

Developing an Objective Long-Term Oriented Measure to Monitor Brand Health

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Philosophy

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Declaration

I hereby declare that this submission is my own work and to the best of my knowledge it contains no material previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at Macquarie University or any other educational institution, except where due acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at Macquarie University or elsewhere, is explicitly acknowledged in the thesis. I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistics expression is acknowledged.

Abas Mirzaei

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my father with much love, respect, and admiration

Abstract

The main focus of this PhD study which is by publication is to provide a new platform to measure and monitor the performance of brand building efforts. This topic is important since it is in response to calls for improvements in marketing accountability and performance measurement. Moreover, it has been well argued that while brands are built over the long-term, they are judged on short-term basis. In response to this call, paper one conducts a comprehensive review of the existing brand performance measures in order to identify different categories of brand performance metrics (academic and industry), and their strengths and shortcomings. A need for objective long-term measures of brand performance was demonstrated.

Focusing on major corporate brands, paper two develops an objective long-term oriented measure of brand health called *Brand health Index* (BHI). BHI is a function of sustained sales growth over the long-term. It enables managers to monitor and track the healthiness of their brands based on real time objective sales data. Extending the brand health index, I provide a behavioural brand evaluation typology, identifying four types of brands, *Dynamos*, *Emergers*, *Strugglers*, and *Disoriented* brands. Such a typology enables managers to first identify their brand's type and then apply more effective branding strategies accordingly.

The advertising spending patterns, I call it *advertising spending diet* of healthy and unhealthy brands was also investigated in paper three. Applying a Kernel distribution estimation approach, I identified four different advertising spending diet, *Smart*, *Double Hump*, *Early Quitting*, and *Poor*. It was observed that healthy brands are on a Smart or Double Hump diet, as opposed to unhealthy brands which are on an early quitting or poor diet. The development of an advertising diet–brand health typology provided an opportunity to consider how effective advertising spending diets could improve brand health. Finally in paper four, the impact of brand health on customer equity was examined. Applying a macro model of customer equity, I demonstrated a positive impact of brand health on customer equity. Moreover, it was found that brand health can facilitate the impact of advertising spending on customer equity. In other words brand health has a mediating impact on advertising–customer equity relationship.

Overall in this thesis longitudinal studies were conducted. Four industries were studied in this thesis including airlines, banking, department stores, and insurance in the US market from 2000 to 2012 encompassing pre-and post-GFC to show how the new measures could be applied. The main contribution of this thesis is developing a new objective long-term based measure of brand health which is positively associated with short-term financial measures, ROA, and EPS. On the one hand, it fulfils senior finance managers' needs since it's a behavioural measure based on consumer purchase behaviour. On the other hand, it fulfils the brand managers' needs to have a behavioural measure that captures the lagged impact of marketing actions.

Table of Contents

Acknowledgement.....	iii
Abstract.....	v
Chapter 1: Introduction	12
1.1. Background of the study	12
1.2. Developing a Brand Health Index	14
1.3. Advertising and Brand Health Interaction	17
1.4. Customer Equity and Brand Health	19
1.5. Research Objectives	22
1.6. Research Contribution.....	22
1.7. Methodology	24
1.8. The Outline of the Research.....	27
1.9. References	36
1.10. Appendix	41
Chapter 2: Measuring and Monitoring Brand Performance over the Long-Term: A Fresh Discussion on Metric Selection	43
Abstract	43
2.1. Introduction.....	44
2.2. Marketing Performance Measurement	46
2.3. Brand Equity: Definition and Perspectives	48
2.4. Brand Equity Measurement Models: Academic and Industry	49
2.5. A Discussion on Brand Measurement Perspectives.....	55
2.6. Conclusion.....	57
2.7. References	58
Chapter 3: Developing a Behavioural Long-Term Based Measure to Monitor the Health of a Brand.....	65
Abstract	65

3.1.	Introduction	66
3.2.	Assessing and Managing Brands over Time; Literature Review	69
3.3.	Brand Health Index: The Sustained Growth Measure	72
3.4.	Behavioural Brand Evaluation Typology.....	81
3.5.	Data Description.....	84
3.6.	Empirical Analysis	85
3.7.	Linking Brand Health to Financial Performance	95
3.8.	Discussion and Implication; Brand Typology Management.....	103
3.9.	References	109

Chapter 4: Is Your Brand Healthy? Which Advertising Diet Are You On?116

Abstract	116
4.1. Introduction	117
4.2. Historical Progression in Advertising Effectiveness Measurement	120
4.3. Approaches in Advertising Effectiveness Measurement	122
4.4. Calls for New Approaches in Assessing Advertising Contribution	123
4.5. Brand Health Index	125
4.6. Research Methodology.....	127
4.7. Empirical Analysis	132
4.8. Advertising Diet–Brand Health Typology	145
4.9. Conclusion.....	149
4.10. References	152

Chapter 5: The Impact of Brand Health on Customer Equity ...158

Abstract	158
5.1. Introduction:	160
5.2. Customer Equity.....	162
5.3. Brand Health Index: An Objective Long-Term Based Measure.....	166
5.4. Brand and Customer Assets	168
5.5. Methodology	171
5.6. Empirical Analysis	177
5.7. Conclusion.....	182
5.8. Managerial Implications.....	182
5.9. Research Limitations and Future Directions.....	184

5.10. References	185
------------------------	-----

Chapter 6: Conclusion192

6.1. Introduction	192
6.2. Overall Findings	193
6.3. Overall Conclusion of the Thesis	199
6.4. Contribution of the Thesis	201
6.5. Managerial Implications.....	203
6.6. Research Limitations.....	205
6.7. Future Research Directions	206
6.8. References	207

List of Tables

TABLE 1.1: TITLE OF PAPERS AND THEIR RESEARCH MODELS.....	29
TABLE 1.2: A SUMMARY OF RESEARCH V TERMINOLOGIES DEFINITIONS	41
TABLE 2.1: MAJOR APPROACHES TO MEASURE BRAND EQUITY	51
TABLE 2.2: INDUSTRY APPROACHES TO EVALUATE BRAND.....	54
TABLE 3.1: CONCEPTUAL BRIEF OF BEHAVIOURAL BRAND EVALUATION TYPOLOGY.....	82
TABLE 3.2: INDUSTRY-LEVEL DESCRIPTIVE STATISTICS	86
TABLE 3.3: BRAND HEALTH, US AIRLINE INDUSTRY	87
TABLE 3.4: BRAND HEALTH, US BANKING INDUSTRY	89
TABLE 3.5: BRAND HEALTH, US DEPARTMENT STORES INDUSTRY	91
TABLE 3.6: BRAND HEALTH, US INSURANCE INDUSTRY	93
TABLE 3.7: TWO-WAY CLUSTER-ROBUST STANDARD ERRORS REGRESSION RESULTS.....	100
TABLE 4.1: ADVERTISING SPENDING DIETS	142
TABLE 4.2: ADVERTISING DIET- BRAND HEALTH TYPOLOGY	147
TABLE 5.1: DECEPTIVE STATISTICS ON ADSTOCK, BRAND HEALTH, AND CUSTOMER EQUITY ACROSS INDUSTRIES.....	177
TABLE 5.2: REGRESSION RESULTS OF EQUATION 1 (SALES-SUPPORTED INCOME).....	178
TABLE 5.3: THE ASSOCIATION BETWEEN BRAND HEALTH AND CUSTOMER EQUITY	179
TABLE 5.4: DIRECT IMPACT OF ADVERTISING ON CUSTOMER EQUITY	180
TABLE 5.5: INDIRECT IMPACT OF ADVERTISING ON CUSTOMER EQUITY	180
TABLE 5.6: MAJOR STUDIES ON CUSTOMER EQUITY MEASUREMENT	190
TABLE 6.1: RESEARCH OBJECTIVES AND OUTCOMES.....	202

List of Figures

FIGURE 1.1: THE RESEARCH MODEL	21
FIGURE 1.2: AVERAGE VALUE ADDED BY INDUSTRY AS A PERCENTAGE OF GDP, 2005-2012	25
FIGURE 3.1: A SYSTEM MODEL OF BRAND ANTECEDENTS AND CONSEQUENCES.....	75
FIGURE 3.2.: GROWTH RATES FOR A PERIOD OF 10 YEARS (PANEL A AND B)	77
FIGURE 3.3: GROWTH SUM, STANDARD DEVIATION, AND BRAND HEALTH	78
FIGURE 3.4: BEHAVIOURAL BRAND EVALUATION TYPOLOGY	81
FIGURE 3.5: BEHAVIOURAL BRAND EVALUATION TYPOLOGY, AIRLINE INDUSTRY (PRE AND POST GFC)	88
FIGURE 3.6: BEHAVIOURAL BRAND EVALUATION TYPOLOGY, BANKING INDUSTRY (PRE- AND POST-GFC)	90
FIGURE 3.7: BEHAVIOURAL BRAND EVALUATION TYPOLOGY, DEPARTMENT STORES (PRE- AND POST-GFC)	92
FIGURE 3.8: BEHAVIOURAL BRAND EVALUATION TYPOLOGY, INSURANCE INDUSTRY (PRE- AND POST-GFC).....	94
FIGURE 3.9: BRAND HEALTH AND FINANCIAL MEASURES	102
FIGURE 4.1: AVERAGE OF BHI AND ADSTOCK INTENSITY ACROSS INDUSTRIES	132
FIGURE 4.2: BHI ACROSS INDUSTRIES, PANEL A-C.....	133
FIGURE 4.3: DENSITY MAPS OF DELTA AIRLINES (PANEL A AND B)	135
FIGURE 4.4: DENSITY MAPS OF SOUTHWEST AIRLINES.....	136
FIGURE 4.5: DENSITY MAPS OF JP MORGAN CHASE	137
FIGURE 4.6: EXAMPLES OF BRANDS WITH DOUBLE HUMP ADVERTISING SPENDING PATTERNS	137
FIGURE 4.7: EXAMPLES OF UNHEALTHY BRANDS WITH RIGHT-SKEWED NORMAL PATTERN	139
FIGURE 4.8: DENSITY HEAT MAPS OF UNHEALTHY BRANDS	140
FIGURE 4.9: DENSITY MAPS, BANK OF AMERICA	143
FIGURE 4.10: ADVERTISING DIET–BRAND HEALTH TYPOLOGY.....	146
FIGURE 4.11: A GUIDELINE TO DEVELOP EFFECTIVE ADVERTISING STRATEGIES	148
FIGURE 5.1: DIRECT AND INDIRECT EFFECTS OF ADSTOCK ON CUSTOMER EQUITY VIA BRAND HEALTH	174

CHAPTER ONE

Introduction

Chapter 1: Introduction

1.1. Background of the study

Marketing managers are under pressure to become more accountable and to justify their contribution to the firm through providing evidence of the results of the dollars spent on marketing actions (Stewart, 2009). The Marketing Science Institute (MSI) has for many years placed marketing accountability on top of its research priorities to emphasise the need for more objective, auditable performance metrics (MSI 2010). Measuring marketing performance is complex, since the road from marketing actions to the firm value and stock return is not clear (Hanssens, Rust, and Srivastava, 2009), although recently few research has shed light on the problem (Joshi and Hanssens 2010; Kumar and Shah 2009; Lim and Lusch 2011).

The impact of marketing actions can be reflected in several stages of consumer purchase behaviour from subjective knowledge, attitudes to actual objective purchase behaviour, and repurchasing actions (Christodoulides and de Chernatony 2010). As a result, several marketing performance measures have been used to examine the contribution of marketing expenditures (Gronholdt and Martensen 2006).

The confounding influence of the temporal dimension on marketing performance measurement suggests that over the long-term part of the effects of marketing actions are reflected in brand assets which provide a richer understanding of marketing performance compared to other measures such as financial metrics (Christodoulides and de Chernatony 2010).

Firms spend their resources on brand building actions because brands can be beneficial for both consumers and firms. From a consumer perspective, knowledge about a brand can

influence consumer perceptions and purchase intentions and repurchasing behaviour (Rego, Billett, and Morgan 2009). Moreover, it can reduce the costs of consumer searching and thinking about alternative products and services (Shankar, Azar, and Fuller 2008). From a firm perspective, brand assets affect shareholder value (Kerin, and Sethuraman 1998) and consumer price insensitivity (Erdem, Swait, and Louviere 2002), facilitates market expansion (Cabral 2000), reduces firm risk and increases stock return by enabling the rapid consumer recognition of product/service at the point of sales (Rego et al. 2009).

It is crucial therefore, to measure, monitor and track the health of a brand to ensure the optimum outcome. Several models and frameworks of brand measurement have been proposed by academic, and recently by industry practitioners (Mirzaei, Gray, and Baumann 2011). Focusing on the brand value chain, brand performance measures can be classified into customer mindset, product market, and financial measures.

First, customer mindset metrics, which are subjective, capture customers' attitudes and perceptions towards a brand. Brand awareness, association, and perceived quality are the common pillars of the customer mindset measures of brand equity (Yoo and Donthu 2001; Srinivasan, Park, and Chang 2005; Buil, de Chernatony, and Martinez 2008). Attitudinal customer mind set measures, which are mostly survey-based, can provide valuable diagnostic insights to managers (Sriram, Balachander, and Kalwani 2007), although they depend on the ability of consumers to report their preference (Park and Srinivasan 1994). Moreover they do not culminate easily in the dollar value which is of interest to senior managers (Ailawadi et al 2003).

Second, product-market measures are objective, but still reflect customers' perceptions towards brands by way of capturing actual consumer purchase behaviour. Market share (Park, and Srinivasan 1994), price premium (Holbrook 1992), revenue premium (Ailawadi et al.

2003), and brand choice utility (Sriram, Balachander, and Kalwani 2007) are some of the major metrics in this category (Christodoulides and de Chernatony 2010).

Third, financial measures tend to judge brand performance based on its financial contribution (Ailawadi, Lehmann, and Neslin 2003). Such measures include discounted cash-flow valuation of licensing fees and royalties (Tiwari 2010). The downside of the financial measures of brand equity is that apart from marketing actions, they are affected by a wide range of other factors which make it difficult to judge the contribution of brand performance (Ailawadi, Lehmann, and Neslin 2003).

In addition to academic frameworks of evaluating brands, there are some industry-based approaches used to evaluate a brand and to measure the brand value. Industry models of brand value are mainly based on expert judgments, survey data, financial input or a combination of these (Mirzaei, Gray, and Baumann 2011). Interbrand, Y&R, and BrandZ are some examples of consulting firms that provide measurements for brand equity and brand value. The weakness of the industry measures is that they are not entirely reliable due to the highly divergent estimations of brand value (Mizik 2010). This inconsistency in measurement methodology sometimes is resulted in a considerable variation in outcomes. For instance, applying seven different brand valuation methodologies in one single database resulted in 450% variation in brand value (Hanssens 2011).

1.2. Developing a Brand Health Index

Among the brand evaluation approaches mentioned above, senior managers prefer behavioural measures including product, market, and financial measures to judge the contribution of marketing spending (Bruce, Peters and Naik 2012; Kumar, Pozza and Ganesh

2013). Kumar, Pozza, and Ganesh (2013), conducting a meta-analysis on customer satisfaction, argue that on average 5 to 8 percent of customers' attitudes on satisfaction are translated to their real purchase behaviour. In other words, in more than 90% of cases customers say something, do something else. Therefore finance managers tend to rely more on behavioural measures (Kumar, Pozza, and Ganesh 2013).

Emphasising short-term behavioural measures of brand performance can be problematic since a brand is built over the years by spending on brand building marketing actions, actions with some lagged impacts (Lodish and Mela 2007).

The outcome of any effective brand building action is initially reflected in a change in customer attitudes, feelings, and thoughts (subjective, attitudinal) (Aaker 1996). It is then translated into consumer purchase behaviour: "the primary payoff from customers' thoughts and feelings is the purchase that they make" (Keller and Lehmann 2006, p.15). This in turn influences the financial value of a firm (Aaker 1996; Keller and Lehmann 2006; Ailawadi et al. 2003). It has been well acknowledged that the impact of some marketing actions such as advertising (Clarke 1976; Ataman et al 2010) may go beyond the current-term and have a lagged impact (Mizik and Jacobson 2008).

Although the lagged impact of marketing actions might take some time to be reflected in "concrete" numbers (Hanssens et al 2009) brand managers are judged on their short-term performance such as weekly or quarterly outcomes (Bruce, Peters and Naik 2012). The dilemma is that brand managers are hired to build brands over the long-term, but to secure their position and to justify their contribution in the short-term, they follow two main approaches. Firstly, they use attitudinal customer mindset measures as an initial reflection of the effectiveness of marketing actions (Bruce, Peters and Naik 2012). Secondly they employ short-term focused marketing actions such as price discounting. However taking either of these approaches is not the optimal solution to the problem since on one hand using

attitudinal measures are not in the best interest of senior managers, and on the other having short-term approach in measuring marketing actions performance may result in brand detriment over the long-run (Lodish and Mela 2007; Pauwels et al. 2004; Ataman, van Heerde and Mela 2010).

To overcome such a dilemma, the focus of this research is to develop a long-term based objective measure to evaluate the brand performance and monitor brand health. The proposed measure which is called *brand health index* is based on publicly available sales data and captures the current-term and lagged impact of brand building marketing actions. Aaker (1996) argues that if a brand has a relative advantage in customers' minds, its sales must increase or at least not decrease. Over the short-term, a brand's sales can increase due to factors such as the temporary introduction of price cuts, discounts, or promotional offering.

Although a brand's sales can increase in the short-term even if brand building activities are cut back (Aaker 1996), over the long-term, continuous persistent sales growth implies that a brand appeals consistently to its customers and performs well (Keller and Lehmann 2009). A brand with persistent sales growth over the long-run is defined as *healthy*, since it is able to adopt effective marketing strategies in order to respond to the customers' changing tastes and as a result to keep the sales growth high not for just one or two periods, but also over many more periods (say 5 to 10 years and beyond). Therefore a healthy brand is a brand with high growth rates and low growth rate volatility over the long-term.

The proposed brand health index is in line with two components of long-term brand performance, growth and persistence, suggested by Keller and Lehmann (2009). The brand health index which to the best of my knowledge is the first measure to encompass long-term brand behaviour is beneficial for both finance and brand managers. On the one hand, it fulfils senior finance managers' needs since it's a behavioural measure based on consumer purchase

behaviour. On the other hand, it fulfils the brand managers' needs to have a behavioural measure that captures the lagged impact of marketing actions.

Building on the brand health index I develop a behavioural brand evaluation typology. I identify four main types of brands including *Dynamos*, *Strugglers*, *Emergers*, and *Disoriented* brands. Classifying brands into different types and categories enables managers to apply the most effective strategies and actions for each stage of the brand evaluation framework.

1.3. Advertising and Brand Health Interaction

One of the main marketing actions that can contribute to brand performance is advertising (Buil, De Chernatony, and Martinez 2013). Advertising can have a positive impact on brand performance both over the short-term and long-term (Ataman Mela and van Heerde 2010). There are a wide range of factors which can influence brand equity and brand health, from product, price, and distribution strategies (Ataman et al 2010). One of the most effective strategies that can influence brand performance is advertising which has been acknowledged in the literature. In this thesis I focus on advertising to examine the impact of marketing actions on brand health.

As mentioned before, one of the well-established arguments in relation to the impact of advertising is that advertising effects last for periods beyond the current-term (Clarke 1976). Therefore not only current-term advertising spending, but also past advertising efforts must be taken into consideration when measuring advertising effectiveness. This cumulative advertising impact is defined as “the effect of a perceived advertisement that influences two or more successive advertising decisions” (Palda 1965, p.162) or as “the effect of an

advertisement that influences consumer buying behaviour beyond the period of its appearance” (Palda 1965, p.163).

To capture the cumulative impact of advertising spending, or time-varying dynamic advertising response, a range of models have been employed over past decades. For example, Clarke (1976) classifies these dynamic cumulative advertising response models into direct duration and implied duration interval models. In the direct duration interval models such as the direct lag model, or weighted average models, the past t years (t equals time) advertising spending are regressed as t independent variables on current-term brand performance. Alternatively, the implied duration interval models consider a decay rate for lagged impacts of advertising spending in estimating the cumulative advertising effect (Clarke 1976).

One of the popular implied models is Koyck (1954) model which uses the geometric decay rate for lagged advertising spending impact (Jedidi, Mela, and Gupta 1999). In this research, to capture the impact of advertising spending on the brand health, following Broadbent (1979), Rizzo (1999), and Shankar, Azar, and Fuller (2008), I apply the Koyck model, and create an Adstock variable. Such an approach allows us to take a new long-term approach in capturing the impact of advertising spending on building healthy brands. In this thesis, in chapter 4 (paper 3) I study the advertising spending patterns of different brands over the long-term. Considering advertising spending pattern analogous to a brand’s diet, I study the advertising diet of healthy and unhealthy brands to see how differently healthy and unhealthy brands consume their intake of advertising diet. Advertising diet is operationally defined as the patterns of advertising spending in the past, their density and distribution functions over the long-term. I identify effective and ineffective advertising diets in building healthy brands. An “advertising diet- brand health” typology is developed and effective advertising diet for each type is proposed.

1.4. Customer Equity and Brand Health

Ultimately firms spend their resources on marketing actions and build brands to acquire new customers and retain existing customers (Stahl, Heitmann, Lehmann and Neslin 2012). Customer acquisition and retention can increase a firm's current and future cash flows which act as a major driver of shareholder returns and firm value (Hanssens, Rust and Srivastava 2009). A customer's contribution to firm value isn't limited to the profit of just one single transaction, but also the total profit gained from a customer throughout its relationship with the brand (Kumar and George 2007).

The concept of customer lifetime value or, in aggregate level, customer equity is designed to capture customer-driven financial returns (Blattberg and Deighton 1996; Gupta, and Lehmann 2003; Rust, Zeithaml and Lemon 2000; Rust, Lemon and Zeithaml 2004). To maximize firm value, it is critical that marketing actions positively affect customer acquisition and retention rates, customer life-time value, or in its aggregate level, customer equity (CE). Customer life-time value is the core concept of customer equity and was first proposed by Blattberg and Deighton (1996). It is defined as "the present value of all future profits generated from a customer" (Gupta and Lehmann 2003, p.10). Or more specifically as "the discounted future income stream derived from acquisition, retention, and expansion projections and their associated costs" (Gupta, Lehmann and Ames Sturt 2004, p. 7).

More recent research has coined the asset arising from customer life-time value as customer equity. Customer equity is driven by customer acquisition, customer retention, and customer expansion (cross-selling) (Gupta, Hanssens, Hardie, Kahn, Kumar, Lin, Nalini, & Sriram 2006). Customer equity as a marketing asset (Hanssens, Rust, and Srivastava 2009) guides managers to find profitable customers and manage marketing actions for different groups of customers (Kumar and Reinartz 2006). Several models have been developed to

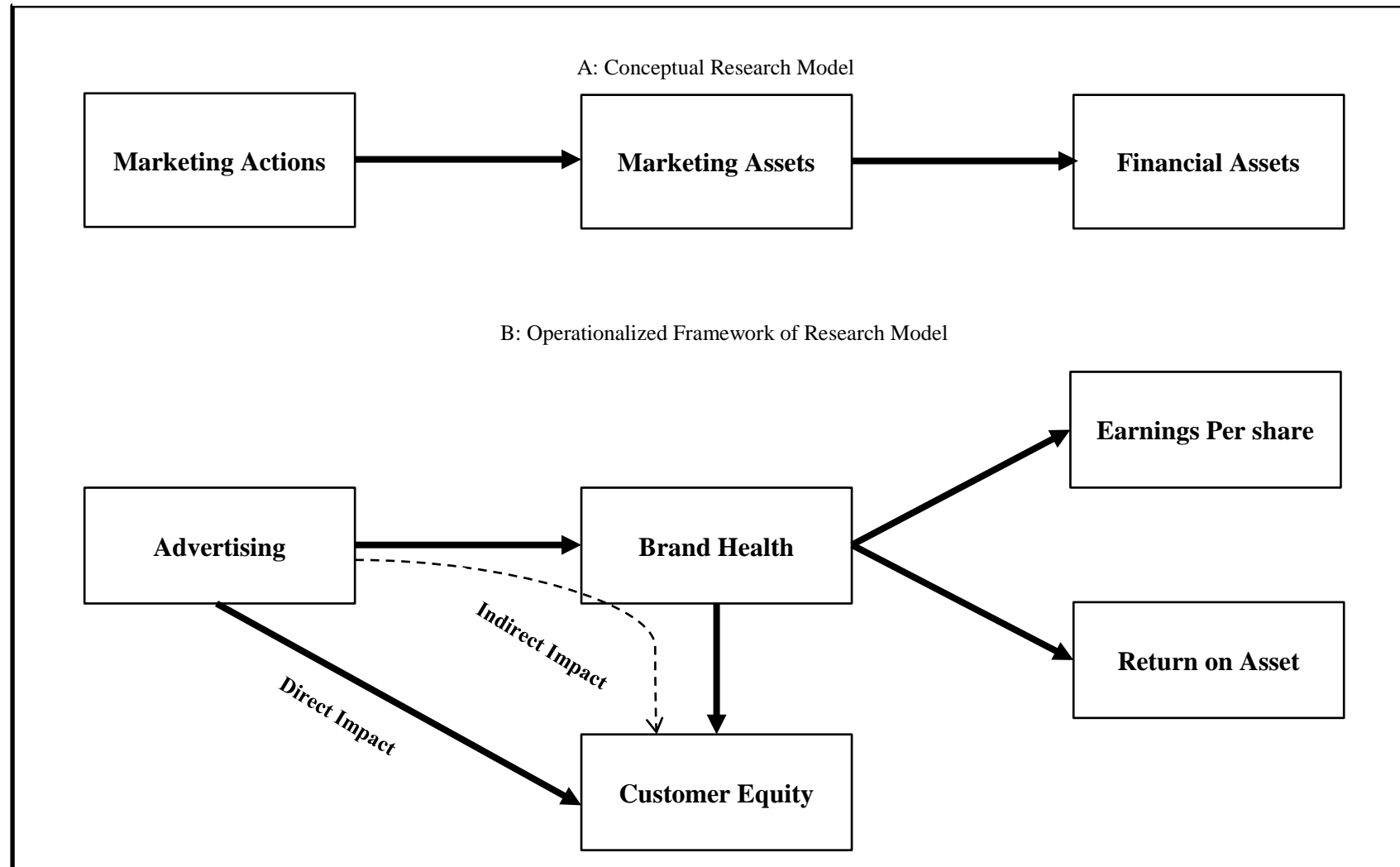
measure the concept of customer equity (Rust, Zeithaml and Lemon 2000; Rust, Lemon and Zeithaml 2004; Gupta, and Lehmann 2003; Gupta, Lehmann, and Ames Sturt 2004; Lemon, Rust, and Zeithaml 2001; Kumar and George 2007; Kumar and Shah 2009).

Recently, Lim and Lusch (2011) classifying all the existing measures of customer equity as “micro” models, proposed a “macro” measure of brand equity which is driven by sales margin capitalization. Their macro model of customer equity is a process model based on readily available data. Their process based customer equity model consists of four steps including: annual sales generate sales margins, annual sales margins generate stock returns, annual stock returns reflects sales margin capitalization and, finally, customer equity can be approximated from “sales margin capitalization” (Lim and Lusch 2011, p. 650).

Although customer equity has recently been studied extensively as a separate concept or in relation to marketing actions (Blattberg, Malthouse and Neslin 2009), few researchers have discussed the interaction between brand and customer assets with and without accounting for marketing actions. Ambler et al (2002), Leone et al (2006), and Bick (2009) have discussed theoretically the relationship between these two marketing assets. They argued that a brand asset can affect customer equity through creating growth opportunities, and charging premium prices, and increasing customer loyalty.

To more fully explore the relationship between brand and customer assets I study the impact of our proposed brand health index on customer equity applying Lim and Lusch’s (2011) macro model of customer equity. I also examine the impact of marketing actions, particularly advertising spending, on customer equity directly, and indirectly considering the mediating role of the brand health. Figure 1.1 provides a schematic outline of this PhD thesis.

Figure 1.1: The Research Model



1.5. Research Objectives

As shown in figure 1.1, this study has four main objectives which I will address in four papers. The main objectives of this dissertation are as follows:

1. **To review and study the literature on brand performance measurement;**
2. **To propose a new objective long-term based measure of brand health;**
3. **To study the impact of advertising spending over time on brand health;**
4. **To examine the impact of brand health on customer equity, and to investigate the mediating role of brand health in advertising–customer equity relationship.**

1.6. Research Contribution

Firstly, this thesis contributes to the branding, and brand measurement literature in several ways: It proposes a new measure of brand performance called the “Brand Health Index” (BHI). It is the first to propose an objective long-term oriented measure of brand health based on firms’ sustained growth. Moreover, this study develops a behavioural brand evaluation typology based on the healthiness and powerfulness of brands. Additionally, it contributes to my understanding of brand-financial performance interactions by linking the long-term customer market measure of brand health to financial measures such as ROA and EPS.

Secondly, I make several contributions to the advertising–brand relationship field. That is, by using a long-term perspective to the brand building contribution of advertising efforts, I

analyse the advertising spending patterns, (i.e. their advertising spending diets) of healthy and unhealthy brands over a period of 13 years from 2000 to 2012. I categorise the main advertising diets of healthy and unhealthy brands into four main advertising diets across several industries. Moreover, I develop an advertising–brand health typology which enables managers to analyse the current advertising diet of a brand and judge its role in building healthy brands. In addition I propose advertising strategies for each type of brand identified based on advertising diet- brand health typology.

Thirdly, this research contributes to my understanding of brand-customer relationships. It empirically studies the impact of brand health on customer equity. In other words, this study examines the interactions between two significant marketing assets, brand and customer assets. Moreover I studied the mediating role of brand health in advertising-customer equity relationships.

Overall this research contributed to improving our understanding of the relationships between marketing actions, marketing assets, and financial performance. I studied several industries to improve the generalizability of the findings. Finally I conducted a longitudinal study which monitored the advertising, marketing assets, financial assets and their interactions over the long-term encompassing both the pre and post global financial crisis (GFC).

1.7. Methodology

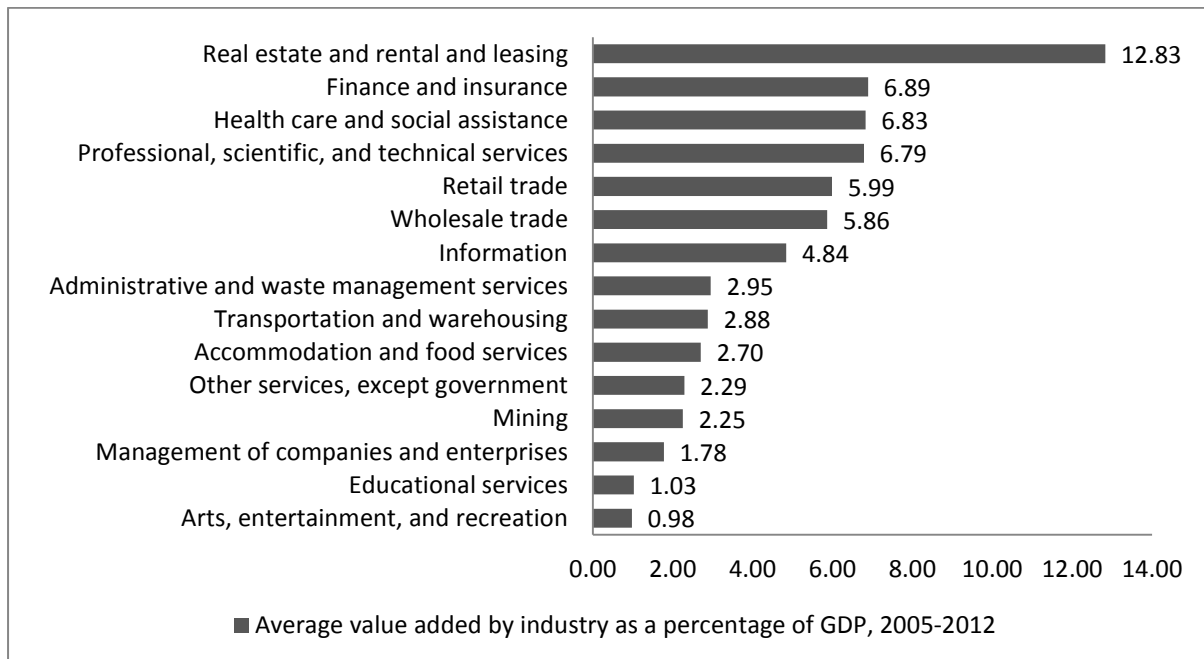
1.7.1. Sample Selection and Data Description

Over the last 50 years there has been a shift from manufacturing to providing services. Looking at the number of people employed in the service-providing sector, and more importantly the GDP contribution of service sector, it is evident that today about 85% of the value added to GDP comes from service sector (Cox et al. 2013). With many brands in this sector across several industries such as retail, finance and insurance, real estate and airlines, it is crucial to address the marketing and branding challenges of firms in this sector. However a vast body of research has studied the branding, but their focus has been mainly of tangible offerings (Ostrom et al. 2010). Research on service brand management still needs to be studied. Effectively branding services has been identified as one of the research priorities, in addition to measuring the value of service in the recent study on service science research priorities published in the *Journal of Service Research* (Ostrom et al. 2010). In response to this call, this thesis focuses on managing service brands. Four service industries, banking, insurance, airlines and department stores from the top 15 industries contributing to the GDP are studied (figure 1.2). Applying the research model into several industries enables us to test the model applicability and generalizability.

Since brands could be perceived differently in different countries and markets due to country-specific characteristics such as customers, and legal and economic factors, I focused on one country. I chose the US market, since it is a dynamic marketplace with multiple brands in each industry. Moreover brand building efforts are more established in the U.S market compared to emerging markets such as Asia.

In order to test different timelines to enhance the validity of research model, different time spans have been tested. Since the focus of this thesis is on long-term brand health, and due to the fact that brand health is computed on long-term basis, to capture the most robust time span which has incremental information for financial measures different time frames were tested.

Figure 1.2: Average value added by industry as a percentage of GDP, 2005-2012



Source: The US Bureau of Economic Analysis 2013

I based this research model and empirical investigation on COMPUSTAT data base. COMPUSTAT is a market database published by Standard and Poor's. It is a financial, statistical, and market information on companies. COMPUSTAT provides a broad range of information including annual company data history since 1950. Data can be retrieved for North American companies and also International companies on a monthly, quarterly and annual basis. The type of information published by COMPUSTAT include: Global Industry Classification Standards (GICS), pricing data, earnings data, insider and institutional holdings, and so forth.

