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Neglected Outcomes of Customer Satisfaction

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Abstract

Although there is significant evidence that customer satisfaction is an important driver of firm profitability, extant literature has largely neglected two intermediate outcomes of customer satisfaction - a firm's advertising and promotion efficiency and its human capital performance. Based on longitudinal analyses of large-scale secondary data from multiple sources, the authors find that customer satisfaction boosts the efficiency of future advertising and promotion investments. This finding can be explained by the possibility that customer satisfaction generates free word-of-mouth advertising and saves subsequent marketing costs. In addition, customer satisfaction has a positive influence on a company's excellence in human capital (employee talent and manager superiority). This finding is highly novel, indicating that human resources managers should have a strong interest in customer satisfaction as well. Finally, the moderating influence of market concentration on both relationships is investigated. The uncovered results have important implications for marketers in their dialogue with financial executives and human resources managers.

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1 Introduction

Many academics would certainly agree that customer satisfaction is one of the most central constructs in marketing research. According to Keiningham, Munn, and Evans (2003), "both practitioners and academics have accepted the premise that customer satisfaction results in customer behavior patterns that positively affect business results." In this context, Seiders et al. (2005) state that "marketing literature consistently identifies customer satisfaction as a key antecedent to loyalty and repurchase." Furthermore, Szymanski and Henard (2001) argue that "customer satisfaction has come to represent an important cornerstone for customer-oriented business practices across a multitude of companies operating in diverse industries". Finally, Mittal and Kamakura (2001) add that "customer satisfaction management has emerged as a strategic imperative for most firms."

Indeed, customer satisfaction has attracted significant research interest over a time period of more than two decades. Particularly, researchers have dealt with theoretical and conceptual underpinnings of customer satisfaction (e.g. Fornell et al. 1996; Luo and Bhattacharya 2006; Rust et al. 2004; Oliver 1997). There is a multitude of scientific articles dealing with potential antecedents of customer satisfaction (e.g. Anderson and Sullivan 1993; Bolton and Lemon 1999; Oliver 1980; Szymanski and Henard 2001). Additionally, many studies have investigated various outcomes of customer satisfaction, which is also the focus of our research.

Figure 1 provides an overview of previous empirical work dealing with the outcomes of customer satisfaction. As can be seen, we distinguish four categories: customer-related, employee-related, efficiency-related, and overall performance-related outcomes. The last category relates to general performance outcomes which are bottom-line in nature. Most of the studies falling into this category have investigated financial performance outcomes of customer satisfaction. On an overall basis, there is significant evidence in the marketing literature that customer satisfaction is an important driver of a firm's profitability. For example, the studies by Anderson, Fornell, and Lehmann (1994) and Rust, Moorman, and Dickson (2002) report a positive impact of customer satisfaction on financial performance such as ROI and ROA. More recently, scholars find that satisfaction boosts shareholder value by increasing cash flow growth and reducing its volatility (Fornell et al. 2006; Gruca and Rego 2005).

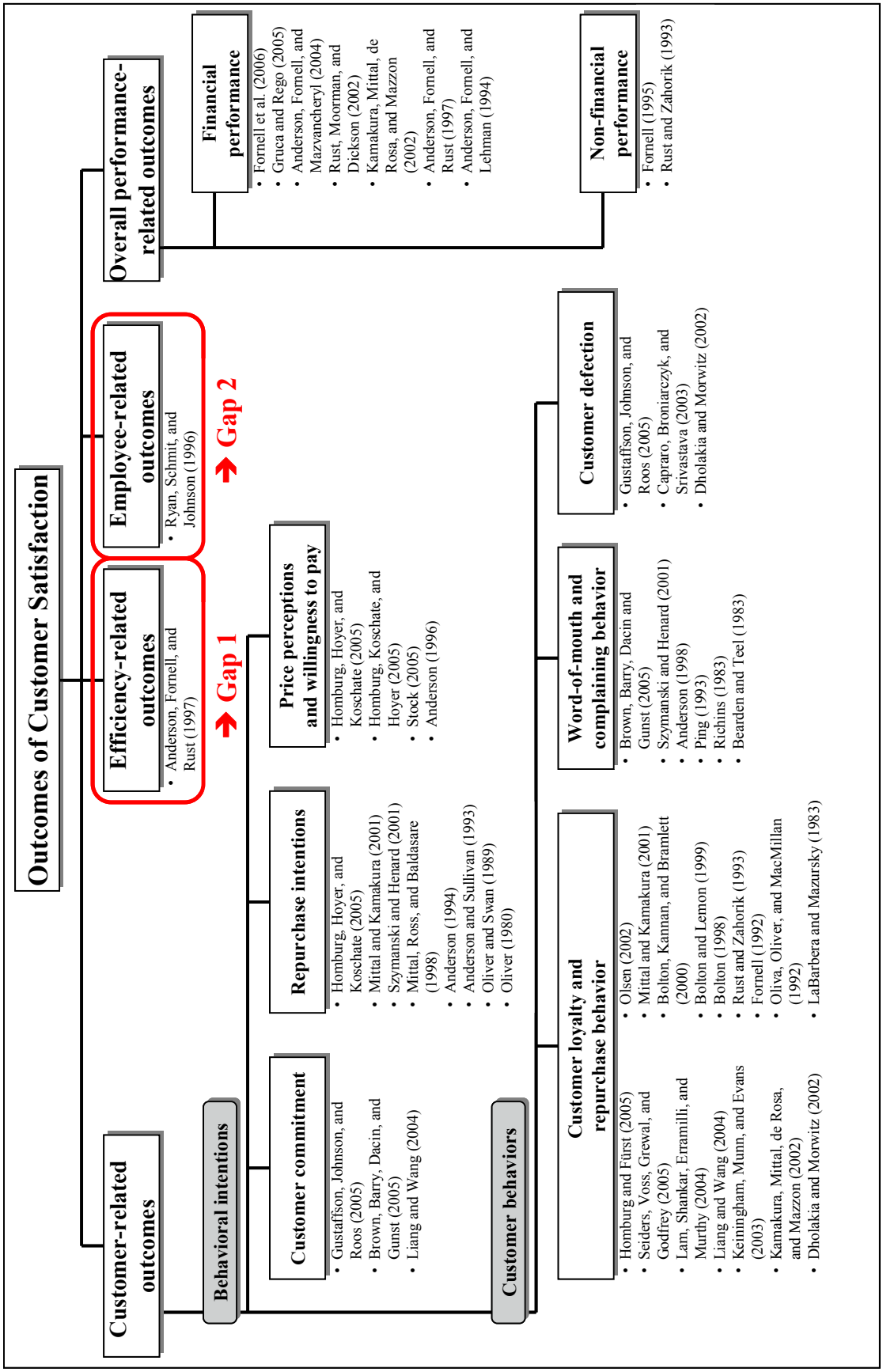

Figure 1: Outcomes of Customer Satisfaction –
Framework and Empirical Studies

The other three categories of satisfaction outcomes are more specific and provide explanations of the positive impact of customer satisfaction on firm profitability. As shown in Figure 1, the large majority of studies have investigated customer-related outcomes (including customers' behavioral intentions and behaviors). The most central finding in this context is that satisfaction increases customer loyalty and influences future repurchase intentions and behavior (Fornell et al. 1996; Mittal and Kamakura 2001; Mittal, Ross, and Baldasare 1994; Olsen 2002). Another mechanism, through which satisfaction can enhance profitability, relates to pricing. Research has shown that highly satisfied customers are willing to pay premium prices (Homburg, Koschate, and Hoyer 2005) and are less price sensitive (Stock 2005).

