Electronic Theses and Dissertations, 2004-2019

2009

Critical Reviews and Market Performance

Elena Pomirleanu
University of Central Florida

CRITICAL REVIEWS AND MARKET PERFORMANCE

ELENA NADIA POMIRLEANU
B.S. Academy of Economic Studies, Bucharest, Romania, 2000

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Marketing
in the College of Business Administration
at the University of Central Florida
Orlando, Florida

Summer Term
2009

Major Professor: Jaishankar Ganesh

ABSTRACT

Firms invest significant resources to improve the quality of their products but also to communicate to consumers about their efforts. However, information regarding quality of product offerings is now increasingly being generated by short or long term users of products or services. The growing popularity of critical reviews has prompted attention from both academics and practitioners alike. Current academic findings do not seem conclusive with respect to the impact critical reviews have on product performance on the market. The current dissertation aims to clarify the role critical reviews have in relation to economic outcomes such as sales, category market share, price premiums and product success. Using four years of cross-sectional data from the automobile market, the first essay of this dissertation conceptualizes consumer and expert ratings as market-based signals and investigates the impact critical reviews have on product performance of new and used automobiles. Results show that both consumer and expert ratings are positively related to market performance (sales and category market share of new automobiles) but they exhibit a non-synergistic interaction. More specifically, at higher levels of consumer ratings, the impact of expert ratings on product performance is decreased and vice-versa. Furthermore, results show that critical ratings are significantly associated with the firm's ability to command higher price premiums. Comparatively, a firm-based driver of product performance, product improvement failed to show a significant association with product market performance but it exhibited a non-linear relationship with price premiums. Moreover, the impact of expert ratings proved to be significantly higher for utilitarian products than hedonic products whereas consumer ratings do not have a differential effect across product types. Finally, the results did not show that the impact of consumer ratings on sales of used automobiles is increasing over time.

The second essay focuses on expert reviews (entertainment critics) and provides a more nuanced examination of the role of critics and critical reviews and their impact on probability of product success. Based on qualitative data, two types of expert reviews are distinguished to be influential (opinions and evaluations), however, their role differs in importance over time. The hypotheses are tested using data from the fourth season of American Idol. Results show that on average, opinions are significantly impacting the probability of success whereas evaluations do not. Moreover, the numbers of statements that contain evaluation negatively impact the success in early periods.

Overall, the results highlight the facts that critical reviews from both experts and consumers should be monitored, that they are a key driver of product market-success and that select expert reviews may influence product success in early stages of product existence.

Key words: critical reviews, expert ratings, consumer ratings, market performance, price premiums

All thanks to mom, dad, and Vali for having unconditional faith in me.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

Until recently, product or service evaluation (termed critical reviews) seemed to be reserved to select few that had the skills, expertise and credentials to express such evaluations. Critical reviews consist of information generated by long or short term users of a product or service. They are omnipresent in the day to day life and with the advent of technology, accessible to the public in multiple ways. Sites such as Ebay.com, ConsumerReports.com, Amazon.com, Epinions.com, RatemyProfessors.com or Hotels.com (to name just a few) exists, strive and/or have been created with the purpose of taking advantage of the newly discovered option for large public to express ratings, reviews, recommendations or opinions about product quality. It seems that today every expert has a real competitor in scores of consumers that want to share own product or service experience. Whether they are especially requested for or offered without any incentive except benefit of society at large, it seems that critical reviews are changing the way we select, consume, and evaluate market offerings. Due to technological advances our own consumer experiences are not constrained to the circle of friends and acquaintances anymore. Digitization of word-of-mouth seems to be a concept to be reckoned with and has potential implications in brand building, customer acquisition and retention, product development, and service delivery.

Present dissertation seeks to advance academic and managerial knowledge in the area of critical reviews by means of two essays. Overall, the impact of two different formats of critical reviews is explored: consumer/expert *ratings* (a numerical representation of the overall quality of the product or service used) and expert *reviews* (a textual qualitative representation of product performance). Using both quantitative (essay one) and qualitative primary data (essay two), the relationship between critical reviews and product performance is investigated. Furthermore,

boundary conditions of the specified relationships are explored. Results inform both academicians and managers about the emerging role of critical reviews as key drivers of product performance on the market.

Recent theoretical and empirical advances establish consumer reviews as well as expert reviews as critical elements for marketing strategy (Chen and Xie, 2005, 2008). However, research in the area has followed two somewhat distinct directions. In the domain of expert critical reviews, debate is still at large with respect to the exact role expert reviews play in product performance (Eliashberg and Shugan, 1997, Basuroy et al. 2003). In the domain of consumer critical reviews, the results, while pointing towards a positive impact on product performance, are somewhat inconsistent with one another. Conflicting results are reported with respect to the explanatory power of consumer reviews valence or volume (Chevalier and Mayzlin, 2006, Godes and Mayzlin, 2004, Liu 2006).

Contrary to the assumption underlying most studies in the area, consumer critical reviews and editor critical reviews do not occur in isolation in the marketplace. To date, the literature has left unexplored the impact of the joint effect of consumer and expert reviews on product performance. The synergistic/compensating nature of the information contained in both types of critical reviews is yet to be addressed. Moreover, research in the area will move forward by uncovering unexplored consequences of critical reviews, pertinent to market performance or success of products.

To this end, the two essays of this dissertation investigate: 1) the relationship between consumer and expert generated information (ratings) and product performance and 2) the impact of various types of expert reviews on a products' probability of success. In Essay one, drawing on signaling theory, I analyze the impact of the synergy (or lack thereof) of different types of

market based signals (i.e. critical reviews) on the market performance of a product (market share, sales and price premiums of new and used automobiles). Further, I compare the impact of critical reviews as market-based signals to the impact of product improvement as a firm-based signal. Next, I examine the contingent roles of product-type characteristics (hedonic versus utilitarian), and of market-type (used versus new).

In Essay two of this dissertation, I attempt to answer whether experts' opinions reflect true product quality or whether they influence economic outcomes independently of their value as a signal of quality. Thus, I provide a more nuanced examination of the information contained in expert reviews and investigate its effects on product success by distinguishing between two types of expert reviews (opinion reviews and evaluation reviews) and I provide an investigation of the impact of two types of expert reviews over time. The data is coded from the fourth season of the very popular TV show, American Idol, which provides a natural setting to examine the role of expert generated information. It is the first study to provide a one to one correspondence between expert reviews and likelihood of product success.

The contribution of this dissertation to literature is threefold. I attempt to a) address the importance of synergistic effects of critical ratings as well identifying boundary conditions for their impact b) distinguish between types of expert reviews and examine the differential impact of reviews on product success over time and c) account for individual expert heterogeneity in a novel setting (a major limitation of previous studies in this area).

CHAPTER TWO: CAN THE WHOLE BE LESS THAN

THE SUM OF POSITIVE PARTS?

2.1 Introduction

Product quality is of paramount interest to consumers and companies alike. Managers strive year after year to improve financial performance of a firm through marketing actions (such as product improvements, sales promotions, price reductions) and/or marketing communications. Manufacturers, producers, retailers are the first in line to signal to consumers about the quality of their products.

However, social networks, technological advances, and internet penetration have accelerated the creation and dissemination of information about product quality that is generated from the market rather than the seller or manufacturer. This type of product quality information that comes from users or consumers is commonly termed 'critical reviews'. Critical reviews[1], as market-based signals of quality are growing in importance for both consumer decision making and firm marketing strategy (Chen and Xie 2005, Chen and Xie 2008). It is a common practice for firms to advertise critical reviews from experts or to capitalize on popularity of independent expert reviews such as the Consumer Reports. Lately, firms are encouraging regular consumers also to share their insights about product experience on their websites. For example, Amazon.com, one of the largest internet retailers has created a Customer Review Team so that "real people" (not employed by Amazon.com or its affiliates) can provide unbiased advice to fellow consumers (New York Times, November 2008). In a step further, Best Buy, one of the top

---

[1] Critical reviews of quality may be generated by regular consumers and/or by experts and can take various forms such as product reviews, ratings, recommendations, comments or endorsements.

US electronics retailers has began using snippets of consumer online reviews along with actual ratings in their nationwide print advertising. In fact, both consumer and expert reviews are becoming so important that they are cited as top information sources for purchase decisions regarding products and services[2]. Reflecting the growing importance of critical reviews, several studies have attempted to examine the relationship between expert/consumer reviews and product market performance such as box office earnings or sales (Eliashberg and Shugan, 1997; Chevalier and Mayzlin, 2004). Unfortunately, the results to date are rather inconclusive as to the relationship between the reviews and product performance (Delarocas, Zhang and Awad, 2007).

While encouraging and/or advertising critical reviews can be intuitively appealing, advertising these reviews can be costly, and the outcomes are often times unpredictable since the tone and content of the review is not within the control of the manager. As critical reviews posted online have the potential to revolutionize marketing and promotion by creating unprecedented opportunities, little is known about the risks associated with the race for achieving higher reviews all-around. Research is yet to examine the potential interaction of consumer and expert reviews and their combined impact on product performance. Moreover, research on the impact of critical reviews on other performance indicators, such as firms' ability to command price premiums as a result of users' goodwill regarding available products is lacking. Finally, investment in product development, a key factor in market growth, is always risky; the success of new products is closely linked to market response of experts or consumers to the new introductions and improvements. A paucity of conclusive evidence linking the impact of critical reviews to performance has resulted in increasing calls for more research addressing this topic

---

[2] Survey hosted by AMA and Opinion Research Corporation in December 2006

that is interesting and important for both academics and practitioners (2008 MSI Research Priorities; Srinivasan et. al. 2009).

The current research attempts to fill this gap by adopting the view that consumers pay attention to critical reviews because they provide an additional source of information about relative quality of products, given that they aggregate dispersed information from previous consumers and knowledgeable experts. A positive current consumers' review or positive expert review can be viewed by future consumers as a *signal* of higher relative quality that will tend to increase demand. In this context, we investigate how the two market-based signals of quality (consumer and expert ratings) interact with each other and how do they compare with other firm-based signals (product improvement) of quality in influencing the product performance in the market place. In particular, this research addresses the following issues:

a) How do market-based signals of quality (consumer ratings, expert ratings) impact market performance?

b) How does the interaction between market-based signals impact market performance?

c) To what extent does the impact of a firm-based signal of quality such as product improvement differ from that of market-based signals? and finally,

d) Do the above relationships hold true under all conditions or are there specific contingencies where the above relationships change?

Focusing on the automobile industry, this research builds on the theoretical premise offered by signaling theory to draw hypotheses relating online consumer and expert ratings to product performance on the market. Further, the level of product improvements, product type (hedonic versus utilitarian) and the type of market (new versus used) are used to explore the relationships

in detail.   Using secondary data collected from Edmunds.com, we test the hypotheses using a pooled least square regression method established in the literature.

The following section discusses the conceptual framework that guides the overall approach of the study by discussing the signaling theory, the roles and characteristics of critical reviews as signals, as well as it presents the development of the hypotheses. Next sections describe the data, the analysis approach and the results. Finally, a discussion section provides interesting guidelines regarding the impact of both expert and consumer ratings on market performance.

2.2 Conceptual Framework and Research Hypotheses

2.2.1 Signaling theory

Product quality is often difficult to evaluate before purchase. Consequently, consumers engage in search for information that is useful in determining product quality. Traditionally, the effects of information such as advertising, price, and brand reputation have been investigated in the context of information acquisition, integration and retrieval in consumer judgment and choice. Extensive behavioral research exists on how cues such as advertising or price affect consumer perception and choice (Rao and Monroe 1989) but this approach has been criticized that it views the cues as 'shortcuts' used by cognitively lazy consumers. Recently (Kirmani and Rao 2000) has proposed that this traditional approach be supplemented with an emerging tradition in information economics which holds the premise that different parties to a transaction often have different amounts or quality of information which may in turn, alter the terms of the transaction or the relationship between the parties.

As the quality is known to the seller but not to the buyer, the well known 'information asymmetry' problem arises (Akerlof 1970). Sellers may choose to signal the quality of their

products to the buyers in order to resolve information asymmetry, reduce consumer uncertainty and perceived purchase risk. Signaling posits a rational consumer that expects a firm to honor the implicit commitment conveyed through a signal because "not honoring the signal is economically unwise" (Kirmani and Rao 2000, p.66). The costs associated with false signaling are key in signaling theory because the effectiveness of market signals depends on the power of these costs as disciplinary mechanisms. When the costs associated with signaling are low, it is highly likely that participants will engage in false signaling. However, when the market is able to sanction false signaling promptly, the likelihood of false signaling is decreased.

Signaling literature documents the role that signals such as brand name (Erdem and Swait 1998), advertising (Archibald, Haulman, and Moody 1983), price (Rao and Monroe 1989), market share (Hellofs and Jacobson 1999) and warranties (Boulding and Kirmani 1993), etc., play in conveying information about product quality to consumers. However, in many cases, it seems that consumers pay great deal of attention to signals that are not generated by the sellers but by long or short time product users such as consumers or experts. Signaling theory has indeed been adopted to study firm's signaling to consumers or even firm's signaling to other firms (Boulding and Kirmani 1993, Rao, Qu and Ruekert 1999). The signals from the sellers are not able to convey all the information needed, otherwise consumers will have no incentive to search for additional information. Surprisingly, signaling from consumers to consumers or market to consumers has been largely left unexplored (Rao and Kirmani 2003).

One reason for this might have been the fact that until recently, the market signals from users of products proved difficult to quantify as their format of presentation was mostly oral. With the advent of technology, signaling from market or consumers to consumers has become not just prevalent but extremely important as it can reach extensive markets cheaper and faster.

Digital word of mouth has complemented and in some cases replaced the traditional word of mouth. Anecdotal evidence[3] shows that online consumer generated reviews have a significant impact on offline purchase behavior whereas the correlation in taste between online raters and non-raters is very high. Nearly a quarter out of every internet user reported using online reviews prior to paying for a service delivered offline. Ninety-seven percent of those who said they based their purchase on online reviews found the reviews to be accurate. Moreover, Nielsen Global Survey, based on data compiled from over 28.000 internet users in over 47 countries reported that recommendations from consumers and consumer opinions posted online are more trusted than television, radio or search ads.

Along with the positive implications of the existence of online critical reviews a question asked more and more loudly is what would motivate consumers to generate these signals in the first place and what kind of differences would be between online and offline user generated critical reviews. In the case of expert reviews online expression provides merely a platform for wider dissemination; thus, qualitatively online or offline expert ratings or reviews are similar. However, consumer compliments literature, albeit limited, provides some answers pertinent to a typology of online consumer opinion platform. Recent research (Henning-Thurau et al. 2004) posits social benefits (i.e. desire to express knowledge), economic incentives, concern for others and extraversion or self-enhancement to be primary reasons for which consumers choose to express themselves online. The criticism that online reviews or ratings are generated primarily by extremely dissatisfied or extremely satisfied consumers seems to be unfounded as, just as complaints do not always accompany dissatisfaction, compliments don't always accompany satisfaction (Kraft and Martin 2001). Also, as the internet acts as a huge archive, over time, the

---

[3] Online Consumer Survey (n=2000) conducted by comScore.com and Kelsey Group, 2007

distribution of motives for expressing critical comments in any form will most likely mirror the distribution of motives in an offline setting.