Since this study focuses on the brand level, and due to the fact that COMPUSTAT provides only corporate level data, I chose those firms and brands that first, operate under corporate branding (e.g., their corporate name is their brand name), and second, have available data for sales, income, earning per share, and more importantly advertising spending over the study period.

In paper 2 which is the first empirical paper, I study four industries for a period of 10 years from 2002 to 2011. In paper 3 I study three industries for a period of 13 years from 2000 to 2012. In paper 4, three industries are studied between 2001 and 2012. I use this time frame to encompass the two periods before and after the global financial crisis (GFC) in 2008. This will enable us to take into account pre and post GFC effects.

1.7.2. Research Method

Since this study is a panel study, in this thesis I employ the Two-Way Cluster-Robust Errors regression method which was recently developed and has been used in panel studies (Cameron, Gelbach, and Miller 2011). A Two-Way Cluster-Robust Error controls for both the time series (Year) dependencies and the cross sectional (Firms) dependencies (Gow, Ormazabal, and Taylor 2010). For example, for the two directions being time and firm, the test corrects for dependency of the observation for firm i at time t , and time $t+1$. It also controls for dependency of observation of firm i at time t , and firm j at time t . Since in panel data, one or more repeated measures are studied over time and across firms, which might potentially be correlated cross-sectionally or serially, it is crucial to correct for the time dependency and cross-sectional dependency. This methodology enables researchers to control for clustering to avoid under-estimating standard errors and over-rejection in panel studies

(Cameron et al. 2011). There are several methodologies such as Fama-Macbeth (1973), which may correct for dependency in just one way (cross sectional or time dependency). However, Gow, Ormazal and Taylor (2010) argue that there is a gap in panel studies where one controls for one direction and misses the other. Comparing the popular methodologies in panel data studies such as OLS, Z2, White standard error, Newy-West, Fama-Macbeth, one way cluster, and two-way cluster-robust error, Gow, Ormazabal and Taylor (2009) suggest that the most robust methodology for any sort of dependency or even independency is the two-way cluster-robust error regression.


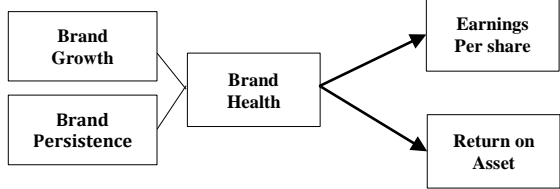

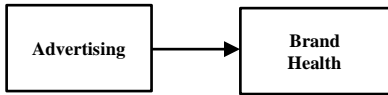

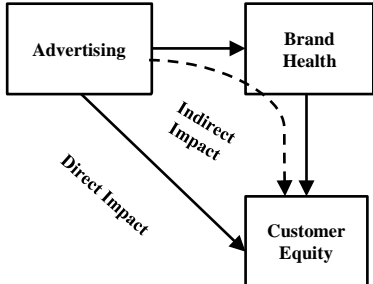
In addition, I apply the Kernel distribution estimation method (Parzen 1962) to capture the advertising diets of healthy and unhealthy brands in chapter 4. As a nonparametric method of distribution estimation, to estimate the density of an unknown distribution, Kernel density estimation is an efficient method which captures the shape of the distribution (Worton 1989). Kernel density allows us to estimate the advertising spending patterns without presuming that the distribution is normal. Since I have a range of healthy and unhealthy brands, I expect to observe different distribution shapes which may not necessarily be normal shapes. I apply the one-dimensional and two-dimensional Kernel distribution estimations (known as heat maps). I draw two-dimensional heat maps for each brand, to examine the distribution of the brands' relative advertising stock throughout time.

1.8. The Outline of the Research

This research adopts a publication format and comprises four academic papers. Paper one, reviews the literature on brand performance measurement, and calls for long-term based, behavioural, and customer purchase-driven measures of marketing contribution. Paper two,

propose a new objective long-term based, consumer market measure of brand health, and examines its associations with two financial measures, namely, return on assets (ROA) and earnings per share (EPS). Paper three investigates the interaction between brand health and marketing actions, particularly advertising spending, and the advertising spending patterns of healthy and unhealthy brands will be identified. Finally, paper four examines the impact of brand health on customer equity, and the impact of advertising on customer equity directly and indirectly through brand health.

Table 1.1: Title of papers and their research models

Paper	Title	Schematic Model
Paper 1	Measuring and Monitoring Brand Performance Over The Long Term; A Fresh Discussion on Metric Selection	<p>A: Simplistic Conceptual Research Model</p>  <pre> graph LR A[Marketing Actions] --> B[Marketing Assets] B --> C[Financial Assets] </pre> <p>B: Operationalized Framework of Research Model, Paper 2</p>  <pre> graph LR A[Brand Growth] --> C[Brand Health] B[Brand Persistence] --> C C --> D[Earnings Per share] C --> E[Return on Asset] </pre>
Paper 2	Developing a Behavioural Long-term based Measure To Monitor the Health on a Brand	<p>A: Simplistic Conceptual Research Model</p>  <pre> graph LR A[Marketing Actions] --> B[Marketing Assets] B --> C[Financial Assets] </pre> <p>B: Operationalized Framework of Research Model, Paper 3</p>  <pre> graph LR A[Advertising] --> B[Brand Health] </pre>
Paper 3	Is Your Brand Healthy? Which Advertising Diet Are You On?	<p>A: Simplistic Conceptual Research</p>  <pre> graph LR A[Marketing Actions] --> B[Marketing Assets] B --> C[Financial Assets] </pre> <p>B: Operationalized Framework of Research Model, Paper 4</p>  <pre> graph LR A[Advertising] --> B[Brand Health] A -- Direct Impact --> D[Customer Equity] B -- Indirect Impact --> D </pre>
Paper 4	The Impact of Brand Health on Customer Equity	

1.8.1. Paper1: Measuring and Monitoring Brand Performance over the Long-Term: A Fresh Discussion on Metric Selection

This paper aims to review the marketing performance measurement literature. It reviews common existing approaches to the measurement of marketing performance and highlights the need for objective, long-term based measures. It provides a review of relevant literature on academic and industry measures and models of brand performance measurement. Finally it discusses the strengths and shortcomings of existing measures of brand performance and brand equity in particular. Specifically, it focuses the subjectivity/objectivity of metrics, the short- term/long- term horizon, the use of financial/non-financial metrics, and the tangibility/intangibility of the metrics used.

This paper highlights the need for an objective, long-term based measure of brand performance that is auditable, based on publicly available data, and is a non-financial measure. It concludes that a behavioural long-term measure of brand performance based on consumers' actual purchase behaviour is required. This analytical/conceptual paper contributes to the literature and to the overall aims of this research by shedding lights on marketing performance measurement and, in particular, the brand performance measurement literature.

This paper was wholly and completely written by Abas Mirzaei and reviewed by Dr. David Gray and Dr. Chris Baumann. A modified version of this paper (the conceptual model proposed in this paper excluded from the thesis, due to the change in the thesis research model) has already been published by invitation after a conference presentation, in The Marketing Review, 2011, Westburn Publisher, UK.

1.8.2. Paper 2: Developing a Behavioural Long-Term Based Measure to Monitor the Health of a Brand

This paper proposes a new objective, consumer-market, long-term based measure of brand health which I call the *Brand Health Index* (BHI). A brand with persistent sales growth over the long-run is defined as *healthy*, since it is able to adopt effective marketing strategies in response to customers' changing tastes over time and as a result to keep sales growth high not for just one or two periods, but also over an extended time-frame (say 5 to 10 years and beyond). Therefore a healthy brand is a brand with high growth rates and low growth rate volatility over the long-term. BHI is objective, based on publically available data, and has a long-term perspective. It is applicable across different industries, can be estimated at different firm levels from corporate to brand, and sub-brand level.

The proposed measure is grounded on the Keller and Lehmann (2009) theory of long-term brand evaluation model. It is built on two components of brand performance including *Growth* and *Persistence* proposed by Keller, and Lehmann (2009). The proposed framework is tested across multiple corporate brands in four industries: airlines, department stores, banking, and insurance. This paper is based on secondary data using the COMPUSTAT data base in the US market. The US market was chosen to control for country-specific differences. As a longitudinal study, this paper estimates the brand health of firms in the aforementioned industries from 2002 to 2011.

Building on the brand health index (BHI), a behavioural brand evaluation typology is developed which categorises brands into *Dynamo*, *Disoriented*, *Struggler*, and *Emerger*. Effective branding strategies are proposed for each type of brand.

I validate the proposed measure by correlating it with two publicly available measures, Interbrand, and Millward Brown's BrandZ. In addition, the current paper applies a two-way

cluster-robust regression model, examines the association between the proposed measure of brand health and two financial measures, namely, return on assets (ROA) and earning per share (EPS).

This empirical paper contributes to the brand performance literature by firstly, proposing a practical, and at the same time reliable and objective, customer-market and long-term based measure of brand health which is based consumers actual purchase behaviour. BHI is a real time monitoring tool, and enables managers to assess and monitor the health of their brands objectively, in different levels of corporate brand, individual brand, and sub-brand and across different industries.

Secondly, I develop a behavioural brand evaluation framework, which enables managers to first identify their brand's type, and then set effective branding strategies accordingly. Third, focusing on the period from 2002 to 2011, this study encompasses the periods before and after the global financial crisis (GFC). This will enable us to take account of pre-and post-GFC effects and capture the changes in brand health over the two periods. The fourth contribution is to provide insights into the branding and shareholder value creation association over the long-term. Finally, in this study I link the proposed long-term based measure of brand health to short-term financial measures.

This paper was wholly and completely written by Abas Mirzaei. Data collection and analysis was solely carried out by Abas Mirzaei. It was then reviewed by Dr. Chris Baumann, and Dr. David Gray. Finally this paper was reviewed by Prof. Lester Johnson. A modified version of this paper won the best track paper in branding, ANZMAC 2013.

This paper is now under review with the International Journal of Research in Marketing (Manuscript Number: IJRM-D-13-00403).

1.8.3. Paper 3: Is Your Brand Healthy? Which Advertising Diet Are You On?

After using the brand health index (BHI) in paper 2, this paper is aimed at investigating the relationship between marketing actions namely advertising and brand health. To do so, I consider advertising spending analogous to a brand's diet. In a real life situation, the health of a person is not attributed to what they had for breakfast. In fact a healthy eating diet over the long-term is required to stay fit and healthy. I consider advertising spending as an eating diet for a brand to be fit and healthy. I study the advertising diet of healthy and unhealthy brands across three industries: airlines, banking, and department stores in the US market from 2000 to 2012.

I apply the Kernel distribution estimation method (Parzen 1962) to capture the advertising spending patterns of healthy and unhealthy brands considering the competitors' advertising spending. I identify four different advertising spending diets: *Smart*, *Double Hump*, *Early Quitting*, and *Poor*. An advertising diet–brand health typology is developed. Based on their healthiness and advertising diet, brands are classified into *Fit*, *Irrelevant*, *Ineffective*, and *Sick*. For each type of brands the most effective advertising diet to build healthier brands over the long-term is proposed.

The findings of this paper provide several implications for managers. Firstly, this study provides a framework which managers can easily use to identify and debate more clearly what kind of advertising spending diet they are following and wish to follow. This will enable managers to analyse their current situation in terms of advertising spending, before setting any new advertising strategy, or budget.

Secondly, this study provides a framework to meet the expectations of both chief financial officers (CFOs) and other senior managers and marketers. It links advertising

spending to a long-term based behavioural measure which is directly associated with customer actual purchase behaviour. Following the approach used in this study, managers can evaluate the direct impacts of advertising on sales and also its indirect impacts through brand equity.

Thirdly, this study offers a firm-specific approach to estimating advertising effectiveness that is applicable across different industries, and service and product categories. Finally, this research provides managers with a more realistic picture of their brand advertising spending effectiveness, since it considers the mediating role of competitors' advertising effects on their own brand advertising effectiveness.

This paper was wholly and completely written by Abas Mirzaei. Data collection and analysis was solely carried out by Abas Mirzaei. It was then reviewed by Dr. David Gray, and Dr. Chris Baumann. Finally this paper was reviewed by Prof. Lester Johnson. This paper is now under review with the Journal of Advertising Research (Manuscript Number: JAR Paper1000)

1.8.4. Paper 4: The Impact of Brand Health on Customer Equity

The final paper of this PhD thesis examines the impact of brand health on customer equity over the long-run. Applying the Lim and Lusch (2011) macro model of customer equity, this paper first studies the impact of brand health on customer equity. It then evaluates the impact of advertising on customer equity directly and indirectly through brand health. In other words, it studies the mediating role of brand health in advertising-customer equity relationship.

To capture the impact of brand health on customer equity, a two-way cluster robust error regression is applied as an efficient method in panel studies. In addition, I examine the impact of advertising on customer equity directly and indirectly via brand health through the application the Sobel test (Sobel 1982). In this paper using the COMPUSTAT database I study three industries: airlines, banking and department stores in the US market over a period of 121 years from 2001 to 2012.

The contribution of this paper is as follows. Firstly, this paper extends previous research on brand and customer asset relationships (Ambler et al 2002; Leone et al. 2006) by quantitatively evaluating the impact of a healthy brand on customer equity over the long-term. Secondly, the findings of this paper provide insights into the effect of marketing actions such as advertising on customer equity directly and indirectly through brand health. It helps managers to judge the impact of one dollar spent on advertising to marketing assets more quantitatively. Overall the findings of this study enable managers to objectively monitor the contribution of brand building efforts, such as advertising spending on customer equity and all the future profits.

This paper was wholly and completely written by Abas Mirzaei. Data collection and analysis was solely carried out by Abas Mirzaei. It was then reviewed by Dr. David Gray, Dr. Chris Baumann and Prof. Lester Johnson.

This paper is prepared to be submitted to the Journal of Marketing Intelligence & Planning.

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1.10. Appendix

Table 1.2: A summary of research v terminologies definitions

Terminology	Definition
Brand Equity	<p>“A set of assets and liabilities linked to a brand, its name and symbol, which add to or subtract from the value provided by a product or service to a firm and/or that firm’s customers” (Aaker 1991, p. 15).</p> <p>“The differential effect of brand knowledge on consumer response to the marketing of the brand” (Keller 1993, p. 2).</p>
Brand Health	<p>A <i>healthy brand</i> is defined as one which is able to adopt effective marketing strategies in response to customers’ changing tastes over time and as a result to keep sales growth high not for just one or two periods, but also over an extended time-frame (say 5 to 10 years and beyond) with a low level of volatility. Operationally brand health is defined as a brand with high cumulative growth and low growth volatility over the long-term (source: authors).</p>
Customer Lifetime Value	<p>“The present value of all future profits generated from a customer” (Gupta and Lehmann 2003, p.10).</p> <p>“The discounted future income stream derived from acquisition, retention, and expansion projections and their associated costs” (Gupta, Lehmann and Ames Sturt 2004, p. 7).</p>
Customer Equity	<p>The aggregate value of the customer lifetime value of all current and future customers (Blattberg and Deghiton 1996)</p>

CHAPTER TWO

Measuring and Monitoring Brand Performance over the Long-Term: A Fresh Discussion on Metric Selection

Chapter 2: Measuring and Monitoring Brand Performance over the Long-Term: A Fresh Discussion on Metric Selection¹

Abstract

Measuring marketing performance has been a long standing problem for managers over the years. This paper, reviews the marketing performance measurement literature. Focusing on brand equity as a main marketing asset, I discuss the academic and industry measures of brand equity, and their strengths and shortcomings. I address brand performance measurement shortcomings and discuss them in terms of subjective/objective, auditable/unauditable, short-term/long-term horizon and financial/non-financial. Discussing the strengths and shortcomings of existing brand performance measurement approaches, this paper emphasises the need for a new objective, long-term oriented, and applicable across different industries measure to monitoring and tracking the health of a brand. Since brands are built over the long-term and due to the fact the contribution of marketing actions can go beyond the current term, such a measure enables managers to capture the overall, long-term contribution of brand building marketing actions.

Keywords: Marketing Performance Measurement, Marketing Effectiveness, Marketing Accountability, Brand Equity, Brand Performance Measurement

¹ A modified version of this paper has been published in *The Marketing Review*

2.1. Introduction

Industry and academia have long called for more effective quantitative metrics to evaluate firm performance in the value creation process (Seggie, Cavusgil & Phelan 2007). In this paper I focus on the metrics applicable to the marketing function because of increasing demand from various stakeholders for the marketing function to become more accountable (Ramond 1976; Sevin 1965; Clancy & Stone 2005; Seggie, Cavusgil & Phelan 2007). The Marketing Science Institute (MSI) has placed increased emphasis in recent times on more clearly defining the contribution of marketing (MSI 2008). There are, however, many relationships in the marketing value chain between marketing actions (e.g., advertising, price promotion, product innovation, and distribution breadth), marketing assets (e.g., brand equity and customer equity), financial assets and ultimately stock price which remain unclear (Hanssens, Rust & Srivastava 2009).

In particular, most studies examining the performance of marketing actions focus on short-term tangible financial metrics (Mizik & Jacobson 2008) which do not fully reflect the performance of marketing actions and expenditures (Wang, Zhang & Ouyang 2009). Intangible non-financial metrics such as brand equity and customer equity add value to financial metrics by providing a richer understanding of marketing performance. The importance of non-financial intangible assets is demonstrated if one compares the market-to-book ratios for the Fortune 500 (i.e. an average ratio of 4 to 1) which implies that over 75 percent of the value of these companies lies in their brands and other marketing-based intangible assets (Doyle 2008, p. 20). These intangible measures comprise a combination of short-term and long-term performance (Ambler 2003) and link marketing actions to shareholder value (Srivastava, Shervani & Fahey 1998).

To this end I focus on intangible marketing assets to measure marketing performance. Brand equity as one of the major intangible marketing assets (Ambler 2003) is a key construct in marketing (Ailawadi, Lehmann & Neslin 2003; Keller 2003) and produces various benefits for customers and firms (Keller & Lehmann 2006). There is a positive relationship between intangible brand asset and consumer willingness to buy (Cobb-Walgren, Ruble & Donthu 1995), customer confidence in brand claims, consumer price insensitivity (Erdem, Swait & Louviere 2002), market share (Agarwal & Rao 1996), and shareholder value (Kerin & Sethuraman 1998). It is also associated with information cost, perceived risk, and cost of thinking negatively (Shankar, Azar & Fuller 2008).

The Marketing Science Institute has placed managing brands as one of its research priorities for 2010-12 (MSI 2010). However, in order to manage a brand one needs to have a consistent and reliable set of metrics (Aaker & Joachimsthaler 2000). There is a variety of brand asset measures and more than 300 models have been developed to estimate brand equity. There is no consensus as to what is the most effective metric to manage and track this intangible complex concept. Apart from financial measures which stress the value of a brand to the firm (Simon & Sullivan 1993; Feldwick 1996), the focus of consumer-based measures is on subjective, intangible metrics such as brand awareness, perceived quality, and image, all of which are mainly attitudinal metrics. These attitudinal, subjective metrics employ consumer surveys to measure brand equity (Aaker 1996).

One of the main strengths of attitudinal and surveys-based measures is their diagnostic power (Sriram et al. 2007). They are used to capture the customers' feelings, and preferences. Since the impact of any marketing action first appears in change in customers attitudes, before being translated into consumers' actual purchase behaviour, thus marketing managers prefer attitudinal measures. In contrast CFOs and CEOs are interested in behavioural measures since behavioural managers are more easily culminated into dollar

value (Ailawadi et al. 2003). Existing behavioural measures are short-term oriented and tend to judge the performance on short-term basis (Lodish and Mela 2007), although it has been well acknowledged that the marketing actions may have a lagged impact (Mizik and Jacobson 2008; Ataman et al. 2010). In other words it may take some time for the impact of marketing actions to be translated into consumers actual purchase behaviour (Hanssens et al. 2009).

In this study to explore more on the brand performance measurement approaches, I begin with a review of relevant literature on marketing performance measurement, academic and industry measures and models of brand performance with a focus on brand equity. Then I discuss brand performance measurement's strengths and shortcomings in terms of the subjectivity/ objectivity of metrics, auditability of measures, and short-term versus long-term horizon in measurement. Finally, emphasising the need to take a different approach in measuring brand performance, I highlight the characteristics and desiderata of an ideal measure to monitor the health of a brand over the long-term.

2.2. Marketing Performance Measurement

Clark (1999), reviewing the history of marketing performance measurement, suggested three shifts: the move from the use of financial to non-financial measures; from the measurement of output-based metrics to measuring marketing inputs as well; and finally from the use of one-dimensional to the use of multi-dimensional measures of performance.

Alternatively, other scholars have suggested four perspectives in performance metric selection (Ambler, Kokkinaki & Puntoni 2004). According to Ambler et al. (2004) these perspectives are: control theory (actual performance is compared with pre-set strategies and plans); agency theory ("the focus is on the principal-agent contractual relationship" (Ambler

et al. 2004, p. 477), and contractor reports those measures to the principal that justify the past and prospective marketing expenditure); institutional (cultural values, the history of the firm, and industry-related factors drive the marketing actions taken by the company (Meyer and Rowan 1977); and market orientation theory (those senior managers that are more market oriented tend to evaluate the marketing performance) (Day 1994).

Gao (2010) clarifies some marketing performance conceptual foundations such as marketing effectiveness and efficiency that have been used interchangeably in the literature. Marketing effectiveness is described as the extent to which marketing actions contribute to a firm's achievement of its business goals (Ambler, Kokkinaki, Puntoni & Riley 2001). There are three major approaches to studying and measuring marketing effectiveness (Connor & Tynan 1999) including structure (Kotler 1977), culture (Hooley & Lynch 1985), and learning organisation (Carson 1990). Structure stresses a customer-based strategy (Kotler 1977); culture assesses if the company's culture reveals shared values, beliefs and corporate commitment to the marketing concept (Hooley & Lynch 1985). Learning organisation on the other hand examines management receptivity to, and absorptive capacity for, organisational learning in its marketing environment (Carson 1990).

Marketing effectiveness compares performance outcomes with goals, whereas marketing efficiency concerns marketing output in relation to resource allocation (Bonoma & Clark 1988). Efficiency and effectiveness may not converge over time due to inherent trade-offs between them (Morgan, Clark & Gooner 2002; Gao 2010). For example, decreasing resource allocation to marketing actions such as cutting advertising expenditures and reducing the size of a sales force will improve short-run marketing efficiency but also affects marketing effectiveness in the long-term in terms of reducing brand awareness and eroding brand positioning (Morgan et al. 2002). The measurement of efficiency can be complicated because of the indirect and lagged effects of marketing actions as inputs in addition to its

diversity (Stewart 2009). This is not to say that efficiency is not an important component of performance, however, what I do say is that the focus must first be on measuring marketing effectiveness. This means that I need to have reliable estimates of marketing outcomes to capture the long-term effectiveness of marketing actions (Stewart 2009). Intermediate marketing outcomes such as brand asset are considered as a proxy for long-term effectiveness, bridging the marketing actions to financial performance (Stewart 2009). Thus in this paper focusing on marketing effectiveness, I discuss intermediate marketing outcomes, namely brand equity, its definitions, and measurement approaches. I address the strengths and shortcomings of existing brand asset measurement approaches and propose a new perspective in brand asset evaluation to overcome the gap in brand performance measurement.

2.3. Brand Equity: Definition and Perspectives

There are many different definitions of brand equity. One of the first studies to define and introduce brand equity concept was Aaker's seminal paper (1991). Aaker (1991) defined brand equity as "a set of assets and liabilities linked to a brand, its name and symbol, which add to or subtract from the value provided by a product or service to a firm and/or that firm's customers" (p. 15). Dimensions of brand equity proposed by Aaker (1991) are: awareness, association, perceived quality, brand loyalty and other proprietary brand assets.

As another perspective in defining brand equity has been considered from a consumer psychology point of view, emphasising brand components and, in particular, brand knowledge (Keller 1993). In this case brand equity is defined as "the differential effect of brand knowledge on consumer response to the marketing of the brand" (Keller 1993, p. 2).

The focus on brand knowledge involves brand awareness and brand image (Buil, de Chernatony and Martinez 2008).

In parallel to the above discussion of brand equity definitions there is also a wide range of measures and models for estimating brand equity based on different perspectives (Ailawadi et al. 2003). The ‘brand value chain concept’ developed by Keller and Lehmann (2001) proposes three major perspectives for brand equity measurement: customer mind-set outcomes, product market outcomes, and financial market outcomes. The customer mind-set outcomes perspective focuses on a hierarchy of measures such as awareness, attachment, association and loyalty (Keller and Lehmann 2001; Ailawadi et al. 2003; Keller and Lehmann 2006). It stresses the fact that brand value is derived from the mindsets and actions of consumers (Bick 2009). Product market outcomes emphasise market-related benefits of brand performance such as market share, relative price, price premium, and revenue premium (Aaker 1996; Agarwal & Rao 1996; Sethuraman 2000; Ailawadi, et al. 2003). Conversely, the financial market outcomes perspective excludes the intangible assets of brand performance and measures the value of a brand based on financial metrics (Ailawadi et al. 2003). For example it uses book to market value, discounted cash flow, and royalties (Tiwari 2010).

2.4. Brand Equity Measurement Models: Academic and Industry

2.4.1. Academic Models of Brand Equity

Brand equity measurement has attracted considerable attention in the decades following Aaker’s (1991) seminal paper on brand equity (Madden, Fehle, and Fournier 2006). A wide range of frameworks and models have been developed since then to measure this intangible

marketing asset. Table 2.1 provides a summary of the main academic studies of brand equity in terms of their dimensions, the perspective they have followed, and the data used. Apart from conceptual models of brand equity (Aaker 1991, 1996; Blackston 1992; Keller 1993; Sharp 1995; Berry 2000; Burmann, Jost-Benz & Riley 2009) which were developed mostly in the early/mid-1990s (Christodoulides & de Chernatony 2010), there are a variety of empirical studies on brand equity measurement. The focus of most conceptual studies comprised analysis of the dimensions of brand equity such as awareness and association. Alternatively, empirical research proposed estimators for brand equity which varied from perceived quality to revenue premium to discounted cash flow.

Some empirical approaches used to calculate brand equity define it as “the implied utility or value assigned to the brand by customers” (Kamakura & Russell 1993, p. 10). In this case employing scanner panel data, Kamakura and Russell (1993) calculated brand equity as volume premium. Simon and Sullivan (1993) followed the financial perspective and computed brand equity as the residual effect on market capitalisation. Park and Srinivasan (1994) used survey data to compute brand equity as “the difference between an individual consumer’s overall brand preference and his or her multi-attributed preference based in objectively measured attribute levels” (p. 274). They argue that, often, two identical products but with different brands may have different levels of consumer preference. Their method reflects the brand-supported market share premium and price premium.

Table 2.1²: Major approaches to measure brand equity

Author/s	Dimensions	Perspective	Data used
Holbrook (1992)	Price premium	PMO	Price data
Kamakura & Russell (1993)	Brand Intangible Value and Perceived Quality	CMO	Scanner panel data
Simon and Sullivan (1993)	Market Capitalization	FMO	Published annual data
Park & Srinivasan (1994)	Attribute based/Non-attribute based components (market share and price premium)	PMO	Survey/firm/Expert judgment
Erdem and Swait (1994)	Perceived Quality, Perceived Risk, Information Costs	CMO	Survey Data
Yoo & Donthu (2001)	Brand awareness, Brand associations, Perceived quality	CMO	Customer survey
Ailawadi et al (2003)	Revenue premium	PMO	Retail sales data
Srinivasan et al (2005)	Awareness, attribute perception biases, and non-attribute preferences	CMO	Survey/firm/expert judgment
Pappu et al. (2005)	brand awareness, brand associations, perceived quality, brand loyalty	CMO	Customer survey
Sriram et al (2007)	Brand choice utility	PMO	Store level data
Shankar et al. (2008)	Offering Value, relative brand importance	CMO	Customer survey/financial data
Buil et al. (2008)	Brand awareness, perceived quality, brand loyalty, brand associations	CMO	Customer survey

Note: CMO= Customer Mindset Outcomes, PMO= Product Market Outcomes, FMO= Financial Market Outcome.

Yoo and Donthu (2001) and Pappu, Quester and Cooksay (2005), on the other hand, proposed a survey-based scale of brand equity measurement based on the Aaker (1991) and Keller (1993) conceptual models (i.e., awareness and association, perceived quality, and brand loyalty). Pappu et al. (2005), surveying customers in two product categories and across six brands, demonstrated the importance of brand awareness and association as two distinct

² The table was designed to provide an overview of the variety in the literature on how brand equity has been conceptualised.

dimensions of brand equity. Revenue premium as a product-market measure of brand equity was proposed by Ailawadi et al. (2003). They operationally defined revenue premium as the difference in a branded product price compared to an unbranded private label brand price. However their proposed measure, although objective, was limited to just one single industry, packaged good categories. To compute price premium there must be a generic brand which is not available across many industries.

Srinivasan, Park & Chang (2005) considered three dimensions for brand equity (i.e., awareness, attribute perception biases, and non-attribute preferences) and tried to measure the direct and indirect effects of these sources on choice probability as a brand equity indicator. Sriram, Balachander & Kalwani (2007) employed store-level data to develop a new approach to estimating brand equity based on brand choice utility. Shankar, Azar & Fuller (2008) estimated brand equity for multi-category brands using a two-dimensional model comprising survey and financial data. They used offering value and relative brand importance as the components of brand equity from discounted cash flow and brand choice models.

While Aaker (1991), and Keller (2013) defines brand equity differently, in this thesis a new approach focusing on consumer purchase behaviour has been developed.

Overall, academic models of brand equity have been developed in response to different needs across marketing value chain. While customer mindset measures capture customers feelings towards a brand, market-based measures focus on market-related outcomes of marketing actions. Financial measures of brand equity, on the other hand evaluate the monetary value of a brand. It seems that market-based measures among all, have the potential to link marketing actions to financial performance (Ailawadi et al 2003). In this thesis, focusing on market-based measures of brand performance, a new behavioural measure is developed.

2.4.2. Industry Models of Brand Equity Measurement

In addition to the academic models of brand equity measurement, there are models developed by consulting and marketing research companies such as Interbrand, Y&R, and Millward Brown. These industry models, which mainly address the value of a brand, show little common ground with the academic models in terms of the basic dimensions of brand equity (Christodoulides & de Chernatony 2010). Lehmann, Keller and Farley (2008), argue that existing industry measures do not capture all different aspects of brands. Table 2.2 provides a summary of major industry models which I have categorised into tangible/intangible, and financial/non-financial dimensions of metrics.

Interbrand's brand value model uses a combination of financial and non-financial metrics. The two financial metrics are financial performance (economic profit) and the role of the brand (which calculates the difference in demand for a branded and non-branded product). The non-financial metric of Interbrand's model is "strength" which is a proxy of ten intangible customer based metrics: commitment, protection, clarity, responsiveness, authenticity, relevance, understanding, consistency, presence, and differentiation (Interbrand, 2010).

Another usable and versatile industry model of brand equity is Y&R's Brand Asset Valuator (BAV) (de Mortanges & Riel 2003). BAV measures brand health through its four pillars: energised differentiation, relevance, esteem, and knowledge. The first two pillars, energised differentiation and relevance, form "brand strength" which is an indicator of future growth value. Conversely, esteem and knowledge are proxies for current operating value that together determine "brand stature" (Gerzema, Lebar & Rivers 2009).

Table 2.2: Industry approaches to evaluate brand

Model	Financial	Non-Financial
Interbrand	Economic profit, Role of Brand	Brand Strength
Y&R Brand Asset Valuator		Energized differentiation, Relevance, Esteem, Knowledge
Millward Brown's Brand Dynamic	Branded Earning	Brand Contribution, Brand Multiple
Equity engine	Price	Affinity, Performance

Millward Brown's "BrandZ" index employs an economic method of brand valuation based on the brand's ability to create demand. It measures brand value through a process of three steps. Firstly it measures branded earnings (i.e., the proportion of a company's earnings that is generated under the banner of the brand). Secondly, it measures brand multiple (i.e., the growth potential of brand-driven earnings).and, thirdly it measures brand contribution (i.e., the level of branded earnings which are generated due to the brand's close bond with its customers). BrandZ adopts a hierarchical approach to determine the strength of relationship a customer has with a brand. This brand dynamic pyramid is called the "journey to loyalty" (Millward Brown 2010). The five levels of loyalty in ascending order are: presence, relevance, performance, advantage, and bonding (Leone, Rao, Keller, Luo, McAllister, and Srivastava 2006).

Equity Engine is another industry model which computes brand equity by estimating the price premium that a brand will support. It measures customers' perceptions of the brand in three dimensions: functional performance, affinity (or emotional performance) and price. Affinity comprises three components to capture the emotional and intangible attributes that customers associate with the brand. They are: authority which measures the reputation of a brand; identification which measures the closeness customers feel for a brand; and approval which measures the way a brand fits into the wider social matrix and the intangible status it holds for experts and friends (Leone et al. 2006).

2.5. A Discussion on Brand Measurement Perspectives

2.5.1. Subjectivity/Objectivity

The main advantage of subjective, attitudinal measures of brand performance and brand equity is their diagnostic power. Attitudinal measures in both academia and industry (brand managers, and advertising agencies) are as a guide to communicate more effectively with customers, capturing their preference, perceptions, and expectations. Two common models of brand equity are conceptualised and built on Aaker' (1991), and Keller's (1993) conceptual frameworks capture the sources of brand equity. Thus they can diagnose the source of brand strength or weakness. A limitation of subjective, attitudinal measures, however, is that they "depend on the ability of consumers to accurately report their relative brand preferences" (Park and Srinivasan 1994, p. 286). Moreover, the link between subjective measures and objective measures is weak (Kumar et al. 2013). Customers often express positive feelings toward a brand, but ultimately make a purchase decision which may not match the survey results. For this reason, senior managers prefer objective measures to subjective measures to judge a brand's performance. However, a major disadvantage of objective measures is their short-term focus. Moreover, the applicability of objective measures such as price premium across different industries is another major shortcoming of objective market-based measures. However identifying a generic brand in the packaged product category might be possible, but in industries such as airline, banking, or car, it remains relatively difficult, if not impossible to identify a generic brand. Therefore measures such as price premium or market share premium are not applicable across many industries.

