PROPOSING AN EXAMINATION OF THE IMAGE CONGRUENCE HYPOTHESIS AND CONSUMERS IN THE HEALTH CLUB INDUSTRY

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ABSTRACT

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The current research proposes the examination of the image congruence hypothesis and consumers in the health club industry. Specifically, we propose investigating the extent to which actual and ideal self-congruities are indicative of health club patronage. An integrative model of self-concept, self-congruity, health club image, and health club patronage provides the foundation of our hypotheses. This paper presents an overview of the research in this area, hypothesis development, and a discussion of methodology. Data collection is in progress, with a current sample of n=353.

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INTRODUCTION

It has been noted that individuals "behave in a fashion consistent with the pictures they hold of themselves and interpret any experience contradictory to this self-picture as a threat" (Rosenberg 1979, p.57). Additionally, many scholars seem to agree that a consumer's attitude, purchase intention, and preference toward a brand are largely affected by a perceived similarity between the brand's image and the consumer's self image (Birdwell 1968; Dolich 1969; Graeff 1996; Hughes 1976; Landon 1974; Sirgy 1982). The perceived similarity between an individual's self-image and the image of a product has been referred to as self-congruity (Graeff 1996; Sirgy 1985). It has been suggested that consumers will likely purchase products which they perceive as being more congruent to their self-concept, or, further, that the acquisition of the product will enhance the individual's self-concept (Grubb and Grathwohl 1967; Landon 1974). Moreover, past research has indicated that individuals tend to prefer environments (Pervin 1967) and stores (Stern, Bush, and Hair 1977) which maintain images they perceive as being more similar to the self-concept (Pervin 1967), and that "consumers feel uncomfortable if they visit a store which does not reflect their perceptions of themselves" (Ibrahim and Najjar 2007, p.220). Aaker (1997) suggests that the image of a brand is molded by the brand's user imagery, and the type of clientele a store caters to will affect the consumer's purchase intentions (Blackwell, Miniard & Engel 2006). According to Sirgy, Grewal, and Mangleburg (2000, p.127) an individual will perceive stores differently based on a store's patron-image, and, "the greater the congruence between the store patron image and the consumer's self-concept, the more likely that the consumer has a favorable attitude toward that store (and the more likely that he would patronize that store)." Therefore, a consumer is likely to patronize a store whose image is congruent to the self-image. Further research into self-concept has resulted in the identification of multiple self-concepts or "possible selves" (Markus & Nurius 1986, p.954).Such findings have allowed researchers to examine the role of multiple self-concepts in consumer behavior (e.g. Graeff 1997; Ibrahim and Najjar 2007; Malhotra 1988).

The purpose of this study is to examine the relationship between consumers' self-concept and their patronized health club under the image congruence hypothesis. First, we intend to explore the relationship between the consumer's health club image and their actual self concept, proposing that there is a positive correlation consistent with the image congruence hypothesis. Then we plan to explore the relationship between ideal self-concept and health club image, given the conspicuousness of the consumption situation. By exploring both actual and ideal self, we plan to determine which is more strongly correlated with patronized health club image. It should

be noted that the research agenda proposed here allows us to explore an integrative model of store image, store patron image, self-congruity, and retail patronage provided by Sirgy, Grewal, and Mangleburg (2000). We focus primarily on the relationships among self-congruity, health club image, and health club patronage. These questions have significant marketing and management implications for health clubs. A thorough review of the seminal research on self and self-concept, as well as more recent explorations of these concepts, provides the foundation for each hypothesis.

HEALTH CLUB INDUSTRY OVERVIEW

In 2006, 29,069 health clubs were operating in the United States. The number of health clubs operating in the U.S. from 1998 to 2006 more than doubled its size, up from around 14,000 health clubs operating in 1998. An industry review conducted by Active Marketing Group (www.activemarketinggroup.com, 2007) reported that revenues generated in 2005 from the top U.S. chains and franchises totaled over $5.1 billion. At the time, the industry's leaders were Curves, Gold's Gym, Lady of America, Health Fitness Corp., and Bally Total Fitness to name a few. The median age of health club members was 41, with a gender breakdown of 57% male and 43% female. Moreover, the 2007 Health Club Industry Review, again conducted by Active Marketing Group, reported that in 2005 52% of the total health club market was held by California, New York, Texas, Florida, Pennsylvania, Ohio, Illinois, Massachusetts, Michigan, and Alabama. By 2005, 15.5% of Americans owned a health club membership and in 2006, revenues in the health club industry jumped to $17.6 billion (Mercanti Chronicle 2007).

Today's health conscious consumers have a variety of choices when it comes to committing themselves to a health club. Health clubs in the U.S. cater to specific demographics in order to give consumers the greatest experience possible when they select the best "fitting" gym. These health clubs include, but are not limited to, "express" clubs, gender-specific, community fitness centers, and college recreation centers (Health Club Industry Review 2007). The Mercanti Chronicle (2007) suggests that "positive demographic trends have helped drive the growth of the U.S. health club industry over the last 10-plus years as the awareness of the benefits of healthy living has increased among aging Baby Boomers, their Echo Boom children (a.k.a. Gen-Y) and a health conscious Gen-X generation" (p.1). Today, over 45 million Americans own a health club membership (Cloud 2009). An individual will choose to join a health club for a variety of reasons: the attainment of a healthier lifestyle; improvements/changes to the body habitus; meeting new people; socializing with other individuals who share a common interest in working out, to name a few. Cash and Pruzinsky (1990) offer that an individual's evaluation of his body-image strongly correlates to his evaluation of self. According to Rogers (1951, p.487), "the organism has one basic tendency and striving- to actualize, maintain, and enhance the experiencing organism." In this vein, it is believed that consumers may also patronize a health club because they are attempting to enhance their body-image, and, therefore, striving to enhance their concept of self.

SELF CONCEPT IN CONSUMER BEHAVIOR

Self-concept has been defined a number of ways. Some of these definitions include self-concept as "the totality of the individual's thoughts and feelings having reference to themselves as subjects as well as objects" (Malhotra 1987, p.7), "a person's perception of his own abilities, limitations, appearance, and characteristics, including his own personality" (Graeff 1996, p.481), and peoples' "impressions of the type of person they are" (Blackwell, Miniard, Engel 2006, p.306). According to Carl Rogers (Rogers 1951, p.501), the concept of self "... is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and to the environment; the value qualities which are perceived as associated with experiences and objects; and goals and ideals which are perceived as having positive or negative valence." Prior studies in the consumer behavior literature have examined an individual's concept of self in relation to his purchase behavior. The notion that consumers' self-concept serves as a predictor of their purchasing behavior was proposed in the late 1960s by Grubb and Grathwohl (1967). They suggested that an individual will purchase products that have symbolic value possessing self-enhancing capabilities, and, further, that these products are perceived as being similar to the individual's self-concept. Rogers' view of the person was that the individual will continually strive for enhancement of the self. The inclusion of self-concept in consumer behavior has been aided by Rogerian Humanistic Theory, which posits "people act and respond on the basis of their understandings of how things are rather than how things *actually* are," (Schneider, Bugental, and Pierson 2001, p.83). Woods (1960) suggested that there exists a group of consumers who are responsive to the symbolic value or meaning inherit in products, and that these consumers are influenced by their perception of a product's image. Similarly, Baumgartner (2002) recently developed a framework for categorizing eight dimensions of purchase behavior. One of the dimensions identified

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was symbolic purchase behavior, which he defined as "buying a brand to project a certain image" (Baumgartner 2002, p.289).

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The image congruence hypothesis states that an individual will prefer products/brands that are perceived as having an image similar to the self-concept of the individual (Graeff 1996). Birdwell (1968, p.78) attempted to demonstrate that an individual's self-image was related to his purchasing behavior, reporting evidence that suggested "an automobile owner's perception of his car is essentially congruent with his perception of himself." Similarly, Dolich (1969) was focused on the notion that individuals are accepting of brands that maintain images similar to their self concept and reject brands that maintain images dissimilar to their self concept. Specifically, his proposition was that "real-self image congruence with product brands differs from ideal-self image congruence with product brands" (p.81). Although his study did provide support for the image congruence hypothesis, no significant differences were found between ideal-self image and real-self image in relation to most preferred brands. Landon Jr. (1974), in his study on the link between self-concept and purchase intention, proposed that some consumers match product-image with their actual self-image, while others match product-image with their ideal self-image. Ideal self-image provided a more dominant influence on purchase intentions for the male group with products such as snow skis, electric toothbrushes, and card table and chairs. Generally, most products in this study showed a higher correlation to real self-image rather than ideal self-image.

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When an individual purchases membership to a health club, they are purchasing a brand and access to the health club facilities and services. It has been noted that a brand's image is reflective upon store image (Assael 2004), and, since the environment of a health club maintains similar attributes of a store (i.e. atmosphere, patrons, products), it is inferred that the brand image of a health club derives from aspects of the health club's attributes and image. Consumption conveys the endorsement of the brand of a given health club. In this sense, health club members are not only relating their self-image to the health club brand's image, but also to health club environment itself. Our first proposition will test the applicability of the image congruence hypothesis to the likelihood of consumers patronizing a health club based on its perceived similarity to their actual self-image.

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H (1): Based on the image congruence hypothesis, consumers are likely to patronize a health club whose image positively correlates to their actual self-image.

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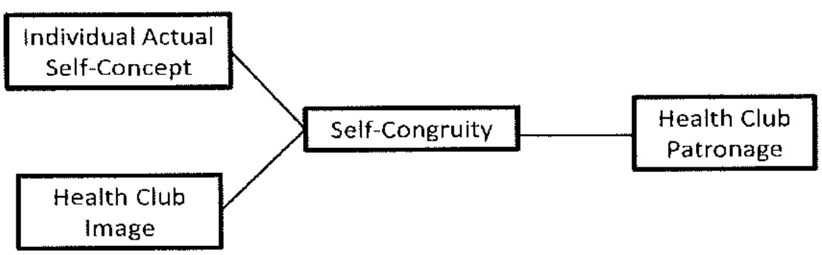

Model A

Model A suggests that when an individual's actual self-concept is perceived to be congruent to the image of a health club, self-congruity will occur. Based on the preceding discussion, it is then likely that self-congruity will serve as an indicator of health club patronage.

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SELF-CONCEPT & CONSUMPTION SITUATION

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Self-concept literature has referred to the self in a multidimensional manner (e.g. Ericksen 1996; Hughes 1976; Malhotra 1988; Sirgy 1982). "Actual self" is the way in which a person sees himself now. "Ideal self" is the way in which a person would like to see himself. "Social self" is the way in which a person believes others see him. Markus & Nurius (1986, p.954) expanded the domain of self-concept through the proposition of "possible selves," referring to the selves an individual would like, fear, or wish to become. The treatment of the self-concept through

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multiple dimensions has allowed researchers to expand the role and importance of such self-images in consumer behavior.

Research on image congruence has sought to examine which concept of self (actual vs. ideal) correlated more strongly to product brands based on product conspicuousness. The results have been inconsistent. Ross (1971) posited that an individual would relate his ideal self-concept to products that were consumed publicly, and conversely, an individual would relate his actual self-concept to products that were consumed privately, however results were not significant. One of the subsequent criticisms of the study was that restricted lists of product brands may have significantly affected the results of the study (Hughes 1976, p.531). Using a partial replication of the Ross (1971) study, Hughes' (1976) found that ideal self, rather than actual self, was more congruent to most preferred brand of automobile. Additionally, results indicated that the actual self-image was more closely related to the most preferred product brand of toothpaste. Hughes (1976, p. 532) found mixed support for his second hypothesis that "the individual will express a brand preference for a privately consumed product when the perceived brand image is more congruent with the individual's actual self image than the individual's ideal self image." At times a consumer may wish to express his ideal self-image through a purchase decision in the event that he is uncomfortable with his actual self-image or if his actual self-image is negatively portrayed (Landon 1974). Graeff (1996) notes no significant difference between actual and ideal self-image congruence for privately consumed brands. Interestingly, a larger congruence between brand image and ideal self-image existed for publicly consumed brands, suggesting that "product evaluations might be more strongly related to ideal congruence than actual congruence" (Graeff 1996, p.488).

Ross' (1971) study received additional criticism when Graeff (1997) asserted that products do not vary in their conspicuousness; rather, consumption situations are what vary in level of conspicuousness. Consumption situation can be defined by the situation in which the consumer believes he or she will use the product or service (Assael 1984). Accordingly, Schiffman & Kanuk (2004) suggest that in various situations, a consumer's behavior will be directed by the self-image he chooses to portray. One of the features of a situation is the individual's social surroundings (Belk 1975), which includes the characteristics of significant others as well as interpersonal interactions. Graeff (1997) examined the effects of actual and ideal self-image on products/evaluations when the consumption situation was experimentally manipulated. Results suggest that consumers whose self-image was congruent to the brand's image held a more favorable attitude and purchase intention toward the brand. Additionally, results indicated that "within each situation, there were no significant differences between the correlations for actual and ideal congruence" (p.55). Although there were no significant differences found between the effects of actual and ideal self-image, it should be noted that ideal self-image did have slightly more favorable image congruence for subjects in the public consumption situation. Accordingly, Sirgy (1982, p.289) notes that "consumption of a brand may be highly congruent with self-image in one situation and not at all congruent with it in another." Based on Graeff's (1997) notion that consumption situations are what vary in their conspicuousness as opposed to products/brands, results from Landon's (1974) study may have been better explained if the researcher had asked subjects to evaluate their purchase intentions based on the effect of consumption conspicuousness, not product conspicuousness.

It is important to note under what circumstances a health club membership is consumed. For the purpose of this study, it is assumed that the situation in which health club membership is consumed is highly conspicuous.

H (2): Since the consumption situation of health club membership is highly conspicuous, consumers will patronize a health club whose image exhibits a stronger positive correlation to their ideal self-image, rather than their actual self-image.

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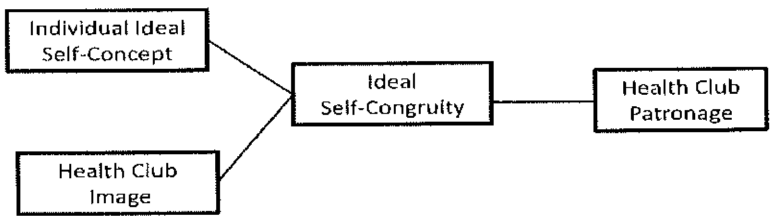

Model B

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Model B posits that when a positive correlation exists between individuals' ideal self-concept and their health club image, ideal self-congruity will occur. When ideal self-congruity occurs, it is likely that a consumer will choose to patronize a given health club. We are suggesting that both actual and ideal self congruity will influence the health club patronage decision; however, it is proposed that ideal self-congruity will be the stronger indicator of health club patronage.

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This research makes contribution to the consumer behavior literature in a number of ways. First, we explore the early theories and research on self-concept in consumer behavior as they relate to image congruence, actual self, and health club members. Secondly, we extend the results of more recent self-congruity studies to consumer behavior in the health club industry. No prior research exists examining the image congruence relationship between a consumer's self-concept and their patronized health club. For many products, marketers have very little control over the consumption environment. However, in the context of a health club, marketers and managers can exert a large degree of control over the situation in which their services are consumed.

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METHODOLOGY

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A two part study was designed consisting of in-store (health club) data collection and online survey distribution. Four different health clubs located in upstate New York permitted access to their members allowing for the distribution of paper and pencil surveys on site. A similar version of the survey was created in an electronic format using the online survey tool Qualtrics. Based on previous research, a semantic differential scale was used to assess both actual and ideal self concept (e.g. Birdwell 1968; Dolich 1969; Ericksen 1996; Hughes 1976; Malhotra 1988; Ross 1971; Sirgy 1985). Subjects were instructed to rate their actual and ideal self-concept (image) on 7-point semantic differential scales containing 20 bipolar adjectives. The dimensions used in the current study were: excitable-calm; personal-impersonal; masculine-feminine; insecure-confident; humorous-serious; positive-negative; follower-leader; dominating-submissive; popular-unpopular; extravagant-economical; mature-immature; unsuccessful-successful; sporty-businesslike; weak-strong; interesting-dull; happy-sad; friendly-unfriendly; bold-shy; young-old; modest-vain. In order to minimize the social desirability response bias, ideal self was measured before actual self, consistent with the recommendations of Ross (1971).

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The semantic differential has also been used to measure product/brand/store image (Malhotra 1988; Stern, Bush & Hair 1977). This technique involves applying the same set of items which are used for describing a participant's self-image to describe product/brand/store image. Based on positive results from past research (Graeff 1996; Hughes 1976; Stern, Bush & Hair 1977), the scale used to measure actual and ideal self-image was also used for the evaluation of health club image. Brands, like consumers, can be perceived as having personalities (Graeff 1997). For instance, some consumers may view Apple as being young, hip, and trendy, while IBM is perceived as older and more conservative (Aaker 1997). Other brands such as Mercedes Benz and Acura may be portrayed as rich, elegant, and sophisticated, while Honda and Toyota convey safety, intelligence, and dependability. Therefore, health club image was measured with the same 20 image dimensions used to measure actual and ideal self-concept (image), however, the items on this scale were set in a randomized order to avoid response bias (Hughes 1976). Following the questions dealing with ideal self, actual self and health club image, participants were presented with a series of questions describing the typical member of their health club (health club patron image).

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A pretest of the questionnaire (n=59) resulted in minor changes to the survey design and the structure of some questions. Main study data collection is in progress and will terminate November 1. To date, n=353.

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Grand Street Community Arts - Leading Sustainable Organizational Change
External Communications Area

Amber Ethier, Siena College
Vincent Petraccione, Siena College
Bryan Serafin, Siena College

Class: Marketing and Management 425 - Organizational Development and Change

COMMUNITY PARTNER

Our community partner during this course was Grand Street Community Arts (GSCA). Located in the South End of Albany, GSCA was founded in 2004. The organization's mission is "to create unity and connection, especially through the arts, in an inner-city neighborhood with racial and economic diversity. The arts center creates a supportive community and focuses on its youth. The center presents a broad spectrum of arts programs and performances that encourage art as a natural tool of expression available to everyone. By restoring historic St. Anthony's church as its home, the arts center creates and nurtures a link with the unique living history of the local community (ww.grandarts.org/about)."

PROJECT DESCRIPTION

Professor Thurston's fall 2009 MKMG 425 Class was partnered with Grand Street Community Arts for the purpose of assisting the organization through the organizational change process. GSCA ideutified six specific areas of study it wished the students to work on. Our group beeame responsible for assessing and recommending chauges to GSCA's external communications plan. Wc analyzed the organization's current communications efforts (such as the website, Facebook page, and other media), helped the organization to identify its goals for external communications, identified challenges facing the organization, created alternatives to overcome these challenges, and ultimately, made recommendations to GSCA of which alternatives to pursue and provided an implementation plan to do so. The set of deliverables required during the semester included: a contract between our team and GSCA, a paper describing tbe challenges and alternatives, and a paper providing GSCA with our recommendations and implementation plan. At the end of the semester, each team presented their analyscs to the leaders at GSCA. Grand Street Community Arts is currently in the process of implementing some of our recommendations.

REFLECTION

This project was important to us because we recognized we had a responsibility to provide GSCA with our best work and recommendations in order to help the organization succeed. GSCA was relying upon us to use our education and fresh ideas to help them face some difficult challenges and decisions they had encountered. Since the staff is made of mostly part-time volunteers, the organization did not have much time or many resources to dedicate to analyzing and revising a lot of the programs or internal operations. For these reasons, the project was very important to GSCA; it has appeared to be a large learning experience for the organization, as well as our group. This project was important to Siena College, for a two main reasons. First, it demonstrated what kind of students Siena is

producing, and what kind of faculty it values. Second, this project was an application of the Franciscan values that Siena is rooted in and instills in each student.

FUTURE

This project has helped us prepare for the future by allowing us to apply our skills and education from our four years of schooling to the real world. It also gave us an opportunity to gain some experience in the non-profit sector of the business world, opposed to the for-profit emphasis that is so often used in classes. The project did not necessarily change what we want to do in the future, but has changed our attitudes on how we will do it. We now understand the importance of keeping change in development in line with the mission statement of an organization, articulating ideas clearly, and working with others to achieve their goals. We learned skills that we have already begun to use in other classes, and that will be valuable in future situations. For example, although we did not do the sustainable funding piece of the project, we did learn skills and ideas from that team during class discussions that have been helpful in our Strategic Management courses. Although it may not have been as clear at the beginning of or during the course of the semester, it is evident now that we have been privileged to have this experience.

DETERMINANTS OF A PERFECT SCORE

William Allan, Siena College

INTRODUCTION

It's past midnight, your internet goes out, all stores are closed, but you need to complete a project on your wireless laptop. So what do you do? Let's look at another example. In this example you work for a local company based in Chicago, Illinois. However, for budgetary and quality reasons the company outsources their financial planning to a separate corporation based in New York. What do you do to keep track of your financial planning? In both of the above cases you would pick up the phone and talk to a corporate operated call center. A lot of people wonder just how good these call centers can be and what they are doing in order to make sure their employees are communicating correct information. In response to this some companies have created graded call reviews in order to make sure the highest standards of quality are being upheld within their company. Now what exactly is a call review? For quality control and training reasons more and more companies today have their call center phone calls tracked on a recorded line. The client is usually made aware that they are speaking on a recorded line for quality control reasons ahead of time. After a given amount of time, specific for each company, the consultants will go through call reviews. In these call reviews the consultants managers will listen to the recorded phone call, look over the consultant's notes, and go over any comments or survey results provided by the customer. Throughout the review the manager will discuss with the consultant the call flow to ensure its objectivity with the company standards. In the end, the consultant will be graded on a given scale based on the reviewed call's characteristics (in this case it will be on a 1 to 5 scale, 5 being the highest). The consultants call reviews can be used for many different reasons; it all depends on the specific company.

Currently I am interning in a company which conducts such call reviews, but for quality control reasons I cannot disclose the name (will now be referred to as XYZ Company or simply XYZ). Throughout the last 5 months I have been at XYZ I have wondered what factors may influence the call review score given to the consultants at XYZ and other consultants' employed by its peer companies. After analyzing the characteristics of call review scores, I concluded that the main variables involved in determining the call review score are the consultant's age, months of service, gender, and their education level. The following research will look to prove the significance of the above variables in determining the consultants score on the call review. A priori, I believe that when all other variables are held constant, the months of service a consultant has with the company will have the greatest significance in effecting their corresponding call review score.

LITERATURE

Call centers have been around for years where they have changed and evolved with our growing economy. Today, improvement in customer satisfaction has been the key focus for companies who are looking to develop their image, advance their customer satisfaction, and expand their customer base. In 2007, Susan Campbell from TMC.net wrote that "the [call] center must ensure that customers are satisfied enough to remain loyal, spread the positive word about the company and produce a return on the investment."[1] There are many different ways companies may use to try and reach these goals. Such ways may be through electronic, phone based, or personal surveys, retention statistics, and call reviews. The primary concern in my research is based upon call reviews because of their in-depth context as well as their variability. As a note, the analysis will be representative of nationally based call centers. The use of outsourcing call centers into countries such as India has played a roll in the current use of call centers. However, this factor will not take them into consideration because of their discrepancy and variability. More specifically, my research and analysis will not focus on the use of outsourcing for call centers and the impacts such companies have had on companies such as XYZ, or call reviews as a whole.

One of the most critical points concerning the call review is the actual consultant. "According to a recent study on hiring costs at 54 Fortune 1,000 companies [2001], hiring the wrong call center representative often costs nearly 26 times the average salary."[2] This figure includes such factors as the consultants' salary and benefits as well

as how much their mistakes could cost the company, the amount of money lost because of lost customers, and the time, money, and energy spent on training the consultants to perform their duties. The use of call reviews enables employers to weed out their stronger employees from their weaker counterparts in order to insure the highest level of performance across the board. It also enables the employer to figure out which consultants may need more time training on a particular subject or conversely, which consultants may prove to be eligible for a promotion. Companies will conduct call reviews at specific time periods for their employees and will use the results to benefit the company and the consultants. Aside from working as benchmarks, call reviews can also allow a particular company to see what items are being brought up the most by the clients. They can then use this information to change their training tactics, company image, customer base, and any other facet of the company that will benefit them as a whole and increase their profitability.

The Global Contact Center Benchmarking Report illustrates research regarding customer satisfaction with call centers over the past few years. Their research found that on average, the percentage of customer satisfaction of call centers has decreased in the years 2006 to 2007. Interestingly enough the researchers believe that "it's not so much because customers are not happy, but because contact centers are doing a better job of measuring satisfaction... [t]hey're more realistic and better at understanding scores. People are paying more attention to analytics, recorded calls and automated survey options. It's a positive for the industry. It shows they're focusing on the customer experience and doing things that will make a difference."[3] Truthfully, these findings do seem to hold justice. Call centers are intricate parts of businesses that must succeed in order for the business to succeed. Companies have realized this and, as the quote suggests, they have increased their standards within the call centers. In effect, when you increase the standards and sources of measurement for customer satisfaction, there is likely to be some form of change within the results.

Call reviews are good ways for both the companies and their employees to learn from each other and help each other in the long run. Studies have shown that "[p]eople who are happy and feel appreciated in the workplace are likely to pour more passion into their work and see their input as an investment. Those who do not are likely to produce lackluster results."[4] Call reviews can be seen as a way to do just this. Call reviews focus on an individual within a company and what they can do to improve their quality of work. This focus and attention can be used to boost the consultant's moral which in turn will make them feel like their work means something for the company. The call reviews can also keep the consultants happy because of their ability to reward, promote, and encourage a consultant to succeed. In the end, the use of call reviews might work to provide consultants with the big promotion or bonus that they have worked hard to attain.

DATA

The data obtained for my analysis is based on cross sectional data from my internship with XYZ Company, which is a firm in the Albany area that specializes in telecommunications between their employees and their clients. Unfortunately, I cannot disclose the company's name for quality control reasons as well as reasons that stretch far along the corporate ladder structure. However, in my research with XYZ I was able to obtain substantial information to develop the most relevant, objective, and unbiased data possible. I was able to take the average of 100 call reviews from the company and use those figures to accurately simulate my own call review data. The variables I considered to be relevant in effecting the call review score are the age of the consultant, the number of months of service the consultant has prior to the call review, the gender of the consultant, and the level of education the consultant has. The approximate numbers which were provided by XYZ Company can be seen throughout Row 71 in *Table 1*. In summation, *Table 1* shows that the average call review score was approximately 3.75 out of 5, the average age of the consultants is 26, the average number of months of service the consultant has prior to the call review is approximately 45 (based on 6 month intervals for the given data), about 42 of the consultants are males (60%), and about 53 consultants have a bachelors degree (75%). Once these figures were objectively obtained I was able to manipulate my simulations to correspond with these figures. The only major change I made was that my sample size (n) is 70 call reviews instead of 100 call reviews to further protect the identity of XYZ Company and its employees. In doing so I made sure that the sample numbers represented the population numbers which were provided by using reflective percentages in order to transfer the figures accurately. This transformation only really occurred within my two dummy variables.

To make my data more interesting and realistic it seemed justifiable to add two dummy variables into the simulation which are the gender of the consultant and their education level. Some people may argue that men are

better consultants than woman or vise versa so it will be interesting who ends up on top. Also, there are common arguments regarding the actual application of higher degree's of education in the work environment today. To test the theories about higher education in the telecommunications consulting industry I set a bachelor's degree equal to 1 and if the consultant has completed additional education to a bachelor's degree (MBA, PhD, CPA, CFA, CFP, etc.) equal to 0, or the base. To test the theories about gender biases in the telecommunications consulting industry I set males equal to 1 and females equal to 0, or the base. Both of these bases may or may not prove to be crucial determinants of the consultants call review score. In order to assess this it is necessary to run a few tests.

STATEMENT OF FINDINGS

Once the variables were established and the data was collected, the next step in my research was to create a multiple linear regression model using the most relevant explanatory variables. *Equation 1*, shows how the call review score (Y) is a function of the age of the consultant [X_{2i}], the number of months of service the consultant has prior to the call review [X_{3i}], the gender of the consultant [D_{4i}], and the level of education the consultant has [D_{5i}] where U_i is there error term.) In addition, there may be some form of interaction between the qualitative dummy variables D_4 and D_5. In other words, the two variables might have a multiplicative effect on the mean Y. To compensate for it was necessary to add an interaction dummy to the model which will be able to show the concurrent effect of the two dummy variables D_4 and D_5. This interaction dummy is represented by D_4D_5 and is attained by multiplying the D_4 variable by the corresponding D_5 variable. Using this form of interaction is the best and most realistic form of interaction within the model that would show the most statistical significance.

Equation 1

$$Y_i = B_1 + B_2X_{2i} + B_3X_{3i} + B_4D_{4i} + B_5D_{5i} + B_6\,D_{4i}D_{5i} + U_i$$

where Y = call review score
X_2 = age
X_3 = months of service
D_4 = gender — Male = 1, Females = 0
D_5 = education level — Bachelors degree = 1, Additional Education = 0
D_4D_5 = gender*education level

Using the data previously discussed, I was able to attain the following results in *Equation 2* through a regression analysis on Microsoft Excel and STATA. The data is available in *Regression 1* in the **Appendix**.

Equation 2

$$\hat{Y}_i = 2.734 + 0.0003X_{2i} + 0.027X_{3i} - 0.473D_{4i} - 0.572D_{5i} + 1.056(D_{4i}\,D_{5i}) + U_i$$

Table 2

	B_1	B_2	B_3	D_4	D_5	D_4D_5
Coefficient	2.73398	0.000364	0.027111	-0.47383	-0.57159	1.056383
se	1.277519	0.052353	0.006123	0.376965	0.339637	0.428047
t-stat	2.14007	0.006946	4.427911	-1.25696	-1.68294	2.467913
p-value	0.036167	0.994479	3.79E-05	0.213336	0.097259	0.016274

To test the significance of the above values my research will primarily focus on the coefficients, t-stats, and p-values that were provided from the regression analysis. In addition, the following research will analyze a Ramsey regression error specification test (RESET) and a Breusch-Pagan/Cook-Weisberg test to see if there are any omitted variables or if the data is heteroscedastic. From the regression on Excel I will go based on the fact that if the absolute value of the t-stat is greater than 2, then the variable is statistically significant in effecting the call review score, if the p-value is less than alpha of 0.05 then it is statistically significant in effecting the call review score. However, more focus should be put on the significance of the p-value due to its reliability and accurancy. Using STATA I will follow the same procedures for the RESET and Breusch-Pagan/Cook-Weisberg test. For these tests it is necessary to analyze the F-value given as well. For these tests, if the F-value and/or p-value is less than the alpha of 0.05 then we will reject the null hypothesis and if the t-stat is greater than 2 we will reject the null hypothesis. We can interpret the following from *Equation 2* and *Table 2* which are based on *Regression 1* of the **Appendix**.

The R^2 shown in *Regression 1* is equal to 0.44955 and the adjusted R^2 is equal to 0.40655. The significance of having a high or a low R^2 has of constant debate both inside and outside of the classroom. Therefore, I will just

comment on the fact that it is low, but that does not mean that the data is not irrelevant, insignificant, or inaccurate. More thorough analysis would need to be done with hypothesis testing and other economic theories in order to prove its importance for each particular case study. However, due to certain restraints I will not be able to go into such detail or testing.

When the consultant's age increases by one year, the consultants call review score will increase by 0.0003 points, holding all other variables constant. According to the corresponding t-stat ($0.006 < 2$) as well as the p-value ($0.994 > 0.05$) in *Table 2*, the consultant's age is not statistically significant in effecting their call review score.

When the consultant's months of service increases by one month, the consultants call review score will increase by 0.027 points, keeping all other variables constant. According to the corresponding t-stat ($4.428 > 2$) as well as the p-value ($3.79E\text{-}05 < 0.05$) in *Table 2*, the consultant's months of service is statistically significant in effecting their call review score.

On average, male call review scores are 0.473 less than female call review scores with all other variables held constant. When all other variables are held constant, the mean call review score for females is 2.734. For males it is ($2.734 - 0.473$) or about 2.26. According to the corresponding t-stat ($1.257 < 2$) as well as the p-value ($0.21 > 0.05$) in *Table 2*, the consultant's gender is not statistically significant in effecting their call review score.

On average, the consultants with a bachelor's degree had a call review score that was 0.572 less than the call review scores of the consultants who had additional education, with all other variables held constant. When all other variables are held constant, the mean call review score for the consultants' with additional education is 2.734. For the consultants with a bachelors degree it is ($2.734 - 0.572$) or about 2.2162. According to the corresponding t-stat ($1.683 < 2$) as well as the p-value ($0.097 > 0.05$) in *Table 2*, the consultant's education level is not statistically significant in effecting their call review score.

Holding all other variables constant, if we add all of the dummy coefficients from *Equation 2* together we attain ($-0.473 - 0.572 + 1.056$) = 0.011. As a result, the mean call review score of male consultants with a bachelor's degree is greater than other consultants by about 0.011 points. The p-value of D_4D_5 is equal to 0.016 which is less than the alpha of 0.05 and the t-stat is equal to 2.468 which is greater than 2, therefore it is statistically significant in the regression model. Oddly enough, the interactive dummy variable (D_4D_5) proves to be significant whereas the individual dummy's (D_4 and D_5) are not significant. I believe that this is because the majority of the sample of consultants were males and a majority of the consultants have a bachelor's degree. In turn, this will reflect the significance of the interactive dummy which tells us that males with bachelor's degrees will score greater than other consultants.

Therefore, the months of service as well as the interactive dummy variable of gender and education level are the two main variables that have the most significance in effecting a consultants call review score. To confirm that there are no CLRM violations within the cross sectional data it is necessary to run the RESET and Breusch-Pagan tests on STATA, which can be found in the **Appendix**. The null hypothesis for the RESET test is that the model has no omitted variables. Using the guidelines previously established, the test found that the Prob > F is equal to 0.3382. Since this value is greater than the alpha of 0.05, we do not reject the null hypothesis stating that there are no omitted variables. The null hypothesis for the Breusch-Pagan test is that there is constant variance. Again, using the guidelines previously established the test found that the Prob > chi2 = 0.8214. Since this value is greater than the alpha of 0.05, we do not reject the null hypothesis stating that there is constant variance and the data is homoscedastic. As a further note about the CLRM violations, the values of the explanatory variables are not random. As a result, the model does not violate the assumption of non-stochasticity. Also, the estimators do not violate BLUE, meaning that they are the Best, Linear, Unbiased, Estimators. Some may argue that there is multicolinearity in the data because of the signs of the dummy coefficients as well as the low number of significant variables. However, I would argue that there is no multicolinearity because of the data collected, there are imperfect relationships between the variables, and there is not a strong linear relationship between the variables. As a quick note, advanced economic theory would show that there is a functional relationship between the explanatory variables as well as a relationship between the explanatory variables and the overall call review score. However, due to the analytical and investigative relevance of the current subject matter my analysis will not go into such detail.

The graphical results shown in the **Appendix** under *Graph 1* and *Graph 2* were created using the regression analysis on Excel. *Graph 1* shows the residual plots for the consultants' age and *Graph 2* shows the residual plots for the consultants' months of service. Both graphs have "no discernable systematic pattern… [between the X and Y axis's] suggesting that perhaps there is no heteroscedasticity in the data."[5] These results concur with the Breusch-Pagan test which was run on STATA to prove that the data is homoscedastic. The two different graphs also prove that there is no autocorrelation between the error terms in either of the graphs, meaning that the error terms are random.

CONCLUSION

In conclusion, my a priori statement was correct in stating that when all other variables are held constant, the months of service a consultant has will have the greatest significance in effecting their corresponding call review score. Also, after thorough analysis the research was able to prove that on average, males with bachelor's degrees will score higher than any other consultants with any additional education, with all other variables held constant. Thankfully the data did not have any violations of the CLRM assumptions which primarily prove the accuracy, objectivity, and unbiasedness of the research results attained. When my research combines with the research of the literary sources described, it is safe to conclude that if an employer increases a consultant's happiness, then the consultant's months of service will increase, which will cause their call review score to increase, thus increasing the company's customer satisfaction, and in the end increasing the company's overall revenue.

Appendix
Table 1

	Call Review Score	Age	Months of Service	Gender	Education Level	Gender* Education Level
1	2	21	6	1	1	1
2	2	22	12	0	1	0
3	2	24	6	1	1	1
4	2	25	18	0	1	0
5	2	26	36	1	1	1
6	2	22	16	0	0	0
7	2	23	30	1	1	1
8	3	24	36	0	1	0
9	3	25	42	1	0	0
10	3	26	48	0	1	0
11	3	28	42	1	1	1
12	3	27	48	0	0	0
13	3	25	54	1	0	0
14	3	23	12	0	1	0
15	3	22	6	1	0	0
16	3	29	52	0	1	0
17	3	21	6	1	1	1
18	3	30	48	0	1	0
19	3	28	12	1	0	0
20	3	27	48	0	1	0
21	3	26	42	1	0	0
22	3	22	6	0	1	0
23	3	25	42	1	0	0
24	3	27	30	0	1	0
25	3	22	18	1	0	0
26	3	23	30	0	1	0
27	3	26	66	1	0	0
28	3	29	72	0	1	0
29	4	28	42	1	1	1
30	4	27	72	0	1	0
31	4	26	36	1	1	1
32	4	29	72	0	0	0
33	4	26	42	1	1	1
34	4	25	36	0	1	0
35	4	24	42	1	1	1
36	4	24	30	0	1	0
37	4	28	72	1	1	1
	Call Review Score	Age	Months of Service	Gender	Education Level	Gender* Education Level

38	4	29	72	0	1	0
39	4	26	66	1	1	1
40	4	25	54	0	1	0
41	4	30	72	1	1	1
42	4	27	54	1	1	1
43	4	23	40	1	1	1
44	4	29	54	1	0	0
45	4	28	40	1	1	1
46	4	29	72	0	1	0
47	4	25	54	1	1	1
48	4	26	66	0	1	0
49	4	27	54	1	1	1
50	4	25	54	0	1	0
51	4	24	42	1	0	0
52	4	28	72	0	1	0
53	4	29	66	1	1	1
54	5	25	54	1	1	1
55	5	26	64	1	1	1
56	5	29	52	1	1	1
57	5	30	66	1	1	1
58	5	28	42	0	0	0
59	5	25	54	1	1	1
60	5	28	66	1	1	1
61	5	27	42	1	1	1
62	5	26	66	1	0	0
63	5	25	54	1	1	1
64	5	29	28	0	0	0
65	5	24	42	1	1	1
66	5	28	72	0	0	0
67	5	29	72	1	1	1
68	5	27	64	0	1	0
69	5	25	54	1	1	1
70	5	27	72	1	1	1
71	**3.7428**	**26.0429**	**46.0571**	**42**	**53**	**31**
72					*0.7571*	

Equation 1

$Y_i = B_1 + B_2X_{2i} + B_3X_{3i} + B_4D_{4i} + B_5D_{5i} + B_6(D_{4i}D_{5i}) + U_i$

where Y = call review score
X_2 = age
X_3 = months of service
D_4 = gender — Male = 1, Females = 0
D_5 = education level — Bachelors degree = 1, Additional Education = 0
$D_{4i}D_{5i}$ = gender*education level

Equation 2

$\hat{Y}_i = 2.734 + 0.0003X_{2i} + 0.027X_{3i} - 0.473D_{4i} - 0.572D_{5i} + 1.056(D_{4i}\, D_{5i}) + U_i$

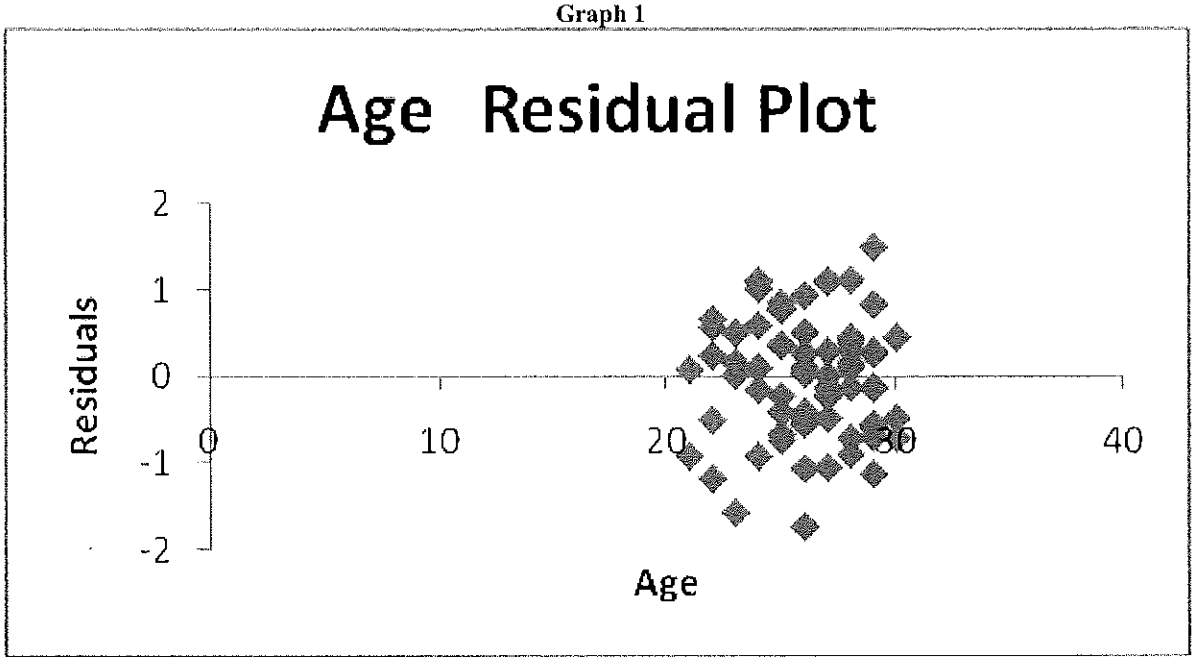
Table 2

	B_1	B_2	B_3	D_4	D_5	D_4D_5
Coefficient	2.73398	0.000364	0.027111	-0.47383	-0.57159	1.056383
se	1.277519	0.052353	0.006123	0.376965	0.339637	0.428047
t-stat	2.14007	0.006946	4.427911	-1.25696	-1.68294	2.467913
p-value	0.036167	0.994479	3.79E-05	0.213336	0.097259	0.016274

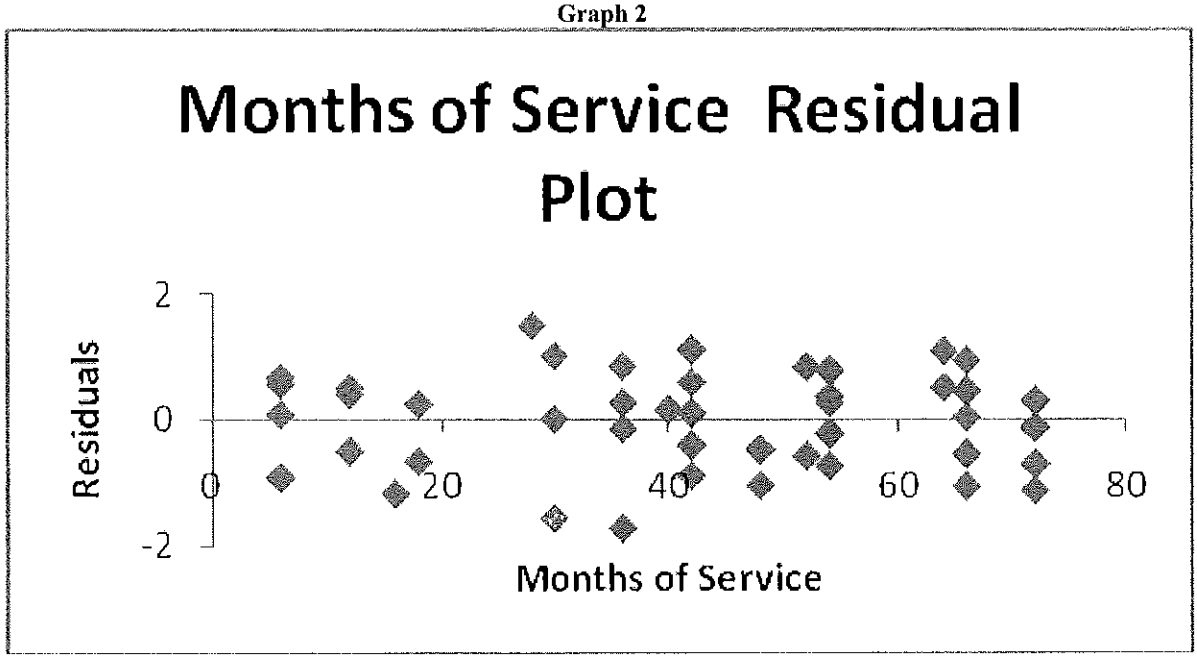
Regression 1

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.67048							
R Square	0.44955							
Adjusted R Square	0.40655							
Standard Error	0.72652							
Observations	70							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	5	27.5897	5.51795	10.4538	2.317E-07			
Residual	64	33.7816	0.52783					
Total	69	61.3714						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.73397	1.27751	2.14006	0.03616	0.18184	5.28611	0.18184	5.28611
Age	0.00036	0.05235	0.00694	0.99447	-0.1042	0.10495	-0.1042	0.10495
Months of Service	0.02711	0.00612	4.42791	3.791E-05	0.01487	0.03934	0.01487	0.03934
Gender	-0.47383	0.37696	-1.2569	0.2133	-1.2269	0.27924	-1.2269	0.27924
Education Level	-0.57158	0.33963	-1.6829	0.09725	-1.2501	0.10691	-1.2501	0.10691
Gender*Education Level	1.05638	0.42804	2.46791	0.01627	0.20126	1.9115	0.20126	1.9115

Graph 1



Graph 2



STATA 1

Source	SS	df	MS		
Model	27.5897619	5	5.51795239	Number of obs	= 70
Residual	33.7816666	64	.527838541	F(5, 64)	= 10.45
				Prob > F	= 0.0000
Total	61.3714286	69	.889440994	R-squared	= 0.4496
				Adj R-squared	= 0.4066
				Root MSE	= .72652

callreview~e	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	.0003637	.0523527	0.01	0.994	-.1042228	.1049501
monthsofse~e	.027111	.0061227	4.43	0.000	.0148794	.0393425
gender	-.4738307	.3769654	-1.26	0.213	-1.226906	.2792442
degree	-.5715893	.339637	-1.68	0.097	-1.250092	.1069135
genderdegree	1.056383	.4280471	2.47	0.016	.2012607	1.911505
_cons	2.73398	1.277519	2.14	0.036	.1818424	5.286117