Several quality indicators have been considered in the marketing literature. Kirmani and Rao (2000) make the distinction between quality signals in which monetary loss occur independent or not of the firm defaulting on its claims. Advertising expenditures, reputation, brand investments entails upfront costs, independent of the quality of the product. Warranties and guarantees, however, are costly to the firm only if a product of lower quality is sold on the market.

Three important features distinguish critical reviews from other information signals, such as advertising, brand reputation or warranties. Irrespective of the product quality, experts and consumers do expend time and costs to review products. Therefore, critical reviews are usually perceived to be a) more credible, and b) trustworthy, revealing multiple aspects of a product ownership or experience, and relatively easier to access compared to manufacturer based information. The third important feature of critical reviews that is especially relevant in the current internet-connected market place is that they are lasting (once posted they become available for a long period of time) and are likely to be relevant across multiple phases of product ownership (i.e. new versus used products).

The signaling literature argues that effectiveness of a signal depends on both the a) *signal credibility* and b) the *relevant information content* (Heil and Robertson 1991, Price and Dawar 2002). To be credible, a signal must have a bonding component, or a potential cost to the sender of the signal if the signal proves to be false. The reputation of an individual or a firm declines if signals go unfulfilled (Kreps and Wilson 1982, Milgrom and Roberts 1982). Signal information content refers to the extent to which a signal carries information that is diagnostic for assessing a

particular quality dimension in a product. For example, a warranty signal may carry information relevant to reliability of a product whereas brand reputation may carry information about reliability or functional product performance. Warranty, as a clear signal of reliability, can be read quickly and with minimum error whereas brand reputation, powerful nonetheless, may be informative of many aspects of the product, including reliability. Credibility and relevance of information content for both consumer and expert ratings signals is discussed in the following sections.

<center>**2.2.2 Market-based Signals**</center>

2.2.2.1 Expert ratings

Historically, expert ratings have been the most popular and readily available information available to consumers (Eliashberg and Shugan 1997). Expert ratings are based on independent laboratory tests or expert evaluations and reflect, arguably in a more objective manner, the inherent quality characteristics of a product. Expert raters are highly trained professionals with extensive knowledge of the entire market and have detailed knowledge about the products, their features, qualities and shortcomings. They tend to focus on product attributes and provide objective information about the performance of the product on the various attributes. Expert ratings are more likely to appeal to sophisticated consumers (Holbrook 1999). Experts risk a loss of reputation if their product evaluations are false. Thus, the bonding component is strong for the expert signal, and, as a result, is considered a highly credible signal. However, the ownership or extended use of product is less likely to be reflected entirely in expert ratings, which lowers the relevant information content of this signal.

2.2.2.2 Consumer ratings

Consumer ratings are numerical summaries of a product's overall performance. They are generated by users of products and are a reflection of personal usage experience, thus, being likely to be more relevant to consumers interested in specific usage situations (Bickart and Schindler 2001) or for consumers less familiar with the product (novices or infrequent users) (Chakravarti, Liu and Mazumder 2008) . Consumer ratings are subjective evaluations, emotion laden even when their evaluative criteria (i.e. performance, design, fun-to-drive) are well defined. Consumer's rating, as a signal, has lower credibility because the bonding component (the cost to consumer for providing false information) is perceived as being not easily identifiable or quantified (Dean and Lang 2005). Nonetheless, this signal from consumers is high in information content because the ratings are a summary of extensive ownership experience with the product- which is not necessarily reflected in expert ratings. Finally, consumer rating, as a signal, is very clear in its content to its intended audience because the similarity between the sender (previous consumers) and receivers (future consumers) is high. This similarity allows an easier interpretation of the information content of the signal.

There are differences and communalities between the two types of ratings. First, user ratings represent the views of the general public and are more commonly thought of as expressing the 'mass' preference of regular consumers. Expert ratings, on the other hand may represent the preference of the 'elites' (Holbrook 1999). The difference in preferences between experts and consumers is greater for experiential and/or hedonic products, (due to the higher level of taste heterogeneity in these products), than for utilitarian products, such as many durable goods are. However, while expert and consumers may have different evaluation criteria, their judgments do reflect shared preferences as was empirically supported by low but nonetheless

positive correlations between the two (Holbrook 1999, Chen and Xie 2008, Dellarocas, Zhang and Awad 2007).

Second, consumer's rating is an aggregate signal, formed by sampling various product experiences from users of that *particular* product. However, it is only limited to a specific product in the broad sample of products as rarely do consumers buy and experience multiple similar products, especially in the consumer durables market. Consumer's ratings signal, thus, provides an *absolute-to-the-market* assessment of the product. For example, a consumer will mostly likely own, use and rate one automobile as is the only one they experience on a day to day basis. Expert's rating, however, is typically based on sampling and evaluating multiple products on the market. The signal from expert has incorporated within a *relative-to-the-market* assessment, as they are comparing a large set of market offerings against each other, on specific and well defined criteria.

Finally, consumer's and expert's rating differ in 'aggressiveness' (Heil and Robertson 1991). In a traditional competitive market signaling setting, where a firm signals to another firm, an aggressive signal (i.e. McDonald's new pizza-product was once perceived as an aggressive act which threatened Pizza Hut's core business) is likely to elicit faster and with greater magnitude reactions, regardless of whether the competing firm is actually harmed or not. Similarly, a market-based signal, such as consumer or expert rating, may have a characteristic of 'aggressiveness' or 'actionability', as perceived by their intended audience. More specifically, expert ratings do tend to provide information on 'best buy' or 'best value', as they do provide the *relative* assessment to the market. Expert ratings signal is highly likely to be interpreted to mean that all the cognitive and evaluative work to determine the best purchase has been done and the top rated brand is the best choice. Thus, less work is left but to take an action on expert

recommendations. Among the market-based signals, expert ratings seem to be higher on this 'actionability' characteristic.

2.2.3 Market-based Signals and Market Performance

The relation between critical reviews and product performance has been the subject of extensive research recently. However, a review of consumer and expert ratings literature (Table 1) reveals that, in general, the context of academic investigation was almost exclusively an experiential products context (books, television shows, movies, wines, theatrical performances). One particular reason forwarded is that the nature of the goods, very low on search attributes but high on experiential and credence attributes, prompts consumers to actively seek the advice and opinion of experts or fellow consumers in order to better determine the quality of the good. As mentioned earlier, past research is mixed in findings regarding the impact of consumer and expert generated information on retail sales of experiential goods. There are a number of aspects of consumer reviews that are of interest: volume (sheer number of reviews), valence (i.e. the preference carried in the product review information, usually measured as favorable, unfavorable or ratings level) and dispersion (i.e. dissemination of information in the market). Using both experimental data (Senecal and Nantel 2004) and field data, a few studies (Chevalier and Mayzlin 2006, Forman, Ghose and Wiesenfeld 2008) have shown that the valence of consumer reviews have a significant impact on sales. In contrast, Liu (2006) showed that the volume of user reviews, and not valence, is significantly related to product performance. Duan et al. (2008) shows that valence directly influences volume of word of mouth which in turn has an impact on box office revenue. By separating consumer reviews' dispersion across different online communities from dispersion within communities, Godes and Mayzlin (2004) showed that dispersion across communities has significant explanatory power, but not their volume.

A similar picture is presented in the literature of expert reviews. While the impact of expert reviews is positive, it appears that the time in which this impact is significant is however, not yet clearly established. In particular, Eliashberg and Shugan (1997) found that the favorableness of critical reviews is correlated with weekly movie box office revenue but only after the fourth week. Basuroy, Chaterrjee and Ravid (2003) find that this correlation is significant in all the eight weeks after opening. Reinstein and Snyder (2005) showed that positive reviews have a large impact on the opening box office sales. In sum, research is needed to clearly establish the impact of expert /or consumer ratings on experiential products performance and whether their impact is different for experiential versus search products.

Research showed that there are significant differences in the consumer decision making process for experiential versus search goods. Specifically, consumer judgment with respect to search products, such as dishwashers, automobiles and other durables, tends to be cognitively driven, instrumental, goal-oriented (Sen and Lerman 2007). This is not the case of experiential goods. During the evaluation of experiential products, consumers generally assign greater weight to experiential attributes or aspects of consumption than to concrete attributes (Batra and Ahtola, 1990, Hirschman and Holbrook, 1982); in other words, the evaluation is more subjective, affected by mood and other sensory experiences. The above differences in consumer processing makes the impact of critical reviews on search goods more easily identifiable and concrete because consumers will use the information contained in critical reviews more objectively.

As explained earlier, the effectiveness of a signal depends on its credibility and information content. More specifically, both expert ratings and consumer ratings signal credibility and content may increase perceived quality, decrease information costs and the risks perceived by consumers. Automobiles are search goods and their attributes are much easier to

evaluate prior purchase. Thus, when consumers or experts are reviewing a product, the incentive to provide false information is less because the information is easily verifiable and makes providing false information difficult. Thus, higher levels of ratings, from both consumers and experts are likely to be associated with higher quality automobiles. It is expected that the ratings are more strongly correlated to real choices, as they reflect the observable truth objectively. However, when both consumers and expert ratings are present, the relative credibility of expert ratings is higher because it has the highest bonding cost, higher expertise and higher objectivity. Thus, based on prior research findings, it is hypothesized that:

> *H1a: Consumer Ratings impact market performance (sales, market share, price premium) positively.*

> *H1b: Editor Ratings impact market performance (sales, market share, price premium) positively.*

More recently, the researchers have tried to integrate the two research streams (Chakravarty et al. 2008, Dellarocas, Zhang and Awad 2007, Senecal and Nantel 2004). Results show that when consumer reviews are taken into consideration beyond the expert reviews, the forecasting power of a model that investigates box office performance increased. What is less clear from the literature is the combined effect of both consumer and expert ratings on market share or sales of a product. Experiments (Senecal and Nantel 2004) investigating some aspect of this relationship (in an online consumer choice context) failed to find any significant difference in how experts or consumers may differentially impact consumer choice.

Signaling theory provides theoretical rationales that pertain specifically to the interaction effects of two or more signals. In addition to each signal's information content (whether it offers pertinent information about a specific quality feature) and inherent signal credibility, the

interaction between two signals must consider their 'relative credibility' and the signals' ability to enhance the each other's signal credibility (Kirmani and Rao 2000, Price and Dawar 2002, Basuroy et al. 2007). For example, a warranty adds an element of tangibility to a reputed brand's ability to signal functional performance of a product (because it will be costly for a low quality brand to signal high quality by paying for the warranties), thus enhancing brand reputation signaling effects. A signal's impact is determined by the weight assigned to the signal in decision making. This weight explains how much consumers rely on that signal and thus, the strength of the impact of the signal.

A signal's effect will be diminished in the presence of other signals if the initial signal will be determined to lack either relative credibility, relevant information about a quality dimension, or both (Price and Dawar 2002). If a second signal is present, then the initial signal will be reassessed in order to determine which one of the two signals is more credible and which one provides better information content. Specifically, expert ratings will attenuate the effects of consumer ratings because of its higher relative credibility, due to higher potential cost of false signaling. The higher the expert rating, the higher the risk assumed and the potential reputation costs. For this reason, in presence of higher expert ratings (which are highly credible), the impact of consumer ratings will diminish. This is a well documented and intuitively understood fact. However, more interestingly, one can argue that consumer ratings can also attenuate the effects of expert ratings because consumer ratings have higher relative relevance of information content. Consumer ratings bring the ownership experience facet to the table - which expert ratings lack for the most part.

Thus, it is hypothesized that:

H2: Expert ratings and consumer ratings will interact such that the joint impact of expert and consumer ratings will be negative; in other words, the impact of expert ratings on a market performance will diminish at higher levels of consumer ratings (and vice-versa).

2.2.4 Firm-based Signals

A firm has the possibility to emit multiple signals; however, the consumer durable markets in general and automobile market in special are well-known for their high reliance on product improvements (including new product introductions). Product improvements and critical reviews go to the heart of competitive advantage as competitive advantage is affected not only by corporate and competitor actions but by consumers alike (Adner and Zemsky 2006). Research investigating the impact of market-based and firm-based signals when both types are present is lacking. Their relation is discussed next.

Product improvement is a tool for market signaling. The benefit for a manufacturer to signal through product improvement is the likelihood of securing a better, newer or stronger position on the market, given that product improvements are not easily replicated and the costs might be prohibiting for the competitors. Therefore, the *product improvement* is a firm-based signal that arguably influences the size of the market (demand), such as expert and consumer signals are also posited to. Interestingly, research in the area investigating product introductions and product improvements has focused mainly on the revenue, profit or firm-value effects of new products (Pauwels et al. 2004) and to a lesser extent on market-performance of products. Conversely, *critical reviews* research had a sustained focus on products' market performance (sales, market share), with much less concentration on investigating any other market

performance outcomes of market-based signals (price premiums). Therefore, in an extension from previous studies, the differential effects of market-based signals (critical reviews) and firm-based signal (product improvement) on market performance of the products are compared.

Product improvements (or model changes) in the automobile industry, have been the focus of consumers and manufacturers since the first Ford-T entered the mass market. For most firms, successful product introductions and improvements are engines of growth as they generate future profitability and prevent the obsolescence of the firm's product line (Pauwels et al, 2004). Product improvements that a manufacturer undertakes can range from minor cosmetic changes not visible to most consumers, to styling changes that result in an altogether new product (JDPA-1998 Guidelines, Pauwels et al. 2004, Srinivasan et al. 2009).

The effect of change in styling as a type of product improvement on demand has been investigated (Bayus 1988, Hoffer and Reilly 1984, Millner and Hoffer 1993). Hoffer and Reilly (1984) found indications that a major change in styling was a determinant of the timing of the replacement of buyers of automobiles whereas a major change in styling has been associated with significantly higher sales growth rates for restyled models than for models undergoing lesser degrees of change (Millner and Hoffer 1993). Bayus (1988) observed that style and new features had an effect on the timing of replacement of TVs. Furthermore, Bayus (1991) found that early replacement of automobiles was frequently made for styling reasons, whereas cost-related reasons were more common for later replacements. In sum, product improvement is positively associated with an increase in demand.

In the automobile industry, the cost of these changes can be substantial and has been argued that while styling changes over years tend to increase sales, they do not necessarily pay off financially (Hoffer and Reilly 1984, Sherman and Hoffer 1971). Looking at the top-line

performance (firm revenue) of new products, Pauwels et al. (2004) argue that new products tend to increase firm revenue. Improved products do tend to sell for higher prices as, in general, higher quality products are associated with higher prices (Rao and Monroe 1989, Dodds, Monroe an Grewal 1991). Recently, Srinivasan et al. (2009) showed that product improvements tend to increase stock market returns. It appears that an interesting question pertains to the ability of a firm to command not just higher prices but price premiums as they improve their products.

Manufacturers have steadily improved the quality and reliability of their products and spent the last decade delivering more and more features into their cars. For example, many luxury cars now feature sophisticated computing and navigational equipment, comprehensive diagnostics; some cars can even park themselves. Consumers are sent training videos and a significant effort is put into educating consumers about all the new functions and features of the cars. As mentioned earlier, moderate and high improvements tend to be more costly. From a signaling perspective, the credibility of this signal is thus stronger as a firm has a lot to lose by investing so much effort into a lower quality product. Secondly, the information content of the signal is becoming stronger as any new improvement will add to the functionality of the product. Thus, it is expected that product improvements will impact positively the ability of a firm to command higher prices for their products. As the costs for product improvement are escalating, consumers will grow unwilling to pay higher and higher prices for the product, as a result, the price premiums that a firm may command will be decreasing.