2.5.2. Short-Term vs Long-Term Horizon

Mizik and Jacobson (2008) argue that managers have a myopic view and tend to judge the contribution of marketing actions in building brands based on short-term measures. Measures such as brand sales, market share, or revenue are short-term oriented, although it has been well established that the impact of marketing actions can go beyond the current term and have lagged, long-term impacts (Mizik and Jacobson 2009), which may take some time to be reflected in “concrete” numbers (Hanssens et al. 2009). Lodish and Mela (2007) argue, however, that brands are built over the long-term so why should they be judged quarterly. Although managers are under pressure from shareholders and the financial markets to maintain profitability at all costs, such a short-term view encourages marketing managers to focus on short-term oriented marketing actions (e.g., discount, and price promotions) which may harm the brand over the long-term (Lodish and Mela 2007).

2.6. Conclusion

In this study I reviewed the marketing performance measurement literature, specifically discussing the marketing asset metrics such as brand equity. Brand performance measures were discussed from different perspectives such as subjectivity/objectivity, tangibility/intangibility, financial/non-financial, and short-term/long-term horizon. It was evident that there is a disagreement in metric selection among managers at different levels. There are advantages and disadvantages for each category of metrics. The diagnostic power in capturing customers' attitudes, preferences and perceptions is the main strength of subjective survey-based measures, although customer bias is their major limitation. On the other hand, short-term focus, and being influenced by factors other than marketing actions are the main shortcomings of existing objective measures. The use of subjective, intangible measures, however, is common among marketing managers, while CEOs and CFOs prefer objective behavioural metrics.

In conclusion, to overcome the shortcomings of existing measures and to bridge the subjective attitudinal measures and objective short-term oriented metrics, there is a need to develop an objective long-term based measure of brand performance. A measure based on consumer purchase behaviour on the one hand is objective, and on the other hand is a good proxy for customers' ultimate purchase decisions. Such an objective measure must also be long-term oriented, capturing customer purchase behaviour over the long-term. Although in short-term sales increase could be due to factors such as temporary promotions and discounts, over the long-term a continuous sustained increase in sales figures reflects the general appeal shown to a brand. Such an objective long-term based measure can be used to monitor the health on a brand, and the overall contribution of marketing actions in building healthy brands over the years.

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CHAPTER THREE

**Developing a Behavioural Long-Term Based
Measure to Monitor the Health of a Brand**

Chapter 3: Developing a Behavioural Long-Term Based Measure to Monitor the Health of a Brand³

Abstract

In response to calls for marketing accountability and for evaluating the long-term brand building efforts, this research, proposes a behavioural objective long-term based measure, called *Brand Health Index* (BHI) to monitor the health of a brand. BHI which is a function of sustained growth, captures the long-term, overall performance of a brand focusing on consumers actual purchase behaviour. Building on BHI, a *behavioural brand evaluation typology* is developed which categorises brands into four types: *Emergers*, *Strugglers*, *Dynamos*, and *Disoriented* brands. I provide managerial insights into effective brand management over the long-term by suggesting practical strategies and actions to be taken for each type of brand. To encompass the brands' behaviour pre-and-post Global Financial Crisis (GFC), I conduct a longitudinal analysis from 2002 to 2011. Four industries, airlines, banking, department stores, and insurance, are studied to improve the model's generalizability. I validate the brand health index by correlating it to Interbrand's and Millward Brown's BrandZ measures of brand value. Using a Two-Way Cluster-Robust Error regression, I study the association between the proposed measure of brand health and two financial measures. The findings suggest that the proposed measure is significantly positively correlated with ROA and EPS.⁴

Key words: Brand Health, Brand Equity, Brand Performance, Marketing Accountability, Branding

³ This paper is currently under review with the *Journal of Brand Management*

⁴ A modified version of this paper has won the best paper award in Branding track at ANZMAC 2013

3.1. Introduction

Marketing performance measurement has been a long standing problem for managers (Clark 1999; Kokkinaki and Ambler 1999; Barwise and Farley 2004). Marketing managers are under pressure to become more accountable and to justify their contribution to the firm through providing objective evidence of the results of the dollars spent on marketing actions (Stewart, 2009). Keller (2001) calls for more actionable models of brand metrics applicable across a broad range of decision settings. Better measures are needed that are reliable and provide insights into brand evaluation and assessment techniques (Keller 2001). The complexity, however, is that the road from marketing actions to the firm value, and stock return in dollar values is not clear (Hanssens, Rust, and Srivastava 2009). This is so because the impact of marketing actions can be reflected in several stages of the brand value chain from subjective customer mind set measures (e.g., knowledge, attitudes, attachment) to objective market based measures (e.g., revenue premium, price premium), and finally financial performance measures (Keller, and Lehman 2006).

Attitudinal measures of brand performance, which are mostly survey-based, can provide valuable diagnostic insights to managers (Sriram, Balachander, and Kalwani 2007), although they depend on the ability of consumers to report their preferences (Park and Srinivasan 1994). On the other hand behavioural measures of brand performance are objective and of relevance to senior managers. Keller and Lehmann (2006) argue that “the primary payoff from customers’ thoughts and feelings is the purchases that they make” (p.15).

Kumar, Pozza, and Gonesh (2013), conducting a meta-analysis, argue that managers prefer behavioural measures because they can be easily linked to sales, revenue, and return as the common language of CFOs and CEOs. Thus senior managers tend to use behavioural

measures. One of the main shortcomings of behavioural measures is that they are short-term oriented and tend to judge the contribution of marketing efforts on short-term basis. This is problematic because marketing efforts may have some lagged impacts appearing in the long-term (Mizik and Jacobson 2007). The impact of a firm's marketing actions often first appears in terms of a change in customer mindset, and it may take some time to be reflected in "concrete" numbers, captured by behavioural measures (Hanssens, Rust, and Srivastava 2009). For that reason it is crucial to have a long-term view in evaluating brand performance, encompassing the lagged impact of marketing actions which may appear in the future. Therefore there is a need for a new behavioural, long-term oriented measure of brand performance as a complimentary measure for attitudinal measures, and behavioural short-term oriented measures. In other words not as an alternative but as a compliment to existing attitudinal and behavioural short-term oriented measures, an objective, behavioural long-term based measure is necessary to be used in order to monitor the health of a brand over the long-term.

In response to this call one can argue the need to focus on the consumers' purchase behaviour stage of the brand model of antecedents and consequences as provided by Keller and Lehmann (2006). In this paper I therefore take a behavioural approach in measuring and assessing brand performance over the long-term. I propose a new measure of brand performance called the *Brand Health Index* (BHI) which is grounded on two main components of the long-term brand value model suggested by Keller and Lehmann (2009). These two components are *Persistence* (i.e., "the extent to which a customer's spending can be sustained over time", p. 10) and *Growth* (i.e., "the extent to which current customers increase their spending over time, and new customers are attracted", p. 10). A brand is healthy if it can experience sustained growth over the long-term. BHI is objective, based on publicly available data, and has a long-term perspective. It is cheap and fast to compute, can

be estimated at different firm levels from corporate to brand, and also at the sub-brand level. BHI is applicable across most, if not all, industries.

In addition to the proposed brand health index, I develop a typology of behavioural brand evaluation (BBE) which enables managers to assess and monitor the health of their brands. Based on the level of healthiness, I classify brands into four categories, namely, *Dynamos*, *Strugglers*, *Emergers*, and *Disoriented* brands. Throughout its life, a brand can face each of the above stages. I provide practical and effective marketing and brand building strategies for each category, and address the question of when, or at what stage, a company should spend on brand building activities.

I measure the brand health index for a period of 10 years from 2002 to 2011. I use this time frame of 2002 to 2011 to encompass the two periods before and after the global financial crisis (GFC) in 2008. This will enable us to take into account pre-and-post GFC effects. To improve the generalizability of the findings, I study four industries, i.e. airlines, banking, insurance, and department stores in the US market. This enables me to examine the applicability of the proposed brand health measure across several industries, which is my main contribution.

I validate the proposed measure by correlating it to Interbrand's and Millward Brown's BrandZ measures of brand value. Moreover, using a Two-Way Cluster-Robust regression (Cameron, Gelbach, and Miller 2011), I link the proposed long-term based proposed measure of brand health to two financial measures namely Return on Assets (ROA), and Earning per Share (EPS). I provide insights into the branding and shareholder value creation association over the long-term through association BHI with ROA and EPS.

3.2. Assessing and Managing Brands over Time; Literature Review

The confounding influence of the temporal dimension on marketing performance measurement suggests that over the long-term, part of the effects of marketing actions are reflected in marketing assets such as brand equity rather than financial-based assets, which provides a richer understanding of the marketing performance (Christodoulides and de Chernatony 2010). For this reason marketing initiatives must be judged not only based on short-term financial outcomes, but importantly also based on the building of intangible, long-term, marketing assets. Brand equity is one of the main marketing assets (Keller and Lehmann 2006; Hanssens et al. 2009) and has attracted considerable attention in the literature over recent decades since Aaker's (1991) seminal paper on brand equity (Madden, Fehle, and Fournier 2006) and Keller's (1993) paper also on brand equity.

There are many definitions of brand equity, although one of the most accepted defines it as "a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers" (Aaker, 1991, p.15). The five major aspects of brand equity identified in this definition are brand awareness, brand association, perceived quality, brand loyalty, and other proprietary aspects (Aaker 1991). From a consumer psychology perspective, Keller (1993) defines brand equity as "the differential effect of brand knowledge on consumer response to the marketing of the brand" (p. 2).

Keller and Lehmann (2006) note that proper management of brands requires managers to clearly understand their brand equity. Brand equity can be perceived differently across different industries. For instance Pappu and Quester (2008) observed that brand equity ratings are significantly higher in department store category compared to clothing store category. Branding is also important in business-to-business marketing (Glynn 2010). It has been

demonstrated that brand strength can moderate the manufacturer–reseller relationship (Glynn 2010). Brand equity can be measured from three major perspectives: customer mindset measures, product-market, and financial market outcomes (Keller and Lehmann 2006). First, customer mindset metrics, which are subjective, capture customers’ attitudes and perceptions towards a brand. Brand awareness, association, and perceived quality are the common pillars of the customer mindset measures of brand equity (Yoo and Donthu 2001; Srinivasan, Park, and Chang 2005; Pappu, Quester and Cooksay 2005; Pappu and Quester 2006; Buil, de Chernatony, and Martinez 2008). Second, product-market measures are objective, but still reflect customers’ perceptions towards brands by way of capturing consumer actual purchase behaviour. Market share (Park, and Srinivasan 1994), price premium (Holbrook 1992), revenue premium (Ailawadi et al. 2003), and brand choice utility (Sriram et al. 2007) are some of the major metrics in this category. Third, financial measures tend to judge the brand performance based on its financial contribution (Ailawadi et al. 2003). These measures include discounted cash-flow valuation of licensing fees and royalties (Tiwari 2010). The downside of the financial measures of brand equity is that apart from marketing actions, they are affected by a wide range of other factors which makes it difficult to judge the contribution of brand performance (Ailawadi et al. 2003).

In addition to academic frameworks of measuring brand equity, there are some industry-based approaches to measuring brand equity and brand value (Mirzaei, Gray, and Baumann 2011). Interbrand, Y&R, and BrandZ are some examples of consulting firms that provide measurements for brand equity and brand value. The weakness of the industry measures is that, in the main, they are not entirely reliable due to inconsistency in measurement methodology which often results in a considerable, (i.e. up to 450%) variation in brand evaluation outcomes (Hanssens 2011).

The aforementioned approaches to measuring brand equity can also be classified into two broader categories, namely, consumer-based brand equity (CBBE) and firm-based brand equity (FBBE) (Christodoulides and de Chernatony 2010). Brand equity, from a consumer perspective, positively influences consumer perceptions, purchase intentions and repurchasing behaviour (Rego, Billett, and Morgan 2009). Moreover, brand equity reduces the costs of consumer searching and thinking about alternative products and services (Shankar, Azar, and Fuller 2008). From a firm perspective, brand equity affects shareholder value (Kerin, and Sethuraman 1998) and consumers' price sensitivity (Erdem et al.2002), and facilitates market expansion (Cabral 2000), reduces firm risk and increases the stock return by enabling the rapid consumer recognition of a product/service at the point of sales (Rego et al. 2009). Branding can also be beneficial in the business-to-business context. For instance, a retailer can benefit from branding efforts of a manufacturer in different ways such as financial support, manufacturer support, and meeting consumers' expectations (Glynn, Brodie and Motion 2012).

In this study, taking a behavioural path in evaluating brands, I focus on consumers' purchase behaviour in the market place. However, such a perspective does not directly capture customers' mindset and emotions, but Keller and Lehmann (2006) argue that "the primary payoff from customers thoughts and feelings is the purchase that they make" (p.15). The underlying logic of market-based measures is that the benefits of brand emotions and attitudes should ultimately be reflected in an actual brand's performance in the market place (Ailawadi, et al. 2003, p.2), a dimension captured in this study.

Nevertheless, managers prefer behavioural measures, while marketing executives tend to focus on consumer-based measures. This conflict in perspectives is problematic since marketers are hired to build brands over the long-term, but are mostly evaluated based on rather short-term sales performance (Lodish and Mela 2007), and they could easily be

penalised (e.g., reduced incentive payments) or being fired as a result of a short-term sales decline, even though their marketing actions might have some long-term brand building impacts (Bruce, Peters, and Naik 2012). Since the impact of a firm's marketing actions often first appears in terms of a change in customers' mindsets, and it may take some time to be reflected in "concrete" numbers such as longer term sales (Hanssens et al. 2009), it is crucial to have a long-term vision on evaluating a brand's performance. In other words there is a need for a behavioural, customer market-based measure with a long-term perspective.

In response to this need, this paper takes a new approach, focussing on consumers' purchase behaviour and proposes an objective measure I name the brand health index (BHI). The proposed measure focuses on behavioural consumers actual purchase behaviour and provides an objective measure to monitor the impact of marketing actions on building healthy brands. BHI is a function of both growth and persistence, as being the two main components of long-term brand value proposed by Keller and Lehmann (2009).

3.3. Brand Health Index: The Sustained Growth Measure

3.3.1. Brand Health Index; Theoretical Ground

Brands are built over the years by spending on brand building marketing actions, although they are judged on short-term basis (Lodish and Mela 2007). Despite the advantages of short-term measures such as being objective and auditable, this kind of short-term management focus has been increasingly criticised because of its possible detriment to the achievement of long-term goals. It has been well acknowledged in the literature that the impact of brand building actions such as advertising can go beyond the current term and

appear in the future as a lagged impact (Clarke 1976; Mizik and Jacobson 2008; Ataman, van Heerde and Mela 2010).

The outcome of any effective brand building action is initially reflected in a change in customers' attitudes, feelings, and thoughts (Keller and Lehmann 2006). Such an impact might take many periods to be reflected in "concrete" sales numbers (Hanssens et al 2009). Over the long-term, if a brand has a relative advantage in customers' minds, its sales revenue is more likely to be increased or at least not decreased (Aaker 1996). In other words, however, "the primary payoff from customers' thoughts and feelings is the purchase that they make," (Keller and Lehmann 2006, p.15), but it may take many periods to be translated from feelings and thoughts to purchase behaviour. Thus, short-term oriented objective measures cannot be a good proxy to evaluate brand building efforts when part of the impacts of such efforts appears in the long-term. Therefore the contribution of building brands over the years needs to be evaluated on a long-term basis.

Over the long-term, brands adopt different marketing actions to respond to their customers' needs. By these means a brand that has been able to effectively touch its customers' minds and hearts is expected to experience sales growth. However, over the short-term a brand's sales growth can change due to a range of factors such as the temporary introduction of price cuts, discounts, or promotional offerings, but over the long-term, a continuous persistent sales growth implies that a brand is continuously appealing to its customers and performing well (Keller and Lehmann 2009). One does not want to be in the situation where, "companies get onto the fortune 50 by growing quickly, but it is like winning the Nobel Prize: their performance falls off afterward" (Laurie, Doz and Sheer 2006, p. 83). It is crucial to be able to sustain the growth over the long-term.

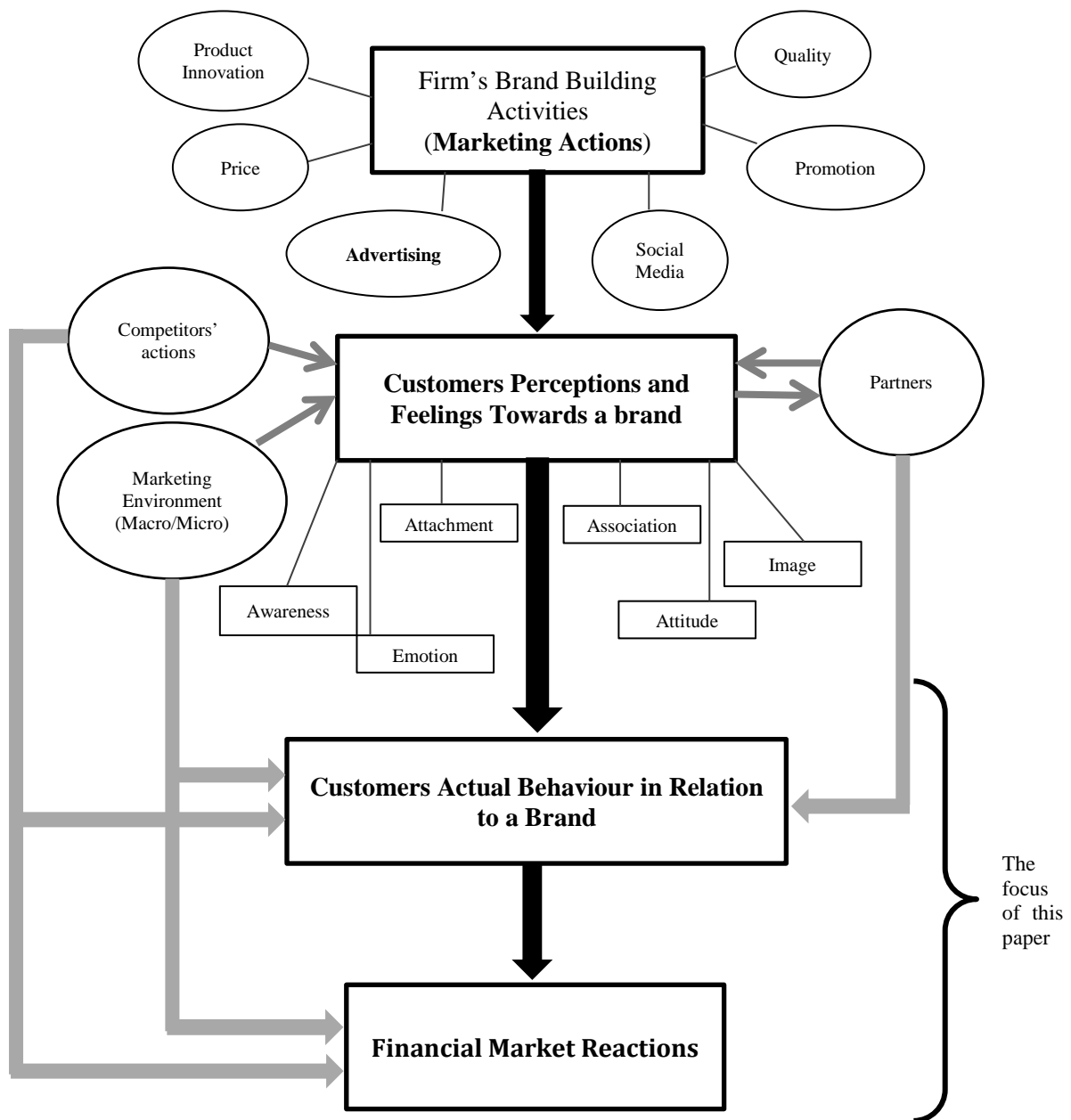
A brand with persistent sales growth over the long-run is defined as *healthy*, since it has been able to adopt effective marketing strategies in response to customers' changing tastes

over time and as a result to keep sales growth high not for just one or two periods, but also over an extended time-frame (say 5 to 10 years and beyond). Therefore a healthy brand is a brand with high cumulative growth and low growth- volatility over the long-term.

Based on the *consistency* component of the co-variation principle of attribution theory, if a person repeats behaviour over time, and under different circumstances, then the behaviour is attributable to internal factors (Kelley and Michela 1980). For instance, if a stand-up comedian can consistently make people laugh on different occasions, under different circumstances, then success cannot be attributable to external situational factors. It means that the comedian knows how to appeal to their audience. Similarly, in a marketing context, if a brand can consistently experience a sales growth with low sales growth fluctuations, its performance is attributed to internal factors.

In this paper, focusing on consumers' purchase behaviour (the third phase of the brand model of antecedents and consequences as shown in Figure 3.1), I develop an objective consumer-market measure of brand health, called "Brand Health Index" (BHI) with that long-term perspective in mind. The proposed brand health index is in line with the two components of long-term brand performance, growth and persistence, suggested by Keller and Lehmann (2009). According to Keller and Lehmann (2009) long-term brand success depends on how a brand can translate customers' perceptions, feelings and attitudes to two key components of actual brand performance. These two components are: *brand persistence* and *brand growth*. Brand persistence is defined as "the extent to which a current customer franchise and its spending level can be sustained over time" (p.10). Brand growth is defined as "the extent to which current customers increase their spending and new customers are attracted to the brand with either existing or new products" (p.10).

Figure 3.1: A System Model of Brand Antecedents and Consequences



(Source: Keller, and Lehmann 2006)

I estimate the brand health index BHI as a ratio of growth sum to growth variability over a T-year time period based on the following assumptions:

- A. *Market is dynamic*: In a dynamic market, brands can react to competitors' actions, where customers' preferences and needs change over time, in such a market growth

rates change over the years, and cannot remain unchanged for a long period of 10 years for instance;

- B. *Market is competitive*: In a competitive market, customers have several brand choices, and are able to switch easily between brands, without being forced to buy any specific brand;
- C. *Market is utilitarian*: In a utilitarian market, customers are seeking the best products and services that suit their needs, wants, values, attitudes, and emotions;
- D. *Market is efficient*: In an efficient customer-market, based on their perceived brand performance (functional/emotional), customers award or penalise brands through their purchase behaviour over a long period of time. In other words, in an efficient market, customers' perceptions, attitudes and image will be translated eventually into their purchase behaviour even if it takes a long period of time.

In market conditions such as a world war or in markets when growth rates are always constant over the years with no fluctuations, the proposed model is not applicable since it is in contrast with the aforementioned assumptions.

Considering standard deviation as a proxy for variability, the health of a brand i over a T -year time period is computed as follows:

$$\text{Brand Health Index}_{it}(\text{BHI}_{it}) = \text{Sustained Growth} = \frac{\sum_{t-T}^t \text{Growth}_{it}}{\text{SD}_{gi(t-T,t)}} \quad (1)$$

$$\text{Growth}_{it} = \frac{(\text{Sales}_{it} - \text{Sales}_{it-1})}{\text{Sales}_{it-1}} \quad (2)$$

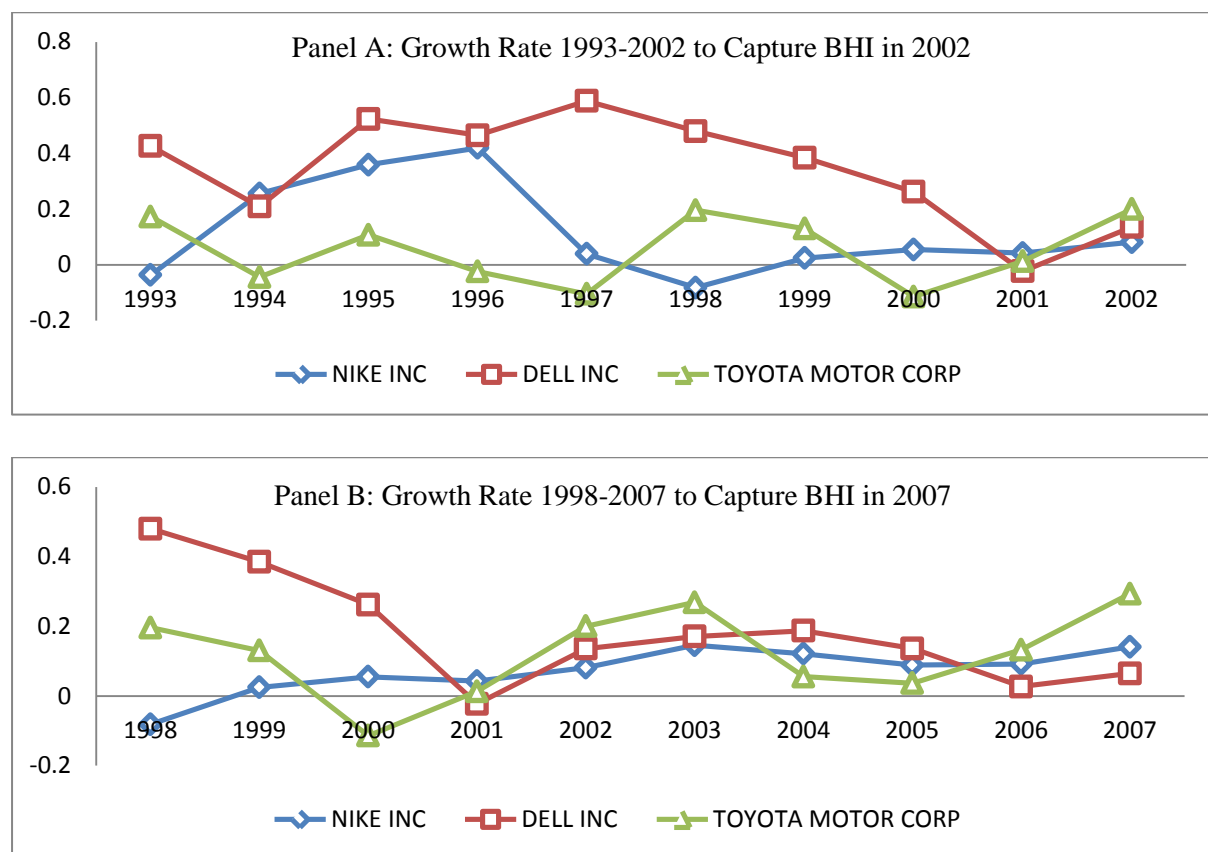
$$\text{SD}_{gi(t-T,t)} = \sqrt{\frac{\sum_{t-T}^t (\text{Growth}_{it} - \text{Growth}_{i(t-T,t)})^2}{T-1}} \quad (3)$$

Where growth_{it} is the growth of firm i at time t , $\text{SD}_{gi(t-T,t)}$ denotes the growth standard deviation of brand i from $t-T$ to t . Growth is calculated as the relative difference between the current period sales and the previous sales period. Based on the above measure, the healthiest

brands are those with the highest cumulative growth and lowest variability on a T-year time period. In equation 1, sales growth can be adjusted for inflation.

To illustrate further how the brand health index works, I estimate the brand health index for three brands, Nike, Dell, and Toyota, in three different industries. Specifically I estimate their brand health over the period 2002 to 2007 as an example. Following equation 1, brand health is a function of the last T years' sales growth (T equals time) and sales growth fluctuations. I set T equal to 10, and calculate the brand health index of Nike, Dell, and Toyota as the ratio of sum of the growth rates to the standard deviation of growth rates from 1993 to 2002 for 2002, and from 1998 to 2007 for 2007.

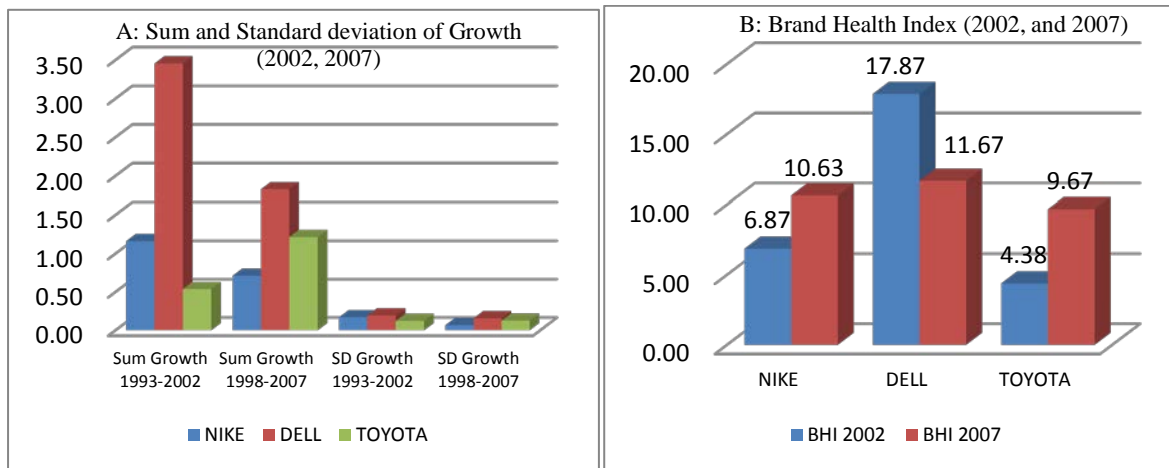
Figure 3.2.: Growth rates for a period of 10 years (Panel A and B)



As shown in figure 3.2 (Panels A and B), Toyota has experienced a similar level of growth fluctuations for both periods from 1993 to 2002, and from 1998 to 2007, although its sum of growth has doubled and, therefore, the brand health index for Toyota has jumped from 4.38 in 2002 to 9.67 in 2007. Similarly the brand health index is computed for Dell and

Nike figure 3.3 (panels A and B). I also applied the BHI to brands such as Apple with exponential sales growth to see whether or not the proposed brand health index penalises such a brand due to possible high growth volatility. A BHI of 21.93 as of 2012 implies that BHI accurately captures the brand health and does not penalise the brands with high growth rates.

Figure 3.3: Growth Sum, Standard Deviation, and Brand Health



3.3.2. Relative Brand Health

To capture the relative brand health of firm i compared to other brands in that industry (incorporating the dimension of industry relatively is a novel approach in this study – previous studies predominantly focus on single industries), I compute the relative brand health as the ratio of a brand's health to the mean of industry health. The relative brand health index (RBHI) provides an estimation of brand health compared to competitors within the industry. It is useful in situations where the firm grew mainly due to external factors such as industry or category growth, or poor competitors. The relative health of brand i at time t in an industry with n operating brands is estimated as follows:

$$\text{Relative Brand Health}_{it} = \frac{\text{Brand Health}_{it}}{\left| \frac{\sum_{i=1}^n \text{Brand Health}_{it}}{n} \right|} \quad (4)$$

3.3.3. Brand Powerfulness

Although I study the brand health on a 10-year base, which is a substantial amount of time, there might be brands that are not healthy for the studied period, although they might have been quite healthy in the past or vice versa. In other words a brand that is unhealthy for the study period might have been healthy out of the study window. Therefore, the out of study window of a brands' health must be taken into account in brand valuation. Moreover, a brand can be healthy, but not necessarily strong and powerful for reasons such as operating in a niche market, or being new to the market. Since the proposed measure of brand health is a scale-free measure, it does not consider the sales volume and sales value differences between brands although it is important in valuing brands (Mizik, and Jacobson 2009). For instance, Ailawadi et al (2003), multiplied price difference by a firm's sales in order to measure revenue premium as a measure of brand equity. As another example, Mizik, and Jacobson (2009) multiplied a brand value coefficient by a firm's sales to value a branded business. Therefore to capture the pure brand powerfulness I multiply the brand health index by the brand's average market share over the study period as a proxy for the firm size and its past performance.

I compute brand powerfulness as follows:

$$\text{Brand Powerfulness}_{it} = \text{BHI}_{it} * \text{Average Market Share}_{i(t-T,t)} \quad (5)$$

$$\text{BP}_{it} = \left(\frac{\sum_{t-T}^T \text{Growth}}{\text{SD}_{gi(t-T,t)}} \right) \times \left(\frac{\sum_{t-T}^T \text{Market Share}_{i(t-T,t)}}{T} \right) \quad (6)$$

Average market share in the above equation is constant throughout the study period for each brand, and does not change over time. It is considered as a proxy for firm's sales differences and also out of study window performance.

For instance, to compute brand powerfulness for a brand like JP Morgan and Chase with 15% average market share and BH score of 7.98 in 2007, the brand powerfulness score of JP Morgan Chase is 1.17 (7.98×0.15)

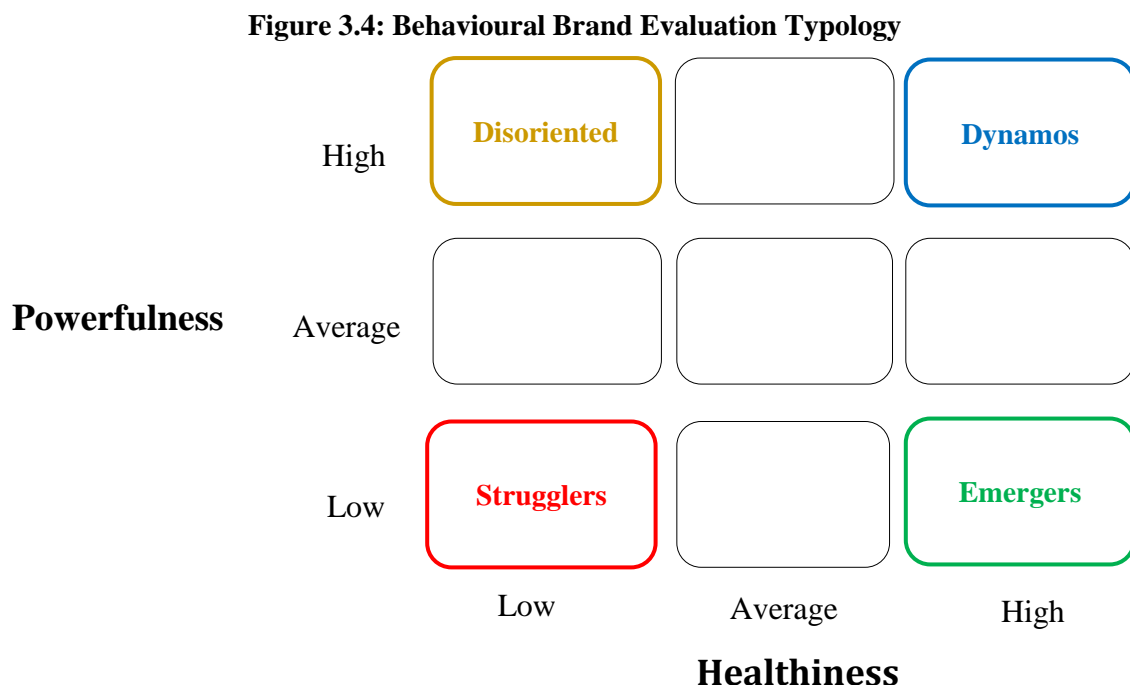
3.3.4. Validating the Brand Health Measure

To assess the validity of the brand health measure in brand evaluation, I correlate it with publicly available measures such as Interbrand, and Millward Brown's BrandZ. Since the BrandZ's data was available from 2006, I estimated the correlations for the period from 2006 to 2011. Overall I found 59% and 55% correlations between the proposed measure of brand health and Interbrand, and BrandZ, respectively. BrandZ and Interbrand have different methodologies for evaluating brands, and include a great deal of subjective metrics and expert judgements, yet our objective singular measure of brand health was positively correlated with both of them.