While Figure 1 reveals a large number of studies dealing with outcomes of customer satisfaction, it also shows that two categories of outcomes have been neglected (and thus are interesting issues that need further research): efficiency-related and employee-related outcomes.

Efficiency generally refers to the conversion ratio of organizational resource inputs to desirable goal outcomes (Bucklin 1978; Luo and Donthu 2006). To the best of our knowledge, there is only one academic study dealing with an efficiency-related outcome of customer satisfaction: The study by Anderson, Fornell, and Rust (1997) shows that customer satisfaction positively affects the ratio of sales to employee. Moreover, Mittal et al. (2005) as well as Rust, Moorman, and Dickson (2002) at least consider efficiency issues in their dual emphasis approach, but they do not explicitly investigate the impact of customer satisfaction on efficiency-related outcomes. Interestingly, it is highly plausible that customer-related outcomes of customer satisfaction affect specific facets of productivity in the marketing domain. As an example, because customer satisfaction induces customer behaviors like free word-of-mouth advertising, firms with higher customer satisfaction may be more efficient in future marketing communication investments. Existing studies have not investigated this impact. Since research evolves as a progression, we need to evaluate the influence of customer satisfaction on the performance metric of advertising and promotion efficiency (i.e. the conversion ratio of sales to required advertising and promotion costs).

As a matter of fact, an approval or rejection of this influence is quite important to quantify the theory of marketing productivity chain (Rust, Lemon, and Zeithaml 2004). According to these researchers, marketing variables like customer satisfaction should first influence some intermediate productivity metrics (i.e., marketing efficiency) before having a financial impact.

Managerially speaking, in their dialogue with chief financial officers (CFOs) marketing managers have to show numbers to justify investments into increasing customer satisfaction (*BusinessWeek* 2004; Gupta and Lehmann 2005; Rust et al. 2004). The CFOs' perspective on this issue often is that customer satisfaction costs money. Revealing a positive impact of customer satisfaction on future advertising and promotion efficiency would prove that customer satisfaction also saves subsequent marketing communication spending.

Previous research has also largely neglected employee-related performance outcomes of customer satisfaction. The only exception we are aware of is the work by Ryan, Schmit, and Johnson (1996) which reveals a positive impact of customer satisfaction on employee satisfaction. We argue that in times when customer satisfaction and corresponding surveys are publicly circulated (e.g., *BusinessWeek* 2006; *The Wall Street Journal* 2004), it is quite possible that superior levels of customer satisfaction also have beneficial effects which are not driven by customer behaviors. For example, firms with higher customer satisfaction are more attractive as employers in hiring better people (via signaling financial success) and, thus, are able to enjoy superior human capital performance (e.g., Dess and Shaw 2001). Another possible explanation for an increase in firm human capital performance is that there is a more positive atmosphere in companies with satisfied and loyal customers, whereby employees enjoy their job more (via emotional contagion) and voluntarily work harder (Reichheld and Sasser 1990).

Addressing this under-researched issue (whether customer satisfaction allows the firm to increase its human capital performance) is highly relevant for managers. Indeed, human resource theory suggests that being an attractive employer with better human capital is one of the key success factors for firms (Becker 1964; Hatch and Dyer 2004; Hitt et al. 2001; Huselid 1995). Many organizations strive to become first choice employers in their industries so as to acquire and retain "star" employees (e.g., see 100 best companies to work for in *Fortune* 2006). Interestingly, if customer satisfaction helps the firm to promote human capital excellence, then human resources managers should have a strong interest in customer satisfaction as well.

The purpose of our study is to address the two neglected categories of customer satisfaction outcomes identified in Figure 1, efficiency-related outcomes and employee-related outcomes. More specifically, we explore whether customer satisfaction affects a firm's advertising and

promotion efficiency and human capital performance. Furthermore, we also analyze whether these two effects are moderated by a contextual variable of market concentration (Anderson, Fornell, and Mazvancheryl 2004).

Besides closing a gap in the literature, studying these two potential outcomes of customer satisfaction is consistent with the proposed research directions by Oliver (1999), who claims further investigations referring to the cost effects of customer satisfaction and its potential effects on employees. From a methodological point of view, the study presented in this paper has two distinctive features. First, it is entirely based on secondary data merged from different archival sources. Second, it offers a dynamic analysis in a longitudinal design. Before presenting the data and results we develop the underlying hypotheses.

2 Hypotheses Development

2.1 Can Customer Satisfaction Influence Future Advertising and Promotion Efficiency?

We first address the suggested effects of customer satisfaction on advertising and promotion efficiency. The dependent variable, advertising and promotion efficiency, is defined as the optimized conversion ratio of a firm's marketing costs (advertising and promotion investments) into its sales performance, or the firm's deployment ability to convert marketing communication costs into results (Bucklin 1978; Luo and Donthu 2006; Vorhies and Morgan 2003). It is a measure of a firm's marketing productivity (Rust et al. 2004), and obviously an important marketing dashboard metric.

We expect that customer satisfaction induces behaviors (free advertising, loyalty, willingness to pay) that should help the firm to become more efficient in its future communication activities. For example, better customer satisfaction goes along with positive word-of-mouth communication by customers (i.e., as "free advertising" for the firm) (Brown, Barry, Dacin, and Gunst 2005; Ranaweera and Prabhu 2003; Szymanski and Henard 2001). Free advertising then reduces the necessity for the company to conduct expensive communication programs in order to attract new customers. Thus, for a given sales level, marketing costs would be reduced in the case of higher customer satisfaction. Perhaps more obvious is the opposite case: Dissatisfied customers tend to give negative references (Blodgett, Wakefield, and Barnes 1995; Bolfing 1989; Fornell et al. 1996; Richins 1983; Szymanski and Henard 2001), and this

possibly occurs even to a greater extent than positive ones from satisfied customers (TARP 1981). Such negative publicity perhaps can only be mitigated by significant advertising and promotion investments, thereby harming communication efficiency.

In addition, for a given level of marketing communication costs, customer satisfaction can lead to higher sales performance through improved customer loyalty. As shown in Figure 1, there is extensive evidence that customer satisfaction is an important predictor of customer loyalty (Fornell 1992; Gustafsson, Johnson, and Roos 2005; Liang and Wang 2004; Rust and Zahorik 1993). Previous research suggests that customer satisfaction and consequently a loyal customer base ensure future sales through consequential purchases and an increased share of wallet (Keiningham, Munn, and Evans 2003; Olsen 2002). Furthermore, customer satisfaction can lead to lower advertising and transaction costs as it is cheaper to retain and serve loyal customers than acquiring new customers (Fornell 1992).