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of callreviewscore

         chi2(1)      =     0.05
         Prob > chi2  =   0.8214

. estat ovtest

Ramsey RESET test using powers of the fitted values of callreviewscore
       Ho:  model has no omitted variables
                    F(3, 61) =      1.14
                    Prob > F =      0.3382
```

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MACRO-ECONOMIC INDICATORS & DETERMINANTS OF SALE: WAL-MART CORPORATION

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ABSTRACT

This study will look to explore the effects of overall macro-economic indicators on the net sales of Wal-Mart. The main focus will be analyzing how influential four main factors really are on Wal-Mart's net sales. The numerical results and findings show that Wal-Mart actually does perform better during times of economic recessions or downturns.

INTRODUCTION

The purpose of this paper is to discuss the correlation and influence of various macro-economic factors on Wal-Mart and their net sales. This paper aims to look at four main variables, including GDP, Inflation, Interest rates, all coupled with the number of store locations. One of the main goals of this paper is to look at and analyze how overall economic performance can influence and hinder Wal-Mart's net sales. Some say that Wal-Mart is "recession proof" and actually performs better during economic downturns. (Light, 2009) This argument can be mainly reflected through the analysis of the GDP rates connected to Wal-Mart's net sales. Also other factors such as interest rates and inflation rates have different tendencies during economic recessions as well, so these too will be investigated to see how these macro-economic factors influence the net sales of Wal-Mart. So the main question here is: Does Wal-Mart actually performs better during times of economic instability and recession? This analysis will seek to answer this question using econometric models.

LITERATURE REVIEW

Other studies similar to this one have shown that retail sales, which include stores like Wal-Mart generally, have a tendency to follow the trend of GDP growth and reduction. (*Graph 1*)(Thoma, 2006) Also for the most part, this makes sense because consumption can make up for a significant amount of GDP, which would peg the two (GDP and Retail Sales) directly to one another. Some researchers have gone as far as looking ahead to see what actual retail sales have done to see how the economy will be doing. If retail sales take a hit, or show growth, then GDP growth and/or reduction should directly correlate. (Lien, 2008) This however is not necessarily the case with Wal-Mart, a recent article displayed: "In spite of both the impact from the hurricanes and the recent challenges to consumer confidence as a result of the economic environment, Wal-Mart U.S. had another period of solid comparable store sales performance."(Wright, 2008) This, again, shows that when things have a tendency to get bad, Wal-Mart somehow prevails.

When looking at inflation, a 2008 article reviewed the fact that growth in retail sales isn't necessarily growth, but in some cases it can simply be inflation. By dividing out the inflation factor you could actually get negative growth rates. (*Chart 1*)(Retail, 2008) Another article reports as expectations for inflation are increasing, stores and store owners are slowly acclimating by also slowly raising their prices, and this leads to overall higher net sales. (Hagenbaugh, 2004) Despite raising net sales for many retail companies, some of the time this is misleading information because it is simply inflation and not really increased performance by the companies.

Finally, other studies and articles including interest rates and retail sales, such as *Retail sales slowdown may not halt interest rate rise* (Padgham, 2007), have shown similar findings to the results of this study: a negative correlation. One article in particular states that: "It's clear recent (interest) rate rises are now beginning to affect customers' willingness to spend" (Padgham, 2007) People are simply saving and investing more instead of consuming, which hits these large retail companies relatively hard. Also in times of threatening economic downturn,

to counter inflation, many national banks including the Federal Reserve are forced to raise interest rates and hinder consumption.

DATA

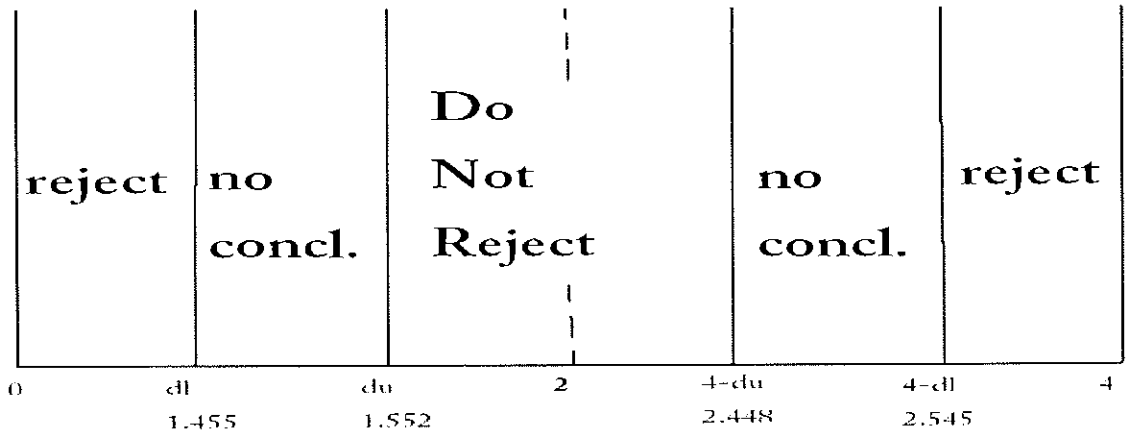
Within this study there were four main variables used to describe " Y" or net sales. These four variables include nominal GDP, nominal interest, inflation, and number of store locations. The sample size (n) of these five factors (including Y which is net sales) is 42. This includes quarterly data from 1999 all the way to the second quarter of 2009, making for 42 observations per variable. The quarterly GDP and inflation data sets were obtained from the Bureau of Economic Analysis (www.BEA.gov) website. The interest rate data set was acquired from the Federal Reserve website (www.federalreserve.gov). Finally, the quarterly net sales information and number of Wal-Mart store locations were obtained through the Bloomberg and Reuters computer financial programs. (*Summary Statistics 1) (Data 1)(Residuals 1*)

RESULTS

When initially running the first linear regression within STATA, the results displayed an r^2 of **.9236**, and only two significant variables including number of store locations and interest rate. Store Locations displayed a t-statistic of *19.33* and a p-value of *0.00*, and interest rate had a t-stat of *-2.50* (which is greater than two in absolute terms) and a p-value of 0.017, making these two variables extremely significant to this analysis. GDP and inflation both had t-statistics lower than two and p-values greater than *0.05* making them insignificant in this regression. (*Analysis 1*) From these results you might gather that there are missing variables. However, after running the Ramsey RESET test, this displayed a p-value of **.1834** which is greater than the alpha of **.05** meaning that we do NOT reject the H_o : model has no omitted variables. After clearing up this issue, there was also the need to run the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity. This test displayed a result of **.0625** which again is greater than **.05** meaning that you do NOT reject the H_o : Constant variance. This means that there is constant variance and no heteroscedasticity. However, generally speaking anything between .05 and .1 is considered somewhat of a gray area when looking at heteroscedasticity.

The next step in correcting this issue was to take the initial linear regression and regress it again, but this time using the Robust test. The Robust test essentially uses constant variances and standard errors (n/(n-k)) to correct for the inconsistent variances. This now showed a higher t-statistic of *-2.55* (absolute value) and a lower p-value of *0.015* for GDP, now making this variable significant as well. (*Analysis 2*) Now knowing that the test showed that there were no omitted variables and heteroscedasticity was no longer an issue, there was still the need to use the Durbin Watson test to check for autocorrelation for time-series data.

These results showed a d-statistic of **2.669** . The calculated d-statistic with an "n" of 42, and a "k" of 1 provides a critical value of **1.455**. After calculating the rejection and acceptance regions table, the Durbin Watson statistic of **2.669** fell into the rejection region of 2.545 or above. This means that we reject the H_o: NO negative autocorrelation, therefore there *is* negative autocorrelation.



D-statistic = 2.669 This falls is *reject* region, so we *reject*: H_o : No negative autocorrelation

The final analysis to alleviate this negative autocorrelation included running a Prais-Winsten regression which automatically transforms the Durbin Watson statistic to an acceptable value. After running this regression, the transformed d-statistic was **1.8898**, which fell directly into the do not reject region, meaning that there is no longer any positive or negative autocorrelation. This Prais-Winsten regression, however, did knock the GDP variable down to a *1.61* t-stat and bumped the p-value up to *0.116*, making the GDP aspect not as significant. (*Analysis 3*) Now that the corrections have been made to all of the violations of the CLRM, it is time to interpret the results.

Final Econometric Model: $Yi = -3533.422 + 13.28X_2 - .0092X_3 - 1403.3X_4 + 744.36X_5$

(intercept) (# stores) (GDP) (interest) (inflation)

INTERPRETATION

Starting with the first variable of GDP, generally speaking one might assume that as GDP for the country increases, as would the sales of many retail stores. This may actually even be the case for many retail distributors; however, this is not the case for Wal-Mart. Looking at quarterly data from 1999-2009, in regards to GDP growth and Wal-Mart net sales actually reflects that there is a negative correlation between these two factors. After running a linear regression in STATA, the resulting coefficient for GDP in relation to Wal-Mart's net sales was **-.0092437**. This negative coefficient shows the negative relationship between the two factors and how if GDP increases, net sales decreases and vice versa. Essentially this means that as GDP increases by *$1,000,000,000* Wal-Mart net sales *decreases* by $ 9,243,700 respectively, while all other variables are held constant.

The second macro economic indicator analyzed was interest rate. When thinking about interest rate and its effect on Wal-Mart net sales, one would probably assume as interest rates rise individuals would have the tendency to invest more and receive higher yields and rates of return for their investments. As investment increases, overall consumption generally has a tendency to drop in response, and this would most likely decrease Wal-Mart's net sales meaning that there would be a negative correlation between the two. When looking at the numerical results of the regression this holds true. The coefficient for interest rates variable is -1403.342 showing a rather large negative relationship between net sales and interest rates. This means that as interest rate increases by 1 unit, Wal-Mart net sales *decrease* by $1,403,342 respectively, while all other variables are held constant.

Yet another macro economic indicator used in this study which influences the net sales of Wal-Mart is inflation. When looking at inflation and its potential persuasion of sales, one would most likely assume that there would be a positive relationship between the two because as inflation or general prices increase, as would the net sales for Wal-Mart. The statistical analysis of this actually reflects the same. The coefficient of the inflation variable is 744.3652 showing that there is indeed a positive relationship between the two. This means that as one increases,

as does the other, and as one decreases, the other will as well while all other variables are held constant. This means that as the inflation increases by 1 unit, Wal-Mart net sales *increases* by $7,443,652. Some may think that this is a significant increase, however when logically thinking about this it makes sense. As overall prices for a country increase, so will all of the prices within a retail store clearly making for a large increase in net sales.

The last variable analyzed in regard to responsiveness of Wal-Mart's net sales is the number of store locations. When thinking about this issue reasonably, one would think that with each new store a company opens there would absolutely be an increase in net sales. Would it make sense for a company to open new locations that would not increase their net sales? If so, this is most likely an extremely inefficient company, and is not the case with Wal-Mart. When looking at the regression results for number of store locations, the coefficient shows a value of 13.28045 . This essentially means that when the number of store locations increases by one unit, or more simply put as Wal-Mart opens one new store; their net sales *increase* approximately $13,280,450 while all other variables are held constant.

So do all of these factors actually reflect improved performance for Wal-Mart during economic downturns or recessions? The only way to truly answer this question is to look at these variables and to see their tendencies during economic recessions and how this is relates to the numerical findings for Wal-Mart. With the first variable as GDP, this is one of the foremost indicators that an economic slowdown or downturn may be underway. When the growth rate for GDP slows, becomes stagnant or begins to decrease, this is an obvious sign that the economy is underperforming. The main factors which make up GDP are(C) consumption, (I) Investment, (G) Government spending and (NX) Net exports. As one of, or several of these factors begin to slow or decrease, as does GDP. When GDP is in times of slowdown and recession, there are fewer jobs, less output, lower income levels, and lower consumption which most might assume would hurt Wal-Mart. However, during these economic hard times even though there is reduced overall consumption, people are looking to cut costs and purchase more inexpensive goods, so more people take advantage of Wal-Mart's affordable prices. On the contrary, when the economy is performing better, Wal-Mart's net sales decrease because there is more output, more jobs, more overall output, and higher incomes. When this occurs people are less likely to shop at Wal-Mart because they would want to buy higher end goods and goods with more quality.

During times of recessions or slowdowns, inflation or a general increase in prices has a tendency to increase as well. When looking at the US economy, it is generally said that the US economy is a consumption driven economy. So during times of recession, how would one go about getting people to consume? You simply have to put more money into the consumer's hands. This can be accomplished by giving tax breaks or even printing more money (which isn't generally recommended because this decreases the value of the dollar). Even uncertainty about potential inflation rates can discourage consumption and investment, which would again decrease GDP and in turn helping Wal-Mart's net sales.

When look at interest rates and their behavior during economic turbulence, they have a tendency to fluctuate depending on the situation. When inflation increases, the Federal Reserve generally increases interest rates in response to keep inflation in check. When this happens it hurts Wal-Mart's net sales, again, because as interest rates increase net sales for Wal-Mart decrease. Also when interest rates increase, people's demand for money or their holding money also decreases, meaning that they consume and invest more which will generally help the economy grow, and again hurts Wal-Mart and is represented with the negative coefficient.

CONCLUSION

Overlooking these general economic indicators and their effect of Wal-Mart's net sales, it is safe to say that Wal-Mart performs better when there is an economic slump. "While many businesses struggle during the recession, a handful of U.S. and global companies — from health care giant Abbott Laboratories (ABT) to retail king Wal-Mart (WMT)— are riding out the financial storm in good shape."(Iwata, 2008) Wal-Mart shows its highest net sales when GDP's growth slows or declines, and there is threat of, or actually is inflation. Given the current situation, where interest rates are at 40 year lows, there is a huge threat of inflation and GDP is close to stagnant, Wal-Mart is continuing to grow and benefit from the situation.

Graph 1

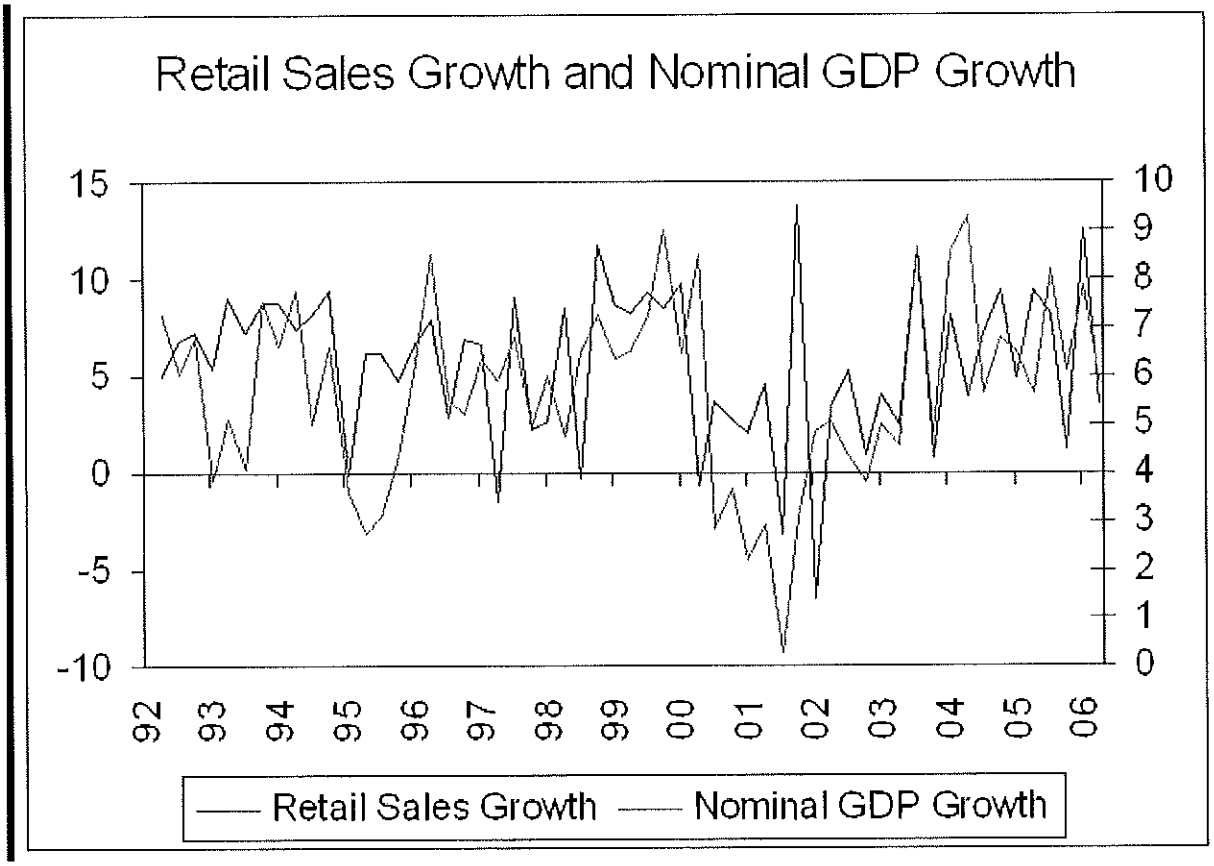


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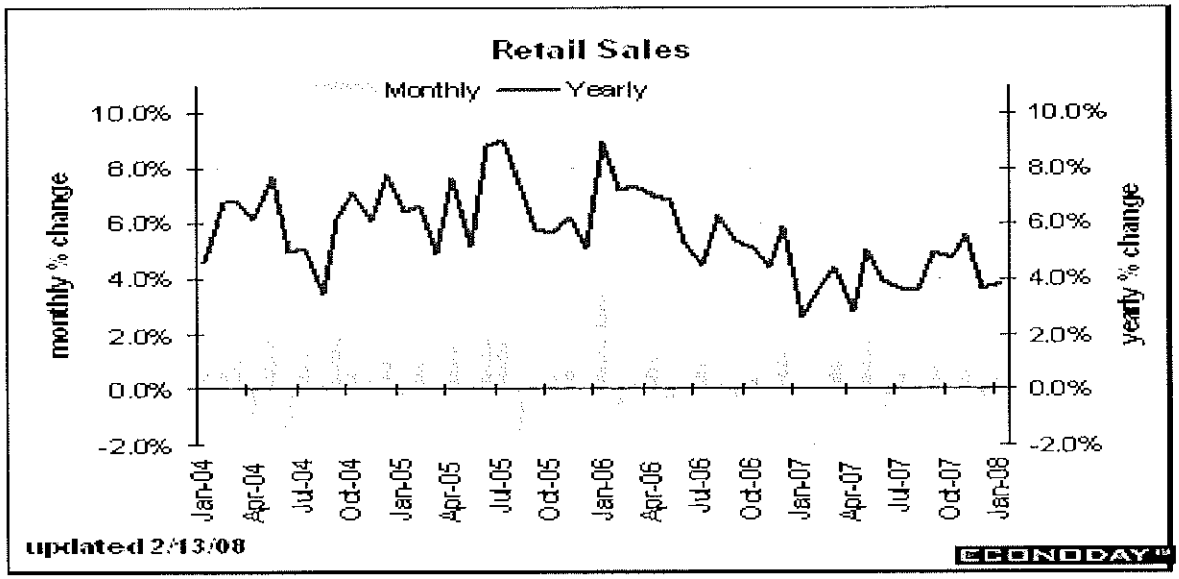
Chart 1



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Summary Statistics 1

. summarize oflocations gdpnominal rnominal inflation

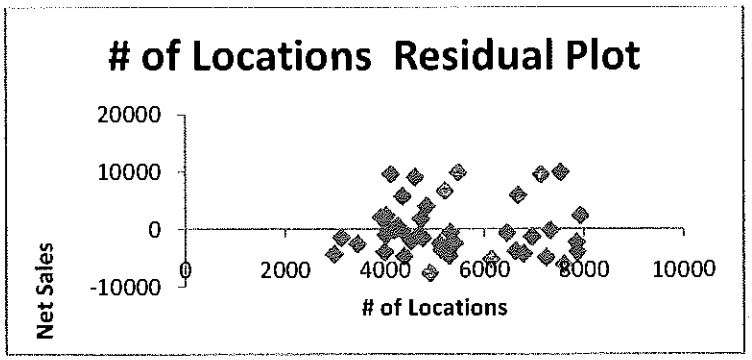
Variable	Obs	Mean	Std. Dev.	Min	Max
oflocations	42	5364.929	1420.673	2980	7928
gdpnominal	42	35345.11	151683.9	9184.6	994901
rnominal	42	3.281429	1.945525	.18	6.52
inflation	42	2.667619	1.165228	-1.15	5.3

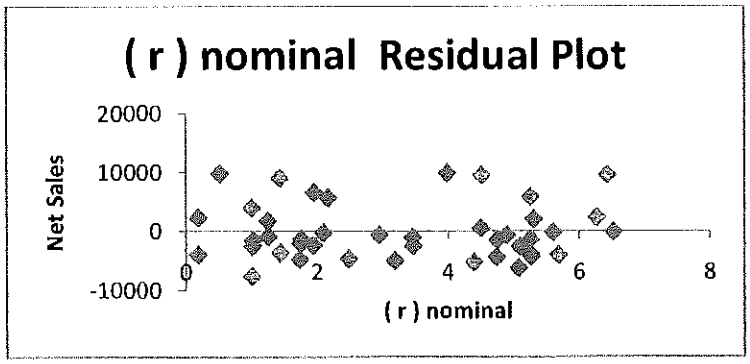
Data 1

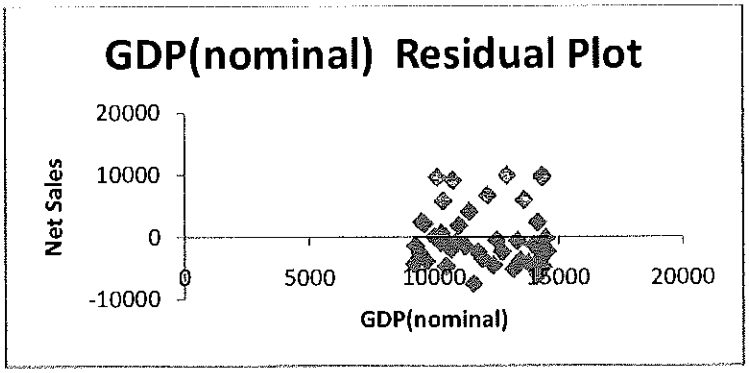
Time:	Net Sales	# of Locations	GDP(nominal)	(r) nominal	Inflation
1999;					
Q1	29,819	2,980	9,184.60	4.74	1.67
Q2	33,152	3,120	9,252.60	4.75	2.11
Q3	33,509	3,440	9,401.50	5.09	2.43
Q4	40,785	3,925	9,607.70	5.3	2.62
2000;					
Q1	34,717	3,993	9,709.50	5.68	3.24
Q2	38,470	4,020	9,949.01	6.27	3.33
Q3	40,432	4,063	10,017.50	6.52	3.51
Q4	51,394	4,117	10,129.80	6.43	3.43
2001;					
Q1	42,985	4,189	10,165.10	5.6	3.39
Q2	46,112	4,241	10,301.30	4.5	3.44
Q3	45,676	4,020	10,305.20	3.45	2.9
Q4	56,556	4,347	10,373.10	2.16	1.72
2002;					
Q1	48,052	4,383	10,498.70	1.73	1.45
Q2	52,799	4,455	10,601.90	1.75	1.3
Q3	52,738	4,518	10,701.70	1.74	1.59
Q4	64,210	4,598	10,766.90	1.42	2.2
2003;					
Q1	54,970	4,688	10,888.40	1.25	2.87
Q2	59,694	4,717	11,008.10	1.24	2.13
Q3	58,797	4,750	11,255.70	1.02	2.19
Q4	66,400	4,835	11,416.50	0.99	1.89
2004;					
Q1	56,718	4,906	11,597.20	1	1.79
Q2	62,637	5,101	11,778.40	1.01	2.87
Q3	62,480	5,135	11,950.50	1.43	3.1
Q4	74,494	5,207	12,144.90	1.95	2.79
2005;					
Q1	64,763	5,289	12,379.50	2.47	3.04
Q2	69,722	5,315	12,516.80	2.94	2.94
Q3	68,520	5,398	12,741.60	3.46	3.83
Q4	82,216	5,477	12,915.60	3.98	3.74
2006;					
Q1	70,908	6,141	13,183.50	4.39	3.65
Q2	76,811	6,452	13,347.80	4.89	4.01
Q3	75,436	6,629	13,452.90	5.25	3.4
Q4	88,418	6,672	13,611.50	5.25	1.94
2007;					
Q1	79,613	6,779	13,795.60	5.26	2.43
Q2	84,524	6,956	13,997.20	5.25	2.65
Q3	83,543	7,597	14,179.90	5.07	2.33
Q4	98,090	7,131	14,337.90	4.51	3.94
2008;					
Q1	85,387	7,239	14,373.90	3.18	4.09
Q2	91,990	7,320	14,479.80	2.09	4.38
Q3	90,880	7,854	14,546.70	1.94	5.3
Q4	106,269	7,529	14,347.30	0.51	1.6
2009;	94,122	7,873	14,178.00	0.18	-0.04

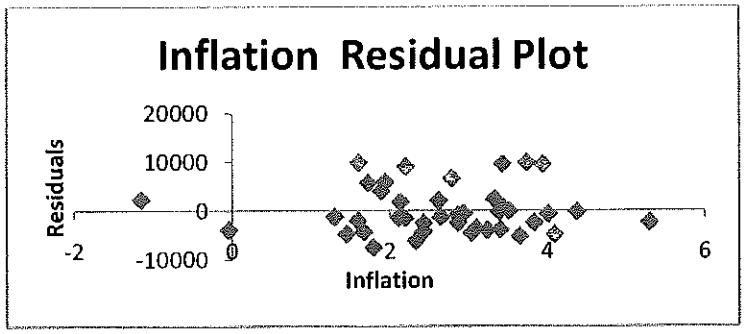
Q1					
Q2	101,598	7,928	14,151.20	0.18	-1.15

Residuals 1









Analysis 1

Source	SS	df	MS	Number of obs =	42
Model	1.6026e+10	4	4.0066e+09	F(4, 37) =	111.87
Residual	1.3251e+09	37	35814535	Prob > F =	0.0000
				R-squared =	0.9236
				Adj R-squared =	0.9154
Total	1.7351e+10	41	423204942	Root MSE =	5984.5

netsales	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
oflocations	13.25631	.6857495	19.33	0.000	11.86685	14.64578
gdpnominal	-.0046338	.0063731	-0.73	0.472	-.0175468	.0082793
rnominal	-1421.841	569.4464	-2.50	0.017	-2575.649	-268.0328
inflation	401.897	907.3117	0.44	0.660	-1436.491	2240.285
_cons	-2590.269	4525.841	-0.57	0.571	-11760.49	6579.955

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of netsales
       Ho:  model has no omitted variables
                  F(3, 34) =      1.71
                  Prob > F =      0.1834

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of netsales

         chi2(1)      =     3.40
         Prob > chi2  =   0.0652
```

Analysis 2

```
. regress netsales oflocations gdpnominal rnominal inflation, vce(robust)

Linear regression                               Number of obs =       42
                                                F(  4,    37) =   248.64
                                                Prob > F      =   0.0000
                                                R-squared     =   0.9236
                                                Root MSE      =   5984.5
```

netsales	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
oflocations	13.25631	.6979335	18.99	0.000	11.84217	14.67046
gdpnominal	-.0046338	.0018174	-2.55	0.015	-.0083161	-.0009515
rnominal	-1421.841	568.5691	-2.50	0.017	-2573.871	-269.8104
inflation	401.897	1000.017	0.40	0.690	-1624.329	2428.123
_cons	-2590.269	4304.252	-0.60	0.551	-11311.51	6130.974

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of netsales
       Ho:  model has no omitted variables
                  F(3, 34) =      1.71
                  Prob > F =      0.1834

. tsset  time
        time variable:  time, 1 to 42
                delta:  1 unit