The functional relationship between product improvements and product performance is also of interest. Recent empirical evidence has suggested a non-linear effect of the improvement on new product success. Gielens and Steenkamp (2003) find a U shaped effect of product novelty on product trial probability. Within a range of product improvements, consumers prefer

20

either minor updates or high relative advantage (new market entry). Moderate improvements typically do not offer much more advantage over minor innovations and thus appear 'stuck in the middle' (Srivinivasan et al, 2009). Also, from a financial perspective, moderate improvements are much more costly than mere trimming and styling changes. Between minor updates and new market entries, the latter are better news for the firm's future value because products high on newness are an especially strong platform for growth. Finally, the relationship between product improvements and stock returns has been shown to follow a U shape (Srinivasan et al 2009).

With respect to the functional form of this relationship, traditional economic theory postulates that products are evaluated by their potential to maximize a consumer utility, where utility is measure as a function of the product's tangible attributes (Drolet, Simonson and Tversky 2000). As more and more features are packed into products, consumers will derive less and less utility from their added benefits. As a result, the willingness to pay higher price premiums for the added features is decreasing.

Finally, literature that pertains to the relationship of critical reviews and product prices is lacking. However, anecdotal evidence suggests that, depending on the product category consumers are willing to pay 20% to 90% more for a 5-star service or product compared to a 4-star service/product. Consistent with the literature relating quality, price, and performance it is expected that the relationship between critical reviews and market performance is positive. Thus:

> *H3: Product improvement impacts market performance (sales, market share, price premium) positively.*

However, the above mentioned implications are usually discussed in settings in which price or quality is presented as stand-alone cues to consumers. Dodds, Monroe and Grewal

(1991) suggest that the impact of quality on prices may diminish in the presence of other, more familiar information cues. As both product improvement and critical reviews are signals of quality, consumers must make the evaluation of which signals is more relevant to the specific consumption situation. For any improvement in product features, the product price goes up and the consumer may face a higher risk of an incorrect assessment. Therefore, more weight will be assigned to product improvement that, as a signal has higher credibility and bonding costs associated with it.

Interestingly, the relationship between critical reviews, product improvement and market performance of a product is different, as the familiarity and usefulness of the signal shifts from product improvement to critical ratings when both types of signals are available on the market. Lower level improvements may be more subtle, and is highly unlikely that regular consumers recognize and/or have a clear understanding of the value of the improvement. In such cases, consumers in the mainstream market are more likely to consult expert ratings because of the expertise and market oversight that experts possess. In this case, they will rely more on expert ratings and the weight associated to expert ratings will increase.

Similarly, while higher levels of product improvements are more complex and not easily understandable in terms of implications for the product's performance or consumption experience, both consumers and experts will easily recognize such changes and can potentially assess the benefits associated with it. Moreover, the magnitude and the newness of the improvement prompts increased interest to consult both sources of information. Thus, for any type of product on the market, critical reviews are more informative about which product is better to select than the level of improvement associated with the product. Therefore, it is expected that:

H4: The impact of product improvement on market performance is lessened in the presence of consumer or expert ratings.

2.2.5 Contingent Effects of Product Type

Consumer choice is driven by utilitarian and hedonic considerations associated with utilitarian and hedonic goods (Dhar and Wertenbrock 2000). Broadly speaking, hedonic goods provide more experiential consumption, fun, pleasure and excitement, whereas utilitarian goods are primarily instrumental and functional, their consumption is more cognitively driven and accomplishes a practical task (Hirschmann and Holbrook, 1982). Both of these dimensions are found in any offered product but there is little doubt that consumers are able to categorize a product as primarily utilitarian or primarily hedonic. The automobile market can be categorized (as a whole) a market for consumer durables, in essence, more superior on utilitarian dimensions than movies or books, for example. However, some categories on this market can be categorized a-priori as being more hedonic (sports, luxury, large sedans) than utilitarian (SUV, crossovers, pick-up trucks or vans). Consumers are likely to respond differently to critical reviews of hedonic versus utilitarian goods (Adaval 2001, Sen and Lerman 2007). In the case of utilitarian products, consumers are primarily concerned with the immediate consequences of consumption and are driven by utility maximization. Since utility maximization is based on tangible, seemingly objective criteria, consumers should feel rather comfortable relying on experts and other consumers' evaluations. Since expert ratings are relatively, more objective and credible signals than consumer ratings, it should be expected that expert ratings be weighed more heavily in this context than consumer ratings. In contrast, the evaluation of a hedonic product involves a high degree of subjectivity, and achievement of value rather than utility maximization (Mort and

Rose 2004). In other words, consumers are more aware of the heterogeneity in taste and realize that each individual consumer has its own view product quality. Thus, the expert or consumer ratings will be perceived as being lower in information content, albeit credible. As a result, the impact of hedonic signals (signals for hedonic products) will be lower than that of utilitarian signals. In sum,

> $H5_a$: *Expert ratings and consumer ratings will have a relatively higher impact on market performance of utilitarian products compared to hedonic products.*
>
> $H5_b$: *Expert ratings will have a relatively higher impact on market performance of utilitarian products than consumer ratings.*

2.2.6 Contingent Effects of Market Type

Automobile industry is characterized by a very active secondary (used car) market. More than 70% of automobiles sold within a year in United States are used cars. Compared to the primary market, independent experts seldom review products on the secondary market. Expert ratings are relevant for new products more than for used products because their information is limited to a specific instance in the life of the product. Over time, expert ratings become less relevant, dated and thus, less impactful. For this reason a key driver for secondary markets is posited to be consumer reviews. Movie industry literature suggests that the impact of word of mouth is gradually reduced as people lose interest in a movie during subsequent weeks. However, in the case of a durable product that can have multiple owners over time, the relevance of consumer ratings will be less likely to disappear. Furthermore, as more consumers are expressing their opinion about the products, the sample of reviews is becoming more accurate and representative of the entire consumer population. The number of consumers providing the

ratings is likely to be of importance. Thus, the precision of the signal is increasing. Furthermore, as the duration of ownership increases, the information content of the associated consumer ratings increases-this has a direct impact on the precision of the signal (Heil and Robertson 1991). Consumer ratings will become more accurate and will be more actively sought for used products. However, on a secondary market, the consumers providing the ratings are also, in most cases the sellers. Hence, a lack of credibility might be associated with their reviews that could potentially decrease the overall impact of the ratings on product performance, although to a lesser extent. Thus, it is expected that:

H6$_a$: Expert and consumer ratings will impact market performance positively.

H6$_b$: The impact of consumer ratings on older products' performance strengthens over time.

2.3 Research Design and Methodology

2.3.1 Data Description

This section presents the research design and methodology used to test the proposed relations. The data has been collected from several sources: Edmunds.com, Ward's Automotive Yearbook, JD Powers.com and R.L. Polk Co. The sample contains new and used automobile sales and critical reviews for 38 brands in 27 market segments (i.e. lower small, upper small, lower luxury, etc) for the years of 2004 through 2007. The sample represents more than 85% of the automobile and light-trucks market in United States. The unit of analysis is represented by the make/model/year combination of automobile (i.e. Toyota Corolla 2004, BMW 3Series 2006). *Consumer ratings (CR).* Edmunds.com is fourth premier automotive site in United States, drawing 100 million visitors a year (Business Week, Nov 2007). The site is well known for user generated content of information about automobiles. Owners of any models can place a review

on the website, and can rate the quality of their automobile on performance, fun-to-drive, build quality, comfort, interior design, reliability, fuel economy and exterior design on a scale of 1 to 10 where 10 represents excellent quality. For each make/model/year combination the average of all the user ratings posted on the website for years 2004 through 2007 has been collected. In order to create an aggregate measure for the consumer ratings, exploratory factor analysis has been employed. All factor loadings above .7 were selected for the composition of the average measure. Thus, consumer ratings (CR) measures the yearly average of the posted ratings for each make/model/year combination over the four-year period (e.g. average of all the ratings posted by the owners of Toyota Corolla 2004 in the year 2004; another observation would be the average of all ratings posted by the owners of Toyota Corolla 2004 in 2005 and so on). The final samples has 980 (new automobiles) and 1320 (used automobiles) observations.

Expert ratings (ER). Edmunds.com is renowned for its editorial board. Each automobile is tested by the experts of Edmunds.com and, is rated on performance, design, build quality and fun-to-drive on a scale of 1 to 10. A rating of 10 means excellent whereas a rating of four or less means poor. An individual and an overall average score is reported on the website. In addition, a review is provided for each automobile. For each make/model/year combination, expert ratings (ER) variable measures the average overall expert ratings.

Product Improvements. To operationalize this variable the Pauwels et al. (2004) scale of product improvement was adapted. A departure from their study will be that the data generated through the use of the scale to quantify model changes will quantify and measures the product improvement at the vehicle level. The source of product improvements information is represented by the expert opinions and the guidelines provided by JDPA (1998) in quantifying the product improvements. The product improvement (measured on a 0 to 4 scale), as identified

by the expert opinions can range from nothing (0) to mere trimming and styling changes (level 1), to 'design' and 'new benefit' improvements (level 2 and 3), to brand entry in a new category (level 4). For example, the 2002 Toyota 4Runner with minor exterior styling changes is a level 1 car, the 1998 Isuzu Rodeo with a major change to vehicles platform is a Level 2 car, the 2001 Ford Explorer with a new platform and additional 'third row' seating is a level 3 car whereas the new introduced 2001 Acura MDX is a level 4 car.

Price premium. Price premium is calculated as the difference between an average options model's price and the average price in the respective automobile segment (i.e. small specialty, large luxury, luxury crossover, luxury van).

Product type. Based on previous findings (Dhar and Werbenbrock 2000, Okada 2004), we categorized the products as primarily hedonic if they belonged to a specialty, luxury or sports category and utilitarian for the rest. In addition, a pretest study was conducted at a major southeastern university (n=70). On a scale of 1 to 7, the respondents were asked to provide their perception of automobile categories as being "More hedonic" or "More utiliatarian". Based on this pretest, the data set has been classified into 'hedonic' or 'utilitarian'.

Objective quality. Data collected from Initial Quality Study conducted annually by J.D. Power and Associates has been used to measure the objective quality of the products. IQS data aggregates the number of problems with the automobile or board instruments experienced by consumers in the first 90 days of ownership. A summary of data is presented in Table 2.

2.3.2 Data analysis

The objective of the study is to establish the impact of critical reviews and product improvements on market performance of the product. Market performance was operationalized in three different ways: measures of logsales, category market share and percent price premiums

27

for ease of interpretation. A 'category' is the official industry determination of automobile submarkets. The data set has eight different categories, as described and generally accepted in the industry: small, medium, large, luxury, crossover, SUV, van and pickup. The hypotheses are tested by examining the change in sales, category market share and percent price premium for new automobile market. Existing literature often uses ordinary least square to test similar hypotheses (e.g. Basuroy et al. 2003, Eliashberg and Shugan 1997, Liu 2006). Three yearly dummy variables are included to control for the effect of unobserved economic factors. Summary statistics of the data are presented in Table 3. Since multiple interactions are being estimated, collinearity checks have been performed using multiple diagnostics on the uncentered data including, bivariate correlations, variance inflation factors, and the condition indices. These multiple diagnostic measures revealed high VIF, albeit unexpected when interaction terms are present in the models. Inter-correlations between variables (Table 4) were analyzed. The correlations are in general modest and, since the signs and significance are as expected, sample size is large (n=754) we proceeded with the analysis interpretation (Stundenmund 2004, Wooldridge 1998). Results of the pooled regression analyses are presented in Table 5,6 and 7.

-----insert table 5, 6, 7 about here-----

Model 1 displays the results of the H1a, H1b and H2 hypotheses tests. The interaction between expert and consumer ratings is significant and negative (β=-.33, p<.001) thus supporting H2 and providing no need for interpretation of simple effects coefficients for expert and consumer ratings (H1a and H1b). These relationships become stronger in the presence of objective quality (JD rating) as main driver of product market-performance. To better understand the negative interaction between consumer and expert rating, the impact of expert ratings at

28

various levels of the consumer ratings for logsales was plotted in Figure 1 (Aiken and West, 1991).

------figure 1 about here-----

Figure 1 plots a 3D interaction between consumer and expert ratings from four different observation points. It is easily observed that at higher levels of consumer and expert ratings the impact on product market performance is lower than on any other high-low level combinations. Further the interaction was analyzed by evaluating the simple slopes at three levels of consumer ratings: one standard deviation below, one standard deviation above and at the mean of consumer ratings. Results indicated that the simple slope of the regression had a positive, non-significant value at one std. deviation below mean CR (t=0.06, p>.5), did not differ significantly from zero at mean CR (t=-1.03, p>.05) and had a significant negative value for values one standard deviation above mean of CR (t=-1.86, p<.1). Similar results were found for the alternative product performance operationalization, the category market share (Figure 2). Also, as table 4c shows both consumer ratings and expert ratings have a significant influence on price premiums (p<.1).

Models 2 from Table 4a, 4b and 4c provide the results of the product improvement test model (H3 and H4). While both consumer and expert ratings maintained their significance, product improvement had no significant impact on sales or market share (b=.02, p>.05, n.s. for sales and b=.15 , p>.05, n.s. for market share) when both consumer and expert ratings are included in the analysis.. Product improvement exhibited a curvilinear (diminishing return) functional form for price premiums and price premiums expressed as percentage[4] of the segment (improv=9.02, p<.001, improv_square=-2.26, p<.001). Therefore, H3 and H4 were both supported.

---

[4] Expressing the price premium in percentage form takes into consideration variation associated to segment effects.

Further, analyses were performed to identify whether the above identified relationships hold true for different product types. Two interaction variables were created to capture the difference in slopes of consumer and expert ratings impacts on logsales, market share and percent price premiums. Results show that consumer ratings do not have a significantly different impact for utilitarian and hedonic products whereas expert ratings are positively associated with sales (ERxUtilitarian=.46 p<.05) and category market shares (ERxUtilitarian=1.48, p<.05) of utilitarian products. Overall, this provides partial support for hypotheses $H5_a$ and $H5_b$ (impact of expert ratings).

Next, we examined the impact of consumer ratings for used markets, as stated in hypotheses $H6_a$ and $H6_b$. The impact of both expert ratings and consumer ratings on market performance of used automobiles is similar to their impact on new markets (Table 8), providing support to $H6_a$. In order to test the impact of consumer ratings for older products, a newly created variable, Vehicle_age will capture the age of a model in the data set. This approach enables examination of the effects of consumer reviews on product performance over time that is not explained by a general trend in sales. Table 8 reveals the results of the analysis. The interaction term of consumer ratings and age of the vehicle is not significant for the used car market (β_{sales}=.006, n.s,, β_{mkt}=-.03, n.s. $\beta_{pricepremium}$=.40, n.s). Thus, $H6_b$ was not supported. Control variables used are warranty, awards, number of reviews and objective quality. Other dummy variables were used to control for the economic and specific brand factors within a specific time period. A summary of the hypothesized effects and the results are summarized in table 9.