Recent empirical research also showed that satisfied customers are less price sensitive (Stock 2005) and willing to pay a price premium (Homburg, Koschate, and Hoyer 2005). By virtue of premium prices and customer loyalty, we believe that a company with satisfied customers can obtain higher revenues from its existing customers and reduce its dependence on costly marketing communication programs, consequently improving its advertising and promotion efficiency. This discussion suggests that customer satisfaction leads to higher future advertising and promotion efficiency (that is, generating more future sales at a given level of advertising and promotion costs, or saving future communication costs at a given level of sales).

H1: Customer satisfaction has a positive influence on future advertising and promotion efficiency.

2.2 Can Customer Satisfaction Impact Future Human Capital Performance?

Essentially, human capital derives from various sources: a human being's education, experience, and talents, as well as attitude towards life and business (Hudson 1993). In the context of a firm, the term of human capital comprises the skills, abilities, knowledge, and experience of people employed within the company (Becker 1964; Hitt et al. 2001). Human resource studies have found that various types (e.g., general employees´ and top executives´ human capital) of human capital are important for increasing company profitability (Benson, Finegold and Mohrman 2004; Hauser and Simester 1996). Thus, we refer to a company's human

capital performance as its excellence in terms of employee talent and manager superiority relative to its leading rival firms in the industry (based on large-scale surveys as detailed later). In basic words, a firm's human capital performance indicates the employer's ability to attract and keep good people. Research in strategy and marketing suggests that better employee attitude and commitment determine customer service quality and, through improved service quality, drives customer satisfaction (e.g., Heskett et al. 1994; Homburg and Stock 2004; Hartline and Ferrell 1996; Schlesinger and Zornitsky 1991; Tornow and Wiley 1991). Not conflicting with these studies dealing with employee *attitude*, we argue for an ignored impact direction - customer satisfaction drives the firm's human capital *performance* over time (e.g., a firm's excellence in employee talent and managerial superiority compared to its leading rival firms in the industry).

Particularly, we expect that a firm's customer satisfaction positively affects its future human capital performance for several reasons (signaling future profitability and emotional contagion). First of all, there are some financially-oriented arguments for a positive impact of customer satisfaction on human capital performance. Given the positive connection between a firm's customer satisfaction and financial performance (e.g., Anderson, Fornell, and Lehmann 1994; Anderson, Fornell, and Mazvancheryl 2004), firms with high customer satisfaction should be able to provide more attractive future financial rewards to their employees. This would prevent good employees from leaving the company and thus contribute to the firm's future human capital performance. Indeed, by signaling and indicating a company's future profitability growth and financial success (Fornell et al. 2006; Gruca and Rego 2005; Luo and Bhattacharya 2006), customer satisfaction promotes a firm's attractiveness to highly qualified potential employees and executives. This signaling effect is particularly relevant in times when customer satisfaction surveys are increasingly circulated and popularized in public (*BusinessWeek* 2006; *The Wall Street Journal* 2004). In addition, superior customer satisfaction signals better chances to develop careers and achieve high future salaries and thus augments the firm's attractiveness as an employer. Therefore, firms with high levels of customer satisfaction will be able to choose new employees from a broader set of applicants which again increases the firm's future human capital performance (e.g., Bretz, Boudrau, and Judge 1994; Gatewood, Gowan, and Lautenschlager 1993; Jurgensen 1978).

Moreover, we rely on the theoretical concept of emotional contagion as outlined by Hatfield, Caccioppo, and Rapson (1994). In particular, the theory of emotional contagion holds that

exposure to an individual expressing positive or negative emotions can produce a corresponding change in the emotional state of the observer (Pugh 2001). Thus, firm employees (e.g., service employees, salespeople, and sales support personnel) who are confronted with highly satisfied customers would develop a higher level of future job satisfaction than employees of firms with frustrated customers who are not satisfied and actively complaining (Bearden and Teel 1983; Ping 1993). Higher employee satisfaction then boosts employee loyalty and weakens the likelihood of employee turnover, respectively (Fornell 1992). This emotional contagion effect between customer satisfaction and employee satisfaction holds both for services and goods sectors, as along as there is personal interaction between firm's employees and its customers (Hatfield, Caccioppo, and Rapson 1994). Indeed, in the business-to-business context for the pharmaceuticals, computers, and other high-tech goods sectors, there is a lot of personal interaction between company employees and customers (Fornell 1992; Harter, Hayes, and Schmidt 2002). Empirically, Ryan, Schmit, and Johnson (1996) find that customer satisfaction has a positive impact on employee satisfaction over time. Echoing this, the meta-analysis of Harter, Hayes, and Schmidt (2002) revealed that employee satisfaction positively relates to employee productivity. Moreover, a managerially oriented work by Reichheld (1996) explicitly states that "the best employees prefer to work for those companies who achieve [customer satisfaction and] customer loyalty," directly supporting that customer satisfaction helps enhance employee performance. This discussion suggests that customer satisfaction has a positive impact on a firm's future human capital performance.

H2: Customer satisfaction has a positive influence on a company's future human capital performance.

2.3 The Moderating Role of Market Concentration

Our study also addresses potential moderating effects of market concentration. Market concentration, which can be described as the extent to which a smaller number of supplier firms account for a large proportion of market output, is an important characteristic of market structure influencing a number of company and market variables. It has been shown that market concentration can significantly affect relationships between customer satisfaction and firm performance outcomes (e.g. Anderson, Fornell, and Mazvancheryl 2004). Indeed, economic theory suggests there is a close relationship between market concentration and competitive

intensity. That is, higher market concentration goes hand in hand with a lower level of competitive intensity (Gatignon, Weitz and Bansal 1990; Steenkamp et al. 2005).

We believe that customer satisfaction's influence on advertising and promotion efficiency is more salient in markets with high (vs. low) concentration. This is because in lowly concentrated (and therefore more competitive) markets (Gatignon, Weitz and Bansal 1990; Kim and Lim 1988), even highly satisfied customers are hard to retain and more price sensitive which reduces the likelihood of subsequent purchases and of gaining price premiums (Anderson 1998; Bolton 1998; LaBarbera and Mazursky 1983; Oliver 1999; Seiders et al. 2005). In this case, customer satisfaction is less likely to translate into higher sales at a given level of advertising and promotion costs. On the contrary, in highly concentrated markets it is easier for the customers to overlook the offers of the different competitors (Park, Lennon, and Stoel 2005). This would lower customers' perceived risk (e.g. the risk of buying a suboptimal product). Given that lowered perceived risk then promotes buying intentions and loyalty (Wood and Scheer 1996), we expect that customer satisfaction is more likely to translate into higher sales at a given level of advertising and promotion costs in highly (versus lowly) concentrated markets.

H3: Customer satisfaction has a stronger influence on future advertising and promotion efficiency in highly concentrated markets.

We also argue that customer satisfaction should have a stronger effect on human capital performance in markets with a low (vs. high) level of market concentration. This is because in markets with low concentration (and intensive competition), there is increased necessity for firms to communicate customer satisfaction results to the public. Market competition both motivates and rewards companies to publicize their superior satisfaction rankings (so as to signal firms´ financial health and future perspectives) (Anderson 1998; Schultz 1961). Indeed, the more markets are competitive, less concentrated and highly uncertain, the more likely talented job applicants would regard customer satisfaction publications as hints in signaling a firm's financial strength and overall attractiveness to them. In other words, better people and experienced applicants' evaluation of a company's promotion and income opportunities might even more depend on its customer satisfaction figures in markets with low concentration.