. estat dwatson

Durbin-Watson d-statistic(  5,    42) =  2.669132
```

Analysis 3

Prais-Winsten AR(1) regression -- iterated estimates

Source	SS	df	MS	Number of obs =	42
				F(4, 37) =	261.05
Model	3.2455e+10	4	8.1138e+09	Prob > F =	0.0000
Residual	1.1500e+09	37	31080946.1	R-squared =	0.9658
				Adj R-squared =	0.9621
Total	3.3605e+10	41	819637101	Root MSE =	5575

netsales	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
oflocations	13.28045	.4755226	27.93	0.000	12.31695	14.24395
gdpnominal	-.0092437	.0057435	-1.61	0.116	-.0208811	.0023938
rnominal	-1403.342	397.128	-3.53	0.001	-2208	-598.6847
inflation	744.3652	684.0815	1.09	0.284	-641.7157	2130.446
_cons	-3533.422	3111.012	-1.14	0.263	-9836.932	2770.087
rho	-.3840557					

Durbin-Watson statistic (original) 2.669132
Durbin-Watson statistic (transformed) 1.889848

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UNITY HOUSE PORTFOLIO

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Brittany Parahus, Siena College

Class: Finance 315 (Advanced Investment – Theory and Practice) with Dr. Fang (Jenny) Zhao

Community Partner: Unity House

PROJECT DESCRIPTION

The assigned projects involved investing and managing the endowment fund portfolio for Unity House for a three-month period. The primary goal of this project was to gain an understanding of the investment process by becoming an interested participant. We were required to trade an initial wealth of $600,000 (the size of the endowment fund of Unity House) in domestic or international stocks, bonds, mutual funds, options, and futures over the semester. The trading simulation was managed by Stock-Trak, Inc. of Atlanta, Georgia, a comprehensive simulation program for Finance students across the U.S. Through this project, we were able to apply techniques of risk and return analysis, financial statement analysis, and equity and bond valuation in a real context. We produced a comprehensive portfolio report by the end of the semester, and we presented our project to the community partner and to the class. At the end of the three-month-time trading period, we were able to achieve a 5.16% return (the annualized return was 22.30%) on our portfolio, which was valued at $630,978.44 (a gain of $30,978.44 from the initial investment of $600,000). At the start of the trading, the S&P 500 was at $1,068.30 and closed the exercise at $1,094.90, yielding a return of 2.49%. Our portfolio return of 5.16% exceeded the S&P 500 benchmark (the market) by 2.65 percentage points, or 106 percent. The project worked effectively to achieve the learning outcomes of the course. The copies of our portfolio report and presentation were delivered to our community partner.

REFLECTION

The service learning project reflects the School of Business mission statement. The project was most effective in teaching us professional development in the business world. We were, in a way, working for the Finance Department at Unity House. It allowed us to see what is expected of a portfolio manager when he or she is entering the professional world. We worked for our client free of charge, and we did it to the best of our ability. It made us feel good that our portfolio outperformed the benchmark and that the type of work we completed was comparable to that of hired professionals. It was truly an enriching experience working with the director of finance at Unity House, Brian Schneider, who was very engaged with our class. We received direct feedback about our policy statement, asset allocation, and investment strategy. We are glad to use our knowledge and skills for the benefit of others.

FUTURE

We enjoyed creating a stock portfolio by using our knowledge of actuarial science, probability, and risk management. By using these concepts we were able to reduce the level of risk that Unity House would acquire. We enjoyed going to the trading room to learn how to collect data from Bloomberg and Thompson to successfully complete this project. We have a better understanding of investment concepts and portfolio simulation as a result of completing this project. We would like to do another hands-on project like this in the future.

SERVICE COMMERCIALIZATION FOR PRODUCT, SERVICE, & WARRANTY

Kerry Connelly, Siena College
John Van Denburgh, Siena College
Frank Massi, Siena College

INTRODUCTION

Product, Service & Warranty (PS&W) is a department within the Renewable Energy division of General Electric (GE). The Renewable Energy division represented almost eighteen percent of GE's net income last quarter and represents a large amount of potential growth within its technical services. The revenue is predominately realized from the sales of GE manufactured wind turbines. GE Wind is the world's largest supplier of wind turbines, with over 13,000 units installed worldwide. These turbines are purchased by power utility companies, municipalities, and venture capitalists. GE Wind has turbine manufacturing facilities throughout the world and offers installation, operation and maintenance services for its wind turbines.

PS&W is comprised of many groups that provide support and technical services for its customers. The primary support groups at the Schenectady headquarters are the Renewable Operational Center (ROC), Fleet Availability Engineers (FAE), and Services Sales. John Gibson, a manager at PS&W, challenged our team to coordinate operational activities and to develop new marketing strategies that would align resources in an effort to commercialize technical services. John dedicated numerous members of PS&W's staff to this project. David Carlson, a member of GE's Leadership Program, was the director who led the joint effort. Our team gained the knowledge and understanding needed to make critical recommendations during a three week period where the Siena Team made nine separate visits, had over forty hours of group discussions with PS&W personnel, and countless personal team meetings.

The revenue target for PS&W is to grow to 1 billion dollars; our recommendations were concentrated on the facilitation of this goal. Primarily the focus was on the coordination of service activities and the development of processes that relied on collaborative actions designed around market opportunities.

The team quickly realized that this endeavor had many convoluted issues and multiple interests with conflicting incentives or agendas. The growth of services sales could potentially alienate customers or account executives and the changing of operational structure could create internal organizational strife. One such dilemma was the changing of warranty classifications which could result in short-term losses. Preliminary recommendations would have allowed for PS&W to reposition its Part and Labor (P&L) agreement customers into Parts Only (Parts) or Operation and Maintenance (O&M) agreements. Many managers agreed that the P&L agreements were not conducive to the overall growth of services but did prefer to increase the O&M contracts. A structural change such as this would not be supported by management, because of its potential for short-term decreased revenue.

OPERATIONAL OVERVIEW

John gave us exclusive access and insight into the operations and processes at PS&W. This approach allowed our team to make valid recommendations based on the actual operational framework currently in place. However, the entire composition of PS&W cannot be completely fathomed in three weeks due to the myriad of overwhelming processes, our team worked to obtain a surface examination of the operations in place. Dave guided the team in a way that permitted independent objective suggestions, without sacrificing progress and freethinking thoughts and questions being brought to light.

GE monitors over 3,500 turbines and can remotely access their systems from its Renewable Operational Center (ROC). The connectivity is facilitated by a T-carrier line that provides 24 hour monitoring and investment

protection for its customers. The ROC is responsible for correcting faults by implementing its Fault Handling Procedures and remotely resetting units. If the ROC cannot correct the faulted condition the issue escalates the fault to the Fleet Availability Engineers (FAEs).

FAEs can also remotely access the faulted unit and gather information to assess the condition and provide procedural support to field technicians. Often the FAEs expertise will yield a corrective action, however, some faulted turbines require a site visit from a FAE to fix or replace the faulted part. The success rate at which the FAEs correct faulted units are a differentiator and provides GE Wind a competitive advantage.

Services Sales is a group of professionals that design service agreements and formulate pricing strategies for an array of offerings. This department interfaces directly with customers and understands their needs. Services Sales continuously reevaluates services and creatively searches for orderings that will enhance customer satisfaction and increase service revenue for PS&W.

This value chain allows GE Wind the opportunity to provide excellent technical support, enhanced services, and sales. The structure of PS&W is focused on delivering technical information throughout its departments. Our team determined that a proactive approach centered on marketing concepts should also flow through its value chain. The existing structure will support a marketing model that should be focused on delivering economic opportunities and value to its customers. The convergence of information should generate a report that identifies a revenue lag at a specific site. The information then should be compiled and packaged into a deliverable that will address site specific deficiencies. This will produce new innovative services that concentrate on offerings that increase the sites revenue. Thus, aligning incentives and creating partnerships between PS&W and its customers. This partnership will not only grow revenue but also facilitate cost reductions for both firms. These future partnerships should emulate the agreements and relationships that exist between Dell Computers and its suppliers. PS&W should construct a supply chain with its customers that will grow its revenue while simultaneously boosting their customer's profitability.

MARKET INDICATORS

The initial steps of evaluating potential service customers for PS&W are premised around a simple approach. Who would benefit the most from partnering with PS&W? The answer was just as simple, the sites that have Frequently Faulted Turbines (FFT) or sites that consistently underperform. These sites are not optimizing their investments and wasting valuable resources.

PS&W has procedures that are equipped to evaluate FFTs and underperforming turbines. The 24 Hour Report is a very powerful tool in detecting problematic units. Sections of this report should be geared toward a marketing effort that identifies potential service customers and delivers relevant information to the services sales department.

The ability of a FAE to restore on-line status for a FFT represents a potential business opportunity and should be aggressively marketed. FAEs currently provide technical support by phone, email, and often troubleshooting assistance at no cost to its customers or service competitors. This process must be converted into a model that allows PS&W the ability to charge for its services and knowledge. This will create a viable revenue stream and increase the operating expenses of its competitors.

The identification of underperforming turbines represents another growth prospect for PS&W services. The potential market size for the optimization of turbines appears to be quite substantial and a larger revenue opportunity than FFTs. PS&W assesses the performance and identifies corrective actions as a routine process in managing its fleet. Underperforming turbines are defined as having a production ratio of less than 95%. Corrective steps include parameter validation, sensor report review, and pitch settings. PS&W should segment its customers based on their production rank. Targeting the under performers should yield a viable business opportunity and increase services sales.

FREQUENTLY FAULTING TURBINES (FFTs)

Frequently Faulting Turbines are considered turbines that have ten or more faults per day that are attributed to the same cause. Wind parks that have even a limited number of FFTs would be at a serious disadvantage considering that most wind parks cost multimillions of dollars. The only way to recoup their initial investment and eventually profit is to generate power; this of course can only occur if the turbines are operational. For example, one wind park in Northern New York had a turbine down for about 8 hours due to Fault 119. This is 8 hours of potential revenue the park could have generated.

One could think of this situation in terms of surfing on the ocean. Surfers wait for hours sometimes on the water for waves. The surfers on the water are analogous to the turbines ready to produce power. The turbines need to be available to produce power, just as surfers need to be on the water to ride waves. Increasing availability would not only increase the potential profitability of these wind parks but also help maintain GE's 97% fleet wide availability target.

As stated above, there needs to be more transparency between FAEs and Sales Services in order to maximize PS&W opportunity to recapture revenue. The information contained in the 24 Hour Report should be communicated to the representatives in Sales Services so that that they can develop appropriate marketing strategies for each site with FFTs.

UNDERPERFORMING TURBINES

The performance of a turbine is just as important as the availability. The performance of a turbine is defined by how much energy or megawatts are produced. One of the best sites to illustrate this is Panther Creek in Texas. Although it has above average availability, the site's underperformance rate is in the high teens. This specific park regardless of outstanding availability is considered an operational failure because the amount of power being generated by the park is significantly less than the park's optimum level. Therefore, there needs to be a balance between the availability of the turbines as well as the performance.

After the initial two year warranties have expired on GE turbines, many companies who do not use GE O&M agreements tend to hire 3rd party contractors. These contractors do not have the same in depth knowledge necessary to keep the turbines running at the optimal levels as their GE counterparts. As a result, many turbines in the GE fleet that are maintained by 3rd parties suffer from underperformance. Most of the underperforming turbines are attributed to improper parameter settings, blade zeroing and pitch settings.

Our target market for underperforming turbines is the lowest 20% of parks or approximately 1800 turbines fleet wide. It is important to note that because there is no significant GE presence at these wind parks, GE must first make a case for how it can increase the profitability of these parks. Our team concluded that a free weekly performance evaluation should be conducted for prospective wind parks to show the owners of the facilities the potential increase in performance. GE technicians should conduct onsite performance tests and the resulting before and after power curves compared to show the facility owners the increase in performance.

EMPLOYEE RETENTION

There is a pressing need to further cultivate the level of information control within the PS&W Department at General Electric. An example of this can be seen from the fact that over 25% of their technicians and engineers on both the parts and labor sites and the operations management sites (O&M) are lost every time the park comes out of warranty. This is an extremely high turnover rate and unfortunately leads to a loss in human capital on multiple levels, firstly you lose the individuals who have experience and training provided for them at the cost of GE and secondly you have to train new employees to replace them.

The most detrimental cost to GE is incalculable at this time; former employees are taking knowledge gained at GE to third party vendors and their competitors. This will hinder GE's ability to do business with the wind parks where their former employees are now providing services for and could be costing them countless amounts lost in potential contracts. GE trained employees are taking all of the experiences, knowledge, and abilities to competing businesses and the cost of retaining information and learning will continue to rise if this goes unchecked

into the future. If management has a suspicion this is occurring it is more likely they are just seeing the tip of the iceberg and the problem is significantly more pervasive then they could have imagined.

A suspicion for this is the reality that parts and labor sites are outperforming the O&M sites, which are more experienced and better staffed. This is a continually puzzling anomaly and is severely hindering GE's ability to sell O&M agreements when their customers can see the parts and labor sites have more availability on average and are paying less for the services. From a business standpoint it's tough to imagine someone who would want to pay more for a service agreement knowing on average they could pay less and have the coverage be better. Once resolved this issue will allow GE's services sales to take advantage of the higher numbers and use it as a sales pitch, but until then it continues to plague them with questions. Our group believes it is correlated with the 25% employee turnover ratio.

It is suggested is to have all future employees sign covenants not to compete. GE could even have the current employees sign these covenants as well but you would need to offer them an increase in benefit so it could be a recognized as a legally binding contract. Currently these contracts are not used by GE and would allow them to potentially slow individuals from leaving the company and going to work for third party operators. This will build a culture from the day they sign a contract that all of the knowledge and training that GE provides to them is not to be taken elsewhere. The covenant not to compete should be in effect for at least two years after the employee leaves GE. The two year hiatus would prevent the employee from keeping up with technology curve within the constantly changing wind industry. When employees break the covenants GE has to be sure to prosecute them to the full extent to set the tone this behavior will not be tolerated.

Another significant issue is some wind parks under warranty no longer order parts through GE. They are bypassing the GE supply chain and are obtaining their parts directly from the manufacturer. This means at some point a park technician gave the information on how to order parts and where to obtain them to the park operators or the third party vendors. It is likely the GE technician did this to be seen in a positive light by the park employees because in roughly two years or less the warranty will be up and they will be forced to move on to the next GE park. The GE technicians might want to stay in the area and settle down if they have a family and believe if they impress the park they are stationed at, it will save them the time and stress of moving and adjusting to a new area.

Upon speaking to the Engineers at PS&W many of them also commented on the close quarters between the wind park operators and the GE technicians on site. Many of them stated they were literally one trailer away from one another and worked in an environment where information could be readily shared.

In order to retain a larger portion of the workforce GE should hire individuals who are more open to moving around on a regular basis. Many of the technicians and engineers currently working for GE in wind parks under service agreements do so for 2 or more years. By hiring individuals more open to moving on an annual basis or even bi-annual basis they could more effectively manage their workforce. Top employees can be targeted by tracking increased service revenues of each park during an employee's tenure. The top employee can then be used to train the next generation of service employees. Conversely GE could more effectively pick out the bottom 10% of their employees working on sites and either give them additional training or remove them to make room for more qualified individuals. If employees have a significant number of years on rotation and are outstanding employees, they could be transferred to sites that have OSA agreements or O&M agreements, thus simultaneously placing less experienced individuals into the parts only agreements. This could also help bolster the high end agreements while rewarding dedicated employees and give the less experienced workers something to work for and stay with GE.

Employees who consecutively, accurately and regularly refer customers to the ROC, the FAEs and to GE for parts and necessary services should be rewarded. By offering modest stock options and possibly cash benefits they would be apt to continue their methods and feel increasingly connected and loyal to GE rather than the park they are working in. Furthermore it would be an incentive to halt the giving of supplier information out to the parks and operators outside of GE. By offering stock to employees it gives them a long term benefit to the company they work for and makes them apt to remain at GE to see their investments mature.

INDEPENDENT OPERATOR TRAINING

GE needs to make sure their customers can still acquire the necessary information to operate the park smoothly. Onsite training should be provided to third party operators, independent owners, insurance companies and loaning institutions. The two target markets PS&W should target are parks coming out of warranty and parks that have recently undergone their PRT (Park Reliability Test). Parks that are coming out of warranty, especially the parks that do not plan to renew a contract with GE, should be sought out by the Sales Services team in order to gain back the loss of potential business. The PRT test is performed on new parks coming online and the onsite training could aid the park administrators in transitioning smoothly so they do not see such a sharp decrease in efficiencies in the beginning. Both of these groups would also foster a close relationship between GE and its customers. These educational services should be a collaborative effort between GE Learning Center and PS&W, since the Learning Center specializes in providing these services.

A company who illustrates a learning model for GE to emulate in the future is Generac Power Systems. Generac is a company founded in 1959 on engineering and developing power generators for domestic and business use. A significant segment of their business model consists of educating those interested in signing up for their Factory and Field Service classes held in Wisconsin where their company is headquartered. Individuals aspiring to gain both introductory knowledge and advanced certifications regarding generators pay over a thousand dollars to sit in a class for ten days and learn the material. Some of the more advanced courses even build on each other and have pre-requisites similar to a college curriculum. If PS&W could successfully build a similar model as Generac and partner with the learning center in the future they could be one step closer to expanding their business and further spread the knowledge of wind parks to others.

The positive outcomes of halting the leakage of information, further empowering employees and marketing education and learning would be limitless. As a group we felt the immediate implications would be the increasing costs of GE's competitors which would over time force them to exit the market. Increasing education would alleviate inundated questions from plaguing the FAE and the ROC personnel. The customer provider relationship would be perpetuated further as wind park managers realized how important GE support can be to achieve their maximum efficiencies. All of these direct consequences will certainly help PS&W grow to become the one billion dollar enterprise they aspire to become.

CONCLUSION

As time goes on it is critical that PS&W designs services that addresses its customers' needs. With the increasing age of the fleet many units will require enhanced maintenance services and innovative service offerings. Potential options for future service revenue growth could include decommissioning services, turbine leasing options, hardware upgrades, and authorized third party vender contracts. Consideration should be given toward a proactive legislative change that regulates the wind turbine industry and forces operators to decommission units under guidelines that favor GE Wind.

The goal of PS&W is to increase sales services from its current level to one billion dollars. This can partly be attained by marketing, FFT's, underperforming turbines, leakage control, and commercialized education. These initial recommendations combined with future market strategies should focus on designing services that add customer value. The first two recommendations can be implemented by management under the current operational structure, with relative ease. The third and fourth recommendations, although non-quantifiable, if successfully implemented, have the potential to sustain service market share.

MARKETING PLAN: FindIT

Ryan Cook, Siena College

EXECUTIVE SUMMARY

Apple Inc. was established on April 1, 1976 and incorporated January 3, 1977. Over the past 33 years Apple has lead its industry in the development of computer hardware, computer software, consumer electronics, and digital distribution. Apple takes pride in making life easier and more efficient for consumers here in the United States and internationally. Our innovative and experienced product development team has developed Apple's newest and most appealing product: FindIT.

FindIT is one of a kind in the field of locating lost or stolen possessions. Similar products have been developed, but lacked what FindIT can provide to consumers. The days of using a metal detector on the beach have come to a screeching halt. FindIT uses superior technology to calibrate possessions such as car keys, cell phones, and wrist watches to a computer global positioning system.

Once purchased, the consumer can place small stickers containing data locator chips. The sticker is powered by light and has a life of two years before having to be replaced. Directly connected to a user-friendly computer system and satellite technology the stickers will provide the precise geographic coordinates of the item. If the item happens to be inside, the computer will recognize this and give the correct room in which the item is located. The consumer can accurately locate up to ten different items using FindIT's features.

FindIT's target market consists of computer friendly adolescents and adults with a primary focus on adults due to the high initial skimming pricing strategy. The upper to upper-middle class demographic segment will be the primary buyers of the product. In addition, businesses will also be targeted in order to make daily operations run more smoothly. The product will also be marketed internationally to growing segments in India, China, and Mexico. Anyone who has trouble searching for lost or stolen possessions is a potential candidate for our newest product FindIT.

Developing a competitive position for FindIT is crucial for the products success. Our product will be marketed and visible on our frequently visited web page and in our stores located here in the United States and abroad. Apple will hire a new team of salespersons in order to better market to businesses. Instead of seeing our new iMac on our clever commercials, consumers will be introduced to FindIT with witty commercials in order to develop a need for the product. Seminars and demonstrations will be used at large events to demonstrate the usefulness and effectiveness of FindIT.

In order to maintain consistency with FindIT Apple Inc. plans on making challenging but attainable goals. Sales initially will be to cover costs of research and development; however, speedy growth is expected for FindIT. We will strive to have our product in all major retail stores within a year of FindIT's launching. FindIT will have updated features every six months in order to maintain current business and attract new business. Apple's stock will be expected to rise by at least ten percent over the next three years after FindIT's release. FindIT's primary goal is to reach growing markets abroad and obtain 40 percent of its profit from international markets.

COMPANY DESCRIPTION

Apple Inc. was established in Cupertino, California on April 1, 1976 by Steve Jobs, Steve Wozniak, and Ronald Wayne and later incorporated January 3, 1977. Apple's main purpose was to hand build and sell the Apple I personal computer kit. Apple has an exceptional reputation in the consumer electronics industry and looks to

enhance its reputation by developing innovative products for consumers. Apple employs over 35,000 people worldwide and obtained $32.48 billion in its fiscal year ending September 29, 2008.

Apple relies on its high brand and repurchase loyalty of its consumers to assure future survival. Innovation and more personalized computers position Apple Inc. from its competitors such as Dell Inc., Hewlett-Packard Company, and IBM. Inventions such as the iMac, iPod, and iPhone have reached millions of consumers in record timing. Apple's investment of time and money has many people thinking FindIT can reach millions in record timing as well.

STRATEGIC FOCUS AND PLAN

Apple ignited the personal computer revolution in the 1970s with the Apple II and reinvented the personal computer in the 1980s with the Macintosh. Today, Apple continues to lead the industry in innovation with its award-winning computers, OS X operating system and iLife and professional applications. Apple is also spearheading the digital media revolution with its iPod portable music and video players and iTunes online store, and has entered the mobile phone market with its revolutionary iPhone. (Apple Online)

Goals

Nonfinancial

1. To have FindIT in all major retail stores by December 7th, 2010.
2. Upgrade services for current users every six months with innovative features.
3. Ensure FindIT will be affordable for middle-upper class here in the United States and internationally.
4. To be regarded the top lost item locater in the industry by 2012.
5. Provide top customer support and be regarded an elite in customer service.

Financial

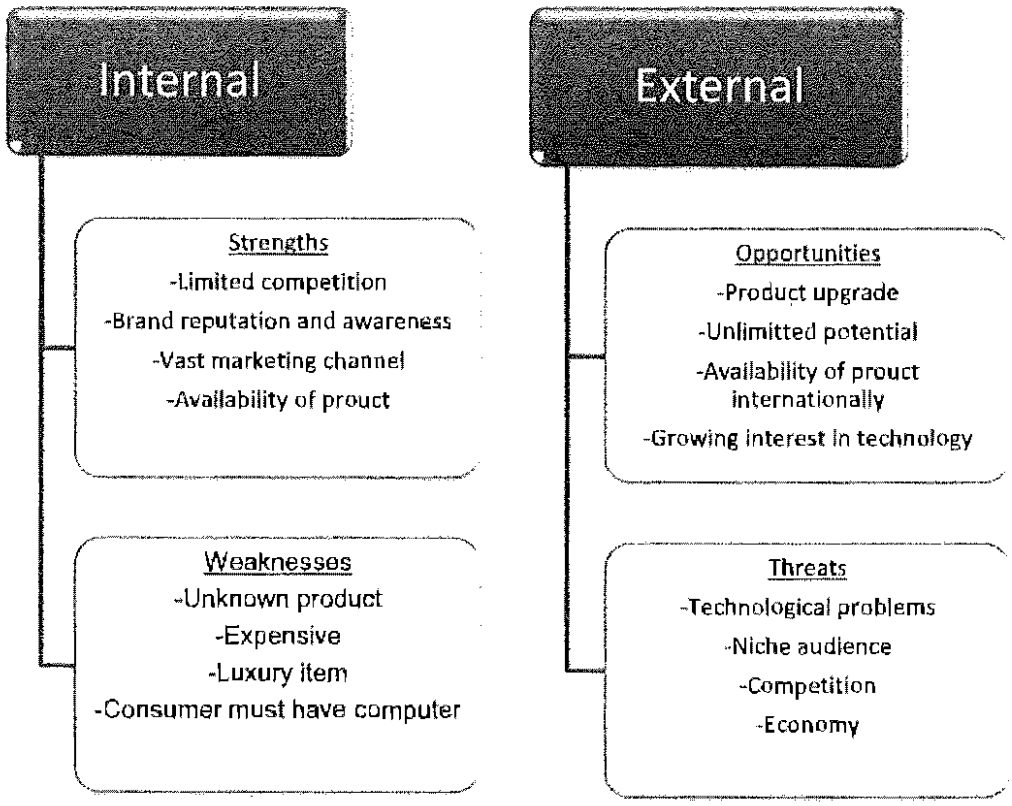
1. To obtain a profit margin of at least 55% on FindIT before marketing and distribution costs are calculated
2. Increase Apple Inc.'s stock by ten percent over FindIT's first three years on the market.
3. To achieve a return equity of at least 15 percent.
4. Have our market sbare of the lost item locater industry reach highs of 40-50 percent.

Core Competency and Sustainable Competitive Advantage

The core competency of FindIT lies in the unavailability of similar or substitute goods. Other items such as metal detectors and lost item trackers that have a beeping function, as you get closer to the object are out of date. The innovative technology provided by FindIT's computer program accurately displays the location of an item in or outside of the home. The use of satellite technology is ground breaking to locating a lost or stolen item. Precision and ease in locating items will create a sense of value in FindIT for our consumers.

SITUATIONAL ANALYSIS

The SWOT (Strength, Weakness, Opportunities, and Threats) analysis supplies Apple with current and potential influencers to our marketing plan. These influencers are located both internally and externally in our organization in order to implement beneficial operating approaches.



Strengths

Limited Competition

As of now there are no direct comparisons to FindIT. Superior technology with use of computers and satellites separate FindIT from the other competitors. Other competitors such as Sony and Microsoft will soon develop similar products with computer capability, but FindIT is one of a kind at this point of time. A heavy marketing campaign will help consumers identify us from the soon to be competitors in this niche market. Consumer satisfaction with the product will ensure return sales and also additional sales.

Brand Reputation and Awareness

Over forty years in the consumer electronic industry has allowed Apple Inc. to develop both brand equity and brand awareness. The brand equity of Apple Inc. will allow FindIT to be priced at a high rate due to the value the consumer will place in the product. Brand personality will allow current Apple users and potential Apple consumers to identify a certain trait with our new product: FindIT. When consumers think Apple, they associate it with innovation and an individual basis. The consumer will think, "Apple caters to my needs, so FindIT will as well.

Vast Marketing Chanel

There is no specific market for FindIT. The target market can be located in several age groups, ethnicities, and personalities. Everyone misplaces items and has trouble looking for them without additional assistance. This provides us with the convenience of marketing our product within several different marketing segments. This also could prove challenging with finding the best place to market our new innovative product.

Availability of Product

With Apple Inc. stores, retail providers, and a comprehensive website; Apple Inc. has the ability to provide the product to several different segments. Apple stores are located across the country and abroad to provide consumers with hand on assistance. No Apple store by you? No problem. Retail stores such as Wal-Mart, Target, and Best Buy, will have the product ready and available for consumers to test and purchase. If a store experience isn't what the consumer is looking for the Apple Inc. website (www.Apple.com) will provide consumers with another channel to purchase our latest product conveniently and cheaply.

Weaknesses

Unknown Product

Similar products have never been introduced to the market. FindIT will not be associated with other products and therefore may not catch attention with consumers. To overcome this conception Apple Inc. must provide interactive demonstrations and informative commercials to educate the consumer on how FindIT actually works. With proper knowledge consumers will have faith in what FindIT has to offer to them and their family.

Expensive

A product such as FindIT must enter the market with a skimming strategy. This skimming strategy will allow us to recover from research and development costs. However, our skimming strategy will deter the price sensitive consumer from purchasing FindIT. It will be essential for FindIT to appeal to the innovators and early adapters due to their education and leadership in the social setting. Our main priority will be to consistently make our product affordable to the upper-middle class.

Opportunities

Product Upgrade

As emphasized in our goals we plan to upgrade our product every six months. This will keep current customers satisfied with our product and at the same time encourage new customers to value our product. Advances in technology will allow this all to be possible. Our research and development team will have challenging, but attainable goals for FindIT's advancement. Consumers will be aware of the step ahead Apple Inc. is with their new item location device.

Growing Interest in Technology

Time and technology have had a positive correlation since anyone can remember. Apple must utilize this to their advantage as consumers become more technologically savvy in today's world. The growing interest of the baby boomers in the Internet and programs such as excel presents an opportunity for FindIT. If a consumer has confidence in their technological skills they will be more willing to test and purchase Apple Inc.'s FindIT.

Threats

Competitors

Currently, FindIT has minimal to no competitors in the market. However, with due time competition will soon arise and we must be ready to adapt. Utilizing our research and development team to overwhelm the competition will prove to be necessary to keep FindIT at the top of the market. A successful campaign at creating a position as the top item-locating device in the country will create even taller barriers of entrance into our market.

Economy

An ever-changing economy could be both an opportunity and a threat to FindIT. If the economy continues to decline a luxury item such as FindIT could have a difficult time appearing as a value to consumers. However, the economy tends to run through cycles continuously. When the economy takes a positive turn FindIT could end up in the hands of more consumers than expected. Predicting environmental forces effectively and accurately will allow us to adapt to the market accordingly.

COMPETITOR ANALYSIS

Apple Inc. has several competitors in the consumer electronic industry. Dell Inc., Hewlett-Packard Company, and Microsoft have all successfully positioned themselves in the Personal Computer industry. Other electronic companies such as Sony have the ability to challenge Apple Inc.'s FindIT with a similar product of their own. The average consumer will only purchase one FindIT in their lifetime. This makes it very important to gain business from first time customers.

Apple will appear unique to the competition due to the reliance it has on its own operating system. The competitors rely on the latest version of Windows to keep their potential item locator program running efficiently. Having the convenience of its own operating system, Apple Inc. will be able to take care of potential problems internally and avoid setbacks.

As of yet, there are no serious competitors to our exclusive product. FindIT's computer based running system distinguishes it from other items on the market. Successfully developing and improving our program will be essential for a sense of brand equity in our product. Positioning FindIT as the personal, easy to use item locater product will prove to be a challenge.

COMPANY ANALYSIS

Apple Inc.'s principal activities are to design, manufacture and market personal computers, mobile communication devices, and portable digital music and video players and sell a variety of related software, services, peripherals, and networking solutions. It also sells a variety of third-party Macintosh (Mac), iPhone and iPod compatible products, including application software, printers, storage devices, speakers, headphones, and various other accessories and peripherals through its online and retail stores, and digital content and applications through the iTunes Store. It sells its products worldwide through its online stores, its retail stores, its direct sales force, and third-party wholesalers, resellers, and value-added resellers. The Group operates in the United States, Europe and Japan. (Corporate Information Online)

CUSTOMER ANALYSIS

The customers of Apple Inc. have been multiplying in recent years. A growing interest in technology and need to find misplaced items will benefit Apple Inc. Over the years Apple Inc. has successfully developed a niche market and more importantly a brand personality to go along with that market. New and returning customers have a preconceived image of our brand. Customers will have convenient locations to buy FindIT in Apple stores, retail stores, and over the Internet. Our primary customer is one who has either a desperate need for the product due to a condition such as Alzheimer's or has enough disposable income to purchase FindIT.

ENVIRONMENTAL SCANNING

Marketers study external, uncontrollable factors that impact a company's ability to meet needs of consumers. The key is to gain a competitive advantage by learning to predict and adapt to several different trends.

Social/Cultural

1. The rise of population in China and India presents an opportunity to market to a larger segment.
2. Consumers may feel influenced to purchase FindIT because they find it socially accepted or want to be perceived with FindIT's image.

Technological

1. The growing use of Internet to buy goods provides another channel for marketers to advertise and sell FindIT.
2. A growing interest and acceptance of technology allows Apple Inc. to market to more consumers. (Appendix B)

Ecological

1. FindIT's energy saving capabilities will allow it to be more marketable to "going green" consumers.
2. Production of FindIT using natural and renewable resources could also attract "going green" consumers.

Economical

1. An improvement in the economy could shift the demand curve in Apple's favor causing more consumers to have more disposable income and have the ability to purchase a luxury item such as FindIT
2. The same goes in the other instance. If the economy takes a turn for the worse the demand of FindIT will fall and consumers will find a substitute product.

Political

1. A government regulation requiring all vehicles to have FindIT stickers could open up a whole new sector of business.
2. A change in the budget shift towards technology interest could provide additional funding for research.

Market-Product Focus

This section describes the five-year marketing and product objectives for Apple Inc. and the target markets, points of difference, and positioning for its new product FindIT.

Marketing and Product Objectives

Apple Inc.'s marketing aim is to create a sense of value for FindIT with current and potential Apple users. The customer must feel a sense of reliance on our product to find misplaced or stolen possessions. Once purchased the customer must feel a sense of accomplishment and a need to use the product. Expanding the features FindIT offers and reinforcing the personalization of Apple Inc.'s products will grow current markets. Repeat purchases are very unlikely due to the nature of the product. Apple must rely on the satisfaction of the product in order for positive word of mouth marketing.

By the end of our 3rd year Apple Inc plans to have FindIT taping into new markets located overseas. The international market will provide more sales due to the increasing population and GDP of China and India. If FindIT can successfully appeal to foreign markets, Apple Inc. will be able to open more stores and expand its product line in retail stores in five years.

Government regulation of FindIT in their sector and in other businesses could dramatically increase profit. For example, city cabs and busses decide or are regulated to use FindIT in order to keep track of their vehicles increasing Apple Inc.'s overall profit. Lobbying to political officials and donating to their campaigns will eventually help us in the long run.

Target Market

The primary target market for FindIT is a upper-middle class household with technologically advanced or very forgetful people. The family should be making in over $150,000 and have an interest in the latest technology. Households with frequently lost objects such as car keys, TV remotes, cell phones, etc. International markets will also be heavily marketed to. The target market will be better understood once sales and research begin. However, the group initially marketed to will be male with an average age of 30.

Points of Difference

Due to the superiority of FindIt to the competition there are many differences with our product. The biggest difference would have to be our computer program based system. Other lost item locaters have no computer system

support. This makes our product more user friendly and efficient. Secondly, FindIT's satellite capability allows the consumer to locate an item anywhere in the world. Families or people that travel frequently will always be able to maintain inventory of their items.

Positioning

Apple Inc. plans to correlate its own position in the market with FindIT's. Apple Inc. prides itself in the quality of both its hardware and software items. Ensuring compatibility with all computers including Apple Inc.'s own computer line will make the product marketable to more consumers. Establishing and maintaining higher quality, better efficiency, and "for myself" image will ensure continuous business.

MARKETING PROGRAM

Product Strategy

The product line will contain two different manufactured goods: FindIT home and FindIT business. The products are virtually identical except for the amount of items able to track. A family will utilize FindIT to locate up to ten items and a business will utilize FindIT to locate up to 100 items whether they may be staplers in the office or taxicabs in New York City.

Once downloaded on their computer the consumer will be able to place small stickers with micro-sensors to detect the items location in their house or anywhere in the country. With satellite technology the items can be precisely spotted anywhere. The expense of this satellite technology is one of the main factors for the price at which FindIT will be sold for.

FindIT will require maintenance from Apple's service team. If experiencing a technical difficulty the consumer can locate an Apple store and bring their product in or if not located by a store, can send the product into Apple Inc.'s service team. Apple Inc prides itself in cheap efficient service and will charge a maintenance fee of $50.00 in order to repair the product. Maintaining consistent and superior customer satisfaction will be essential to ensure future sales. (Appendix C)

A warranty will also be offered with FindIT. If unsatisfied with the product the consumer has up to two months to return FindIT for a full refund. Returned FindIT's will be placed in stores and sold at a discounted rate. The item must be returned in its original packaging. The packaging comes in one of Apple Inc.'s unique white boxes similar to their laptops only larger in size.

Place/Distribution

FindIT will be distributed through Apple Inc. warehouses to Apple stores and other retail stores. Steady growth is expected and will determine the number of new stores and distributing facilities needed. If sales increase to the point where capacity is challenged, a separate division will be created to handle FindIT solely.

Multichannel marketing will be used to blend the different forms of communication and delivery channels. Shopping online should be similar to the store shopping experience. We want to make sure that consumers feel a sense of balance with Apple Inc.'s marketing campaign and fin it convenient to shop with us. A heavy focus will be placed on online ordering due to convenience.

Apple Inc. will partner with UPS in order to effectively deliver FindIT to consumers. We will create a contract giving them a certain rate for the amount of business we plan on giving UPS. Overseas transportation will be done through UPS as well. Rates will solely depend on how close the home or business is to one of our distribution locations.

Stock level will be monitored with computer-based stock keeping unit systems. Every Apple store and primary retailer will keep a suitable amount of FindIT's in storage depending on previous sales and research.

Initially a market test will be in effect in the Northeast. Numbers generated from these sales will be essential into determining how many FindIT's to have for backup.

Promotion

Store demonstrations will be used to convey to consumers the effectiveness of FindIT. Seminars in Apple stores and other retail stores will take place nationally and abroad. Apple's sales force will run a campaign to make businesses aware of FindIT's capabilities. Apple Inc.'s website will also feature the product and display previews of how FindIT operates and details of its features. These videos will also be available to view on Youtube.com to reach more markets.

Another promotion will be implemented to appeal to current Apple consumers who buy related products. For example, when a laptop is purchased the consumer will receive a coupon grantiug them a discount on FindIT. Apple consumers tend to buy other Apple products for their electronic needs. If a consumer has purchased a MacBook or iPod they will be that much more inclined to purchase Apple Inc.'s newest product.

The continual ads seen on T.V. contrasting Mac and PC will convert over to FindIT. Clever commercials stressing individuality and necessity for the product will help drive sales. Showing a mother struggle to find her car keys in the morning or locate a missing watch will appeal to consumers and create a sense of value in the product.

FindIT's will be donated to charitable organizations to show a sense of community concern. Programs such as Catholic Charities and Chow will receive FindIT's to use for their non-for profit businesses. Consumers will associate the Apple brand with a caring attitude and will want to connect with the brand name.

Price

The price of FindIT will be its ultimate weakness. Heavy costs with research, development, satellite usage, and heavy marketing will force Apple Inc. to use a skimming strategy. The skimming strategy will allow Apple Inc. to make up for some of these costs and eventually turn a profit in the future. The markets must see the value in FindIT if they are willing to pay the price for this luxury item.

The initial list price for FindIT will be $3,000 for the home model dollars or about double the price of one of Apple Inc.'s MacBooks. The business version will sell at $5,000 dollars. The reason for such a steep price also ties into the factor of recovering a item potentially worth more than that amount. If a misplaced car or expensive watch is recovered FindIT has already paid for itself. The computer program is included with the purchase. However, additional fees will be paid monthly in order to help with satellite rental costs.

Once registered the consumer will pay a fee of $20 per a month in order to ensure a working program. Incentives will be offered to consumers who pay on time such as other Apple Inc. products. A system of point rewards will be set up for consumers who develop a good history with Apple Inc. The points can be converted into discount rates for Apple Inc. goods and services. Free delivery or songs on iTunes will be handed out to those who pay their bill within a certain time period of when it's due. Similar to the two in ten discount offered by wholesalers and other companies.

Holiday discounts around Christmas will be offered to encourage consumer spending. Purchasing multiple FindIT's will also present a discount to consumers. Paying in full will also allow consumers to receive a discount on FindIT. If not able to pay in full, consumers can fill out a credit application. If the credit application is accepted our finance team the consumer may set up monthly payments for FindIT.

FINANCIAL DATA AND PROJECTIONS

Apple Inc. sales revenue has been increasing in the past eight years and is expected to continually do so. (Appendix A) Projections are all based on sales at $3000.00. Apple Inc. realizes the price will vary due to the economy, promotions, and inflation. Continual growth is expected due to tbe barriers of entry to competitors. Being

the first product of its kind and having an exceptional research and development team will help keep these numbers true.

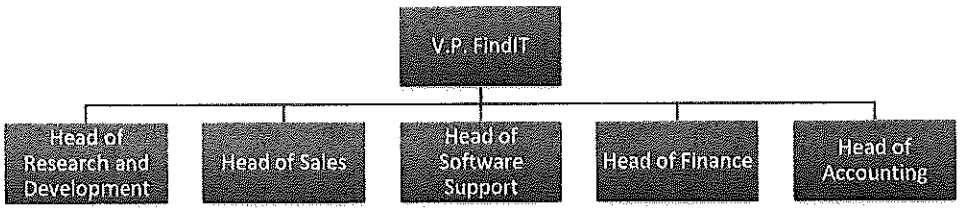
Fixed costs will include salaries of the research and development team, satellite rental fees, and store rentals fees. Variable costs will depend on the cost of raw materials and the sum of marginal costs. Profit is not expected until the third year after FindIT's launch. This will also be the year FindIT travels abroad and tests the markets overseas more intensely. Apple Inc. also anticipates growth in the business sector of FindIT business in this year.

FindIT Home	Units Sold	Net Sales in Millions	Operating Profit (loss)
Projected 2010	250,000	$75	($0.50)
Projected 2011	400,000	$120	($0.20)
Projected 2012	700,000	$210	$2.80
Projected 2013	1,000,000	$300	$3.70
Projected 2014	1,500,000	$450	$5.10

ORGANIZATION

The complexity of Apple Inc.'s organization would take several pages to display. FindIT will have it's own division in Apple Inc. but operate under Apple Inc.'s policies and regulations. The Vice President of FindIT will be in charge of the head of five different departments: Accounting, Finance, Sales, Research and Development, and Software Support. Each division will be operating in correlation with FindIT and Apple Inc.'s mission and goals.

The head of sales will be responsible for enhancing brand awareness and increasing the brand value and brand personality. He will work with the data provided by the research and development team. The research and development team will use surveys and consumer research to gain a competitive advantage.



The head of software support will ensure that FindIT's will be maintained and taken care of when problems arise. The head of finance will help with production and marketing costs in the present and predictions for the future. The head of accounting will be in charge of the current assets and liabilities of FindIt's division. They all play an important roll in the development, sales, and future of the division. Apple Inc.'s human resource division will aid in the operation of FindIT.

IMPLEMENTATION

After market testing the Northeast, FindIT plans to make movement to the South and then later the West. Once the majority of U.S. markets are tapped into then foreign markets can be attacked. Adding new markets will depend mainly on the research and development team's findings and the execution of the sales force. Writing ads, running promotions, and setting prices will all be implemented to achieve our market share goals.

The market share will be initially ours due to lack of competitors, however, competitors are expected to arise in both the United States and internationally. These competitors will initially decrease our market share but our marketing strategy and successful implementation will help gain more market share. Marketing tactics will be implemented with information on environmental forces provided by the research and development team.

Year	New Markets Added	Cumulative Markets	Cumulative Percentage of U.S Markets	Cumulative Percentage of Foreign Markets
2010	3	6	90	90
2011	4	10	92	84
2012	2	12	85	83
2013	5	17	87	86
2014	5	22	90	89

One of the first strategies used will be to capture the women demographic. To do this FindIT demonstrations will take place in shopping centers and advertised on the Soap network. Stay at home mothers and wives with disposable income will be exposed to FindIT and develop an interest in the product. A promotion in People magazine for FindIT will spark interest in the product. Donating a certain amount of earnings to a breast cancer foundation will appeal to women as well.

EVALUATION AND CONTROL

The goals of FindIT will be available for all of the division's employees to see daily. However, there are procedures that will not be followed or environmental factors that will keep us from achieving these goals. When these situations arise it will be the responsibility of the research and development team to reanalyze the market and the sales force to reach the markets effectively.

Possible Deviations

1. People are unfamiliar with FindIT and are apprehensive to buy it due to its price.
2. A downshift in the economy will send demand for FindIT to the bottom of the industry.
3. Overproduction could lead to little inventory space and high debts.

Possible Solutions

1. In the event that consumers are unaware of FindIT's innovative technology and offerings we must educate them on the benefits of the product. Running more ads is always an option, but educating the consumer on the different features to appeal to particular markets will be essential.
2. If the economy causes demand to fall pricing will have to be addressed. The luxury of FindIT will make it an elastic good. Consumers do not need to buy FindIT by any means. A drop in price would be the most effective solution when there is a downturn in the economy. A successful promotion would also work such as a rebate offer.
3. Improper planning could lead to an overproduction of FindIT. This would drive up expenses if demand does not increase. A successful SKU computer system will help keep an accurate inventory. Having multiple distribution centers will force FindIT to invest a substantial amount of money in this computer system. However, due to Apple Inc. being a computer based company costs should be somewhat reasonable.

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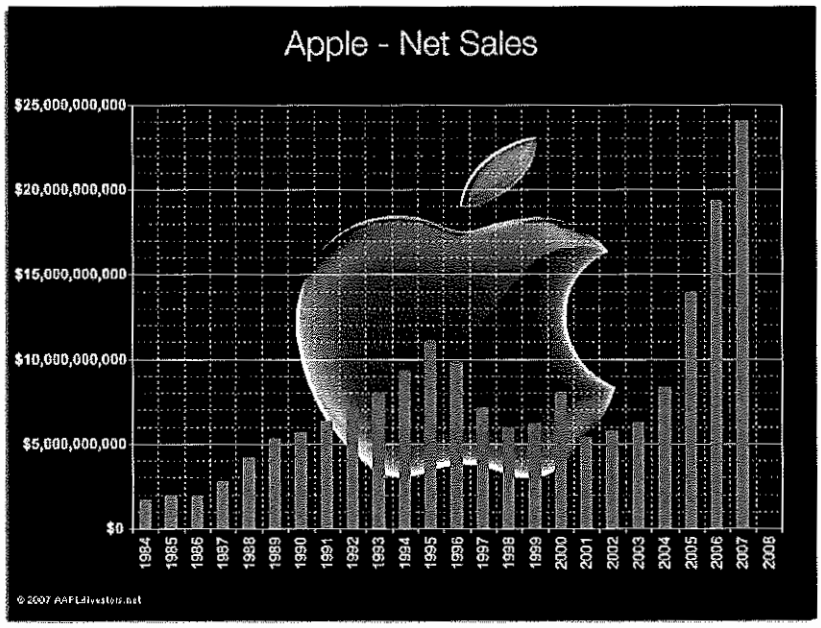
"Apple Investor Relations Investor FAQ." *CCBN is now a part of Thomson Financial*. Web. 01 Dec. 2009. http://phx.corporate-ir.net/phoenix.zhtml?c=107357&p=irol-faq

APPENDIX A



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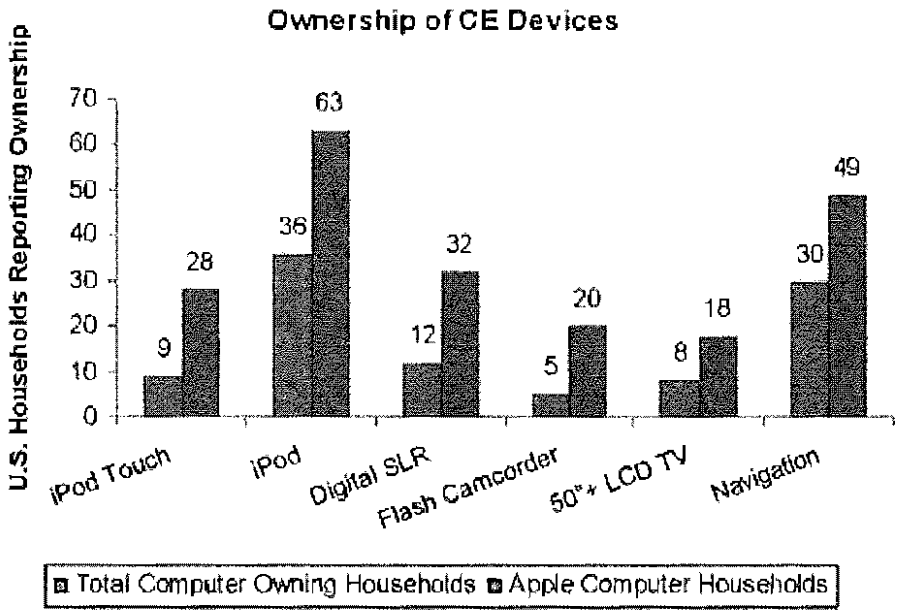

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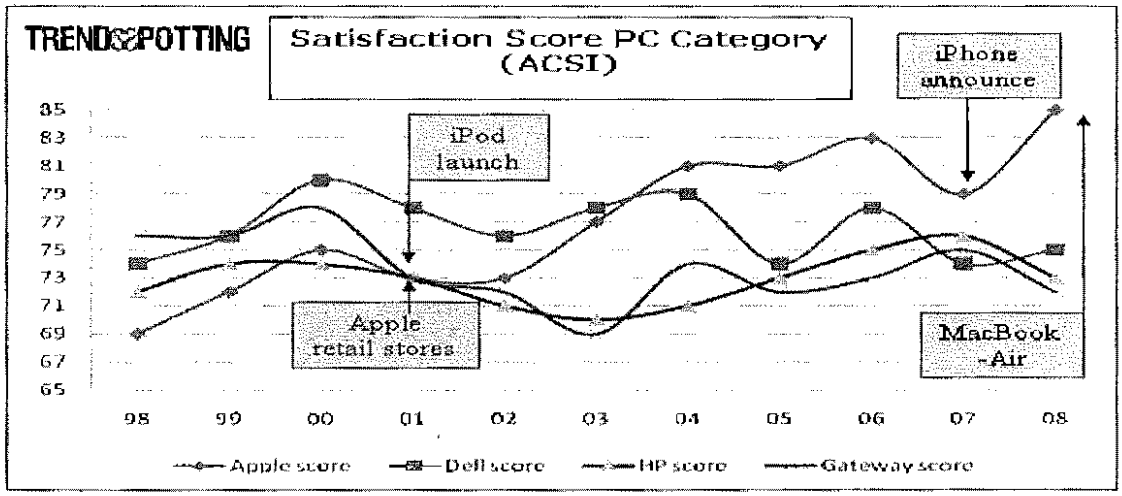

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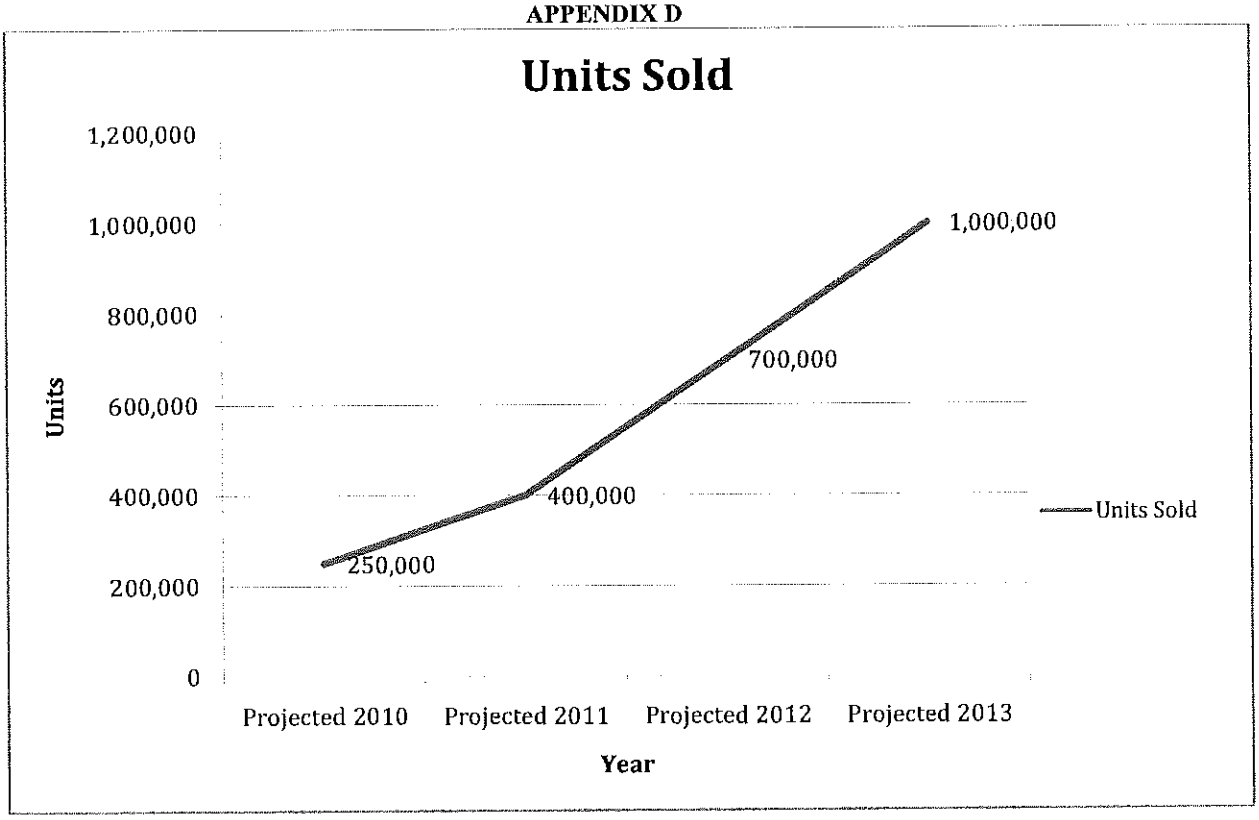
APPENDIX D


Units Sold
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1,000,000
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400,000
200,000
0
Units
250,000
400,000
700,000
1,000,000
Units Sold
Projected 2010
Projected 2011
Projected 2012
Projected 2013
Year

MEDICAL INFORMATION SYSTEMS

Brian Litz, Siena College
Krista Timpano, Siena College
Alicia Yaccarino, Siena College

Class: Management Information Systems

Professor: Jami Cotler

ABSTRACT

This presentation will discuss the world of information technology and how it applies to health care in the United States. This is a major topic in the news today and thus it is important for people to understand the implications and results that will occur with the implementation of this new method. The presentation will touch upon the general attributes of Medical Information Systems, the concept of HIPAA and how one's privacy will be affected, as well as President Obama's plans for the future of health care.

The presentation on Medical Information Systems also is innovative in the fact that it will be presented via WebEx, an Internet-based web conference program. The presenters will be in a remote location and will be seen on a screen rather than in person. Furthermore, the presentation material was created using a wiki, a website that the students created, instead of a traditional Power Point presentation. The use of a wiki allowed the students to create the presentation while in different locations because the document was shared with each student which allowed them to edit and add information. This presentation will inform the audience not only about health information technology, but also the technological methods that are sure to be utilized in business in the future.

GIVING AND RECEIVING: EDITING COMMUNICATIONS FOR A NON-PROFIT ORGANIZATION

Mary Beth Dineen

Class: MKMG 113 - Business and Organizational Communication

Professor: Dr. Melinda Costello

Community Partner: Homeless and Travelers Aid Society (HATAS)

Project Description: In the beginning of the semester, our class was given a packet of communications materials, including fundraising letters and thank you notes, used by HATAS, a support system for people who need assistance being placed in homeless shelters. Jackie Ginnan, a Siena graduate and representative from HATAS, spoke to our class about the organization's mission and the purpose for each communication.

We edited each letter and compared our revisions. Dr. Costello extracted our favorite content into one document. From here, we collaborated on the finished document. This promoted a group atmosphere that allowed everyone an opportunity to give his or her opinion until unanimous decisions were made.

After the revised versions of each letter had been finalized, we constructed an e-mail to send to HATAS. In the e-mail, we summarized our revisions, presented the final versions of each document, and thanked the organization for the opportunity. We received positive feedback from HATAS and were told our work would be used in future communications.

Reflection: Through this project, my classmates and I learned how to patiently collaborate. Because of the interactive and participatory approach to this project, we were able to recognize the value of others' contributions.

Furthermore, editing letters for HATAS allowed us to put into practice what we read in the textbook about structuring communications. This project gave our class real world experience, and the fact that our revisions might actually be used by HATAS put added pressure on us to assemble our best work.

The value of an outsider's viewpoint was emphasized in the positive feedback we received from HATAS. The fresh perspective of people outside of the organization added to the clarity of the communications. This will hopefully allow such a worthwhile organization to raise more money, appropriately thank their donors, and more effectively communicate with the people they serve.

Future: Doing homework with a bigger purpose than just for a grade emphasized the importance of communications to non-profit organizations, which inspired us to help HATAS. This gave us practice in anticipating an audience's reaction and was a great experience to learn how to work with a client, understand their mission, and analyze an audience. These skills are useful with everything from e-mail to school projects, which is why strengthening them proved worthwhile. For example, I now consider the receiver of my e-mails more and put into practice what we learned about the "you view", which was

critical to this project. Through improving HATAS's communications, we simultaneously bettered our own communication skills.

THE IMPACT OF THE MAY 2003 DIVIDEND TAX CUT ON NYSE FIRMS

Kevin Gioia, Siena College
Dr. James P. Murtagh, Siena College

ABSTRACT

The 2003 Jobs and Growth Tax Relief Act reduced the maximum statutory personal tax rate on dividends from 38.1% to 15%. This study analyzes the dividend payment activity of all NYSE listed companies in the thirty-six month period preceding the tax change and thirty-six months afterward. Specifically, average dividend payments, returns, shares outstanding, trading volume and market capitalization are compared for dividend-paying firms and non-dividend paying firms before and after the tax change.

INTRODUCTION

The specific factors that drive corporate payout policy have been in constant debate for a number of decades. Further research conducted in analyzing various components that determine corporate payout policy has only led to further debate. In theory the two ways a company will return cash to their shareholders are through the payment of a dividend or a share repurchase. In this paper we analyze the specific impact that taxes on dividend income have on pay out decisions. Specifically we look at the impact of the "Jobs and Growth Tax Relief Reconciliation Act of 2003." This act lowered the dividend income tax rate from 35% to 15%. By collecting dividend announcements from CRSP and sorting them by industry we will look at the impact of this legislation from a before and after standpoint. Data is collected from 2000-2006 in order to grasp the amount of dividend disbursements three years before the enactment and three years after.

It is quite clear that prior to the enactment the proportion of dividends being paid out were decreasing steadily in favor of share repurchases. Fama and French (2001) outline that in 1972 66.5% of publicly traded firms (excluding utility and financial firms) paid dividends. By 1999 only 20.8% paid out dividends. Fama and French (2001) seek to isolate the characteristics of firms that pay dividends in an effort to determine what drives a firm's payout decision. It is noted that larger and profitable firms tend to pay out dividends while firms with higher investment levels tend to not. Fama and French (2001) outline that the decrease in dividends is directly related to the shift in the types of firms that have never paid dividends (i.e. low earnings, small-cap, with high investment opportunity). Interestingly enough the overall nature of smaller firms changed post 1978. One sees that small-cap firms prior to 1978 exhibited much higher profitability than those post 1978. Both had high growth investment opportunities therefore making it necessary for developing firms post 1978 to retain earnings and capitalize on strong growth opportunities. These changing characteristics coupled with a large influx of new listings logically led to a decreasing trend in dividend payments. These characteristics had effects on firms considering dividend initiations and resumptions. Controlling for profitability, market-cap, and investment opportunity it is found that post 1978 firms had a lower inclination to resume paying dividends if they had stopped, as well as initiate first time dividend payments. Fama and French (2001) therefore outline that the overall "perceived benefits" from paying dividends had decreased.