2.4 Research Findings, Discussion and Implications

2.4.1 Research Findings and Discussion

The present research offers some interesting theoretical and managerial contributions to the signaling and critical reviews literature. Theoretically, the signaling literature is enhanced insofar as this is one of the first efforts aimed specifically at investigating the impact of multiple signals and interrelationship of signals that are not generated by the firm. As pointed out by Rao and Kirmani (2003), to date only a handful of papers do address the interaction of signals. Out of those that do all are still in the realm of traditional – firm generated - signals (i.e. Dodds, Monroe and Grewal 1991, Basuroy et al 2007, Price and Dawar 2003). Currently, existing competitive market signaling theory (Heil and Roberstson 1991) does not incorporate market-based signals or recognize the impact signals from the market may have on marketing strategy.

First, the results point towards the fact that seemingly helpful market-based signals may interact in a non-synergistic fashion. As the firms are changing their strategy to incorporate and encourage generation of market-based signals, the question arises of whether there are specific signals that may be more useful to the firm, that should be advertised and encouraged more. Secondly, the results point towards the facts that powerful firm-based signals may decrease in intensity in the presence of market based signals. Product improvement (generally a strong firm-based signal) has failed to show significant impact on sales or market share in the presence of critical reviews whereas generally, it has been shown to impact demand in a positive fashion. This suggests that as the market place evolves more intricate relationships between well established marketing actions and reactions may be altered not just by the signals sent on the market by the direct competition but by third parties that, in many instances are more similar and thus more persuasive to the target market. Also, this research raises the question of the right and

31

most efficient combination of signals that a firm may use. As critical reviews do represent aggregated information about product quality, they may speak volumes to consumers about specific product experiences. Firms should try to understand and measure signal clarity so that specific use of market-based signals speak about specific issues. Finally, taking into consideration these types of signals by incorporating them in firms' strategy can be an avenue to build a richer theory of the fit between firm and its environment.

Present research is informative to critical reviews literature also. First, it establishes the role of expert ratings and consumer ratings as valuable sources of information for durable goods with search attributes. From a managerial perspective, understanding the impact of quality reviews on product performance is critical because engaging in advertising, encouraging or improving critical reviews may be costly and alternative-laden (Chen and Xie 2005, 2008). Interestingly, despite calls for addressing this issue (Eliashberg, Elberse and Leenders 2006), research in the area of critical reviews has largely ignored the joint impact of the types of critical reviews. The importance of examining the combined impact of the reviews is heightened by the fact that: a) the two types of critical reviews do not exist in isolation in the market place and that both are important to consumers, b) the reviews may exhibit differential impacts that change over time depending on their salience or relevance to prospective buyers, and c) the reviews reflect various dimensions of product experience or ownership that can complete or overlap with each other.

The major findings are as follows: a) first, we established that both expert ratings and consumer ratings do have an important impact on the success of a product in the market place beyond the effects of objective product quality; b) second, the impact of expert ratings must be interpreted while taking into consideration the level of consumer rating. Specifically, expert

ratings seem to have a weaker impact on performance at higher level of consumer ratings than lower levels of consumer ratings. This supports the view that, for search products, with attributes that are easily verifiable, multiple information sources may become less relevant and not work in synergy. This result is interesting because a common misconception on the market is that more or higher reviews are always better. The results appear to say that, at higher levels of consumer ratings information from expert ratings gets discounted. However, an underlying story line is the fact that the information content similarity of critical reviews plays an important part in their interaction. A critical managerial implication is that in order to manage this interaction, critical reviews should provide information specific to product quality dimensions that consumers can easily compare. A better management of information will live less room for consumer guessing and will determine a clear interpretation and decoding of any market-based signal.

The interaction between the two market level signals (consumer and expert ratings) highlights the fact that multiple market level signals must be monitored. Also, it suggests an additional use for expert or consumer ratings in advertising to counter unfavorable market level signals. However, since the marketer has little control over the consumer ratings but a lot of control over advertising, the use of favorable expert ratings in advertising may be a useful strategic tool for combating unfavorable consumer ratings.

Further, present research adds to the literature on product improvement in several ways. First, empirically supporting a non-linear relationship between product improvement and price premiums current knowledge in the area provides information about financial consequence of product improvement. Due to diminishing utility consumers are able to derive from continuing improved products companies are not able to extract the full benefits associated with their efforts. An interesting implication for firms is the fact that mere cosmetic changes seems to be

more fruitful than technologically advanced improvements. Reasons associated with this development are that consumers are in most cases unable to distinguish and appreciated the value associated with improvements as they lack the technical skills and expertise. Post-hoc analyses aimed at investigating interrelationships between product improvements and critical reviews revealed that neither consumer reviews nor expert reviews provide any contingent effects for the impact of product improvement on price premiums. Thus, an avenue for future research would be uncovering conditions under which firms can extract higher price premiums associated with their product improvements. Second interesting results from the product improvement analyses is the fact that results failed to relate product improvements to sales of market share. It seems that consumers are willing to buy better products based on market-based signals but their willingness to pay is only related to the degree of product improvement. Thus, market-based signals and firm-based signals have a different effect on market-performance of products. The implication for managers is strictly related to the growth strategy pursued in the organization. If market expansion and penetration is the goal, then advertising and encouraging market-generated feedback may prove a useful tool. If increased top-line revenues are the goal, pricing of the product should take into consideration factors that affect ability to command higher prices and price premiums-that, at the moment seem to be internally managed.

Finally, the investigation was aimed to understand boundary conditions for the above mentioned relationships. Based on consumption goals, any product market can be divided into utilitarian and hedonic submarkets. The current literature provided relevant information regarding how critical reviews may be used differently based on consumption motives. Results show that expert ratings maintain their impact on sales and market share for utilitarian products but not for hedonic products. Consistent with past literature in advertising that suggests that the

effectiveness of an endorser or spoke-person is likely to be contingent on whether the product is viewed as utilitarian or hedonic purchase (Feick and Higie 1992, Stafford and Day 2002, Smith, Menon and Sivakumar 2005) the results show that the objective expert critical ratings do impact purchase of utilitarian products significantly more than they impact hedonic products. However, consumer ratings failed to show a differential impact on sales or market share between hedonic and utilitarian products. One reason may be that the emotional bond that usually consumers look for when shopping for hedonic or experiential products is not transpiring in consumer ratings as a signal- therefore consumers fails to create rapport with the other users of the product. Consumer ratings are informative and speak about specific product experience and the quality of the product, but they fail to influence the choice of hedonic products above quality information. Managers may use this information and promote specific and customized rating experience for any potential buyer. Technological advances today permit instant identification of consumption goals that can be then paired with customized shopping experience, enabling increased impact of consumer ratings on choice in general. Moreover, understanding the differential impact of expert and consumer ratings on durable hedonic or utilitarian products offers interesting avenues for marketing strategy. If for example, expert ratings are favorable, a change in product positioning from hedonic to utilitarian and emphasizing a utilitarian labeling may take advantage of the favorable market-based existing signals.

From the analysis it appears that the potential of secondary markets is clearer to economists than to marketers. As the volume of trade is almost double on secondary markets, the word of mouth for used goods and the potential implications for building brand values from "underground" is not explored. As the impact of consumer ratings is higher as the age of the product increases, firms can derive value by encouraging long term users to provide information

about the product. As a result, they can establish high quality reputation that in turn may increase the sales of their products on both primary and secondary markets.

It is generally believed that expert reviews play a more important role for experiential goods, such as movies, books, art, where the intrinsic quality of the product attributes is difficult to assess before purchase or consumption. A final contribution of the paper is the extension of the investigation on signals of quality from experiential to durable goods. It is shown that critical reviews can be key drivers of product performance even when products have search attributes easily identifiable and verifiable.

2.4.2 Limitations and directions for future research

This paper has several limitations that provide avenues for further development. Theoretically, developing and testing a market-based signaling theory is long overdue. Similarly, building competitive advantage based on market-based generated feedback and information is one avenue for generating a better firm-environment fit in marketing strategy.

Furthermore, the negative interaction between types of critical reviews needs to be characterized further. Identifying boundary condition in which consumer rating and expert ratings will act in synergy is required. The theoretical background offered an explanation as for our specific predictions but a methodology to measure the quality of critical ratings information content clarity should be developed. Also, as presented earlier, questions that pertain to identifying a menu of signals (market-based and firm-based) that can convey the information about product quality in the most efficient way is of great interest to firms. Modeling the optimal choice of signal types and their number will hit home with many marketing managers.

From a methodological standpoint, we analyzed only one industry but validation of this research in other industries will provide interesting insights, especially in industries with active

secondary markets. Second, the limited amount of data (four years) may not be enough for identifying trends at the market level that require a coarse grain analysis. Similarly, the present analysis is based on a cross-sectional approach. Identifying longitudinal trends in market-based signaling and quantifying the sustaining power of any of critical reviews is of interest. Firms will benefit from assigning a dollar value to critical ratings. However, with the availability of online information, archived information about products may be easier to extract. Finally, this paper opens great avenues for identifying the relations between the effectiveness of advertising based on various types of critical reviews and for building brand loyalty from secondary markets through consumer reviews.

CHAPTER THREE: DO JUDGES OR JUDGES' REVIEWS CHOOSE OUR IDOLS?

3.1 Introduction

Seeking advice from experts is common practice. Moreover, a large fraction of modern economic decisions is made by "experts" who are richly compensated by their efforts. Examples of expert power are seen across all areas, where physicians, law judges, financial analysts, art gurus or Olympic judges make decisions that have high economic implications. A key question that has been raised repeatedly is whether expert's opinions reflect true, fundamental product quality or whether they influence economic outcomes independently of their value as a signal of quality.

In everyday life, experts and expert reviews represent an important source of information for consumers and are believed to play an even more prominent role in markets where information asymmetry is high, such as experiential goods markets where product quality is more difficult to ascertain prior to purchase (Hirschmann and Holbrook 1982). It is believed that one of the biggest phenomenon in American television programming, American Idol, is a result of not just the appeal of the contestant but also the presence of 'acid-tongue' judges (musical experts) for which, every week, millions of voters would tune in their TV sets. The official network statements, however, play down the role of judges and insist that no judge would actually influence the viewer's vote (New York Times, June 2008). Surprisingly, the same level of disagreement with respect to the role experts play is found in the marketing literature. Usually, the role of *experts* was inferred by analyzing the correlational evidence of *expert reviews* and product performance or consumer choice. A closer look reveals though that many studies did not account for expert heterogeneity, information content of expert reviews and quality of the

product. Thus, the results reported in the marketing literature are still under scrutiny and several issues require further clarification.

First, expert reviews have been shown to be influential in entertainment industries such as books, theatre, television programs (Clement, Proppe and Rott 2006, Gisnburch and van Ours 2003, Reddy, Swaminathan and Motley 1998). In the context of movie industry, however, there is a disagreement in the literature with respect to whether experts can truly influence product performance or can merely predict the future runs. The literature has investigated two separate roles of reviewers: as 'influencers' (critics with opinions correlated with early box office performance) and 'predictors' (critics with opinions that are correlated with overall box office sales). As Eliashberg and Shugan (1997) showed, critics act more as leading indicators or 'predictors' of the subsequent performance of a movie and less as opinion leaders or 'influencers' of public taste. Their results have not been supported by recent research (Basuroy, Chatterjee and Ravid 2003) which contended that, on an aggregate level, critics can play a dual role, both as influencers and predictors. Moreover, at a disaggregate level, various critics act more as influencers, and not predictors (Boatwright, Basuroy and Kamakura 2007).

A second issue is the operationalization of the focus variables: most studies do categorize the reviews as positive/negative. This distinction determines a loss of information contained in a review and may preclude us from understanding their true impact. Thus, the questions still remain: do *experts* truly have a role in influencing consumers' evaluation of a product or not? Does the information contained in a *review* matter and if yes, how?

The motivation and contribution of this paper is threefold: 1) to provide a nuanced examination of the roles of experts by controlling for and investigating the information contained in critical reviews, moving away from the positive/negative dichotomy of a review, 2) to provide

a one-to-one correspondence between the expert, experts reviews and product success, and 3) to investigate the roles of experts/information in a longitudinal context as is very likely that different types of reviews may become more or less informative, over time. We investigate these issues in a novel context, a music reality television show called American Idol, which provides a natural setting for disentangling the above mentioned effects and brings in crucial elements of rigor and insight that adds significantly to our knowledge in this area.

To this end, we start by examining the roles of experts/critics and the various ways in which an expert can exert influence on consumers. Subsequently we provide a theoretical framework for the development of the hypotheses, develop a model to test the hypotheses and present the results of the analysis. Finally, we conclude with a discussion of the results.

3.2 Conceptual Framework and Research Hypotheses

Hedonic consumption has been evidenced in the rapid development of industries that offer experiential products. Books, art, movies, theme parks are examples of areas which are now flourishing. As these offerings are providing experiential and emotional benefits (Hirschman and Holbrook, 1982), consumers are unable to perfectly assess their quality, especially before consumption. Thus, consumers turn to credible third party reviews, valuable sources of information, using the information provided to form their own opinion or make choices. However, what exactly is a review, a reviewer and how do they influence consumers has received less attention in the marketing literature. Establishing these roles is a key part in identifying the types of information contained in a review.

Common knowledge posits that a critic is an expert, a person who 'must have' a sound knowledge over the field in which he/she provides a review. Critics or expert reviewers occupy a strategic position of mediation between consumers and the product offering, whether it is an

experiential or non-experiential good. An expert reviewer is not a simple connoisseur of the topic; being a critic implies making the transition from simple knowledge to judgment, setting standards for the creation, distribution and consumption of goods. It has been showed in prior literature that experts can shape consumer preferences in multiple ways, through the type of information that they convey to the public (Sorensen and Rasmussen 2004, Clement, Proppe and Rott 2007).

First, the most obvious effect of an expert review is that it informs the consumer about the availability of the product by *evaluating* the product attributes, similar to the informative effect of advertising (Bucklin 1965, Mehta et al. 2008). Information about characteristics of the product included in a review educates consumers and reduces the consumer risk of making a wrong choice (Reinstein and Snyder 2005). This *evaluative* effect does not necessarily have a positive impact on product performance (i.e. sales) because it may just redistribute consumers in the market, on the basis of their risk aversion. This redistributive effect occurs in two ways: on one side, additional information reduces quality uncertainty, which increases sales among risk-averse segment of consumers. On the other, the amount of erroneous choice decreases (Clement, Proppe and Rott 2007). As a result, the less risk averse the consumers, the less the impact of the evaluative effect on consumer choice.

Second, an expert review may have a *promotion effect,* bringing the product into the limelight of consumers (Kamakura, Basuroy and Boatwright 2005, Dellarocas and Wood 2008). A positive promotion review will have a positive effect on product performance. Finally, expert reviews can also have an *opinion, or persuasive effect*, meaning that a positive review typically increases sales, whereas a negative review does not. It is similar to and captures the 'influencer' perspective/role advocated by Eliashberg and Shugan (1997). Reinstein and Snyder (2005)

highlighted the possibility that the power of influence can be reserved to only few selected critics. An expert can play all these roles concurrently and a review can contain information about product performance *and* opinions of reviewers.