In the next section I develop a *behavioural brand evaluation typology* based on brand healthiness and powerfulness. This typology provides managers with an objective framework to track, and monitor the healthiness of their brands over time. More importantly it provides significant insights and contributes to the brand management literature, enabling managers to make effective situational decisions based on the status of their brand in the marketplace.

3.4. Behavioural Brand Evaluation Typology

In this section I develop a typology of brand health and powerfulness indexes. Consulting the marketing literature, the two dimensions (brand health, and brand powerfulness) emerged that were designed to capture the essence of brand evaluation. The behavioural brand typology has two distinct aspects; brand powerfulness which was operationalized as a function of market share and brand health which was operationalized as a function of sales growth. Based on these two dimensions the following four types emerged representing the four quadrants of brand powerfulness. As shown in figure 3.4, the proposed model classifies brands into four categories based on different combinations of two main constructs, healthiness, and powerfulness. The four categories are *Disoriented*, *Dynamos*, *Strugglers*, and *Emergers*. These are new terms and I introduce them here. There are also brands somewhere in between these main categories.



The proposed behavioural brand typology is different from the Boston Consulting Group (BCG) matrix since it is focused on long-term cumulative growth rather than a single-

term growth. Moreover, the proposed matrix takes into account the variation in growth, however BCG doesn't. In addition, the proposed behavioural brand evaluation typology is focused on brands, whilst the focus of BCG matrix is on products. Whilst a product can reach a maturity stage, with high market share and low growth (Milky Cows in BCG matrix), a healthy brand long before reaching a maturity stage will find a way (product innovation, market expansion, product) to keep the sales growth persistent to avoid moving to the *disoriented* stage. In other words although a product like Walkman can go out of the market, but a brand like Sony to remain healthy needs to upgrade and introduce new products, and experience sales through new streams. Table 3.1 provides a summary explanation for each category.

Table 3.1: Conceptual Brief of Behavioural Brand Evaluation Typology

Construct	Description
Dynamos	Brands in this category are those that have been able to respond constantly to customers' changing needs. They have been able to adapt their services, products, and marketing actions to suit their target markets' preferences. Dynamos are performing very well, quite healthy, have a promising future, and a considerable market share. Nike perfectly matches this category. A powerful, healthy brand. Completely on the right track in terms of dynamically responding to customers' needs.
Emergers	Brands in this category are continuously and increasingly appealing to their target market. With a high brand potential their future is promising. Brands in this category are healthy but not quite powerful since most are young brands with a small market share. Emergers can turn to Dynamos through stable ascending brand health over the years. JetBlue in the US airline industry is an example of this category. Small market share, but quite healthy with constant sales growth. The future is promising for JetBlue if it continuous to adapt its services to suit its consumers' tastes.
Strugglers	Brands in this category are the unhealthiest brands with a low level of powerfulness. These are the brands that have been struggling in touching customers' hearts and appealing to them. Brands in this category are mainly young with no bright future. They haven't been able to effectively address customers' needs neither in the past, nor in the current term, and are heading towards failure. SkyWest and Fifth Third are examples of brands in this category.
Disoriented	Brands in this field have been doing very well in the past for the period out of the study window. However, for the last 10 years, they haven't

been able to experience a stable sales growth. Brands in this category aren't healthy at this stage, but all still powerful due to their past performance. Disoriented brands have failed to adapt their strategies and actions to market changing needs. Without an effective plan to improve their brand health index, brands in this category will move towards the Strugglers category. AIG in the insurance industry is an example of a Disoriented brand falling from market leader to an unhealthy brand, losing most of its market share. Nokia in the smartphone arena could be considered as another example in this category.

3.5. Data Description

I base the model and empirical investigation on the COMPUSTAT data base. I study 10 years of brands' health and powerfulness from 2002 to 2011. I compute brand health on 10-year basis. It means that brand health for each year (e.g., 2005), is computed as the sales growth and sales growth fluctuation of its last 10 years (e.g., the sales growth and the sales growth standard deviation (SD) of 1996 to 2005 for 2005, and the sales growth and the sales growth SD of 1997 to 2006 for 2006, and so forth). In doing so, I retrieve the annual sales records of brands with available data for 20 years between 1993 and 2011.

The focus in this paper is the service sector following calls for effective branding in the service sector (Ostrom et al. 2010), and due to the fact that the service-providing sector is the main contributor to the GDP (around 85%). To improve the model's generalizability, and to demonstrate that it is an actionable measure for different industries, I apply the framework in four industries including banking, airlines, department stores, and insurance. The aforementioned industries are among the top 15 GDP contributing service-providing industries (The US Bureau of Economic Analysis 2013).

The Compustat database provides corporate level data, however the focus of this study is on the brand level, thus in this study I chose those brands that operate under corporate branding (e.g., their corporate name is their brand name). The brands studied in each industry are the major brands that count for over 80% of the market share. Moreover, because brands could be perceived differently in different countries and markets, to control for the country-specific characteristics such as customers, legal, and economic factors, the focus of this paper is on the US market.

3.6. Empirical Analysis

During the period from 2002 to 2011 (i.e., the study's time period) the global financial crisis occurred, so I split the analysis of the brand health into two spans. The global financial crisis significantly impacted sales growth, growth variability, and consequently on brand health. Thus, the findings will be discussed for the period *before* the financial crisis from 2002 to 2007, and the period *after* the financial crisis from 2008 to 2011. In assessing brand health, I controlled for any abnormal jump or decline in sales growth rates which were driven by influences such as merger or acquisition, which shouldn't be attributed to the branding and marketing efforts.

As shown in table 3.2, most firms across all four industries have experienced growth for the period prior to 2008 as opposed to the period after 2008. The US airlines industry, among the four industries, perhaps surprisingly, has been affected least by the GFC, as opposed to the banking industry where the average growth rate from 2008 to 2011 has dropped to almost zero. In department stores and insurance industries the growth rate after the GFC period has declined to approximately one-fifth of the growth rate for 2002-2007. In general it seems that the airline industry has been able to continue to grow even after the GFC, although with half the growth rate of the period before the financial crisis.

Table 3.2: Industry-level Descriptive Statistics

	Year	Average Growth Rate%	Average SD	Average BHI
Airlines	2002-2007	0.114	0.09	9.36
	2008-2011	0.065	0.11	7.24
Banking	2002-2007	0.115	0.18	9.95
	2008-2011	0.001	0.16	6.11
Department Stores	2002-2007	0.051	0.06	11.17
	2008-2011	0.011	0.06	5.97
Insurance	2002-2007	0.090	0.07	13.31
	2008-2011	0.022	0.08	9.06

Note: SD: Standard Deviation, BHI: Brand Health Index

3.6.1. Industry-Based Empirical Analysis of Brand Health

3.6.1.1. Airline Industry

As table 3.3 shows in the airline industry, as of 2007, West Jet has been the healthiest brand followed by Alaska Airlines with health scores of 20.90, and 18.34 respectively. United Airlines, on the other hand, is the unhealthiest with a health score of just 1.82. Similar to United Airlines, AMR and US Airways have struggled in their customer appeal and growth for both the periods before and after the financial crisis. An unsuccessful attempt to merge with United Airlines in 2001, being entered in chapter 11 bankruptcy twice, in 2002 and 2004, are some evidence for US Airways' poor health.

Table 3.3: Brand Health, US Airline Industry

Industry	Brand	Sum of Growth		SD of Growth		BHI		RBHI	
		10-Year base		10-Year base		10-Year base		10-Year base	
		2007	2011	2007	2011	2007	2011	2007	2011
Airline	AMR	0.23	0.28	0.07	0.09	3.36	3.11	0.35	0.38
	Alaska Air	0.73	0.74	0.04	0.06	18.34	12.33	1.88	1.52
	US Airways	0.27	0.29	0.06	0.07	4.20	3.82	0.43	0.47
	American Airlines	0.39	0.36	0.06	0.09	5.57	3.92	0.57	0.49
	Delta	0.37	1.00	0.09	0.08	4.2	12.5	0.43	1.54
	Southwest	1.01	1.13	0.07	0.10	13.63	11.14	1.49	1.39
	SkyWest	2.88	2.27	0.20	0.28	14.42	8.10	1.48	1.00
	United Airlines	0.20	0.35	0.11	0.13	1.84	2.70	0.19	0.33
	West Jet	3.40	2.12	0.16	0.14	20.90	15.52	2.18	1.87

Note: Sum of Growth on a 10-year base in 2007: a brand's past 10 years cumulative growth from 1998 to 2007, SD of growth on a 10-year base in 2011: a brand's standard deviation of growth from 2002 to 2011, BHI: Brand Health Index, RBHI: Relative Brand Health Index

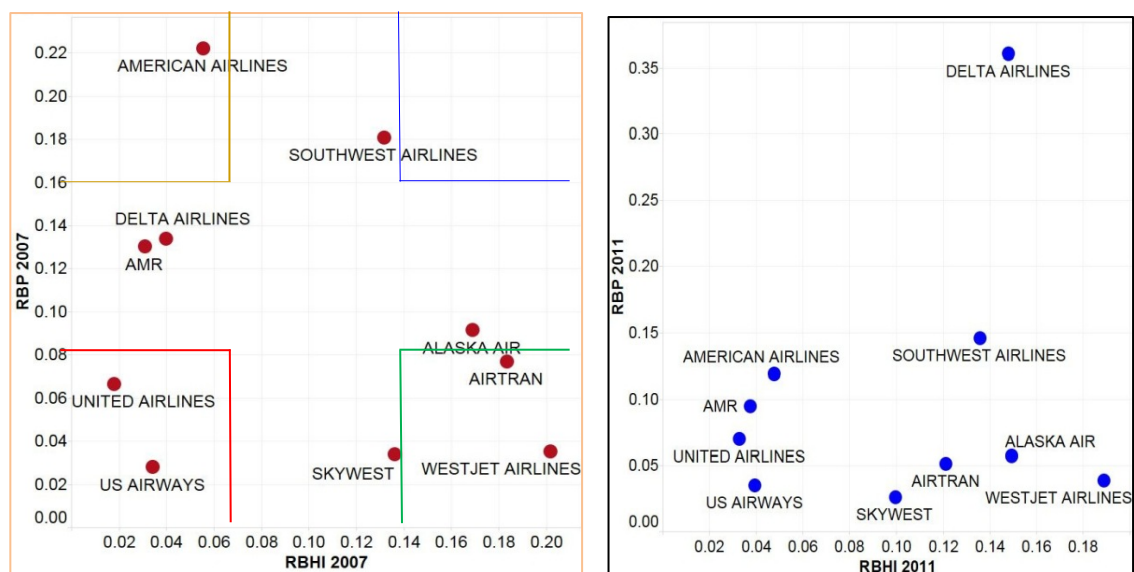
Among the poor health brands, however, as of 2007, Delta Airline's growth was limited to just 0.39, while for the period after the financial crisis, when most of the brands struggled to survive, according to sales figures, Delta skyrocketed its sales, growing dramatically, jumping to the second top healthy brand in 2011 from fourth unhealthiest brand in 2007. It seems that Delta's long term investment, social responsibility, innovation, quality of products and services, and global competitiveness have paid off and this brand has been able to top Fortune's most admired airline list in 2011 and also in 2013. During the hard times of the GFC, Delta Airlines, instead of cutting back on prices or limiting its special offers, decided to increase consumer offerings. For example, in February 2011 they announced that frequent flier points won't expire anymore. They also upgraded their Facebook application to facilitate the process of booking a flight, or printing a boarding pass. With regard to social responsibility, during the Japan earthquake, they helped the victims (Fortune 2013).

On the brand typology map, as shown in figure 3.5, which is based on relative brand health index (RBHI) and relative brand powerfulness (RBP), Delta has moved from a Disoriented brand in 2007 to a Dynamo in 2011. As opposed to Delta, American Airlines has

moved towards its failure from a Disoriented brand in 2007 to a Struggler in 2011. Southwest Airline's health index was relatively stable for both periods before and after the GFC, being the fourth healthiest brand, although it's not as powerful as it was in 2007. Their casual employee focused management style is no longer novel, and no longer generates the same hype as when the approach was new in contrast to the traditional brand's 'command and execute' management style.

This study shows nicely how originally new approach wears off and no longer generates additional brand health. Based on their relative health index and relative brand powerfulness in 2007 and 2011, I apply the BBE typology to airline brands, shown in figure 3.5.

Figure 3.5: Behavioural Brand Evaluation Typology, Airline Industry (Pre and Post GFC)



Note: RBP: Relative Brand Powerfulness; RBHI: Relative Brand Health Index

3.6.1.2. Banking Industry

For the period before the financial crisis, the main driver of brand health in the banking industry was low growth-volatility, which suggests intense competition between brands. From 2002 to 2007, the majority of brands have experienced a similar level of growth

(between 1 and 2 units), although for the period after the GFC, brands posted different growth rates and an overall dramatic decline in growth.

Table 3.4: Brand Health, US Banking Industry

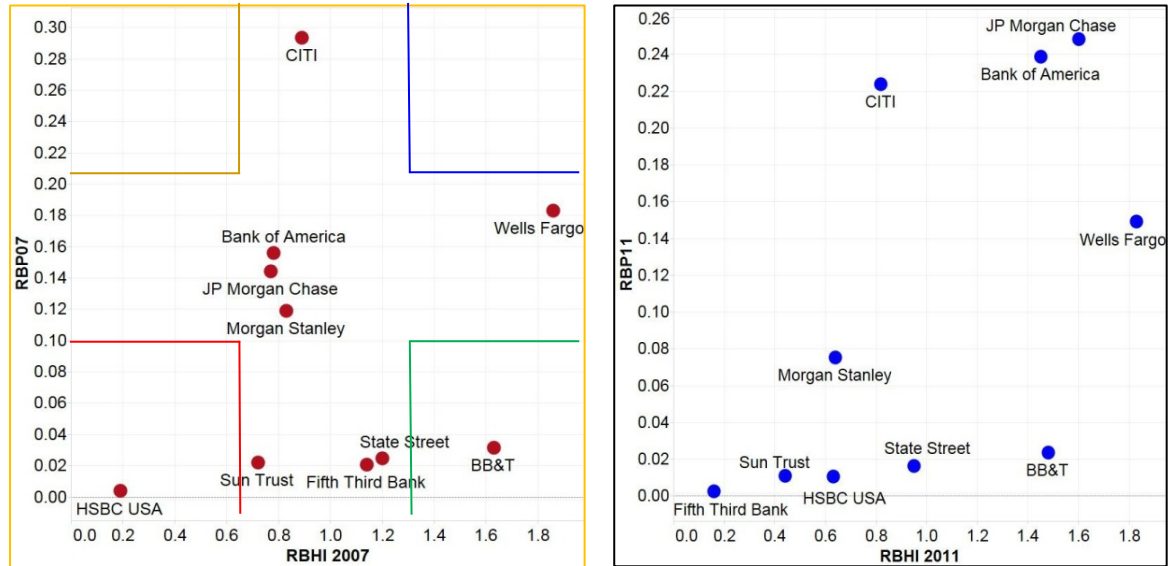
Industry	Brands	Sum of Growth		SD of Growth		BHI		RBHI	
		10-Year base		10-Year base		10-Year base		10-Year base	
		2007	2011	2007	2011	2007	2011	2007	2011
Banking	JP Morgan Chase	1.69	1.20	0.27	0.16	6.26	7.32	0.77	1.60
	CITI	1.20	0.42	0.16	0.11	7.23	3.75	0.89	0.82
	Wells Fargo	1.18	0.76	0.07	0.09	15.16	8.40	1.86	1.83
	Bank of America	1.09	1.27	0.17	0.19	6.40	6.65	0.78	1.45
	Fifth Third Bank	1.72	0.05	0.18	0.08	9.28	0.74	1.14	0.16
	Morgan Stanley	1.39	0.81	0.20	0.27	6.78	2.92	0.83	0.64
	State Street	1.40	0.73	0.14	0.17	9.77	4.32	1.20	0.95
	HSBC USA	0.34	0.73	0.22	0.25	1.54	2.89	0.19	0.63
	Sun Trust	1.30	0.33	0.22	0.16	5.85	2.01	0.72	0.44
	BB&T	1.57	0.60	0.11	0.09	13.30	6.76	1.63	1.48

Note: Sum of Growth on a 10-year base in 2007: a brand's past 10 years cumulative growth from 1998 to 2007, SD of growth on a 10-year base in 2011: a brand's standard deviation of growth from 2002 to 2011, BHI: Brand Health Index, RBHI: Relative Brand Health Index

As shown in table 3.4, in 2007, Wells Fargo, BB&T, State Street, and Fifth Third Bank enjoyed less volatile high growth. In contrast, HSBC USA⁵ has been the unhealthiest in the market due to low cumulative growth and high growth volatility. For the period after the financial crisis, Citi Group was one of the biggest losers, experiencing one-third of the cumulative growth of the period before the GFC. Unlike Citi Group, its main competitors such as JP Morgan Chase and Bank of America were relatively in excellent health in 2011. Since 2007, that is, after GFC, JP Morgan Chase and Bank of America have moved up on the brand typology map and, based on their healthiness and powerfulness scores, are classified as Dynamos.

⁵ Here we discuss the HSBC USA and not the global HSBC

Figure 3.6: Behavioural Brand Evaluation Typology, Banking Industry (Pre- and Post-GFC)



Note: RBP: Relative Brand Powerfulness; RBHI: Relative Brand Health Index

As shown in figure 3.6, BB&T and State Street are performing healthily and are classified as Emergers. Their position in the BBE map hasn't changed much pre-and post-GFC. Unlike BB&T and State Street, brands such as SunTrust and Fifth Third have not been able to find their ways to customers' minds and feelings, and have moved back on the BBE map, being classified as Strugglers with an unclear future. They may end up being acquired by or joined with other brands if they cannot reconnect with their customers (including new ones).

3.6.1.3. Department Stores Industry

In the department stores industry, Kohl's is the unbeatable healthiest brand over the periods before and after the GFC. However, its health has been weakened since 2008, although Kohl's remains the strongest, and in excellent health compared to other brands in the industry, well above its main competitors such as Macy's. This sustainable growth over the long-term suggests that Kohl's has been able to respond continuously to customers'

changing needs and to acquire new customers while retaining the existing ones (Tatge 2004). On the BBE map, shown in figure 3.7, Kohl's is classified as a Dynamo for both pre- and post-GFC. In contrast J C Penny, without significant growth, has benefited from a low growth fluctuation rate for the period before the financial crisis. For the period after the GFC, while most of the brands experienced negative growth rates, Macy's outperformed the market, enjoying a greater cumulative growth rate of 0.34 in 2011 compared to 0.25 in 2007, and placing itself in the third healthiest position after Kohl's and Neiman Marcus (Chaudhuri 2013).

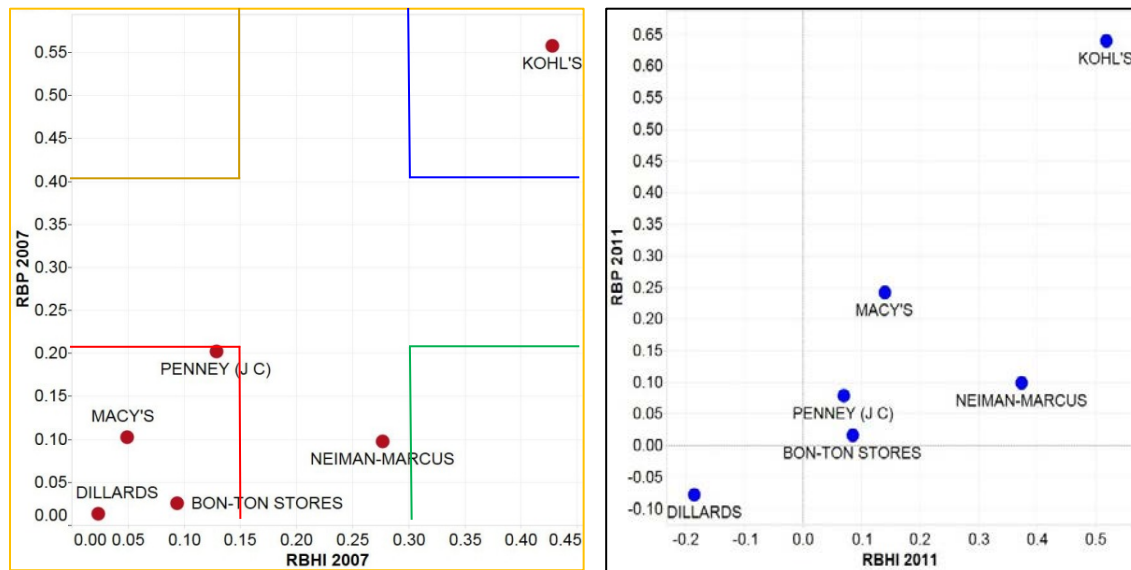
Table 3.5: Brand Health, US Department Stores Industry

Industry	Brand	Sum of Growth		SD of Growth		BHI		RBHI	
		10-Year		10-Year		10-Year		10-Year	
		2007	2011	2007	2011	2007	2011	2007	2011
Department Stores	Macy's	0.25	0.34	0.09	0.07	2.27	4.81	0.30	0.84
	Penny Co	0.16	0.07	0.02	0.03	8.00	2.39	0.87	0.42
	Neiman-Marcus	0.71	0.59	0.05	0.04	14.2	12.86	1.55	2.24
	Bon-Ton Stores	0.49	0.29	0.09	0.10	5.44	2.91	0.59	0.51
	Kohl's	1.86	1.07	0.08	0.07	23.25	17.84	2.54	3.11
	Dillards	0.10	-0.25	0.08	0.04	1.25	-6.40	0.14	-1.12

Note: Sum of Growth on a 10-year base in 2007: a brand's past 10 years cumulative growth from 1998 to 2007, SD of growth on a 10-year base in 2011: a brand's standard deviation of growth from 2002 to 2011, BH: Brand Health Index, RBHI: Relative Brand Health Index

Looking at the BBE typology in the department stores category shown in figure 3.7, however, J C Penny has lost the momentum from 2007 to 2011, but still has the chance to be back on track, by carefully developing effective marketing strategies and actions to fulfil customers' values. Since 2007, it has continued on its current path, and has been dropped to Strugglers from the Disoriented category.

Figure 3.7: Behavioural Brand Evaluation Typology, Department Stores (Pre- and post-GFC)



Note: RBP: Relative Brand Powerfulness; RBHI: Relative Brand Health Index

3.6.1.4. Insurance Industry

Similar to the banking industry, competition is intense in the US insurance industry, having several brands in good health, which implies the importance of branding in retaining and acquiring customers in order to experience high growth with low volatility. As of 2007, brands such as Progressive and Travelers have been able to challenge the market leaders by recording stable high growth, with low growth variability.

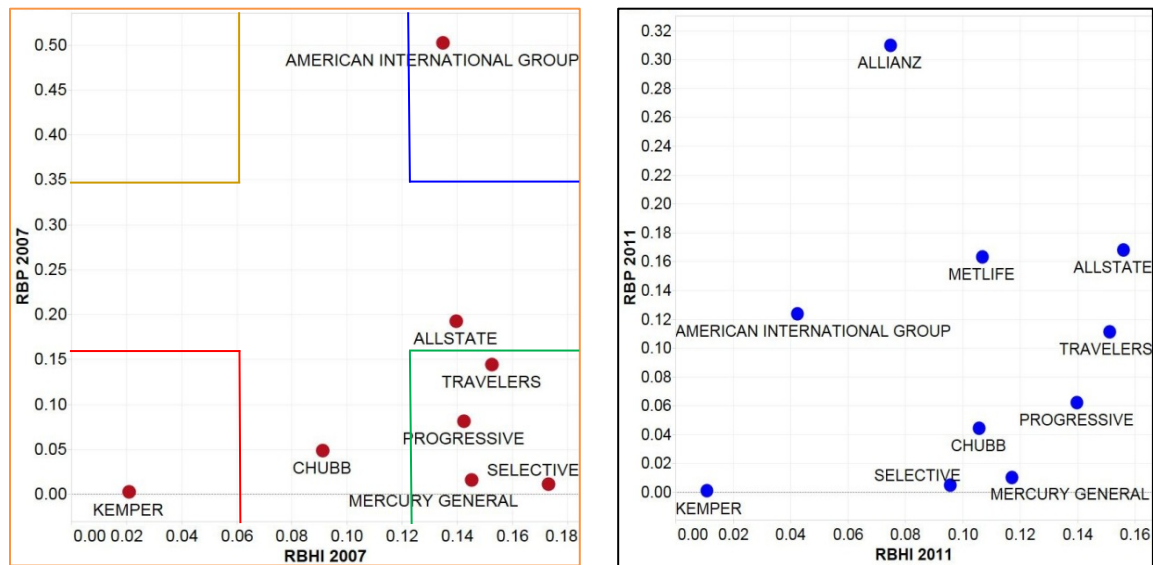
Table 3.6: Brand Health, US Insurance Industry

Industry	Brand	Sum of Growth		SD of Growth		BHI		RBHI	
		10-Year		10-Year		10-Year		10-Year	
		2007	2011	2007	2011	2007	2011	2007	2011
Insurance	AIG	1.42	0.44	0.11	0.15	12.9	2.93	1.04	0.41
	Chubb	0.81	0.70	0.09	0.09	9.00	7.77	0.72	1.08
	Progressive	1.26	0.99	0.09	0.1	13.98	9.9	1.12	1.37
	Mercury	1.12	1.06	0.08	0.13	14.00	8.15	1.12	1.13
	Selective	0.90	0.53	0.05	0.08	18.00	6.62	1.44	0.92
	Kemper	0.16	0.06	0.08	0.07	2.00	0.85	0.16	0.12
	Allstate	0.40	0.38	0.03	0.03	13.33	12.66	1.07	1.76
	Travelers	0.66	0.51	0.04	0.05	16.5	10.2	1.32	1.42
	Allianz	NA	0.63	NA	0.12	NA	5.25	NA	0.73
	Metlife	NA	1.08	NA	0.14	NA	7.71	NA	1.07

Note: Sum of Growth on a 10-year base in 2007: a brand's past 10 years cumulative growth from 1998 to 2007, SD of growth on a 10-year base in 2011: a brand's standard deviation of growth from 2002 to 2011, BH: Brand Health Index, RBP: Relative Brand Health Index

Regardless of the GFC, American Insurance Group (AIG) among the market leaders experienced a relatively descending trend in its growth rate, from 2002 to 2011, despite an ascending growth rate from 2002 to 2005, from 0.08 in 2002 to -0.16 in 2011. This signals the fact that AIG has not been able to meet customers' needs, and "catch up" with their changing preferences, and thus has been classified as a Disoriented brand in 2011, although it was a Dynamo in 2007. Conversely, with a significant stable cumulative growth of around 0.40, Allstate is considered as the least vulnerable brand in the insurance industry, being able to retain its existing customers and acquire new ones by continuously satisfying their changing needs, and wants.

Figure 3.8: Behavioural Brand Evaluation Typology, Insurance Industry (Pre- and post-GFC)



Note: RBP: Relative Brand Powerfulness; RBHI: Relative Brand Health Index

Brands such as Selective, Progressive, and Travellers are among the Emergers and although they are not quite powerful, but have been able to successfully fulfil their target market needs, and experience sustainable growth over the study period.

Reviewing all four industries' health indexes over the period of 10 years from 2002 to 2011, it becomes clear that the healthiest brands are those which have been able to sustain their high health in the long-term regardless of any situational influencers such as the financial crisis which occurred in this time span.

In the next section, in line with Aaker and Jacobson (1994) and Madden, Fehle, and Fournier (2006), I examine the proposed measure of brand health to see whether it contains incremental information to financial measures useful for managers, investors, and shareholders. I expect the proposed measure to be significantly associated with financial measures.

3.7. Linking Brand Health to Financial Performance

I investigate whether the proposed measurement of brand health contains any information that could be incremental to a change in a firm's financial performance. To test the link between the brand health measure (i.e. BHI) and a firm's financial performance, I employed multiple measures of financial performance namely, return on assets (ROA) and earning per share (EPS), for a period of 10 years from 2002 to 2011. First I use ROA as a forward looking metric because it provides information about future profitability⁶ (Krosnikov, Mishra, and Orosko 2009), and has been widely used in the literature (Fairfield, Sweeney, and Yohn 1996; Krosnikov, Mishra, and Orosko 2009; Mizik, and Jacobson 2008). Second, to enhance the validity of our findings, I also include Earning Per Share (EPS) as a common measure of stock return (Mizik, and Jacobson 2008; De Mortanges, and Van Riel 2003). Using the data from the COMPUSTAT database, I computed the ROA as the ratio of net income before extraordinary items to total assets (Krosnikov, Mishra, and Orosko 2009). EPS is calculated as a firm's profit divided by the number of its outstanding shares and was retrieved directly from the COMPUSTAT database.

3.7.1. Methodology to Link Brand Health to Financial Measures

To evaluate the financial value of brand health over the long-term, I employed one of the methodologies which was developed recently and has been used in panel studies (Cameron, Gelbach, and Miller 2011). The Two-Way Cluster-Robust Errors method is used in this study to investigate the association between the brand health index and financial performance. A two-way cluster error controls for both the time series (Year) dependencies

⁶ Krosnikov, Mishra and Orosko (2009) in examining the impact of brand on financial performance use ROA as a financial ratio that provides information about the future profitability to investors.

and the cross sectional (Firms) dependencies (Gow, Ormazabal, and Taylor 2010). Since in panel data, one or more repeated measures are studied over time and across firms, which might potentially be correlated cross-sectionally or serially, it is crucial to correct for the time dependency and cross-sectional dependency. This methodology enables researchers to control for clustering to avoid under-estimating standard errors and over-rejection in panel studies (Cameron et al. 2011). There are several methodologies such as the Fama-Macbeth (1973) approach, which may correct for dependency in just one way (cross sectional or time dependency). However, Gow, Ormazal and Taylor (2010) argue that there is a gap in panel studies where one controls for one direction and misses the other. Two-Way Cluster-Robust Error regression allows clustering on two directions (Gow, Ormazal and Taylor 2010). For example, for the two directions being time and firm, the test corrects for dependency of the observation for firm i at time t , and time $t+1$. It also controls for dependency of observation of firm i at time t , and firm j at time t . Comparing the popular methodologies in panel data studies such as OLS, Z2, White standard error, Newy-West, Fama-Macbeth, one way cluster, and two-way cluster-robust error, Gow, Ormazabal and Taylor (2009) suggest that the most robust methodology for any sort of dependency or even independency is the two-way cluster-robust error regression. Therefore I use this method to capture the association between the Brand Health Index (BHI) and ROA and EPS across firms and over time.

For each brand I computed the BHI on a 5-year to 10-year basis. For example a 9-year based BHI is a function of the last nine years brand's sales growth (cumulative growth) divided by the sales variability (standard deviation) of growth during that nine years period, whereas a 6-year based BHI is a function of the last six years sales growth and sales growth variability. The reason for estimating brand health using several bases was to understand the extent to which the past performance of a brand affects its current financial situation. In other words, to discover the lagged impact of brand health on financial measures, I regressed the

financial measures on the brand health of different bases (5-year to 10-year) for the study period, 2002-2011.

3.7.2. Findings of the Linkage between BHI and Financial Measures

In general the findings identify a high association between BHI, ROA, and EPS, and that the results vary over time. Table 3.7 provides detailed findings of the two-way cluster-robust errors regression. For a 5-year based brand health, I found that the Brand Health Index (BHI) has a significant positive impact on return on assets in the airlines industry ($\beta = 0.0061$, $t = 4.35$, $p < 0.05$). BHI is also positively correlated with ROA ($\beta = 0.002$, $t = 3.32$, $p < 0.01$), and EPS ($\beta = 0.229$, $t = 2.35$, $p < 0.05$) in the insurance industry. Similarly there is a positive association between BHI and ROA ($\beta = 0.0003$, $t = 2.77$, $p < 0.05$) and EPS ($\beta = 0.125$, $t = 2.55$, $P < 0.05$) in banking on a 5-year base. With regards to the department stores category, however, the impact of BHI on ROA was not significant, ($p > 0.05$), but EPS was associated significantly with BHI ($\beta = 0.084$, $t = 2.31$, $p < 0.05$). For a 6-year base compared to the 5-year base, the BHI was significantly associated with financial measures across all industries, although it was weaker in the department stores industry. The BHI was significantly correlated with ROA at the 0.01 level across airline ($\beta = 0.007$, $t = 5.37$), banking ($\beta = 0.0006$, $t = 3.59$), and insurance industries, ($\beta = 0.002$, $t = 3.31$).

Expanding the base in computing brand health from six years to seven years, I can see a considerable improvement in the regression models, which resulted in a more significant positive association between BHI, and the two financial measures. Compared to the 6-year base, the BHI on a 7-year basis was more significantly correlated with ROA in the airline industry ($\beta = 0.007$, $t = 7.46$, $p < 0.01$), banking industry ($\beta = 0.0007$, $t = 4.65$, $p < 0.01$), the insurance industry ($\beta = 0.002$, $t = 3.43$, $p < 0.01$), and the department stores ($\beta = 0.002$, $t = 1.93$,

$p < 0.1$). Moreover, the 7-year based BHI proved to be a better describer of the change in EPS across airlines ($\beta = 0.5490$, $t = 2.86$, $p < 0.01$), banking ($\beta = 0.1655$, $t = 3.47$, $p < 0.01$), insurance ($\beta = 0.2062$, $t = 2.52$, $p < 0.05$), and department stores ($\beta = 0.077$, $t = 2.45$, $p < 0.05$) in comparison to a 6-year base.