DeAngelo and DeAngelo (2005) state that dividend payments are of first order importance to a company's pay out decision. It was previously theorized by Miller and Modigliani (1961) that a company's payout policy is irrelevant and investment policy is the main determinant of the value of a company. DeAngelo and DeAngelo (2005) challenge this assertion and move to say that the M&M Irrelevance theorem itself is irrelevant. They challenge the assumption that a firm will always distribute 100% of Free Cash Flow stating that this restraint would make it so firms would ignore the ever important decision of payout versus retention. DeAngelo and DeAngelo move to say that by restricting the only payout choice to 100% payout of Free-Cash Flow M&M theory would disregard potential agency costs. It is concluded that managers have to make choices between positive NPV projects

in order to move the company in a way that will maximize shareholder wealth. Therefore it is impossible for a company to payout its entire FCF, making payout policy quite relevant. With this established DeAngelo and DeAngelo move to say that because payout policy is relevant it is safe to say that a company's payout policy can determine the overall attractiveness of a stock to investors, because investors value securities *only for the payouts they expect to receive*. It is even documented that while Miller was lecturing about dividend irrelevance to a brokerage house he was interrupted when AT&T announced its first dividend in 30 years and rose 10% immediately.

It is later argued against the points made by DeAngelo and DeAngelo that M&M theory require that a firm fix their payout policy at an arbitrary level; not the optimal level (Handley 2007). It is argued that a firm does not need to disburse 100% of Free Cash Flow through dividends but instead can disburse a percentage of earnings as dividends and use the remaining cash flow to make a stock repurchase with the aim to hold investment policy constant. The timing of the payout can be accelerated if the company issues shares (decreasing its investment in Zero-NPV projects) and delayed if the company repurchases shares (increasing its investment in zero-NPV projects). Handley argues that the timing does not matter because eventually it is assumed that FCF will be fully distributed. This therefore implies that irrelevance will hold because payout policies will result in the same result in terms of shareholder wealth. DeAngelo and DeAngelo reply to these assertions pointing out the flaws in Handley's arguments. Handley argues that if a firm retains cash only for an instant then they can maintain investment policy by quickly supplementing the disbursement with a share repurchase. However, DeAngelo and DeAngelo point out that by doing this Handley ignores the fact that under M&M theory distributions on the same date are made simultaneously. Therefore a firm can either retain all cash at the same moment or disburse cash at the same moment; but not both. Under Handley's arguments any retained cash invested in zero-NPV projects would violate the M&M assumption that a firm's investment policy must be fixed level as this would imply an increase in investment levels. Therefore Handley's claims are proven false as they are based on "prohibited" assumptions about the M&M model and the original assertions made by DeAngelo and DeAngelo about the relevance of payout policy hold.

Daniel, Denis, and Naveen (2008) consider that firms will manage their earnings upwards in an attempt to maintain dividend levels. They acknowledge the first order importance of dividend payments and believe that this assumption is consistent with the large negative stock price reactions associated with dividend cuts. Daniel et al. establish that reported earnings constrain dividend levels and firms do in fact actively manage earnings in order to maintain dividend levels. Using a sample of S&P 1500 firms from 1992-2005 a few conclusions are made. They note that dividend paying firms will increase the level of deficit with regards to their discretionary accruals (defined at the difference between earnings before extraordinary items and operating cash flow) while no paying firms will not. They also find that firms are more likely to decrease dividend payments only after they find they cannot eliminate an earnings shortfall through discretionary accruals. Because a firm manages its levels of earnings towards dividends they then must consider dividends to be as important as other risks in earnings management (i.e. increased taxes, cost of capital). This therefore indirectly show that because the levels of dividends are of such high importance to earnings management they become extremely relevant and of first order importance to managers.

Blouin, Raedy, and Shackleford (2003) outline the impact of the tax cut on a sample of 1,463 regular dividend paying companies. The study tested three hypotheses; Increases in dividend payments following the 2003 Act were increasing in the percentage of payer's stock held by individual investors, firms increased their special dividends following the 2003 Act, and firms decreased their share repurchases following the 2003 act. Blouin et al. find evidence that showed an increase in regular and special dividends and a decrease in share repurchases. In the six months following enactment regular dividends increase $3.8 billion and special dividends $1.2 billion. It was also found that share repurchases decreased 25% in the final seven months of 2003 relative to the same period in 2002. Although these conclusions are compelling it is important to acknowledge that in 2003 the economy was expanding. Furthermore, because the tax reduction would impact only individual shareholders (not institutional) there would have logically been a major increase in dividend disbursements by companies whose majority shareholders were non-institutional. There was no evidence to support this logic outlining the major caveat of the research.

It is documented in Chetty and Saez (2005) that after the enactment of the tax reform relative to 2002-Q4 aggregate dividends disbursements increased 20%. Likewise the authors observe that the number of dividend initiations rose from 4.9% to 29% post-enactment. However they also outline that it would be difficult to conclude

these changes could only be attributed to the tax cut as they simply look at raw dividend announcements. They dismiss the hypothesis that recent accounting fraud had played a deciding role in unconfident investors demanding steady value from the institutions in which they were invested. They consider that the reform only impacted dividends that were distributed to shareholders through non-tax favored accounts. By isolating a subset of institutional investors who would not be affected by the tax decrease (pension funds, insurance companies, non-profits) and comparing them to institutional investors that would be affected they were able to shed further light on the impact of the tax reduction. It was found that institutions that were unaffected by the tax cut did not change the initiation rate of dividend payments, whereas the initiation rate of those affected quintupled. The overall conclusion suggested that the tax reform played a substantial role in the increase in dividend initiations.

The strength of this conclusion is later qualified by Brav, Graham, Harvey, and Michaely (2008). They consider that the tax decrease was only applicable to retail investors who are usually not considered to be first order importance in developing a payout scheme. The assertion is made that if retail investors are of secondary importance in developing pay-out policy then tax levels that impact these investors would logically be of second-order importance. It was first acknowledged that the levels of dividend disbursements decreased following the initial surge in the final half of 2003. However, through 2006 these levels fluctuated displaying little if any trend. Thus, Brav et al. offered a survey to 7,000 institutional pay-out decision makers that polled them on the factors they found to be most important in developing their payout policy. They considered hoth private and public firms and then divided each class into first time dividend initiators versus long-term historic dividend payers. The results followed that for publicly traded initiators their stability of cash flows, cash on balance sheet, ahility to attract institutional investors and investment opportunities, all held higher importance in their payout decision than the tax rate on dividends. Privately held companies reported the same results, excluding the ability to attract institutional investors. Publicly held firms that had a long tradition of paying dividends reported that their stability of cash flows, tradition of paying dividends, cash on balance sheet, investment opportunities, ability to attract institutional investors, ability to attract retail investors, and signal of strength were all of greater importance than the tax rate. For privately held companies with histories of paying dividends the stability of cash flows, tradition of paying dividends, and cash on the balance sheet, were all considered of greater importance than the tax rate.

Based on the conclusions hy Brav et al. (2008) that for each type of company there were a series of considerations of greater importance than the tax rate, the findings of Chetty and Saez seem less conclusive. Although Brav et al. agree that the tax rate decrease led to an initial increase in dividend disbursements the trend did not hold or continue in any meaningful way. It is therefore the point of this paper to continue the analysis on the effect of the 2003 dividend tax cut in order to shed light on the relevance of tax rates to corporate payout policy. By analyzing the data from CRSP three years before the enactment and three years after, we will be able to analyze any trends or lack thereof, providing further insight into this question.

HYPOTHESIS DEVELOPEMENT

Hypothesis 1: Dividend-paying firms will increase average dividend payments after the tax cut.

Hypothesis 2: Dividend payment increases the attractiveness of a firm's shares to investors. Average trading volume for dividend paying firms will increase after the tax cut.

Hypothesis 3: Payout decisions are influenced by industry specific factors.

3a. Average dividend increases will vary by industry.

3b. Average increases in trading volume will vary by industry.

SAMPLE

The sample selection is designed to identify patterns in dividend payments before and after Congressional passage of the bill on May 23, 2003. The initial sample contains monthly dividend data from all NYSE firms (3766) in the Center for Research in Security Prices (CRSP) database. To exclude non-corporate distributions on common stock, the dataset was further restricted to firms with a CRSP share code of 11 (Blouin et al 2004). To compare dividend payouts before and after the regulatory change, the data was collected for a 36 month period before and after bill passage. The pre-cut period includes May 1, 2000 through April 30, 2003. The post-cut period covers May

1, 2003 through April 30, 2006. The data analyzed includes dividend payments, returns on income, returns without dividends, shares outstanding, average monthly trading volume, market capitalization, stock price and associated index returns. Descriptive statistics are shown in Table 1. Table 2 shows the differences between the means for dividend-paying and non-paying stocks before and after the tax cut. Industry results are shown in Table 3.

RESULTS

The statistics shown in Table 1 describe the characteristics of the full sample tested. On average, dividend paying firms have nearly twice the market capitalization of the non-paying firms. This size difference is evident in both time period subsamples. Additionally, dividend paying firms have, on average, higher stock prices and more shares outstanding than the non-paying firms. Also, dividend paying firms exhibit slightly higher average trading volume before and after the dividend tax cut. These results are consistent with previous literature indicating that dividend-paying firms tend to be larger, more mature firms in mature industries.

Panel A: NYSE Reporting Companies (excluding Financial and Utilities)

Our first sample consisted of NYSE traded companies that both paid and did not pay dividends over the course of the six year test period. Consistent with Chetty and Saez (2005) we initially excluded companies that were classified within the Financial or Utilities sector. We analyze the differences between means three years before the tax cut and three years after the tax cut for dividend amount, share price, shares outstanding, market capitalization, trading volume, returns on income, and returns without dividends. As a measure of comparison to the overall market, we show the average returns on S&P 500 firms in the sample (excluding dividends).

Our results show that there was in fact an increase in the average dividend payment as well as stock price for NYSE reporting companies. Over the course of the six year period we note an increase in dividend amount as well as stock price. We see that the average dividend amount grew from $.147 to $.179 marking a noted increase of $.032 per share (H1). For firms that did not pay dividends during the period we note an average increase in stock price of $6.26. Companies who paid dividends saw a greater increase in average stock price ($7.041) compared with non dividend paying firms respectively. These results were concluded at the 1% level of significance.

It was also found in Panel A that the average amount of shares outstanding increased for non dividend paying firms by 26.3 million. There was also an increase in market capitalization of $762.279 million. These results were found at the 1% level of significance. There was an increased in dividend paying firms of 8.519 million shares outstanding. We also note an increase in market capitalization of $355.433 million, however these results were not found to be statistically significant. At the 1% level of significance there was an increase in average trading volume over the six year period. Non dividend paying firms noted an increase of 58.291 million, while dividend paying firms increased 53.054 million.

For companies that did not pay dividends throughout the period they saw an increase in average returns on income of 0.56% as well as in returns without dividends of 0.23%. These results however were not found to be statistically significant. For dividend paying companies there was a noted decrease in returns on income of -2.66% as well as a decrease in returns without dividends of -1.21%. However these differences were not found to be statistically significant. From the sample companies on the S&P 500 that did not pay dividends displayed an increase in capital gains of 2.11%. Those who did pay dividends experienced an increase in capital gains of 2.42%. Both these results were found at the 1% significance level.

Panel B: NYSE Reporting Companies (Including Financial and Utilities)

Panel B considers the same variables along the same time frame as Panel A. Panel B does however include Financial and Utilities companies in the sample. As a result there are some differences between the results of the two panels.

For firms that issued dividends there was an increase in average dividend payment of $.019. This result is significant at the 1% test level (H1). For firms who did not pay dividends there was an increase in average stock price of $92.88. These results were not found to be statistically significant. Dividend paying firms saw an average increase in stock price of $4.77. These results were found significant at the 1% test level.

We noted that average shares outstanding for non dividend paying firms increased 30.354 million. These results were significant at the 1% level. The amount of average shares outstanding for dividend paying firms increased 39.712 million, which was found significant at the 1% level. For firms who did not pay dividend there was an increase in average market capitalization of $1.808 billion. Firms who paid a dividend over the period saw an average increase in market capitalization of $1.944 billion. Both of these results tested significant at the 1% level. For firms who did not pay a dividend there was an increase in average trading volume of 33.664 million at the 1% level of significance. Firms paying dividends noted an increased average trading volume of 37.765 million at the 1% level of significance.

For firms who did not pay out dividends in the period there was an increase in returns on income of 1.78%. This was not found to be statistically significant. For firms that did pay dividends there an increase in average returns on income of 10.74%. This difference was found to be significant at the 10% level. For firms that did not pay dividends the return excluding dividends was found to increase 2.69%. This was not found to be statistically significant. Firms that did pay dividends noted an increase in returns excluding dividends of 11.53%. This was found significant at the 10% level. Firms that did not pay dividends on the S&P 500 noted a capital gains increase of 2.06%. Firms that did pay dividends on the S&P 500 experienced an increase in average capital gains of 2.44%.

INDUSTRY RESULTS

Industry results for forty major industry groups are shown in Table 3, panels A through G. Panel A shows the differences between the means for the average dividend amount before and after the tax cut. Of the forty industry groups evaluated, 23 showed a positive and statistically significant increase in average dividend amount. In contrast, three industries (Electric-gas-water, personal services and motion pictures) show a statistically significant decrease in average dividend paid. With respect to share price, nearly all industry showed an increase in stock price for dividend paying firms (35 industries, 24 significant). Average trading volume also increase for dividend paying firms after the tax cut in 35 of the 40 industries tested.

CONCLUSIONS

The "Jobs and Growth Tax Relief Reconciliation Act of 2003" reduced the dividend income tax rate from 35% to 15%. Previous research on corporate payout policy indicates that the dividend payment decision is influenced by both managerial and industry considerations. The present study evaluates some of the characteristics of dividend paying and non-paying firms before and after the May 2003 dividend tax cut and assesses the differences in means before and after the regulatory change. As expected, average dividends for financial and non-financial firms increase after the tax change (H1). Additionally, average trading volume increases for dividend paying firms after the tax cut (H2), consistent with the hypothesis that the change in tax rates on dividend would be these shares more appealing to investors. Finally, while these results are shown to be consistent across major industry groups, differences in actual industry results support the hypothesis that industry factors are influential in the payout decision. Opportunities for further research include specific controls for macroeconomic factors, firm size and statistical assessment of the differences between the means across samples (paying vs nonpaying firms).

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TABLE 1: Descriptive statistics

Panel A1: Nonfinancial Firms, before the tax cut (May 2000 - April 2003)

	FIRMS NOT PAYING A DIVIDEND				DIVIDEND PAYING FIRMS			
Variable	N	Mean	Standard Deviation	Median	N	Mean	Standard Deviation	Median
Dividend amount	36472	$ -	0.00	0.00	6707	$ 0.147	0.24	0.11
Share price	36472	$ 23.26	23.68	19.12	6707	$ 30.98	31.01	26.37
Shares outstanding	36472	156,122	494363.98	41889.00	6707	248,709	711591.31	54193.00
Capitalization	36472	5,004,796	20587968.27	765813.75	6707	9,793,360	31585064.96	1424387.88
Average Volume	36472	166,269	469233.96	39159.00	6707	205,353	472037.68	53701.00
Returns on income	36472	-27.958%	4.30	0.00	6707	-2.399%	1.40	0.00
Returns without dividends	36472	-27.459%	4.30	0.00	6707	-2.597%	1.40	0.00
SP500 index returns without dividends	36472	-1.111%	0.05	-0.01	6707	-1.279%	0.05	-0.02

Panel A2: Nonfinancial Firms, after the tax cut (May 2003 - April 2006)

	FIRMS NOT PAYING A DIVIDEND				DIVIDEND PAYING FIRMS			
Variable	N	Mean	Standard Deviation	Median	N	Mean	Standard Deviation	Median
Dividend amount	33728			0.00	7089	$ 0.179	0.52	0.12
Share price	33728	$ 29.52	29.24	25.05	7089	$ 38.02	38.47	33.05
Shares outstanding	33728	182,422	555013.04	51629.50	7089	257,227	742861.99	63485.00
Capitalization	33728	5,767,075	20003614.68	1287945.45	7089	10,148,792	29364529.19	2115579.22
Average Volume	33728	224,560	580706.49	78633.50	7089	258,406	529489.20	89027.00
Returns on income	33728	-27.396%	4.24	0.00	7089	-5.057%	1.92	0.00
Returns without dividends	33728	-25.157%	4.25	0.02	7089	-3.808%	1.92	0.01
SP500 index returns without dividends	33728	0.996%	0.02	0.01	7089	1.143%	0.02	0.01

All variables are normally distributed using Jarque-Bera

TABLE 1: Descriptive statistics (continued)

Panel B1: Financial Firms, before the tax cut (May 2000 - April 2003)

	FIRMS NOT PAYING A DIVIDEND				DIVIDEND PAYING FIRMS			
Variable	N	Mean	Standard Deviation	Median	N	Mean	Standard Deviation	Median
Dividend amount	9540			0.00	3052	0.24	0.16	0.22
Share price	9540	$ 295.64	4196.64	26.19	3052	34.55	21.93	30.48
Shares outstanding	9540	176,179	383783.90	61847.00	3052	219138.10	453494.13	79975.50
Capitalization	9540	6,942,440	19310564.31	1613533.47	3052	8969739.24	22141286.72	2267742.08
Average Volume	9540	165,081	339288.21	46837.00	3052	183983.91	353927.05	64765.00
Returns on income	9540	-31.824%	4.57	0.00	3052	-0.14	3.16	0.01
Returns without dividends	9540	-30.916%	4.57	0.01	3052	-0.14	3.16	0.00
SP500 index returns without dividends	9540	-1.075%	0.05	-0.01	3052	-0.01	0.05	-0.02

Panel B2: Financial Firms, after the tax cut (May 2003 - April 2006)

	FIRMS NOT PAYING A DIVIDEND				DIVIDEND PAYING FIRMS			
Variable	N	Mean	Standard Deviation	Median	N	Mean	Standard Deviation	Median
Dividend amount	9008	$ -	0.00	0.00	3037	$ 0.255	0.28	0.22
Share price	9008	$ 388.53	5384.04	31.06	3037	$ 39.33	25.36	34.83
Shares outstanding	9008	206,533	443113.64	76365.50	3037	258,850	536472.78	93980.00
Capitalization	9008	8,750,453	21980868.09	2375301.00	3037	10,913,955	25285260.53	3070500.48
Average Volume	9008	198,745	354169.51	76099.00	3037	221,749	384686.82	91034.00
Returns on income	9008	-30.040%	4.44	0.00	3037	-3.617%	1.69	0.01
Returns without dividends	9008	-28.227%	4.44	0.01	3037	-2.955%	1.69	0.01
SP500 index returns without dividends	9008	0.982%	0.02	0.01	3037	1.136%	0.02	0.01

All variables are normally distributed using Jarque-Bera

TABLE 2: Differences Between Means for Nonfinancial and Financial Firms

NON FINANCIAL FIRMS

	FIRMS NOT PAYING A DIVIDEND						DIVIDEND PAYING FIRMS					
		Before		After	Difference After -			Before		After	Difference After -	
Variable	N	Mean	N	Mean	Before		N	Mean	N	Mean	Before	
Dividend amount	36472		33728				6707	$ 0.147	7089	$ 0.179	$ 0.032	***
Share Price	36472	$ 23.260	33728	$ 29.522	$ 6.262	***	6707	$ 30.983	7089	$ 38.024	$ 7.041	***
Shares outstanding	36472	156,122	33728	182,422	26,300	***	6707	248,709	7089	257,227	8,519	
Capitalization	36472	5,004,796	33728	5,767,075	762,279	***	6707	9,793,360	7089	10,148,792	355,433	
Average Volume	36472	166,269	33728	224,560	58,291	***	6707	205,353	7089	258,406	53,054	***
Returns on income	36472	-27.96%	33728	-27.40%	0.56%		6707	-2.40%	7089	-5.06%	-2.66%	
Returns without dividends	36472	-27.46%	33728	-25.16%	2.30%		6707	-2.60%	7089	-3.81%	-1.21%	
SP500 index returns without dividends	36472	-1.11%	33728	1.00%	2.11%	***	6707	-1.28%	7089	1.14%	2.42%	***

FINANCIALS FIRMS, INCLUDING UTILITIES

	FIRMS NOT PAYING A DIVIDEND						DIVIDEND PAYING FIRMS					
		Before		After	Difference After -			Before		After	Difference After -	
Variable	N	Mean	N	Mean	Before		N	Mean	N	Mean	Before	
Dividend amount	9540		9008				3052	$ 0.235	3037	$ 0.255	$ 0.019	***
Share Price	9540	$295.643	9008	$388.525	$ 92.882		3052	$ 34.555	3037	$ 39.331	$ 4.776	***
Shares outstanding	9540	176,179	9008	206,533	30,354	***	3052	219,138	3037	258,850	39,712	***
Capitalization	9540	6,942,440	9008	8,750,453	1,808,013	***	3052	8,969,739	3037	10,913,955	1,944,216	***
Average Volume	9540	165,081	9008	198,745	33,664	***	3052	183,984	3037	221,749	37,765	***
Returns on income	9540	-31.82%	9008	-30.04%	1.78%		3052	-14.36%	3037	-3.62%	10.74%	*
Returns without dividends	9540	-30.92%	9008	-28.23%	2.69%		3052	-14.48%	3037	-2.96%	11.53%	*
SP500 index returns without dividends	9540	-1.07%	9008	0.98%	2.06%	***	3052	-1.31%	3037	1.14%	2.44%	***

*** 1%, ** 5%, * 10%

significance of t-values based on pooled method, equal variances verified with F-test (not shown)

TABLE 3: Differences Between Means by Major Industry Group

Panel A: Dividend amount

	FIRMS NOT PAYING A DIVIDEND					DIVIDEND PAYING FIRMS						
Major industry group	N	Before	N	After	After-Before	N	Before	N	After	After-Before	
Agriculture	96		90			18	$ 0.076	18	$ 0.113	$ 0.037	***
Mining	549		487			124	$ 0.274	156	$ 0.246	$ (0.028)	
Oil, Gas & Petroleum	2612		2418			515	$ 0.194	505	$ 0.242	$ 0.048	
Construction	773		906			134	$ 0.059	192	$ 0.167	$ 0.108	*
Food and kindred spirits	1288		1160			381	$ 0.168	384	$ 0.177	$ 0.009	
Tobacco products	96		96			48	$ 0.554	48	$ 0.665	$ 0.111	**
Apparel & textiles	731		510			105	$ 0.144	110	$ 0.114	$ (0.031)	
Wood, furniture & fixtures	551		480			173	$ 0.122	171	$ 0.178	$ 0.055	***
Paper products	858		771			249	$ 0.232	238	$ 0.221	$ (0.011)	
Printing & publishing	1292		1118			410	$ 0.180	401	$ 0.207	$ 0.027	
Chemicals	1172		1086			407	$ 0.149	335	$ 0.169	$ 0.020	**
Drugs	804		909			168	$ 0.165	167	$ 0.175	$ 0.010	
Soaps & cosmetics	340		253			143	$ 0.156	95	$ 0.199	$ 0.043	***
Rubber	496		471			163	$ 0.144	150	$ 0.173	$ 0.029	***
Leather	237		229			36	$ 0.064	36	$ 0.074	$ 0.010	*
Stone, clay, glass, concrete	457		304			167	$ 0.138	138	$ 0.218	$ 0.079	*
Metal products & machinery	3683		3376			842	$ 0.145	776	$ 0.194	$ 0.049	**
Computers & electronics	3114		2803			401	$ 0.132	360	$ 0.147	$ 0.015	
Transportation, aerospace, aircraft	1448		1329			342	$ 0.170	369	$ 0.160	$ (0.011)	
Measuring, medical, photo, misc mfg	2005		1957			272	$ 0.165	333	$ 0.157	$ (0.008)	
Tranportation, shipping incl air	802		872			151	$ 0.115	132	$ 0.138	$ 0.024	*
Telecommunications, incl radio/tv	1221		1172			92	$ 0.125	158	$ 0.303	$ 0.178	*
Electric, gas, water*	2691		2477			1079	$ 0.337	971	$ 0.325	$ (0.012)	*
Wholesale trade - durable and nond	1790		1541			354	$ 0.101	393	$ 0.132	$ 0.031	**
Retail trade	3592		3306			470	$ 0.082	615	$ 0.126	$ 0.044	***
Commercial banks, SLs*	2480		2418			966	$ 0.214	1008	$ 0.251	$ 0.037	***
Real estate, mortgage bankers, brol	592		415			71	$ 0.144	92	$ 0.213	$ 0.069	
Investment banks, dealers, exchang	1040		963			257	$ 0.108	264	$ 0.174	$ 0.065	***
Insurance companies*	2439		2587			651	$ 0.158	669	$ 0.198	$ 0.039	**
Office and Hldg, not bank*	298		138			28	$ 0.235	33	$ 0.210	$ (0.025)	
Hotels & casinos	564		388			48	$ 0.052	66	$ 0.202	$ 0.150	
Personal services	261		259			41	$ 0.157	61	$ 0.096	$ (0.061)	***
Advertising & business services	3077		3106			286	$ 0.081	406	$ 0.122	$ 0.041	***
Prepackaged software	221		228			10	$ 0.038	17	$ 0.151	$ 0.113	***
Repair services	147		135			28	$ 0.078	24	$ 0.085	$ 0.008	
Amusement & recreation services	574		497			19	$ 0.069	77	$ 0.138	$ 0.069	***
Health services	832		820			21	$ 0.022	64	$ 0.098	$ 0.075	***
Legal, education, social & misc servi	159		245			16	$ 0.049	30	$ 0.883	$ 0.834	*
Motion picture production & dist.	141		132			6	$ 0.086	12	$ 0.077	$ (0.009)	***
Public administration	18		24			63	$ 0.074	54	$ 0.121	$ 0.047	***

significance: *** 1%, ** 5%, * 10%

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel C: Shares outstanding	FIRMS NOT PAYING A DIVIDEND					DIVIDEND PAYING FIRMS				
Major Industry group	N	Before	N	After	After-Before	N	Before	N	After	After-Before
Agriculture	96	30,079	90	29,920	-159	18	44,261	18	39,034	-5,227 **
Mining	549	56,260	487	80,214	23,954 ***	124	46,642	156	65,312	18,669 ***
Oil, Gas & Petroleum	2612	138,794	2418	178,532	39,738 **	515	279,966	505	347,243	67,277
Construction	773	37,602	906	53,745	16,143 ***	134	44,664	192	63,988	19,324 ***
Food and kindred spirits	1288	231,861	1160	252,090	20,229	381	358,888	384	349,553	-9,335
Tobacco products	96	458,365	96	595,696	137,331	48	480,345	48	596,064	115,719
Apparel & textiles	731	40,771	510	51,665	10,893 ***	105	38,739	110	55,711	16,972 ***
Wood, furniture & fixtures	551	54,173	480	88,391	34,218 ***	173	66,210	171	99,743	33,533 ***
Paper products	858	99,160	771	109,106	9,946	249	125,280	238	121,789	-3,491
Printing & publishing	1292	57,707	1118	111,273	53,566 ***	410	65,210	401	95,450	30,240 ***
Chemicals	1172	137,470	1086	147,009	9,540	407	178,385	335	189,790	11,406
Drugs	804	644,407	909	668,028	23,621	168	1,334,041	167	1,487,913	153,872
Soaps & cosmetics	340	200,617	253	396,808	196,191 ***	143	233,005	95	479,567	246,563 ***
Rubber	496	49,304	471	63,244	13,940 ***	163	52,239	150	61,484	9,245
Leather	237	30,522	229	64,424	33,902 ***	36	33,535	36	34,224	690
Stone, clay, glass, concrete	457	86,091	304	47,782	-38,308 ***	167	72,426	136	47,806	-24,621 *
Metal products & machinery	3883	57,825	3376	78,191	20,368 ***	842	90,580	776	91,910	1,329
Computers & electronics	3114	286,330	2803	400,315	113,985 ***	401	626,016	360	775,775	149,759
Transportation, aerospace, aircraft	1448	147,935	1329	153,536	5,601	342	245,239	369	236,931	-8,308
Measuring, medical, photo, misc mfg	2005	98,602	1957	126,644	28,042 ***	272	154,733	333	172,727	17,994
Tranportation, shipping incl air	802	81,920	872	90,328	8,407	151	135,486	132	190,847	55,360 ***
Telecommunications, incl radio/tv	1221	609,920	1172	519,423	-90,497 **	92	1,389,922	158	681,827	-708,095 ***
Electric, gas, water*	2691	140,369	2477	168,120	27,751 ***	1079	115,448	971	153,144	37,696 ***
Wholesale trade - durable and nond	1790	69,796	1541	81,957	12,160 ***	354	119,928	393	118,259	-1,669
Retail trade	3592	172,933	3306	184,340	11,407	470	377,203	615	310,894	-66,309
Commercial banks, SLs*	2480	301,900	2418	360,421	58,521 ***	966	360,133	1008	424,485	64,352 **
Real estate, mortgage bankers, brol	592	39,657	415	99,482	59,825 ***	71	73,731	92	187,917	114,185 ***
Investment banks, dealers, exchang	1040	209,743	963	161,098	-48,645 **	257	361,129	264	246,794	-114,336 **
Insurance companies*	2439	117,328	2597	140,090	22,764 ***	651	143,282	669	182,394	39,112 **
Office and Hldg. not bank*	298	89,051	138	89,048	-3	28	179,686	33	153,971	-25,715
Hotels & casinos	564	90,531	388	116,462	25,931 ***	48	176,935	66	143,429	-33,505
Personal services	261	193,510	259	118,235	-75,276 ***	41	52,326	61	84,027	31,701 *
Advertising & business services	3077	133,935	3106	102,568	-31,368 ***	286	204,277	406	142,916	-61,361 ***
Prepackaged software	221	178,431	228	196,907	18,476	10	360,821	17	299,991	-60,830
Repair services	147	32,693	135	31,740	-953	28	47,247	24	49,788	2,542
Amusement & recreation services	574	107,841	497	183,412	75,571 ***	19	228,257	77	131,668	-96,590
Health services	832	113,388	820	142,183	28,795 ***	21	360,948	64	224,517	-136,432 **
Legal, education, social & misc servi	159	34,148	245	36,790	2,643					
Motion picture production & dist.	141	340,946	132	895,151	554,205 ***	18	343,646	30	512,005	168,359
Public administration	18	6,136	24	8,562	2,426 ***	8	6,135	12	8,468	2,333 ***

significance: *** 1%, ** 5%, * 10%

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel B: Share price	FIRMS NOT PAYING A DIVIDEND						DIVIDEND PAYING FIRMS					
Major Industry group	N	Before	N	After	After-Before		N	Before	N	After	After-Before	
Agriculture	96	$ 20.76	90	$ 30.02	$ 9.26	***	18	$ 23.97	18	$ 24.77	$ 0.80	
Mining	549	$ 12.33	487	$ 26.53	$ 14.21	***	124	$ 15.59	156	$ 35.34	$ 19.74	***
Oil, Gas & Petroleum	2612	$ 23.97	2418	$ 34.48	$ 10.51	***	515	$ 34.61	505	$ 44.73	$ 10.12	***
Construction	773	$ 24.21	906	$ 42.08	$ 17.87	***	134	$ 30.74	192	$ 52.62	$ 21.88	***
Food and kindred spirits	1288	$ 28.50	1160	$ 30.39	$ 1.89	**	381	$ 34.62	384	$ 33.49	$ (1.12)	
Tobacco products	96	$ 39.83	96	$ 46.96	$ 7.13	**	48	$ 38.01	48	$ 46.88	$ 8.88	**
Apparel & textiles	731	$ 15.35	510	$ 27.47	$ 12.12	***	105	$ 21.76	110	$ 34.75	$ 13.00	***
Wood, furniture & fixtures	551	$ 18.85	480	$ 30.74	$ 11.89	***	173	$ 24.92	171	$ 35.50	$ 10.58	***
Paper products	856	$ 25.35	771	$ 27.22	$ 1.87	*	249	$ 35.22	238	$ 35.60	$ 0.38	
Printing & publishing	1292	$ 35.10	1118	$ 46.63	$ 11.54	***	410	$ 48.13	401	$ 59.12	$ 10.98	
Chemicals	1172	$ 21.99	1086	$ 28.10	$ 6.11	***	407	$ 25.94	335	$ 32.41	$ 6.47	***
Drugs	804	$ 42.31	909	$ 34.34	$ (7.97)	***	188	$ 45.54	187	$ 39.55	$ (5.99)	***
Soaps & cosmetics	340	$ 35.55	253	$ 38.55	$ 3.00	*	143	$ 40.11	95	$ 45.27	$ 5.16	**
Rubber	496	$ 23.63	471	$ 31.79	$ 8.15	***	163	$ 24.78	150	$ 33.97	$ 9.18	***
Leather	237	$ 18.18	229	$ 25.01	$ 6.84	***	36	$ 13.35	36	$ 23.57	$ 10.22	***
Stone, clay, glass, concrete	457	$ 27.87	304	$ 45.94	$ 18.07	***	167	$ 36.60	136	$ 47.53	$ 10.93	***
Metal products & machinery	3883	$ 21.40	3376	$ 31.46	$ 10.05	***	842	$ 25.68	776	$ 39.03	$ 13.35	***
Computers & electronics	3114	$ 21.18	2803	$ 22.84	$ 1.68	***	401	$ 31.42	360	$ 37.16	$ 5.74	***
Transportation, aerospace, aircraft	1448	$ 25.99	1329	$ 31.94	$ 5.95	***	342	$ 36.88	369	$ 39.16	$ 2.28	
Measuring, medical, photo, misc mfg	2005	$ 27.03	1957	$ 32.32	$ 5.30	***	272	$ 35.41	333	$ 39.41	$ 4.00	***
Tranportation, shipping incl air	802	$ 21.22	872	$ 27.41	$ 6.19	***	151	$ 28.48	132	$ 43.65	$ 15.17	***
Telecommunications, incl radio/tv	1221	$ 24.33	1172	$ 20.67	$ (3.66)	***	92	$ 27.74	158	$ 26.84	$ (0.90)	
Electric, gas, water*	2691	$ 27.57	2477	$ 29.97	$ 2.41	***	1079	$ 30.05	971	$ 33.94	$ 3.89	***
Wholesale trade - durable and nond	1790	$ 18.68	1541	$ 26.76	$ 8.08	***	354	$ 27.02	393	$ 35.51	$ 8.49	***
Retail trade	3592	$ 20.54	3306	$ 28.71	$ 6.17	***	470	$ 23.23	615	$ 31.20	$ 7.97	***
Commercial banks, SLs*	2480	$ 30.50	2418	$ 36.47	$ 5.97	***	966	$ 36.97	1008	$ 39.88	$ 2.91	**
Real estate, mortgage bankers, brol	592	$ 16.75	415	$ 26.46	$ 9.72	***	71	$ 30.81	92	$ 37.57	$ 6.76	**
Investment banks, dealers, exchang	1040	$ 30.16	963	$ 41.63	$ 11.47	***	257	$ 39.21	264	$ 54.41	$ 15.20	***
Insurance companies*	2439	$ 1,075.85	2697	$ 1,264.03	$ 188.18		651	$ 36.87	669	$ 40.94	$ 4.07	***
Office and Hldg, not bank*	298	$ 17.97	138	$ 26.59	$ 8.62	***	28	$ 37.70	33	$ 32.88	$ (4.82)	
Hotels & casinos	564	$ 14.32	388	$ 24.91	$ 10.59	***	48	$ 20.19	66	$ 31.87	$ 11.68	***
Personal services	261	$ 14.63	259	$ 22.66	$ 8.03	***	41	$ 28.02	61	$ 29.85	$ 3.83	
Advertising & business services	3077	$ 23.14	3106	$ 26.09	$ 2.95	***	286	$ 31.48	406	$ 32.14	$ 0.66	
Prepackaged software	221	$ 16.75	228	$ 21.95	$ 5.20	***	10	$ 26.98	17	$ 31.07	$ 4.09	
Repair services	147	$ 17.43	135	$ 23.42	$ 5.99	***	28	$ 22.55	24	$ 26.77	$ 4.22	
Amusement & recreation services	574	$ 15.34	497	$ 22.12	$ 6.79	***	19	$ 11.82	77	$ 28.24	$ 16.41	***
Health services	832	$ 28.81	820	$ 32.83	$ 4.02	***						
Legal, education, social & misc servi	159	$ 18.81	245	$ 26.84	$ 8.02	***	21	$ 39.19	64	$ 43.20	$ 4.02	
Motion picture production & dist.	141	$ 16.70	132	$ 16.39	$ (0.31)		18	$ 28.91	30	$ 16.09	$ (12.82)	***
Public administration	18	$ 13.40	24	$ 14.59	$ 1.20	***	8	$ 13.54	12	$ 14.27	$ 0.73	

significance: *** 1%, ** 5%, * 10%

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel D: Capitalization

Major industry group	FIRMS NOT PAYING A DIVIDEND N	Before	N	After	After-Before		DIVIDEND PAYING FIRMS N	Before	N	After	After-Before	
Agriculture	96	628,023	90	793,221	165,197	***	18	1,092,525	18	965,631	-126,894	
Mining	549	567,200	487	1,785,904	1,218,704	***	124	687,452	156	2,537,520	1,850,068	***
Oil, Gas & Petroleum	2612	5,349,120	2418	8,379,120	3,030,000	***	515	13,100,615	505	17,717,918	4,617,304	
Construction	773	847,646	906	2,122,544	1,274,898	***	134	1,281,085	192	3,071,823	1,790,738	***
Food and kindred spririts	1288	8,305,185	1160	9,271,373	966,189		381	13,378,101	384	13,174,163	-203,938	
Tobacco products	96	20,720,022	96	34,204,863	13,544,841	**	48	20,826,763	48	34,409,448	13,582,684	
Apparel & textiles	731	808,080	510	1,590,386	782,306	***	105	1,024,374	110	2,100,396	1,076,022	***
Wood, furniture & fixtures	551	1,238,873	480	3,257,107	2,018,234	***	173	1,763,745	171	3,865,006	2,111,261	***
Paper products	858	4,134,263	771	3,831,107	-303,156		249	6,559,792	238	5,554,101	-1,005,690	
Printing & publishing	1292	1,883,828	1118	3,143,346	1,259,518	***	410	2,682,721	401	3,630,106	947,385	***
Chemicals	1172	4,420,909	1086	5,350,350	929,441	**	407	6,146,574	335	7,797,914	1,651,340	*
Drugs	804	31,368,534	909	25,800,839	-5,567,695	**	168	66,060,458	167	55,542,652	-10,517,806	
Soaps & cosmetics	340	11,822,860	253	20,593,610	8,770,750	***	143	13,996,707	95	27,095,643	13,098,936	***
Rubber	496	1,286,976	471	1,997,907	710,931	***	163	1,426,949	150	2,351,395	924,446	***
Leather	237	630,952	229	2,060,162	1,429,210	***	36	411,153	36	721,505	310,352	***
Stone, clay, glass, concrete	457	2,545,120	304	2,318,243	-226,877		167	3,357,186	136	2,379,788	-977,398	
Metal products & machinery	3883	1,634,483	3376	2,823,795	1,189,312	***	842	2,936,623	776	4,239,433	1,302,811	***
Computers & electronics	3114	8,679,404	2803	8,933,539	254,135		401	23,877,397	360	26,157,612	2,280,214	
Transportation, aerospace, aircraft	1448	4,802,732	1329	5,405,277	602,545		342	9,060,420	369	8,916,876	-143,744	
Measuring, medical, photo, misc mfg	2005	3,312,912	1957	4,863,144	1,550,233	***	272	6,045,389	333	7,566,355	1,520,966	
Tranportation, shipping incl air	802	2,470,081	872	3,856,478	1,386,397	***	151	4,445,349	132	10,422,285	5,976,936	***
Telecommunications, incl radio/tv	1221	14,605,189	1172	9,455,911	-5,149,278	***	92	44,822,612	158	19,984,310	-24,838,302	***
Electric, gas, water*	2691	3,868,032	2477	4,700,538	832,506	***	1079	3,741,971	971	5,185,550	1,443,579	***
Wholesale trade - durable and nond	1790	2,234,481	1541	2,925,317	690,836	***	354	4,466,605	393	4,944,459	477,855	
Retail trade	3592	5,368,314	3306	6,154,812	786,498		470	13,787,480	615	11,932,179	-1,855,302	
Commercial banks, SLs*	2480	11,960,608	2418	15,016,564	3,055,957	***	966	14,536,348	1008	18,077,519	3,541,170	**
Real estate, mortgage bankers, brol	592	902,290	415	2,836,159	1,932,869	***	71	2,438,254	92	5,636,603	3,098,349	***
Investment banks, dealers, exchang	1040	8,710,734	963	7,413,562	-1,297,172		257	16,841,757	264	12,356,340	-4,485,417	
Insurance companies*	2439	6,481,154	2597	8,485,456	2,004,302	***	651	7,040,188	669	8,764,227	1,724,039	
Office and Hldg, not bank*	298	2,546,460	138	3,755,178	1,208,719	*	28	7,547,689	33	7,686,834	139,145	
Hotels & casinos	564	1,532,677	388	3,552,761	2,020,084	***	48	3,735,941	66	4,539,761	803,819	
Personal services	261	2,953,717	259	2,609,924	-343,793		41	2,033,983	61	2,447,932	413,969	
Advertising & business services	3077	3,837,609	3106	2,726,188	-1,111,421	***	286	6,706,722	406	4,977,742	-1,728,980	***
Prepackaged software	221	3,612,456	228	4,362,495	750,040	*	10	10,249,511	17	8,408,770	-1,840,741	
Repair services	147	595,741	135	879,825	284,084	***	28	1,073,253	24	1,496,860	423,607	**
Amusement & recreation services	574	2,015,731	497	4,593,637	2,577,906	***	19	4,143,120	77	4,230,227	87,106	
Health services	832	3,701,573	820	5,475,613	1,774,041	***	21	15,719,990	04	10,060,214	-5,659,776	**
Legal, education, social & misc servi	159	760,128	245	1,057,222	297,094	***						
Motion picture production & dist.	141	11,596,017	132	15,197,816	3,601,799		18	19,019,872	30	8,895,711	-10,124,161	
Public administration	18	82,187	24	124,120	41,934	***	8	83,032	12	119,940	36,908	***

significance: * 1%, ** 5%, * 10%**

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel E: Average volume

Major industry group	FIRMS NOT PAYING A DIVIDEND N	Before	N	After	After-Before		DIVIDEND PAYING FIRMS N	Before	N	After	After-Before	
Agriculture	96	29,619	90	39,275	9,656	*	18	39,776	18	62,742	22,966	**
Mining	549	68,005	487	208,351	140,346	***	124	42,936	156	185,766	122,830	***
Oil, Gas & Petroleum	2812	157,275	2418	244,044	86,769	***	515	227,995	505	416,216	188,221	***
Construction	773	60,230	906	140,113	79,883	***	134	85,044	192	172,190	87,146	***
Food and kindred spririts	1288	146,566	1160	174,046	27,481	***	381	212,860	384	232,244	19,384	
Tobacco products	96	362,043	96	461,786	99,743		48	437,981	48	508,899	70,918	
Apparel & textiles	731	40,619	510	68,466	27,848	***	105	33,684	110	77,303	43,619	***
Wood, furniture & fixtures	551	61,007	480	131,890	70,883	***	173	66,681	171	134,816	68,135	***
Paper products	858	89,558	771	107,193	17,634	**	249	112,654	238	124,972	12,318	
Printing & publishing	1292	43,366	1118	99,807	56,441	***	410	47,241	401	89,049	41,808	***
Chemicals	1172	120,595	1086	158,217	37,622	***	407	155,802	335	192,570	38,768	*
Drugs	804	470,068	909	580,557	110,490	**	168	799,621	167	1,046,394	246,773	**
Soaps & cosmetics	340	153,845	253	299,219	145,374	***	143	180,366	95	359,755	179,389	***
Rubber	498	68,761	471	120,175	51,414	***	163	63,504	150	85,656	22,152	*
Leather	237	50,078	229	109,486	59,416	***	36	24,397	36	38,691	14,294	***
Stone, clay, glass, concrete	457	140,991	304	77,983	-63,008	**	167	99,701	136	57,187	-42,514	
Metal products & machinery	3883	61,243	3376	126,534	65,291	***	842	82,767	776	128,854	46,086	***
Computers & electronics	3114	360,934	2803	571,351	210,418	***	401	488,451	360	659,703	171,252	**
Transportation, aerospace, aircraft	1448	161,620	1329	214,937	53,317	***	342	273,205	369	324,027	50,821	
Measuring, medical, photo, misc mfg	2005	127,778	1957	168,803	41,026	***	272	159,518	333	206,793	47,276	**
Tranportation, shipping incl air	802	108,864	872	136,334	27,670	***	151	125,381	132	207,355	81,974	***
Telecommunications, incl radio/tv	1221	647,913	1172	523,988	-123,926	**	92	1,081,453	158	552,535	-528,918	***
Electric, gas, water*	2691	169,760	2477	201,703	31,943	***	1079	120,173	971	143,932	23,759	***
Wholesale trade - durable and nond	1790	71,234	1541	96,880	25,646	***	354	115,959	393	121,554	5,595	
Retail trade	3592	195,197	3306	234,655	39,458	***	470	315,348	815	351,357	36,008	
Commercial banks, SLs*	2480	240,167	2418	281,546	41,379	***	966	276,675	1008	315,783	39,109	*
Real estate, mortgage bankers, brol	592	27,111	415	124,942	97,831	***	71	45,131	92	227,784	182,653	***
Investment banks, dealers, exchang	1040	197,232	963	194,955	-2,276		257	323,556	264	275,605	-47,951	
Insurance companies*	2439	113,898	2597	135,188	21,290	***	651	111,222	669	170,011	58,789	***
Office and Hldg, not bank*	298	78,750	138	139,294	60,545	***	28	207,887	33	240,357	32,470	
Hotels & casinos	564	79,268	388	138,234	58,966	***	48	149,543	66	199,278	49,735	
Personal services	261	250,272	259	117,697	-132,575	***	41	74,057	61	100,802	26,745	
Advertising & business services	3077	142,959	3106	119,540	-23,419	**	286	248,641	406	151,397	-97,244	***
Prepackaged software	221	274,601	228	305,279	30,678		10	394,992	17	264,668	-130,324	
Repair services	147	42,569	135	40,284	-2,285		28	46,098	24	70,967	24,870	**
Amusement & recreation services	574	105,689	497	204,485	97,797	***	19	170,403	77	131,430	-38,973	
Health services	832	170,006	820	209,765	39,759	***	21	488,240	64	301,554	-184,686	**
Legal, education, social & misc servi	159	35,831	245	62,847	27,017	***						
Motion picture production & dist.	141	198,205	132	819,246	621,041	***	18	263,573	30	783,540	499,967	
Public administration	18	1,413	24	2,061	648	*	8	1,553	12	2,044	491	

significance: * 1%, ** 5%, * 10%**

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel F: Returns on income	FIRMS NOT PAYING A DIVIDEND					DIVIDEND PAYING FIRMS				
Major industry group	N	Before	N	After	After-Before	N	Before	N	After	After-Before
Agriculture	96	-68.750%	90	0.000%	68.750%	18	0.304%	18	0.471%	0.167% ***
Mining	549	-48.087%	487	-54.209%	-6.122%	124	1.370%	156	0.767%	-0.603%
Oil, Gas & Petroleum	2612	-35.375%	2418	-43.672%	-8.297%	515	0.598%	505	0.445%	-0.153% ***
Construction	773	-51.229%	906	-21.854%	29.375%	134	0.242%	192	-33.937%	-34.179%
Food and kindred spirits	1288	-10.248%	1160	-11.379%	-1.131%	361	-16.815%	384	-33.852%	-17.037%
Tobacco products	96		90			48	1.651%	48	1.637%	-0.014%
Apparel & textiles	731	-13.543%	610	-25.882%	-12.338%	105	0.710%	110	0.367%	-0.343% ***
Wood, furniture & fixtures	651	0.000%	480	-60.750%	-60.750% **	173	0.660%	171	0.628%	-0.032%
Paper products	856	-15.305%	771	-17.121%	-1.736%	249	0.747%	238	0.643%	-0.104% ***
Printing & publishing	1292	-5.108%	1118	-23.614%	-18.505%	410	0.566%	401	0.515%	-0.051%
Chemicals	1172	-16.984%	1086	-42.541%	-25.047%	407	0.627%	335	-19.156%	-19.783%
Drugs	804	-8.209%	909	-36.304%	-28.095%	168	0.427%	167	0.475%	0.048%
Soaps & cosmetics	340		253			143	0.355%	95	0.454%	0.099% **
Rubber	496	-13.306%	471	0.000%	13.306%	163	0.503%	150	0.560%	0.043%
Leather	237	-27.848%	229	0.000%	27.848%	36	0.620%	36	0.350%	-0.179% ***
Stone, clay, glass, concrete	457	-14.442%	304	-21.711%	-7.269%	167	0.447%	136	0.482%	0.035%
Metal products & machinery	3883	-13.593%	3376	-9.775%	3.823%	842	-7.106%	776	0.620%	7.715%
Computers & electronics	3114	-21.195%	2803	-16.462%	4.712%	401	0.469%	360	0.505%	0.036%
Transportation, aerospace, aircraft	1448	-18.232%	1329	-29.797%	-11.565%	342	0.517%	389	0.449%	-0.068% ***
Measuring, medical, photo, misc mfg	2005	-29.626%	1957	-13.490%	16.136%	272	0.778%	333	0.495%	-0.283%
Transportation, shipping incl air	902	-19.377%	872	-52.982%	-3.605%	151	0.482%	132	0.383%	-0.099% **
Telecommunications, incl radio/tv	1221	-61.031%	1172	-61.946%	19.136%	92	0.385%	158	-40.538%	-40.923%
Electric, gas, water*	2691	-22.074%	2477	-10.323%	8.751%	1079	-4.037%	971	0.983%	5.020%
Wholesale trade - durable and nond	1790	-33.184%	1541	-34.263%	-1.078%	354	-18.173%	390	0.425%	18.598%
Retail trade	3592	-27.561%	3306	-23.956%	3.605%	470	0.386%	615	-10.285%	-10.672%
Commercial banks, SLs*	2480	-34.597%	2418	-24.566%	10.031%	966	-40.357%	1008	-5.863%	34.494% *
Real estate, mortgage bankers, brok	592	-11.149%	415	-47.711%	-36.562%	71	0.571%	92	0.709%	0.132%
Investment banks, dealers, exchange	1040	-31.731%	963	-51.882%	-29.951%	257	0.345%	264	0.413%	0.068%
Insurance companies*	2439	-43.296%	2597	-30.497%	12.800%	651	0.542%	669	-9.316%	-9.859%
Office and Hldg. not bank*	298	-44.295%	138	-143.478%	-99.183%	28	0.599%	33	0.922%	0.323%
Hotels & casinos	564	0.000%	388	-17.010%	-17.010%	48	0.301%	66	0.753%	0.452%
Personal services	261	-50.575%	259	-25.483%	25.092%	41	0.642%	61	0.396%	-0.246% ***
Advertising & business services	3077	-38.605%	3106	-25.499%	13.106%	286	0.291%	406	0.408%	0.118% **
Prepackaged software	221	-89.593%	228	-57.895%	31.698%	10	0.165%	17	0.465%	0.280% **
Repair services	147	0.000%	135	-48.889%	-48.889%	28	0.353%	24	0.261%	-0.092%
Amusement & recreation services	574	-34.495%	497	-39.839%	-5.344%	19	0.486%	77	0.507%	0.021%
Health services	832	-55.529%	820	-32.195%	23.334%	21	0.080%	84	0.246%	0.166% ***
Legal, education, social & misc servi	159	-124.528%	245	-26.038%	97.590%					
Motion picture production & dist.	141	-46.809%	132	-100.000%	-53.191%	18	0.225%	30	4.948%	4.723% *
Public administration	18		24			8	0.650%	12	0.536%	-0.114% ***

significance: *** 1%, ** 5%, * 10%

TABLE 3: Differences Between Means by Major Industry Group (continued)

Panel G: Returns without divide	FIRMS NOT PAYING A DIVIDEND					DIVIDEND PAYING FIRMS				
Major industry group	N	Before	N	After	After-Before	N	Before	N	After	After-Before
Agriculture	96	-68.612%	90	0.865%	69.477%	18	1.212%	18	2.866%	1.654%
Mining	549	-47.539%	487	-49.919%	-2.380%	124	1.386%	156	4.546%	3.160% **
Oil, Gas & Petroleum	2612	-34.222%	2418	-39.897%	-5.675%	515	1.414%	505	3.426%	2.012% ***
Construction	773	-49.385%	906	-18.510%	30.879%	134	2.405%	192	-31.203%	-33.608%
Food and kindred spirits	1288	-8.030%	1160	-10.105%	-1.455%	361	-16.164%	384	-33.644%	-17.480%
Tobacco products	96	3.804%	96	3.004%	-0.800%	48	2.615%	48	1.575%	4.190% *
Apparel & textiles	731	-13.176%	610	-24.541%	-11.365%	105	-0.584%	110	2.601%	3.185% **
Wood, furniture & fixtures	651	0.506%	480	-67.377%	-67.884% **	173	0.167%	171	1.822%	1.656%
Paper products	856	-14.675%	771	-15.658%	-0.982%	249	-0.342%	238	1.329%	1.672% **
Printing & publishing	1292	-4.298%	1118	-22.842%	-18.353%	410	1.055%	401	0.672%	-0.383%
Chemicals	1172	-16.888%	1086	-40.260%	-23.372%	407	-0.540%	335	-18.036%	-17.497%
Drugs	804	-5.739%	909	-35.001%	-29.263%	168	-1.136%	167	-0.274%	0.862%
Soaps & cosmetics	340	1.190%	253	0.065%	-0.230%	143	0.770%	95	1.308%	0.538%
Rubber	496	-12.317%	471	1.555%	13.872%	163	0.787%	150	1.689%	0.902%
Leather	237	-25.615%	229	2.144%	27.759%	36	0.192%	36	1.113%	0.921%
Stone, clay, glass, concrete	457	-13.552%	304	-18.428%	-4.476%	167	0.813%	136	2.034%	1.222%
Metal products & machinery	3883	-13.602%	3376	-6.466%	7.136%	842	-7.875%	776	2.451%	10.326%
Computers & electronics	3114	-21.360%	2803	-14.514%	6.866%	401	-1.357%	360	2.069%	3.426% ***
Transportation, aerospace, aircraft	1448	-17.876%	1329	-27.847%	-9.971%	342	-0.297%	389	0.891%	1.187%
Measuring, medical, photo, misc mfg	2005	-29.055%	1957	-11.783%	17.272%	272	1.043%	333	1.015%	-0.027%
Transportation, shipping incl air	902	-49.898%	872	-50.747%	-1.050%	151	1.152%	132	3.092%	1.939% *
Telecommunications, incl radio/tv	1221	-62.710%	1172	-60.953%	21.757%	92	-0.173%	158	-42.699%	-42.526%
Electric, gas, water*	2691	-21.737%	2477	-11.828%	9.909%	1079	-6.172%	971	0.883%	7.055%
Wholesale trade - durable and nond	1790	-32.555%	1541	-32.120%	0.436%	354	-16.783%	390	2.427%	19.209%
Retail trade	3592	-28.699%	3306	-21.727%	6.973%	470	-0.109%	615	-9.084%	-8.974%
Commercial banks, SLs*	2480	-33.465%	2418	-23.030%	10.435%	966	-39.917%	1008	-5.083%	34.834% **
Real estate, mortgage bankers, brok	592	-9.818%	415	-45.068%	-35.250%	71	1.105%	92	1.915%	0.809%
Investment banks, dealers, exchange	1040	-30.259%	963	-59.294%	-29.035%	257	1.115%	264	2.458%	1.343%
Insurance companies*	2439	-42.293%	2597	-28.641%	13.652%	651	1.064%	669	-8.390%	-9.453%
Office and Hldg. not bank*	298	-43.611%	138	-138.429%	-94.818%	28	-1.225%	33	2.412%	3.637%
Hotels & casinos	564	0.027%	388	-13.653%	-13.680%	48	2.350%	66	1.377%	-0.976%
Personal services	261	-49.020%	259	-23.819%	25.201%	41	1.178%	61	2.621%	1.443%
Advertising & business services	3077	-38.191%	3106	-23.478%	14.712%	286	-0.701%	406	1.342%	2.043% ***
Prepackaged software	221	-89.355%	228	-55.904%	33.451%	10	-5.061%	17	1.812%	6.892%
Repair services	147	-0.662%	135	-44.600%	-43.938%	28	1.202%	24	-0.311%	-1.513%
Amusement & recreation services	574	-34.212%	497	-37.991%	-3.170%	19	-0.094%	77	3.039%	3.733%
Health services	832	-54.304%	820	-30.080%	24.225%	21	8.072%	84	1.806%	-6.264%
Legal, education, social & misc servi	159	-123.018%	245	-24.290%	98.728%					
Motion picture production & dist.	141	-50.780%	132	-100.280%	-49.491%	18	4.772%	30	-2.051%	-6.822%
Public administration	18	0.412%	24	2.013%	2.201%	8	1.604%	12	0.987%	-0.617%

significance: *** 1%, ** 5%, * 10%

FLUCTUATIONS IN THE ASSESSMENT OF RISK

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INTRODUCTION

Finance teaches that return per unit of risk is the appropriate measure to use to evaluate an investment. This is based upon the expectation that investors are risk adverse and must be compensated for taking on risk. The level of that compensation fluctuates significantly, as the investor's current perceptions of risk varies. After 1982 the economy entered a period of low volatility, often called the "Great Moderation", where fluctuations in GDP, industrial production and employment were significantly lower than the prior decades. This new found economic stability was attributed to factors such as the rise of the service sector, improved inventory control, and better monetary policy. Regardless of its cause, this prolonged period of moderation led individuals and firms to adjust their perception of risk.

Starting in 2002, the bond market was the scene of a significant downward revision of risk, even while the Federal Reserve slowly retreated from the easy money policy which many argue had fueled asset inflation. The objective of this research is to examine the perception of risk within the corporate bond market as the economy moved toward the crisis of 2008. It seeks to identify the extent to which investors' perceptions of the risk inherent in various classes of bonds fluctuated and the lessons that can be learned from this.

DATA AND METHODOLOGY

This research explores the fluctuations in the risk perception of bond market investors from September 27, 2002 (the date the Bloomberg's composite bond series began) through December 18, 2009 by examining both the spreads of corporate bonds over the treasury rate of the same term, as well as the percent of a bond's return due to default risk. All series used are constant maturity. To calculate the percent of a bond's return due to default risk, the end of week yields of composite corporate bonds rated AAA through B and the associated treasury rate provided by Bloomberg were used. These yields are created by Bloomberg "in order to track the corporate bond market by grouping similar bonds together using an internal algorithm in order to get a composite aggregate view of a class of fixed income securities" (Bloomberg Help Desk). Since U.S. Treasury instruments of the same term are exposed to identical risks, except default, the difference between Treasury yields and the composite yields for each bond rating class can be attributed to default risk. Assuming that investments of identical risk and term should have identical expected yields, we can express the relationship of constant maturity Treasury yields of term t, to constant maturity corporate yields of the same term by the following equation.

$$\textbf{Treasury\_Yield}_t = \textbf{Corporate\_Yield}_t * (1 - \textbf{percent of a bond's return due to default risk})$$

Applying this equation to our data, we solve for the percent of a bond's return due to default risk. This will give us a relative measure of perceived riskiness of each bond which will be useful in identifying the changing perceptions of risk. In addition we will also examine how the interest rates of each class of bonds varied over time. Included within this analysis are all available historical constant maturity composite bond yield data and the corresponding treasury yields from Bloomberg for securities with maturities of 3 months, 1 year, and 10 years.

PERIOD IDENTIFICATION AND THE HISTORICAL ENVIRONMENT

An examination of the percent of a bond's return due to default risk, derived from the composite bond series provided by Bloomberg, led to the identification of four separate sequential periods of investor behavior which will be used for this study. (See Figures I, IV, VI below.) Period One extends from the week ending September 27, 2002, (with the initial publication of the series) through the week ending February 11, 2005. It began ten months after the 2001 recession ended, with the economy in a fragile state as the Federal Reserve cut rates until June 2003. From then, the target Fed Funds rate remained at 1% for a year. Low long-term interest rates helped home ownership hit record levels, raising home values. The Dow industrials gradually increased as did worker productivity. In April 2004, employment hit a four year high. In July, the Fed increased the Federal Funds rate to 1.25 and continued to raise rates by 25 basis points every month thereafter for the remainder of period 1. Most

mortgage-related companies looked healthy despite some isolated problems with Fannie Mae and Freddie Mac. Thus the overall environment was one of declining financial risk.

As Period Two began on February 18, 2005, the economic expansion was well underway, with growth continuing throughout the period. The Fed continued to tighten its monetary policy as the sizzling housing sector continued to fuel economic growth and consumer spending. Rising energy prices had some impact, especially on the auto industry. By September 2006, subprime mortgage defaults begin to materialize. Soon after, Freddy Mac announced that it would stop buying the most risky mortgage related securities. Five weeks later, leading subprime mortgage dealer New Century Financial filed for Chapter 11 bankruptcy protection. Most investors did not perceive any extraordinary signs of systemic risk deriving from the mortgage market, thus the Dow continued to rise and broke 13000 in April 2007. Until this period's abrupt end, investors perceived only minor differences in the level of risk associated with bonds of various classes. (See Figures I, IV, VI below.)

Period Three began abruptly on June 1, 2007 with market participants grasping the degree of systemic risk originating from snbprime mortgages. The percent of a bond's return due to default risk rose rapidly as Standard and Poor's and Moody's announced a wave of downgrades on hundreds of mortgage-related securities. (See Figures I, IV, VI below.) This sent ripples of fear and uncertainty throughout the financial markets as investors adjusted to the rating agencies' misjudgments. Despite this, during the second week, the Dow rose above14000. The following week, continuing losses forced Bear Stearns to liquidate two of its mortgage hedge funds. In response to liquidity pressures in the financial markets intensifying, the Federal Reserve began cutting the Fed funds rate, moving towards the zero barrier, and the Treasury announced programs to help stop home mortgage defaults. The Dow continued to fluctuate but remained in the 12000-13000 range despite the fact that we would later learn that the U.S. had entered a recession in January 2008.

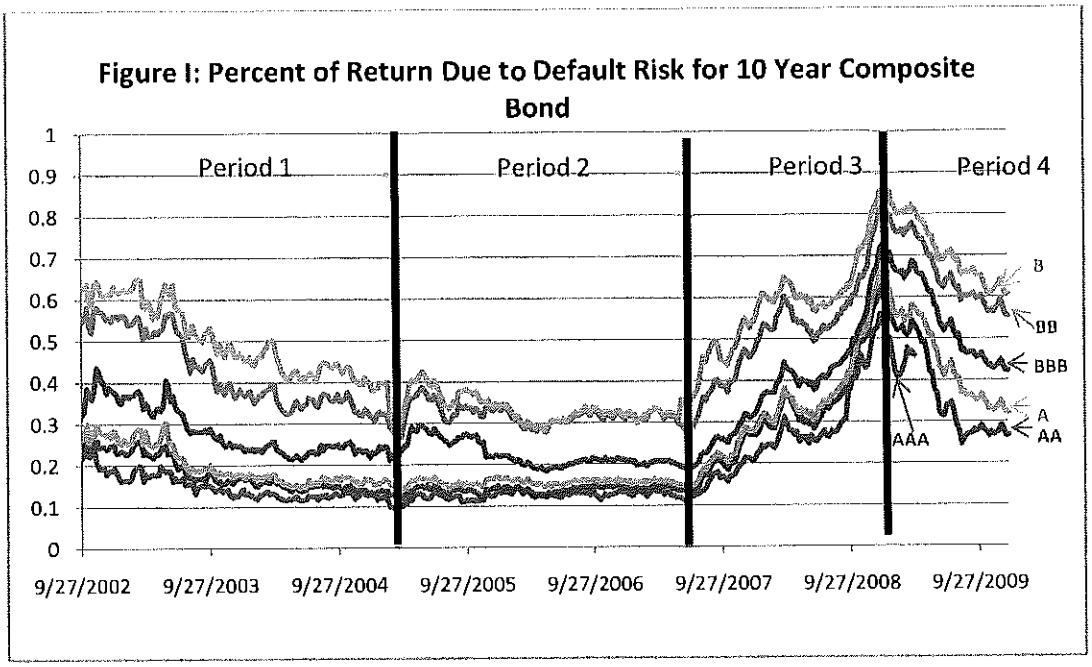
As the new year began, the mounting news concerning the extent of late mortgage payments and multi-billion dollar write downs by financial institutions continued to accumulate. In March, the Fed helped JP Morgan Chase buy a collapsing Bear Sterns. By September 2008, financial turmoil coupled with recessionary impacts and further mortgage related problems spawned an unprecedented flight from risk in the financial markets. A partial list of the historic market shaking events include Fannie Mae and Freddie Mac being placed in government conservatorship, Lehman Brothers Holdings Inc. filing for Chapter 11 bankruptcy protection, and the Federal Government's bailout of American International Group. With these unprecedented problems, the Federal Reserve, Treasury and other regulatory entities collaborated to create unprecedented programs aimed at restoring order in the financial markets. These included the Treasury temporarily guaranteeing money market mutual funds, the FDIC increasing deposit insurance coverage to $250,000, the passing of the Emergency Economic Stabilization Act of 2008which created TARP, and the Federal Reserve's creation of various collateralized lending programs. As these events unfolded, treasury rates dropped towards zero and the percent of the return of each composite bond series associated with default risk rose sharply. (See Figures I, IV, VI below.)

The fourth period began on December 19, 2008 as the accumulating financial news of damage derived from mortgage related securities began to slow and a complete economic collapse no longer seemed imminent. Unprecedented Fiscal and Monetary policy actions to provide liquidity and mitigate fear in financial transactions began to "unstick" markets. As this perception began to enter the calculations of market participants, the proportion of each bonds return due to default risk began to decline. (See Figures I, IV, VI below.) In addition, each of the figures clearly show that as the turmoil receded the returns for each class of bond due to default risk began to reflect the risk implied by its rating. The period ends on December 18, 2009 with the end of our data set.

Investor Assessment of Risk in the Ten Year Corporate Bond Market

We will now focus our attention on changes in the market's perception of long term risk. Figure I graphs the percent of return due to default risk for Bloomberg's 10 year composite bond series during each of our four time periods. As shown in Figure I, the percent of return due to default risk for ten year corporate bonds of all ratings generally fell during this period. In addition, the impact of the "Great Moderation" on bonds of each rating varied. As shown in Table I, the AAA to Treasury premium fell from 1.04% to .47% during period 1. Only the spread for A over AA rose during this period and that only happened towards the end of the period. In addition, the spread between A and BBB dropped only slightly, while the spreads between BBB, BB and B indicate that the market perceived a falling difference in riskiness among these instruments. Towards the end of the period in February 2005, the "Great Moderation" had lulled investors into reducing their estimates of the risk of highly speculative B and BB rated bonds relative to AA and to almost bundle AAA through A into a single class of risk. (See Figure II and Table

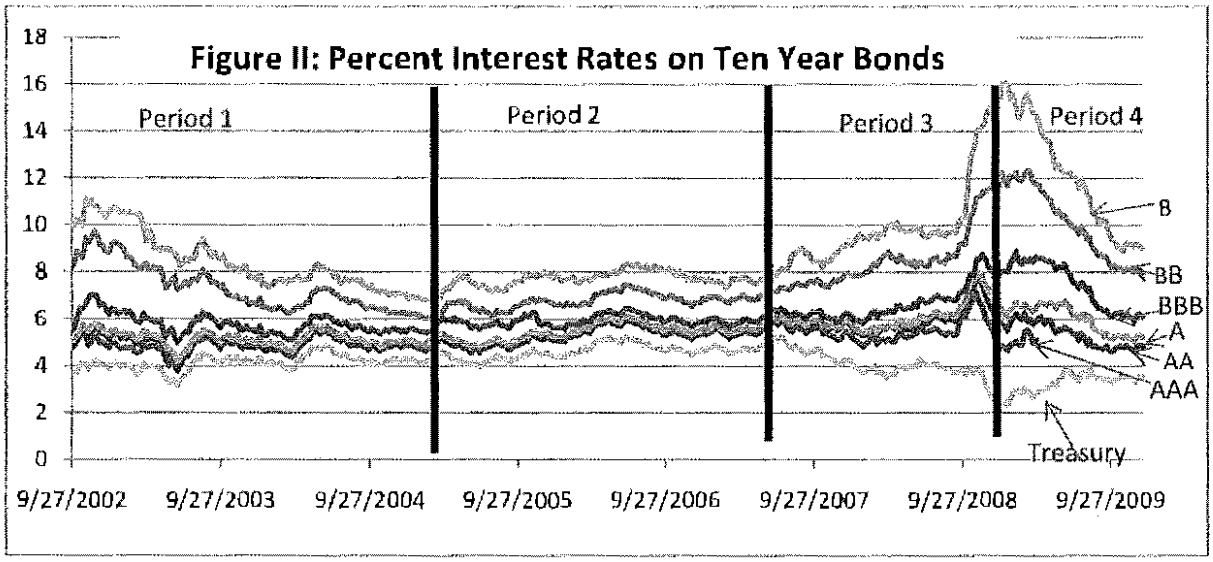
I). Clearly, investors searching for higher returns increasingly bid up the price of the lower rated bonds, disregarding their rating even as the Fed tightened the fed funds rate to 2.5%.



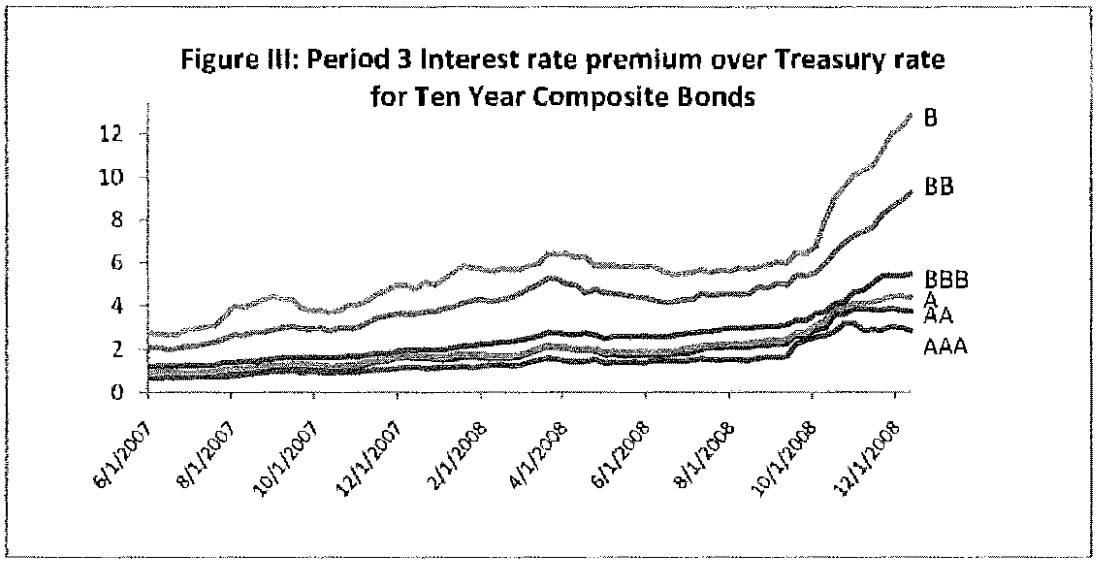
In general, period two begins as the rapid decline in percent of a bond's return due to default risk comes to an end. This period is characterized by evidence suggesting a pervasive rejection in the notion that bond ratings are highly related to default risk. As an examination of Table I illustrates that between the start of period 2 and its end, the spreads between AAA through BBB fell even as 10 year interest rates rose slightly as shown in Figure II. In essence the market had moved to characterize the risk of corporate bonds into two classes, AAA through BBB and BB through B. However, this appears to be only a minor distinction since the spread between BBB and B ten year bonds which appears sizable in Figure II was only .88% by the end of period 2.

Table I: Risk Premium Spreads in Percent-Ten Year

	AAA premium over T	AA premium over AAA	A premium over AA	BBB premium over A	BB premium over BBB	B premium over BB
start of period 1	1.048	0.200	0.090	0.420	2.700	1.730
start of period 2	0.478	0.150	0.150	0.370	0.610	0.760
start of period 3	0.671	0.120	0.090	0.310	0.880	0.700
start of period 4	2.734	0.720	0.800	1.210	3.880	3.440
end of period 4	NA	NA	0.380	0.910	1.830	1.050



Period three began with the realization that default probabilities had been severely underestimated and a flight from risk materialized. This can be seen in the dramatic rise shown in Figure I, as well as the change that occurred in the spreads reported in Table I. By November 28, 2008 the percent of a AAA bond's return due to default exceeded 50%, which one year earlier, on November 16, 2007, was the level attributed to low rated B bonds. Clearly, the market was having significant trouble in evaluating the level of risk of these instruments.



Amid the chaos of the near financial meltdown, the confidence of investors in the ability of bond ratings to differentiate risk appears to have been severely weakened. While investors appear to have quickly regained the perception that a bond rating of AAA indicated some relative measure of safety, an examination of Figure III suggests that this was not true for lesser rated bonds. The spread between Treasuries and AA and A rated bonds converged and as the period wore on approached BBB. In addition, the compensation required for the lowest rated bonds diverged significantly from BBB. By the end of the period, Figure III and Table I illustrate that the spreads between each class of bonds had widened as the market fully acknowledged risk differences in bonds with different ratings.

Period four began as the accumulation of chaotic financial news slowed. As an examination of Figure I illustrates that the percent of return due to default risk fell significantly. As this occurred, the market has so far exhibited different behavior than that observed in period one. While technical reasons forced Bloomberg to stop issuing the AAA series, the spread between the other series have remained relatively large as shown in Figure II and Table I. Currently the market is exhibiting behavior which suggest that it perceives a difference in risk between bonds of each rating. While monetary and fiscal policy intervention was able to mitigate the contagion fear that had swept the financial system during period 3, the market is continuing to require additional compensation from bonds with lower ratings even as the overall level of risk perception declines. This suggests that investors are explicitly acknowledging a concrete difference in risk between various bond ratings, and that the extremely loose monetary policy of the Federal Reserve is not currently fueling a search for returns which ignores risk.

Investor Assessment of Risk in the One Year Corporate Bond

As with the ten year bond series, the return due to default risk for one year bonds exhibited a downward pattern with tightening spreads (see Table II). By the end of period 1, the spread between each bond rating (except for A to AA) fell significantly, with the lower rated bonds exhibiting much larger declines. Even as the Federal Reserve began to tighten in July 2004, spreads continued to decline as shown in Table II and Figure V. By the end of period 1, the spread between AAA and B securities had been reduced to 1.38%.compared to the gap between AAA and B ten year bonds of 2.04%. This illustrates that risk perceptions were falling faster in the one year market despite Federal Reserve tightening.