An overview of the current literature in expert reviews reveals that mainly, the roles of critics as 'influencers' or 'predictors' have been inferred from correlational evidence at an aggregate level. This means that none of the *distinct* effects of reviews and reviewers discussed above have been singled out and, as a result, the true effect of reviewers as influencers might have been washed out, which is a testament for the first motivation of this study.

Expert reviews have been mostly linked to volume of sales as indicator of product performance, and mostly in entertainment industry (i.e.Eliashberg and Shugan 1997, Basuroy, Chatterjee and Ravid 2003, Boatwright, Basuroy and Kamakura 2007, Dellarocas, Zhang and Awad 2007). However, expert reviews are influential in other domains also. An integrative review of all the determinants of movie performance (Hennig-Thurau et al. 2003) showed that movie reviews impact neither short-term nor long-term box office performance (sales) directly, but strongly correlate with awards and consumers' quality perceptions. Hennig Thurau et al. (2003) findings were not able to settle the different opinions expressed by Eliashberg and Shugan (1997) and Basuroy, Chatterjee and Ravid (2003) but clearly showed that the relation between critical review and performance is mediated by awards and consumers' quality perceptions. To date, research that investigates other indicators of product performance are scarce. This is important because a) expert reviews are most likely to be offered at the time of the introduction of a new product and b) before a product becomes successful, it must pass the test of surviving on the market. This study attempts to extend the current literature by investigating the effect of expert and expert reviews on product success, as a dependant variable.

42

Apart from the role critics play in subsequent entertainment product performance or consumer choice, the researchers have looked at the valence of the critical reviews. Across industries, it seems that negative or positive reviews have different effects on profitability. In investigating the impact of New York Times book reviews on sales, Sorensen and Rasmussen (2004) have found out that any type of review is having a beneficial influence; even negative reviews lead to increase in sales. In motion picture research, it has been shown that there is a differential impact of positive and negative reviews (D'Astous and Touil 1999, Desai and Basuroy 2005), identifying not only valence but also the consistency as important elements of a critique. These elements bring about the fact that critic's style, consistency and internal characteristics are important factors which consumers take into evaluations when they decide to choose a product. In this regard, the current study benefits from analyzing the results of the Idol contest where three judges (critics) with varying style and characteristics are present to judge the performers.

As noted earlier, the context of our study is American Idol show, which, week after week, provides viewers with the experience of musical performances. The key determinant of this setting is that each of the contestants (12 in total) strives to prove themselves both technically but also as true performers, trying to create and establish their personal image/brand. Every week the performers try to add more to their portfolio of good performances in order to 'survive' or avoid being eliminated by popular vote.

Drawing on the theoretical background of information processing theory (Miller 1956) and cognitive load theory (Sweller 1988), this study develops the hypotheses and explains how different types of information contained in the expert reviews affect success probability. First, evidence suggests that people not only agree to be influenced in their decisions, but they actively

seek others' opinions. At the same time, it has been shown that consumers try to understand the reasons behind critics' judgments and recommendations about a product before they make their own evaluations (d'Astous and Touil 1999). However, the transfer of information from an expert to a 'novice' or a regular consumer happens best under conditions of similar cognitive structures, known as schemas. These are the cognitive structures that make up the knowledge base (Sweller 1988). Schemas are acquired over a lifetime of learning, and may have other schemas contained within them. The difference between an expert and a novice is that a novice hasn't acquired the schemas of an expert. Thus, the easier, simpler or more condensed information from an expert, the more likely a consumer will rely on it.

Second, the amount of information that a consumer can take from an expert is limited by the capacity of short-term memory. Miller (1956) showed that short term memory, can only hold a few meaningful 'chunks' of information. In other words, too much technical information is going to be discarded more or even misunderstood by regular consumers.

This is more easily exemplified with the following reviews: Review A: "I am looking at the next American Idol." This is a review that expresses an opinion. On the other hand, review B: 'That was a great performance. A little sharp in spots because it was kind of weird place to modulate and everything […]' is a review in which the expert evaluates the technical abilities of the contestant. This type of review is more likely to express the evaluation effect, as discussed earlier. Will these reviews have similar effects on the performance or one review will have a greater impact than the other?

In this context, a review that contains opinions will easily be assimilated by the consumer or rather, an opinion review does not require too much thinking or analyzing on the

part of the consumer. These reviews are simple statements regarding the performance of the product. Such simple statements do not pose too much cognitive effort on the consumer.

Comparatively, evaluative reviews forces the consumer to analyze the review more deeply, to concentrate on the various aspects of the product the review is evaluating and requires considerably more effort put forth by the consumer. Also, an evaluative review may require specific knowledge from the part of consumers, knowledge that not necessarily the majority of the consumers will posses. Moreover, in order to make a choice between multiple choices, a consumer must remember all these information, leading to an increase cognitive load. Cognitive load has been commonly assumed to deteriorate task performance in general and information integration in particular (e.g. Hinson, Jameson, and Whitney 2003; Shiv and Fedorikhin 1999). Hence, consumers are more likely to remember and use predictive reviews rather than evaluative reviews, consistent with similar evidence that truly, experts are indeed opinion leaders (influencers). This leads us to hypothesize that:

H1: *Opinion reviews have a greater impact on product success compared to evaluative reviews.*

The second part of the discussion pertains to how the different information contained in a review influences the success over time. Movie industry literature suggests that the impact of word of mouth is gradually reduced as people lose interest in a movie during subsequent weeks. While most of the reviews of experts are indeed effectuated and advertised in the introduction phase of a product, it is very important to understand if the impact of information contained in reviews or the importance of the experts changes over time. At early stages of product introduction, reviews that help establish the quality and characteristics of the product are

important. However, once the quality of the product is established to a certain degree, differentiation in its success is created by the strength of reviews from the product supporters.

Evidence for this evolution is found in marketing literature (Christensen 1997). It is suggested that brands may pass through life cycles of evolution. The character of the evolution is determined by the cumulative changes in the product attributes of individual new product models that are introduced within a given category. A central thesis is that in many industries, there is a product attribute or a rank ordering of a family of attributes which constitutes the criteria by which mainstream customers determine whether one product is better than the other. For example, in many of the studied industries (disk drives, excavators, executive education) the initial basis upon which companies competed was functionality. However, technology was able to eliminate the functionality differences in products which required the competition shifting to other dimensions of products, such as reliability and then convenience. Whereas functionality, reliability or convenience is more difficult to measure in experiential products, we expect that a similar cycle applies. Products (contestants in this specific case) need to provide evidence of functionality (ability to perform). Once that is established, other dimensions will be of interest to consumers. We suspect that in our case is easier to identify the change in attribute hierarchy since the show has two distinct phases: in the first one, each contestant is required to perform only one but in the second one, the remaining contestants are asked to sing twice. We term the period in which the first rank attributes are developed Early Stages. Period that marks the change to a new attribute is called Later Stages. Thus:

H2: At early stages, evaluative reviews have a relatively stronger impact on success than opinion reviews.

H3: At later stages, opinion reviews have a relatively stronger impact on success than evaluative reviews.

3.3 Research Design and Methodology

3.3.1Data Description

To address the hypotheses and research questions we use data collected from the fourth season of American Idol show featured on the Fox Network in the United States for the past 8 years. This is the first season in which the age limit has been raised to increase variety in the contestant pool. The show is a reality-show singing competition in which viewers can call in and vote on contestants to determine the best "undiscovered" young singer in the United States. The data consists of 11 weeks of contestants' performance evaluations, expert reviews and objective ratings from the MSNBC website. Thus, in each week, each contestant is observed and reviewed by three different experts. For the second part of the show when 7 contestants are eliminated, the remaining contestants are required to perform two songs instead of one. The most important characteristic of the data is that in order to vote, the audience that sees the performance is exposed to expert reviews. Moreover, all experts are rating all the contestants. In total, 225 observations have been recorded for the entire show.

Success. The dependent variable in the model is operationalized based on the survival of the contestant at the end of the voting and is coded as 0/1 (where 1 stands for 'survival' at the end of the week).

Review score. Defining and quantifying the language of a review is a challenging task. First, information contained in a review must be classified. We argue that the 'information effect' and the information role are non-existent here because all of the contestants are already in the show and the audience is informed about their existence to the same degree. Second, the

47

content of the reviews has to be analyzed to extract the information pertaining to evaluations and experts opinions per se. Content analysis was used to classify the judges' reviews, following a thought listing procedure: every phrase was broken down in simple statements which were then evaluated by the specific instructions. The difference between opinion and evaluative statements resides in the degree to which the statements made by the judges are either self-reports or can be supported by evaluative evidence. Evaluative statements can be verified by applying objective standards of value. For example, stating that 'Your vocal is good' or 'Your vocal is very good' can be verified by applying the standard measures of vocal performance in existence. Whereas, stating, 'I dig your vocal' or 'I simply love you as a performer' is simply a matter of opinion. Furthermore, the strength of each statement has been assessed using a scale of 1 to 7 where 1 represents 'extremely bad' and 7 represents 'extremely good' evaluation or opinion. The data has been coded by a trained research assistant that has been provided with the definitions, examples and word modifier examples in order to quantify the strength of the review. Finally, two different average scores have been calculated: an opinion score and an evaluative score, for each review and for each expert.

To bring more rigors to constructing the data, a second (graduate) research assistant has been trained to code the same data, separately. The intra-class correlation coefficient (single measure) for the scores of review types is .811 for opinion reviews and .819 for evaluative reviews which is compares favorably with studies that have used a similar approach (i.e. Tellis and Johnson, 2007). Then the variables have then been mean-centered. We proceeded with the analysis for the second sample as differences have been resolved favorably towards it by discussion.

Number of statements. Each statement in the review has been counted towards two count variables, evaluative (EvalStm) and opinion statements (OpinStm).

Experts. Reviews associated with a specific expert were coded with a dummy variable with three levels, Randy, Simon and Paula. Thus, dummies Randy and Paula capture the reviewer individual heterogeneity compared to Simon as a baseline.

Objective performance. Objective performance is defined as the degree to which a contestant performance is approaching an established professional musical standard. Each week, another critic, an MSNBC contributor is writing a review pertaining to last week's performance. Every contestant is assigned a letter grade, A to D, which reflects his or her level of performance. The author is assigning the grades, or ratings, by critically evaluating the professional aspects of the performer; professional aspects include vocals, stage presence etc. Literature has shown that these types of expert ratings can be used to measure the objective or true quality of a product (Mitra and Golder 2007). The letter system was transformed into a rating scale with where letter grade A was equivalent of 10 points and D letter grade the equivalent of 1 point, similar to the literature in domain (Liu 2006). *Objective performance* captures the variation in the probability of success associated with the underlying quality of the contestant.

Control variables

Order_Entry of the contestant in the show is an important control variable. The impact of reviews on the consumer's evaluation of the performance may be different for contestant performing first compared to contestant performing last. This may be due to the fact that the voting system is such that the votes are allowed after the end of the show and the consumer might remember the performance of the last contestant better than that of the first contestant.

Week_No. The number of weeks a contestant was in the show will also impact the success of the contestant due to the fact that as the week number increase, there are less and less contestant remaining and the probability of exit will be, by sheer number, higher. *ID.* Each contestant is coded with a contestant ID and this ID is also considered as a control variable to account for 'fans' of these contestants.

Song. To control for popularity of the song chosen by competitors, a variable quantifying the highest position a song has attained in Billboard Top 100 was added. This will ensure that popularity of the song is not influencing the success likelihood without being partialed out.

Line. As the contestants are trying to prove themselves each week, the ability to navigate between various musical genres is important. A newly created "Line" variable captures the number of different musical genres that the contestant has covered thus far. For the first week, each contestant has a Line of 1 which will remain unchanged until the contestant tries another genre.

3.3.2 Data Analysis

The dependant variable in the model is a (0, 1) dichotomous variable. The estimation procedure employed retrieves the probability that product will be successful or not to surviving another week given that it has survived until a particular week. We use the Generalized Estimating Equations (GEE) procedure with a logit link function with Class variable ID which performs best when the observations are correlated. The following model was specified:

$$(1)\ h(t) = \beta 0 + \beta 1 * EvalScore + \beta 2 * OpinScore + \beta 3 * EvalStm + \beta 4 * OpinStm$$

$$+ \beta 5 * Objective\ Performance + \varphi[Ct]$$

$$where\ \varphi\ is\ a\ vector\ of\ control\ variables.$$

The parameters $\beta_1 \& \beta_2$ measure the effect of evaluative and opinionated reviews on the probability of surviving the week. We expect that $\beta 2 > \beta 1$. In order to answer the questions is RQ1, we employ a subgroup analysis, estimating a model for contestants in early and another one in late periods of the show through the following model (Agarwal, Sarkar and Echambadi 2002):

$$(2) h(t) = \beta 1 * EvalScoreEarly + \beta 2 OpinScoreEarly + \beta 3 EvalStmEarly$$
$$+ \beta 4 OpinStmEarly + \beta 5 ObjectivePerformanceEarly + \beta 6 EvalScoreLate$$
$$+ \beta 7 OpinScoreLate + \beta 8 EvalStmLate + \beta 9 OpinStmLate$$
$$+ \beta 10 ObjectivePerformanceLate + \varphi[Ct]$$

Equation (2) enables an easy interpretation of the coefficients. For example, with respect to size, $\beta 1$ represents the effect of Evaluative Scores on success during the early stages of the show, whereas $\beta 6$ measures the effect of Evaluative Scores during the late stages of the show. Late periods of the show comprise of information gathered after week 7. Starting with week 8, the contestants are required to sing two songs. The scores of reviews have been averaged between the two songs. We analyze (2) using Proc logistic in SAS System.

----insert Table 10 about here-----

Table (1) presents the results of preliminary analysis for H1. The results reveal that the coefficient for OpinScore is significant at the 0.05 level where as the coefficient for EvalScore is not significant. This provides support for Hypothesis 1.

---insert Table 11 about here----

Table (2) presents the results of the preliminary subgroup analysis. For Early Stages in the show the coefficients for objective quality and the coefficient for evaluative statements numbers are significant though the first is positive while the second is negative. However, for the

51

later stages in the show, the only significant (.1 % level) variable is opinion score. This implies that success probability increases with true quality but decreases with the number of evaluative statements contained in a review. However, the probability of success is positively impacted in the later stages of the show by the expert opinions. One surprising result is that none of the coefficients for the dummy variables representing individual reviewers, per se, is significant.

3.4 Research Findings, Discussion and Implications

3.4.1 Research Findings and Discussion

Do experts matter? According to the results, the individual reviewer, per se, has no significant impact on the success probability of a contestant. This result is somehow surprising as one of the reviewers on the show is perceived by general public as more negative and hard to please (even though no scientific evaluation has been conducted in this respect for this study). Further analysis should investigate this issue. Several explanations can be forwarded in this respect. First, this result may be true. It is possible that consumers are aware of the differences in the 'baseline' of reviewers and actually discount more the information from the more negative source, being able to calibrate the information to the same level across reviewers. Research in the area showed that reviewer reputation can moderate the subsequent evaluation of a movie and that consumers are able to distinguish if a review is not consistent with the reviewer reputation (d'Astous and Colbert 2002). Second, it is possible that truly is heterogeneity in reputation between the experts on the show and other, external reviewers, less experienced or less famous, so in a different context, more comprehensive, a significant relationship may be found.