Furthermore, our hypothesis can also be supported through arguments focusing on existing employees and managers. Previous research indicates that, in more competitive markets, there is a tendency for higher management turnover (Fee and Hadlock 2002). In this context, a high level of customer satisfaction and the resulting financial performance may be a particularly relevant barrier to management turnover and promote the loyalty of highly skilled executives. The resultant decreased risk of the loss of talented employees and managers then enables customer satisfaction to have a stronger effect on human capital performance in markets with a low (versus high) level of market concentration.

H4: Customer satisfaction has a stronger influence on a company's future human capital performance in lowly concentrated markets.

3 Data and Method

We collect a large-scale longitudinal dataset from multiple archival sources to test the hypotheses. The data have measures for customer satisfaction, advertising and promotion efficiency, and human capital performance. As detailed below, we used data sources from the annual customer satisfaction index (ACSI) to gauge customer satisfaction, Competitive Media Reporting (CMR) and COMPUSTAT to derive a measure of advertising and promotion efficiency based on data envelopment analysis (DEA), and Fortune America's Most Admired Corporations (AMAC) to measure human capital. Table 1 reports the measures and their sources.

Measure	Operationalization	Data Sources	Rationale for Inclusion in Model
Customer Satisfaction	The American Customer Satisfaction Index by the National Quality Research Center (customer-based, independent, cumulative, firm-level satisfaction measure for nearly 200 Fortune biggest companies in 20 industries and 7 sectors in America)	American Customer Satisfaction Index (ACSI)	Independent variable
Advertising and Promotion Efficiency	A ratio of output (sales volume, sales growth) to inputs (broadcast advertising investment, print advertising investment, outdoor advertising investment, and sales promotion investment)	COMPUSTAT and CMR	Dependent variable
Human Capital of Employee Talent	Employee talent in work related skills, knowledge, experience and human resources among 1,000 largest firms in America (the America's Most Admired Corporations annual reputation survey)	AMAC	Dependent variable
Human Capital of Manager Superiority	Senior management quality in work related skills, knowledge, experience and human resources among 1,000 largest firms in America (the America's Most Admired Corporations annual reputation survey)	AMAC	Dependent variable
Market Concentration	Herfindahl concentration index in the market	COMPUSTAT	Moderating variable

Table 1: Measures and Data Sources

3.1 Customer Satisfaction

For customer satisfaction, we used survey data of the annual customer satisfaction index by ACSI. This index provides a customer-based (not expert-based) measure of overall satisfaction at the firm level. It is designed to represent the health of the national economy as a whole, covering all major economic sectors such as manufacturing durables and non-durables, trans-

portation, communications, utilities, retail, finance, insurance, and others. It comprises about 43% of the US economy (Anderson, Fornell, and Mazvancheryl 2004; Fornell et al. 1996).

In compiling this customer satisfaction index, ACSI interviews over 200 customers on average per firm for nearly 200 large companies. More than 65,000 consumers are identified and interviewed annually. Interviewees are from 48 replicate samples of households with telephone services and Internet samples for e-businesses. Each respondent (real user of the products/services) has to pass screening questions related to predefined purchase and consumption time periods before participating in the survey. The survey questionnaire has multiple items for multiple constructs that are used to estimate the latent variable of overall customer satisfaction. The resulting customer satisfaction for an individual firm indicates its served customers' overall evaluation of total consumption experiences. This measure ranges from 0 to 100 (the highest).

The ACSI dataset offers a unique and reliable measure of customer satisfaction because it employs identical survey methods, interview procedures, sampling, and estimation methods across firms and years. A comprehensive test of the validity and reliability of this satisfaction measure can be found in Fornell and colleagues (1996). An increasingly emerging body of literature has successfully employed this satisfaction database (e.g., Anderson, Fornell, and Mazvancheryl 2004; Fornell et al. 2006; Gruca and Rego 2005; Mithas, Krishnan, and Fornell 2005; Mittal and colleagues 2005; Morgan and Rego 2006). We were able to collect this survey-based measure of customer satisfaction for 139 companies in 2002 (time 1) and 2003 (time 2).

Although the total sample size of ACSI for the two years is more than 139 companies and has about 200 firms/brands, we were not able to obtain a larger sample size for the final merged dataset for several reasons. First, the sampled firms in ACSI has been changing over the years, and ACSI methodology has incorporate more and more companies, from less than 130 firms/brands to over 200 firms/brands. For example, customer satisfaction scores of some companies/brands (i.e., CenterPoint Energy, Inc., Pepco Holdings, Inc., Verizon Wireless, Kohl's Corporation, Orbitz, Inc. etc.) are not measured until 2005. Furthermore, in ACSI, the same corporation may have multiple brands. For example, General Motors has Cadillac, Buick, Saturn, GMC, Pontiac, Chevrolet brand-level customer satisfaction scores. Thus, following prior studies (i.e., Anderson, Fornell, and Mazvancheryl 2004, p. 177), we aggregated

these multibrands at the firm level. After this step, we merged the ACSI data with other secondary sources like AMAC, CMR, and COMPUSTAT at the firm, not brand, level for the 278 firm-year unbalanced panel observations (278=139 firms x 2 years). Other secondary sources like company annual reports, Standard & Poor's industry reports, Moody's reports, and Compact Disclosure are also extensively searched to fill the missing data. This merged dataset includes individual firms in various industries ranging from airlines, athletic shoes, automobiles, department and discount stores, hotels, household appliances, personal computers, supermarkets, to utilities. Table 2 reports descriptive statistics and correlations of customer satisfaction and other variables.

Variables	Mean	SD	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12
V1. Customer Satisfaction (time 1)	75.24	6.94	1.00											
V2. Human Capital of Employee Talent (time 1)	5.80	1.21	.16	1.00										
V3. Human Capital of Manager Superiority (time 1)	6.13	1.27	.17	.85***	1.00									
V4. Advertising and Promotion efficiency (time 1)	0.61	0.28	.14	.11	.14	1.00								
V5. Human Capital of Employee Talent (time 2)	6.02	1.14	.22**	.81***	.77***	.12	1.00							
V6. Human Capital of Manager Superiority (time 2)	6.41	1.20	.20*	.77***	.80***	.14	.81***	1.00						
V7. Advertising and Promotion efficiency (time 2)	0.68	0.30	.25**	.13	.12	.42***	.12	.10	1.00					
V8. Market concentration (Time 1)	0.21	0.13	.09	.06	.08	.03	.03	.02	.05	1.00				
V9. Business segments (time 1)	2.36	1.85	.03	.01	.02	-.03	.00	.01	-.01	-.04	1.00			
V10. Firm size (time 1)	4.11	0.93	.02	-.01	-.00	-.02	.01	-.01	-.00	-.02	.05	1.00		
V11. Operating leverage (time 1)	0.37	0.58	-.03	-.04	-.02	-.03	-.01	-.02	.18*	.01	.02	-.03	1.00	
V12. Financial leverage (time 1)	2.03	7.11	-.04	.01	.02	.04	.17*	.03	.04	-.03	.05	.01	-.02	1.00

*$p < .10$.
**$p < .05$.
***$p < .01$.