Figure IV: Percent of Return due to Default Risk for One Year Composite Bond

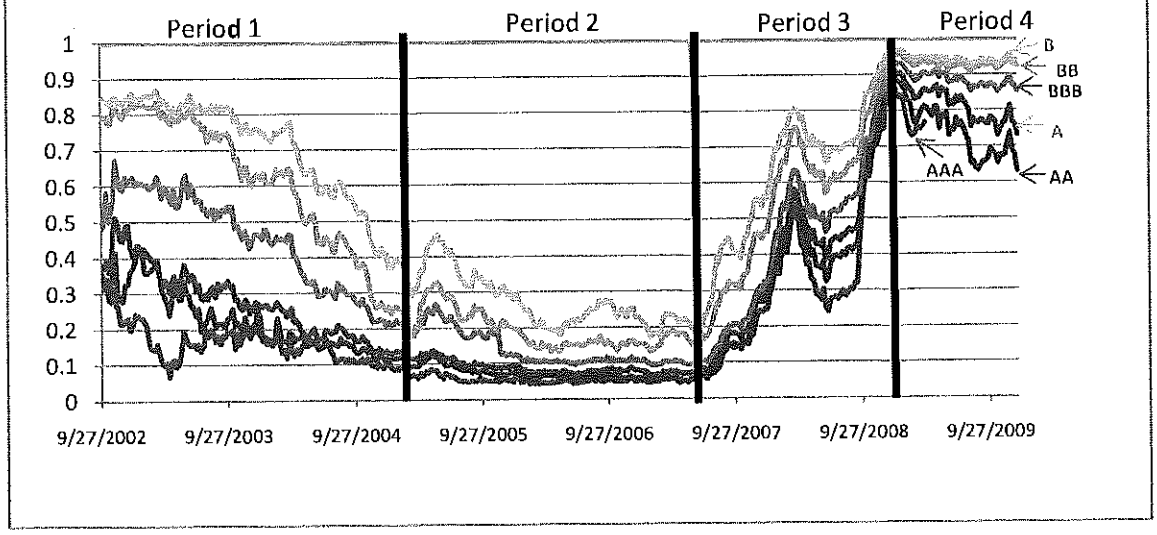
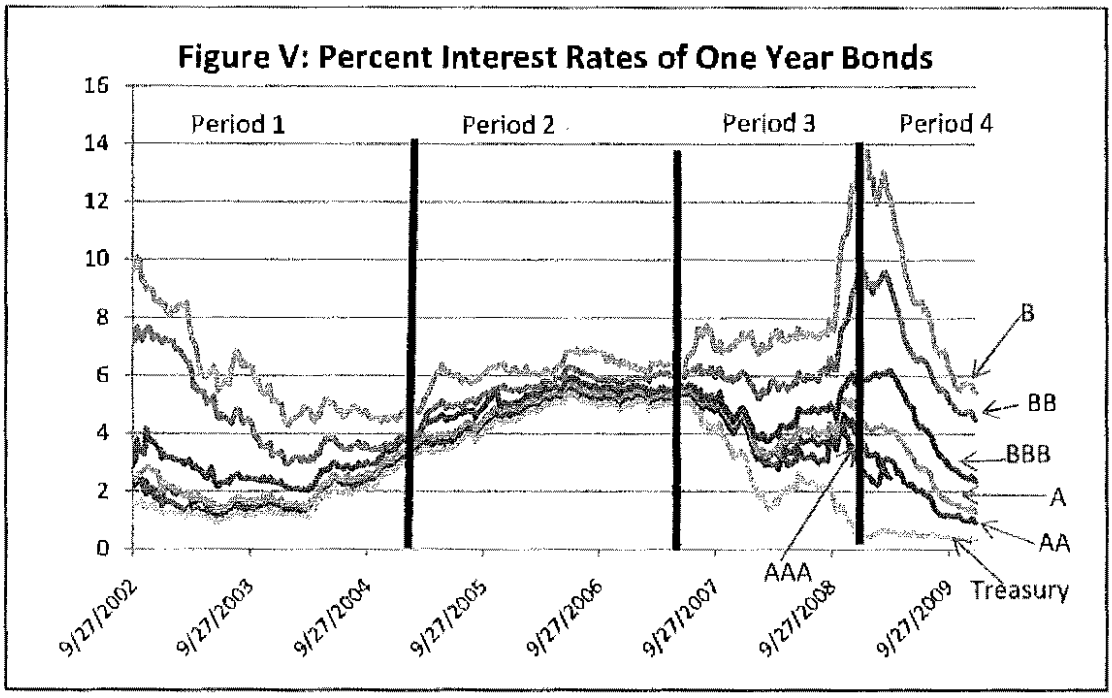


Table II: Risk Premium Spreads in Percent-one year						
	AAA premium over T	AA premium over AAA	A premium over AA	BBB premium over A	BB premium over BBB	B premium over BB
start of period 1	0.679	0.150	0.090	0.480	4.430	2.320
start of period 2	0.274	0.070	0.110	0.220	0.180	0.800
start of period 3	0.306	0.010	0.090	0.120	0.360	0.290
start of period 4	2.489	0.830	0.820	1.110	3.780	3.490
end of period 4	NA	NA	0.35	1.07	2.14	0.95



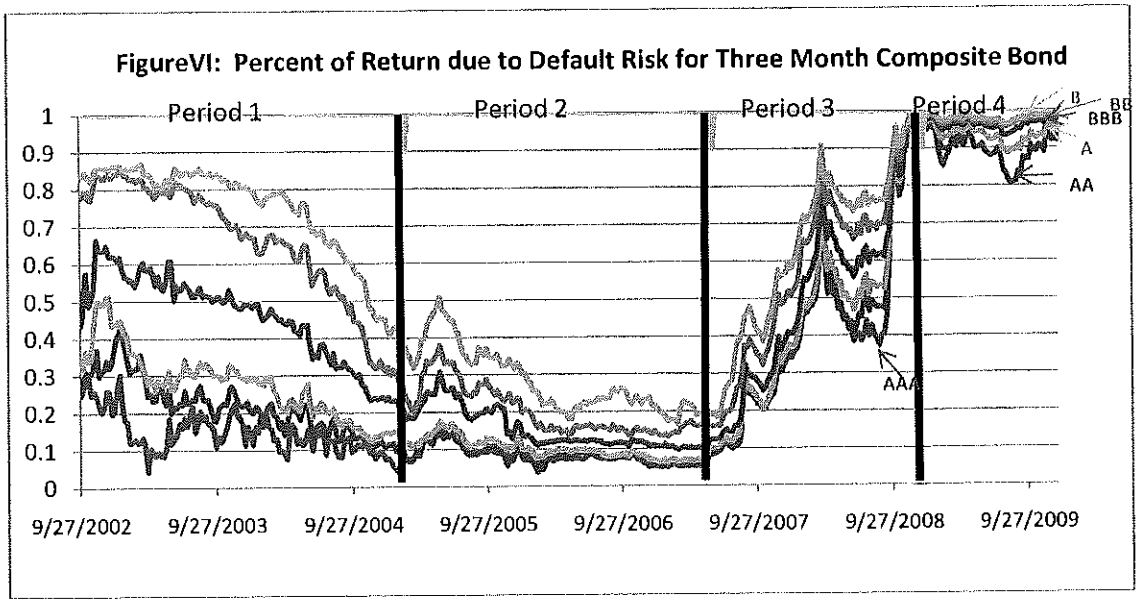
As Period two began in February 2005, the downward movement in percent of return due to default risk slowed (See Figure IV) even while the spreads further tightened. By May 2006 the spread between AAA and B securities had declined to .83% and the risk premium of B securities over Treasury bonds had decline to 1.1%. Thus the market was embracing the notion of the Great Moderation and the end of risk. However as time wore on, BB and B rated one year securities began to diverge from the others as evidence of risk began to seep into the financial news.

As Period Three began on June 1, 2007, a crisis of confidence was emerging in the market and altering risk perceptions. Surprisingly, as shown in Figure V, all rates except the B and BB bonds fell in response to Federal Reserve liquidity injections. The rates of AAA through BBB bonds began to rise after financial news gradually worsened, which additionally led to the American Recovery and Reinvestment Act of 2009. The one year investment grade bonds demonstrated similar movement to the ten year investment grade bonds as the percent rates increased. As the one year investment grade bond rates rose, the spreads among the bonds started to become restored. By the end of Period Three, the spread between treasuries and AAA bonds exceeded Period Two's spread between treasuries and B bonds. In addition, the spreads between BBB and B bonds were similar for both ten and one year composite bonds. Clearly investors reevaluated risk in the corporate bond market.

Period four began as Treasury one year rates approached the zero barrier. During this period, all one year rates fell. However, Figure V and Table II indicate, that the market continued to require larger spreads between bonds of different ratings. Even as interest rates have begun to decline in the face of loose monetary policy and a slack economy, spreads remained large. This suggests that the market is acknowledging the risk implied by bond ratings.

Investor Assessment of Risk in the Three Month Corporate Bond

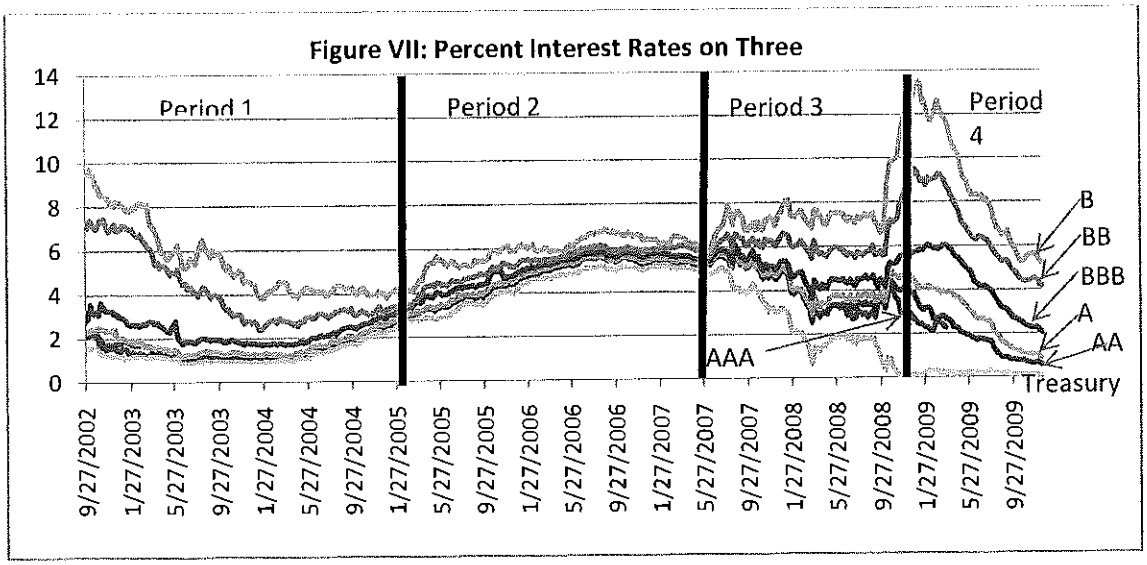
Figure VI graphs the percent of return due to default risk for Bloomberg's three month composite bond series. As the figure illustrates the assessment of risk by market participants within this market paralleled that of investors in the one year market.



During period one, investors in this market followed other market participants in lowering their perception of risk. This can be seen in Table III and Figure VII. As rates fell initially in period one in response to Federal Reserve policy, spreads between each class of bonds fell, and continued to do so, even as policy tightened later in the period. By the end of period one, the spreads between bonds of different ratings had been significantly reduced, with the most significant changes occurring for the lesser rated bonds.

Table III: Risk Premium Spreads in Percent-Three Month

	AAA premium over T	AA premium over AAA	A premium over AA	BBB premium over A	BB premium over BBB	B premium over BB
start of period 1	0.517	0.140	0.090	0.470	4.410	2.230
start of period 2	0.196	0.010	0.140	0.230	0.220	0.710
start of period 3	0.448	0.050	0.050	0.140	0.240	0.220
start of period 4	2.857	0.930	0.780	1.000	3.680	3.320
end of period 4	NA	NA	0.31	1.15	2.16	1.03



In period two, the "great moderation" continued with investor perception of risk falling as shown in Figure VI and Table III. Even in the face of market turmoil that began to be apparent by the end of period two, the risk premiums associated with the lower rated bonds remained stubbornly low and the spread between different ratings remained small.

As period three began the turmoil of accumulating subprime defaults caused the percent of return due to default risk soared as treasuries rates plummeted in response to a flight to safety and Central Bank liquidity injections. As Figure VII shows, the spreads and interest rates associated with the lower rated bonds (B and BB) rose almost immediately, following the pattern of one year bonds. Rates on higher rated bonds initially fell even as the spread to Treasuries widened. It was only at the end of period three that the market began to require significantly different risk premiums for AAA through BBB bond.

As we entered period four, turmoil in this market also abated. Table III and Figure VII indicate that while the market perception of risk is declining, with bond rates dropping toward treasuries. As in each of the bonds examined, the spread between bonds of different ratings is not collapsing, with investors continuing to require significant premiums for investing in lower rated bonds.

CONCLUSION

This study tracks a significant decline in the perception of relative risk that occurred in the bond market from February 18, 2005 through June 1, 2007. During that period the spreads between bonds of different ratings generally collapsed, with the AAA to B interest rate spreads dropping 300, 700, and 680 basis points for ten year, one year, and three month bonds respectively; thus, a greater moderation on the short end of the yield curve. BBB essentially became investment grade as its spread to A bonds reduced to .3, .12, and .14 percent for ten year, one year, and three month bonds, respectively. However, as the figures illustrate, the spreads between the ten year B and BB bonds remained on average one percent higher than spreads for the shorter maturities. This indicates that there was still some perception of longer run risk in the lower rated instruments.

The financial crisis ended this, with the divergence of interest rates occurring much faster in Period Three. Ten year bond rates rose faster and higher than shorter term rates, with the lowest rated bonds leading the pack as investors required significantly more compensation for risk. While ten year rates generally rose throughout the Period Three, one year rates exhibited more fluctuation by falling, then rising slowly until a sudden increase at the end of the period. The three month rate in contrast fell initially and then stabilized until it rose with the other terms. However by the end of period three, all markets were moving to reestablish the spreads between different bond ratings with spreads of 402, 405 and 407 basis points for the ten year, one year, and three month bonds respectively occurring by the end of our study. Thus, bond ratings appear to have regained the relevance to investors that they lost during the Great Moderation.

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ARE GENERATION Y (MILLENNIAL) CONSUMERS BRAND LOYAL AND IS THEIR BUYING BEHAVIOR AFFECTED IN AN ECONOMIC RECESSION? A PRELIMINARY STUDY

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ABSTRACT

The buying behavior of college students, members of the Millennial Generation, is of particular interest to marketers as they strive to understand the patterns of purchasing of the wealthiest generation. To date, there have been conflicting results regarding the Millennial Generation and their degree of brand loyalty. Using a sample of 68 undergraduate students, brand loyalty, customer satisfaction, and the effects of an economic recession on buying behavior were evaluated. Results suggest that college students are not brand loyal consumers, that there are no gender differences with regard to overall brand loyalty, and that purchase behavior has not been greatly affected by the economic recession. Implications and recommendations for future research are presented.

INTRODUCTION

This paper examines the concept of brand loyalty and the characteristics of the generation known as the Millennials. Brand loyalty is defined as the biased behavioral response expressed over time by a decision-making unit, with respect to one brand out of a set of such brands, and is a function of psychological processes (Jacoby and Chestnut, 1978). The Millennial Generation is the generation of individuals that were born starting in 1982 and began attending college in 2000 (DeBard, 2004).

Recent research (Caplan, 2005; DeBard, 2004; Ritchie, 1995) on the Millennial Generation has shown that marketers are constantly striving to understand the Millennials' buying behavior and brand loyalty patterns. And with the onset of an economic recession, marketers should understand if and how the current recession has affected college students.

LITERATURE REVIEW

The majority of research that has been conducted on Generation Y has actually proclaimed Generation Y to be a misnomer, as it indicates that Generation Y is merely a continuation of Generation X. Instead, researchers today prefer to call the generation born since 1982 as the Millennials (Beirne and Howe, 2008). Starting in 2000, when the Millennials began attending college, they began to be studied by researchers and marketers to determine the generation's overriding characteristics. Millennial college students are the most racially and ethnically diverse, as enrollment of women and minorities has increased while enrollment of white students has decreased (DeBard, 2004). Millennials make long-term plans, believing they are capable of accomplishing anything. However, Millennials expect high grades to mark their achievement but will only do what is expected of them to get those high grades (DeBard, 2004). While older generations lament the ever-increasing usage of technology by the Millennials, this technology is just a tool used by Millennials to fulfill their desire of being part of a community (Beirne and Howe, 2008). Millennials are also considered to be sheltered and both expect and want rules to be clearly communicated and properly enforced (DeBard, 2004). It is evident that Millennials like to follow rules, as violent crime by teens has fallen by 70%, teen pregnancy and abortion has fallen by 35%, and consumption of tobacco and alcohol is lower than ever before. Millennials believe in the benefits of community service, participating in elections, and working for companies that give back to the community (Beirne and Howe, 2008). Unfortunately, it

has also been found that Millennials are studying less and are not as concerned about important issues, such as the environment or race relations (Sax, 2003).

Because Millennials are wealthier than previous generations, marketers understandably want to learn how to market to this generation. While Millennials are trusting of certain authority, they are skeptical of advertising that is targeted to them (Kapner, 1997). Because Millennials value products for their necessity to their lives, they dislike advertising because it often causes them to buy things they do not need. Millennials question the truth in advertising and believe marketing to be misleading. They believe that advertising leads to higher product price, which conflicts with their desire for the lowest price possible (Beard, 2003). Even though Millennials are wealthier than previous generations, they describe themselves as "poor college students", so marketers should not position their products as a luxury if they want Millennials to buy it (Phillips, 2007).

Research that has been completed on Millennials and the concept of brand loyalty has resulted in two conflicting theories. The first is that Millennials are not brand loyal consumers. A study done by K. Ritchie showed that they are less brand loyal than previous generations due to the constant bombardment of promotions (Ritchie, 1995). Phillips (2007) stated that Millennials believe themselves to be reasonable, price-oriented consumers who are not influenced by an attraction to a certain group of brands. Millennials value price and features as the most important attributes of a product, instead of brand name. Millennials want products that match their lifestyle or personality, which is why brand is of almost no importance (Caplan 2005).

The second is that Millennials are brand loyal consumers. Brands will become bigger than ever, as Millennials identify the idea of a big brand as being a return to community. Millennials are loyal to brands whose products not only provide for the individual but also for the community as a whole (Beirne and Howe, 2008). Millennials are committed to a brand as long as it provides for their needs (DeBard, 2004).

The current economic recession is presently a source of great concern as marketers attempt to determine the current buying behavior of consumers. Consumers are changing their buying behavior and greatly decreasing their overall spending (Creamer, 2008). Consumers have been coined as "recession shoppers" as they utilize the Internet more than ever to find the best possible price (PR Newswire Association LLC, 2009). Consumers are also saving more than ever before (Crutsinger, 2009). Products that were low price already are subject to brand switching, due to the consumer's low involvement. Advertisers of these types of products must emphasize the benefits of the brand (Creamer, 2008).

Marketers are trying to do as much as they can to preserve brand loyalty. Marketers have attempted to create an emotional attachment with their customers, believing that once customers become attached, they will not switch to another brand, regardless of price (Hamilton, 2009). Unfortunately, consumers are more likely than ever to become brand switchers, especially to private labels, as they look for lower-price alternatives to what they normally purchase. Customers are abandoning brand loyalty and experimenting with different but cheaper brands. It seems that grocery store items are most affected by brand switching; products ranging from food, paper goods, and personal-care items are victims of either brand switching or being purchased less frequently, as shoppers stretch out the use of these products for as long as possible (Byron, 2008). While the sales of luxury items has decreased somewhat, it seems that luxury items have the most brand loyal consumers. Consumers are willing to save up their money for these luxuries; they justify paying top prices for these items by saving and reducing spending on other lower-priced items (Heher, 2009). It appears that the best and most innovative brands have been or will continue to be able to hold their value, despite the current recession (Hamilton, 2009).

HYPOTHESES

The current study is designed to improve our understanding of the brand loyalty behavior of Millennial consumers. It utilizes a partial replication of Bennett and Rundle-Thiele's (2002) Propensity to be Brand Loyal scale and self-reported purchase behavior. The current study also intends to establish the buying behavior of Millennials in an economic recession. It is hypothesized that:

H1: College students believe themselves to be brand loyal.
H2: There are no gender differences in reported brand loyalty.
H3: College students are brand loyal to higher price items, such as MP3 players and laptop computers.

H4: College students are not brand loyal to commodity goods or supermarket items, such as gum or candy.
H5: The buying behavior of college students has not been greatly affected by the economic recession. Therefore, college students' degree of brand loyalty will not be affected by the recession.

METHODOLOGY

A paper and pencil survey was designed. It incorporated Bennett and Rundle-Thiele's (2002) Propensity to be Brand Loyal Scale, Jones and Sasser's (1995) Apostle Model (customer satisfaction and customer loyalty), and Sloot et al.'s (2005) designations for behavioral responses to out of stock situations (brand loyalty). Bennett and Rundle-Thiele's (2002) Propensity to be Brand Loyal scale consists of seven items measured with a 5-point Likert scale with the verbal anchors of 1 = Strongly Disagree and 5 = Strongly Agree. Sloot et al.'s (2005) consumer responses to out-of-stock situations were also measured using a 5-point Likert scale with the verbal anchors of 1 = Strongly Disagree and 5 = Strongly Agree. Jones and Sasser's (1995) Apostle Model was also used to help us understand customer satisfaction and loyalty. Again a 5-point Likert scale with the verbal anchors of 1=Strongly Disagree and 5 = Strongly Agree was used. Additionally, the survey included self report questions regarding purchasing behavior in particular brand categories, as well as the most important reasons for purchasing a product. Finally, questions were asked about the recession and its impact on the respondent, as well as demographic information.

The survey was administered to students in various business classes at a small private liberal arts college in upstate New York. There were not inducements for participation. A total of 68 responses was collected. Sample characteristics are displayed in Table 1 below. The sample consisted of 62% females and 38% males, which closely resembles the gender distribution of the institution. Additionally, the sample was comprised mostly of juniors (51%) and seniors (34%).

Table 1: Sample Characteristics

	Number (n=68)	Percent
Gender		
Male	26	38%
Female	42	62%
Age		
19 and under	3	4%
20	20	29%
21	21	31%
22	18	27%
23-25	4	6%
Over 25	2	3%

RESULTS

Data was input and analyzed in SPSS. A reliability analysis of the Propensity to be Brand Loyal scale suggests that the scale performed well, with an overall alpha of .7462. This is deemed to be acceptable given Nunnally's (1978) recommendations. Mean and standard deviation values for scale items are included in Table 2. In addition to evaluating each scale item, an overall mean score for the Brand Loyalty Scale was calculated for each respondent. The overall mean score was 3.07. With 3 indicating the "Neutral" point on the scale, results suggest that the sample "leans" toward brand loyalty. This does not provide support for H1. Interestingly, we asked respondents to answer the question: "Overall, do you consider yourself to be a brand loyal consumer?" 53 respondents, or 77.94 percent of the sample, responded yes, they were brand loyal consumers. 15 respondents, or 22.06 percent of the sample, responded no, they were not brand loyal consumers. Using the overall measure of brand loyalty as the dependent variable, we conducted an F-test between those that responded they were brand loyal and those that responded they were not. Findings were significant at $p<=.1$ but not at $p<=.05$. ($F=2.653$, p value= .078, eta squared of .075).

Looking at gender differences and H2: we note overall brand loyalty for men (3.17) and for women (3.01), resulting in an F-value of 1.304 and a significance value of $p=.258$. Therefore H2 is supported: there are no significant differences in brand loyalty based on gender.

Table 2: Means and Standard Deviations for the Propensity to Be Brand Loyal Scale Items

Scale Item	Mean*	Standard Deviation
I would rather stick with a brand I usually buy than try something I am not sure of.	3.65	.82
If I like a brand, I rarely switch from it just to try something different.	3.79	.76
I rarely introduce new brands and products to my friends and family.	2.59	.95
I rarely take chances by buying unfamiliar brands even if it means sacrificing variety.	2.78	.96
I usually buy the same brands even if they are only average.	2.59	.92
I would rather wait for others to try a new brand than try it myself.	2.82	.99
I would rather stick with well-known brands.	3.32	.95

*5 Point Likert Scale: 1 = Strongly Disagree 5 = Strongly Agree

To better understand brand loyalty as reflected through actual buyer behavior, respondents were asked to identify their preferred brand for fourteen product categories, then to rate their loyalty to that brand, and finally to indicate how many brands of that particular product category had been purchased over an indicated period of time. See Table 3 for the results of durable products purchased in the last four years. As brand purchase behavior results suggest, college students are most brand loyal to laptops, cell phones, and MP3 players. However, they are not completely brand loyal to any product categories as none of the mean scores are exactly 1.00. See Table 4 for the results of non-durable products purchased in the last four months. As the results suggest, college students are most brand loyal to toothpaste and deodorant. However, they are not completely brand loyal to auy product categories as none of the mean scores are exactly 1.00. Note that respondents were asked to indicate their brand loyalty (7 point Likert scale with verbal anchors of 1=absolutely no brand loyalty and 7=extremely brand loyal) to the particular brand in a product category that they identified as their preferred brand. Results suggest highest brand loyalty to cell phones, MP3 players, and deodorants.

Table 3: Self Report of Product Purchase within the Last 4 Years

Product	Mean* (Brand	Number/percent (n=68) indicating degree of brand	Number/percent of women (n=42) indicating being	Number/percent of men (n=26) indicating being	Mean Score of Different Brands Purchased in Last

Category	Loyalty to Preferred Brand)	loyalty between "sometimes," "often" and "extremely"	"extremely brand loyal" to preferred brand	"extremely brand loyal" to preferred brand	Four Years
Sneakers	4.81	48 (71%)	8 (19%)	6 (23%)	2.19
Laptops	4.9	46 (68%)	11 (26%)	6 (23%)	1.13
Boots	3.69	32 (47%)	7 (17%)	4 (15%)	1.27
Jacket/Coat	4.12	36 (53%)	2 (5%)	5 (19%)	1.34
Cell Phone	5.35	52 (76%)	11 (26%)	11 (42%)	1.44
MP3 Player	5.49	54 (79%)	13 (31%)	12 (46%)	1.03

*7 Point Likert Scale: 1 = Absolutely No Brand Loyalty 7 = Extremely Brand Loyal

Table 4: Self Report of Product Purchase within the Last Four Months

Product Category	Mean* (Brand Loyalty to Preferred Brand)	Number/percent (n=68) indicating degree of brand loyalty between "sometimes," "often" and "extremely"	Number/percent of women (n=42) indicating being "extremely brand loyal" to preferred brand	Number/percent of men (n=26) indicating being "extremely brand loyal" to preferred brand	Mean Score of Different Brands Purchased in Last Four Months
Gum	3.97	34 (50%)	7 (17%)	4 (15%)	2.4
Candy	3.37	25 (37%)	2 (5%)	2 (8%)	2.88
Beer	3.94	32 (47%)	1 (2%)	4 (14%)	2.53
Cigarettes	1.91	15 (22%)	7 (17%)	1 (4%)	1.50
Bottled Water	4.1	35 (51%)	7 (17%)	3 (12%)	2.68
Chips	3.71	31 (46%)	1 (2%)	3 (12%)	2.97
Toothpaste	4.66	41 (60%)	8 (19%)	5 (19%)	1.49
Deodorant	5.32	54 (79%)	10 (24%)	10 (38%)	1.29

*7 Point Likert Scale: 1 = Absolutely No Brand Loyalty 7 = Extremely Brand Loyal

In order to test H5, respondents were asked questions regarding the current economic recession and if/how it has affected their buying behavior. A total of 36 respondents (53%) responded that the current economic recession has not affected their spending in the past six months and 41 respondents (60%) said they have spent over $200 on a single purchase in the past six months. Additionally, 42 respondents (62%) said that they do not find themselves saving more than before the recession began. Lastly, 32 respondents (47%) believe that the current economic situation will improve in the time period of over a year but under two years. To further evaluate H5, an F-test was conducted. Results suggest no significant difference between respondents' perceptions of when the economic situation will improve and their overall brand loyalty ($F=1.482$; $p=.228$). This is further supported by reviewing the pairwise comparisons. See Table 5 below. Interestingly, those believing that the economic situation is going to improve within the next 4 – 6 months report the lowest overall brand loyalty. In fact, their score of 2.82 suggests they are not brand loyal as they fall below the neutral point of 3.

Table 5: Overall Brand Loyalty and When the Economic Situation will Improve

	Overall Brand Loyalty Score*	Std. Deviation	N
4-6 months	2.82	.43	8
7-12 months	3.25	.57	15
Over a year, but under two years	3.0	.64	32

Over two years	3.22	.44	13

*5 Point Likert Scale: 1 = Strongly Disagree 5 = Strongly Agree

DISCUSSION

From the results from the Propensity to be Brand Loyal scale, we can conclude that the Millennial Generation does not perceive themselves to be brand loyal overall. Therefore our results are consistent with Caplan (2005), Phillips (2007), and Ritchie (1995). In actuality, they "score" relatively close to the neutral point. Additionally, we note that there are no significant differences based on gender or based on age within the sample. It is also interesting to note that we applied the scale as a measure of overall brand loyalty and the scale demonstrated good reliability with all items loading resulting in a single factor scale. When applied to a specific product category in previous research, the scale did not perform as well, and results suggested eliminating 3 factors from the scale (Bennett and Rundle-Thiele, 2002).

It is also interesting to note the actual mean scores on scale items and the managerial implications that they potentially have. The three items of "I would rather stick with a brand I usually buy than try something I am not sure of.", "If I like a brand, I rarely switch from it just to try something different.", and "I would rather stick with well-known brands." all have a mean within the neutral range. This indicates that familiarity with a product and familiarity with brand name product may not be as important to college students. Unlike other generations, college students are not concerned with being familiar or having a comfort level with a product. Instead, they like variety, they want quality products, and they are not afraid of the risk of trying new things. This is supported by mean scores in the "disagree" range (2 on the Likert scale) for the following four items: "I rarely introduce new brands and products to my friends and family.", "I rarely take chances by buying unfamiliar brands even if it means sacrificing variety.", "I usually buy the same brands if they are only average.", and "I would rather wait for others to try a new brand than try it myself." It is evident that when marketing products to college students, marketers must understand their variety-seeking behavior.

While we note no significant gender differences in overall brand loyalty, a review of Tables 3 and 4 does provide some interesting insight into product category specific differences. Looking at the percent of men and women indicating that they are "extremely brand loyal" to their preferred brand, we note double digit gender differences in jackets/coats, cell phones, and MP3 players, with men reporting much stronger brand loyalty in each case. For example, 42% of men report being extremely brand loyal to their preferred cell phone brand whereas only 26% of women do. Similarly, 46% of men report extreme brand loyalty to MP3 players relative to 31% of women.

When we further review self-reported buyer behavior, we reach the conclusion that the Millennial Generation does report varying degrees of product category specific brand loyalty. We surmised that college students are brand loyal to higher price items, such as MP3 players and laptop computers. The higher price product categories were sneakers, laptop, boots, jacket/coat, cell phone, and MP3 players. From the results, we can see that while 48 (71%) respondents indicated some degree of brand loyalty for sneakers. The mean number of brands purchased, 2.19, indicates that on average two different brands of sneakers have been purchased within the last four year. All other higher price items have a mean number purchased between 1.00 and 1.50, which suggests that respondents have a higher degree of purchase loyalty and brand loyalty to these product categories. However, we must also acknowledge that the average useful life of some of these products may be longer than four years, which would decrease the reported number of brands purchased in that period of time. The two highest priced items, MP3 players and laptops, have the highest degree of brand purchase loyalty with mean scores of 1.03 and 1.13 respectively, but this also may be a function of the product life...students may not replace their laptops or MP3 players within a four year time frame. Looking at the overall brand loyalty scores, we note the highest overall brand loyalty scores for MP3 players and cell phones.

The fourth hypothesis was college students are not brand loyal to commodity goods or supermarket items. The product categories were gum, candy, beer, cigarettes, bottled water, chips, toothpaste, and deodorant. Gum had a mean number of brands purchased of 2.4, candy was 2.88, beer was 2.53, bottled water was 2.68, and chips was 2.97; these mean scores indicate college students are not brand loyal consumers of gum, candy, beer, bottled water, and chips. Surprisingly, the product categories of cigarettes, toothpaste, and deodorant all had mean scores between

1.00 and 1.50. It would seem that respondents have a degree of brand loyalty to personal hygiene items, as well as cigarettes. College students enjoy variety so if an item is not expensive, is not as important to them, and is a supermarket/commodity good, they appear more likely to experiment and try different brands. While they may ultimately have a preferred brand, they seemingly do not have a strong attachment that translates into exclusive purchase of the preferred brand. In fact, they are willing to try another brand. For personal hygiene items and cigarettes, it seems that college student find a brand they like and remain loyal to it.

With regard to the final hypothesis, we note that the buying behavior of college students has not been greatly affected by the economic recession. While others have clearly been affected and have changed their buying behavior, the results show that college students have not greatly changed their spending or saving habits. Further, the recession has not impacted the brand loyalty of college students either. Regardless of the perception of the economy, there are no significant differences in the reported levels of overall brand loyalty. Additionally, over 60 percent of the sample stated they have spent over $200 on a single purchase in the last six months. While some of that 60% spent that amount on critical purchases such as rent or bills, many have spent that amount on non-essentials such as shoes or tattoos. However, of those who responded that they have changed their spending and saving habits, the majority were female: 66% of respondents who stated they have changed their spending habits were female and 73% of respondents who stated they have saved more money than before the recession began were female.

Based on our established definition of brand loyalty (Jacoby and Chestnut, 1978), the Millennial Generation is not brand loyal. While many college students believe/perceive themselves to be brand loyal, their self-reported purchase behavior suggests they are not. If they were truly/exclusively brand loyal, they would buy only one brand per product category. Out of 68 respondents, there were only a few respondents who indicated that they buy only one brand per product category. A lack of overall brand loyalty is further indicated by the Propensity to be Brand Loyal Scale results. It is evident that many members of the Millennial Generation are not brand loyal consumers and may in fact be variety seekers. It is also evident that unlike other generations, the Millennial Generation is one that is not as concerned with their spending habits or saving money.

LIMITATIONS

Opportunities for future research are provided by various limitations of the study. First, a larger and more diverse sample of the Millennial Generation is desirable. While we have a better understanding of college students brand loyalty, we recognize that college students represent only a segment of Gen Y. We also recognize the sample of college students used lacks racial and ethnic diversity, and has slightly skewed gender representation. We also recognize the limitations of self-reported purchase behavior. Asking subjects to recall past purchase behavior has the potential to induce bias. The use of actual point of sale data would be useful. Further, we recommend a study of other generations as it will allow for a better understanding of what the brand loyalty characteristics of the Millennial Generation actually mean. In other words, how might Baby Boomers or Generation X score on the Propensity to be Brand Loyal Scale? We are making the claim that the Millennial Generation is not brand loyal absent a direct comparison to another distinct group.

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MILLION DOLLAR CARD: BUILDING CONNECTIONS

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INTRODUCTION

For nearly eighty years Price Chopper has been a grocery market that is centered on customer service. Price Chopper has focused on and helped shoppers that needed specialty foods, wanted hot prepared meals, and low prices. In all the positives there is still one group of people that Price Chopper and fellow grocery stores have not found a way to target. This group of individuals is college students. In the local area alone there are about 50,000 college students that do not attach themselves to a particular grocery chain. Our group from Siena College has an innovative concept that will help strengthen the ties to your future customers.

Our innovation for Price Chopper is the idea of using student identification cards such as the Saint Card at Siena College or the SUNY Card used at The State University at Albany. As mentioned in the "Building Connections?" theme statement, Price Chopper's main goal is to "improve our connections with our consumers through a better in-store experience." In accordance with this we decided that you should implement this system allowing students to use their identification card to purchase goods at your store. It should be mentioned that your competition, CVS, has already implemented this type of idea successfully with SUNY Albany and Siena. This technology is also being used at CVS, St. Croix Tan, Subway, and many others.

We think this idea would attract not only college students who already shop at Price Chopper but it would get the name out to the student body, as well as make them lifetime customers. Similarly, we think that other colleges in the area including, but not limited to, Hudson Valley Community College, Union College, and The College of Saint Rose, would be more than likely to add this program to their college ID's.

Our business proposal includes the processes used at Siena College as well as SUNY Albany for implementing the card program. In addition we have taken surveys to prove to you that if given the opportunity to use their identification cards to purchase items college students would be more likely to shop at Price Chopper. Our data backs up our million-dollar title, and with implementation from other colleges we see that number rising rapidly.

We realize that this innovation only has a target market of college students but we believe this idea would strongly attract them to your store as opposed to your competitors. We believe that the benefits far outweigh the costs, if put into practice, that the cards would produce.

SIENA'S PROCESS

The process of linking Price Choppers system on the Siena College Saint Card is relatively simple considering Siena handles all of the transactions on campus, at The Siena College Saint Card Office, and does not outsource to a third party. The Siena Saint Card Program is a licensor program in which community members of Siena College including students, as well as faculty and staff make an initial deposit of funds in a "Siena Saint Card Declining Balance Account." The Director of Auxiliary Services and Procurement coordinates the process with the vendor. After Price Chopper shows that they express an interest, our Student Senate votes for approval of the vendor, and a contract is sent.

The general provisions of the card are stated in the contract and describe in detail the card and its uses. "Upon the initial deposit, Licensor establishes an electronic account balance in the Participant's name". The

Participant may then use these funds for purchases wherever the card is honored. Sales made by off campus merchants are reimbursed to the Licensee, being Price Chopper, at the end of each revenue period. The licensee must pay to the licensor a commission on the high bound of about 5%. The licensee must name Siena College as an additional insured under the liability insurance policy. The licensee must provide a certificate of insurance to the Saint Card Office. The licensee may advertise and promote its business through the Saint Card name only when advertising has been approved by the Licensor, Price Chopper. Our ideas for advertising will be stated below under a different title.

The sales procedures are as follows: first, the Siena College cardholder requests goods using the Siena College Saint Card. At this point the cashier totals the goods including tax and notifies the student of the amount to be deducted. The cashier swipes the card in the terminal reader, Verifone Trans 330, or Trans 380 with printer. The cashier then enters the amount deducted into the card reader, which sends the information to the Siena Saint Card system. If the cardholder has sufficient funds the message APPROVED will display and a receipt will be printed showing the total amount of the transaction. If there are not sufficient funds the message "insufficient funds" or "denied" will return on the card reader. If a message indicating the Siena Saint Card has been reported lost or stolen the sale should be declined, this eliminates the problem of having no pin identification number when using the card. Finally, any refunds should be issued back onto the card and therefore onto the account and not issued in cash.

The accounting procedures are as follows. Weekly reports will be sent to Price Chopper for reconciliation, these reports are the basis of revenue paid. If there are any discrepancies in the totals Price Chopper must contact Siena College within three business days and the agreed upon adjustments will be processed in the next regular payment following the date of agreement. Revenue during the most recently completed period, less commission, will be mailed to the Licensee within five business days of the close of the revenue period.

We will recognize the cost of the Verifone reader, accounting procedures, and necessary training, in our statistical analysis that follows.

ALBANY'S PROCESS

SUNY Albany is another one of the local Universities that allow their students to use their ID cards at off campus merchants throughout the area. They provide this service to students so that the university community can have the opportunity to use it while promoting local businesses. The process for connecting Price Chopper's systems with SUNY Albany ID cards is similar to that of Siena, but differs in that they use a third party to handle transactions and system set up with the off campus merchant.

SUNY Albany uses the CBORD CSGold system for managing their University at Albany ID card system. They work with a company called Off Campus Advantage (OCA) to manage contracts with the off campus partners. To be a participant Price Chopper would have to contact this company directly to express interest in joining the program. OCA establishes a contract with the off campus company, provides the card swipe interface that connects back to the SUNY Albany server, provides training and promotional opportunities, sets up the financial account with the bank so the off campus company receives the money within 24 hours, and provides monthly financial statements to the off campus company. The participating merchant will individually negotiate a fee with OCA for their services.

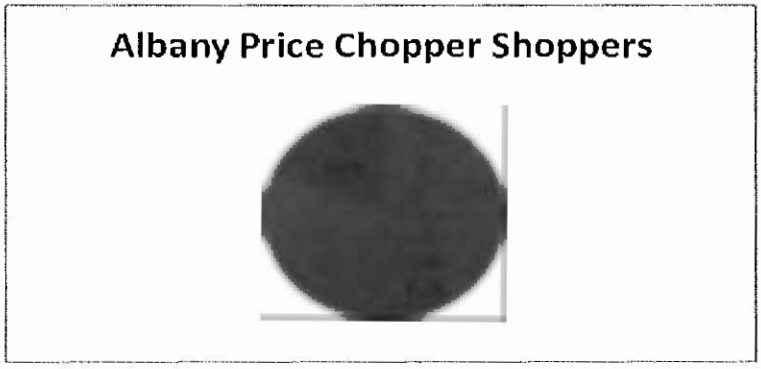
After negotiation of contract details and commission the merchant will receive their rental terminal from OCA if their terminal is not compliant, this should be a minimal cost if necessary. A student then has the ability to shop at Price Chopper using their ID card. Once the card is swiped the information is sent through secure channels to the OCA server. Their server then connects to SUNY Albany to check the students account and if the funds are available money is deducted from account. SUNY Albany then sends this information back to OCA and they link to the merchant bank to deposit or credit the money generally at the end of the week.

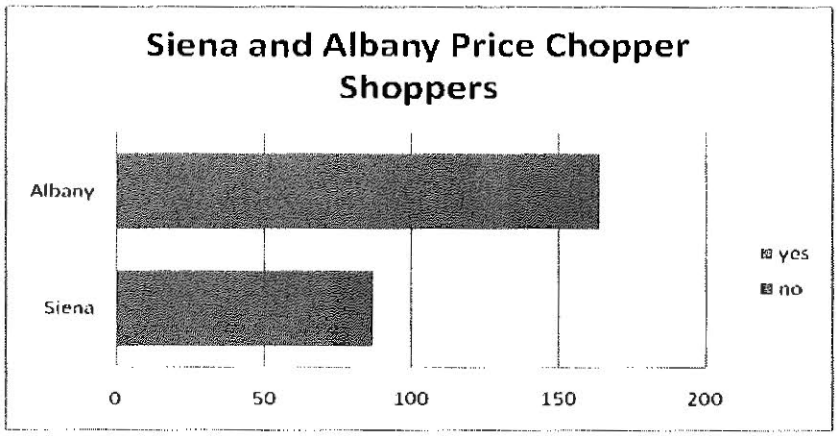
STATISTICS & CALCULATIONS

In order to address the value of the new swipe card system our team surveyed 164 students from the SUNY Albany and 90 students from Siena College. Conservative measures were taken as the data was trimmed so that

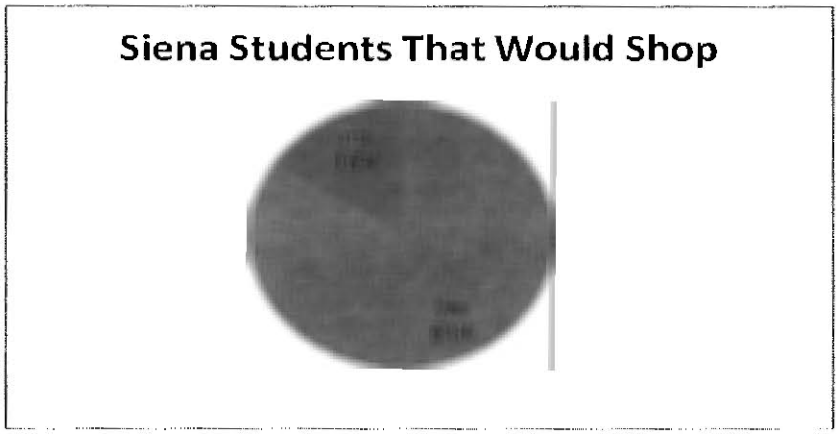
respondents that did not or would not shop at Price Chopper would not be included. Additionally, anytime data was found we calculated the measure of error and subtracted it from the mean to find the low bound average. The results are as followed:

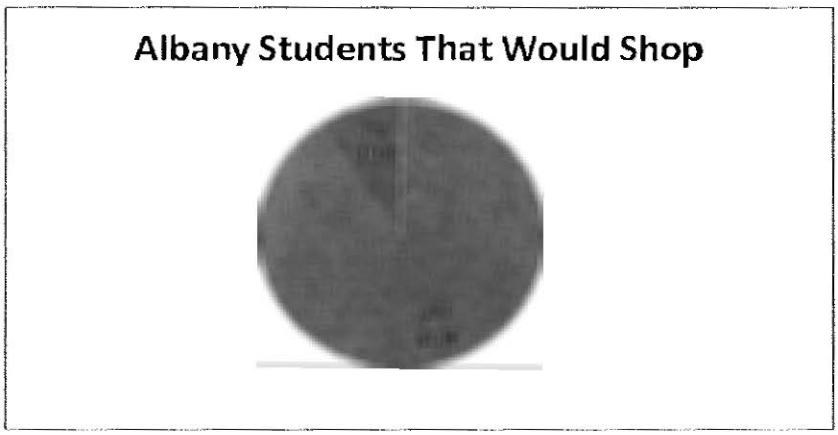
1) Students were asked if they would shop at Price Chopper if they could use their swipe card. Of the 164 Albany students that responded 133 said they would use their card as did 73 of 90 Siena Students.

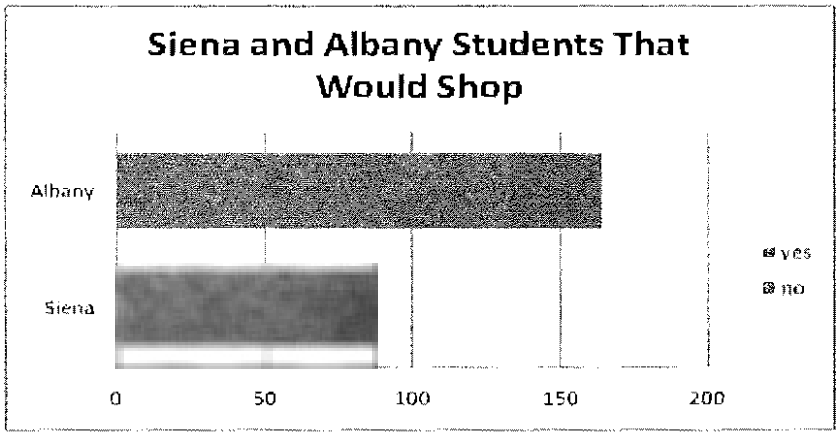




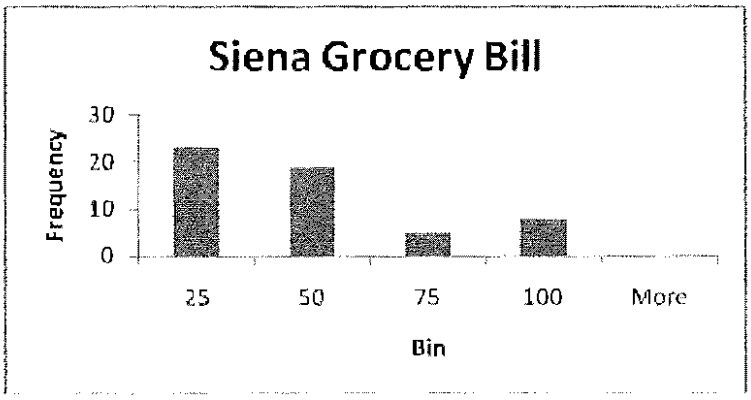
2) Students were asked if they would shop at Price Chopper if they could use their swipe card and receive an incentive. Of the 164 Albany students responses 148 said they would. Of the 90 Siena students 73 said they would.

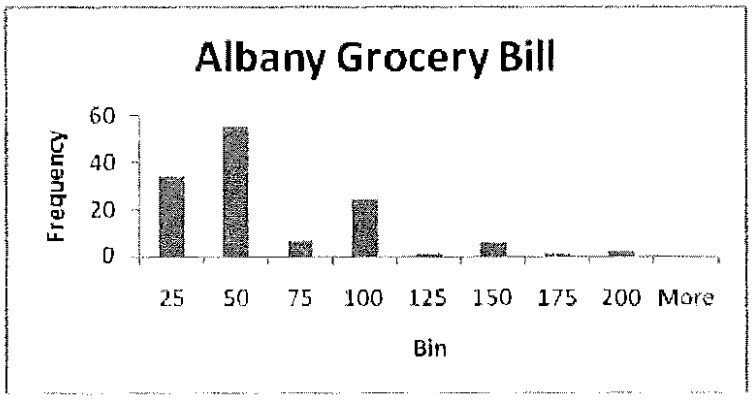






3) Students were asked how much they spend on groceries on a monthly basis. The trimmed average low bound mean of Albany was $49.48 and Siena was $34 per month.





Through statistical analysis we find the following facts (for SUNY Albany):

- The percentage of students that would use the card, if allowed, at Price Chopper = 81.7%

- The lower bound on the 95% confidence interval for the true population percentage that would shop at Price Chopper with the card = 75.8%
- The trimmed mean average grocery allowance = $56.07 per month
- The lower bound on the 95% confidence interval for the true population average grocery allowance = $49.89 per month

This proposal to Price Chopper focuses on marketing to college students in hopes that they will become lifelong customers of Price Chopper. An analysis of this proposal finds that the cost of the proposal is relatively low compared to the potential revenue of the proposal if implemented.

An examination of the costs involved in implementing the proposal reveals the following:

1) The commission for the process itself is approximately 5% of gross revenue from sales to college students. Assuming that Price Chopper, like many retail stores, builds in a credit card deduction of approximately 4-5% on items when figuring profit due to the cost of credit card processing, the commission cost of approximately 5% for this proposal would actually be negligible. Another way to look at the commission charge is as a new credit card trying to open an account with Price Chopper. For this presentation let us assume there are currently 24 credit cards being used at Price Chopper with an average commission rate of 2.5%. Then when you add the new card into the set to make 25 cards your new average becomes 2.6%. Hence, we predict a decrease of 0.1% on your profit margin.

2) While the proposal will require cashiers to use the new card swipes, since cashier training already involves teaching cashiers about card swipes, there will be little or no training involved. Therefore, there are no associated costs for training the cashiers.

3) A Price Chopper bookkeeper will have to be trained to balance the transactions from Albany to Price Chopper every week. The estimate monthly cost for processing is $129 per bookkeeper. Assuming that each month has 4.3 weeks. This is based on an estimated hourly salary (inclusive of benefits) of $30 an hour for an average bookkeeper at Price Chopper, who will spend approximately one man hour per week processing the transactions.

Therefore, the cost of implementing this proposal is extremely low compared to the potential revenue for Price Chopper. Please note that all figures used in the following scenario are based on the lowest estimates. Therefore, actual implementation would result in even higher revenue than illustrated in the proposal.

An estimated 75.8% of each of the class years of college students (approximately 3,000 per class year) at the State University at Albany would use the card, meaning that approximately 9096 undergraduate students would use the card per month. This does not include the thousands of graduate students, faculty and staff who might also take advantage of the card system. Assuming that each of the 9096 students spends an average of $49.90 a month on items from a supermarket (once again a low estimate) each of the seven (7) months of the academic year, the average student would spend $349.30 per year. Of course, this does not take into account students who spend the entire calendar year on campus, nor does it take into account additional students who are at home in the Capital District during semester breaks and the summer who would be inclined to use the card as well.

Simple math reveals that if 9096 students each spend $349.30 per year using the card system, the total revenue from the card system would be $3,177,232.80. Deducting 5% for OCA from the revenue of $3,177,232.80, which should already have a deduction for credit card processes in it, the **revenue stream from Albany** would be approximately **$3,018,371.16.** It is important to note that currently only 30% of students shop at Price Chopper now. This proposal, allowing students to use their card at Price Chopper, would increase student use of Price Chopper to 75.8%.

More important than the revenue is the fact that the proposal is designed to foster links between Price Chopper and these young adults who may well become Price Chopper shoppers for life. Therefore, this proposal is much more valuable than just the estimated revenue detailed above. Intended to increase engagement with college age students in hopes of developing partnerships and building community with these shoppers, a major benefit to

Price Chopper of this proposal is that it enhances Price Chopper's position within the community as it builds customer loyalty for the future. The satisfied college student of today will become a Price Chopper shopper for the next 60 years, in other words, for the next 720 months, if this proposal is implemented!

It should also be noted that if an incentive of $10 off every $50 spent for the first month of every semester were offered to students, revenue for Price Chopper would actually increase since more students would be encouraged to shop at Price Chopper. For example, two (2) months of the academic year would offer the above mentioned incentive, and five months would result in the true revenue. Recognizing that Price Chopper would see an increase in the number of college student shoppers, the total revenue would be $3,118,843.20. See the details below:

- 2 months of incentives and 5 months of true revenue
- an increased number of college student shoppers:
- (.887)(4)(3000)*(39.9)(2) = 849391.2 for the incentive months
- 9096*(49.9)(5) = 2,269,452 for the other months
- Total revenue is 3,118,843.20 for the incentive program

This proposal would, of course, require Price Chopper to use two separate systems for each college. That is why the focus of this proposal is to begin it in Albany where the largest concentration of college students in the Capital District resides. Note that all estimates are based on that Albany population and it still increases revenue dramatically. In addition, the card price swipe is extremely low compared to the potential revenue from this proposal. Furthermore, to simplify the proposal, the card swipe machines could be limited to certain stores, say in Albany, to begin with, and even to certain checkout lanes as well.

CONCLUSION

This proposal is designed to not just increase revenue by attracting college students to shop at Price Chopper stores but it is intended to engage college students as shoppers while building customer loyalty that will result in increased customers in the future. We believe the college students of today will become the Price Chopper shoppers of tomorrow. So, in order to gain a competitive advantage we feel this service is a necessity to build a better customer relationship with college students that will lead to stronger shopping bonds. We thank you for this chance and would be happy to explain our findings in detail. There is clearly a lot of interest for this proposal and we would love to present these facts for you.

SURVEY USED

General Information: (check one answer with an X)

Year of Graduation: 2010___ 2011___2012___2013___ other: _____

Gender: M____ or F_____

Survey Questions:

1. Do you live on or off campus?
   On___ Off____

2. Do you use your student ID card to purchase things at off campus businesses?
Yes____ No____

3. Do you shop at Price Chopper?
Yes____ No____

4. Would you shop there if you could use the bonus dollars on your student ID card?
Yes____ No____

5. Would you be more likely to shop there if Price Chopper added an incentive to students using their ID cards in their store?
Yes____ No____

6. How much do you spend for groceries during a month? _____

HOW ALCOHOL AFFECTS A COLLEGE STUDENT'S GPA

Thomas McMillan, Siena College

ABSTRACT

In my paper I will try to explain how alcohol, among other factors, affects a college students GPA. I obtained the data by conducting a survey of one hundred and ten students at Siena College by randomly handing out surveys. I will explain the regression results using the data I collected in my survey, to try to explain my hypothesis that alcohol consumption will negatively affect a student's GPA.

On college campuses throughout the country binge drinking is becoming more and more of a problem. From my experiences in college I believe that many students participate in binge drinking for many different reasons. Some college students drink because they believe that it's what everyone does, some drink to escape from schoolwork, some drink to fit in, and others drink because they like to. I believe the problem when trying to determine whether students at a particular institution binge drink or not, and how it affects their studies, is how the data is collected. I believe that students all have different perceptions about binge drinking, and their definitions of binge drinking will most likely be different than the college's definition. I also believe that students are reluctant to be truthful in studies performed by the college, and also believe that many of the students who do respond to the survey do not fall into the category of binge drinkers. I think that people who drink a lot do not even bother looking at these surveys conducted by the college. From personal experience I believe that the studies are bias, and would argue that the results obtained from the sample do not truly represent the population. Having said this I believe I might have some biases in my analysis as well. Although one can strive to be objective, there is no snch thing. Every person has things in their life such as background, family, schooling, and many others which create biases within themselves. I handed out my surveys at the library, and tried as much as possible to be random about who I asked to take the survey. However when handing out the surveys I would see people I knew, and it was much easier to ask them then a stranger to take the survey. I tried to be as objective as possible when conducting the survey, but there may be some biases in my data, as with any data collected through a primary source.

The first study I looked at was a study conducted by Harvard University which was the first national study to look at the affects of binge drinking on a student's performance in college. "The College Alcohol Study was a study done by Harvard University to determine the affects of binge drinking on a student's performance in school. It was the first national study to track how widespread and harmful binge drinking had become on college campuses throughout the nation. It put college binge drinking on the national agenda, where it has gained widespread public attention ever since. Harvard has conducted three national surveys throughout the 1990s. They included roughly 18,000 students in 1993, 16,000 in 1997, and 15,000 in 1999 from 140 four-year colleges and universities in 40 states" (Binge Drinking on America's College Campuses on Web at http://www.hsph.harvard.edu/cas/Documents/monograph_2000/cas_mono_2000.pdf).

I am going to use the results of the Harvard study with a similar study done at Bucknell University, to help me interpret my regression results. The article I am going to discuss was published by Amy Wolaver, who is an economist at the University of Bucknell, in February of 2004 on Bucknell University's website titled College Students' Binge Drinking Affects Future Earnings, Bucknell Economist Find. The study was conducted by students in the Health economics Class in the spring semester of the year 2000. The students sent out 512 anonymous surveys to students that were randomly selected from the college directory, and 183 students responded. In her study Amy Wolaver is trying to see whether or not a college student's binge drinking will affect their future earnings. It is relevant to my regression because she related the affects of binge drinking on GPA to determine her results, and did so by running a regression. She compared her findings to a labor market study that showed there was a positive relationship between college GPA, and the average earnings a college student has in their first job after graduating from college. She begins her paper by talking about the data, and how there could be several problems with it. The survey was taken at Bucknell from the Bucknell student body, and they reported a 36%

response rate. She says that she hoped for a better response rate, and since it was low the information they measured is not as precise as they would have liked it to be. She also says the responses to the questions could be biased or untruthful, and researchers have reported that young adults tend to overestimate their drinking habits. However with this study she believes that students might have underestimated their drinking habits because the students were aware of a study Bucknell previously participated in with Harvard, which was a similar study " (Bucknell EC312 Drinking Study on Web at http://www.facstaff.bucknell.edu/awolaver/alcohol/data.htm#Validity of the Data). After the Harvard study a ten point plan was developed, and Bucknell adapted the ten point plan to address the issues with binge drinking at the school. The primary purpose of the ten point plan was to discourage alcohol use and binge drinking among college students. The plan uses education materials such as posters, and ads in the student newspaper to get the message out to the students. I am not aware if Siena College follows the ten point plan, hut similar to Bucknell, Siena does try to discourage binge drinking on campus. Siena discourages binge drinking putting up posters, and reprimanding students who drink illegally on campus. Wolaver believed that because of the ten point plan students may have underestimated the amount of alcohol they drink in the survey in the hopes of avoiding further burdensome sanctions. The survey was also distributed after house party weekend which is a period of time where average drinking is increased, and house party weekend can be compared to Sienafest at Siena College where my survey was conducted. Since the survey was distributed after house party weekend Wolaver believes "a recall bias could result that inflates students' memories of their typical drinking" (Bucknell EC312). Before she begins to talk about the results she says this: "The sample slightly over-represents Greeks, whites, women, and seniors, but with the exception of females, the sample averages are within a few percentage points of the actual population means. Nonetheless, for the reasons outlined above, care should be taken in interpreting the results given below" (Bucknell EC312). What she is saying is that she believes that the sample represents the population well for the most part with the exception of females, since many of the students that responded to the survey where females, but nonetheless the results should be interpreted with the possible problems with the data as mentioned earlier in this paper.

With the exception of students either under or over estimating their drinking habits, I do not believe that I would have any other problems with my data. I told the students who took my survey that it was not a school sponsored survey, and it was totally anonymous. The questions about how many drinks per night a student has on average can be biased answers, simply because of the fact that it is hard for a student to remember how many drinks they have throughout a night of drinking. Having said that I do believe students have a general idea about how much alcohol they consume on a given night, and think that the data is relatively accurate. Also my survey was not distributed after a weekend of unusually excessive drinking, as it was in the Bucknell study.

Before I begin talking about the results of the Bucknell study I must first define what binge drinking is according to the Harvard study, since this was the definition referred to in the Bucknell study. The Harvard study defines binge drinking as follows: "Male who consumed five or more drinks in a row; female who consumed four or more drinks in a row at least once in a two-week period (Harvard Study). The data in the Bucknell survey was not comparable with the data from the earlier Harvard survey because the "Harvard study bases the definition of binge drinking on the respondent's behavior in the two weeks prior to the survey, not the student's usual reported behavior" (Bucknell). The same goes for my study and despite the differences in the two studies, the results of the Bucknell and Harvard studies were similar.

The drinking habits in the Bucknell study were determined by asking the students how many nights per week they typically drink, and the average number of drinks a student has each time they drink. Before knowing about the Bucknell study I also used these two categories to determine the students drinking habits in my survey. In the 1997 survey 67% of Bucknell students were defined as binge drinkers according to the definition given by the Harvard study. In comparison with my study only 1 student out of 110 that I surveyed reported that he drinks on average of 0 nights per week with every other student reporting that they drink at least once a week. Even the student who reported that on average he drinks 0 times per week, he reported that when he does drink he has on average 5 drinks. Since on average the student reported drinking on average 0 times per week I excluded him from the binge drinking category. According to the Harvard definition of binge drinking 99.09% of the students I surveyed would fall into this category. Probably more than half the students that took the survey by chance happen to be students that I know and whom I know binge drink because I have seen them around and out drinking. I think this statistic is not representative of the entire population especially since I only conducted a survey of only 110 students. The Bucknell survey came to several conclusions when analyzing their data. One of the first patterns that they recognized was that binge drinking tends to start in high school and gradually increases from the end of high

school, and throughout a student's years in college. This is obviously not true for all students, but is a general assumption that came from the data that was collected in the Bucknell study. Another conclusion that stemmed from the Bucknell research was that the students, who consume the most alcohol on an average night, tend to drink more often than students who drink less alcohol. This basically means that the heavier of a drinker a student is the more frequent that student drinks. The Bucknell study also tries to determine whether binge drinking is correctly defined by the Harvard study. The Harvard study defines binge drinking at 5 drinks in a row for men, and 4 drinks in a row for women because they found that at these levels of drinking is when problem for binge drinkers increase such as missed class, hangover, blacked out just to name a few. In the Bucknell study the data was consistent with the Harvard definition of binge drinking, as it found that the biggest increases in the fraction of students experiencing most of the problems come at 3-5 drinks. The Bucknell study also found that as a student's alcohol tolerance gets greater their definition of binge drinking also expands. They asked students the number of drinks it takes them to get drunk, and also what their own personal definition of binge drinking was. The more a person personally drank, the more drinks that person thought defined binge drinking. This was very interesting to me because I think this is one of the major problems with binge drinking in college. I do not believe that most college students define binge drinking as the Harvard study defines it. I personally believe that binge drinking is when someone drinks more than as described in the Harvard study, but this is my own personal opinion. I have discussed this with my friends as well, and they also think that binge drinking should be considered more drinks than as the Harvard study describes. When comparing these conclusions to the Bucknell data it proves the idea that as alcohol tolerance gets greater, so does their definition of it. The point made in the Bucknell study that I agree most with is the idea that most students overestimate how much other students drink, and feel more pressure to drink because of these assumptions. Overall the Bucknell study tanght me a lot about this topic, and it was very helpful when I looked at my results

In my regression I had a sample size of 110 students from Siena College. I surveyed 62 men and 48 women, and this means the survey consisted of around 57% males and 43% females. I conducted a survey to collect data about each student, and used this data in my regression analysis. The survey asked students their age, gender, average nights per week they drink, average amount of drinks they consume each night they drink, average amount of hours they study per week, high school GPA, and cumulative college GPA up to this point in time. College GPA was my dependent variable, and the other questions asked served as my independent variables. I expected the average nights per week and amount of drinks per night students drink to have a negative relationship on GPA, and expected that the more a student drinks the worse they will do in school. I expected study hours and high school to have a positive relationship on GPA, since the more you study the better you will do on a test, and if you had a good high school GPA, it will most likely follow through in college. At first I ran a regression in Stata with only 80 data points. I passed my Ramsey's test, but ran into problems with passing my heteroskedasticity test. Also the only three variables that were significant were average nights per week a student drank, study hours, and high school GPA. The Adjusted R squared was .24 which seemed low to me, and I wanted to see if I could increase the Adjusted R squared by increasing my sample size. These are the results of the regression I ran with 80 observations.

Source	SS	df	MS
Model	3.62531779	6	.604219632
Residual	8.44750243	73	.115719211
Total	12.0728202	79	.152820509

Number of obs	80
F(6, 73)	5.22
Prob > F	0.0002
R-squared	0.3003
Adj R-squared	0.2428
Root MSE	.34018

collegegpa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	.0192244	.0892866	0.22	0.830	-.1587235	.1971723
age	.077336	.0404812	1.91	0.060	-.003343	.158015
avgnightsw~k	-.1067953	.0528452	-2.02	0.047	-.2121157	-.0014749
avgdrinksn~t	-.0083129	.0096551	-0.86	0.392	-.0275556	.0109297
studyhours	.0151966	.00592	2.57	0.012	.003398	.0269952
highgpa	.5093101	.1563633	3.26	0.002	.1976785	.8209417
_cons	-.0443554	.8608565	-0.05	0.959	-1.76004	1.671329