Moving from the 7-year based BHI to an 8-year based BHI, where brand performance is a function of its past eight years' sales growth and sales fluctuations, I observed a significant improvement in the model's explanatory power. The association was significant across all industries including the department stores at the 0.01 and 0.05 levels between BHI and ROA, and BHI and EPS respectively. When the BHI was calculated on a 9-year basis, the results found to be very similar to the 8-year basis in terms of both t-value magnitude and the significant level of beta coefficients across all four industries. The 9-year BHI was significantly associated with higher ROA and EPS. The model's explanatory power has increased for the BHI and ROA association across banking ($R^2 = 0.22$), department stores ($R^2 = 0.29$), and insurance industry ($R^2 = 0.27$), although in the airlines industry the r-square has dropped from 0.29 to 0.26. However, for the narrower spans (5-year to 8-year bases), BHI wasn't significantly associated with EPS in the department stores industry at the 0.05 level, but on the 9-year basis, BHI is a significant explainer of the change in ROA ($\beta = 0.002$, $t = 9.74$, $p < 0.01$), and EPS ($\beta = 0.02$, $t = 2.02$, $p < 0.05$) in department stores in addition to all other industries including airline, banking, and insurance.

Finally using a 10-year based BHI, the correlation between BHI and the financial measures is weak compared to the narrower spans, particularly 8-year or 9-year bases across all four industries.

Across all industries, I observed a high association between the proposed brand health and two financial measures, ROA, and EPS. Reviewing the results of all industries on a 5-year to 10-year based brand health, I conclude that in general, financial measures are more

associated with longer/wider based brand health. In other words, the information contained in the longer-term based brand health, such as 7-year, 8-year, and 9-year, provide more insights into the change in the financial measures compared to narrower bases such as 5-year or 6-year. This finding is in line with the branding literature that generally acknowledges that building a brand takes time. This also justifies the approach to this study, to capture a brand's health on long term bases.

Table 3.7: Two-way Cluster-Robust Standard Errors Regression Results

Base		Airline (n=10)		Banking (n=21)		Department Stores (n=6)		Insurance (n=7)	
		ROA	EPS	ROA	EPS	ROA	EPS	ROA	EPS
5-year	BHI	0.006191***	0.294865**	0.000377**	0.125892**	0.002432	0.084319**	0.002517***	0.229974**
	t-value	(4.35)	(2.30)	(2.77)	(2.55)	(1.58)	(2.31)	(3.32)	(2.35)
	R²	0.1589	0.1407	0.0466	0.0419	0.1992	0.1031	0.1948	0.1466
6-year	BHI	0.007156***	0.371993***	0.000545***	0.152072***	0.002427*	0.070362**	0.002492***	0.21397**
	t-value	(5.37)	(2.87)	(5.29)	(3.21)	(1.77)	(2.67)	(3.31)	(2.41)
	R²	0.1904	0.1922	0.0942	0.0571	0.2088	0.0794	0.2040	0.1356
7-year	BHI	0.007614***	0.392006***	0.000793***	0.165571***	0.002665**	0.077045**	0.0025731***	0.206297**
	t-value	(7.46)	(3.16)	(4.65)	(3.47)	(1.93)	(2.45)	(3.43)	(2.57)
	R²	0.2343	0.2298	0.1570	0.0880	0.2320	0.0888	0.2344	0.1359
8-year	BHI	0.008152***	0.434813***	0.000774***	0.231047***	0.00288***	0.079098**	0.002604***	0.196630**
	t-value	(6.23)	(3.56)	(4.50)	(3.15)	(2.75)	(2.36)	(3.39)	(2.52)
	R²	0.2912	0.2984	0.2018	0.1353	0.2822	0.0967	0.2557	0.1314
9-year	BHI	0.007169***	0.375602***	0.000713***	0.201***	0.00300***	0.084143**	0.002529***	0.169923**
	t-value	(4.91)	(3.15)	(5.01)	(3.74)	(2.77)	(2.54)	(3.62)	(2.43)
	R²	0.2655	0.2660	0.2230	0.1563	0.2913	0.1101	0.2704	0.1101
10-year	BHI	0.006111***	0.316839***	0.000660***	0.193346***	0.0028763***	0.0740016*	0.002374***	0.147984**
	t-value	(4.28)	(2.88)	(5.87)	(3.89)	(2.81)	(2.27)	(3.70)	(2.36)
	R²	0.2311	0.2303	0.2157	0.1450	0.2799	0.0911	0.2807	0.084

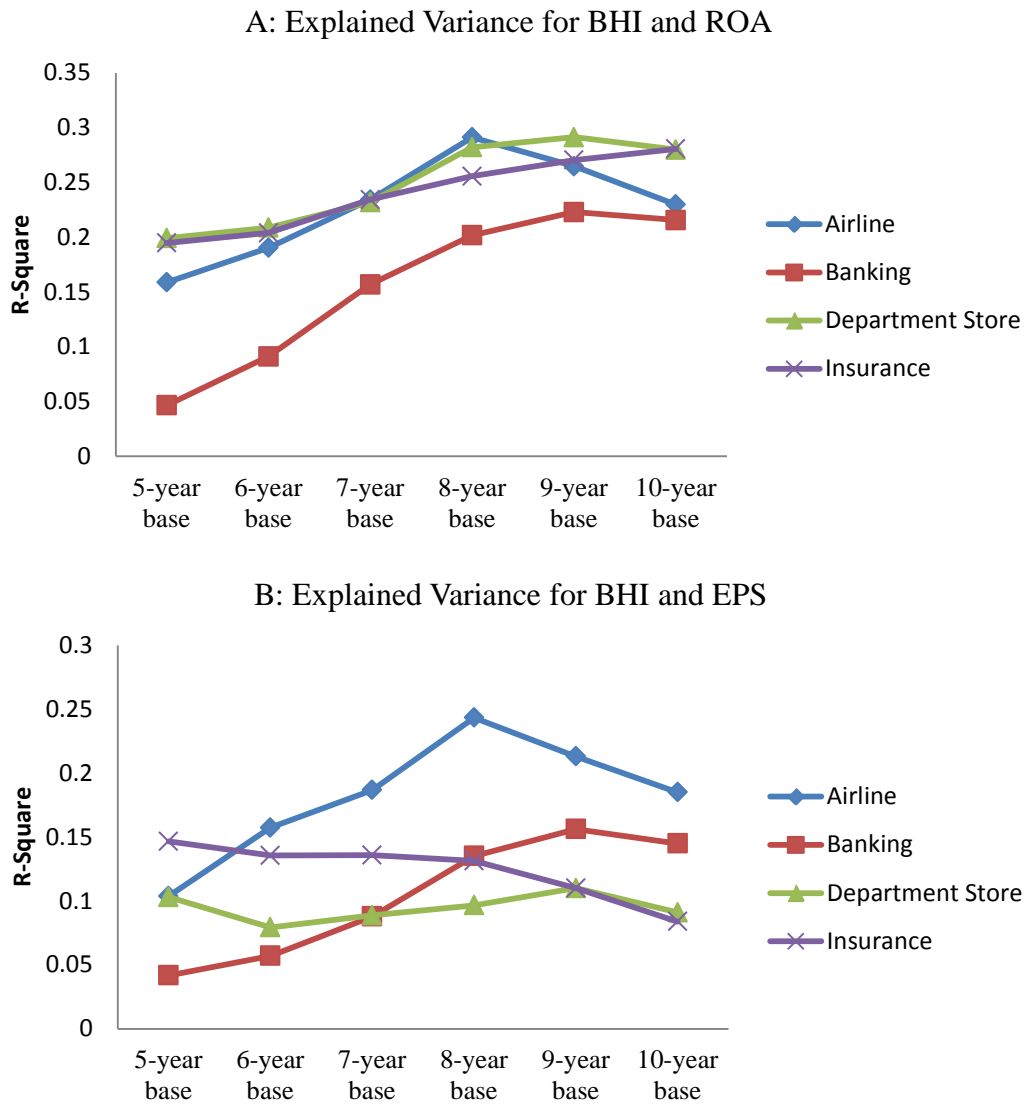
Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ ROA: Return on Assets; EPS: Earnings Per Share; BHI: Brand Health Index

As shown in Figure 3.9 (panels A and B), the results of the models' explanatory power are almost n shaped, rising from a 5-year base to an 8-year and 9-year base and then declining. This suggests that in order to optimise the association between brand health and financial measures, brand health is recommended to be computed ideally on a 7-year to 9-year basis for each year. In other words, the brand health of a given brand in 2002 can be measured based on its sales growth and sales growth variation from 1996 to 2002 for a 7-year base brand health estimation, or from 1995 to 2002 for an 8-year base brand health estimation.

Therefore, short-term financial outcomes contain information from long-term brand health results. In financial markets, according to the literature, managers and investors have a relatively myopic view, tending to focus on short-term outcomes, and sacrificing long-term goals (Mizik and Jacobson 2007). Whilst branding efforts can pay off in the long-term, financial measures rely on short-term outcomes to judge the branding efforts (Madden, Fehle, and Fournier 2006). This conflict of perspective is a part of the reason for a lack of marketing accountability. The proposed measure of brand health is able to overcome this long-standing shortcoming through linking the long-term oriented marketing outcomes to short-term oriented financial outcomes. The results suggest that short-term financial measures encompass information from long-term brand performance, since I found that financial measures, ROA, and EPS are associated more positively and significantly with longer-term brand health scores such as 9-year⁷ as opposed to 5-year or 6-year bases.

⁷ Again it must be emphasized that 9-year base brand health means that in order to compute brand health for each period, we include the sales growth and sales growth volatility of the last 9 periods. Similarly for 5-year base brand health, we compute the brand health in each period based on the last 5 periods' sales growth and growth volatility.

Figure 3.9: Brand Health and Financial Measures



3.8. Discussion and Implication; Brand Typology Management

3.8.1. Discussion of the Results

“Brand management may be more difficult than ever” (Keller 2013, p. 52) due to both challenges, and opportunities in the market. Consumers are savvier than ever, more knowledgeable and demanding since the invention of the internet. Media transformation from traditional to interactive platforms has shifted the power from seller to buyer. Competition is also more intense due to globalisation, and some other factors (Keller 2013). Depending on the extent to which a brand can ease the market threats, and seize the market opportunities through adopting effective strategies in response to changing customer needs, a brand can go through different stages. A brand can go through four main phases from Emerger to Dynamo, to Disoriented, or Struggler. In each phase a brand should develop and apply different scenarios suitable for that stage in order to stay in or move on towards another stage (unless, of course, it is a Dynamo, i.e. the ultimately desired stage). In this section I discuss the most effective marketing/branding strategies for each phase.

In addition to all those fundamental marketing strategies and actions, brands in each stage must take some additional, complementary specific actions. For Emergers, the main task is to monitor and track their brand health continuously to ensure they remain healthy and on track. Emergers need to build their profile and brand, expand, among others. Market penetration and market and product development strategies can be applied to reach and acquire more customers. In fact growth strategies can be put in place in order to move on to the next phase which is Dynamo.

For brands in the Dynamo category, maintaining, or indeed defending the current situation is the main task. Building customer relationships is crucial at this stage. Moreover,

brand extension strategies can be tested in order to take advantage of a healthy, powerful brand in new markets. Monitoring market trends and consumers' preferences and adopting up-to-date marketing strategies and corresponding actions are critical to stay on top. Perhaps that's the main factor which distinguishes Dynamos from Disoriented brands.

The main problem for brands in the Disoriented category is that they stick to their old-fashioned strategies and actions that have been successful in the past, but may not be effective any more. Disoriented brands are losing the momentum due to being passive in relation to consumers' changing needs. For brands in this phase immediate action is necessary to regain consumers' trust and improve brand health again. In-depth market research, R&D spending, product and service innovation, and effective consumer relationship management are critical in this phase. If the brand itself has become dated, rebranding or at least readjusting/updating some brand elements has to be considered. Sticking to their out-of-date prescriptions to tackle the market challenges, Disoriented brands will soon find themselves in a worse phase of the brand cycle which is Strugglers.

For brands in the Struggler category, however, immediate and dramatic action must be taken in order to save the brand. Rebranding, product innovation and service improvements seem unavoidable, yet ultimately Strugglers might become victims of mergers and acquisition strategies that may not work in their stakeholders' interests.

3.8.2. Conclusion

Long-term brand value depends on "maximizing long-term brand persistence and growth" (Keller, and Lehmann. 2009, p. 6). Based on this theory, I developed an objective measure of brand health as a function of long-term sustained growth. The primary focus was to respond to recent calls for marketing managers to become more accountable and to justify

their spending on brand building strategies, and to justify their contribution to the firm. The proposed measure enables managers to easily track and monitor the change in their brand health over the years, and use it as a direction for the future. The second focus was on developing a behavioural long-term brand evaluation framework that classifies brands into several categories based on their healthiness and powerfulness indexes. The third focus was on providing insights into the financial returns of the brand building efforts. Proposing a measure of brand health based on long-term sales growth and growth variability, I made several contributions to the body of research on brand measurement.

Firstly, I proposed an objective measure of brand health, and brand powerfulness which is auditable and applicable across all industries, and countries. It can also be used for multiple, single, and family branding strategies. Secondly, I developed a new framework of behavioural brand evaluation, a brand typology framework encompassing four main types of brands including Dynamos, Strugglers, Emergers, and Disoriented brands. The proposed framework enables managers to evaluate their brand status, and adopt the most effective marketing strategies and actions correspondingly. Thirdly, this study is the first to link a long-term based measure of brand health to the short-term based financial measures, ROA, and EPS.

3.8.3. Managerial Implications

This research provides several managerial insights. The findings of this research are beneficial to CEOs, CFOs, and Chief Marketing Officers (CMOs). Firstly, since CEOs and CFOs prefer behavioural measures to evaluate a brand's performance, the proposed measure enables them to evaluate the healthiness of their brands based on objective customer-market data. Moreover, because the proposed measure is associated with financial metrics, it enables

CEOs and CFOs to interpret and estimate the financial contribution of any change in the brand health index. Secondly, marketing managers, who argue existing behavioural measures have a short-term focus, can use the proposed measure since it enables them to expand the performance evaluation time span. In other words, the proposed measure, on the one hand fulfils the need of CEOs, and CFOs in using behavioural measures, linkable to financial measures. On the other hand, it fulfils the need of marketing managers to capture the current and lagged impact of their actions behaviourally since the proposed brand health index is based on customers' actual purchase behaviour and takes a long-term view.

According to a recent survey conducted by IBM (2013) among managers, the main concern of senior managers has been sustaining the growth of brand value. The proposed measure developed in this study will allow managers, in real time, to easily monitor, track and manage their health through sustained growth. Thirdly, and as discussed earlier, managers can apply the proposed framework of behavioural brand evaluation to evaluate their brand status in the market place. The behavioural brand evaluation typology framework can be used as a guide to pursue a firms' objectives over the years. Finally, marketing managers can use *one* single number to monitor their position in the marketplace, and justify their financial contribution, since I were able to link the proposed long-term based measure of brand health to short-term financial measures.

3.8.4. Research Limitations and Future Directions

All research studies have limitations and this study is no exception. First, there were only four industries being evaluated. This study could be expanded in future to consider a wider range of industries to improve the generalizability of the research. Second, this study is limited to the study of corporate brands due to the limited availability of corporate data for

the industries evaluated in the Compustat database. Third, the study is limited to one country, namely the United States of America. Further studies could be undertaken in other countries to improve the generalizability of the findings. Fourth, many studies focus on dual brand strategies and brand portfolio. This current study focuses on single corporate brands but provide a fine platform to embark on testing the model for these multi brand strategies.

Since the ultimate goal of this research was to contribute to the marketing accountability and marketing-finance interface literature, I developed an objective auditable measure of brand health linkable to financial measures. Future research can focus on the linkage between marketing actions such as advertising spending and the proposed measure. However, a wide body of research exists on the direct/indirect, short-term/long-term impacts of marketing actions on brand performance measures (Pauwels 2004; Ataman, Mela and Van Heerde 2008; Ataman, Van Heerde and Mela 2010; Joshi and Hanssens 2010). Nonetheless, since the proposed measure is the first to be computed on a long-term base, encompassing more than one time wave, it opens a new avenue and stream in studying the impacts of marketing actions on this new measure of brand health.

Similarly, future research might aim to examine the explanatory power of the proposed measure in valuing branded businesses and also risk evaluation, as an objective auditable replacement for measures such as Interbrand or Y&R BAV (Mizik and Jacobson 2009; Rego, Billett and Morgan 2009).

Since I provided a new framework of brand typology based on a brand's health index, studying the customer-brand relationships in each phase of brand typology framework is crucial. Therefore future research can focus on the impact of brand health on customer life time value and customer equity in each phase of brand typology framework.

The scope of this study was clear on services only, the testing of the studies' models for areas such as FMCG is presented as an area of future research.

3.9. References

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CHAPTER FOUR

**Is Your Brand Healthy? Which Advertising Diet
Are You On?**

Chapter 4: Is Your Brand Healthy? Which Advertising Diet Are You On?⁸

Abstract

This study applies a new objective long-term based measure called “Brand Health Index” (BHI) to study the interaction between advertising spending and a healthy brand. Considering advertising spending patterns as analogous to a brand’s diet, I study the advertising diet of healthy and unhealthy brands across three industries, airlines, banking, and department stores from 2000 to 2012. I identify four advertising diets *Smart*, *Double Hump*, *Early Quitting*, and *Poor*. Based on a firm’s advertising diet and brand healthiness an *advertising diet- brand health* typology is developed. Healthy brands are “*Fit*”, taking a *Smart* diet; however, unhealthy brands are “*Sick*” taking a *Poor* diet.

Keywords: Advertising Effectiveness, Brand Health, Brand Performance, Advertising Diet, Advertising Patterns

⁸ Conditionally Accepted, *Journal of Advertising Research*

4.1. Introduction

For more than 80 years, advertising researchers in both industry and academia have tried to demonstrate the impact of advertising. Different models and methods have been developed to measure the impact of advertising, and yet in 2013 advertising experts and researchers from giant firms such as Google and Microsoft continue to write on the impossibility of measuring advertising return (Metzger 2013; Lewis and Rao 2013). While there are a variety of different explanations for the difficulty in measuring the impact of advertising (e.g., the direct/indirect, lagged, and cumulative impacts) part of the reason is the different selections of input and output metrics to evaluate the advertising impact. In other words the inconsistency in advertising input (e.g., advertising frequency, intensity, the content of advertising) and output performance metrics has contributed to the difficulty in advertising performance measurement. A short-term/long-term, subjective/objective, attitudinal/behavioural, or financial/non-financial perspective in choosing performance metrics can result in different outcomes.

Managers often prefer objective, behavioural measures to subjective, attitudinal measures because they tend to avoid the use of “black box procedures that cannot be examined and validated” (Metzger 2013, p.3). Moreover objective behavioural measures can be more easily linked to sales, revenue, and profitability, terms which are the common language of CFOs and CEOs (Chandon, Morwitz, and Reinartz 2005; Kumar, Pozza, and Gonesh 2013). Despite all the advantages of these objective behavioural measures, one main shortcoming of such measures is that they are oriented to the short-term. However, the impact of marketing actions, and in particular advertising can go beyond the current term and last for years (Clarke 1976; Mizik and Jacobson 2008; Ataman, van Heerde and Mela 2010).

Hiring advertising agencies to build brands over the long-term, but judging their performance over the short-term can be problematic (Bruce et al 2012). Over the short-term, the performance of a brand can be influenced by short-term situational influences such as price discounting and aggressive marketing actions by competitors. The implementation of these kinds of influences does not necessarily mean that advertising spending is ineffective. By focusing on short-term outcomes advertisers and brand managers may actually undermine the potential to build brands over the long-term. Lodish and Mela (2007) argue that while brands are built over the years, they are judged and evaluated quarterly.

In this paper I apply a new long-term objective behavioural measure of brand performance called the *brand health index* (BHI) proposed by Mirzaei et al. (2014) to examine the contribution of advertising spending in building healthy brands. BHI, which is based on consumers' actual purchase behaviour, is a function of sustained growth over the long-term. Mirzaei et al. (2014) define a healthy brand as a brand that is able to adopt the most effective strategies to respond to customers' changing needs over time, and, as a result, experience a sustained growth over the long-term. Brand health can be quite crucial in explaining and predicting consumer behaviours (Romaniuk 2013). "Brand-health tracking is however the only mechanism available to understand how a brand competes in consumer memory" (Romaniuk 2013, p. 11). However, it is also possible for feedback mechanisms between brand health and consumer behaviour to interact over time, thus blurring the association between what is antecedent and what is dependent variable.

Deviating from regression and econometric approaches in measuring the impact of advertising, in this study I use the dietary analogy to examine the interaction between advertising and brand health. I consider advertising spending as a brand's *diet* to build

healthy brands and so I study the *advertising diet* of healthy brands versus unhealthy brands. Since the health of a person shouldn't be attributed solely to what they had for breakfast (LaPointe 2012), I study the advertising diets of healthy and unhealthy brands over the long-term, a period of 13 years from 2000 to 2012. When referring to advertising diet I mean the patterns of advertising spending in the past, their density and distribution functions over the long-term. I look at the advertising spending diets of brands in relation to different levels of brand healthiness. In doing so I try to answer the following questions:

1. What are the main categories of advertising diets undertaken by brands?
2. What are the similarities and differences in advertising diets among healthy and unhealthy brands?
3. Are the advertising diets consistent across industries?
4. What are the effective and ineffective advertising diets to build healthy brands?

In this study, focusing on the operational definition of brand health, the advertising spending diet of healthy and unhealthy brands is examined. Answering the above questions I provide managerial insights and contribute to the field by, firstly, identifying major advertising spending diets undertaken by firms in different industries. Secondly, I study the link between advertising diet and a brand health (BH) as a new objective long-term based measure of brand performance. The third contribution is to develop an *advertising diet-brand health typology*. Such a typology provides a platform from which to analyse the advertising efforts over the long-term in building healthy brands. Ultimately effective advertising strategies for building healthy brands are proposed for different types of brands. The nature of contribution in this study is extending the knowledge on brand-advertising relationship.

In response to calls for measuring and optimizing the value of service, and effectively branding services, in this paper I focus on service-providing sector (Ostrom et al. 2010). Over the last 50 years there has been a shift from manufacturing to providing services. Looking at the GDP contribution of service sector, it is evident that today about 85% of the value added to GDP comes from service sector (Cox et al. 2013). Three service industries, banking, airlines and department stores from the top 15 industries contributing to the GDP (The US Bureau of Economic Analysis 2013) are studied. Applying the research model into several industries enables us to test the model applicability and generalizability.

I study brands with available advertising data across three industries (airline, banking, and department stores) for a period of 13 years from 2000 to 2012 encompassing pre and post GFC. I chose those firms and brands that are operating under corporate branding (e.g., their corporate name is their brand name).

4.2. Historical Progression in Advertising Effectiveness Measurement

In response to the questions *how much to spend on advertising? When to spend?* and *for how long?* There is a vast body of knowledge on the impact of advertising. Advertising response models vary in method and approach and depend on the duration of advertising impact, its carry-over rate, the shape of the effect (concave or S-shaped), whether its impact is instantaneous or persistent, cumulative or not, linear or non-linear, and short-term or long-term (Hanssens 2009).

One of the well-established arguments around advertising impact is that advertising effects last for periods beyond the current-term (Clarke 1976). Therefore not only current-term advertising spending, but also past advertising efforts must be taken into consideration

when measuring the advertising effectiveness. This cumulative advertising impact is defined as “the effect of a perceived advertisement that influences two or more successive advertising decisions” (Palda 1965, p. 162) or as “the effect of an advertisement that influences consumer buying behavior beyond the period of its appearance” (Palda 1965, 163).

To capture the cumulative impact of advertising spending, or time-varying dynamic advertising response, a range of models have been employed over past decades. Clarke (1976) classifies these dynamic cumulative advertising response models into direct duration and implied duration interval models. In the direct duration interval models such as the direct lag model, or weighted average models, the past t years (t equals time) advertising spending are regressed as t independent variables on current-term brand performance. Alternatively, the implied duration interval models consider a decay rate for lagged impacts of advertising spending in estimating the cumulative advertising effect (Clarke 1976). One of the popular implied models is the Koyck (1954) model in which lagged advertising spending impact decays exponentially (Jedidi, Mela, and Gupta 1999).

Recently, time series econometric models were applied to capture interactions in marketing response dynamics (Pauwels et al 2004). Advanced econometric methods such as vector autoregressive (VAR) models (Dekimpe and Hanssens 1999; Pauwels et al 2004; Joshi, and Hanssens 2010), and dynamic linear models (DLM) (Ataman, Mela, and Van Heerde 2008; Ataman, Van Heerde, and Mela 2010) have been applied to examine the impacts of advertising on brand performance.

4.3. Approaches in Advertising Effectiveness Measurement

The effect of advertising in the form of advertising elasticity, intensity, wear in/wear out (An Ad is said to be worn in if consumers who have been exposed to it react in any way from immediate recall, and cognitive response to purchase behaviour (Pechmann and Stewart 1990)), or advertising content has been captured through linking it to a wide range of performance measures across the marketing value chain (Bass et al. 2012; Bertrand et al. 2010; Pechmann, and Stewart 1988; Sethuraman, Tellis, and Briesch 2011).

Among the measures of brand performance, brand sales and market share are the most popular performance measures used to study the impact of advertising (Clarke 1976; Baghestani 1991; Dekimpe and Hanssens 1999; Steenkamp et al. 2005; Ataman, Van Heerde, and Mela 2010). Besides brand sales and market share, the impact of advertising has been examined using other measures such as stock return (Srinivasan, Pauwels, Silva-Risso, and Hanssens 2009), firm risk (McAlister et al 2007), market capitalisation (Joshi, and Hanssens 2004), and brand equity (Sriram et al 2007; Wang, Zhang, and Ouyang 2010).

For instance, employing a vector autoregressive model (VAR), Joshi and Hanssens (2010) investigate the direct and indirect impacts of advertising on market capitalisation over the long-term. They hypothesised that advertising affects firm value directly and also indirectly through sales revenue and profit. They found a positive long-term relationship between advertising spending and firm value. Srinivasan et al. (2009) studied investors' reactions to advertising spending. They found that investors respond positively (statistically significant) to a brand with higher advertising spending. Ataman, Van Heerde and Mela (2010) examined the long-term impact of marketing actions on brand sales and found a positive long-term positive statistically significant impact for advertising. Mela, Gupta, and Lehmann (1997) studied the extent to which advertising and promotion can influence brand

choice over the long-term in the packaged goods category. Their results showed that reducing advertising spending and increasing promotion spending will make customers more price sensitive, which in the long-term has a negative impact on brand performance (Srinivasan et al. 2009).

4.4. Calls for New Approaches in Assessing Advertising Contribution

As extensively studied in the literature, advertising budgets can be set using a wide range of methods. Judgemental, objective and task, percentage of sales, affordability, and competitive parity, are some of the common methods used in advertising resource allocation (Lynch and Hooley 1990; Farris and West 2007). There is no single prescription for all brands as the best advertising spending strategy. Different approaches are employed due to differences in organization culture (e.g., risk averse/risk prone); the perspective of managers involved in the decision-making process (e.g., short-term/ long-term perspective) and firm/market conditions (Low and Mohr 1997). It is possible that a budget allocation method can be effective for one brand but quite ineffective for another. To justify the allocated advertising budget and to reduce the risk of an ineffective advertising spending decision, brand managers and advertising agencies must be able to judge the effectiveness of different advertising methods. It is crucial to have a reliable well-specified input (e.g. advertising intensity, frequency, wear in/wear out, the advertising content) and output (e.g. brand sales, brand image, awareness) to facilitate advertising decision-making. Without clear input, and output metrics, feedback is likely to be slow and unclear, and can result in habitual thinking and the repeating of decisions by firms simply because they have made these decisions before (March et al.1989; Farris and West 2007).

In addition to the budgeting approach itself, the evaluation criteria used in the budgeting approach is also important. Low and Mohr (1997) for example, when interviewing B2C managers highlighted the importance of evaluation criteria and the associated process. They categorised the advertising budget allocation influencers into *good*, *bad*, and *ugly*, and suggested that managers should “focus on long-term, overall performance”, and “consistently evaluate the performance of past programs” (p. 9).

There are studies which have examined the impact of advertising on brand building efforts. Specifically, Yoo, Donthu, and Lee (2000) studied the impact of marketing actions including advertising spending on customer mindset-based brand equity. They found that greater advertising spending is related to greater brand equity. Sriram, Balachandler, and Kalwani (2007) proposing a measure of brand equity based on store level data in consumer package good categories, found that advertising spending positively influences brand equity. Chaudhuri (2002) examined the impact of brand reputation on the advertising–brand equity association. Shankar, Azar, and Fuller (2008) found that advertising spending positively influences brand equity over the long-term. Whilst past research has found a positive association between advertising and brand building (Sriram et al 2007; Shankar et al. 2008), there is little research into the effectiveness of advertising strategies on to build healthy brands. For instance if an unhealthy brand decides to improve its brand health, which advertising diet should be taken? So the question is that in order to build healthy brands which strategy should brands apply, and how should brand managers modify the advertising budget in relation to healthy and unhealthy competitors?

Therefore instead of making budgeting decisions arbitrarily, based on gut feeling, affordability, or just because they have made these decisions the same way before, managers need to set their strategies based on comprehensive past advertising spending analysis (internal analysis), and in relation to competitors actions (external analysis). Whilst

researchers such as Yoo and Mandhachitara (2003) analysed the relativity of advertising spending decisions with competitors, the focus was still on short-term sales growth.

In this study, I take a different, long-term oriented approach to the input (i.e. advertising spending), and output (i.e. brand health) assessment. Instead of examining the impact of advertising or the magnitude of advertising impact, and adding another percentage to the long list of advertising impact coefficients, I apply a new behavioural long-term based metric of brand health as the output, and study the firms' past advertising spending diets over the long-term as the input.

Dividing brands into healthy and unhealthy, I investigate the differences between the advertising spending diets of healthy brands compared to unhealthy brands. So the dietary analogy focuses on the patterns of advertising spending in the past, their density and distribution functions over the long-term. In other words, I do not judge the budgeting method; although I evaluate the pattern, consistency, and the shape of spending over the long-term. The main question to be addressed in this paper is *whether the advertising diet of healthy brands is different from unhealthy brands?*

4.5. Brand Health Index

Brands are built over the years by spending on brand building marketing actions (Lodish and Mela 2007). The outcome of any effective brand building action is initially reflected in a change in customers' attitudes, feelings, and thoughts (Keller and Lehmann 2006). Over the long-term, if a brand has a relative advantage in customers' minds, its sales revenue is more likely to be increased or at least not decreased (Aaker 1996) such that, "the primary payoff from customers' thoughts and feelings is the purchase that they make,"

(Keller and Lehmann 2006, p.15). This payoff in return influences the financial value of a firm (Aaker 1996; Keller and Lehmann 2006; Ailawadi et al 2003).

Brands can adopt different marketing actions to respond to their customers' needs. By these means a brand that has been able to effectively touch its customers' minds and hearts is expected to experience sales growth. However, over the short-term a brand's sales revenue can be volatile and change due to a range of factors such as the temporary introduction of price cuts, discounts, or promotional offerings, but over the long-term, continuous persistent sales growth implies that a brand is continuously appealing to its customers and performing well (Keller and Lehmann 2009). One does not want to be in the situation where, "companies get onto the fortune 50 by growing quickly, but it is like winning the Nobel Prize: their performance falls off afterward" (Laurie, Doz and Sheer 2006, p. 83). It is crucial to be able to sustain the growth over the long-term.

Thus, in the context of this paper there are two critical components of brand health. First, there is the ability of that brand to achieve *sales growth* over the long-run. Second, there is the ability of that brand to achieve *consistency of sales growth* over the long-run. This means the ability to minimise the volatility of changes in sales growth over the long-term. Thus a *healthy brand* is defined as one which is able to adopt effective marketing strategies in response to customers' changing tastes over time and as a result to keep sales growth high not for just one or two periods, but also over an extended time-frame (say 5 to 10 years and beyond) with a low level of volatility.

The *consistency* component of brand health derives from the co-variation principle of attribution theory and in a brand strategy context provides evidence as to the long-term success or failure of the advertising actions being implemented. That is, if a person consistently repeats behaviour over time, and under different circumstances, then the behaviour is likely to be attributable to internal factors (Kelley and Michela 1980). For

instance, if a stand-up comedian can consistently make people laugh on different occasions, under different circumstances, then success cannot be attributable to external situational factors. It means that the comedian knows how to appeal to their audience. Similarly, in a marketing context, if a brand can experience a relatively consistent pattern of sales growth with low sales growth fluctuations, its performance is attributed to internal factors which encompass a range of marketing actions.

Thus, the proposed brand health index (BHI) is in line with the two components of long-term brand performance, growth and persistency in growth, suggested by Keller and Lehmann (2009). More importantly, BHI has incremental financial information since it is significantly and positively associated with financial measures including return on assets (ROA) and earning per share (EPS) (Mirzaei et al. 2014). Therefore, the brand health index is beneficial for both financial and brand managers. That is, on the one hand it fulfils senior finance managers' needs since it is a behavioural measure based on consumer purchase behaviour, and linkable to financial measures. On the other hand it fulfils brand manager needs of having a behavioural measure that captures the lagged impact of marketing actions.

4.6. Research Methodology

4.6.1. Variable Operationalization

Brand Health Index: As mentioned earlier, I apply the Mirzaei et al.'s (2014) proposed measure of brand health which is based on publicly available sales data from the COMPUSTAT data base. Following their methodology I compute brand health as follows:

$$BHI_{it} = \left(\frac{\text{Sum of Growth}}{\text{Standard Deviation of Growth}} \right) \quad (1)$$

$$\mathbf{BHI}_{it} = \left(\frac{\sum_{t-T}^T \mathbf{Growth}}{\mathbf{SD}_{gi(t-T,t)}} \right) \quad (2)$$

$$\mathbf{Growth}_{it} = \frac{(\mathbf{Sales}_{it} - \mathbf{Sales}_{it-1})}{\mathbf{Sales}_{it-1}} \quad (3)$$

$$\mathbf{SD}_{gi(t-T,t)} = \sqrt{\frac{\sum_{t-T}^t (\mathbf{Growth}_{it} - \mathbf{Growth}_{i(t-T,t)})^2}{T-1}} \quad (4)$$

Where growth_{it} is the growth of firm i at time t , $\text{SD}_{gi(t-T, t)}$ denotes the growth standard deviation of brand i for a period of T years (T equals time) from $t-T$ to t . Growth is calculated as the relative difference between current period sales and sales in the previous period last period sales.