Table 2: Descriptive Statistics and Correlations

3.2 Human Capital Performance

To measure human capital performance, one may use objective firm data. For example, company-specific human capital can be measured as firm records on employee enrollment and types of degrees their employees earned as a result of company tuition reimbursement (Benson, Finegold, and Mohrman 2004). Additionally, human capital at the top manager level can be assessed by company records on CEO success, tenure and age (Buchholtz, Ribbens, and Houle 2003). However, company records of this type have inherent limitations: (1) the records may not be exhaustive and thus it is hard to check regarding their validity, which leads to a concern of biased findings, and (2) these company records are hardly large-scale regarding the number of firms involved, nor are they comparable across firms due to different booking and housekeeping practices (Davenport and Prusak 1988). Thus, in this study, we used the comprehensive longitudinal survey data for measuring human capital from AMAC.

Particularly, AMAC provides two types of human capital performance—employee talent and manager superiority. For time 1 and time 2, AMAC has data on more than 10,000 senior executives, outside directors, and industry analysts over 580 large companies (c.f., Fombrun and Shanley 1990; Fortune 2005, p.68) across 70 major industries. Companies are required to have at least $1.3 billion in revenue to be eligible for the sampling list. For those companies on the AMAC list, a maximum of 10 top executives and seven directors (outside board members) per company are selected as well as a pool of industry analysts. AMAC surveys the respondents' perceptions of a firm's excellence in terms of its employee talent and quality of management compared to the major competing companies in the industry. The attributes of human capital performance are defined on the AMAC survey as "the ability to attract and retain talented people" and "quality of management."

AMAC items of human capital performance are derived from a series of interviews and pilot tests with a large pool of executives and industry analysts. AMAC compiles the list of these respondents in August and sends out the surveys in October with a follow-up reminder mailing in November. At the latest, all surveys are due by mid-December. The score of these human capital performance measures ranges from 0 to 10 (the highest).

Prior studies (e.g., Fombrun and Shanley 1990; Houston and Johnson 2000; McGuire, Schneeweis, and Branch 1990) have reported evidence of internal consistency and validity of this data. Particularly, McGuire, Schneeweis, and Branch (1990, p. 170) suggest that it may

be "one of the most comprehensive and widely circulated surveys of attributes available. Both the quality and number of respondents are comparable or superior to the 'expert panels' usually gathered for such purposes." However, because AMAC data have strong halo effects with firm financial performance, we parceled out this bias by using the approach (c.f., Roberts and Dowling 2002) for both employee talent and manager superiority. Particularly, we regress human capital measures (employee talent and managerial superiority) against firm financial performance (ROA) in prior four years and save the residual of this regression as the final measure of human capital. Because this residual is independent from financial performance, the reverse causality bias and halo effects in measuring human capital are parceled out.

3.3 Advertising and Promotion Efficiency

We measured advertising and promotion efficiency with the data envelopment analysis (DEA) approach. Developed by operations research scholars (Banker et al. 1984; Charnes et al. 1978), DEA is a mathematical programming technique that assesses the efficiency of resource utilization. Luo (2004) provides a comprehensive review of DEA applications in consumer research, advertising, retailing, personal selling, and other areas.

Essentially, DEA measures the relative efficiency of a firm in converting multiple inputs into multiple outputs. The efficiency of a particular company is the conversion ratio of producing the outputs from the necessary inputs when compared to best practices of competing firms. In DEA modeling, a firm is efficient (conversion ratio=100%) if it can not reduce its investments in any inputs holding the same levels of outputs (or can not increase its outputs holding the same levels of inputs). Otherwise, a firm is not efficient, and the portion of inputs and costs (1- conversion ratio) is what can be saved while achieving the same level of outputs for the firm.

There are two key advantages of DEA approach to modeling efficiency over traditional simple ratios (output/input). First, DEA results are based on comparisons to the most efficient firms operating under similar situations and scales, whereas simple ratios deal with average performing firms and do not account for firm heterogeneity. Further, DEA is a mathematical programming that does not require any subjective specifications in weighting the multiple inputs and multiple outputs, whereas simple ratios require such a subjective assumption (Charnes et al. 1978; Luo and Donthu 2006).

To model advertising and promotion efficiency with DEA, we used four inputs—broadcast advertising investment (BAI), print advertising investment (PAI), outdoor advertising investment (OAI), and sales promotion investment (SPI). These different kinds of spending are the firm's marketing communications mix efforts. We obtained the data on these advertising and promotion inputs from Competitive Media Reporting (CMR). The output variables in DEA are sales volume (SAL) and sales growth (SGO) (see footnote 1). We gleaned data on sales volume and growth from COMPUSTAT. Next, we present the DEA model, in which advertising and promotion efficiency is expressed as a conversion ratio of output to inputs:

$$(1) \qquad \psi = \frac{\text{Outputs}}{\text{Inputs}}$$

The advertising and promotion efficiency for a firm w can be obtained by solving the fractional programming format below (Charnes et al. 1978). The objective of this programming model is to maximize this conversion ratio for firm w by fitting the data with different weights for outputs (u1 and u2) and inputs (v1, v2, v3, v4). The constraint of these weights assures that the resultant advertising and sales promotion efficiency is optimized for firm w in the estimation (see footnote 2).

$$(2) \qquad \text{Max } \psi_w = \frac{u1*SALw + u2*SGOw}{v1*BAIw + v2*PAIw + v3*OAIw + v4*SPIw},$$

$$\text{subject to } \frac{u1*SALk + u2*SGOk}{v1*BAIk + v2*PAIk + v3*OAIk + v4*SPIk} \leq 1,$$

$$(k=1, 2, \ldots, n),$$

$$u1, u2, v1, v2, v3, v4 \geq 0.$$

All estimated efficiency (ψ_w) results are either equal to or less than 1 (100%) because firm w is enveloped by the efficient frontier with all firms (including itself) in DEA programming. The most efficient firms (identified as the best practices by DEA) have a value of 1 for the efficiency, while the remaining firms have a value between 0 and 1. The portion ($1-\psi_w$) represents the inefficient percentage of advertising and sales promotion investments for firm

w. In our analyses, the mean of advertising and promotion efficiency was .61 (standard deviation =.28) for Time 1 and .68 (standard deviation =.30) for Time 2, as reported in Table 2.

3.4 Market Concentration and Controls

We measured *market concentration* intensity by using the Herfindahl concentration index. This measure was derived based on the lagged sales for all the companies with the more recent North American Industry Classification System 4-digit codes for each firm–year observation (Anderson, Fornell, and Mazvancheryl 2004; Rao, Agarwal, and Dahlhoff 2004).

Data for all control variables are obtained from COMPUSTAT database. Particularly, we control for *firm size*, which is the log of the number of employees. *Operating leverage* is the ratio of fixed assets to total assets. *Financial leverag*e refers to the ratio of book debt to total assets (Rao, Agarwal, and Dahlhoff 2004). Finally, *business segment* is the number of segments in which the firm operates in the marketplace (Rao, Agarwal, and Dahlhoff 2004).

4 Analyses and Results

Analyzing the data requires estimation techniques that can accommodate the unique distribution of advertising and promotion efficiency results. In addition, such techniques should consider the correlated error terms in a series of regression equations involving two types of human capital performance.