```
. summarize
```

Variable	Obs	Mean	Std. Dev.	Min	Max
gender	80	.525	.5025253	0	1
age	80	20.175	1.076504	18	21
avgnightsw~k	80	2.9175	.780421	0	4
avgdrinksn~t	80	11.7125	4.803595	3	27.5
studyhours	80	12.6	6.869673	2	40
highgpa	80	3.3535	.2605646	2.7	3.9
collegegpa	80	3.0165	.3909226	1	3.61

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of collegegpa
       Ho:  model has no omitted variables
                  F(3, 70) =      1.57
                  Prob > F =      0.2042

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of collegegpa

         chi2(1)      =     8.77
         Prob > chi2  =   0.0031

.
```

To try and get rid of my heteroskedasticity problem, I handed out more surveys, and increased my sample size to 110. I thought this would be more representative of the population, and when I increased my sample size I passed my heteroskedasticity test. Since I did not use time series data, and I did use primary cross sectional data, these were the only two tests I needed to run in Stata. My Ramsey's test came back with a Prob > F = 0.1134 which is above the designated alpha of .05 so I do not reject the null hypothesis which states that my model has no omitted variables. My heteroskedasticity test came back with a Prob > chi2 = 0.6677 which is also above the designated alpha f .05 so I do not reject the null which states that my model has constant variance. I did not see any evidence of multicollinearity in my regression results since a majority of the variables were significant. My regression results can be seen below along with Summary Statistics about the data I collected.