Advertising Spending: To estimate the advertising spending patterns following Broadbent (1979), Rizzo (1999) and Shankar, Azar, and Fuller (2008), I apply the Koyck (1954) model and create an Adstock variable. Adstock captures the distributed lag impact of past advertising spending considering a decay rate of λ . Koyck (1954) argues that the impact of advertising spending decays geometrically, such that the impact of this year's spending on the next three years would decay on a rate of λ , λ^2 , and λ^3 respectively. Since the data interval is annual, following Shankar, Azar and Fuller (2008) I consider λ equal to 0.2 which is in line with $\lambda=0.6$ of Clarke (1976) for quarterly data, and the $\lambda=0.97$ of Jedidi, Mela and Gupta (1999) for weekly. (Considering λ equal to 0.97 for weekly data, then annual rate of λ would be $0.97^{52} = 0.2$). Adstock is computed as follows:

$$\mathbf{ADSTOCK}_t = (1 - \lambda)\mathbf{AD}_t + \lambda \mathbf{ADSTOCK}_{t-1} \quad (5)$$

In equation 5, the current Adstock is a function of current term advertising spending (AD) and the Adstock for the previous year. I compute the Adstock of the first year as follows:

$$\mathbf{ADSTOCK}_t = \mathbf{AD}_t + \lambda \mathbf{AD}_{t-1} + \lambda^2 \mathbf{AD}_{t-2} + \lambda^3 \mathbf{AD}_{t-3} + \dots \quad (6)$$

Competitors' Advertising Spending: A brand's performance can be affected by competitive conditions (Capon, Farley, and Hoenig 1996; Srinivasan et al. 2009). Advertising as a marketing action is employed to affect both a brand's own and also its competitors brand share (Naik, Raman, and Winer 2005). Rizzo (1999) studying the advertising impact on price elasticity in the pharmaceutical industry, considered the competitors' advertising spending to capture its impact on a brand's sales revenue. Thus, by considering competitors advertising spending in the advertising-brand relationship, it is possible to capture a more realistic picture of advertising effectiveness. Following Rizzo (1999), I operationalize competitor advertising spending as the average competitors' advertising spending at time t excluding the advertising spending of brand i . Given that in this paper I use the Adstock concept, I calculate competitors Adstock of brand i at time t as the average competitors' Adstock at time t excluding the Adstock of brand i . Relative competitors Adstock is computed as the ratio of its own brand Adstock to average competitors Adstock.

4.6.2. Research Method to Capture the Advertising Diet

To study a brand's advertising diet, I apply the Kernel distribution function ((Parzen 1962) which is a nonparametric method of distribution estimation. To estimate the density of an unknown distribution the Kernel density estimation is an efficient method which captures the shape of the distribution (Worton 1989). Kernel density allows us to estimate brand advertising spending patterns without presuming that the distribution is normal. Since I have a range of healthy and unhealthy brands, I expect to observe different distribution shapes which may not necessarily be normal shapes.

I apply the one-dimensional and two-dimensional Kernel distribution estimations (known as heat maps). I draw two-dimensional heat maps for each brand, to examine the

distribution of the brands' relative advertising stock throughout time. For instance if a brand is healthy in 2012, a two dimensional heat map provides information about brand's advertising spending patterns for the years prior to 2012. Donthou and Rust (1989) applied Kernel distribution estimation to geographic customers' densities. Comparing Kernel distribution estimation to other methods such as histograms, and bivariate normal distribution, they established the superiority of Kernel density in estimating the distribution.

4.6.3. Data Description

The current study is longitudinal and examines the advertising spending behavioural diets of healthy/unhealthy brands on BHI for 13 years from 2000 to 2012 encompassing the pre-and post-global financial crisis (GFC). As mentioned earlier in this study in response to calls for research on effectively branding services, measuring and optimizing the value of a service (Ostrom et al. 2010), I focus on service-providing sector as the main contributor to GDP (around 85%).

Three industries in the US market were studied over 13 years: airlines (7 brands, 91 observations), banking (10 brands, 130 observations), and department stores (7 brands, 91 observations) among the top 15 industries contributing to the GDP (The US Bureau of Economic Analysis 2013) are studied. Applying the research model into several industries enables us to test the model applicability and generalizability.

Since brands could be perceived differently in different countries and markets due to country-specific characteristics such as customers, and legal and economic factors, I focused on one country. I chose the US market, since it is a dynamic marketplace with multiple brands in each industry. Moreover brand building efforts are more established in the U.S market compared to emerging markets such as Asia.

I based the research model and empirical investigation on COMPUSTAT data base. Since this study focuses on the brand level, and due to the fact that COMPUSTAT provides only corporate level data, I chose those firms and brands that first, operate under corporate branding (e.g., their corporate name is their brand name), and second, have available data for sales, and more importantly advertising spending over 13 years between 2000 to 2012. The brands studied in each industry are the major brands that count for over 80% of the market share.

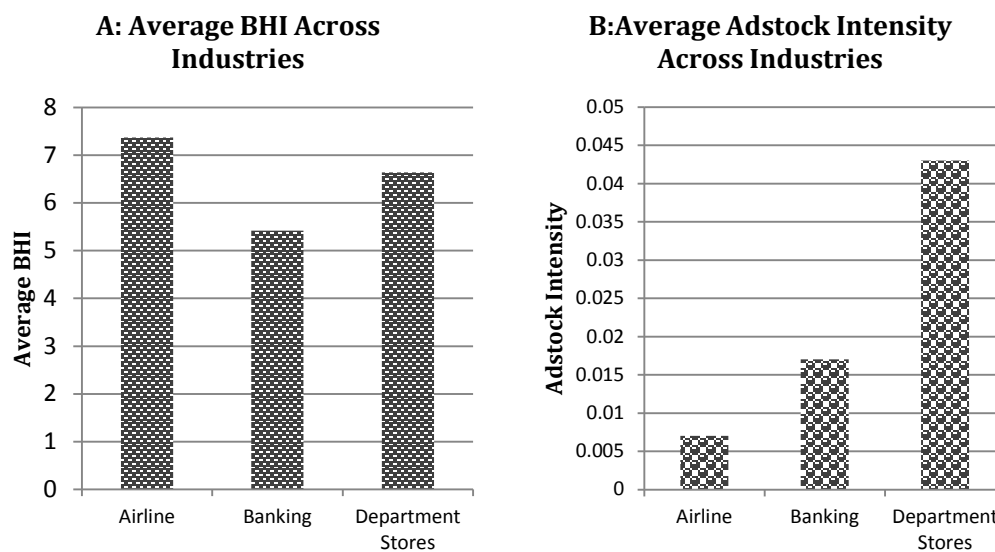
With regards to brand health index, I compute the BHI on a 9-year base as the most robust time span (Mirzaei et al. 2014). Mirzaei et al (2014) computing BHI on different bases from a 5-year base to a 10- year base, examined the association between BHI and financial measures, ROA, and EPS. They found that computing BHI on 9-year base is more significantly associated to ROA, and EPS. Computing BHI on a 9-year base means that BHI at each time point is a function of its last 9 years' sales growth and sales growth volatility. For instance, BHI in 2002 is a function of sales growth and sales growth fluctuations between 1994 and 2002. As another example, BHI in 2009 is a function of sales growth and growth fluctuations between 2001 and 2009, and similarly for other years.

4.7. Empirical Analysis

4.7.1. Descriptive Statistics

Figure 4.1 shows the descriptive statistics of the sample including the average Adstock, and average BHI across industries. The unit of analysis in this study is corporate brand.

Figure 4.1: Average of BHI and Adstock Intensity across Industries



Note: BHI: Brand Health Index

On average the Adstock intensity in the airlines category is 0.007 which is the lowest as opposed to the department store category with the highest Adstock intensity at 0.043. Adstock is also relatively high in the banking industry with 0.017. With regards to BHI magnitude, the average BHI ranges from 5.42 in banking to 7.37 in the airline industry.

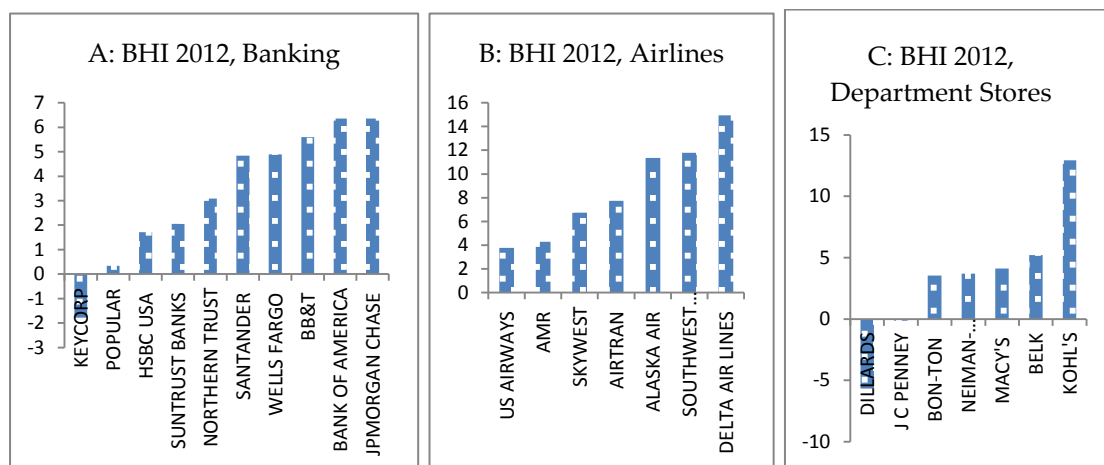
4.7.2. Brand Health Evaluation across Industries

The brand health index (BHI) has been computed on 9-year bases for brands across the three industries. In the banking industry, as shown in figure 4.2, panel A, JP Morgan Chase, Bank of America, and BB&T are the top three healthy brands. On the other hand Keycorp is

the unhealthiest brand in this category. Similarly, Delta, and Southwest have topped the healthy brands charts in the airline industry, although US Airways, and AMR are the unhealthiest brands. In the department stores category, Kohl's is by far the healthiest brand followed by Belk and Macy's. Dillard's and JC Penny are the unhealthy brands due to negative cumulative sales growth for the last 9 years.

Brands with BHI score of one standard deviation below the average were categorised as unhealthy, however brands with BHI of one standard deviation above the average were categorised as healthy brands. Brands in between were considered as relatively unhealthy/healthy. Identifying the healthy and unhealthy brands, I now discuss the advertising spending patterns, which we have called *advertising spending diets* of healthy and unhealthy brands to examine whether there are differences in their diets.

Figure 4.2: BHI across Industries, Panel A-C



4.7.3. Do Healthy Brands Spend Differently on Advertising Compared to Unhealthy Brands?

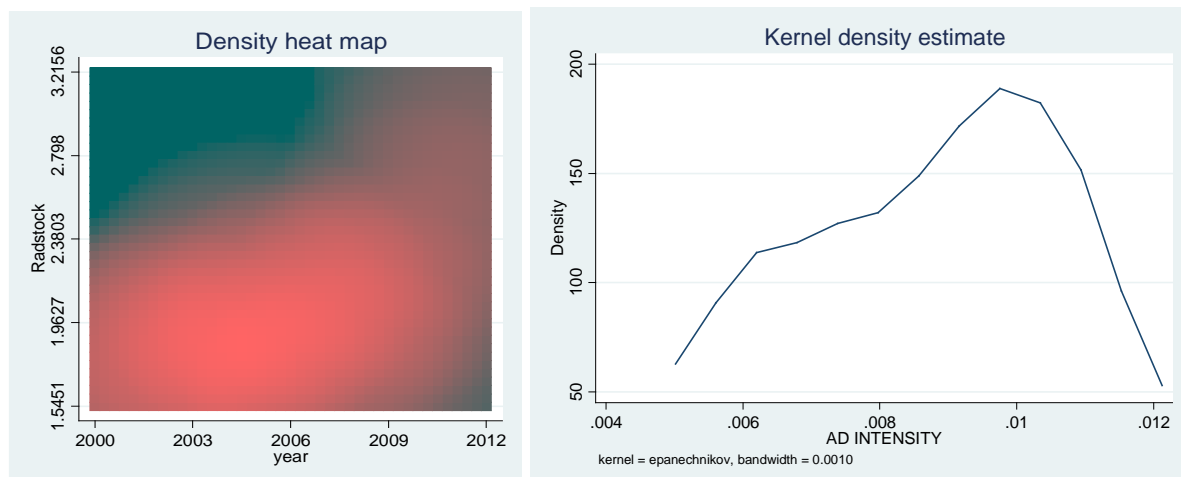
To demonstrate which style of advertising spending contributes most to building a healthy brand, in this section I discuss the advertising spending diet of brands in different levels of healthiness. If advertising has any effect, then it is expected that healthy brands take a different diet compared to unhealthy brands. I apply the Kernel distribution estimation to advertising intensity (the ratio of advertising to sales) to estimate the brands' advertising spending diets. Moreover, I apply a two-dimensional Kernel estimation (Kernel heat map) to study the brands' relative advertising stock (Radstock) patterns for a period of 13 years from 2000 to 2012. The Radstock heat map provides insights into a brand's history of advertising spending in relation to competitors. Compared to one-dimensional advertising intensity Kernel estimation, two-dimensional Radstock (relative adstock) heat maps enable us to monitor the advertising spending patterns throughout the time compared to competitors. I expect that brands that are healthy as of 2012 have spent more on advertising for the period prior to 2012 as opposed to unhealthy brands. Thus, in a heat map, for a healthy brand, I expect larger red pixels in the upper right corner of the heat map, and larger black pixels in the bottom right corner. Conversely, for unhealthy brands, I expect to see larger black pixels in the upper right corners for the period prior to 2012.

4.7.3.1. Advertising Spending Diets of Healthy Brands

In the airline industry, Delta Airlines as the healthiest brand has an almost normal advertising intensity distribution with a slight left skewness (figure 4.3, panel B). Left skewness of advertising intensity distribution means that the mode and median are greater

than the mean. In other words Delta airlines has spent more than its average intensity rate on advertising since the mode and median are greater than mean (negative skewness). In order to map Delta's advertising spending over time, I run a two-dimensional heat map which shows the distribution of advertising spending over time. Looking at the intensity heat map which shows the advertising spending patterns throughout the years, it is evident that Delta Airlines has increased its relative advertising spending, especially for the period after the financial crisis. As shown in figure 4.3, Panel A, the upper right corner of the heat map is red which implies that Delta has increased its relative advertising spending. While, its overall brand healthiness could be due to several reasons such as increasing consumer offerings, Delta Airlines' advertising spending diet has dramatically changed for the period after GFC.

Figure 4.3: Density maps of Delta Airlines (Panel A and B)



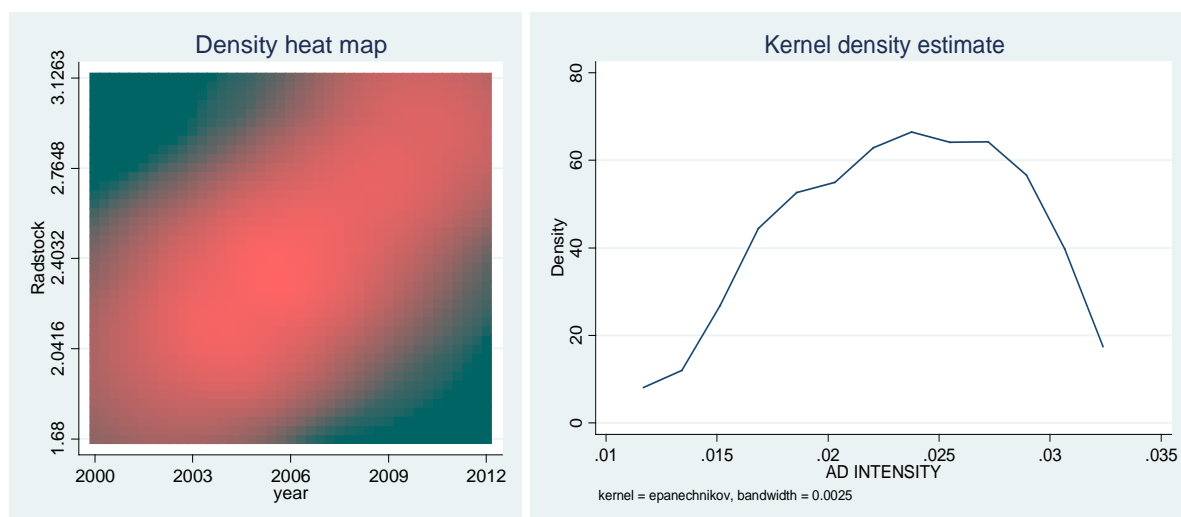
Note: Radstock: the ratio of its own brand Adstock to average competitors Adstock; Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

Similarly, the Southwest Airlines heat map depicts an increasing relative advertising stock for the period prior to 2012, both before and after the GFC. The advertising intensity distribution of Southwest Airlines is almost normal with a slight skew to the left, and its heat map suggests that Southwest Airlines has constantly increased its relative Adstock for years

prior to 2012. Regardless of the GFC in 2007-2008, Southwest hasn't cut back on its advertising spending, and stuck to its increasing relative advertising spending strategy.

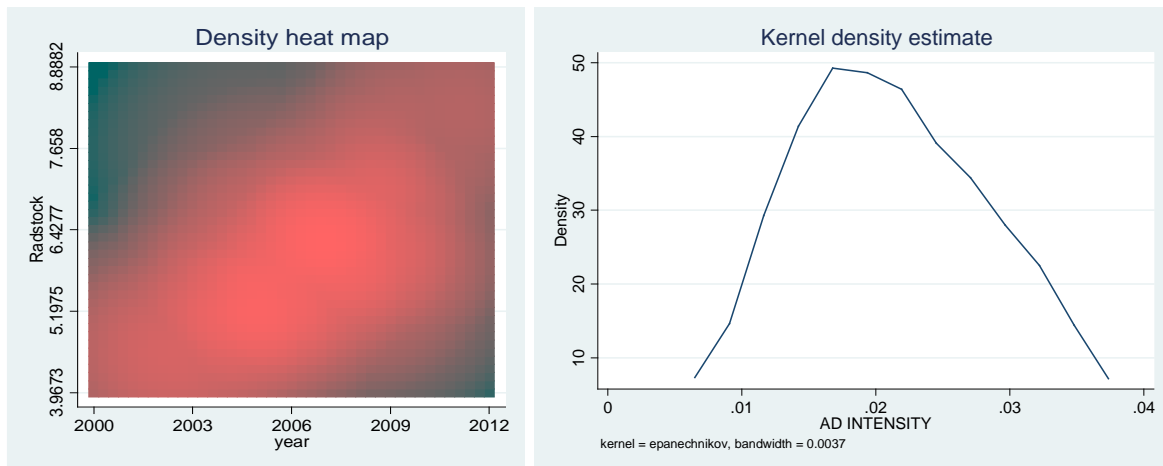
In the banking industry, JP Morgan Chase shows a similar advertising pattern. With a peak of advertising spending from 2004 to 2006 (higher heats in figure 4.5), JP Morgan Chase continued on its ascending Radstock despite the economic downturn in 2007. JP Morgan Chase stuck to its aggressive advertising diet for the period after GFC and did not cutback, although they over spent compared to other competitors. As shown in figure 4.5, its advertising spending intensity has an almost normal distribution. The pattern is similar for Kohl's as the healthiest brand in the department stores industry.

Figure 4.4: Density maps of Southwest Airlines



Note: Radstock: the ratio of its own brand Adstock to average competitors Adstock; Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

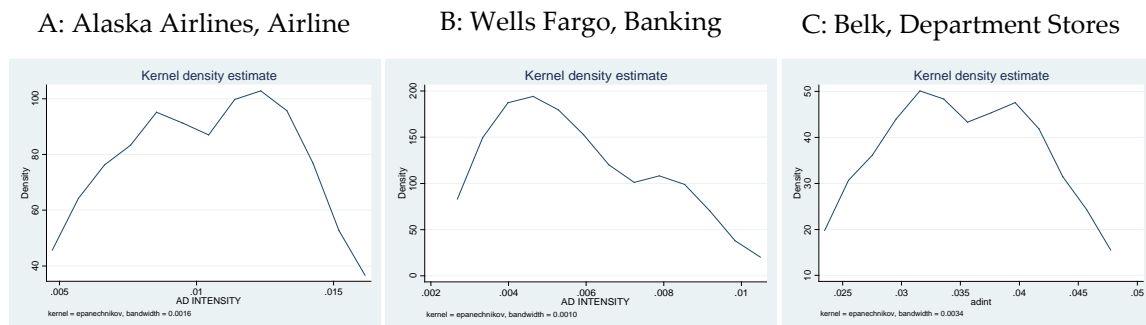
Figure 4.5: Density maps of JP Morgan Chase



Note: Radstock: the ratio of its own brand Adstock to average competitors Adstock; Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

Further analysis on advertising spending pattern of healthy brands, a *double hump* shape of advertising spending was identified. Brands with a double hump shape are healthy but not the healthiest. They tend to have a relatively high Adstock. However sometimes their relative Adstock is low, yet overall they tend to stick to a high Radstock diet. Alaska Airlines and Wells Fargo are examples of a *Double Hump* diet (see figure 4.6).

Figure 4.6: Examples of Brands with Double Hump Advertising Spending Patterns



Note: Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

4.7.3.2. Advertising Spending Diets of Unhealthy Brands

Unhealthy brands are brands with a poor advertising diet or no particular diet at all. Unhealthy and healthy brands have some major differences in their advertising spending diets. Unhealthy brands simply do not consider advertising as a significant sales influencer, since for some of them there is no specific relative advertising spending pattern over the study period (figure 4.8A). There are unhealthy brands, where this is advertising that is seen as a function of sales rather than sales being a function of advertising. Setting an advertising budget as a percentage of sales for an unhealthy brand with sales decline means that the brand is cutting back on its advertising budget and thus its relative advertising stock is low. However sometimes it might be appropriate to increase advertising spending when the brand's performance is poor.

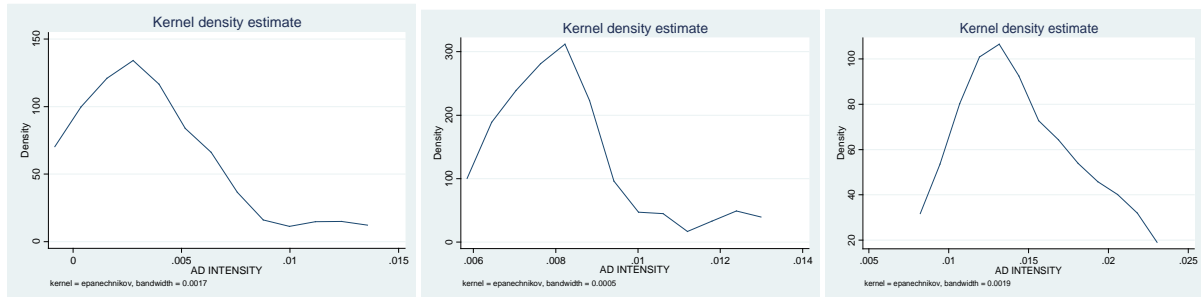
The advertising intensity patterns for the majority of unhealthy brands have an almost normal distribution with a significant right skewness. A normal pattern with right skewness means that mean is greater than mode and median. Right skewness implies that due to several positive outliers mean has been over estimated, however the majority of observations are below the average since median and mode are less than average. With the unhealthy brands, advertising intensity with positive skewness means, unhealthy brands tend to spend less on advertising, although from time to time they decide to increase their advertising budget dramatically (the right tail in Ad Intensity Kernel estimation, figure 4.7, panel A & B). They soon go back to their low rate advertising spending routine (the mode and median are less than mean). For instance AMR and US Airways in the US airline industry and Keycorp in the banking industry are among the unhealthiest brands with a right-skewed advertising spending pattern (figure 4.7).

Figure 4.7: Examples of unhealthy brands with right-skewed normal pattern

A: US Airways, Airlines

B: AMR, Airlines

C: Keycorp, Banking

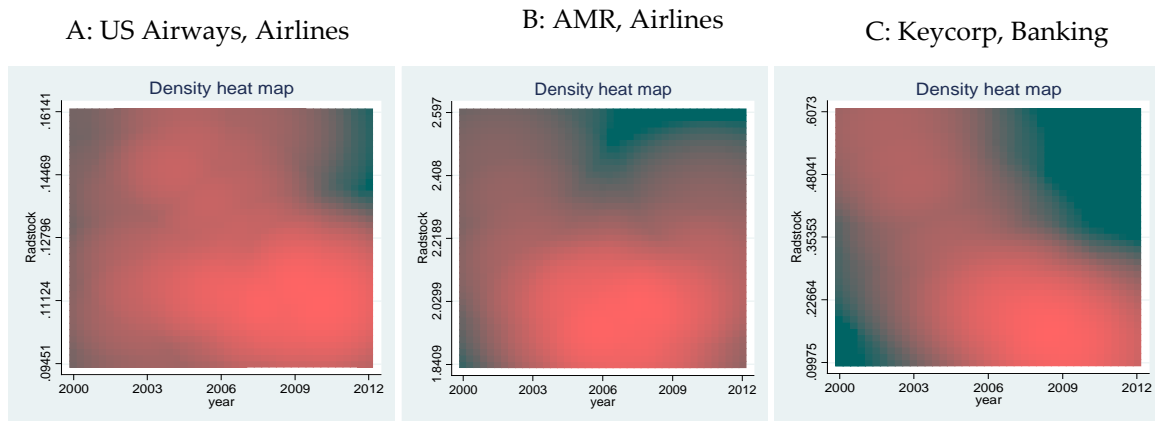


Note: Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

Looking at the Kernel density heat map of unhealthy brands, the upper right corner of the heat map is black, and the bottom right corner is red for all the unhealthy brands which depicts that unhealthy brands have had a low relative Adstock (Radstock) for the period prior to 2012. A low Radstock for unhealthy brands means that there has been no effort to increase the advertising budget compared to competitors. As shown in figure 4.8, US Airways expenditure on advertising has no pattern before and after the GFC.

This is further illustrated in figure 4.8, which shows the Radstock density heat map of unhealthy brands such as US Airways, AMR, and Keycorp. Interpreting these heat maps identifies two sub patterns: *a*) linear pattern with dark upper right corner (figure 4.8, panel C, Keycorp), and *b*) no pattern with dark upper right corner (figure 4.8, panel A, Us Airways & B, AMR Airlines).

Figure 4.8: Density Heat Maps of Unhealthy Brands



Note: Radstock: the ratio of its own brand Adstock to average competitors Adstock; Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution.

Thus I can divide the advertising spending patterns of unhealthy brands into two categories; a: brands with a normal advertising intensity pattern and linear descending heat map pattern (i.e. brands with this pattern are on a *poor* diet), and b: brands with right-skewed advertising intensity patterns, and no heat map pattern (i.e. brands with this pattern are on an *early quitting* advertising diet).

Brands with a *Poor* diet are those unhealthy brands that set their advertising budget as an almost constant percentage of sales. Such a strategy is problematic since a constant advertising intensity rate implies that advertising is a function of sales rather than vice versa. Thus, the advertising budget will go up if sales go up, and it will fall if sales go down. It may be justifiable for a healthy brand to apply such a strategy, but for an unhealthy brand with poor sales performance, setting advertising spending based on sales means that advertising is not being used effectively to reverse, stop, or slow the descending sales trends. On the other hand, a right-skewed normal pattern suggests that unhealthy brands with an *early quitting* diet, try to apply aggressive and intense advertising spending strategies to influence the descending sales trends and stimulate sales, although they soon give up, stop aggressive advertising spending and return to their low rates spending routines.

Based on the categorisation, US Airways and AMR are on an *early quitting* diet (right-skewed Ad intensity, and no heat map pattern), however Keycorp is on a *poor* advertising diet (an almost normal Ad intensity, and a linear descending heat map pattern).

Overall, looking at the advertising spending patterns of brands, I identify four main diets including *Smart* diet, *Double Hump* diet, *Early Quitting* diet and *Poor* diet. Table 4.1 summarises the explanation for each pattern.

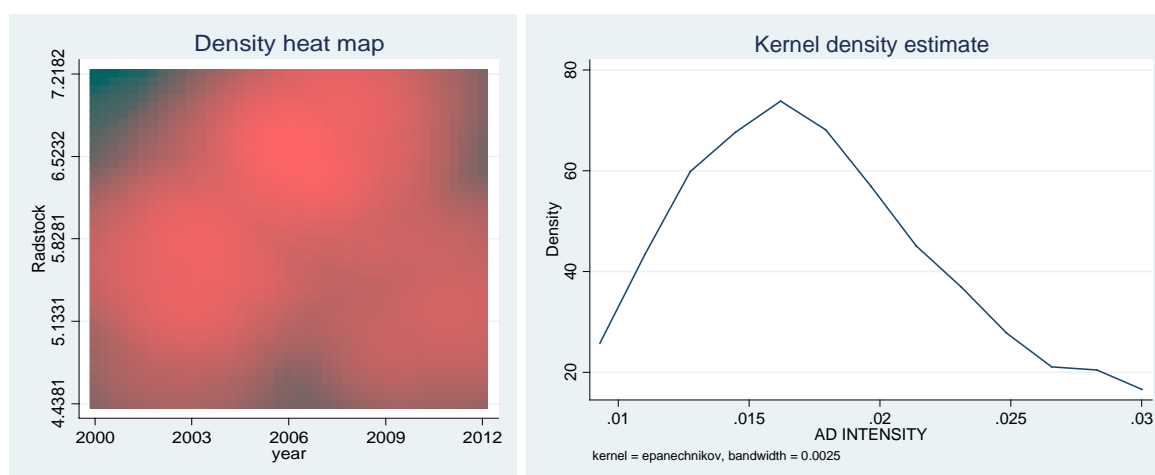
Table 4.1: Advertising Spending Diets

Diet	Description
Smart	Brands in this category follow a persistent, and increasing relative advertising spending pattern. Their relative Adstock is always high, not only when their sales revenue is surging, but also when sales are declining. Thus brands in this category spend relatively higher than competitors on advertising. These brands do not cut back their advertising spending when sales figures are dropping. Aggressive advertising spending, when the industry is struggling to generate sales is another characteristic of brands with smart advertising diets. Normal or left-skewed normal Ad intensity distribution, with Southwest Airlines, Kohl's and JP Morgan Chase are perfect examples of this category.
Double Hump	Brands in this category are those that are on a healthy advertising diet but with one or more gaps along the way. They may have stopped their smart advertising spending for a short period of time, but soon resumed it. Or they have upgraded their advertising spending and have taken their spending onto another level. The longer they stick to their intense diet, the healthier they can get. Alaska Airlines, BB&T, Wells Fargo and Belk are examples of double hump diet.
Early Quitting	Brands in this category are those that tend to spend higher on advertising, but are not able to stick to it. They irregularly take aggressive advertising spending diets, but soon give up, in most cases before seeing the results of their diet. Brands in this category suffer from under-spending or over-spending. Brands with an Early Quitting advertising diet are unhealthy brands. US Airways and AMR are some examples of brands on an Early Quitting diet.
Poor	Brands in this category act like they are quite healthy, and need no diet, although they are the unhealthiest brands with immediate need for a lifesaving diet. Simply regardless of their sales performance they have an almost constant budget for advertising. They are opposite to healthy brands with a Smart diet. Since their advertising budget is a function of their sales, and due to the fact that their sales are declining, they spend less on advertising. They have experienced their lowest and highest sales with almost the same advertising budget. There is no pattern of advertising. Keycorp, Popular and Dillard's are examples of brands in this category.

4.7.4. Intra-Industry Consistency of Findings

After classifying advertising spending habits into four different categories, and demonstrating the advertising spending patterns of healthy and unhealthy brands, I consider the question of to what extent the results are consistent across brands. In other words *is a brand's advertising diet attributable to its health across all brands*. The findings show a consistency across brands for the association between advertising diet and brand health. However, despite the general consistency across brands, there are brands where their advertising diet doesn't match their health score.

Figure 4.9: Density Maps, Bank of America



Note: Radstock: the ratio of its own brand Adstock to average competitors Adstock; Kernel density definition: a nonparametric method of estimating the shape of an unknown distribution; Ad Intensity definition: the ratio of advertising spending to brand's sales.

Bank of America, for instance, which was a healthy brand as of 2012, has an advertising spending pattern that does not fit a healthy brand's diet. Its advertising intensity pattern is normal with a slight right skewness. Moreover, its density heat map depicts no advertising spending pattern for the years prior to 2012. Thus it is likely that Bank of America, with such an advertising intensity kernel distribution and density heat map, falls in the early quitting diet category.

4.7.5. Inter-Industry Consistency of Findings

I studied three industries, airlines, banking and department stores, to examine the generalizability of the findings across different industries. In fact, I tried to answer the question of *whether healthy brands across all industries follow similar advertising diets*, and *whether healthy brands' diets are substantially different from the unhealthy brands' diet*.

The findings, which are consistent across all three industries, show that healthy brands take a different diet compared to unhealthy brands. With regard to unhealthy brands, I found that across all three industries, with no exception, unhealthy brands are on a *poor* or *early quitting* diet. In fact, I couldn't find any unhealthy brands with a *smart* diet. The advertising diet of healthy brands, with one exception (i.e. Bank of America) across all industries, are on *smart*, or *double hump* diets. Thus, across the three industries, the healthiness of a brand is attributable to its advertising spending diet.