4.1 Advertising and Promotion Efficiency Results

Because DEA-based advertising and promotion efficiency results are censored with an upper bound of 1 and a lower bound of 0, traditional OLS can not parcel out this sample censoring bias. As a result, we employ the two-limit Tobit model (Heckmann 1979). This Tobit modeling has been applied by Datar et al. (1997) in their investigation of time-based new product development. In particular, let $y_{t2,\,i}$ * denote the latent advertising and promotion efficiency of firm i at time 2, $X_{t1,\,i}$ denote a vector of explanatory variables at time 1, and □ denote a vector of coefficients. Then, the advertising and promotion efficiency of firm i is given by:

$$(3)\quad y_{t2,\,i}^{*} = X_{t1,\,i}\beta + \varepsilon_i = \beta_0 + \beta_1 \text{CustomerSatisfaction}_{t1,\,i} + \beta_2 \text{MarketConcentration}_{t1,\,i} + \beta_3 \text{CustomerSatisfaction}_{t1,\,i} \text{ x MarketConcentration}_{t1,\,i} + \beta_4 \text{BusinessSegments}_{t1,\,i} + \beta_5 \text{FirmSize}_{t1,\,i} + \beta_6 \text{OperationgLeverage}_{t1,\,i} + \beta_7 \text{FinancialLeverage}_{t1,\,i} + \beta_8 y_{t1,\,i} + \varepsilon_{i,}$$

where ε_i denotes the normally distributed residuals with zero mean and σ^2 variance. However, because the dependent variable of advertising and promotion efficiency ranges from 0 to 1, we control for this sample censoring and specify the observed advertising and promotion efficiency (y_i) below:

$$(4)\; y_{t2,\,i} = 0 \quad \text{if } y_{t2,\,i}^{*} \le 0 \text{ (lower bound)},$$

$$y_{t2,\,i} = y_{t2,\,i}^{*} \quad \text{if } 0 < y_{t2,\,i}^{*} < 1,$$

$$y_{t2,\,i} = 1 \quad \text{if } y_{t2,\,i}^{*} \ge 1 \text{ (upper bound)}.$$

The log likelihood function is specified as:

$$(5)\quad l(\beta,\sigma) = \sum_{i=1}^{N} \log f((y_{t2,i} - x'_{t1,i}\beta)/\sigma) \cdot 1(\underline{c_i} < y_{t2,i} < \bar{c}_i) - \log(F((\bar{c}_i - x'_{t1,i}\beta)/\sigma) - F((\underline{c}_i - x'_{t1,i}\beta)/\sigma)), (\underline{c}_i = 0, \bar{c}_i = 1).$$

	Advertising and Promotion Efficiency (Time 2)				
Independent Variables (Time 1)	**Prediction**	**Estimate**	***p*-Value**	**Unobserved Heterogeneity**	**Support for Hypothesis**
Customer Satisfaction	H_1 +	0.29	0.02 (one-tail)	0.05 (n.s.)	H_1 Supported
Market Concentration		0.05	0.46	-0.01 (n.s.)	
Customer Satisfaction x Market Concentration	H_3 +	0.21	0.03 (one-tail)	0.02 (n.s.)	H_3 Supported
Business segments		-0.07	0.38	-0.02 (n.s.)	
Firm Size		0.05	0.41	0.03 (n.s.)	
Operating Leverage		0.18	0.05 (one-tail)	0.06 (n.s.)	
Financial Leverage		0.09	0.35	0.01 (n.s.)	
Advertising and Promotion Efficiency		0.45	0.00	0.09 (p<.05)	

Note: because advertising and promotion efficiency results are truncated values with censored distribution based upon linear programming modelling, Tobit regression is employed to test hypotheses. Random unobserved heterogeneity models are estimated to test results robustness. None of these estimated random coefficients is significant. Schwartz Bayesian information criterion (BIC) =472.50; Akaike's information criterion (AIC) =463.77. The reported results in the column of "unobserved heterogeneity" are the difference between RCM coefficients and non-RCM coefficients. The results of n.s. simply mean that there is no significant cross-modelling (RCM or not) variation in the database.

Table 3: Impact of Customer Satisfaction on Advertising and Promotion Efficiency: Tobit Results

The impact of customer satisfaction on advertising and promotion efficiency. In H_1, we predict that there is a positive impact of customer satisfaction on future advertising and promotion efficiency. As reported in Table 3, Tobit modeling results indicate that customer satisfaction at time 1 is positively and significantly related to advertising and promotion efficiency at time 2 (b=.29; p<.05). Therefore, H_1 is supported by the data.

The moderating role of market concentration. In H_3, we expect that the positive impact of customer satisfaction on advertising and promotion efficiency is expanded under conditions of high market concentration. To test this, we mean-centered customer satisfaction and market concentration before generating the interaction term (Aiken and West 1991). Tobit results suggest that the interaction between customer satisfaction and market concentration has a positive and marginally significant influence on advertising and promotion efficiency at time 2 (b=.21; p<.05). Because the highest variance inflation factor was 2.80, the threat of multicollinearity bias was not severe. We plot the data to facilitate the interpretation of these moderating effects. Figure 2 illustrates the impact of customer satisfaction on advertising and promotion efficiency for low versus high market concentration (see Aiken and West 1991, p.12-14). Clearly, Figure 2 shows that the positive influence of higher customer satisfaction at time 1 on advertising and promotion efficiency at time 2 is more salient in markets with high concentration (versus in markets with low concentration). As a result, we accept H_3.

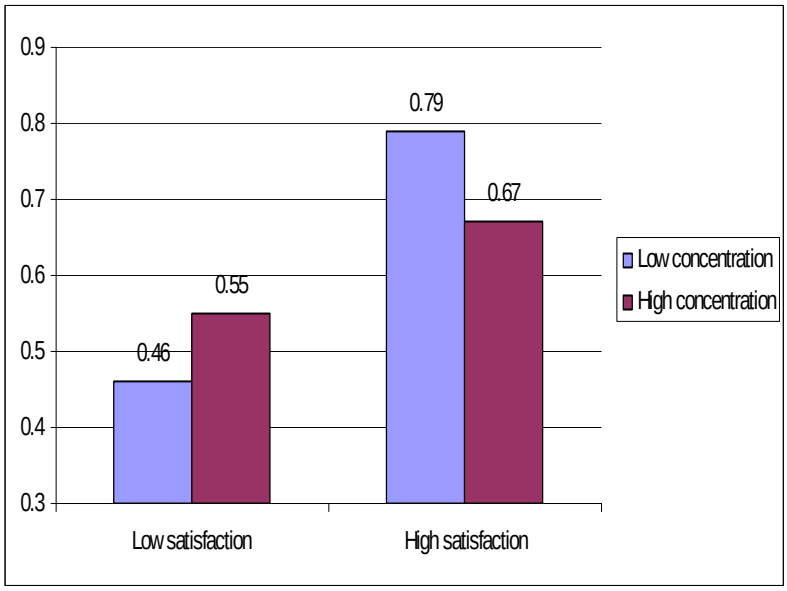

Figure 2:
The Moderating Role of Market Concentration on the Impact of Customer Satisfaction (Time 1) on Advertising and Promotion Efficiency (Time 2)