Source	SS	df	MS	Number of obs =	110
				F(6, 103) =	16.91
Model	4.85930903	6	.809884839	Prob > F =	0.0000
Residual	4.93161849	103	.047879791	R-squared =	0.4963
				Adj R-squared =	0.4670
Total	9.79092753	109	.089825023	Root MSE =	.21881

collegegpa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	-.0379625	.0489357	-0.78	0.440	-.1350149	.05909
age	.0266743	.0230658	1.16	0.250	-.0190712	.0724197
avgnightsw~k	-.0624276	.0287501	-2.17	0.032	-.1194467	-.0054085
avgdrinksn~t	-.0108527	.0050264	-2.16	0.033	-.0208215	-.0008839
studyhours	.0093499	.0033448	2.80	0.006	.0027162	.0159836
highgpa	.5361685	.0771378	6.95	0.000	.3831838	.6891532
_cons	.9569257	.5048098	1.90	0.061	-.0442454	1.958097

```
. summarize
```

Variable	Obs	Mean	Std. Dev.	Min	Max
gender	110	.5636364	.4982036	0	1
age	110	20.21818	.9989152	18	21
avgnightsw~k	110	2.971818	.7651985	0	4
avgdrinksn~t	110	12.62727	5.099216	3	27.5
studyhours	110	13.20909	6.518281	2	40
highgpa	110	3.298909	.296036	2.5	3.9
collegegpa	110	3.044545	.2997082	2.2	3.61

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of collegegpa
       Ho:  model has no omitted variables
                 F(3, 100) =      2.04
                  Prob > F =      0.1134

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of collegegpa

         chi2(1)      =     0.18
         Prob > chi2  =   0.6677
```

Final regression model:

Out of the 6 variables I included in my regression I found 4 of them to be significant. Gender and age were not significant variables according to p values, but the other variables were significant and include average nights per week the student drinks, average drinks per night when a student drinks, average hours per week a student studies, and high school GPA. As expected there was a negative relationship between the number of days per week a student drinks and drinks per night, and there was a positive relationship between study hours and high school GPA. The alpha used to determine whether or not a variable was significant or not was .05. Gender had a p value of .44 and age had a p value of .25. These 2 p values are above the alpha of .05 making these variables not significant in the model. The average nights per week a student drinks had a p value of .032 which is lower than alpha making it significant. When the average nights per week a student drinks increases by 1 night the students college GPA decreases by .0624. The average drinks per night a student consumes had a p value of .033 which was lower than alpha making this variable significant. When the average drinks per night a student consumes increases by 1 drink then the student's college GPA decreases by .0109. While this might not seem like that big of a deal you have to take into consideration that GPA is only measured out of 4, which makes these small changes in GPA significant. Study hours had a p value of .006 which is lower than the alpha of .05, making this variable significant as well. When the average amount of hours per week a student studies increases by one hour the student's college

GPA will increase by .0093. High school GPA had a p value of .000 which is lower than alpha and the closest to 0 making this variable the most significant out of the 4. When a student's high school GPA increases by 1 unit the student's college GPA increased by .5362. My adjusted R squared is .467 which means that 46.7% of the variation in college GPA can be explained by this model. It is no surprise to me that high school GPA was the most significant of the variables in the model because the better a student's high school GPA, the more likely the student's college GPA will he. Basically if a student had a good GPA in high school one would assume that the student has good study habits or is smart, and this would translate into college, and the same is true of the opposite that bad study habits or failure in high school would translate into college. What interest me most about my results is the relationship to be considered between study hours and average nights per week a student drinks. If both were increased by 1 unit the average nights per week a student drinks has around 7 times more of an impact on GPA than study hours. One would tend to conclude from this observation that drinking one less day per week would almost be as if the student was studying for 7 extra hours a week. This is very interesting especially for students who have problems in school, but do not want the burden of doing extra work to get better grades, and are satisfied with their current GPA. All the student would have to do in most cases was to drink one less night per week to start seeing an improvement in grades.

In conclusion, I found that alcohol consumption negatively affects a student's GPA. Binge drinking is seen as a serious problem to many people on college campuses, and it is affecting student's performance in school. I believe that colleges are trying to increase awareness about binge drinking on their campuses to try and discourage it. The more aware students become about how drinking affects their GPA I believe that it will encourage students to binge drink less often.

Appendix: Contains Regression Results, Specification Tests, Scatter Plots of Significant Variables, and the Excel Data for my Regression

Source	SS	df	MS
Model	4.85930903	6	.809884839
Residual	4.93161849	103	.047879791
Total	9.79092753	109	.089825023

Number of obs	110
F(6, 103)	16.91
Prob > F	0.0000
R-squared	0.4963
Adj R-squared	0.4670
Root MSE	.21881

collegegpa	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	-.0379625	.0489357	-0.78	0.440	-.1350149	.05909
age	.0266743	.0230658	1.16	0.250	-.0190712	.0724197
avgnightsw~k	-.0624276	.0287501	-2.17	0.032	-.1194467	-.0054085
avgdrinksn~t	-.0108527	.0050264	-2.16	0.033	-.0208215	-.0008839
studyhours	.0093499	.0033448	2.80	0.006	.0027162	.0159836
highgpa	.5361685	.0771378	6.95	0.000	.3831838	.6891532
_cons	.9569257	.5048098	1.90	0.061	-.0442454	1.958097

```
. summarize
```

Variable	Obs	Mean	Std. Dev.	Min	Max
gender	110	.5636364	.4982036	0	1
age	110	20.21818	.9989152	18	21
avgnightsw~k	110	2.971818	.7651985	0	4
avgdrinksn~t	110	12.62727	5.099216	3	27.5
studyhours	110	13.20909	6.518281	2	40
highgpa	110	3.298909	.296036	2.5	3.9
collegegpa	110	3.044545	.2997082	2.2	3.61

```
. estat ovtest

Ramsey RESET test using powers of the fitted values of collegegpa
       Ho:  model has no omitted variables
                 F(3, 100) =      2.04
                  Prob > F =      0.1134

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of collegegpa

         chi2(1)      =     0.18
         Prob > chi2  =   0.6677
```

WORKS CITED

http://www.facstaff.bucknell.edu/awolaver/alcohol/data.htm#Validity of the Data
http://www.bucknell.edu/x30190.xml
http://www.hsph.harvard.edu/cas/Documents/monograph_2000/cas_mono_2000.pdf

SIENA / GSCA PARTNERSHIP FOR SUSTAINABLE CHANGE: DATABASE MANAGEMENT SYSTEM

Kimberly DeFilippo, Siena College
Kristin Scheitinger, Siena College
Alicia Novak, Siena College

Class: Organizational Development & Change, MKMG 425 with Dr. Thurston

Community Partner: Grand Street Community Arts (GSCA) – Albany, NY

PROJECT DESCRIPTION

Our goal in working with GSCA was to devise a change plan and recommend a course of implementation for a new database management system. In order to find a solution most appropriate for this organization, we took responsibility for researching and providing information on various database applications. Those that we considered are E-Tapestry, Metrix, Organizers' Database (ODB), Microsoft Access, and BasicFunder Premier. We also looked into partnering with Siena's Management Info Systems (CSIS114) course to have students build and install a custom database at Grand Street. This project required us to hold several meetings with our community partner, conduct a survey on database user preferences at GSCA, present scheduled deliverables, and propose our findings through a PowerPoint Presentation.

REFLECTION

This project really showed us how creativity and "thinking outside of the box" can propel an organization into the future. It allowed us to develop further interest in non-profit organizations, and helped us to appreciate the constraints (i.e. financial and legal) that they have to operate under. While putting our management skills to work, we gained invaluable experience by helping a good cause and taking part in a real world application. Nothing could have been more gratifying! Our project was important to Grand Street Community Arts because our efforts not only helped to promote awareness for their organization, but also provided them with feasible methods of organizing their data and gaining internal support for this new initiative.

FUTURE

This project has prepared us for the future because we now have experience in developing a feasible change plan for an existing organization. We have a better understanding of how to analyze a company's needs, and how to present recommendations in a compelling and professional manner. By completing this project, we have applied concepts from several of our Siena classes (i.e. Organizational Behavior, Consumer Behavior, Management Info Systems, etc). Lastly, this semester long assignment has enhanced our public speaking skills, as well as stressed the importance of ethical consideration for those with different backgrounds and needs.

KPM DELI: MARKETING PLAN

Peter Oliveri, Siena College
Michael Fernandes, Siena College
Kyle Hudson, Siena College

SYNOPSIS

A marketing plan is an important tool used by marketers that forecast all the marketing activities that a specific organization will go through during a future time period. Marketing plans are used by big company executives and venture capitalists all over to decide whether they should invest in a new start-up company. The marketing plan lays out the future projections of a new, startup company. From the marketing plans, rich company executives will decide if certain businesses are going to succeed or fail if money is invested it. Thousands of marketing plans a year reach these venture capitalists, but only a select few that appear from the onset to have what it entails to succeed will be given the chance. Marketing plans list and discuss the following topics related to a business' future:

- A good marketing plan identifies and discusses a business' target audience and purpose. A marketing plan is only successful if it is able to convince a person (or firm) that they are worth investing in. It must clearly explain and project what will happen to the business in the future and that it will not only succeed, but also be profitable for the investors. The investors need a solid incentive to buy into the future business.
- An investor will only trust a company if they know what exactly is going to happen with their money. If a marketing plan is able to gain and ensure an investor's trust then the investor is more likely than not going to invest in the future of that business. Investors need to know what kind of business that they are getting into. A marketing plan needs to convince an investor that they are making a smart choice and they will be rewarded in the future.
- Marketing plans will only be successful if it is followed thoroughly. Most importantly, the plan needs to be followed when it comes to its strategic planning and financial objectives.
- The structure of one's company especially ours, Is indicative for success. By having implied structure in ones company, one can see organization and direction. This will no doubt create a competitive advantage, when thinking in a long-term perspective.
- It is important to think of our success in two stages: short term vs. long term. We cannot get carried away, when It comes to projecting long-term goals in a short term period. Our company must be confident with our product and let positive word of mouth do the rest.
- At the end of the day, it is all about community brand equity. There are over 50 delis in the local region-all amazing, all offering unique services. It is our job to have our own distinct niche, have excellent service/products, keep customers' waiting to a minimum, an develop a core following. The rest is in the hands of our community.
- It is important to stick to our mission statement. Those are our core beliefs. To deviate from our core values and mission statement would be turning our back on the fabric of our being. This can perhaps produce a negative sense of brand personality, when one thinks about KPM Deli.

COMPANY DESCRIPTION

KPM Deli was established by Michael Fernandes, Kyle Hudson and Pete Oliveri in the early 1990's. Growing up in Colonie, New York our whole life, we were disappointed to see the same type of deli in the region. This consisted of busy lines, un-interested workers and a disconnected environment. When we established KPM Deli, Michael, Kyle & Peter wanted to change the status quo of delis around here. First and foremost, our deli will open the earliest at five in the morning, for a specialized breakfast menu consisting of fresh pastries, home-styled egg assortments, pancakes and even crepes. In addition, we instill vigorous tests for our employees where they will have to have knowledgeable experience about OUR products. No longer will customers feel as if they're just a

number. Our workers will know all about our products, when certain products will be in stock and who is working when. Consequently, we will pay our employees ten dollars an hour and only expect them to work to 3 p.m.

At KPM Deli, we do not expect high efficiency out of our employees for twelve hour shifts. As a result, our deli will be open from 5 a.m-3 p.m, and workers cannot work more than five hour shifts. This is to ensure fresh, attentive and happy employees to our customers. Every Thursday night, the three founding fathers of KPM Deli will provide free food to our employees at our "weekly meeting". Participating will be mandatory, but it will only due to our dedication to our customers. At this meeting, we will have our employees express their concerns, suggest new products and perhaps offer additional avenues our company can go into (like sponsoring Little League events). We feel that this is the true meaning of a democratic community, where the owners have just as much say as our employees. At KPM, our employees are just an extension of us; they are our family and we truly care about their voice.

Even though we have been around for a while, I would consider us an up and coming organization. We have been blessed to receive many awards with local newspapers for our quality products and expert services. Our company is also looked at as a staple for producing many community happenings, which includes little league teams, plays, and catered town meetings. We have a lot of small time success now; we can smell the number one spot!

Our company will try it's best to only import products from the community (this includes Troy, Schenectady and The Capital Region area). This includes our pastries, meats, and dairy products. At KPM, we feel that it is only right to give our money back to the local industries that have supported us close to two decades. In addition, our products will be as cheap as possible; our food/beverages will not be over-priced compared to some of our competition (Bruegger's Bagels & Genoa Imports). We understand that our community is affluent, but we are not trying to rip off the heart of our company-the customers. Yes, this is a business, but we want to be different. We're confident that if you have some of our best meats & products at a cheap price, than you will gladly come back for more.

MISSION/PHILOSOPHY

Our mission at KPM is, "We pride ourselves in helping our customer's start off their day with a well-balanced, healthy meal with great quality at an affordable price." This mission of our company has been consistent with our ways of business since 1991, when we started KPM Deli. We want to be the first thing "Jimmy the Trucker" or "Pete the Plumber" sees when he wakes up for his shift in the early hours of the morning. We feel that it's important to be ready for the needs of all our local workers in the community with fresh coffee and whatever breakfast goods they desire. This type of attitude extends to the lunch time, where workers on their break can get the same, consistent service he/she received just six hours before. Consistency=long-term success.

Core Values

Respect for our customers, Pride for our meats, and Determination for the service to our amazing customers.

Goals

We have a few, consistent goals of our company. To evaluate the possible success or failures of our company, KPM will wait to the end of the year and diagnose the situation properly. These goals are as followed:

- 90% Customer Satisfaction (We will give our beloved customers' a survey at the end of the year for a free sandwich, so that he/she has incentive to fill out our questionnaire).
- Steady increases in revenue after expenses our accounted for.
- For our company to be mentioned in one of the local newspapers or magazines, as having an amazing product or amazing service.
- To have a high turnover for our employees (having to train employees at a high level is expensive and time consuming).
- To have the ability to donate to multiple organizations, community partners and good-will associations.

Core Competencies

When we think about core competencies or what our company does better than our competition, KPM can deduct the following:

- Our employees' expert knowledge of our products, whereas our competition may not be familiar with their own stores' goods.
- Our ability to be open before all other companies (We open when it's dark out, and prepare for our customers even before they are awake).
- Our products' are fresher than the competition (import new goods every shift) while being more affordable than the rest (the average Genoa sandwich is $6.50 compared to ours at $5.50).
- Instead of spreading out our menu, we just focus on breakfast and lunch. Thus, we can have more diverse combinations of products sold during this time, which gives our customers' more options than the rest.
- Our ability to be actually connected with the community. We will promise our customers' to donate to as many/more than "community organizations" as our competition.

The Complexity of our Industry

The deli industry is much like any other market in the Capital District. In order to be a staple in our company, we needed to research the "average customer". The recession that took effect on the American family has had dire consequences on the deli market. After 2006, it was reported that the typical customer visits their local deli 3.6 times per month! That is less than once a week. In order to have repeat purchases, we need to make sure that each customer's experience with KPM Deli is unique and memorable. At 3.6 times per month, KPM Deli has no room for error with unnecessary things like getting the order wrong or not listening properly to our customer's wants (poor service!!!!).

The average patron of a specialty, premium deli such as ours is, well-traveled, educated and has a higher than average income. This is good for our location since the average income for a Colonie, New York family is $63,822, way above any other area around here. However, these affluent customers' want fresh food and require proper service. The typical deli customer has changed since the end of the 20th century. Instead of having rich, fatty foods, the average customer wants specialty products. This includes organic, natural foods that have rich components that are good for one's health. These goods also have to be readily available for one's convenience. All of these components described above are indicative for repeat purchases.

Strategic Focus & Plan

Strategic Statement from KPM

In our research, we have found out that strategic planning is the formal consideration of an organization's future course. All strategic planning deals with at least one of three key questions:

"What do we do?"
"For whom do we do it?"
"How do we excel?"

At KPM, we truly believe that all these questions have a solution that is customer-centric. When asked, "What do we do?", our company can say that we provide a premium service for our customers. We do this service for our customers' satisfaction, so that he/she can feel confident making us the deli to go to 3.6 times/month. To be perfectly honest, our company can feel that we excel internally but unless our customers' feel the same way, it is useless. The only way to measure true gains of success is to, see how our customers' feel about us.

Focus

- To stay true to our roots: we are independently owned, local business, serving the needs of those who are interested in a premium deli.
- We must pride ourselves with customer satisfaction, through speedy but ACCURATE service.
- Since we are a local-based organization, we must give back to the community through sponsering local events.
- Our focus is to be attentive to our customer needs with our challenging standards for employees.

- ❖ Our focus is to have such impressive, such fresh products (pertaining to breakfast & lunch meals), that…KPM is the only way to go.

Planning Process

It was once said that, "The planning process is never "done" -- the planning process is a continuous cycle that's part of the management process itself." At KPM, we cannot agree more. Our strategy is constantly evolving to our customers' needs. If our local workers' come in the morning and want more variety in their coffee choices…so be it. The only job we have, is to position ourselves as a company that is so close with it's customers that he/she does not have a problem in approaching us. We have to dual-task! While making one's meal, we must ask how their morning is going, what he/she is going to do today, or give them a personal anecdote. Being friendly and open to our customers', shows that we have no problem in curtailing our products to meet their personal needs. That's how it started in the 1950's; that is how it has to be now.

Organization Structure:

At our company, the following roles must be enacted for our company to truly tap its potential. This will ensure success to our company for the next three to five years (long term goals described above).

➢ KPM Owners	➢ Michael, Kyle and Peter need to do a successful job in hiring the floor supervisors. They need to make sure that weekly goals are being met and that ALL inventory is accounted for. As owners of the store, it is their responsibility to make sure that our inventory accurately meets the needs of our customers. There cannot be any filler in our store, since our prices are as low as they can get while turning necessary profit.	➢
➢ Store Managers/Floor Supervisors	➢ Since inventory turnover is so rapid, it is their job to make sure that this process is running smoothly. They need to also make sure that customers' are receiving their food in a timely manner. As unpleasant as it sounds', they are the everyday bosses of our deli. In some ways, they have to police the workers and make sure that they are doing their jobs. Amazing service is the reason for the policing of our workers.	➢
Everyday Employees	➢ Their job is to make sure those goods and products are made in a timely manner. However, they must be familiar with all of our products and are able to think on the fly. This is a quick	➢ thinking business; they have to act, accordingly.

Non-financial Goals

- To retain its customer-centric appeal, with its ties to the community.
- To enter into new markets, such as Troy & Schenectady, where our product is so good that he/she doesn't matter the trip.
- To start distributing our own brand of deli meats, cheeses, & breakfast goods.
- To be regarded as one of the top three deli's, with implications of being number one by 2012.

Financial Goals/Projections

- To obtain a growth in earnings of 7% per year, with implications of 13% gains by 2014 (five year projection)
- To obtain a return on equity of 18-22%.
- To donate $2,000-$3,000 back to the Colonie community.

Break-Even Analysis	**Five Year Projections**
We will need to see $650,000 to break even in one year	**To be the number one deli in the region**
We will need to see at least $800,000-$850,000 in revenue (with $200,000-$250,000 in profit) to reach some of our five year goals.	**For gains up to 10% by 2014**
We will need to finance our ovens ($75,000) over ten years to keep our expenses attainable. For all equipment over $20,000, we will finance the product over an allotment of years. In addition, we will look for advanced ways to keep our equipment down and workers happy	**Number one deli by 2014.**

Competition in the Local Deli Market

Business	***Location (All listed as being in Albany, even though they differ within hamlets)***
Deli Warehouse	71 Fuller Road
Subway	155 Wolf Road
Honey Baked Ham	69 Wolf Road
Wednesday's Deli	131 Wolf Road
Maurice's Delicatessen	1814 Central Avenue
Leaners Deli	4 Palisades Dr # 113
Sahara Deli	98 Wolf Road
Bumby Bakeries Inc.	71 Fuller Road #6
Amici's	19 Aviation Road.

Market Product Focus

Target Markets- Our community is affluent, so trying to target certain income demographics would be useless (since most have the same level of high income). We rather want to target DIFFERENT types of individuals

Who	***Why***
Working Adults	We want the plumbers, roofers and physicians to come to our deli early in the morning for a cup of coffee and some fresh breakfast. We want these working adults to also come back during their lunch break, another specialty of ours. They can also refer us to many of their working buddies!
College Students	We want college students to come to our establishment on the way to classes in the mornings

	(commuters, specifically) who do not have a meal plan. There are so many deli's, but if we establish positive word of mouth with college students…we can be their deli
Everyday Community Patrons	When mother's drop their son/daughter's off at school, they can come in for the freshest and healthiest goods.
Senior Citizens	It is no secret that the elderly are up as early as we are, so why not target them. We have a very personal setting in our store, where it's normal for the elderly to read the paper and sit down for as long as they want.

By definition, a target market is "one or more specific groups of potential customers toward which an organization directs its marketing program." At KPM Deli, we have decided that our so-called 'target market' will be every consumer. We feel that we do not want to focus or center on one specific target group but rather as many consumers or customers that we can in our region or area of business. Therefore, after establishing our target market, we were able to come up with our 'Marketing Mix,' which is more or less the set of *controllable* factors that we as marketers are able to have control of and use to our advantage in trying to market our product to the overall consumer.

As just mentioned, we have selected and identified our target consumers, and now our next step in the process is to identify and then ultimately to satisfy our consumers wants and needs. Thus, we at KPM Deli must create our marketing mix to develop our marketing program. As Professor E. Jerome McCarthy first referred to them, we need to identify the four P's: product, price, place and promotion. We can use these four factors to develop our marketing program to better reach out to our consumers and satisfy their needs and wants to the best of our abilities. A more detailed look at our marketing mix follows:

Product

Our product line consists of different varieties of breakfast and lunch foods. We sell most every breakfast food from biscuits and bagels, to muffins and scones, and even some breakfast sandwiches with eggs and bacon. We also offer salads and Danishes. For lunch, we offer our consumer various hot and cold sandwiches, from a juicy hamburger to a BLT to a Philly Cheese Steak. Our products are moderately priced and comparable to our competition. We prepare each and every order with the same care and expertise, whether it is the first meal of the day or the last. We use only the finest products for our meats which we buy from Boar's Head, a leading meat vendor with an outstanding reputation.

We carry over our mentality for our meat products to the rest of our other products. We buy only the best and healthiest foods for customers, whether it is our eggs or breads or greens. We value our customer above all else, because without them we would not have a business. While some companies have a particular need for packing and labeling to help differentiate and separate themselves from their competition, KPM does not necessarily feel that packaging is of a major concern to our business. However, we do not totally write it off as useless. We provide take-home bags for our customers with our logo on it, and along with each bag we give customers a free menu to take home to serve as a reminder.

Price

Our products at KPM Deli are priced very fairly and comparable to our competition. Sandwiches between $5-$7 are at the optimal level for our business. Aside from the fast food industry, who charges less for a breakfast meal, you will not a find a better value for your meal. McDonald's has cheaper items but at a significantly lesser value. That is why we are able to still maintain profits and be successful, by offering the highest quality at an *affordable* price. Other competitors like Genoa Importing Co. also have a high quality and value but they sell their

sandwiches at $8. We feel that charging our products a little below them will allow us to draw more consumers away from them, especially for the consumer who is a little more money-conscious than the average person.

Growth Strategies

A growth strategy is a strategy that is focused or centered on investing in a product or a market in general that is growing at faster rate than normal markets. Growth strategies are different from other business strategies because they have the potential to give better outcomes in the form of overall capital gain. Growth strategies allow for an exponential increase for a certain company, providing those companies with a distinct competitive advantage, which is what every business and company is constantly seeking. Here are a few examples of growth strategies.

Diversification	A diversification growth strategy is one of the more risky and therefore higher potential for reward strategies. Markets and products in this category are still unproven as to whether they can and will succeed. There is no data or predictions to fall back on and if something goes wrong, there is no way to know how it will end. However, if the new product or market takes off, then the company or business will see an enormous benefit and will generate huge profits.
Product Development	A product development strategy is one where a company or business attempts to enter a new product into an existing and familiar market. Businesses use this method when they are comfortable with a certain market and know how the market will react because of their extensive knowledge in that specific market. However, this does not always mean success because there is no telling how the new product will react in that market.
Market Development	A market development strategy is the opposite of a product development strategy. In a market development strategy, a business will take an already successful product and try to test it in an entirely new market. A business will do this when it feels that there is potential for expansion into a new market and that they believe that it can succeed in the new market. If it is successful in the new market, then profits will increase greatly. If it does not, then the business can simply pull out of the new market and return the product to its already proven market.
Market Penetration	Market penetration strategies are different from the preceding strategies in that they possess already existing products in already existing markets. The question of whether the product will succeed is not relevant because the business is not trying anything new because the main goal is to increase market share, not the number of markets or products. A market penetration strategy focuses on repeat customers, and seeks to gain customer loyalty and retention by adding new and different incentives to repeat customers to increase brand loyalty and gain as big a competitive advantage as possible in that specific market.

Points of Difference

In my research of the competition, it is easy to deduct that deli's in the Capital Region are a dime, a dozen. In fact, if I were to list off my direct competition in a table, I could easily name a hundred delis in a twenty mile radius. So what is KPM going to do to separate itself from the rest?

First and foremost, we are going to be a health conscious deli. This includes all-natural, grade-a deli meats, with no preservatives. We will also offer health conscious beverages like Fuze, Vitamin Water & Odwalla. Our deli will also offer organic products and will have a vitamin section for those who are interested in that avenue. Sure, we will have pastries but our deli wants its customers to live long & live happy.

Our second point of difference will be the quality of our employees' service. When hiring the people at our deli, we took a "Geek Squad" approach to our service. Yes, we will pay them more than one's average deli employee, but a lot is expected out of them. They will also have to go through a two-week training period to see if they can handle the KPM "environment".

Lastly, we will separate ourselves, specifically with our breakfast menu. The days of having bacon egg and cheese are over for our company-that can be for our competition. When our customers' wake up in the morning, they deserve a diverse menu full of variety. This is why we will offer as many coffee choices as Dunkin' Donuts, as many bagel selections as Bruegger's and as many breakfast choices as IHOP. The problem with many delis when it comes to breakfast goods, is that it focuses on five variations of a breakfast sandwich; this is an egg sandwich with a combination of either bacon, cheese, sausage, ham and hash browns. At KPM, all of these choices are possible but we will also offer crepes, chocolate-chip pancakes, waffles, and custom omelets. Breakfast is the most important meal of the day. While our competition might want to offer the same, vanilla choices-we will change the mold.

Segmentation

KPM Deli will see the needs of customers and constantly strive to meet their expectations. However, KPM has segmented itself into a highly competitive market. In this area, there is a deli every other. What is KPM going to do to survive in this highly competitive market? It must have products that are guilty pleasure items as well as health-conscious ones. We must segment ourselves to both types of customers. Finally, we must segment our market into the needs of our working community. This is accomplished by providing unique and innovative menu items in the breakfast and lunch.

Product Positioning

We will position our market as the following:

- A market that is unique and different from the rest.
- A deli that offers premium products at a highly-affordable prices.
- A community deli that will not sacrifice its values for the gains of a rouge corporation.
- A deli that has whatever you're craving (as far as breakfast/ lunch is concerned).
- A deli that starts you off right in the morning and gives your body the essential nutrients that it needs to have a successful afternoon.
- A deli that has expert service, with friendly and knowledgeable worker employees.

SWOT Analysis

Internal Factors	**Strengths**	**Weaknesses**
Management	Experienced and friendly staff. Family owned making for a home like environment.	Small staff size, making the possibility of expansion tough.
Offerings	High quality products, made with the freshest ingredients for guaranteed satisfaction.	Some low quality products that may not be health conscious.
Marketing	Well known in town, and we have built a quality reputation with the locals.	We have only one location, and we are not known by many.
Personnel	Great, hard working employees, who are set on delivering a high quality product/service.	Mostly family members, with some outside help. Lower level workers need more training to gain upper management experience.

Finance	Currently in our highest revenue trend since opening.	Small size of the company may restrict financial growth when compared to other competitors with multiple locations.
Manufacturing	We gather our resources from high quality food distributors. We offer a wide selection of sandwiches, subs, wraps, salads, etc.	Not enough storage room to hold large amounts of ingredients, so shortage of supply happens often.

External Factors	**Opportunities**	**Threats**
Consumer/Social	Delis are popular near college campuses. Likely to be a stable market, and the local population is looking for quick and convenient meals.	Prices may be high for some and it may limit customers. Consumers are always looking for a bargain.
Competitive	Home-style atmosphere makes for a relaxed environment.	Many competitors nearby who offer similar products.
Technological	New computer system (for financials), and high quality meat slicing machines.	Many larger competitors update technology frequently.
Economic	Convenience is a big factor for the local consumers. Many are able to afford prices due to the upscale area.	More consumers are going to "Subway" and "Mr. Sub". Eating home is becoming more popular.
Legal/Regulatory	FDA approved facility.	Many small businesses are starting to be bought out by franchises.

STEEP	Explanations
Social	Population Trends and characteristics of the region look as if the people would like our morning-afternoon market/deli. People want fresh coffee to start them off right.
Technological	We feel that we should always seek the fastest and most cutting edge technology to get our orders out. This will create a sense of brand equity, which will keep our customers' coming back for more.
Economic	All economic treuds point to people wanting to eat home and not have to deal with the high prices of eating out. It is our job to ensure repeat purchases with excellent service.
Environmental	There is not much analysis in this department, besides having recyclables ready and re-usable cups.
Political	Once again, there is not much analysis here BUT we will have current newspapers and fliers demonstrating who is running.

In our favor, internally is our experienced and friendly staff that is dedicated to providing you with an enjoyable, yet relaxing experience. Our high quality products provide consumers with the satisfaction that they are looking for in a deli. We have built a strong reputation in the surrounding area, and we are known by many of the locals; this can provide benefits in the hoping that word f mouth will spread the awareness of our company. Our hardworking employees have helped put us into the peak of our revenues since our opening, and we will continue to work hard to bring our consumers a wide variety of nothing but high quality meals. Our favorable external factors include our prime location (located in a wealthy town with Siena College a short distance away), we provide a home-style atmosphere making for a friendly and relaxing experience, we are able to provide a convenience to our consumers, and price is not much of an obstacle; due to the upscale area that we are presently located in.

Amongst our unfavorable factors, our biggest weakness is our small staff size. Yes, sometimes this may be a good thing because you do not have to deal with training new employees on a constant basis, but if someone were to ever need time off, or if something happened to one of our more experienced employees, we would not have the staff to fill that void. Along with that, due to the size of our small staff, if we ever moved to a larger location then our small staff would not be enough to provide a high quality experience. Another factor that could prove to cause difficulties is our storage space.

The space provided in our building is small enough as it is, but once we implement onr deli counter, meat slicing station, tables, chairs, beverage refrigerators, etc, we are not left with much space to work with. Sometimes if we really become busy, some of our more popular products tend to run out real fast, and this is due to the fact that we are not able to keep enough extra in our storage units. More storage space would help eliminate this problem, and when we have to tell customers that we do not have enough ingredients to make a certain product it shows a sign of bad preparation. Our threats include nearby competitors, such as Subway and Mr. Sub, other franchises are popping up more frequently, and our technology may not compare to other franchised businesses.

Industry Trends

Delis are becoming more and more popular for a couple of reasons. With the economy going through a tough time, many restaurants are raising their prices and making their serving portions smaller. This tends to drive consumers towards other options. We have no intention on reducing our in serving sizes, and our prices will not become affected enough where consumers will stop doing business with us.

Convenience is always a dominant factor in our economy. Demanding lifestyles have increased the demand for convenience, especially in the food industry. Many do not have time to sit down at a restaurant for an hour and eat a meal. People are always on the move in order to fit the needs of those around them. This is where we step in; our deli provides quick, efficient, and quality services. People do not want to wait for long periods of time to receive their food, so we create our meals quickly, but with quality in mind.

Deli sales have been rising due to the students at Siena College. Once they find a deli that they like, it is hard to stay away. As an alternative to their dining hall, many students come to us for lunch mostly and for those early birds we have quite a number of breakfast consumers.

Potential Challenges: Intangibles & Competition

The sandwich market is always growing, and competitors are always a concern of ours. A competitor of ours does not always carry our products, but they may carry a majority of our products. The products that we focus on are sandwiches, subs, wraps, salads, soups, and breakfast sandwiches. The biggest competitors that draw our concern are Subway, Mr. Sub, Brueger's, Panera, and other local delis. With companies like Subway, focusing primarily on subs, we must make sure that our products are just as good, but preferably better, and that our prices are comparable.

Brueger's specializes mostly in the bagel department, but they do offer breakfast sandwiches and they have become very popular. Panera can be compared to any type of deli; they offer many of the same products that we do,

but because they also focus on bread and desserts, their selections are not as broad as ours. Competition is always a threat, but if we continue to deliver quality products and services, then our competitors will not become a major concern.

Company Analysis

Our deli was founded and is operated under one family, with a couple outside employees. We have a very experienced staff that is capable of providing quality services. Our founders are still very involved in our business, even though they mostly handle the financials, they are not afraid to get behind the counter and make a sandwich or two. Our lower level employees may need some upper level training; after analyzing the production of our lower level employees, I am not sure if they would be able to handle the tasks of upper level management.

We use many outside producers, who we have developed very good relationships with. We continue to try and increase the amount of inventory we carry so we can always be prepared for possible shortages. This could also help in increasing production efficiencies, then resulting in an increase in the cost of goods sold. When constructing our meals we try to use the optimum amount of meat to satisfy the consumer's hunger. We do not like to overload our meals, but we are not trying to scam our customers by giving them little amounts of meat. This is a big deciding factor when it comes to choosing where you are going to get your sandwiches from, and we believe by providing this service, our company will benefit.

Customer Analysis

Customer Characteristics.

Our products are consumed by those who live a busy lifestyle, and they do not have the time to stop at home and make lunch, or breakfast. They are consumers who are looking for a convenient meal that is not going to take a large amount of time to make and consume. For the most part our consumers are part of the business world or they are college students. Sometimes local families make regular appearances, but for the most part we deal with people on the move.

Our business type customers usually are seen during breakfast or lunch hours. It seems that our consumers work early jobs, so we regularly see customers in a shirt and tie who need a quick breakfast before they start their day. With Albany a short distance away, many of those who work in the city but live in the suburbs of Loudonville, are able to stop at our deli and grab a quick bite. This saves them time and effort.

We regularly see college students during lunch hours of the day. Many of the students come to us and we hear endless stories about the poor quality of food in their dining hall, so we provide them with the quality foods that they are looking for. Our prices are not overbearing on their wallets, so we are able to see them frequently. We are currently trying to work out a deal with Siena, so possibly students can use their student id cards as a credit card.

Health and Nutrition Concerns:

A Deeper Look Through the Segmentation Perspective

The average consumer has been gaining more and more interest in health and nutrition. We have taken this into great consideration, and we try and design our products with this in mind. Virtually all of our products are made with fresh and healthy ingredients. Some of our products do contain foods that are not the healthiest, but we try our best to meet the nutrition needs of our customers. We created a separate menu that has "smart choices" on it; they are a little more expensive because it is hard to get our hands on the freshest and healthiest ingredients, but to the consumer who is looking for this in their product it is well worth it.

In-Dept Analysis of the Organization at Hand: *A Second Look*

There is much more than meets the eye when it comes to what is required to run this type of business. Making sandwiches is just one part of the job, like any other business we have to deal with financials (expenses and revenues), inventory, equipment, maintenance, etc. Aside from this we need a plan for the organization, and we need to coordinate with our distribution channels. We receive meats and other ingredients

from many different distributors, so we are constantly placing orders with companies. When we order what we need we deal with direct channels. We do not gather what we need from an intermediary, we deal directly with the manufacturer and they send us what we need. We try our best to take advantage of the 2/10 net 30 deal that most of our distributors offer, but we do not always have the funds to execute this.

The equipment that we use to slice our meats, keep our ingredients cool, etc is constantly cleaned. Being in the food industry has different responsibilities than other typical businesses. Due to the fact that we sell food products, the issue of health is brought into the picture. There are annual inspections by the Food & Drug Administration, and we have to make sure that at all times we keep our equipment germ free. The health of the consumer falls into our hands because we handle their food; this is a major responsibility, but it is part of the complexity of the organization.

Implementation Phase:

After we have planned out what we need for our company, we then must turn our plans into results. Being a deli, we do not make our ingredients from scratch; we need to order them from outside distributors. This is a list of distributors that we order from:

Domestic Distributors

1. Boar's Head
2. Hormel Foods
3. Oscar Mayer
4. Hillshire Farm
5. Foster Farms
6. Butter Ball
7. Alpine Lace
8. Organic Valley

Time Frame of Objectives & Market Share	Explanations
Short-Term Success	About one year, where we look to have for incremental leaps of success. This includes a gain of customers by 10%. This also includes increased brand recognition in the local papers.

Intermediate-Term Success	This would be for us 2-4 years. We will see an increase in customers by 13-15%. By this time, we expect to be in the top three for deli's around here.
Long-Term Success	Look to be our own distributor's, with our oven almost paid for. We would like to see 20% more customers, and increased revenue by 13-15%
Market Share	There are over sixty three delis in a fourteen mile radius. In the next five years, we look to have 4-6.5% of the market share. Even though that is a bit ambitious, we rather shoot high. It is not as un-realistic as one may think. Delis in the local area come and go, but we have been around for close to twenty years. If all goes as planned, we look to have a 5-7.5% hold of the market share in the next five years.

Analysis of Profit
We will look at products in categories: This means our organic section, our healthy section, our bagels, our coffees and so on. At KPM, we want to see what is working and what needed to be deleted/harvested
For new and cutting edge products (such as FUZE & NAKED), we will offer extended sales periods for the products. This will be a company decision, in order to see if the product really has legs for long-term stock placement.
We will see if less is more! Due to our extensive lines of bagels and coffees', we will make a decision if it is really in our best financial interest to continue product line? Are there central products that the customers' want? How can we lessen the costs of our products?
Are people really sitting down and eating? We want to have a community feel to our establishment, but if nobody is sitting down and enjoying the environment…it is in our best interest to delete the existence of the furniture and chairs. This might benefit us for long-term success
Analysis of profit will be done in the fourth quarter, closest to Christmas time!!

Resources Needed

All of the items placed on our menus for the slides

Cabinets and furniture to stock our food

Disposable units to take out our trash (eco-friendly, of course)

Cash Registers

Newspapers (with newspaper racks)

Chairs and Tables (so people can converse)

A place to store our beverages

Swiffer Wet Jets & Other Cleaning Products
Containers & Other Storage Devices to Keep our Bagels Fresh
Coffee machines that have implications to make a fresh brew every fifteen.
Aprons and other Clothing to ensure our customers that their food is safe and reliable.

Promotion

As far as our actual marketing organization goes, we do our best to get our name out there. We advertise in the local newspapers, we place coupons in the newspapers with our advertisement, we frequently bring flyers to Siena College to hand out, and we have our own television commercial. Seasonality also comes into play when it comes to how we market our business. During the holidays we have Christmas specials, during Thanksgiving we offer catering, and during the summer months we offer summer picnic packages. We do not only perform catering for seasonality purposes, but we are available for catering year round.

We devised our schedule to try and suit the needs of our customers. From Monday thru Friday we open at 630 am and we close at 4 pm. On the weekends we are open from 730 am to 330 pm. For our employees sake we do our best to try and run two different shifts, but more often than not many of the employees will work all day. This is another reason that we need to hire more employees.

Monitor and Correct Deviations from Plan	WHY???
Employee Cooperation	Who better to make suggestions than the people serving our great customers for the past twenty years. We will put a lot of responsibility on our workers to tell us what is and what is NOT working. This will include business operations and product line (for example- the health food items not selling).
Looking at our Financial Statements at the End of The Year	We really want to serve our community well, but this is a business. If we want to be the best, our revenue has to match our financial goals. If there is some deviation from our blueprint, we have to go back to the drawing board. This can include a hike in prices, a deletion of some unsuccessful products and a cut-back in employees (even though this would be the last possible option).
Think on our Feet	The average deli has about $3,000-$5,000 in

	business a day! It is going to be hard to predict all the operations in our business, day-by day. Consequently, we are going to have to think on our feet and make some deviations on the fly. This can include making executing decisions the day of the matter. Even though this can be considered "risky business practices", it is necessary in an industry like ours. For example, having fewer products available the morning after a snow storm. People are going to be less likely to risk the elements, if the roads are unsafe (especially if their children are in the vehicle).

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MODELING AUTO INSURANCE PREMIUMS

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INTRODUCTION

The findings in this paper will provide the reader with a basic knowledge and understanding of how Auto Insurance Companies are able to determine the price of a specific person's insurance premium on their automobile. The process of determining the premium is very difficult and laborious, because the large number of factors that majorly influence the price. Therefore to make things simpler the data will only be based on one specific zip code in Albany, New York (12208). In return, the goal will be to determine among the randomly generated data which persons are most likely to have a greater premium. To be able to accomplish this goal the premium price must depend on the age, net income, size of car, value of the car, number of previous claims, and the gender of the policyholder.

The results that will be received by this data should be able to construct a simplified way of figuring out a person's car insurance premium. It will also show which groups of people pay higher premiums on their car; in theory this should be young males and the elderly (which is predicted by gender and age groups alone). Let the reader realize that this model of producing the price of auto insurance is not truly accurate because of the limitations put on this model; therefore the model may have some violations (for example multicollearity). Like previously mentioned it is very difficult to figure out the exact price that a person has to pay for his or her car insurance. This is why different insurance companies have different prices for the same make and model for a car. The reason for this is because each insurance company uses different variables to construct a car insurance policy. Another issue with regressing this model is that the distribution of this model can never be zero, because an insurance company cannot charge a policyholder a negative amount. Therefore, the distribution will be fatter on one side; the model will increase rapidly, reach its maximum, and decrease slowly. Making this model a non-normal distribution and more like a F-distribution or a Chi-Square distribution depending on the data that is collected. However, by invoking the Central Limit Theorem, which states:

> "Let X1, X2, … , Xn be independent random variables, all of which have same probability distribution and thus the same mean μ and variance $\sigma 2$.
> If n is large ($n >= 30$), the sum
>
> $S = X1 + X2 + \ldots + Xn$
>
> will be approximately normal with mean $n\mu$ and variance $n\sigma 2$,"

the model can also be assumed as a normal distribution. Even though this model is not truly accurate for reasons discussed earlier, it will still provide us with the understanding of the process of constructing a car insurance policy and hopefully prove the theory that young males and the elderly pay higher premiums on car insurance.

LITERATURE REVIEW

Most of the literature that I was able to find on auto insurance or insurance in general had to do with experimental cases. Literature on this subject is mostly experimental and theoretical because of privacy laws; that prohibit auto insurance companies from publishing any of its policyholders' personal information. Even though these papers are experimental and theoretical, I was still able to figure out from these papers what I thought to be the most important determinates for my model.

Determinants of Insurance Pervasiveness: a cross-national analysis:

The goal for these researchers, were to prove if sociocultural variables impact the degree of insurance pervasiveness, which is an unwelcome influence or physical effect on insurance. To accomplish this, the researchers collected data from a representative sample of 37 countries across the world and were able to prove that certain cultural and sociopolitical variables can impact the level of insurance pervasiveness significantly. The results from this study provided important information for various insurance companies.

Concerning Variables:

Cultural Dimensions:

1. Uncertainty Avoidance (UAI) – "Considered to represent the amount of anxiety in a society and the extent to which it tends to consider itself threatened by risk, uncertainty and ambiguous situation. Uncertainty avoidance centers on how societies deals with the unknown aspects of its future." Therefore in high uncertainty avoidance cultures have a higher concern for security and safety, which in return causes these cultures to have a higher, need to control their future.

   "*Hypothesis 1*: The higher the degree of uncertainty avoidance in a country's culture, the higher the degree of insurance pervasiveness in the country."

2. Individualism – Collectivism (IDV) – "Individualism – collectivism is an analytical dimension that captures the relative importance people accord to personal interest and to shared pursuits. This dimension reflects the degree of emotional independence of individuals from organizations or groups."

   "*Hypothesis 2*: The higher the degree of individualism in a country's culture, the higher the degree of insurance pervasiveness in the country."

3. Masculine – Feminine (MAS) – "Masculine oriented cultures focus more on quantity of life and emphasize independence and accomplishment (power, wealth, and status). Whereas feminine oriented cultures place greater emphasis on quality of life and value interdependence, relationships, and the welfare of other people."

   "*Hypothesis 3*: The higher the degree of masculinity in a country's culture, the higher the degree of insurance pervasiveness in that country."

4. Power Distance (PDI) – "Associated with the degree of centralization of authority and the extent of autocratic leadership. It reflects the degree to which centralization and autocratic leadership are inherent in the mental programming of the members in the society, not only among those who have power but also among those who are the bottom of the power hierarchy."

   "*Hypothesis 4:* The higher the power distance in a country's culture, the lower the degree of insurance pervasiveness in that country."

Non- Cultural Variables:

1. National Income (GNP) – "As income rise, people may want to feel more secure, and their financial resources available to deal with the consequences of a disaster also tend to increase. … as income rises, their ability to hedge risk and uncertainty increases."

   "*Hypothesis 5*: The higher the level of national income in a country, the higher the degree of insurance pervasiveness."

2. Sociopolitical Instability (SPI) – " Viewed as a two-dimensional concept. The first emphasizes the executive instability by focusing on the propensity to observe government changes within a constitutional framework. The second is based on indicators of social unrest and political violence."

"Hypothesis 6: The higher the degree if sociopolitical instability in a country, the higher the degree of insurance pervasiveness."

3. Degree of Regulation (EFREE)

"*Hypothesis 7:* The higher the degree of economic regulation within a country, the lower the degree of insurance pervasiveness.

Variables used to regress their data, prove to have only three significant variables which where GNP, SPI and EFREE. In conclusion this study was unable to identify if national culture is a significant factor that is related to insurance pervasiveness, but it did found out that "several factors can explain a significant portion of the variances in the degree of insurance pervasiveness across the nations."

Handling Imbalanced Data Sets in Insurance Risk Modeling:

In this paper, it explains that "data sets constructed for the purpose of insurance risk modeling are therefore highly imbalanced" because there are rarely ever filed claims. The researchers in this paper use tree-based learning techniques accompanied by a "split-selection criterion tailored to the specific statistical characteristics of insurance data, and it uses constraints on the statistical accuracies of model parameter estimates to guide the construction of splits in order to overcome selection biases that arise because of imbalance that is present in the data." The paper provides the reader with different models to use to regress insurance risk by using the Joint Poisson/ Log-Normal Model and using actuarial credibility, which "has to do with the accuracy of estimated risk parameters." The paper does not actually regress any data but does provide an insight into why it is very difficult in constructing a model for insurance and insurance risk, which is the risk that the insurance company under goes taking on a new policyholder.

DESCRIPTION OF DATA

As said in the introduction, the determinates of auto insurance premiums for this model are age, net income, size of car, number of previous claims, and the gender of the policyholder. Making the formula for the model:

$$Y_t = \beta_1 + \beta_2 X_{2t} + \beta_3 D_{3t} + \beta_4 X_{4t} + \beta_5 D_{5t} + \beta_6 X_{6t} + \beta_7 X_{7t} + U_t$$

Where:

Y_t = Auto Insurance Premium Amount
β_1 = Intercept
X_{2t} = Age
D_{3t} = Gender
X_{4t} = Net Income
D_{5t} = Size of Car
X_{6t} = Value of Car
X_{7t} = Number of Previous Claims
β_2 = Corresponding Coefficient for X_{2t}
β_3 = Corresponding Coefficient for D_{3t}
β_4 = Corresponding Coefficient for X_{4t}
β_5 = Corresponding Coefficient for D_{5t}
β_6 = Corresponding Coefficient for X_{6t}
β_7 = Corresponding Coefficient for X_{7t}
U_t = Error Term

By using brainyzip.com, it provided a detail list of the population break down in the zip code that is used for this model.

Description of variables:

The data for the auto insurance premium amount was accumulated by using a website that allowed the policyholder to find amounts of premiums for different auto insurance companies by selecting if he or she were male or female, the size of the population, single or married, and age. By changing the gender and the age of the policyholder, while keeping the population set to < 200,000 and the martial status to single,

were able to collect the data for the amount of the auto insurance premiums, for the purpose of simplicity GEICO insurance company is the company used for the data.

By setting gender as a dummy variable (Female = 0) we are able to randomly generate a data set in excel by finding the number of males (9,980 people) and females (11,327) within the population then divide each (total females and total males) by the total population of 21,307 people. Resulting in a probability of .531609 for females and .468391 for males.

To simplify things down even further, the data for age will be grouped into eight groups (15-24; 25-34; 35-44; 45-54; 55-64; 65-74; 75-84; 85-100) using the midpoints for the data. As said before the total population in this specific area is 21,307 people, but to find the total population within the age range needed for this data subtract the amount of people under the age of 15 (total of 3,067 people) from the total population, making the total population need for this data set to be 18,240 people. From the website, it provided the population of each age group:

15 – 24 → 3,780 people;
25 - 34 → 3,717 people;
35 - 44 → 2,928 people;
45 - 54 → 2,786 people;
55 - 64→ 1,583 people;
65 – 74 → 1,402 people;
75 – 84 → 1,390 people;
85 – 100 → 633 people

To generate a data set for age, find the probabilities of occurs of each age group by dividing the population of that specific age group by the total population in that zip code.

By doing this, we obtain:

Age	Age Midpoints	Probabilities
15 – 24	20	.209375
25 – 34	29.5	.203783
35 – 44	39.5	.160526
45 – 54	49.5	.151754
55 – 64	59.5	.086787
65 – 74	69.5	.076864
75 – 84	79.5	.076206
85 – 100	92.5	.034705

To generate the data use the probabilities found and the age midpoints to use the random generator program in excel. The process of forming a data set for net income is similar to age, but this time net income (for households not families) will be grouped into seven groups ($0 - $24,999; $25,000 - $49,999; $50,000 - $74,999; $75,000 - $99,999; $100,000 - $149,999; $150,000 - $200,000). From the website the population of each net income group is obtain, which are:

$0 – $24,999 → 3,007 people;
$25,000 – $49,999 → 2,834 people;
$50,000 – $74,999 → 1,860 people;
$75,000 – $99,999 → 852 people;
$100,000 – $149,999 → 696 people;
$150,000 – $200,000 → 233 people

The table for net income with its probabilities is located in the appendix section of this paper.

Depending on what kind of vehicle the policyholder owns determines a sufficient portion of the auto insurance premium. Because there are so many different varieties of automobiles the data will have to be simplified even further. This is accomplished by using the size of the car as a dummy variable. The size of the car will consist of three categories: small, midsize, and large (making the midsize category the base, meaning midsize = 0). To randomly generate data for the size of the car, assume that between the three different categories they have equal probabilities of 1/3 then use the random generator program in excel to formulate your data. Table is located in the appendix under Tables for Determinates. Now for the value of the car, it will be similarly done like net income and age but in this case it was difficult to find the amount of each car in the specific area so assumptions where made to find the probabilities of each group of the value of the car. The assumptions that were made were by using the knowledge of actuarial science and probability. By looking at the total number of people in each net income group and the social and physical

environment of the area, assumptions were made by forming the probabilities of the first value group with the probability of .4, second group with a probability of .3, third group with a probability of .25, forth group with a probability of .04, and the fifth group with a probability of .01. The probabilities of these groups make probable sense because as the value of the car and the amount of net income increases there are less people likely to purchase a $50,000 car. The breakdown of each group for the value of the car and its probabilities are located in the appendix section. The last variable, number of previous claims, are broken down in to three groups (0 claims, 1 claim, and 2 claims). The reason for only going up to 2 claims is because if a policyholder as more then 2 claims filed within a six month time period the insurance company is most likely going to drop the policyholder if another claim is filed. The reason for the insurance company dropping the policyholder is because it cost the insurance company to much money to pay for the damages. Also in the eyes of the insurance company this policyholder is too risky for them to provide insurance to. The probabilities of the three claim groups were found by using an exam question on the Society of Actuaries website. Number of Previous Claims table is located in the appendix.

Figuring out the sample size:

Because we do not know the standard deviation or the proportion (p) of cars owned in the original population (21,307 people), it is impossible to simply figure out the sample size. So to figure out the sample size needed to accurately estimate the model some assumptions are going have to be applied. First, assume that approximately 95% of the people in the area own cars, which will be represented by p*. Also, assume that the maximum error of the point estimate (p*) will be equal to .10, which will be represented by ε (where $\varepsilon = (z^2_{\alpha/2}\,(p^*(1-p^*))^{1/2}) / (n^{1/2})$. Therefore the sample size (n) will equal $((z^2_{\alpha/2}(p^*(1-p^*))) / \varepsilon^2)$ for the $100(1-\alpha)\%$ confidence interval for p. Although, the assumption of p is not truly accurate therefore to find n use the fact that "No matter what value p takes between zero aud one, it is always true that $p^*(1-p^*) \leq \frac{1}{4}$. Hence $n = (((z^2_{\alpha/2})(p^*(1-p^*))) / \varepsilon^2) \leq (z^2_{\alpha/2})/(4\varepsilon^2)$. Thus, if we want the $100(1-\alpha)\%$ confidence interval for p to be no longer than that given by y/n (the relative frequency) $\pm\ \varepsilon$, a solution for n that provides this protection is $n = (z^2_{\alpha/2})/(4\varepsilon^2)$."

So from this N = 8,196 never married residents in the area of 12208

95% confidence interval $\Rightarrow \alpha = .05$ and $\varepsilon = .1$

$n = (z^2_{\alpha/2})/(4\varepsilon^2) = (1.960^2) / (4(.1^2)) = 96.04 \approx 97$ residents (the reason for rounding up is because you cannot have .04 of a person so you round up instead of down)

Therefore, the sample size that will be used for this model will be 97 residents of the area in question. The reason why for using the population of never married residents to figure out the sample size is for the sake of simplicity and also because if a policyholder has a family his or her auto insurance premium will increase from the number of family members. Also, the policy for a policyholder with a family is different from the policy of a policyholder with no family members; so to run a regression using both family and no family would skew the regression.

REGRESSION

The regression for this model:

In Stata: (the summary of the regression model is located in the appendix)

Source	SS	df	MS
Model	2562740.45	6	427123.408
Residual	13895082.3	90	154389.804
Total	16457822.8	96	171435.654

Number of obs	= 97
F(6, 90)	= 2.77
Prob > F	= 0.0163
R-squared	= 0.1557
Adj R-squared	= 0.0994
Root MSE	= 392.92

priceforpr~m	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age	2.506429	1.875397	1.34	0.185	-1.219374	6.232233
gender	323.5103	83.20402	3.89	0.000	158.211	488.8096
netincome	-.0004717	.0010198	-0.46	0.645	-.0024979	.0015544
sizeofcar	-59.70216	84.05933	-0.71	0.479	-226.7007	107.2964
valueofcar	-.0001475	.0040108	-0.04	0.971	-.0081157	.0078207
numberofcl~d	-23.37451	77.04134	-0.30	0.762	-176.4306	129.6816
_cons	759.9711	144.3584	5.26	0.000	473.1779	1046.764

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of priceforpremium

         chi2(1)      =     6.55
         Prob > chi2  =   0.0105

. estat ovtest

Ramsey RESET test using powers of the fitted values of priceforpremium
       Ho:  model has no omitted variables
                    F(3, 87) =      6.59
                    Prob > F =      0.0005
```

(The regression model in excel is located in the appendix section)

RESULTS

From the regression of this model it shows that the results are not accurate or significant for this particular model. The reason for this it because the data used to run this regression was not appropriate for this model. The data used was not accurate enough because I was unable to find data on auto insurance premiums. Auto Insurance Companies are uot allowed to publish their policyholders' premiums because of privacy laws. So this is why the data that was collected did accurately represent the price of auto insurance premiums.