Do reviews matter? Absolutely. The results show that on average, what the experts are saying is significantly and positively impacting the probability of success. This is possible

through the opinion type of information that is contained in a review. It is important to note that a review may contain evaluations, opinions and both. For the current results, no information was added if either type of information was missing. Existence of both type of information is essential for providing answers to the hypothesis H1.

Is the information contained in the review more significant over time for success? In the context of American Idol, it appears that truly, the first weeks of the competition is about showing to the public and the experts that competitors are good. This is evidenced in the positive impact of the objective performance variable. An interesting preliminary result that emerges is the negative significant impact of the number of statements that are associated with evaluations (i.e. 'you had a pitch problem'). At a sheer glance, the result would look counterintuitive. The explanation for this negative effect is actually consistent with Sood and Dreze (2006) brand extension evaluation of experiential goods findings. Contrary to traditional goods, an extension is evaluated more positively if is *dissimilar* than the parent brand because the consumers become satiated with the experiential attributes and desire something else than what they have already seen. The American Idol context is very similar to a brand extension setting in which consumers are actually expecting something new every week. The number of evaluative statements captures the similarity or dissimilarity of the competitor's performance to what the experts would expect. Theory posits that a moderate extension (moderate dissimilarity) generates the greatest number of thoughts about the extension (the greatest number of statements in the present context). Superimposing this theory with American Idol, the data shows that, consistent with prior findings, an average 'extension', which means that the competitor is not standing out in any way, is going to be detrimental to its success in the competition. Moreover, the results show that too much discussion about the skills and competencies of a competitor in the beginning of the

competition is detrimental. For audience, this discussion is beneficial because it shows which contestants are 'not quite there' when it comes to having the minimum requirements necessary for stardom.

Finally, the results show that in the later part of the competition, the opinions of the experts have a significant positive impact. The result is sensible because, in these later weeks, the contestants which are still in the show do posses the qualities and technical skills necessary to sing. From now on, is about gaining the experts on their side and with them, the audience. If needed to explain these results within the influencer/predictor framework, the results speak about the fact that reviewers, through their reviews can be influencers and predictors-it is all a matter of conjecture.

The preliminary results presented in the paper offer both academic and managerial insights. From an academic perspective is important to identify and test different roles of experts and different information contained in a review. This works advances the knowledge in the area through both an integrated perspective on third-party information effects and an interesting approach to study it. From a managerial perspective, these results should provide insights with respect to timing of advertising and specific information that should be advertised when it pertains to critical reviews so that the communication is most effective.

3.4.2 Limitations and directions for future research

Preliminary investigation offers interesting results into the posed research questions. However, additional models and data is needed to test the robustness of the results. First, number of observations in the data set is 225 but on some analysis it is as low as 128. Collecting additional data and replicating the analysis over two or three seasons would provide even more interesting results. Second, as objective quality and the information contained in the review are highly

correlated, the model can be re-estimated with and without the objective quality rating. Future research should replicate these results in an experimental setting. Also, generalizability of the results should be established by replicating the study over other TV reality vocal competition programs, TV reality programs, movies or other industry.

APPENDIX: FIGURES AND TABLES

Figure 1. Impact of Expert and Consumer Ratings on Market Performance (log sales)

57

**Figure 2. Impact of Expert and Consumer Ratings on Market Performance (log sales)
LO-LO**

**Figure 3. Impact of Expert and Consumer Ratings on Market Performance (log sales)
HI-HI**

Figure 4. Impact of Expert and Consumer Ratings on Market Performance (log sales)
 LO-HI

60

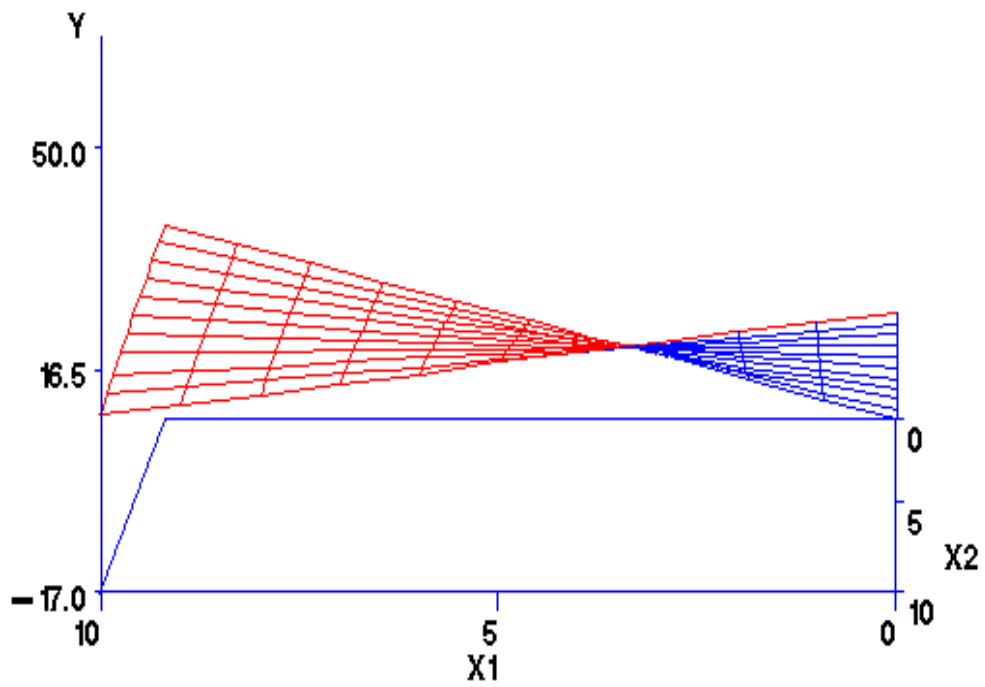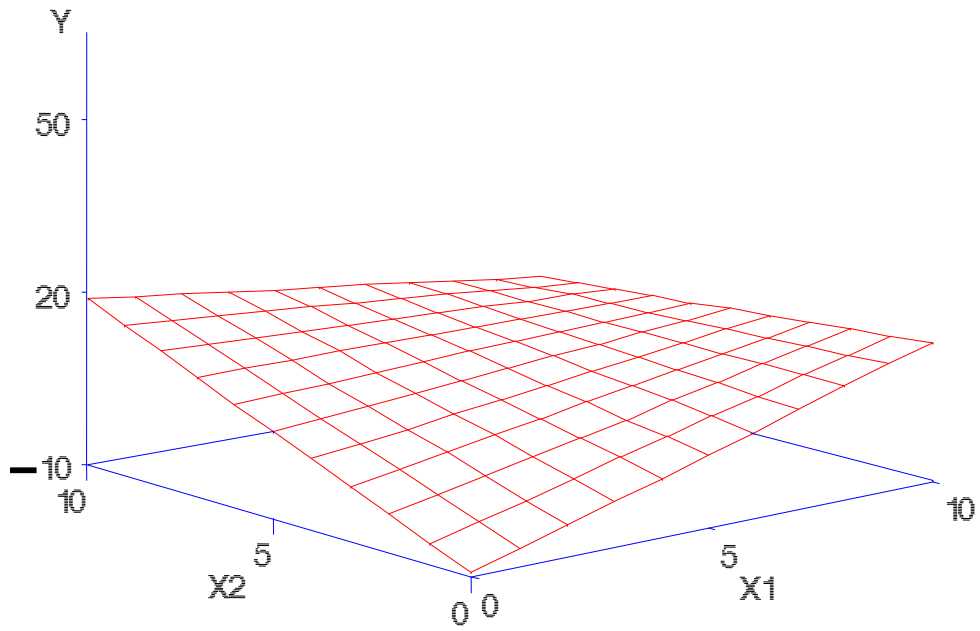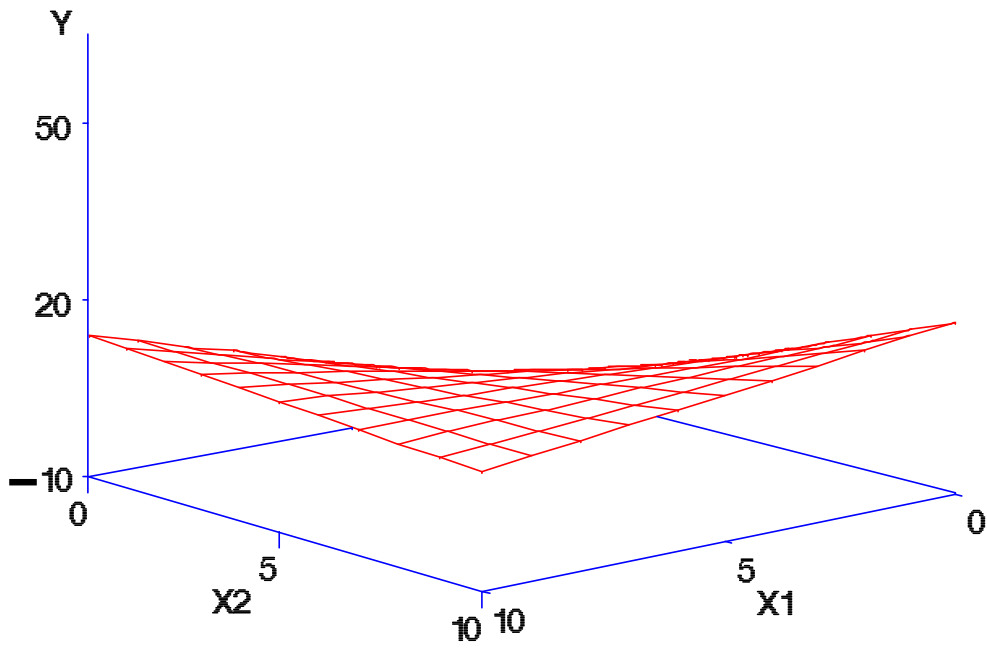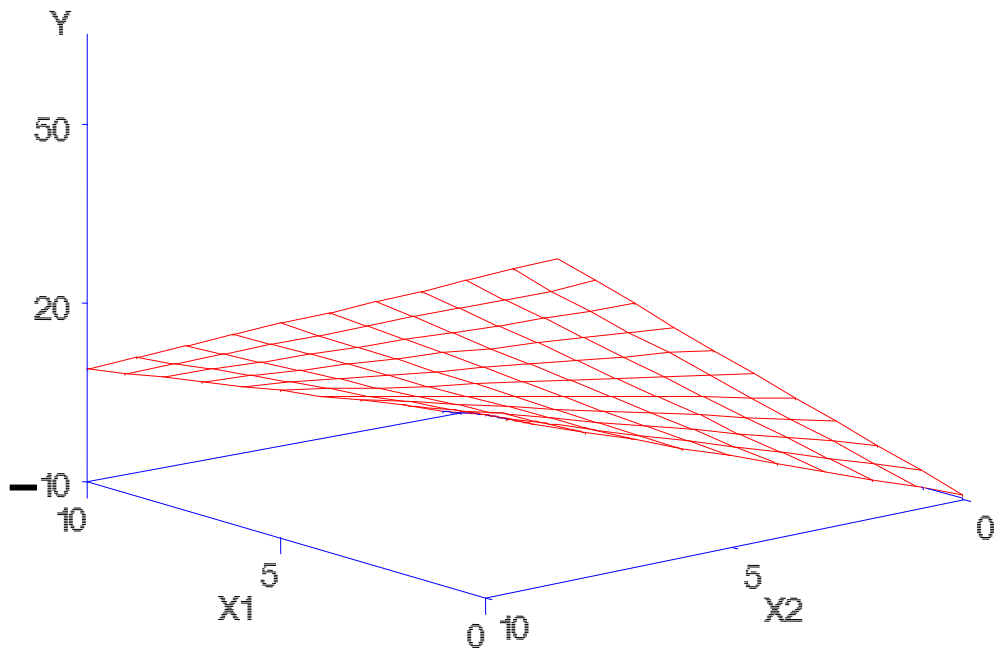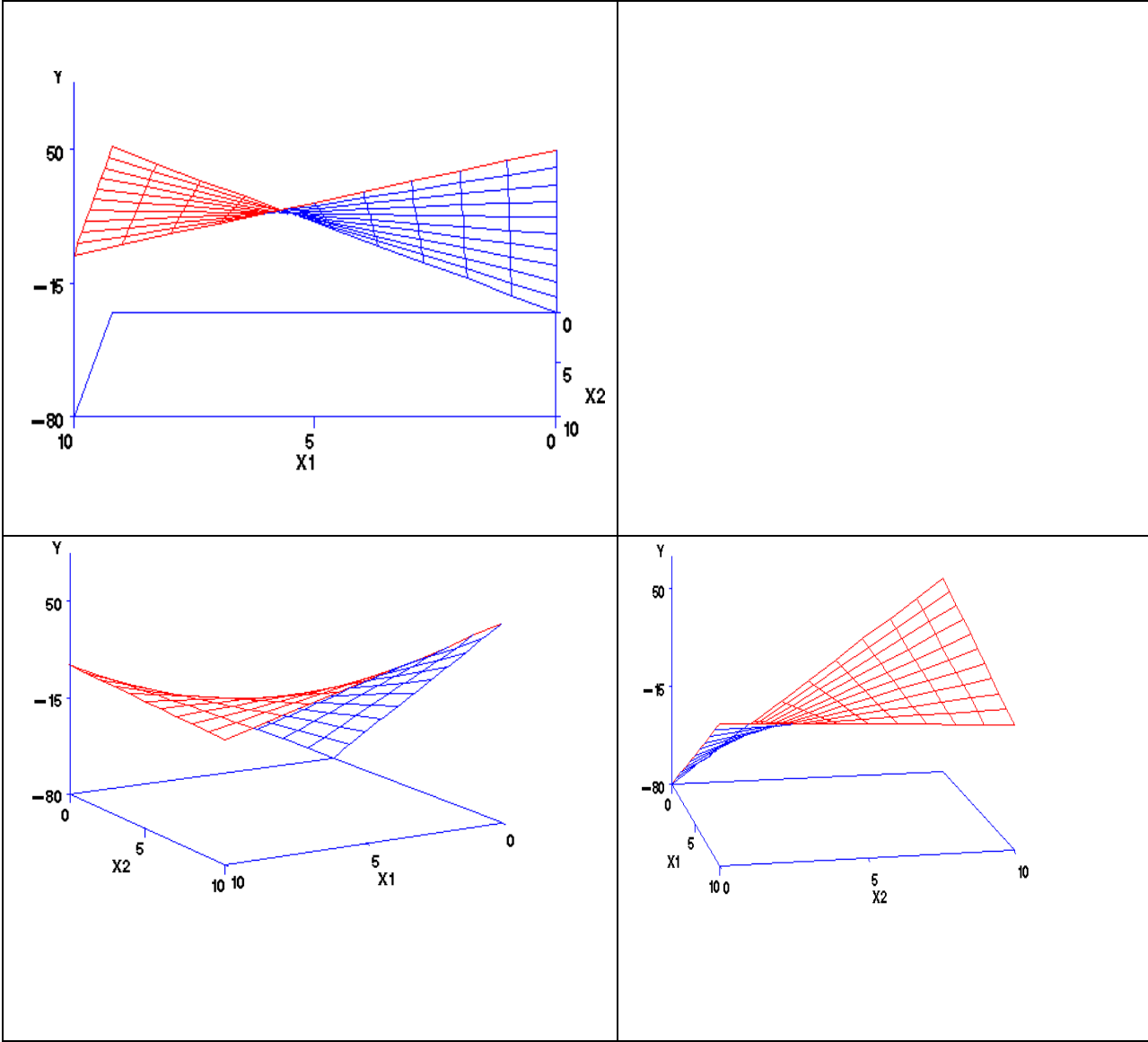**Figure 5. Impact of Expert and Consumer Ratings on Market Performance (Category Market Share)**
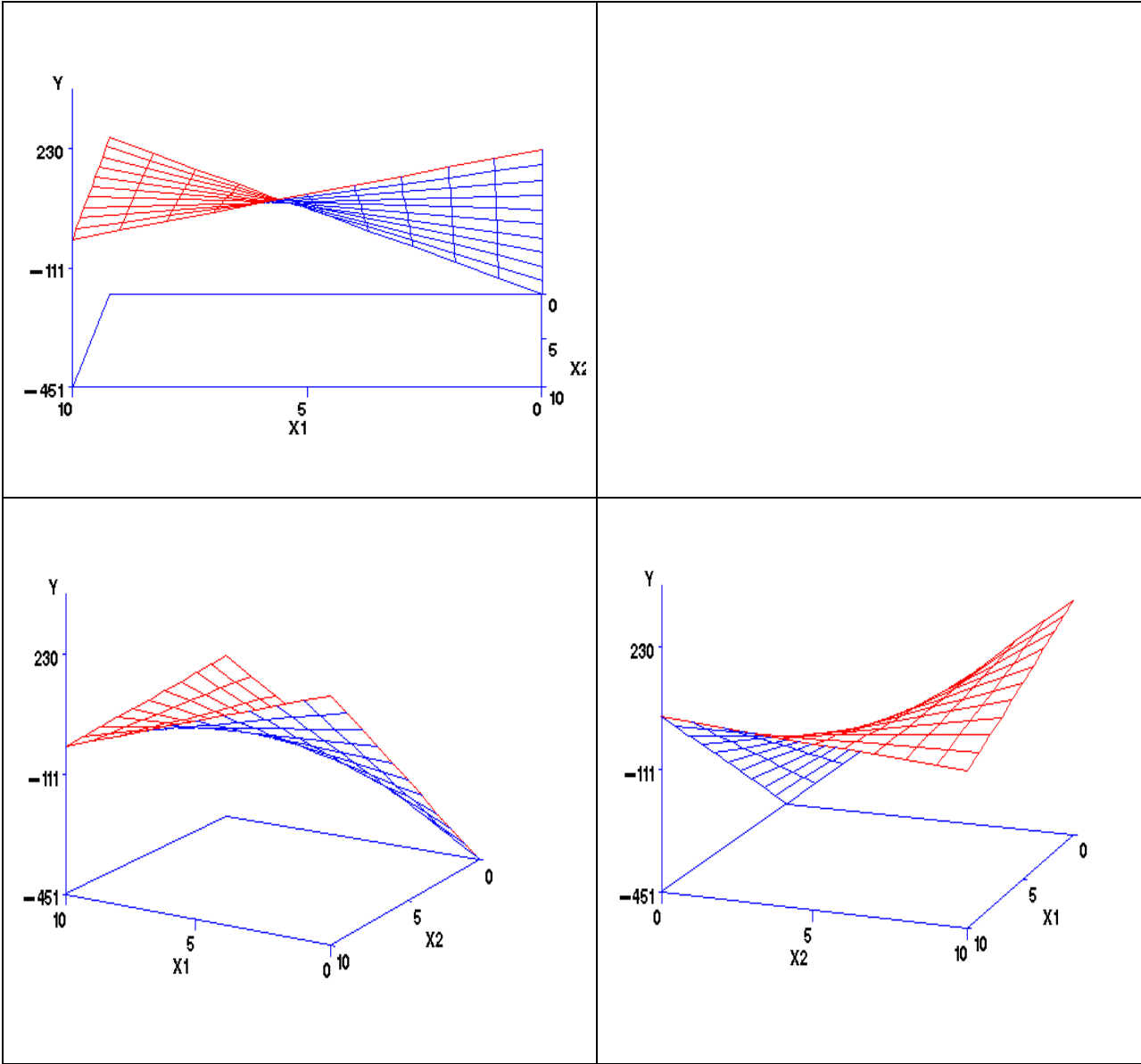
Figure 6. Impact of Expert and Consumer Ratings on Market Performance (Price Premiums as %)