4.2 Human Capital Performance Results

To test the impact of customer satisfaction on two dimensions of human capital performance we specify a series of regression equations. Let $y1_{t2,\,i}$ denote the human capital of employee talent and $y2_{t2,\,i}$ denote the human capital of manager superiority at time 2 below.

$$(6)\quad y1_{t2,\,i} = X_i\,\gamma + \varepsilon 1_i = \gamma_0 + \gamma_1 CustomerSatisfaction_{t1,\,i} + \gamma_2 MarketConcentration_{t1,\,i} + \gamma_3 CustomerSatisfaction_{t1,\,i} \times MarketConcentration_{t1,\,i} + \gamma_4 BusinessSegments_{t1,\,i} + \gamma_5 FirmSize_{t1,\,i} + \gamma_6 OperationgLeverage_{t1,\,i} + \gamma_7 FinancialLeverage_{t1,\,i} + \gamma_8 y1_{t1,\,i} + \varepsilon 1_i$$

$$y2_{t2,\,i} = X_i\,\delta + \varepsilon 2_i = \delta_0 + \delta_1 CustomerSatisfaction_{t1,\,i} + \delta_2 MarketConcentration_{t1,\,i} + \delta_3 CustomerSatisfaction_{t1,\,i} \times MarketConcentration_{t1,\,i} + \delta_4 BusinessSegments_{t1,\,i} + \delta_5 FirmSize_{t1,\,i} + \delta_6 OperationgLeverage_{t1,\,i} + \delta_7 FinancialLeverage_{t1,\,i} + \delta_8 y2_{t1,\,i} + \varepsilon 2_{i.}$$

Because the error terms (ε1, ε2) in above equations can be correlated and the dependent variables of the two dimensions of human capital are also correlated, we employed Seemingly Unrelated Regression (SUR) estimation technique (Zellner 1962). In this situation, SUR would produce more robust coefficients than traditional OLS technique.

	Human Capital of Employee Talent (Time 2)					Human Capital of Manager Superiority (Time 2)			
Independent Variables (Time 1)	**Prediction**	**Estimate**	***p*-Value**	**Unobserved Heterogeneity**		**Estimate**	***p*-Value**	**Unobserved Heterogeneity**	**Support for Hypothesis**
Customer Satisfaction	H_2 +	0.33	0.01 (one-tail)	0.05 (n.s.)		0.27	0.02 (one-tail)	0.03 (n.s.)	H_2 Supported
Market Concentration		0.06	0.70	0.04 (n.s.)		0.05	0.80	0.01 (n.s.)	
Customer Satisfaction x Market Concentration	H_4 -	-0.21	0.04 (one-tail)	-0.01 (n.s.)		-0.18	0.05 (one-tail)	-0.04 (n.s.)	H_4 Supported
Business segments		0.02	0.94	0.03 (n.s.)		0.01	0.97	0.04 (n.s.)	
Firm Size		0.03	0.85	0.01 (n.s.)		0.02	0.91	0.01 (n.s.)	
Operating Leverage		0.12	0.22	0.02 (n.s.)		0.07	0.72	0.02 (n.s.)	
Financial Leverage		0.23	0.03 (one-tail)	0.04 (n.s.)		0.08	0.63	0.02 (n.s.)	
Human Capital of Employee Talent		0.51	0.00	0.08 ($p<.05$)					
Human Capital of Manager Superiority						0.62	0.00	0.06 (n.s.)	

Note: The reported results in the column of "unobserved heterogeneity" are the difference between RCM coefficients and non-RCM coefficients. The results of n.s. simply mean that there is no significant cross-modeling (RCM or not) variation in the database.

Table 4: Impact of Customer Satisfaction on Human Capital Performance: SUR Results

The impact of customer satisfaction on human capital performance. In H_2, we predict that there is a positive impact of customer satisfaction on future human capital performance. As reported in Table 4, SUR modeling results indicate that customer satisfaction at time 1 has a positive and significant influence on human capital performance in terms of both employee talent and manager superiority at time 2 (b=.33, p<.01 and .27, p<.05 for employee talent and manager superiority, respectively). Therefore, H_2 is strongly supported by the data.

The moderating role of market concentration. In H_4, we expect that the positive impact of customer satisfaction on human capital performance is reduced under conditions of high market concentration. The results suggest that the interaction between customer satisfaction and market concentration has a negative and significant influence on human capital of employee talent at time 2 (b=-.21, p<.05) and on human capital of manager superiority (b=-.18, p<.10). As a consequence, the results suggest that H_4 is supported by the data.

4.3 Additional Data Analysis

We specified several alternative models and tested competing explanations of results. First, we examined the reverse causality concern by conducting granger causality tests (Granger 1969; Chintagunta and Haldap 1998; Hidalgo 2005). Specifically, the general granger causality model is specified in footnote 3. In this context, we computed the following Wald F tests: the F statistics account for 7.38 (p<.01) for the influence of customer satisfaction on advertising and promotion efficiency, 6.73 (p<.01) for the impact of customer satisfaction on human capital performance in terms of employee talent, and 6.01 (p<.01) for the influence of customer satisfaction on human capital performance in terms of manager superiority. This means that customer satisfaction grangerly causes advertising and promotion efficiency, employee talent, and manager superiority. Moreover, the F statistics account for 1.50 (p>.05) for the influence of advertising and promotion efficiency on customer satisfaction, 0.77 (p>.05) for the impact of human capital performance in terms of employee talent on customer satisfaction, and 0.92 (p>.05) for the influence of human capital performance in terms of manager superiority on customer satisfaction. This means that advertising and promotion efficiency, employee talent, and manager superiority do not grangerly cause customer satisfaction in this sample. Overall, these granger causality test results seem to support our theoretical framework on the neglected outcomes of customer satisfaction.

Second, we estimated rival models with the terms of customer satisfaction squared and cubic (i.e., for competing explanations in terms of non-linear impact). We failed to find these higher order terms significant in either Tobit or SUR estimations (p>.10), while the first order term of customer satisfaction and the interaction term between customer satisfaction and market concentration remained significant (p<.05).

Third, we also employed random coefficient models (RCM) to test the results' robustness. As reported in the columns labeled as the unobserved heterogeneity in Table 3 and Table 4, none of the estimated RCM results is significantly (p>.05) different from non-RCM coefficients. This means that there is no significant cross-modelling (RCM or not) variation**.** In this sense, our hypotheses findings are stable and robust.

Fourth, analyzing time-series cross-sectional data can suffer from both autocorrelation and heteroskedasticity bias (thus varying and heterogeneous estimators). As a result, we did more sensitivity analyses with General Method of Moments (GMM). GMM estimation approach does not require full density, and can accommodate possible autocorrelation bias and generate heteroskedasticity consistent results (Dubé 2004; Hansen 1982; Prabhu, Chandy, and Ellis 2005) (see footnote 4). The GMM results also show that our conclusion is robust: customer satisfaction leads to higher advertising and promotion efficiency and stronger human capital performance.