4.8. Advertising Diet–Brand Health Typology

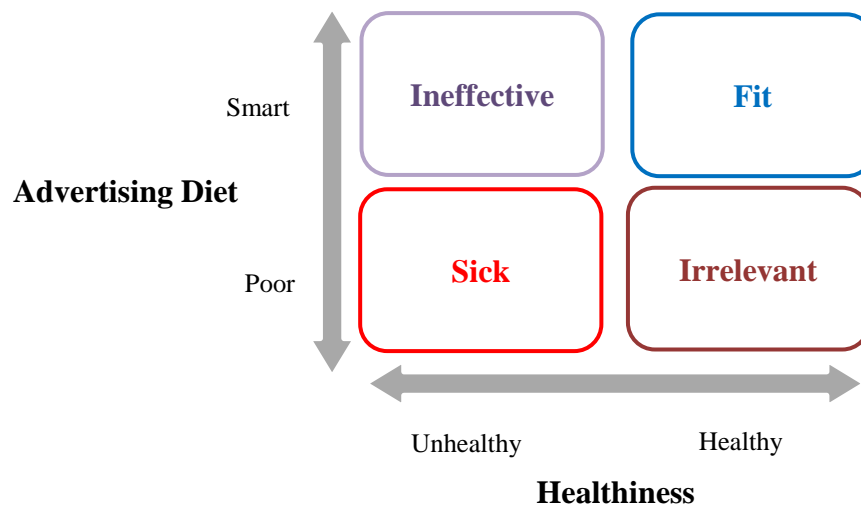
Developing effective advertising strategies without a comprehensive internal and external situational analysis can happen only by chance. Advertising, as one of the key marketing actions, can either be seen as an investment and sales generator, or it can be seen as a cost (sometimes unnecessary) or even a waste of money. It does not really depend on the managers' perspective; it actually depends on the effectiveness of advertising spending outcomes. In order to set an effective advertising spending and resource allocation strategy, it is crucial to analyse one's own brand advertising spending policies (internal analysis), and also compare them with competitors advertising efforts (external analysis).

In this study I took a long-term view, developed a practical platform to analyse a corporate brand's current advertising diet, and then judged the outcomes of different behavioural advertising diets in building healthy brands. The advertising diet framework can be used in conjunction with the brand health index to evaluate the effectiveness of each diet.

Depending on the advertising diet followed, and its brand health score, a brand can adopt an effective advertising strategy to improve its health over the long-term. To consolidate the discussion I develop an *advertising diet–brand health typology* and discuss possible scenarios, proposing effective strategies for each type.

There are four main possibilities for different combinations of an advertising diet and the healthiness of a brand. As shown in figure 4.10, brands with different combinations of advertising diet and health are categorised as *Fit*, *Ineffective*, *Irrelevant*, and *Sick*. Table 4.2 describes each type and suggests key effective strategies for brands of each type.

Figure 4.10: Advertising Diet–Brand Health Typology



Based on the proposed typology, an unhealthy brands with a *poor* advertising diet is *sick* and in immediate need of a change or upgrade to their advertising diet. They need to develop an advertising strategy (diet) set on a long-term growth trajectory, with a gentle regular increase in their relative advertising spending. A persistent gentle, unaggressive increase in relative advertising spending can help a brand to avoid quitting a healthy diet too early. However, over the short-term, a gentle increase in the advertising budget may not result in a dramatic sales increase, but over the long-term it is more likely to contribute to building a healthier brand. Alternatively, a *sick* brand may take an aggressive advertising diet with a jump in the advertising budget, but it must be consistent over the long-term for any significant improvement in brand health.

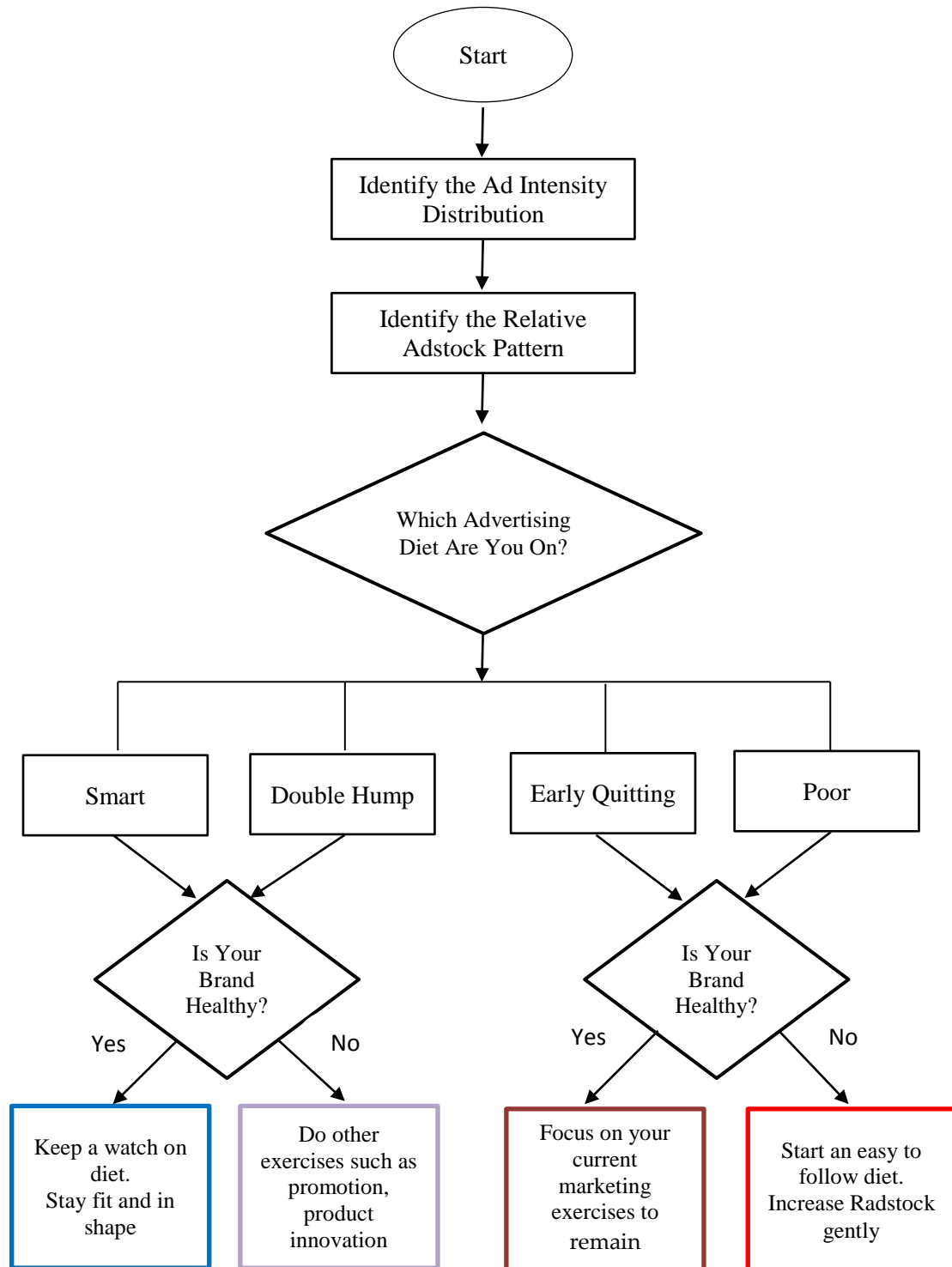
As opposed to *sick* brands, *fit* brands can continue their effective advertising diet, with a consistent higher relative advertising spending compared to competitors. Brands in the *irrelevant* category are healthy without relying much on their advertising diet. In other words, to remain healthy, brands in this category have applied other strategies and actions rather than advertising to remain healthy. Thus they should continue their current path of building healthy brands, no significant change in their marketing plan is recommended. Conversely,

brands in *ineffective* category have focused on advertising as a main marketing action, however their advertising spending strategies haven't helped these brands to build a healthy brand. Their advertising spending diet is a smart diet, although they are unhealthy. For brands in this category it is recommended to lessen the focus on advertising, and apply other marketing strategies and actions as alternative.

Table 4.2: Advertising Diet- Brand Health Typology

	Description	Strategy	Key Message
Fit	Brands in this category are on a smart or double hump diet. Their brand is healthy, and they have seen the positive outcome of their advertising diet.	Brands in this category are doing well and must stick to their effective advertising diet.	Stay fit and in shape. Keep a watch on Diet
Ineffective	Brands in this category are on a smart or double hump diet. They spend more relative to competitors, but they are not healthy brands.	Advertising spending hasn't been a major sales driver, so these brands need to shift the focus from advertising to other marketing actions such as promotion, product innovation, and pricing.	Do other exercises such as promotion, product innovation
Irrelevant	Brands in this category are healthy without a smart advertising diet. The focus of these brands is on other marketing actions such as product innovation, promotion, etc., rather than advertising.	These brands need to stick to what they are doing such as product and service quality, product variety, etc. A cautious advertising diet may be considered.	Stay fit, and focus on your current marketing exercises to remain healthy.
Sick	Brands in this category are unhealthy with a poor or early advertising quitting diet. For brands in this category, advertising is mainly a function of their sales revenue rather than vice versa. With a fixed budgeting policy, they spend more on advertising when their sales rise, and spend less when their sales fall.	For unhealthy brands with a poor advertising diet it is crucial to start an effective advertising diet. Increasing the relative advertising spending, and sticking to the diet is recommended for brands in this category. Also, to avoid an early quitting diet, brands must take an easy to follow diet, setting a relatively small increase in their advertising budget over the long-term.	Start an easy to follow, unaggressive diet with gentle consistent Radstock increase

Figure 4.11: A guideline to develop effective advertising strategies



In figure 4.11, I develop a simple practical flowchart as a guideline to set effective advertising spending diets. Applying the proposed flowchart could be usefully applied by managers in reducing the risk of decision-making, since it enables managers to have a clear

understanding of their brands' situation, set their goals and allocate advertising budget accordingly.

4.9. Conclusion

4.9.1. Conclusion of Results

Employing a long-term objective measure of brand health, I studied the advertising diet of healthy and unhealthy brands over a period of 12 years from 2000 to 2012 across three industries in the U.S., airlines, banking, and department stores. Four different advertising diets were identified namely, *smart*, *double hump*, *early quitting*, and *poor*. The findings show that healthy brands follow a *smart* or double hump diet. They consistently increase their relative advertising stock and their advertising intensity is not a fixed rate, so if their sales go down they do not cut back on their advertising spending. Conversely, unhealthy brands have a *poor* or *early quitting* advertising diet. Their advertising budget is either a constant rate of sales, or an almost fixed budget with no link to their sales. The results were consistent across the three industries. However there was one example of a healthy brand that despite being healthy, did not have a smart advertising diet, but I could not find any unhealthy brands with a smart advertising diet.

Based on different combinations of brand healthiness and their advertising diet, I identified a typology of four types of brands: *fit*, *ineffective*, *irrelevant*, and *sick*. Among all types, *sick* brands are in immediate need to adopt a healthy advertising diet and gently increase their advertising spending rate to avoid early withdrawal. Alternatively sick brands can consider retiring. In conclusion, although there is a wide range of factors that can

influence the healthiness of a brand, taking a long-term view, I found that the advertising spending diet of healthy brands is effective than unhealthy brands.

4.9.2. Managerial Implications

The findings of this paper provide several implications for managers. Firstly, brand and advertising managers can easily apply the brand health index (BHI) to measure the overall long-term performance of their brands. Since it's a behavioural, objective measure, it enables managers to evaluate the brand building outcome of their advertising spending throughout the years. This kind of objective measure should be relatively appealing to CFOs and other senior management given its objectivity and ease of calculation. The BHI could also be used to forge closer ties between advertising, marketing management and other senior management roles as they can more easily see the impact of advertising on their brands. In addition, the BHI and the advertising diet-brand health typology can be used to complement the attitudinal measures often used by brand and advertising managers in the development and evaluation of their advertising and promotional strategies.

Secondly, this study provides a framework which managers can easily use to identify and debate more clearly what kind of advertising spending diet they are following and wish to follow. This will enable managers to analyse their current situation in terms of advertising spending, before setting any new advertising strategy, or budget.

Thirdly, this study provides a framework to meet the expectations of both CFOs and other senior managers and marketers. It links advertising spending to a long-term based behavioural measure which is directly associated with customers actual purchase behaviour. Following the approach used in this study, managers can evaluate the direct impacts of advertising on sales and also its indirect impacts through brand equity.

Fourthly, this study offers a firm-specific approach to estimating advertising effectiveness that is applicable across all industries, and service and product categories. Finally, this research provides managers with a more realistic picture of their brand advertising spending effectiveness, since it considers the mediating role of competitors' advertising effects on their own brand advertising effectiveness.

4.9.3. Research Limitations and Future Directions

As with all academic research there are some limitations with the current study. Data availability is the main limitation of this study. The sample was limited to major corporate brands with available advertising spending data over a period of twelve years. It is not clear whether the results found in this study are applicable to all types of industries and contexts. Despite this I had a reasonable sample size for each category, although having a larger sample could improve the model's generalizability. These limitations, however, create opportunities for additional research to explore a wider range of industries and contexts as compared to those explored in this study. For instance, future research could be directed to replicate the current study focusing on other databases with available data for advertising spending and sales for more firms and also across a wider range of industries. Moreover, in addition to advertising, a firm's diet that uses other marketing actions such as price promotion, and product innovation can be studied to compare the overall effectiveness of each marketing action in building strong brands.

4.10. References

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CHAPTER FIVE

The Impact of Brand Health on Customer Equity

Chapter 5: The Impact of Brand Health on Customer Equity

Abstract

Purpose: The purpose of this paper is to study the interactions between brand and customer assets as two marketing assets over the long-term. Through the application of a new behavioural measure of brand health called the brand health index (BHI) I examine the impact of brand health on customer equity; the direct impact of advertising spending on customer equity, and also its indirect impact via brand health.

Design/Method/Approach: I apply two new measures to compute brand health and customer equity. I run regression on time series data for each firm and provide firm-specific analysis. In addition, in order to examine the impact of advertising on customer equity both directly and also indirectly via brand health I apply the Sobel test. I focus on major U.S. brands across three important industries including airlines, banking, and department stores for a period of 12 years from 2001 to 2012 pre- and post-GFC.

Findings: The results show that brand health is positively associated with customer equity over the long-term. Across all three industries brand health has a positive impact on customer equity. The magnitude of the BHI impact on customer equity varies from 0.11 in the airlines industry to 0.4 in the department stores industry, which means one unit change in brand health is resulted in 0.11 unit change in customer equity in airlines and 0.40 unit change in department stores. Moreover brand health can improve the advertising impact on customer equity. I demonstrated that building healthy brands can increase customer equity. Examining the impact of advertising on customer equity, I demonstrated that advertising not

only influences customer equity directly, but advertising also has an indirect positive impact on customer equity via brand health.

Practical Implications: Firstly, this study provides a mechanism so that managers can easily compute objectively a brand's health, and then quantitatively estimate the contribution of building healthy brands to customer equity. Secondly, the findings of this research help managers to judge the impact of advertising spending on marketing assets quantitatively. Overall, the findings enable managers to monitor objectively the contribution of brand building efforts such as advertising spending on customer equity and future cash flows.

Originality/ Value: To the best of my knowledge, this paper is one the first to study the effect of a behavioural measure of brand health on customer equity quantitatively. The findings of this paper extend the knowledge of the relationship between brand and customer asset interaction by developing an objective behavioural and applicable framework to monitor the brand health–customer equity relationship.

Keywords: Brand Health, Customer Equity, Adstock, Advertising Spending, Brand Equity

Paper type: Research Paper

5.1. Introduction:

Customers and brands are firms' primary intangible assets (Gupta and Lehmann 2003). Firms spend their resources to acquire new customers and retain existing customers (Stahl, Heitmann, Lehmann and Neslin 2012) in order to increase their current and future cash flows and ultimately firm value (Hanssens, Rust and Srivastava 2009). A customer's contribution to firm value is not limited to the profit from just one single transaction, but also to the total profit gained from a customer throughout its relationship with the brand (Kumar and George 2007). Therefore to maximize firm value, it is critical that managers can influence customers' decisions, and maximize customers' acquisition and retention rates; which are the two main drivers of customer lifetime value.

To capture all future margins generated by a customer, the concept of customer lifetime value (CLV) or in its aggregate level, customer equity (CE) (Kumar and Shah 2009) has been proposed in recent years (Gupta and Lehmann 2003). Previous research has shown a positive association between marketing actions (such as price, advertising, and promotion) and customer equity (i.e. see Blattberg, Malthouse and Neslin 2009 for a comprehensive review). In addition to marketing actions, customer lifetime value and customer equity can be affected by other intangible assets such as brand equity (Stahl et al. 2012).

However, brand building activities and customer oriented marketing actions both focus on firm profitability, but they follow different approaches in achieving the same goal (Ambler, Bhattacharya, Edell, Keller, Lemon and Mittal 2002). While the focus of brand building actions is mainly on extending the brand to new markets and acquiring new customers, customer oriented activities place the emphasis on existing customers to grow profitability (Ambler et al. 2002).

Despite all the differences in approach and focus, customer and brand assets overlap in many respects such as the fact that both focus on the customer loyalty (Leone, Rao, Keller, Luo, McAlister, and Srivastava 2006), cross-buying, and charging premium prices (Ambler et al. 2002). In theory it has been argued that a brand asset can affect customer equity through creating growth opportunities, and charging premium prices, thereby increasing customer loyalty. Despite the conceptual papers developed on the brand–customer asset relationship, little research has studied this interaction empirically. Stahl et al. (2012) recently employed a survey-based attitudinal measure of brand equity (Brand Asset Valuator) which studied the impact of brand equity on customer acquisition, retention, and profit margin as the components of CLV. Studying the car industry in the US market, they called for further research to generalise the findings beyond a single industry by considering the differences between product and service industries.

In this paper, I apply a new measure of customer equity, a macro model proposed by Lim, and Lusch (2011). I also use a new objective behavioural, long-term based measure of brand health proposed by Mirzaei, Gray, Baumann, Winzar and Johnson (2014) to examine the impact of building a healthy brand on customer equity over the long-term. Following Stahl et al. (2012), I demonstrate the impact of advertising on customer equity. Finally I examine the mediating role of a healthy brand in advertising-customer equity relationship by applying the Sobel (1982) test. To improve the model's generalizability I use the COMPUSTAT data base to study three industries, namely airlines, banking, and department stores in the U.S. market from 2001 to 2012.

The nature of contribution in this study is extending the knowledge on advertising-customer equity relationship, considering the moderating impact of healthy brands. This study contributes to the understanding of the relationship between brand oriented–customer oriented marketing actions. This is one of the first studies to examine empirically the

interaction between two marketing assets, brand and customer assets, through studying the impact of brand health on customer equity.

In the next section, I provide a review and discussion on customer equity, its definition and measurement approaches. I then discuss the brand health index, its theoretical ground, and methodology. I then discuss the customer–brand asset interactions before moving to the research methodology and findings.

5.2. Customer Equity

One of the early papers on customer equity was Blattberg and Deighton's (1996) seminal paper on creating and maximizing customer equity. Since then it has been enriched by extensive research efforts (Bick 2009). The core concept of customer equity is customer lifetime value (CLV) which is defined as “the present value of all future profits generated from a customer” (Gupta and Lehmann 2003, p.10). It has also been defined as “the discounted future income stream derived from acquisition, retention, and expansion projections and their associated costs” (Gupta, Lehmann and Ames Sturt 2004, p. 7). Simply stated, customer equity is the aggregate value of the customer lifetime value of all current and future customers (Blattberg and Deighton 1996). Since not all customers are equally profitable for a firm, it's critical to allocate different resources to different customers (Gupta, Hanssens, Hardie, Kahn, Kumar, Lin, Nalini and Sriram 2006). Customer lifetime value and customer equity as marketing assets (Hanssens, Rust and Srivastava 2009) enable managers to find the profitable customers and manage the marketing actions for different groups of customers (Kumar and Reinartz 2006).

Customer lifetime value is driven by three major sources: customer acquisition, customer retention, and customer expansion (or cross-selling) (Gupta et al. 2006). Several

models have been developed to measure the concept of customer equity. Blattberg and Deighton (1996) proposed a mathematical framework of calculating customer equity based on acquisition and retention rates. In an effort to find the optimum acquisition and retention rate to maximize customer equity, Blattberg and Deighton (1996) suggested as guidelines a list of considerations such as investing in highest-value customers first. Two of the main shortcomings of their approach are that they haven't taken the expansion (cross-selling) rate into account, and also their approach is only applicable in the direct marketing field (Bick 2009).

Rust, Zeithaml and Lemon (2000) and Rust, Lemon and Zeithaml (2004) proposed a model of customer equity which is built on three main pillars, namely, value equity, brand equity and relational equity. *Value equity* was defined as "Customers' objective assessment of the utility of a brand based on perceptions of what is given up for what is received" (Lemon, Rust and Zeithaml 2001, p. 22). Value equity itself is driven by quality, price, and convenience (Lemon, Rust and Zeithaml 2001). Sweeney and Soutar (2001) developed a four-dimensional consumer perceived value scale to examine the drivers of purchase attitude and behaviour in retail industry. All four emotional, social, quality/performance, and price/value for money were significantly associated with consumers' value creation (Sweeney and Soutar 2001). They suggested that to create consumer value, retailers should not just focus on price, and other drivers must be considered (Sweeney and Soutar 2001). There are also some mediating factors in the relationships between value and its drivers. For instance Sweeney, Soutar and Johnson (1999) demonstrated the mediating role of risk in consumer quality-value relationship. While value equity refers to objective values, *Brand equity* as the second component of customer equity suggested by Rust, Zeithaml and Lemon (2000), and Rust, Lemon and Zeithaml (2004), addresses the subjective side of value perception. Brand equity was defined narrowly as "the customer's subjective and intangible assessment of the

brand, above and beyond its objectively perceived value” (Lemon, Rust and Zeithaml 2001, p. 22). However, while value equity and brand equity are crucial in attracting new customers, it is not enough to hold and retain the customers. *Relationship equity* is required to associate the brand with customers (Lemon, Rust and Zeithaml 2001).

While value equity focuses on the functional benefits such as price and perceived quality, associated to a product purchase decision, brand equity captures the emotional benefits and benefits associated to a purchase decision. Similar to brand equity, Relationship equity focuses on emotional benefits and is considered as the social and emotional bonds between a brand and a customer. Higher relationship equity is resulted in higher brand equity.

Lemon, Rust and Zeithaml (2001) defines relationship equity as “the tendency of a customer to stick to a brand, above and beyond the customer’s objective and subjective assessment of the brand”, (p. 22). The framework provided by Rust, Zeithaml and Lemon (2000) and Rust, Lemon and Zeithaml (2004) can be used by managers as a guidelines for improving customer equity through improving its components (Bick 2009). Gupta and Lehmann (2003) and Gupta, Lehmann and Ames Sturt (2004) propose a simplified model of customer lifetime value measurement which enables managers to calculate the customer lifetime value with minimal and general information. But their proposed measure of customer lifetime value is based on certain assumptions such as constant margin rates over time, constant retention rates over time, and infinite length of project. It is acknowledge that maybe aspects of brand equity being “double counted” in a sense with the customer equity measures.

Kumar and his colleagues in a series of studies shed light on customer lifetime value, customer equity, and the linkage between marketing actions and customer lifetime value on one the hand, and customer lifetime value, firm value and market capitalization on the other hand (Kumar, Ramani and Bohling 2004; Kumar, Venkatesan and Reinartz 2006; Reinartz and Kumar 2003; Reinartz, Thomas and Kumar 2005; Thomas, Reinartz and Kumar 2004;

Venkatesan and Kumar 2004; Kumar and George 2007; Kumar and Shah 2009). Kumar and Shah (2009), applying what they called the *always-a-share* approach, proposed a framework to measure customer lifetime value. According to Kumar and Shah (2009), the always-a-share approach assumes that customers are always associated with the firm and never terminate their relationship. The level of marketing contacts directed towards customers, the probability of a customer purchasing at each time, and the margin contribution of customers at each time are the three aspects of the Kumar and colleagues' CLV model that must be predicted before computing CLV (Kumar and Shah 2009).

Stahl et al. (2012) classify all the existing models of customer lifetime value measurements into two categories: the simple retention models, and the Markov migration models. While the simple retention models assume that a customer is acquired, and then retained, the Markov migration models assume that a customer can temporarily move in and move out. In other words in Markov migration models a customer can initially purchase from brand A, and then switch to brand B, and again return to brand A, after several time periods (Stahl et al. 2012).

Considering all the approaches discussed above as micro models of CLV and customer equity measurement, Lim and Lusch (2011) propose a new framework for measuring customer equity at the macro level. Their macro model of customer equity is a process model based on readily available data. Their process model of customer equity consists of four steps: annual sales generate sales margins, annual sales margins generate stock returns, annual stock returns reflect sales margin capitalization, and finally customer equity can be approximated from "sales margin capitalization" (Lim and Lusch 2011, p. 650). I will discuss the Lim and Lusch model of customer equity in more detail later in the methodology section.

5.3. Brand Health Index: An Objective Long-Term Based Measure

Managers are under pressure to perform in the short-term yet must balance the need to achieve short-term results against long-term strategic goals. Whilst understandable given the circumstances such myopic management has been increasingly criticised because of possible detriment to a firm's long-term goals. It has been well acknowledged in the literature that the impact of some marketing actions such as advertising can go beyond the current term and last for years (Clarke 1976; Mizik and Jacobson 2008; Ataman, van Heerde and Mela 2010). Marketing actions can first touch customers' thoughts, feelings, and hearts, and are reflected in subjective concepts such awareness, association, or attitude change (Aaker 1996). Any effective marketing action will eventually pay off in terms of customers' actual purchase behaviour (Keller and Lehmann 2006). However, the impact of marketing actions, such as advertising spending might take some time to be reflected in "concrete" numbers (Hanssens et al. 2009). For this reason it has been argued that short-term measures of brand building performance evaluation are not rich enough to capture the lagged impacts of marketing actions on building healthy brands (Mirzaei et al. 2014).

The impact of marketing actions can be reflected in several stages of the brand value chain from subjective customer mind set measures (e.g., knowledge, attitudes, attachment) to objective market based measures (e.g., revenue premium, price premium), and finally financial performance (Keller and Lehman 2006). Attitudinal measures of brand performance, which are mostly survey-based, can provide valuable diagnostic insights for managers (Sriram et al. 2007), although they depend on the ability of consumers to report their preferences (Park and Srinivasan 1994). On the other hand, behavioural measures of brand performance are objective and of greater relevance to senior managers. Kumar, Pozza, and Gonesh (2013), conducting a meta-analysis, argue that managers prefer behavioural measures to judge the contribution of marketing actions because they can be easily linked to

sales, revenue, and return, terms and concepts which are the common language of CFOs and CEOs.

However senior managers tend to use behavioural measures, the main concern for marketers is that existing behavioural measures are short-term oriented, while marketing efforts might have some lagged impacts appearing in the long-term (Mizik and Jacobson 2007). Thus, to meet the needs of CFOs, and CEOs, marketers and brand managers focus on short-term oriented marketing actions which may damage the brand over the long-term (Lodish and Mela 2007). Therefore it is crucial to have a long-term vision on evaluating a brand's performance. In other words, there is a need for a behavioural, objective, long-term measure of brand performance to evaluate and monitor the health of a brand over the long-term.

In response to this call, in this paper I take a behavioural approach in measuring and assessing brand performance over the long-term. I apply a new measure of brand performance proposed by Mirzaei et al. (2014) called the *Brand Health Index* (BHI) which is grounded on two main components of long-term brand value model suggested by Keller and Lehmann (2009). These components are *Persistence* (i.e., “the extent to which a customer’s spending can be sustained over time”, p. 10) and *Growth* (i.e., “the extent to which current customers increase their spending over time, and new customers are attracted”, p. 10).

Over the long-term, continuous and persistent sales growth implies that brand is continuously appealing to its customers and performing well. A brand with persistent sales growth over the long-run is defined as *healthy*, since it is able to adopt effective marketing strategies in response to the customers’ changing tastes over time and as a result to keep the sales growth high not for just one or two periods, but also over an extended time frame (say 5 to 10 years and beyond). Therefore a healthy brand is a brand with high growth rates and low growth rate volatility over the long-term.

BHI is objective, based on publically available data, and has a long-term perspective. It can be estimated at different firm levels from corporate to brand, and sub-brand level. BHI is applicable across most, if not all, industries. More importantly the brand health index has incremental financial information since it is significantly and positively associated with financial measures including return on assets (ROA) and earning per share (EPS) (Mirzaei et al. 2014). Therefore, the brand health index is beneficial for both financial and brand managers. That is, on the one hand it fulfils senior finance managers' needs since it's a behavioural measure based on consumer purchase behaviour, and linkable to financial measures. On the other hand it fulfils the brand managers' needs for a behavioural measure that captures the lagged impact of marketing actions.

5.4. Brand and Customer Assets

Brand and customer assets, being two critical marketing assets, are associated in many ways. Customer loyalty, for instance, is the focus of both brand equity and customer equity (Leone et al. 2006). Both brands and customer oriented marketing actions can affect a firm through acquiring new customers, encouraging cross-buying, charging a premium price and reducing the marketing costs (Ambler et al. 2002). Brand and customer assets must be seen as two sides of a coin (Ambler et al. 2002). Customer relationship development and brand building strategies can be focused at different levels across different industries. For instance in some industries, especially where customers are easily addressable, the customer relationship development can be focused in parallel with brand building efforts (Bick 2009).

Regardless of being brand-oriented or customer-oriented, brand building marketing actions can influence customer equity and vice versa. Therefore it's critical to take both brand

and customer assets into account when making optimal marketing decisions (Ambler et al. 2002). Despite all the similarities and overlaps, however, brand and customer assets differ in several aspects. Firstly, while a brand is an asset, customer equity is the value of an asset (Ambler et al. 2002). Secondly, customer equity focuses on the bottom-line, but brand building efforts emphasise the effectiveness of marketing actions in creating brand awareness and image and, eventually, the bottom-line (Leone et al. 2006). Thirdly, a brand asset is more effective in extending to new products and acquiring new customers, while customer equity is more effective in increasing the purchase of current products by existing customers (Ambler et al. 2002).

Whilst considerable prior research has examined the relationship between marketing actions and brand performance, marketing actions and customer lifetime value and customer equity, little work has been done on the interaction between brand and customer assets with and without accounting for marketing actions. Only recently has the impact of brand equity on customer retention, acquisition, and profit margin been examined as key components of customer lifetime value in the US automobile industry (Stahl et al. 2012). Using the Brand Asset Valuator (BAV) as the brand equity measure Stahl et al. (2012) found some mixed associations between the components of customer lifetime value and the BAV pillars. For instance they found that brand differentiation is associated with higher customer profitability and lower customer acquisition and retention. In this paper, building on the measure proposed by Mirzaei et al. (2014) I compute the brand health index, and examine the impact of brand health on customer equity.

To compute customer equity as discussed earlier, a range of approaches and methodologies have developed over the years which can be classified into micro models of customer equity (Lim and Lusch 2011). They are micro models since their unit of analysis is individual customers. Micro models have a bottom up approach and focus on factors such as

frequency of purchase or purchase size (Lim and Lusch 2011). To compute customer equity based on micro models, access to individual customers transactional records is required. In addition micro models are built on several pre-set assumptions, thus micro models are not easily applicable. Alternatively Lim and Lusch (2011) propose a new macro, top down approach to estimate customer equity. Their model is based on firm level publicly available data from financial statements. In this study I apply the Lim and Lusch's (2011) macro model to compute customer equity, and examine the impact of brand health on customer equity as the dependent variable.

While customer equity is defined as “the discounted future income stream derived from acquisition, retention, and expansion projections and their associated costs” (Gupta, Lehmann and Ames Sturt 2004, p. 7), brand health is defined as “one which is able to adopt effective marketing strategies in response to customers’ changing tastes over time and as a result to keep sales growth high not for just one or two periods, but also over an extended time-frame (say 5 to 10 years and beyond) with a low level of volatility”. In this thesis we apply the operational definition of customer equity proposed by Lim and Lusch (2011) which discussed earlier in this chapter.

5.5. Methodology

5.5.1. Variable Operationalization

Customer Equity: Following Lim and Lusch (2011) I compute customer equity as a process model from annual sales margin to sales margin capitalization. In the first step, by regressing annual changes in income (ΔY_{it}) (changes in earnings before tax) on annual changes in sales (ΔS_{it}), I estimate the association between earnings and sales for each firm as follows:

$$\Delta Y_{it} = a_0 + a_1 \Delta S_{it} + \varepsilon_{it} \quad (1)$$

Both variables are deflated by the market value of equity. According to Lim and Lusch (2011) a_1 in equation 1 represents the sales margin (“how sales changes are translated into changes in earnings”, p. 648, or “the profits generated from additional sales of one dollar”, p. 651) Obtaining a_0 , and a_1 from equation 1, two components of the annual changes in earnings, changes in sales supported margins (ΔSMAR)⁹, and changes in earnings residual from sales (ΔERFS)¹⁰ are computed as equations 2 and 3 respectively:

$$\Delta \text{SMAR}_{it} = a_0 + a_1 \Delta S_{it} \quad (2)$$

$$\Delta \text{ERFS}_{it} = \Delta Y_{it} - a_0 - a_1 \Delta S_{it} \quad (3)$$

Finally by regressing the annual stock return (R_{it}) on ΔSMAR , and ΔERFS , one can estimate the margin capitalization rate (b_1) as follows:

$$R_{it} = b_0 + b_1 \Delta \text{SMAR}_{it} + b_2 \Delta \text{ERFS}_{it} + \theta_{it} \quad (4)$$

Assuming that brand sales are generated from marketing actions, the margin capitalization rate (b_1) can be seen as the net present value of all future profits. Considering i as the risk adjusted discount rate, the present value of one dollar change in earnings would be

⁹ That portion of changes in earnings that is supported by changes in sales

¹⁰ That portion of changes in earnings that is supported by changes in other factors

(1+1/i), where 1/i is the current value of revision in all future periods earnings (Lim and Lusch 2011, p. 659). Customer equity as the revisions in market expectation of all future periods earning can be computed as (b₁-1)*i (Lim and Lusch 2011, p. 659). In other words, it is the percentage in sales-supported earnings that is expected to be continued in the future. Following Lim and Lusch (2011) I consider i, the discount rate, equal to 0.125 (12.5%). Lim and Lusch (2011) argue that “many security analysts estimated the debt equivalent value of operating leases by multiplying the annual rent by a factor of 8” (p. 659).

Brand Health Index: Building on Mirzaei et al. (2014) I measure brand health as a function of sustained growth. Following their methodology I compute brand health as follows:

$$BHI_{it} = \left(\frac{\text{Sum of Growth}}{\text{Standard Deviation of Growth}} \right) \quad (5)$$

$$BHI_{it} = \left(\frac{\sum_{t-T}^T \text{Growth}}{SD_{gi(t-T,t)}} \right) \quad (6)$$

$$\text{Growth}_{it} = \frac{(\text{Sales}_{it} - \text{Sales}_{it-1})}{\text{Sales}_{it-1}} \quad (7)$$

$$SD_{gi(t-T,t)} = \sqrt{\frac{\sum_{t-T}^t (\text{Growth}_{it} - \text{Growth}_{i(t-T,t)})^2}{T-1}} \quad (8)$$

Where growth_{it} is the growth of firm i at time t, SD_{gi(t-T, t)} denotes the growth standard deviation of brand i for a period of T years (T equals time) from t-T to t. Growth is calculated as the relative difference between current period sales and the last period sales.