Table 1. Summary of the empirical results in related literature

Work	Expert (Third-Party Information) Conceptualization	Effect	Variable of interest	Effect	Consumer (User comments) Conceptualization	Authors
			Sales (books)	+	An improvement in a book's review leads to an increase in relative sales at that site (compared to other site)	Chevalier and Mayzlin (2006) /book sales
Eliashberg and Shugan (1997)	Critical reviews/Published	+	**Box office performance**			
Basuroy et al. (2003)	Critical reviews/Published	+	**Box office performance**			
Reinstein and Snyder (2005)	Critical reviews/Published	+	**Box office performance**			
Liu (2006)	Critical reviews as covariates/Online	+	**Box office performance**	+	User reviews/Online	Liu (2006)
Dellarocas et al. (2007)	Critical reviews /Online	+	**Box office performance**	+	User reviews/Online	Dellarocas et al. (2007)
Duan et al. (2008)	Critical reviwes (fixed effects)	n/a	**Box office performance**	+	User reviews/Online	Duan et al. (2008)
Yerger (1996)/automobiles	Avoid/Recommend announcements in Consumer Reports	n/a	**Resale price (automobiles)**			
			TV ratings	+	User comments/Online	Godes and Mayzlin (2004)

63

Table 2. Measures, Operationalization, and Data Sources

Measure	Variable	Operationalization	Temporal aggregation	Data Sources
Consumer ratings	CR	Average of all posted consumer ratings per a model	Yearly	Edmunds.com
Expert ratings	ER	Expert overall rating	Yearly	Edmunds.com
Objective Quality	JD	Number of defects reported in the first 90 days of ownership (Initial Quality study JDPA)	Yearly	JDPA website
Product improvement	Improv	Improvement level on a scale of 0 to 4	Yearly	JDPA expert opinion
Product type	Utilitarian	Dummy variable (1=Utilitarian product)		
Controls	Time	Dummy variables for each year of model manufacturing year		
Market performance 1	Logsales	Logarithm of sales	Yearly	Ward's Automotive Book
Market performance 2	MktCat	Market share in category for each model/year	Yearly	Ward's Automotive Book
Price premium	SPPP	Price premium % calculated as the difference between segment average and average model price	Yearly	N.A.D.A

Table 3. Data Summary

Variable (New market)	Observations	Mean	Standard deviation	Minimum	Maximum	Model years
Consumer_Rating_overall	948	9.034268	0.5424489	3.5714286	10	2004-2007
Editor_Rating_Overall	900	7.521667	0.7018865	4.9	9.2	2004-2007
Average_prices_NADA	957	35669.36	30493.52	7775	450000	2004-2007
SALES	957	65459.08	93103.05	104	901463	2004-2007
Mktcat	957	3.14326	3.9139384	0.0083488	28.1269591	2004-2007

Variable (Used market)	Observations	Mean	Standard deviation	Minimum	Maximum	Model years
Consumer_Rating_overall	1429	8.580782	1.0337661	1.1428571	10	2004-2007
Editor_Rating_Overall	1320	7.541061	0.7935652	4.9	9.2	2004-2007
Average_prices_NADA	1428	25985.5	20541.52	6675	374594	2004-2007
SALES	1437	9701.99	14008.05	0	136730	2004-2007
Mktcat	1437	3.182158	4.3230437	0	30.5482982	2004-2007

Table 4. InterCorrelations among variables (New automobiles market)

	Consumer_Rating	Expert_Rating	Logsales	Market share	% Price Premium	Utilitarian	JD_rating	Improvement	Improvement Square
1. Consumer Rating	1								
2.Expert Rating	0.30873	1							
3.Logsales	-0.02139	0.04222	1						
4.Market share	-0.04545	0.09025	0.69575	1					
5.%Price Premium	-0.09677	-0.01165	0.03268	0.04422	1				
6. Utilitarian	-0.17571	-0.19006	0.37681	0.32993	0.13	1			
7. JD_rating	0.21971	0.22793	0.01534	0.12014	-0.05208	-0.18681	1		
8. Improvm.	0.07639	0.23039	0.08489	0.05349	0.02713	-0.02596	-0.08437	1	
9. Improvm. Square	0.09108	0.23073	0.07136	0.04166	0.00343	-0.02731	-0.09701	0.95869	1

Notes: Correlations are presented as Pearson Correlations and are modest.

Table 5. The comparative effects of Critical Reviews and Product Improvements on Market Performance (sales)

Variable	Model 1	Model 2	Full Model
CR	2.27 (2.79)**	3.17 (4.36)**	2.32 (2.85)**
ER	2.76 (2.83)**	4.21 (4.58)**	2.81(2.88)**
CRxER	-.33(-3.10)**	-.47 (-4.61)**	-33 (-3.17)**
JD	.11(2.66)**	.06 (1.46)	.123 (2.92)**
Improv		.02 (.24)	.0(.63)
Improv square		.005(.22)	-.001(-.07)
Utilitarian	-2.34 (-1.31)		-2.30(-1.29)
CRxUtilitarian	-.04(-.25)		-.04(-.26)
ERxUtilitarian	.47 (4.06)**		.46 (4.04)**
R-sq	.16	.03	.17

Table 6. The comparative effects of Critical Reviews and Product Improvements on Market Performance (Mk share)

Variable	Model 1	Model 2	Full Model
CR	7.12 (2.34)**	8.72 (3.22)**	7.23(2.38)**
ER	9.54 (2.62)**	13.01 (3.80)**	9.61(2.64)**
CRxER	-1.07(-2.69)**	-1.39 (-3.67)**	-1.08(-2.73)**
JD	.82 (5.35)**	.64 (3.85)**	.85(5.46)**
Improv		.15 (.39)	.28(.79)
Improv square		-.007 (-.08)	-.03(-.40)
Utilitarian	-1.9 (-.29)		-1.82(-.27)
CRxUtilitarian	-.70 (-1.01)		-.71 (-1.02)
ERxUtilitarian	1.49 (3.46)**		1.48 (3.45)**
R-sq	.17	.05	.17

**p<.05, p<.1

Notes: The unstandardized estimates are reported. T-values are in parentheses.

Table 7. The comparative effects of Critical Reviews and Product Improvements on Market Performance (price premium)

Variable	Model 1	Model 2	Full Model
CR	28.77 (1.32)	48.58 (2.68)**	26.39 (1.22)
ER	47.23 (1.81)	68.14 (2.98)**	43.37 (1.67)
CRxER	-5.26 (-1.85)	-7.46 (-2.94)**	-4.83 (-1.71)
JD	.12 (.11)	-.75 (-.67)	-.19 (-.17)
Improv		9.02 (3.49)**	9.31 (3.63)**
Improv square		-2.26 (-3.72)**	-2.31 (-3.84)**
Utilitarian	-73 (-1.54)		-73.48 (-1.55)
CRxUtilitarian	6.9 (1.37)		6.7 (1.35)
ERxUtilitarian	2.35 (.76)		2.63 (.86)
R-sq	.03	.04	.16

**p<.05, p<.1

Notes: The unstandardized estimates are reported. T-values are in parentheses.

Table 8. Impact of Consumer Ratings on Secondary (Used Automobiles) Markets

Variable	Logsales	MktShare (in Category)	Price Premium (%)
CR	.92 (2.58)**	4.53 (3.17)**	12.21 (1.42)*
ER	1.19 (3.03)**	6.52 (4.16)**	20.72 (2.20)**
CRxER	-.15(-3.3)**	-.74 (-4.04)**	-1.61 (-1.47)
JD	-.01 (-.44)	.23 (1.61)	-.11(-.13)
Age	-.07 (-.18)	-.04 (-.03)	-3.76 (-.40)
CRxAge	-.006(-.014)	-.03 (-.19)	.40 (.38)

Variable	Logsales	MktShare (in Category)	Price Premium (%)
CR	.89 (2.65)**	4.5 (3.35)**	11.09 (1.38)*
ER	1.12(2.89)**	6.38 (4.09)**	20.74 (2.22)**
CRxER	-.14 (-3.23)**	-.73(-4)**	-1.58(-1.45)*
JD	-.01 (-.51)	.25 (1.66)	-.31 (-.35)
Improv	.08(.93)	.16(.46)	4.03(1.90)
Improv_square	-.01(-.51)	-.01(-.14)	-1.13 (-2.27)
R-sq	.05	.04	.16

**p<.05, *p<.1

Notes: The unstandardized estimates are reported. T-values are in parentheses.

Table 9. Summary of hypothesized effects and findings

Impact of…	Logsales	Market Share	Price Premium
Consumer rating	+ (supported)	+ (supported)	+ (supported)
Expert rating	+ (supported)	+ (supported)	+(supported)
Consumer and expert rating interaction	- (supported)	- (supported)	- (supported)
Product improvement	+ n.s.	+ n.s.	+ (supported)
Hedonic/Utilitarian	ER> CR (supported)		-
Market type (Age)	CR increasing influence- n.s		

Table 10. Expert Opinion/Evaluation estimation results

Parameter	Estimate	Std. Error	95% Confidence Limits		Z	Pr > |Z|
Intercept	2.01	1.79	-1.5084	5.534	1.12	.2625
OpinScore	0.53	0.25	0.04	1.03	2.15	.0312
EvalScore	-0.008	0.14	-0.29	0.27	1.42	.95
Objective						
Performance	0.3	0.21	-0.11	0.73	1.42	.15
OpinStm	-0.11	0.15	-0.41	0.18	-0.73	.46
EvalStm	-0.2	0.15	-0.51	0.1	-1.29	.19
Randy	-0.49	0.53	-1.54	0.56	-0.91	.36
Paula	-0.15	0.46	-1.07	0.75	-.34	.73
Week_no	-0.77	0.31	-1.38	-0.15	-2.47	.01
Order_entry	-0.04	0.1	-0.25	0.17	-.39	.69
Song	-0.0068	0.01	-0.03	0.01	-.56	.57
Line	1.063	0.64	-0.2	2.33	1.64	.10
Gender	-0.76	1	-2.91	1.38	-.70	.48

Table 11. Additional analyses Expert Opinion

Parameter	Estimate	Std. Error	Z	Pr > |Z|
OpinScoreEarly	.22	.42	.28	.59
EvalScoreEarly	1.01	.71	2.03	.15
Objective_PerformanceEarly	.60	.28	4.49	.03
OpinStmEarly	.22	.42	.28	.59
EvalStmEarly	-.66	.38	3.04	.08
OpinScoreLate	.36	.23	2.46	.11
EvalScoreLate	-.55	.43	1.59	.20
Objective PerformanceLate	.36	.23	2.46	.11
OpinStmLate	-.25	.32	.65	.41
EvalStmLate	-.29	.20	2.11	.14
Paula	.49	.99	.24	.61
Randy	-.23	.87	.07	.78
Song	-0.00018	.01	.0002	.98
Line	1.5	.74	4.13	.04
Order_entry	.03	.13	.05	.81
Gender	-.09	.71	.01	.89
Week_no	-.72	.41	3.04	.08

REFERENCES

Adner, Robert and Peter Zemsky (2006), "A Demand-Based Perspective on Sustainable
Competitive Advantage," *Strategic Management Journal*, 27 (1), 215-239.