Fifth, because DEA mathematical programming is non-parametric in nature and sensitive to extreme data values and measure errors (Charnes et al. 1978; Luo 2004; Luo and Donthu 2001), it is important to test the robustness of DEA-based advertising and promotion efficiency results. Thus, we repeated the DEA analyses with other combinations of variables (i.e., two outputs and three inputs, one output and four inputs, one output and three inputs). The results indicated that the resultant advertising and promotion efficiency results are significantly correlated (smallest r = .89, $p < .01$), attesting the robustness of DEA results.

Finally, we also explored profitability implications. The results show that advertising and promotion efficiency has a significant impact on Tobin's q (b=.37, p<.01) (see footnote 5). In addition, human capital performance in terms of employee talent also has a significant impact on Tobin's q (b=.31, p<.01); human capital performance in terms of manager superiority has a marginal significant impact on Tobin's q (b=.17, p<.10 one-tail). We also find that customer

satisfaction has a significant impact on Tobin's q (b=.36, p<.01). This result is consistent with existing studies (Anderson et al. 2004; Fornell et al. 2006; Gruca and Rego 2005).

5 Discussion

The point of departure for our study was that extant academic literature of the performance outcomes of customer satisfaction significantly provides further research opportunities. After establishing the association between customer satisfaction investments and financial performance, it is interesting to examine the direct linkages through which a firm's financial success is created. In this paper we explored two outcomes of customer satisfaction that have not been investigated so far. Based on longitudinal analyses with a matched secondary dataset from multiple sources, we were able to show that customer satisfaction not only increases a firm's future advertising and promotion efficiency, but enhances its subsequent human capital performance as well.

5.1 Managerial Implications

Our study offers some helpful managerial implications. First, the results of our study suggest that firms with higher levels of customer satisfaction should use this performance metric for attracting and retaining employees and managers of high quality—the fundamentals of a company's human capital excellence (Schultz 1961). Although the use of a customer satisfaction index in personnel recruiting is not yet very common in business, this index can be powerful (*BusinessWeek* 2006; *Fortune* 2006). The finding of an expanded positive influence of customer satisfaction on employee talent in lowly concentrated markets suggests that firms should (1) proactively publicize their superior satisfaction ratings and (2) extensively use this metric in their HR recruiting, compensation, and retention programs, especially in lowly concentrated markets when facing fierce competition. Indeed, because customer satisfaction leads to human capital excellence, HR managers have a good reason to pay attention to the firm's customer satisfaction index.

Furthermore, we suggest that companies should carefully monitor their marketing communication efficiency compared to competition, and relate these analyses to customer satisfaction benchmarks. If a firm which has superior customer satisfaction values is not more efficient in

terms of marketing communication than its competitors it is likely that the firm's communication management has potential for efficiency improvement. This implication is especially important in industries where firms spend a considerable percentage of their revenues on marketing communication. Thus, this implication would be more relevant for consumer goods firms than for firms in business-to-business marketing.

With regard to our empirical findings, marketing managers could raise the question whether spendings into customer satisfaction are more effective than spendings into advertising. Based on the analyses in our paper, we are not able to provide a specific answer to the question whether firms should increase spendings into customer satisfaction and decrease their spendings on advertising. The reason is that we have no information on the costs of increasing customer satisfaction. If these costs are extremely high for a firm, the achieved increase in advertising and promotion efficiency may not be able to compensate for these costs. However, if costs of increasing customer satisfaction are fairly low, it may indeed make sense to shift budgets from advertising to customer satisfaction activities. Consequently, we suggest that firms should conduct cost-benefit-analyses with their individual data to determine an appropriate marketing budget allocation. In this context, it is also important to mention that our findings show that expenditure on customer satisfaction would lead to saved *future* advertising money. As expenditure on advertising is important for *current* sales, customer/brand equity, and market share (i.e., Mizik and Jacobson 2003), this may limit the possibility to shift expenditures from advertising to customer satisfaction improvement.

Additionally, the results of the study should be valuable for marketing managers in their dialogue with CFOs. As there is a strong push for marketing accountability in the corporate world (Fornell et al. 2006; Luo and Donthu 2006; Rust, Lemon, and Zeithaml 2004), our finding that customer satisfaction increases advertising and promotion efficiency provides a strong argument for marketing managers in front of CFOs. That is, customer satisfaction can also help save future marketing money. Thus, marketers should approach top executives and seriously question relentless cost-cutting on programs that aim at increasing customer satisfaction and loyalty. Indeed, better customer satisfaction may enable the firm to consume less future resources while achieving better efficiency; that is, improving customer satisfaction helps generate more future sales at a given level of advertising and promotion costs, or save future marketing communication costs at a given level of sales.

Finally, a constant challenge for managers who want to improve marketing accountability is a lack of scientific measure of efficiency. Our study meets this challenge and informs managers on how data envelopment analyses (DEA) can be applied to pulse and improve advertising efficiency. This technique is especially important in consumer goods industries where firms spend a considerable percentage of their revenues on marketing communication. For example, package goods companies, via using DEA, can carefully monitor their marketing communication efficiency compared to competition and relate these analyses to customer satisfaction benchmarks. Because DEA efficiency results are benchmarked against best practices of competitors, rather than average performers in traditional regression based approaches, it offers a rigorous and scientific method for managers to furnish the marketing metrics dashboard. Indeed, firms can easily employ DEA to measure and boost the efficiencies of marketing activities, ranging from product development, branding, customer experience management, price promotion, personal selling, to channel governance (Horsky and Nelson 1996; Luo and Donthu 2001, 2006; Murthi, Srinivasan, and Kalyanaram 1996).

5.2 Research Issues

We feel that this study contributes to a better understanding of beneficial consequences of customer satisfaction for firms. Previous research has largely focused on *effectiveness* outcomes such as customer loyalty, customer retention, and price perceptions (e.g., Anderson and Sullivan 1993; Mittal and Kamakura 2001). To the best of our knowledge this study is the first to show that customer satisfaction significantly affects *efficiency* outcomes of advertising and promotion investments. It seems that a high level of customer satisfaction may allow firms to allocate future marketing communication costs more efficiently and productively respectively. Because advertising and promotion efficiency is by definition directly linked to a company's profitability, it constitutes a very critical marketing metric for future research efforts addressing marketing productivity chain (Rust, Lemon, and Zeithaml 2004). Our finding of the impact of customer satisfaction on communication efficiency helps alleviate the criticism of marketing's lack of accountability, since customer equity building with higher satisfaction and loyalty, by virtue of saving future marketing costs, generates more cash flows and shareholder value (Fornell et al. 2006; Gruca and Rego 2005).

Another key finding of our study is that improving customer satisfaction also allows firms to build superior human capital both on the employee and on the management level. This result is highly novel and refreshing because previous satisfaction research has rather focused on customer-related than employee-related outcomes. It seems that customer satisfaction may signal that the company has good prospects in the future. In this sense and on a more general level, our work suggests that marketing and strategy research should explore more the interface between customer satisfaction and HR management. For instance, future research may extend our efforts and examine a multitude of other interlinked concepts from the two disciplines (e.g., relating customer satisfaction to (1) CEO succession, top management compensation and turnover rate and (2) personnel selection, employee training and motivation).

Overall, our work contributes to the important literature on customer satisfaction and its intermediate consequences. We call for more research efforts along these lines so that important outcomes (e.g., a firm's future advertising and promotion efficiency and human capital excellence) of customer satisfaction will not be neglected any longer.

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