Advertising Spending: To estimate the direct impact of advertising spending on customer equity and also its indirect impact via brand health, following Broadbent (1979), Shankar, Azar, and Fuller (2008), and Gijsenberg, Dekimpe, Van Heerde, and Nijs (2011), I first apply the Koyck model, and create the Adstock variable as follows:

$$ADSTOCK_t = (1 - \lambda)AD_t + \lambda ADSTOCK_{t-1} \quad (9)$$

In equation 9, the current Adstock is a function of current term advertising spending and the Adstock of the last year. Adstock captures the distributed lag impact of the past advertising spending considering a decay rate of λ for the past advertising spending. Koyck (1954) argues that the impact of advertising spending decays geometrically, therefore the impact of one year spending on the next three years would be decayed with the rate of λ , λ^2 , and λ^3 respectively. Since the data interval is annual, I consider λ equal to 0.2 following Shankar, Azar, and Fuller (2008) which is in line with $\lambda=0.6$ of Clarke (1976) for quarterly data, and the $\lambda=0.97$ of Jedidi, Mela and Gupta (1999) for weekly data (Considering λ equal to 0.97 for weekly data, the annual rate of λ would be $0.97^{52} = 0.2$). Adstock can also be calculated as follows:

$$ADSTOCK_t = AD_t + \lambda AD_{t-1} + \lambda^2 AD_{t-2} + \lambda^3 AD_{t-3} + \dots \quad (10)$$

I use the equation 10 to calculate the Adstock of the first year.

5.5.2. Model Specification

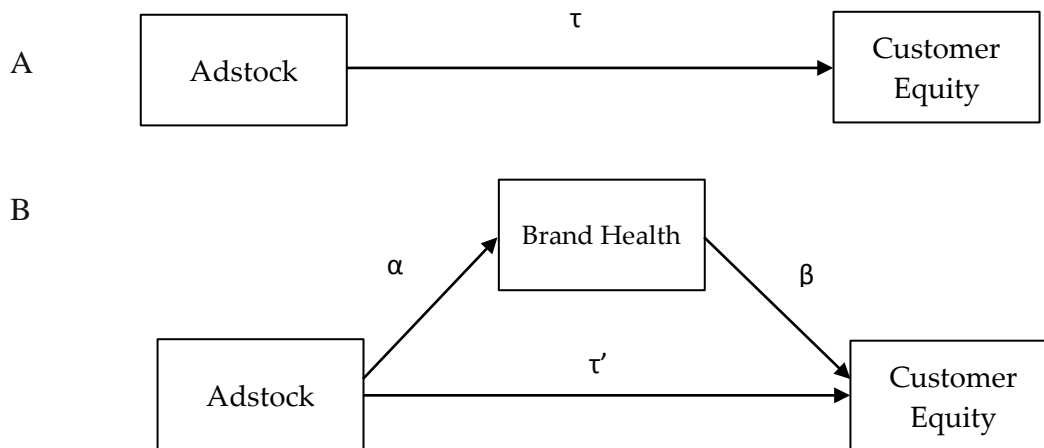
To capture the impact of brand health on customer equity, I run regression on time series data for each firm. Following Lim and Lusch (2011) in this study I provide firm-specific analysis.

I specify the model structure as follows:

$$CE_{it} = \alpha_{CE,t} + \gamma BHI_{it} + \omega_{CE,t} \quad (11)$$

In equation 11, CE_{it} denotes the customer equity of brand i at time t . similarly, BHI_{it} represents the health index of brand i at time t . In order to examine the impacts of a firm's Adstock on customer equity both directly and also indirectly through brand health, following Baron and Kenny (1986) and Stahl et al. (2012) I employ the Sobel test (Sobel 1982).

Figure 5.1: Direct and indirect effects of Adstock on customer equity via brand health



As illustrated in figure 5.1, figure 5.1A represents the direct impact of Adstock on customer equity which is an unstandardized coefficient of path τ . Figure 5.1B, represents both the direct effect of Adstock on customer equity (path τ') and the indirect impact of Adstock on customer equity via brand health as moderator. The impact of Adstock on

customer equity via brand health is defined as the product of two paths linking Adstock to customer equity via brand health ($\tau\tau' = \alpha\beta$) (Preacher and Hayes 2008).

To quantify the coefficients, three different regression models need to be examined as follows:

$$CE_{it} = \alpha_{CE,t} + \tau\Delta Adstock_{it} + \omega_{CE,t} \quad (12)$$

$$BHI_{it} = \alpha_{BHI,t} + \alpha_1\Delta Adstock_{it} + \omega_{BHI,t} \quad (13)$$

$$CE_{it} = \alpha_{CE,t} + \tau'\Delta Adstock_{it} + \beta_1\Delta BHI_{it} + \omega_{CE,t} \quad (14)$$

In the above equations, CE_{it} , represents the customer equity of brand i at time t , BHI_{it} denotes the brand health index of brand i at time t . Also $\Delta Adstock_{it}$ represents the changes in Adstock of brand i at time t from $t-1$. Moreover ω represents the error term.

5.5.3. Data Description

The data to empirically test the model is based on the COMPUSTAT database, with the aforementioned variables computed over a period of twelve years from 2001 to 2012. This time period will enable us to capture the interactions between brand and customer assets before and after the global financial crisis (GFC).

This study focuses on the brand level, and due to the fact that COMPUSTAT provides only corporate level data, I chose those firms and brands that, firstly, operate under corporate branding (e.g., their corporate name is their brand name) and, secondly have available sales, income, stock return, and advertising data for 12 years from 2001 to 2012. The brands studied in each industry are the major brands that count for over 80% of the market share.

Focusing on service-providing sector with almost 85% contribution to GDP (The US Bureau of Economic Analysis 2013), three industries in the US market were studied over 12 years – airlines (7 brands, 84 observations), banking (10 brands, 120 observations), and

department stores (7 brands, 84 observations). The aforementioned industries are among the top 15 major GDP contributing service industries (The US Bureau of Economic Analysis 2013). Since brands could be perceived differently in different countries and markets due to country specific characteristics such as customers, legal and economic factors, I focused on one country. I chose the U.S. market, since it's a dynamic marketplace with multiple major brands in each industry. Moreover branding efforts are more established in the U.S market compared to other markets. Focusing on U.S. brands, I retrieve the annual sales records, income and stock returns of brands with advertising spending data available for the study period.

I compute the BHI on a 9-year base as the most robust time span (Mirzaei et al. 2014). Computing BHI on different bases from 5-year base to 10 year base, Mirzaei et al. (2014) examined the association between BHI and financial measures, ROA and EPS. They found that BHI on a 9-year base is more significantly associated with ROA, and EPS. BHI on a 9-year base means that BHI at each point in time is a function of its last 9 years sales growth and sales growth volatility. For instance, BHI in 2002 is a function of sales growth and sales growth fluctuations between 1994 and 2002. As another example, BHI in 2009 is a function sales growth and growth fluctuations between 2001 and 2009, and similarly for other years.

The unit of measurement for all the study variables, namely brand health, customer equity, and adstock is corporate brand level.

5.6. Empirical Analysis

Table 5.1 presents the descriptive statistics for all three main variables, Adstock, brand health, and customer equity. On average, the Adstock intensity in the airlines category is 0.007 which is the lowest as opposed to the department store category with the highest Adstock intensity at 0.043. Adstock is also relatively high in the banking industry compared to airline industry with 0.017. With regard to BHI magnitude, the average BHI ranges from 5.42 in banking to 7.37 in the airlines industry.

Regarding the customer equity, the average varies from 0.26 in the airlines industry to 0.47 in the banking category. It means that on average 26 and 47 cents of sales supported earnings will be continued in the future respectively for airlines and banking industries. However at the first glance the link between brand health and customer equity looks inconsistent, but since the numbers for brand health and customer equity in table 5.1 are unstandardized, therefore they are not comparable across industries. I later provide standardised industry-specific and firm-specific discussions for the link between BHI and customer equity which can be compared across industries.

Table 5.1: Deceptive statistics on adstock, brand health, and customer equity across industries

	Average Adstock Intensity	Average Brand Health	Average Customer Equity
Airline	0.007	7.37	0.26
Banking	0.017	5.42	0.47
Department stores	0.043	6.64	0.38

The results for sales supported income, the sales margin of a one dollar sales increase, (i.e. the first part of table 5.2) summarises the results of the OLS regression for equation 1. In the airlines industry, the sales margin (α_1) of a one dollar sales increase is almost three times greater (33 cents on average) compared to the other two industries. The sales margin is quite

similar across banking and department stores with 11 and 10 cents per dollar respectively. R-square varies from 0.24 to 0.37 which is in line with the 31.4 R-square of Lim and Lusch (2011).

The results for the sales capitalisation rate (i.e. the second half of table 5.2) report the regression results of equation 4. On average it's evident that the impact of sales-supported earnings (b_1) on stock return is greater than non-sales related earnings (b_2). This means that revenue is mainly driven by customers purchase than other factors. The sales-supported component of stock return in the department store sector is 8.86. In the banking industry, the value of the sales-supported component (b_1) of stock return is more than twice the non-sales related component (b_2). The average R-square for equation 4 varies from 0.31 to 0.48 for banking and department stores industries.

Table 5.2: Regression results of equation 1 (sales-supported income)

	Airlines	Banking	Department Stores
Equation 1			
a_0	0.05	0.003	0.006
a_1	0.33	0.11	0.10
R-square	0.37	0.25	0.24
Equation 4			
b_0	-0.001	0.02	-0.21
b_1	3.09	4.79	8.86
b_2	2.4	2.31	6.89
R-square	0.43	0.31	0.48

Sales supported income" is defined as that portion of changes in earnings that is supported by changes in sales

5.6.1. Linking Brand Health to Customer Equity

After reviewing the descriptive statistics, I now discuss the impact of brand health on customer equity. As shown in table 5.3, brand health has a positive impact on customer equity across all three industries. The standardised coefficients, suggest that on average, one standard deviation increase in brand health resulted in an 11% increase in customer equity

across the airlines industry. The positive impact of brand health on customer equity is even stronger across banking and department stores with 20% and 40% respectively per one standard deviation increase in brand health.

Table 5.3: The association between brand health and customer equity

	Brand Health Standardised Coefficient	R-square
Airline	0.11	0.17
Banking	0.20	0.22
Department stores	0.40	0.21

In this study instead of running a pooled regression combining all brands, firm-specific analysis has been provided. For instance in airline industry, the association between brand health and customer equity is significantly positive ($\beta=0.76$, $t\text{-value}= 3.79$, and $p\text{-value}<0.05$) for Alaska Airline.

5.6.2. The Impact of Advertising on Customer Equity

Following Stahl et al. (2012), in this section I study the impact of advertising spending on customer equity both directly and also indirectly via brand health.

5.6.2.1. Direct Impact

As reported in table 5.4, advertising which here is operationalized as Adstock has a strong positive impact on customer equity across all three industries. On average in the banking industry there is a 9% positive direct impact of advertising on customer equity. Advertising is also crucial in the department store and airline industries to create customer equity with 28% and 25% impact respectively. The average R-square of 0.26 to 0.31 across brands suggests a strong linear relationship between advertising and customer equity.

Table 5.4: Direct impact of advertising on customer equity

	Advertising (Direct)	R-square
Airline	0.25	0.31
Banking	0.09	0.26
Department stores	0.28	0.28

5.6.2.2. Indirect Impact through Brand Health

To capture the indirect impact of advertising on customer equity, considering the mediating role of brand health, I apply the Sobel test (Sobel 1982). The findings of this study, reported in table 5.5, show that advertising can appositively influence the customer equity via brand health.

Table 5.5: Indirect impact of advertising on customer equity

	Advertising (Indirect)	R-square
Airline	0.068	0.40
Banking	0.074	0.38
Department stores	0.081	0.42

On average the indirect impact of Adstock on customer equity via brand health is 6.8% in airlines industry with 40% average r-square. The positive indirect impact of Adstock on customer equity is even stronger in banking and department store categories with 7.4% and 8.1% respectively.

Applying Sobel test to capture the mediating role of brand health on advertising-customer equity relationship, it was evident that including brand health to model increases the R-2 from 9% in Airline industry to 12% in banking, and 14% in the department store industry. Beside this, the findings of Sobel test show that brand health can increase the impact of advertising on customer equity. Without including brand health, advertising has a positive impact of 0.25 on customer equity. Adding brand health to the model is resulted in

increase in the impact of advertising on customer equity. Brand health can increase the impact of advertising on customer equity up to 8.1% in the department store industry.

Overall a healthy brand can positively contribute to customer equity across all three industries.

5.7. Conclusion

Applying a new measure of brand health (BHI) I studied the impact of building healthy brands on customer equity over the long period from 2001 to 2012 across three industries. Moreover the direct impact of advertising on customer equity was examined along with its indirect impact via brand health. I applied a macro measure of customer equity proposed by Lim and Lucsh (2011). I demonstrated that building healthy brands can increase customer equity since the BHI is positively associated with customer equity across all three industries. The magnitude of the BHI impact on customer equity varies from 0.11 in the airlines industry to 0.4 in the department stores industry. This means one unit change in brand health is resulted in 0.11 unit changes in customer equity in airlines and 0.40 unit changes in department stores. Examining the impact of advertising on customer equity, I demonstrated that not only does advertising influence customer equity directly, but advertising also has an indirect positive impact on customer equity via brand health. In other words building healthy brands can positively influence and facilitate the advertising impact on customer equity.

5.8. Managerial Implications

The findings of this research provide several managerial implementations for managers. Firstly, since it was found that sales-supported earnings are greater than non-sales supported earning, therefore the findings demonstrated the importance of customer relationship development to increase the future earnings. Secondly, they shed light on the brand–customer asset relationship, as brand and customer assets being a firm’s two main marketing assets. It enables managers to compute objectively the brand health index, and then estimate

quantitatively the contribution of building healthy brands to customer equity using objective consumer purchase information. Thirdly, the findings of this research help managers to justify quantitatively the contribution of every dollar spent on marketing actions such as advertising on marketing assets. Fourthly, the applicability of the measures and methods that I used enables managers across different industries to follow the approach provided in this study to estimate brand health and customer equity, and examine their interactions.

Overall, the findings of this study enable managers to monitor objectively the contribution of brand building efforts, such as advertising spending on customer equity and all the future profits.

5.9. Research Limitations and Future Directions

As with all academic research there are some limitations with the current study. Data availability is the main limitation of this study. The sample was limited to major corporate brands with available sales, income, stock return and, advertising spending data over a period of 12 years. However I had a reasonable sample size for each category, but having a larger sample size with more brands across different industries could improve the model generalizability. These limitations, however, create opportunities for additional research to explore a wider range of industries and contexts as compared to those explored in this study. For instance, future research could be directed to replicate the current study focusing on other databases with available data for advertising spending, income, stock return and sales for more firms and also across a wider range of industries. And, since this study was limited to corporate brands, future research can replicate the current study across firms with multiple brands or at the individual brand level. Moreover in addition to advertising, future research can study a firm's other marketing actions such as price promotion and also its product innovation to compare the overall impact of each marketing action on customer equity and brand health. Future research can also be focused on applying other measures of brand health and customer equity to examine the brand–customer asset interrelationship.

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Appendix A:

Table 5.6: Major studies on customer equity measurement

Study	Assumptions	Metrics	Study level
Blattberg et al (2001)	<ul style="list-style-type: none"> • Contribution margin for each segment varies over time. • Acquisition and retention probability for each segment vary over time. • Finite projection period 	<ul style="list-style-type: none"> • Return on retention • Return on acquisition • Return on add-on-selling 	Segment level
Rust et al. (2000)	<ul style="list-style-type: none"> • The sample consumers represent the firm consumers • purchases are assumed to occur in intervals inversely proportional to the average number of purchases • Finite projection period 	<ul style="list-style-type: none"> • Retention probability • Contribution per purchase 	Firm level
Gupta and Lehmann (2003)	<ul style="list-style-type: none"> • Constant retention rate • Constant contribution margin • Infinite projection periods 	<ul style="list-style-type: none"> • Retention Rate • Average Contribution 	Firm level
Venkatesan and Kumar (2004)	<ul style="list-style-type: none"> • The future purchases are assumed to occur in intervals inversely proportional to the predicted frequency. • Finite projection period 	<ul style="list-style-type: none"> • Purchase frequency • Contribution margin • Marketing costs 	Customer level

Source: Kumar and George 2007, p.159

CHAPTER SIX

Conclusion

Chapter 6: Conclusion

6.1. Introduction

To evaluate the contribution of brand building marketing actions, taking a long-term perspective has been recommended in the marketing literature (Lodish and Mela 2007, Keller and Lehmann 2006, 2009). However, no practical platform applicable across different industries has been provided to evaluate the long-term contribution of brand building efforts. Despite all the benefits of long-term brand building focus, managers are still short-term oriented in brand performance evaluation. Such a myopic perspective has been criticised in the literature (Mizik and Jacobson 2007). What do they see in short-term approaches that they haven't seen in long-term perspectives? Conducting a diagnostic review of the brand performance measurement literature, I identified the main shortcomings of existing measures of brand performance. I demonstrated that although brands are built over the long-term, none of the existing measures objectively captures the long-term, overall performance of brands. In other words the inability in objectively measuring the long-term outcomes of brand building efforts was the main obstacle to managers taking a long-term perspective in brand performance evaluation (paper 1).

In this thesis I not only encouraged managers to value the long-term contribution of marketing actions in building brands, but more importantly I proposed a practical platform that enables managers to objectively evaluate that long-term brand performance. I developed an objective long-term based measure of brand performance called the “*Brand Health Index* (BHI)”. BHI, which is based on consumers' actual purchase behaviour, is a reflection of firms' sustained growth. BHI is positively and significantly associated with financial

measures such as return on assets and earning per share (paper 2). In paper 3 I studied the advertising spending patterns, I call it *advertising spending diet*, of healthy and unhealthy brands. I demonstrated that healthy brands take a different approach in advertising diet compared to unhealthy brands (paper 3). The fourth paper aimed to examine the impact of building healthy brands on future cash flow and customer equity. It also examined the impact of advertising on customer equity, directly and indirectly through brand health (paper 4).

This chapter summarises the findings of the four papers, draws together the overall conclusions, managerial implications, research limitations, and the possibilities for future research.

6.2. Overall Findings

Paper 1 reviewed the existing literature of brand performance measurement. Specifically, I discussed the existing brand performance evaluation metrics from three main perspectives, that is, subjectivity, auditability, and long-term/short-term horizon. Reviewing the shortcomings of all three categories, it was evident that there is a need for an objective long-term based measure of brand performance that is auditable and applicable across different industries, categories, brands, and sub-brands.

In response to this need, paper 2 aimed to develop an objective long-term based measure of brand performance. Specifically the aims of the second paper were twofold: (a) to develop an objective long-term based measure of brand health which is applicable across all industries easily auditable and based on publicly available data, (b) to examine the extent to which the proposed measure contains information incremental to the financial measures that

are the common language of senior managers. The proposed measure, the “*Brand Health Index*”, was significantly associated with return on assets and earning per share as two financial metrics. The results were consistent across all four studied industries, namely, airlines, banking, insurance, and department stores.

Paper 3 aimed at examining the contribution of advertising spending in building healthy brands. The advertising spending patterns of healthy and unhealthy brands over a period of 13 years were studied. Four different types of advertising spending diets, *Smart*, *Double Hump*, *Early Quitting*, and *Poor*, were identified. In comparison, healthy brands have a *smart* advertising diet and consistently increase their relative advertising spending, even if their sales fall. On the other hand, unhealthy brands have a *poor* advertising diet. They either set a constant advertising spending rate or an almost constant absolute budget with no link to their sales.

Finally, paper four aimed at studying the impact of brand health on customer equity. Specifically, the contribution of building healthy brands to generate greater future cash flows through increasing the customer equity was examined. It was found that the brand health is positively associated with customer equity and can moderate the impact of advertising on customer equity.

In the following section the key findings of the thesis are briefly outlined for each paper.

6.2.1. Paper 1: Measuring and Monitoring Brand Performance over the Long-Term: A Fresh Discussion on Metric Selection

In this study I reviewed the marketing performance measurement literature, and specifically discussed marketing asset metrics such as brand equity. Brand performance measures were discussed from different perspectives such as subjectivity/objectivity, tangibility/intangibility, financial/non-financial, and short-term/long-term horizon. It was evident that there is a disagreement in metric selection among managers at different levels. There are advantages and disadvantages for each category of metrics. The diagnostic power in capturing the source of brand equity is the main strength of subjective survey-based measures, although customer bias is their major limitation. On the other hand, short-term focus, and being influenced by factors other than marketing actions are the main shortcomings of existing objective measures. Moreover, the use of subjective, intangible measures is common among marketing managers, while CEOs and CFOs prefer objective behavioural metrics. In conclusion, to overcome the shortcomings of existing measures and to bridge the subjective attitudinal measures and objective metrics oriented to the short-term, I identified the need to develop an objective long-term based measure of brand performance. A measure based on consumer purchase behaviour on one hand is objective, and on the other hand is a good proxy for customers' ultimate purchase decisions. Such an objective measure must also capture the customers' purchase behaviour over the long-term since over the short-term a sales increase could be due to temporary promotions and discounts. A continuous sustained increase in sales figures over the long-term reflects general appeal for a brand and thus a healthier brand.

6.2.2. Paper 2: Developing a Behavioural Long-Term Based Measure to Monitor the Health of a Brand

Long-term brand value depends on maximizing “long-term brand persistence and growth” (Keller and Lehmann, 2009, p. 6). Based on this theory, I developed an objective measure of brand health as a function of long-term sustained growth. The primary focus was to respond to recent calls for marketing managers to become more accountable and to justify their spending on brand building strategies, and thereby to justify their overall contribution to the firm. The proposed measure enables managers to track and monitor easily the change in their brand health over the years, and use it as a direction for future decision-making. The second focus was on developing a behavioural long-term brand evaluation framework that classifies brands into four categories based on their healthiness and powerfulness indexes. The third focus was on providing insights into the financial returns of the brand building efforts. Proposing a measure of brand health based on long-term sales growth and growth variability, I made several contributions to the body of research on brand measurement.

Firstly, I proposed an objective measure of brand health, and brand powerfulness which is auditable and applicable across all industries and countries. It can also be used for multiple, single, and family branding strategies. Secondly, I developed a new framework of behavioural brand evaluation, a brand typology framework encompassing four main types of brands including *Dynamos*, *Strugglers*, *Emergers*, and *Disoriented* brands. The proposed framework enables managers to evaluate their brand status and to adopt the most effective marketing strategies and actions correspondingly. Thirdly, this study is the first to link a long-term based measure of brand health to short-term based financial measures, namely, ROA and EPS.

6.2.3. Paper 3: Is Your Brand Healthy? Which Advertising Diet Are You On?

Employing a long-term objective measure of brand health, I studied the advertising diet of healthy and unhealthy brands over a period of 13 years from 2000 to 2012 across three industries, airlines, banking, and department stores. Four different advertising diets were identified including *Smart*, *Double Hump*, *Early Quitting*, and *Poor*. It was found that healthy brands follow a smart or double hump diet. They consistently increase their relative advertising stock, their advertising spending intensity is not a fixed rate such that if their sales go down they do not cut back on their advertising spending. Conversely, unhealthy brands have a poor or early quitting advertising diet. Their advertising budget is either a constant rate of sales, or an almost fixed budget with no link to their sales. The results were consistent across the three industries. However, there were two healthy brands that, despite being healthy, didn't have a smart advertising diet, but I couldn't find any unhealthy brand with a smart advertising diet. Based on different combinations of brand healthiness and advertising diet, four types of brands were developed including *Fit*, *Ineffective*, *Irrelevant*, and *Sick*. Among all types *Sick* brands are in immediate need of taking an improved advertising diet and gently increase their advertising spending rate to avoid early quitting. In conclusion, although a wide range of factors can influence the healthiness of a brand, taking a long-term view, I found that the advertising spending diet of healthy brands is smarter than that for unhealthy brands.

6.2.4. Paper 4: The Impact of Brand Health on Customer Equity

Applying the new measure of brand health, I studied the impact of building healthy brands on customer equity over the long-term from 2001 to 2012 across three industries, airlines, banking, and department stores. In addition, the impact of advertising on customer equity directly and also indirectly via brand health was examined. I applied a macro measure of customer equity proposed by Lim and Lucsh (2011). I demonstrated that building healthy brands can increase customer equity since BHI is positively associated with customer equity across all three industries. The magnitude of the BHI impact on customer equity varies from 0.11 in the airlines industry to 0.4 in the department stores industry. Examining the impact of advertising on customer equity, I demonstrated that not only does advertising influence customer equity directly, but advertising also has an indirect positive impact on customer equity via brand health. In other words, healthy brands positively moderate the impact of advertising on customer equity.

6.3. Overall Conclusion of the Thesis

The primary focus was to respond to recent calls for marketing managers to become more accountable and to justify the contribution of their spending on brand building strategies. To this end, I proposed an objective long-term based measure of brand performance called the “*Brand Health Index*” which is auditable and applicable across all industries. It also can be used for multiple, single, and family branding strategies. The second focus was on developing a new framework of behavioural brand evaluation, a brand typology framework encompassing four main types of brands including *Dynamos*, *Strugglers*, *Emergers*, and *Disoriented* brands. The third focus was on providing insights into the financial returns of brand building efforts. I demonstrated a positive significant association between brand health and the financial measures return on assets (ROA) and earning per share (ROA).

Studying the advertising spending of healthy and unhealthy brands, I identified four different types of advertising diets including *Smart*, *Double Hump*, *Early Quitting*, and *Poor*. I demonstrated that over the long-term healthy brands have a distinct advertising diet compared to unhealthy brands. While healthy brands are on smart or double hump diets, unhealthy brands are on poor or early quitting diets. Based on different combinations of brand healthiness and advertising diet, four types of brands developed including *Fit*, *Ineffective*, *Irrelevant*, and *Sick*. Among all types, *Sick* brands are in immediate need of shifting to an improved advertising diet. In conclusion, it was evident that the advertising spending diet of healthy brands is smarter than that for unhealthy brands.

Finally, I demonstrated that building healthy brands increases the life time value of customers since the proposed brand health index was positively associated with customer equity. Moreover, healthy brands facilitate the impact of advertising on customer equity. In

other words, advertising influences customer equity directly and also indirectly via brand health.

6.4. Contribution of the Thesis

The present thesis contributes to the marketing field and more specifically to brand management and measurement. It also contributes to the advertising–brand interaction area of research. Moreover, this thesis adds to the understanding of brand–financial performance interactions and provides insights into the link between brand building efforts and financial outcomes. In the following section I discuss these contributions in more detail.

Firstly, this thesis contributes to the branding and, in particular, brand measurement literature in several ways: It proposes a new measure of brand performance called the “Brand Health Index” (BHI). This study is the first to propose an objective “long-term oriented” measure of brand health based on firms’ publicly available data. Moreover, as another key contribution, this study develops a behavioural brand evaluation typology based on the healthiness and powerfulness of brands. Additionally this study contributes to knowledge on brand–financial performance interactions by linking the long-term customer market measure of brand health to financial measures such as ROA and EPS.

Secondly, I make several contributions to the advertising–brand management field: Taking a long-term perspective for evaluating the brand building contribution of advertising efforts, this thesis studies the “advertising spending diets”, of healthy and unhealthy brands over a period of 13 years from 2000 to 2012. Moreover, I develop an advertising–brand health typology which enables managers to first analyse and identify their advertising diet and type of brand, and then set new advertising strategies to build healthier brands, shifting from poor diet to smart. I propose effective advertising strategies for each type of brand I have identified, based on this advertising diet-brand health typology.

Thirdly, this thesis contributes to the understanding of the relationship between brand oriented–customer oriented marketing actions. This is one of the first studies to examine empirically the interaction between two marketing assets, brand and customer assets, through

studying the impact of brand health on customer equity. Moreover, I studied the mediating role of brand health in advertising–customer equity relationships.

Overall I contributed to the marketing actions, marketing assets, and financial performance relationships. I studied several industries to improve the model applicability across different industries, and to test the generalisability of findings. Finally, I conducted a longitudinal study and monitored the advertising, marketing assets and financial assets interactions over the long-term encompassing both pre- and post-GFC periods. This thesis makes a unique contribution to the literature by empirically establishing the links between advertising, brand health, customer equity, and financial measures such as ROA, and EPS. This also means that future research can take the supported model as a foundation for testing in different geographic markets, (e.g, Asia), and then also for other types of industries (e.g, physical products).

Table 6.1: Research objectives and outcomes

Research Objectives	Research Outcomes
To review and study the literature on brand performance measurement	An extensive review of brand performance measurement literature was provided. Academic and industry approached in brand performance measurement were discussed. This study critically analysing the existing measures, called for a behavioural long-term oriented measures.
To propose a new measure of brand health measurement	A new long-term based objective measure to monitor the health of a brand was developed. The brand health index is applicable across different industries and is positively associated to financial measures such as return on assets and earning per share.
To study the impact of advertising spending over time on brand health;	Taking a long-term perspective for evaluating the brand building contribution of advertising efforts, this thesis proposed a new term, the “advertising spending diets”, and examined the advertising diet of healthy and unhealthy brands. Healthy brands follow a smart or double hump diet, however unhealthy brands follow either an early quitting diet or poor diet.
To examine the impact of brand health on customer equity, and to investigate the mediating role of brand health in advertising–customer equity relationship.	Applying a new macro measure of customer equity, impacts of advertising on customer equity directly and indirectly through brand health was examined. Brand health can positively mediate the impact of advertising on customer equity.

6.5. Managerial Implications

This thesis provides several managerial insights. The findings of this research are beneficial to CEOs, CFOs, CMOs, brand managers, and advertising agencies. I briefly address them here.

Firstly, the proposed measure of brand health (BHI) provides managers with a platform to evaluate objectively the long-term, overall performance of brand building efforts. Marketing managers, who argue that existing behavioural measures have a short-term focus, can use the proposed measure to monitor the health of their brands over the long-term. BHI enables them to expand the performance evaluation time span and capture the lagged impact of marketing actions. Moreover, because the proposed measure is associated with financial metrics, the contribution of brand building efforts is easily justifiable in financial terms. In other words, it enables CEOs and CFOs to interpret and estimate the financial contribution of any change in the brand health index. In other words, the proposed measure on one hand fulfils the need of CEOs and CFOs in using behavioural measures, linkable to financial measures. On the other hand, it fulfils the need of marketing managers to capture the current and lagged reflection of their actions in consumers purchase behaviour.

Secondly, managers can apply the proposed framework of behavioural brand evaluation typology to evaluate their brand status in the market place. The behavioural brand evaluation typology can be used as a guide to monitor the health and overall performance of brands. Depending on the brand type, *Emerger*, *Disoriented*, *Dynamo*, and *Straggler*, effective branding strategies can be developed.

Thirdly, the identification of different advertising diets, applied by different types of brands, enables managers to evaluate the advertising diet of their brand and then set effective

advertising strategies accordingly. Categorising brands according to the healthiness of their brand on one hand and their current advertising diet on the other, I identified four different types of brands including *Fit*, *Irrelevant*, *Ineffective*, and *Sick* brands. Drawing a strategy development flowchart, I suggested effective strategies for each type of brand. Managers can apply the proposed flowchart to identify their brand's type, and then apply appropriate strategies accordingly. Instead of repeating themselves in making advertising budget allocation decisions, or before overspending/underspending on advertising, firms can identify their advertising diet to determine which strategy suits them best.

Fourthly, this thesis provides managers with a framework to also measure and monitor the contribution of building healthy brands to future cash flows and customer equity. Since the ultimate goal of every firm is to increase customer lifetime value, thus it is crucial to examine the impact of brand building efforts on customer equity. Moreover, the proposed brand health index, and the method used in the fourth paper of this thesis, is beneficial to managers because it captures the impact of advertising on customer equity through brand health. In other words, advertising and brand managers can apply the proposed model to justify the contribution of advertising and healthy brands to future cash flows and customer equity.

6.6. Research Limitations

Since the focus of this thesis was on brands, data availability at the brand level was the main limitation of this thesis. I based the analyses on the COMPUSTAT data base, however COMPUSTAT does not provide brand level data. Thus, I were limited to corporate entities which operate under the same brand name, specifically brands with a corporate branding strategy. This also limited the number of industries to be studied. For instance, KFC and Pizza Hut as two key brands in the fast food industry are available in COMPUSTAT as parts of the Yum brands group. However, the framework proposed in this study is applicable across family brands such as Yum, but the unit of analysis in this thesis was individual brands. I focused on individual brands since I needed to capture the impact of advertising on individual brands, or the impact of individual brands on customer equity. Moreover, this thesis was limited to the US market since there weren't enough brands with available data in other countries to identify a reasonable sample size for each industry. Advertising data availability was another limitation in this study. Many firms do not disclose their advertising spending, and I needed brands with available advertising spending data for 13 years. Thus I were limited to brands with a corporate branding strategy and available data for sales, advertising, and returns in the studied industries in the US market. Similar to any other research, this thesis is based on some pre-assumptions among them a dynamic and competitive market. In a dynamic and competitive market, it is expected that brands experience different sales growth rates over a period of 10 years. Therefore in such a market the proposed measure is perfectly applicable without such a limitation.

6.7. Future Research Directions

Future research can be directed to replicate the current study focusing on other databases with available data for advertising spending and sales across more brands. New studies can re-examine the applicability and generalisability of the framework proposed in this thesis in other industries and countries. Moreover, in addition to advertising, firm diets on other marketing actions such as price promotion and product innovation can be studied to compare the overall effectiveness of each marketing action diet in building strong brands. In addition, future research might aim to examine the explanatory power of the proposed brand health index (BHI) in valuing branded businesses and also risk evaluation. Considering BHI as an objective auditable replacement for measures such as BrandZ, Interbrand, or Y&R's BAV (Mizik and Jacobson 2009; Rego, Billett and Morgan 2009), future research can focus on examining the impact of BHI on brand value, and firm risk. With regard to the impact of marketing actions on customer equity, I examined the direct and indirect impacts of advertising on customer equity via brand health. Future research can be directed to study the impact of other marketing actions such as price promotion, and product innovation on customer equity directly and also indirectly. This will enable managers to compare the effectiveness of each marketing action on customer lifetime value and customer equity.

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