Agarwal, Rajshree, MB Sarkar and Raj Echambadi (2002), "The Conditioning Effect of Time on Firm
Survival: An Industry Life Cycle Approach," *Academy of Management Journal,* 45 (5) 971-
994.

Akerlof, George (1970), "The Market for 'Lemons: Quality and the Market Mechanism,"
Quarterly Journal of Economics, 84 (August), 488–500.

AMA (2006), "Social network shopping," (accessed 2007) [available at
http://www.marketingcharts.com/interactive/ama-social-network-shopping-cause-
related-marketing-top-holiday-trends-2729/].

Amazon.com (2008), "Amazon.com Tries User-Generated Public Relationship," (accessed
November 2008), [available at http ://bits.blogs.nytimes.com/2008/11/26/amazoncom-
tries-user-generated-public-
relations/?scp=3&sq=amazon%20customer%20review&st=cse].

Archibald, Robert B., Clyde A. Haulman, and Carlisle E. Moody Jr. (1983), "Quality, Price,
Advertising, and Published Quality Ratings," *Journal of Consumer Research*, 9
(March), 347–56.

Basuroy, Suman, Kalpesh K. Desai and Debabrata Talukdar (2007), "An Empirical
Investigation of Signaling in the Motion Picture Industry," *Journal of Marketing
Research,* 43 (May), 287-295.

Basuroy, Suman, Subimal Chatterjee and S. Ravid (2003), "How Critical Are Critical
Reviews? The Box Office Effects of Film Critics, Star Power, and Budgets," *Journal
of Marketing,* 67 (October) 103-117.

Batra, Rajeev and Olli T. Ahtola(1990), " Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes," *Marketing Letters*, 2 (2), 159–170.

Bayus, Barry (1991), "The Consumer Durable Replacement Buyer," *Journal of Marketing*, 55 (1), 42-52.

Boatwright, Peter , Suman Basuroy and Wagner Kamakura (2007), "Reviewing the Reviewers: The impact of Individual Film Critics on Box Office Performance," *Quantitative Marketing and Economics,* 5 (4), 401-425.

Boulding, William and Amna Kirmani (1993), "A Consumer-Side Experimental Examination of Signalling Theory," *Journal of Consumer Research*, 20 (1), 111–23.

Boulding, William and Amna Kirmani (1993), "A Consumer-Side Experimental Examination of Signaling Theory," *Journal of Consumer Research*, 20 (1), 111-123.

Bucklin, Louis P.(1965), " The Informative Role of Advertising," *Journal of Advertising Research,* 5**,** 11–15.

Chakravarti, Anindita, Yong Liu and Tridib Mazumdar (2008), " Online User Comments versus Professional Reviews: Differential Influences on Prerelease Movie Evaluation," *MSI Reports –Working Papers Series* 1 (8) 115-137.

Chen, Yubo and Jinhong Xie (2008), " Online Consumer Review: Word-of-Mouth as a New Element of Marketing Communication Mix," *Management Science*, 54 (3)477-491.

Chen, Yubo and Jinhong Xie (2005), "Third-party Product Review and Firm Marketing Strategy," *Marketing Science*, 24 (2) 218-240.

Chen, Yubo, S.Fay and Q. Wang (2003), "Marketing Implications of Online Consumer Product Reviews,", *Working paper, University of Florida.*

Chevalier, Judith and Dina Mayzlin, "The Effect of Word of Mouth on Sales: Online Book Reviews," *Journal of Marketing Research,*43 (3) 9-14.

Christensen, Clayton (1997), "Patterns in the Evolution of Product Competition," *European Management Journal,* 15 (2), 117-127.

Clement, Michel, Dennis Proppe and Armin Rott (2007), "Do Critics Make Best Sellers? Oppinion Leaders and the Success of Books," *Journal of Media Economics,*20 (2) 77-105.

Clemons, Erik, Gudong Gao and Lorin Hitt (2006), "When Online Reviews Meet hyper differentiation: A study of the Craft Beer Industry," *Journal of Management Information Systems,* 23 (2) 149-171.

D'Astous, Alain and Nadia Touil (1999), "Consumer Evaluations of Movies on the Basis of Critics' Judgments," *Psychology and Marketing*, 16 (8) 677-694.

D'Astous, Alain and Francois Colbert (2002), "Moviegoers' Consultation of Critical Reviews: Psychological Antecedents and Consequences," International Journal of Arts Management, 5 (1)24.

 Dellarocas Chrysanthos., and Charles Wood (2008), "The Sound of Silence in Online Feedback: Estimating Trading Risks in the Presence of Reporting Bias," *Management Science* 54, (3) 460, 17.

Dellarocas, Chrysanthos, Michael Zhang and Naveen Awad (2007), "Exploring the Value of Online Product Reviews in Forecasting Sales: The case of Motion Pictures," *Journal of Interactive Marketing,* 21 (4) 23-45.

Dhar Ravi and Klaus Wertenbroch (2000), "Consumer Choice Between Hedonic and Utilitarian Goods," *Journal of Marketing Research*, 37 (1), 60-71.

Duan Wenjing , Bin Gu and Andrew Whinston (2008), "The Dynamics of Online Word-of-Mouth and Product Sales-An empirical investigation of the movie Industry," *Journal of Retailing,* 84 (2) 233-242.

Eagle A.H., and S. Chaike,(1975) "An attributional analysis of the effect of communicator characteristics on opinion change: The case of communicator attractiveness," *Journal of Personality and Social Psychology*, 2: 136-144.

Eliashberg Jehoshua and Steven Shugan (1997), "Film Critics: Influencers or Predictors," *Journal of Marketing,* 61 (April 1997) 68-78.

Eliashberg, Jehoshua, Anita Elberse and M. Leenders (2006), "The Motion Picture Industry: Critical Issues in Practice, Current Research, and New Research Directions," *Marketing Science,* 25 (6) 638-661.

Gemser, G., M. Leenders and N. Wijnberg (2008), "Why Some Awards Are More Effective Signals of Quality Than Others: A Study of Movie Award," *Journal of Management,* 34 (1) 25-54.

Ginsburgh Victor and Jan C. van Ours (2003), "Expert Opinion and Compensation: Evidence from a Musical Competition," *American Economic Review*, 93 (1), 289-296.

Godes, David and Dina Mayzlin (2004), "Using Online Conversations to Study Word-of-Mouth Communication," *Marketing Science,* 23 (4) 545-560.

Gotlieb, J. and D. Sarel (1992), "The Influence of Type of Advertisement, Price, and Source Credibility on Perceived Quality," *Journal of the Academy of Marketing Science,* 20 (3) 253-260.

Grewal, Drew, J. Gotlieb and H.Marmorstein (1994), "The Moderating Effects of Message Framing and Source Credibility on the Price-Perceived Risk Relationship," *Journal of Consumer Research,* 21 (1) 145-153.

Heil Oliver and Thomas S. Robertson (1991), "Toward a Theory of Competitive Market Signaling: A Research Agenda," *Strategic Management Journal*, 12 (6), 403-418.

Hellofs Linda L. and Robert Jacobson (1999), "Market Share and Customers' Perceptions of Quality: When Can Firms Grow Their Way to Higher Versus Lower Quality," *Journal of Marketing*, 63 (1), 16-25.

Hennig-Thurau, Thorsten, Kevin P. Gwinner, Gianfranco Walsh and Dwayne D.Gremler (2004), "Electronic Word of Mouth via Consumer Opinion Platforms: What Motivates Consumers to Articulate Themselves on the Internet?," *Journal of Interactive Marketing*, 18 (1), 38-52.

Hennig-Thurau,Thorsten, Mark B. Houston and Gianfranco Walsh (2003),"Unveiling the Mysteries of Motion Picture Success: An Interrelationship Approach of the Determinants of Motion Picture Box Office, in: Enhancing Knowledge Development in Marketing,", Proceedings of the 2003 AMA Summer Marketing Educators' Conference, Chicago: American Marketing Association.

Hinson, John, Jameson Tina and Paul Whitney (2003), "Impulsive decision making and working memory," *Journal of Experimental Psychology*: Learning, Memory, and Cognition, 29, 298–306.

Hoffer, George and Robert Reilly (1984), "Automobile styling as a shift variable: an investigation by firm and by industry," *Applied Economics*, 16 , 291-297.

Holbrook, Morris (1999), "Popular Appeal versus Expert Judgments of Motion Pictures," *Journal of Consumer Research*, 34 (October), 415-424.

Holbrook, Morris and Elizabeth C. Hirschman (1982), "The Experiential Aspects of Consumption," *Journal of Consumer Research*, 9 (September), 132-140.

Kalpesh K. Desai and Suman Basuroy (2005), "Interactive Influences of Genre Familiarity, Star Power, and Critics' Reviews In the Cultural Goods Industry: The Case of Motion Pictures," *Psychology and Marketing*, 22 (3) , 203-223.

Kamakura, Wagner A., Suman Basuroy, and Peter Boatwright (2006), "Is silence golden? An inquiry into the meaning of silence in professional product evaluations," *Quantitative Marketing & Economics*, 4,119–141.

Kirmani, Amna and Akshay R. Rao (2000), "No pain, No gain: A critical Review of the Literature on Signaling Unobservable Product Quality," *Journal of Marketing*, 64 (April), 66-79.

Kraft Frederik B. and Charles L. Martin (2001), "Customer Compliments as More Than Complementary Feedback," *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 14, 1-13.

Liu, Yong (2006), "Word of Mouth for Movies: Its Dynamics and Impact on Box Office Revenue," *Journal of Marketing,* 70 (July), 74-89.

Mayzlin, Dina (2006), "Promotional Chat on the Internet, " *Marketing Science,* 25 (2), 155-163.

Mehta, N., X.Chen and O. Narasimhan (2008)," Informing, Transforming, and Persuading: Disentangling the Multiple Effects of Advertising on Brand Choice Decisions," *Marketing Science,*27 (3), 334-355.

Mehta, Nitin, Xinlei (Jack) Chen and Om Narasimhan (2008), "The Role of Informative and Transformative Effects of Advertising on Brand Choice Decisions" *Marketing Science*, 27 (3), 334-355.

Milgrom, Paul and John Roberts (1986), "Price and Advertising Signals of Product Quality," *Journal of Political Economy*, 94 (4), 796–821.

Miller, George A. (1956), "The Magical Number Seven, Plus or Minus Two: Some Limits on our Capacity for Processing Information," *Psychological Review*, 63, 81-97.

Millner, Edward and George Hoffer (1993), "A re-examination of the Impact of Automotive Styling on Demand," *Applied Economics,* 25, 101-110.

Mitra Debanjan. and P. Golder(2006), "How Does Objective Quality Affect Perceived Quality? Short-term Effects, Long-Term Effects, and Assymetries," *Marketing Science,* 25 (3), 230-247.

Miyazaki, D.A, D.Grewal and R. Goodstein (2005), "The Effect of Multiple Extrinsic Cues on Quality Perceptions: A Matter of Consistency," *Journal of Consumer Research,* 32 (June) 146-153.

Okada, Erica Mina (2005), "Justification Effects on Consumer Choice of Hedonic and Utilitarian Goods, " *Journal of Marketing Research,* 42 (February), 43-53.

Padmanabhan, V and R. Rao (1993), "Warranty Policies and Extended Service Contracts: Theory and Application to Automobiles," *Marketing Science,* 12 (3) 230-247.

Pauwels, Koen, Jorge Silva-Risso, Shuba Srinivasan and Dominique M. Hanssens (2004), "New Products, Sales Promotions, and Firm Value: The Case of The Automobile Industry," *Journal of Marketing*, 68 (October), 142-156.

Price Lydia and Niraj Dawar (2002), "The Joint Effects of Brands and Warranties in Signaling New Product Quality," *Journal of Economic Psychology***,** 23 (2), 165-190.

Rao, Akshay R. and Kent B. Monroe (1989), "The Effect of Price, Brand Name, and Store Name on Buyers Perceptions of Product Quality: An Integrative Review," *Journal of Marketing Research*, 26 (August), 351–57.

Rao, Akshay, R. Lu Qu, and Robert W. Ruekert (1999), "Signaling Unobservable Quality Through a Brand Ally," *Journal of Marketing Research*, 36 (May), 258–68.

Reinstein David and Christopher Snyder (2005), "The Influence of Expert Reviews on

    Consumer Demand for Experience Goods: A Case Study of Movie Critics," *Journal*

    of Industrial Economics, LII (1) 27-51.

Sen Shahana and Dawn Lerman (2007), "Why Are You Telling Me This? An Examination

    into Negative Consumer Reviews on the Web," *Journal of Interactive Marketing*, 21

    (4), 76-94.

Senecal, Sylvain and Jacques. Nantel (2004), "The influence of online product

    recommendations on online consumer choices,", *Journal of Retailing,* 80 (2) 159-

    168.

Shimp, Terrence and William O. Bearden (1982), "Warranty and Other Extrinsic Cue Effects

    on Consumers' Risk Perceptions," *Journal of Consumer Research,* 9 (June) 38-46.

Shiv, Baba and Alexander Fedorikhin (1999), "Heart and Mind in Conflict: The Interplay of Affect

    and Cognition in Consumer Decision Making," *Journal of Consumer Research*,

    26(December), 278-292.

Sood, S. and X. Dreze (2006), "Brand Extensions of Experiential Goods: Movie Sequel Evaluations,"

    Journal of Consumer Research, 33 (3) 352.

Sorensen, Allan and Scott Rasmussen (2004),"Is any publicity good publicity?," In: A note on

    the impact of book review, NBER Working paper, Stanford University.

Srinivas K. Reddy, Vanitha Swaminathan and Carol M Motley (1998), "Exploring the

    determinants of Broadway show success,", *Journal of Marketing Research,* 35(3),

    370-384.

Srinivasan, Shuba, Koen Pauwels, Joell Silva-Risso and D. Hanssens (2009), "Product

    Innovations, Advertising, and Stock Returns, " *Journal of Marketing,* 73 (January).

Srinivasan, Shuba, Koen Pauwels, Jorge Silva-Risso and Dominique Hanssens (2009),
"Product Innovations, Advertising, and Stock Returns," *Journal of Marketing*, 73
(January), 24-43.

Srivastava, Joydeep. and Nicholas Lurie (2001), "A Consumer Perspective on Price-Matching
Refund Policies: Effect on Price Perceptions and Search Behavior," *Journal of
Consumer Research*, 28 (September), 296-307.

Sweller, John (1988), "Cognitive load during problem solving: Effects on learning". *Cognitive Science*
12 (2), 257–285.

Tellis, Gerard J. and Johnson, Joseph (2007), "The Value of Quality: Stock Market Returns to
Published Quality Reviews," *Marketing Science,* 26, (6), 742-756.

Tulim,Erdem and Joffre Swait (1998), "Brand Equity as a Signaling Phenomenon," *Journal
of Consumer Psychology,* 7 (2), 131–58.

www.comscore.com/pressevents /press_releases/2007/11/Online_Consumer_Reviews.

Zeithaml, Valerie (1988), "Consumer Perceptions of Price, Quality and Value: A Means-End
Model and synthesis of evidence,", *Journal of Marketing,* 52 (July) 1988.