The measurement of R^2, measures how well a regression line approximates real data points. As you can see from the regression, $R^2 = .1557$ and the Adjusted $R^2 = .0994$ this shows that the data used for this model only represents 15% of this model and does not accurately represent the model.

It is also seen that many of the variables used are not significant, the reason for this is because to find prices of auto insurance premiums I used another model on a website to find the amounts. When another model is used to help produce a different model the regression run on the new model will be skewed and have many violations. As can be seen by the regression on this model only gender and the intercept are significant with a t-stat of 3.89 and a t-stat of 5.26, respectfully. This is because the model used to find the prices of the auto insurance premiums only used gender and age groups to figure out the prices therefore gender would be significant but because age was grouped it is not accurate enough for this model therefore its t-stat is only 1.34.

Even before running the violation tests, you can see from the regression that this model is not going to pass many of the violation tests because of the fact that there are not many significant variables. When running the violation test of Heteroskedasticity the P-Value is equal to .0105, which is less than $\alpha = .05$, therefore you reject the null and the model is heteroskedastic. If $\alpha = .01$ then the P-Value would be greater than α, therefore you do not reject the null and the model is homoskedastic, it all depends on the value of α that is assumed. Another test that was run on this model was the Ramsey RESET Test, which provides the information if the model is missing any relevant variables that are needed to regress this model. From the Ramsey Test, the P-Value is equal to .0005, which is less than $\alpha = .05$, therefore it is not significant and there are omitted variables. One test was run in excel, which was for multicollearity, resulting in having no multicollearity because of the "Thumb Rule" of .8 or higher indicates multicollearity (The results for this test is located in the appendix section).

CONCLUSION

From the findings of this regression and the results from the violation tests, the data used was not accurate for this model. Even though many of the variables are not significant the theory that was stated in the introduction of young males and the elderly pay higher auto insurance premiums was proven. As the age of the policyholder increases the auto insurance premium increases by 2.506429, which proves that the

elderly pay more for their policy. When the dummy variable for gender equals 1 (males) the price of the auto insurance premium is 323.5103 greater than if the policyholder was a female, proving that males pay higher auto insurance premiums. From both age and gender, young males do pay more for their policy than young females do therefore proving the theory.

The Ramsey Test that was performed showed that there were omitted relevant variables in the model. The reason for this can be that, for pricing auto insurance premiums there are so many different variables that effect the pricing.

As stated in the introduction, the process of determining auto insurance premiums is very difficult because of the large number of factors that are involve, this is why assumptions were made to simplify the model which in return resulted in inefficient results. Because there are so many factors that affect auto insurance premiums this is why each auto insurance company have different prices for their premiums. Each individual auto insurance company chooses what they believe to be the most important variables in figuring out the premiums. Resulting in different premium amounts for the same policyholder. Therefore it is not totally possible to obtain every single factor that can contribute to the pricing of auto insurance premiums.

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http://www.foranu.com/site/

☐

http://www.brainyzip.com/zipcodes/12/12208.html

APPENDIX

Data Set:

Price for Premium	Age	Gender	Net Income	Size of Car	Value of Car	# of Claims Filed
624	39.5	0	37499.5	1	40000.5	1
850	39.5	1	62499.5	1	20000.5	0
893.2	20	0	62499.5	0	7500	0
510.1	29.5	0	12499.5	0	30000.5	0
856.3	59.5	0	12499.5	1	20000.5	0
532.95	39.5	0	37499.5	0	7500	0
1469.4	20	0	12499.5	1	20000.5	0
495.3	39.5	0	37499.5	1	30000.5	0
643.6	39.5	1	62499.5	0	7500	1
957.45	29.5	1	62499.5	1	40000.5	0
1320.15	20	1	12499.5	1	20000.5	0
1210.95	20	0	12499.5	0	30000.5	0
1104.1	92.5	0	12499.5	0	40000.5	0
650.45	59.5	0	175000	1	20000.5	0
958.45	39.5	1	37499.5	0	7500	0
479.05	29.5	1	175000	1	30000.5	1
1293.25	39.5	1	37499.5	0	30000.5	2
991	20	1	37499.5	1	7500	0
546.52	59.5	0	62499.5	1	30000.5	1
739.5	49.5	1	12499.5	0	20000.5	0
550	29.5	0	87499.5	0	7500	0
738.5	29.5	0	37499.5	0	20000.5	0
642.1	49.5	0	12499.5	1	20000.5	0
857.63	69.5	0	62499.5	1	20000.5	2
985.5	79.5	0	37499.5	1	7500	0
603.45	29.5	1	12499.5	1	20000.5	1
984.65	59.5	1	62499.5	1	7500	0
1210.85	20	0	12499.5	1	7500	0
954.15	20	1	37499.5	1	7500	0
798.56	79.5	0	125000	1	7500	0
615.45	59.5	0	37499.5	0	7500	0
875.64	69.5	1	62499.5	0	30000.5	0
321.25	39.5	0	125000	1	30000.5	0
796.9	20	1	12499.5	1	7500	0

924.8	20	1	87499.5	1	7500	1
1530	20	0	125000	0	7500	0
533	49.5	1	62499.5	0	7500	0
541.26	59.5	0	125000	0	20000.5	0
1633.1	20	1	87499.5	1	30000.5	0
1460.45	20	1	37499.5	1	7500	0
981.2	49.5	1	12499.5	1	7500	0
678.97	69.5	0	37499.5	1	20000.5	0
958.45	29.5	1	37499.5	1	30000.5	1
549.35	59.5	1	37499.5	1	30000.5	1
864.36	69.5	0	12499.5	1	7500	0
658.61	69.5	0	62499.5	1	20000.5	0
452.67	59.5	0	125000	1	20000.5	0
648.05	29.5	0	37499.5	1	7500	0
1645.55	20	1	125000	1	20000.5	2
629.8	49.5	0	37499.5	1	20000.5	2
1254.55	20	0	87499.5	1	20000.5	0
1139.3	29.5	0	37499.5	1	20000.5	0
1704.9	20	1	12499.5	0	40000.5	0
495.3	29.5	0	37499.5	1	20000.5	0
697.41	59.5	0	37499.5	0	30000.5	2
1097.65	79.5	0	12499.5	1	7500	0
847.45	29.5	1	87499.5	1	7500	0
893.2	29.5	0	12499.5	1	30000.5	0
668.8	39.5	1	37499.5	1	30000.5	0
368.98	59.5	0	125000	0	30000.5	0
844.55	29.5	0	62499.5	1	20000.5	0
746.35	49.5	0	12499.5	0	20000.5	0
376.2	39.5	0	37499.5	0	7500	0
827.1	20	1	12499.5	0	7500	1
348.85	49.5	0	12499.5	1	7500	0
2037.5	20	1	37499.5	1	7500	1
588.85	49.5	1	62499.5	0	20000.5	0
669.3	39.5	0	87499.5	1	20000.5	0
437.3	49.5	0	37499.5	1	20000.5	0
1019.65	29.5	0	87499.5	0	40000.5	0
865.5	20	0	37499.5	1	20000.5	0
963.7	29.5	0	12499.5	0	30000.5	0
1177.95	29.5	1	37499.5	1	7500	0
2018.86	92.5	1	37499.5	1	30000.5	1
1778.54	92.5	0	12499.5	0	7500	0
957.42	79.5	0	37499.5	0	30000.5	0
1393.2	49.5	1	37499.5	0	7500	0
1079.3	20	1	37499.5	0	7500	0
2116.8	92.5	1	175000	1	7500	0
1985.65	92.5	1	62499.5	0	20000.5	0

1103.15	20	1	37499.5	1	30000.5	0
624	49.5	0	62499.5	1	7500	0
1027.05	29.5	1	62499.5	0	7500	1
1129.05	20	0	12499.5	1	20000.5	0
1053.4	20	0	12499.5	0	30000.5	0
1027.35	29.5	0	62499.5	1	20000.5	0
1758.35	20	1	12499.5	0	20000.5	0
600	49.5	0	37499.5	1	7500	1
875.65	69.5	1	12499.5	1	20000.5	0
668.8	39.5	1	125000	1	30000.5	0
817.4	39.5	1	37499.5	1	7500	0
1604.6	92.5	0	125000	0	7500	0
1645.52	92.5	1	37499.5	1	20000.5	0
736	20	0	12499.5	1	20000.5	0
860.65	39.5	0	37499.5	1	30000.5	0
629.7	39.5	0	12499.5	1	7500	0
379.25	49.5	0	37499.5	1	7500	0

Tables for Determinates:

Age	Age Midpoints	Probability
15 – 24	20	.209375
25 – 34	29.5	.203783
35 – 44	39.5	.160526
45 – 54	49.5	.151754
55 – 64	59.5	.086787
65 – 74	69.5	.076864
75 – 84	79.5	.076206

Net Income	Net Income Midpoints	Probability
$0 - $24,999	$12,499.50	.317127
$25,000 - $49,999	$37,499.50	.298882
$50,000 - $74,999	$62,499.50	.196191
$75,000 - $99,999	$87,499.50	.089854
$100,000 - $149,999	$125,000	.073402
$150,000 - $200,000	$175,000	.024544

Value of The Car	Value Midpoints	Probability
$0 - $15,000	$7,500	.4
$15,001 - $25,000	$20,000.50	.3
$25,001 - $35,000	$30,000.50	.25
$35,001 - $45,000	$40,000.50	.04
$45,001 - $50,000	$47,500.50	.01

Number of Claims Filed	Probability
0	.8
1	.12
2	.08

Size of Car	Probability
0 (Midsize)	1/3
1	2/3

Gender	Probability
0 (Female)	.531609
1	.468391

Stata Data Summary:

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 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/    10.1   Copyright 1984-2009
  Statistics/Data Analysis              StataCorp
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                                        College Station, Texas 77845 USA
                                        800-STATA-PC        http://www.stata.com
                                        979-696-4600        stata@stata.com
                                        979-696-4601 (fax)

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       Serial number:  1910514455
         Licensed to:  School of Buisness
                       Siena College

Notes:
      1.  (/m# option or -set memory-) 1.00 MB allocated to data

. use "\\calista\sshare$\ba26para\Car Insurance 2.dta"


. summarize

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
priceforpr~m |         97    934.9485    414.0479      321.25     2116.8
         age |         97    43.55155    21.91288          20       92.5
      gender |         97    .4226804    .4965517           0          1
   netincome |         97    50643.89    39953.36     12499.5     175000
   sizeofcar |         97    .6494845       .47961           0          1
-------------+---------------------------------------------------------
  valueofcar |         97    18402.37    10150.04        7500    40000.5
numberofcl~d |         97    .2371134    .5356693           0          2
```

Stata Regression and Violation Tests:

```
  ___  ____  ____  ____  ____ tm
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   10.1   Copyright 1984-2009
  Statistics/Data Analysis             StataCorp
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                                       College Station, Texas 77845 USA
                                       800-STATA-PC        http://www.stata.com
                                       979-696-4600        stata@stata.com
                                       979-696-4601 (fax)

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       Serial number:  1910514455
         Licensed to:  School of Buisness
                       Siena College

Notes:
      1.  (/m# option or -set memory-) 1.00 MB allocated to data

. use "\\calista\sshare$\ba26para\Car Insurance 2.dta"


. regress priceforpremium age gender netincome sizeofcar valueofcar numberofcla
> imsfiled

      Source |       SS       df       MS              Number of obs =      97
-------------+------------------------------           F(  6,    90) =    2.77
       Model |  2562740.45     6  427123.408            Prob > F      =  0.0163
    Residual |  13895082.3    90  154389.804            R-squared     =  0.1557
-------------+------------------------------           Adj R-squared =  0.0994
       Total |  16457822.8    96  171435.654            Root MSE      =  392.92

------------------------------------------------------------------------------
priceforpr~m |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |    2.506429   1.875397     1.34   0.185    -1.219374    6.232233
      gender |    323.5103   83.20402     3.89   0.000      158.211    488.8096
   netincome |   -.0004717   .0010198    -0.46   0.645    -.0024979    .0015544
   sizeofcar |   -59.70216   84.05933    -0.71   0.479    -226.7007    107.2964
  valueofcar |   -.0001475   .0040108    -0.04   0.971    -.0081157    .0078207
numberofcl~d |   -23.37451   77.04134    -0.30   0.762    -176.4306    129.6816
       _cons |    759.9711   144.3584     5.26   0.000     473.1779    1046.764
------------------------------------------------------------------------------

. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of priceforpremium

         chi2(1)      =     6.55
         Prob > chi2  =   0.0105

. estat ovtest

Ramsey RESET test using powers of the fitted values of priceforpremium
       Ho:  model has no omitted variables
                  F(3, 87) =      6.59
                  Prob > F =      0.0005
```

Excel Regression:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.394608216
R Square	0.155715644
Adjusted R Square	0.09943002
Standard Error	392.9246757
Observations	97

ANOVA

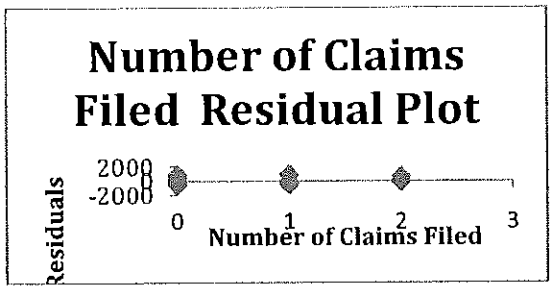
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	2562740.429	427123.4	2.766526	0.016287847
Residual	90	13895082.07	154389.8		
Total	96	16457822.5			

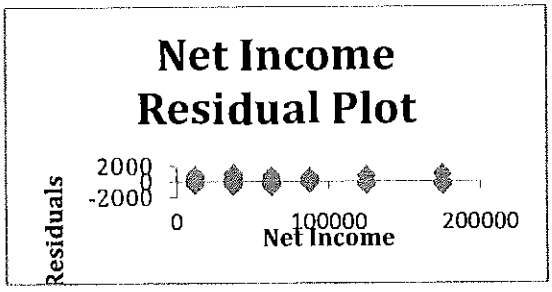
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	759.9711356	144.3584176	5.264474	9.485E-07	473.177949	1046.764322	473.177949	1046.76432
Age	2.506429476	1.875396904	1.3364795	0.1847616	-1.219373726	6.232232678	-1.219373726	6.23223268
Gender	323.5102978	83.20401695	3.8881572	0.000193	158.2109993	488.8095964	158.2109993	488.809596
Net Income	-0.000471743	0.001019849	-0.4625616	0.644795	-0.002497851	0.001554365	-0.002497851	0.00155436
Size of Car	-59.70216622	84.05932647	-0.7102385	0.4793926	-226.7006864	107.2963539	-226.7006864	107.296354
Value of Car	-0.000147486	0.004010813	-0.036772	0.9707482	-0.008115666	0.007820695	-0.008115666	0.00782069
Number of Claims Filed	-23.37450679	77.04133517	-0.3034022	0.7622837	-176.4305626	129.681549	-176.4305626	129.681549

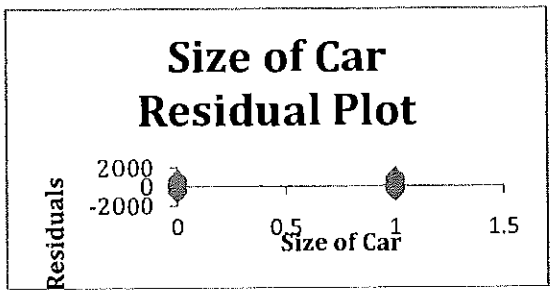
Excel Mulitcolliearity Test:

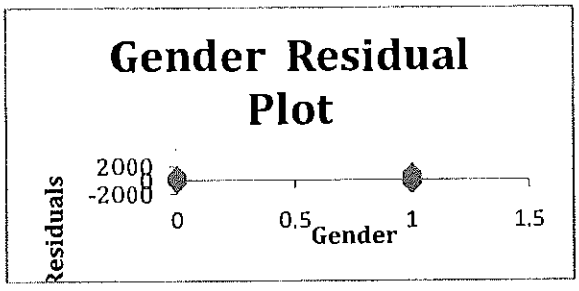
	Price for Premium	*Age*	*Gender*	*Net Income*	*Size of Car*	*Value of Car*	*Number of Claims Filed*
Price for Premium	1						
Age	0.07556767	1					
Gender	0.361881197	-0.14083709	1				
Net Income	-0.01925626	0.146903403	0.03207183	1			
Size of Car	-0.074085476	-0.05773215	0.0162333	0.05267976	1		
Value of Car	-0.0330995	-0.01326624	-0.0661084	0.00898746	-0.0360108	1	
Number of Claims Filed	0.027390229	-0.00682038	0.16754981	0.06579497	0.04305358	0.13747096	1

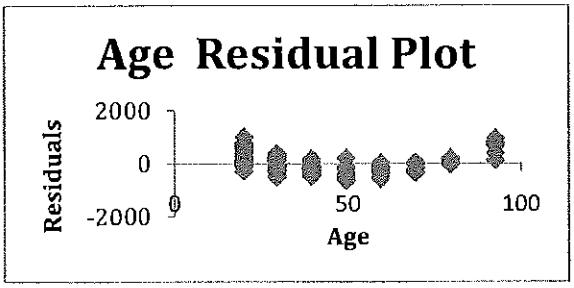
Excel Residual Plots:


Number of Claims Filed Residual Plot
Residuals
2000
0
-2000
0
1
2
3
Number of Claims Filed


Net Income Residual Plot
Residuals
2000
0
-2000
0
100000
200000
Net Income


Size of Car Residual Plot
Residuals
2000
0
-2000
0
0.5
1
1.5
Size of Car


Gender Residual Plot
Residuals
2000
0
-2000
0
0.5
1
1.5
Gender


Age Residual Plot
Residuals
2000
0
-2000
0
50
100
Age

Health Consciousness of Siena Students

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EXECUTIVE SUMMARY

We decided to research the health consciousness of Siena College students. We first became interested with this subject because we learned through the FDA that health concerns have been increasing over the past few years and we wanted to see if this concern was common among the students at Siena. The questions we wanted answered by the end of our project were "Do Siena College students exhibit health conscious physical behaviors?" and "Do Siena College students exhibit healthy attitudinal behaviors?"

In order to gather information, we prepared and administered a survey using Qualtrics. The survey included questions to see if the students partook in certain activities that lead to living a healthy lifestyle, such as staying active, eating healthy, taking vitamins, and not smoking. Our survey included questions that measured attitudinal as well as behavior-based questions. We also wanted to explore the reasons behind why students exercised or why students do not exercise.

Our survey was administered to three different marketing classes. Of the students in these classes, we had 83 respondents to our survey. After compiling our results, we then exported them to SPSS so we could analyze them using numerous statistical processes such as frequency tests, chi squared tests, correlation test, t-test, and anova tests. From here, we determined which variables posed significant associations.

We were able to find out that there was a significant association between the amount of fast food meals consumed per week and the hours of television watched per week. Therefore, Siena students who eat a significant amount of fast food meals per week also spend a lot of time watching television, and vice versa. There was also a significant association between how many hours of sleep Siena students get per night and the amount of fast food meals Siena students eat per week. The more fast food meals one eats, the more hours of sleep one gets. There is also significance between class year and the amount of times per week a student participates in physical activity. Freshmen and sophomores participate in physical activities more time per week than juniors and seniors.

After analyzing the tests and the results, we believe that Siena College students are health conscious. According to the results, 87 percent of the respondents believed they were health conscious and also lived a healthy lifestyle by exercising, not smoking, watching their caloric intake, and visiting a doctor at least once a year.

INTRODUCTION

Studies have been performed that show American adults believe it is important to have a healthy lifestyle. This includes eating habits, exercise, and overall well-being. However, many people to not reflect this behavior in their everyday lives. We thought it would be interesting to see if Siena students have the same concerns and if their behaviors reflect these concerns. We would like to determine the overall health consciousness of Siena students by conducting research about their lifestyle. Information will be collected by conducting a survey to measure both attitudinal and behavioral aspects of Siena students. The purpose of this research is to determine if there is a level of health consciousness among Siena students, and how that level translates into actions.

RESEARCH OBJECTIVES

The overall objective is to find out how health conscious Siena students are as comprised of behavioral and attitudinal components. The research questions we plan to answer by the end of this project are:

- Do Siena College students exhibit health conscious objective physical behaviors?
- Do Siena College students exhibit healthy attitudinal behavior?

METHOD

Our data research design consisted of both exploratory and descriptive research. We conducted exploratory research because we needed to find out what exactly health consciousness was and the attributes of health consciousness such as eating healthy, taking vitamins, not smoking, and partaking in physical activities.

Our data research design consisted of descriptive research. We chose descriptive research because we wanted to find out if Siena College students thought they were health conscious, why they thought they were health conscious and how they kept themselves healthy (i.e. not smoking, exercising regularly, eating healthy, taking vitamins). In order to collect the data for our project, we developed a sample survey entitled "Health Conscious Siena Students," which is an example of a cross sectional study. We chose to conduct a survey to obtain primary data because it was easy to administer. We developed the survey using Qualtrics and administered the survey to our classmates in our marketing research class as well as Dr. Pepe's two other marketing classes. Using this convenience sample, we felt we could get a representative sample of the Siena College student population.

This survey consisted of 19 different questions that measured students' demographics, attitudes, beliefs, and behaviors regarding health consciousness. The first four questions of the survey were demographic and classifications questions regarding the students' gender, age, class year, and GPA. Following these questions, was a screening question to select the respondent types that we wanted to be in the survey. The screening question included in the survey was "Do you consider yourself healthy." Following this question, we included warm-up questions because they were simple to answer and we wanted to generate interest from our respondents. The warm-up questions included if the respondent watched their calorie intake and how often the respondent visited the doctor. Complicated and difficult to answer questions followed the warm-up questions. By using these types of questions in the survey, we were able to find out specific details about the respondents eating habits, smoking habits, and exercise habits. We were also able to find out why or why not the respondent participated in physical activities.

All of our results are based upon the primary data we collected from the survey. After conducting our survey, we exported the results from Qualtrics into SPSS and analyzed our results through performing different tests such as frequency tests, cross tabulation tests, chi squared tests, and anova tests. From these tests, we were able to see if there were any significant correlations between different variables.

Using an online survey tool like Qualtrics will reduce data entry errors because the results did not have to be key entered. There tends to be an increase in respondent error in understanding questions with an online survey as the researcher is not present to answer questions.

RESULTS

We administered the survey over a period of two weeks. There were 83 students that participated in our survey. The first test we decided to run was a cross tabulation table and a chi-square of question 1 and question 6 from the survey (*refer to Appendix 1).* We wanted to see if gender played a role in monitoring their caloric intake. The Pearson Chi Square had a level of significance of .031 (*Refer to Exhibit 1 and 2*). This number is below .05 and it is positive, therefore there is significance between gender and if watching caloric intake. There is a difference between the way females and males answered the question, "do you watch your caloric intake?" We found that 74% of the men surveyed responded that they did not watch their caloric intake. Only 50% of the women said that they did not watch their caloric intake. Females watched their caloric intake more than males. Therefore, gender relates to watching caloric intake.

Exhibit 1

Gender and Caloric Intake Crosstabulation

What is your gender? * Do you watch your calorie intake? Crosstabulation

			Do you watch your calorie intake?		
			Yes	No	Total
What is your gender?	Male	Count	8	23	31
		% within What is your gender?	25.8%	74.2%	100.0%
	Female	Count	25	25	50
		% within What is your gender?	50.0%	50.0%	100.0%
Total		Count	33	48	81
		% within What is your gender?	40.7%	59.3%	100.0%

Exhibit 2

Chi-Square Test between Gender and Caloric Intake

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.639[a]	1	.031		
Continuity Correction[b]	3.691	1	.055		
Likelihood Ratio	4.778	1	.029		
Fisher's Exact Test				.038	.026
Linear-by-Linear Association	4.582	1	.032		
N of Valid Cases	81				

We then completed a correlation table to see if there was a connection between the hours of television watched per week and the number of meals consumed at fast food restaurants per week (*refer to Exhibit 3).* The significance was .005. This means that there is a positive association between the number of fast food meals consumed per week and the hours of television watched per week. We can conclude that Siena students who ate a high number of fast food meals per week indicates a large number of hours spent watching television, and vice versa.

Exhibit 3
Correlation between Fast Food and Television

Correlations

		How many meals a week do you eat fast food?-Amount per week	How many hours a week do you watch television?-Hours
How many meals a week do you eat fast food?-Amount per week	Pearson Correlation	1	.316**
	Sig. (2-tailed)		.005
	N	82	79
How many hours a week do you watch television?-Hours	Pearson Correlation	.316**	1
	Sig. (2-tailed)	.005	
	N	79	79

We completed a Correlation Test to determine if there was any type of relationship between the questions "how many hours of sleep do you get a night" (Question 15, *Refer to Appendix I*) and how many meals a week do you eat fast food (Question 16, *Refer to Appendix I*). The level of significance was .027 (*refer to exhibit 4*). This means that there is a significant association between the number of meals per week Siena students eat at fast food and the hours of sleep Siena students get. This means that an increased number of meals consumed at fast food correlates to an increased number of hours of sleep per night.

Exhibit 4
Correlation between Sleep and Fast Food

Correlations

		How many meals a week do you eat fast food?-Amount per week	On average, how many hours of sleep do you get a night?-Hours
How many meals a week do you eat fast food?-Amount per week	Pearson Correlation	1	.244*
	Sig. (2-tailed)		.027
	N	82	82
On average, how many hours of sleep do you get a night?-Hours	Pearson Correlation	.244*	1
	Sig. (2-tailed)	.027	
	N	82	82

We then ran a correlation test to see if there was a relationship between the amount of fast food consumed per week (Question 16) and the number of times per week students participate in physical activity (Question 9). The level of significance was .934. This means that there is no significant association between fast food consumed and the number of times per week physical activity is completed. These results were surprising because we though that there would be a correlation between eating fast food and working out but it appears that there is no relationship between the two activities.

Exhibit 5
Correlation between Fast Food and Physical Activity

Correlations

		How many meals a week do you eat fast food?-Amount per week	How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week
How many meals a week do you eat fast food?-Amount per week	Pearson Correlation	1	-.009
	Sig. (2-tailed)		.934
	N	82	81
How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week	Pearson Correlation	-.009	1
	Sig. (2-tailed)	.934	
	N	81	81

We decided to run an Anova Test to see if there was a significant association between the questions "how many times per week do you participate in physical activity" (Question 9) and "what is your class year" (Question 3). The level of significance was .001 (*Refer to Exhibits 6 and 7).* This means that there is an association between class year and the number of times per week students participate in physical activity. Looking at the Post Hoc Test, there is a significant difference between two different groups. The first group is freshman and sophomores and the second group is juniors and seniors. Freshman and sophomores participate in physical activity many more times per week than juniors and seniors. Freshmen participate in physical activity on an average on 6.25 times per week; Sophomores 6.59 times per week. Juniors participate in physical activity on an average of 3.92 times per week; Seniors 3.17 times per week. Underclassmen participate in physical activity many more times per week than upperclassmen.

Exhibit 6
Anova for Class Year and Physical Activity

ANOVA

How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	164.477	3	54.826	6.278	.001
Within Groups	672.404	77	8.733		
Total	836.880	80			

Exhibit 7
Post Hoc Tests
Homogeneous Subsets

How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week

Duncan[a,,b]

What is your class year?	N	Subset for alpha = 0.05	
		1	2
Senior	47	3.17	
Junior	13	3.92	3.92
Freshman	4		6.25
Sophomore	17		6.59
Sig.		.574	.062

We decided to complete a Correlation Test to see if there was a relationship between the questions, "how many hours of sleep do you get per night" (Question 15) and "how many hours of television do you watch a week" (Question 12). Tbe level of significance is .049 (*refer to Exhibit 8).* There is a significant association between sleep and television watched. An increased number of television hours watched per week corresponds to an increased number of hours slept per night.

Exhibit 8
Correlation between Sleep and Television

Correlations

		On average, how many hours of sleep do you get a night?-Hours	How many hours a week do you watch television?-Hours
On average, how many hours of sleep do you get a night?-Hours	Pearson Correlation	1	.222*
	Sig. (2-tailed)		.049
	N	82	79
How many hours a week do you watch television?-Hours	Pearson Correlation	.222*	1
	Sig. (2-tailed)	.049	
	N	79	79

We decided to do an Independent T-Test to determine if there was a significant association between the questions "How many times per week do you participate in physical activity" (Question 9) and "do you watch your caloric intake" (Question 6). The level of significance was .252 (*Refer to Exhibit 9),* therefore there is no significance association between number of times a Siena student participates in physical activity and whether or not they watch their caloric intake. This is interesting because it seems that those who exercise would watch their caloric intake, because they would want to be healthy in all aspects of tbeir lives.

Exhibit 9
T-Test between Physical Activity and Caloric Intake

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
How many times per week do you participate in physical activity? (long walks, running, exercise of s...- Times per week	Equal variances assumed	.171	.680	1.154	79	.252	.839	.727	-.608	2.285
	Equal variances not assumed			1.101	57.920	.275	.839	.762	-.686	2.364

We wanted to determine the reasons why Siena students exercise and why they do not (Questions 18 and 19). Siena students exercise because they either want to look good or be healthy (*Refer to Exhibit 10).* We completed a frequency table to see why Siena students exercise. There were 83 students who answered this question. The most picked answer out of the options was to be healthy. Approximately 78.3% of Siena students exercise in order to be healthy. From the results in the survey, 73.5% of Siena students choose to exercise in order to look better. Approximately 54.2% of Siena students exercise in order to tone muscles.

We completed a frequency table to see why Siena students do not exercise (*Refer to Exhibit 11).* Eight of the 83 students surveyed do not exercise. The biggest reason why they do not exercise is because they do not have the time. However, a large amount of them said that they do not like going to the gym.

Exhibit 10
Frequency Table for Why Students Exercise

Statistics

		Why do you exercise? (Check all that apply)- To look better	Why do you exercise? (Check all that apply)- To be healthy	Why do you exercise? (Check all that apply)- To tone muscles	Why do you exercise? (Check all that apply)- To meet new people	Why do you exercise? (Check all that apply)-I do not exercise	Why do you exercise? (Check all that apply)- Other (please specify)	Why do you exercise? (Check all that apply)- Other (please specify)- TEXT
N	Valid	83	83	83	83	83	83	83
	Missing	0	0	0	0	0	0	0

Exhibit 10a
Frequency Table

Why do you exercise? (Check all that apply)-To look better

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	22	26.5	26.5	26.5
1	61	73.5	73.5	100.0
Total	83	100.0	100.0	

Exhibit 10b

Why do you exercise? (Check all that apply)-To be healthy

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	21.7	21.7	21.7
1	65	78.3	78.3	100.0
Total	83	100.0	100.0	

Exhibit 10c

Why do you exercise? (Check all that apply)-To tone muscles

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	38	45.8	45.8	45.8
1	45	54.2	54.2	100.0
Total	83	100.0	100.0	

Exhibit 10d

Why do you exercise? (Check all that apply)-To meet new people

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	77	92.8	92.8	92.8
1	6	7.2	7.2	100.0
Total	83	100.0	100.0	

Exhibit 10e

Why do you exercise? (Check all that apply)-I do not exercise

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	75	90.4	90.4	90.4
1	8	9.6	9.6	100.0
Total	83	100.0	100.0	

Exhibit 10f

Why do you exercise? (Check all that apply)-Other (please specify)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		72	86.7	86.7	86.7
	1	11	13.3	13.3	100.0
	Total	83	100.0	100.0	

Exhibit 10g

Why do you exercise? (Check all that apply)-Other (please specify)-TEXT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		72	86.7	86.7	86.7
	for fun	1	1.2	1.2	88.0
	For Fun	1	1.2	1.2	89.2
	for my sport	1	1.2	1.2	90.4
	fun	2	2.4	2.4	92.8
	have to	1	1.2	1.2	94.0
	I am part of the swim team here at Siena	1	1.2	1.2	95.2
	Sport	1	1.2	1.2	96.4
	Sports	1	1.2	1.2	97.6
	team	1	1.2	1.2	98.8
	to be stronger	1	1.2	1.2	100.0
	Total	83	100.0	100.0	

Exhibit 11

Frequency Table for Why Students Do Not Exercise

If you do not exercise, why not? (check all that apply)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Do not like going to the gym	5	6.0	22.7	22.7
	Do not have time	14	16.9	63.6	86.4
	I am not health conscious	1	1.2	4.5	90.9
	I am already healthy	2	2.4	9.1	100.0
	Total	22	26.5	100.0	
Missing	System	61	73.5		
Total		83	100.0		

We ran a Chi-Square Test to determine if there is a significant association between the questions "do you have a meal plan" (Question 14) and "do you watch your caloric intake" (Question 6). There is a .020 level of significance for the Pearson Chi- Square (*Refer to Exhibits 12 and 13).* This means that there is a significant

association between meal plans and if students watch the caloric intake. Students with meal plans do watch their caloric intake, and vice versa.

Exhibit 12
Crosstabulation Table between Meal Plan and Caloric Intake

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Do you have a meal plan? * Do you watch your calorie intake?	82	98.8%	1	1.2%	83	100.0%

Do you have a meal plan? * Do you watch your calorie intake? Crosstabulation

Count

		Do you watch your calorie intake?		
		Yes	No	Total
Do you have a meal plan?	Yes	9	25	34
	No	25	23	48
Total		34	48	82

Exhibit 13
Chi Square between Meal Plan and Caloric Intake

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.379[a]	1	.020		
Continuity Correction[b]	4.376	1	.036		
Likelihood Ratio	5.517	1	.019		
Fisher's Exact Test				.024	.017
Linear-by-Linear Association	5.314	1	.021		
N of Valid Cases	82				

In order to test the level of health consciousness among Siena students, we ran frequency tables on the behavioral and attitudinal components of our survey. Approximately 86% of students consider themselves healthy (*refer to Exhibit 14a).* This signifies that there is a attitudinal component to health consciousness among Siena students. Most students do not watch their caloric intake (*refer to Exhibit 14b).* However, a significant percentage of 42% of students, do watch their caloric intake. About 92% of Siena students visit the doctor at least once a year (*refer to Exhibit 14c).* Only six students do not go to the doctor every year. 95% of Siena students do not smoke

(refer to Exhibit 14d). The other 5% smoke between 2 and 4 cigarettes a day. Only six students reported to not exercising at all *(refer to Exhibit 14e)*. The majority of students exercise between one and seven times per week. The majority of students who answered the survey (44%) exercise for 60-90 minutes every time they work out *(refer to Exhibit 14f)*. Not only do Siena students exercise numerous times per week, they are exercising for long duration of time.

Exhibit 14

Frequency Tables to Determine Health Consciousness

Statistics

		Do you consider yourself healthy?	Do you watch your calorie intake?	How often do you visit the doctor?	How many cigarettes do you smoke per day?-Cigarettes per day	How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week	What is the duration of your exercise at one time?
N	Valid	83	83	83	82	82	82
	Missing	1	1	1	2	2	2
Mean		1.13	1.58	2.40	.07	4.35	2.28

Exhibit 14a

Do you consider yourself healthy?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	72	85.7	86.7	86.7
	No	11	13.1	13.3	100.0
	Total	83	98.8	100.0	
Missing	System	1	1.2		
Total		84	100.0		

Exhibit 14b

Do you watch your calorie intake?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	41.7	42.2	42.2
	No	48	57.1	57.8	100.0
	Total	83	98.8	100.0	
Missing	System	1	1.2		
Total		84	100.0		

Exhibit 14c

How often do you visit the doctor?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	More than twice a year	16	19.0	19.3	19.3
	Twice a year	24	28.6	28.9	48.2
	Once a year	37	44.0	44.6	92.8
	Every other year	6	7.1	7.2	100.0
	Total	83	98.8	100.0	
Missing	System	1	1.2		
Total		84	100.0		

Exhibit 14d

How many cigarettes do you smoke per day?-Cigarettes per day

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	80	95.2	97.6	97.6
	2	1	1.2	1.2	98.8
	4	1	1.2	1.2	100.0
	Total	82	97.6	100.0	
Missing	System	2	2.4		
Total		84	100.0		

Exhibit 14e

How many times per week do you participate in physical activity? (long walks, running, exercise of s...-Times per week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	3.6	3.7	3.7
	0	1	1.2	1.2	4.9
	0	2	2.4	2.4	7.3
	1	9	10.7	11.0	18.3
	2	13	15.5	15.9	34.1
	3	9	10.7	11.0	45.1
	4	14	16.7	17.1	62.2
	5	9	10.7	11.0	73.2
	6	6	7.1	7.3	80.5
	7	7	8.3	8.5	89.0
	8	1	1.2	1.2	90.2
	9	1	1.2	1.2	91.5
	10	4	4.8	4.9	96.3
	12	1	1.2	1.2	97.6

	20	2	2.4	2.4	100.0
	Total	82	97.6	100.0	
Missing	System	2	2.4		
Total		84	100.0		

Exhibit 14f

What is the duration of your exercise at one time?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-30 minutes	16	19.0	19.5	19.5
	30-60 minutes	37	44.0	45.1	64.6
	60-90 minutes	19	22.6	23.2	87.8
	greater than 90 minutes	10	11.9	12.2	100.0
	Total	82	97.6	100.0	
Missing	System	2	2.4		
Total		84	100.0		

LIMITATIONS

Although this research report was an attempt to see how health conscious the Siena student body is, there were certain limitations that should be noted when analyzing the results. One limitation was getting people to take the survey. We contacted students by email, but we are unable to email the entire school so the amount of students taking the survey was very limited. Students also receive many emails a day and tend to delete the ones that they do not believe is important. This means that students that we did send this email to may not have completed the survey because they felt as though it was unimportant to them and a waste of time.

While we tried getting as many students to respond as possible only 83 did, and of the 83 that responded 48 were seniors. This makes 58% of the people who took this survey, seniors. There were only 4 freshmen, 18 sophomores, and 13 juniors that took this survey. This could skew our results to mainly be about Siena seniors instead of about the entire school. If further research were done, it would be helpful to find a way to email the entire school so they all get the chance to participate. Offering some kind of incentive, such as a raffle, would be one way of getting more students to complete the survey.

CONCLUSION AND RECOMMENDATIONS

Based on the results of this survey, we believe that Siena students are health conscious. Approximately 87% of students believe that they are healthy and according to this survey their lifestyle reflects this. Most students (95%) do not smoke cigarettes, visit the doctor at least once a year, and work out regularly and for substantial periods of time. Many students (42%) also watch their caloric intake. Approximately 90% of Siena students exercise regularly. The average student works out 4-5 times per week for 60-90 minutes. Approximately 78% of students exercise in order to be healthy. This information shows that the average Siena student is health conscious through their attitudes and behaviors.

Endnotes

The Environmental Protection Agency, *Health and Diet Survey Report of Findings*, 2008, http://www.fda.gov/Food/ScienceResearch/ResearchAreas/ConsumerResearch/ucm080331.htm#overall

KOIJA WOMEN'S GROUP: MARKETING PLAN

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Kimberly DeFilippo, Siena College

INTRODUCTION

Loisaba Community Conservation Foundation, a non-profit organization, has been working towards their ultimate goal of improving lives and living conditions of local tribes in Kenya. The Koija Women's group is a branch of this foundation that focuses on benefiting the lives of native women by providing them with jobs and a source of income. The proceeds from buying the products directly assist these people's lives. Previous proceeds have resulted in the building of a school, a cafeteria for the school's children, and a water well. Our current goal is to improve the quality of the children's dormitory beds.

We propose that the Koija Women's Group sell their beaded bangle bracelets, beaded dog collars, and introduce a new product, the Koija Flip Flops to the Northeastern part of the United States. A variety of colors and patterns create unique products that are made from the finest leather and beading. These high quality and handmade products will be successful products in this area because they will fulfill the demand for beaded accessories. Beaded jewelry is an attractive commodity for this middle to upper-class population. They have additional income to spend and they are willing to pay the price for such products to help out a good cause.

The beaded bracelets are in the growth stage of the product life cycle, while the beaded dog collars and beaded flip flops will be in the introductory stage of the product life cycle. In the growth stage, our goals for the beaded bracelets are to increase the Koija products' popularity, possibly expand to larger markets, and increase sales. For the beaded dog collars and flip flops in the introductory stage, our goals are to increase product awareness, reduce risks of financial loss, and create some brand equity for the Koija Women's Group.

SWOT ANALYSIS

Strengths:

- Offers unique products-differentiation
    - No two products are the same
- Variety of products
- Using women's natural skills
- The Loisaba Community Conservation Foundation
- Helps conserve environment
    - Uses natural resources
      Helps people in Kenya
    - Provides jobs

Weaknesses:

- Length of time for order to come in (lead time)
- Don't have specific target markets
- Limited financial resources
- Limited natural resources
- Need a better distribution strategy
- Need a better promotion strategy to gain awareness
- Lack of packaging for the products

- Lack of a fun, interactive website where consumers can buy products

Opportunities:

- Potential for growth
- Potential to be profitable
- Appeal to variety of customers based on wide array of products
- Market penetration - increases sales to present customers using present retailing format
- Market expansion- increase sales existing retail format in new market segments
- Retail format development-new retail formation (with diff retail mix) for the same target market
- Diversification-operates a new retail format directed toward a new target market.

Threats:

- Organizations that have more awareness
    - Red Foundation
- Similar foundations using mass production
- Local trade fairs
- Economy
- Competition
    - Ten Thousand Villages
    - Global Girlfriend
- Neighboring foundations in Kenya that have the same products:
    - Ewaso
    - Musul Naramatisho Women's Group

PROBLEMS AND OPPORTUNITIES

In Kenya, the mail and transportation systems are not very advanced. Therefore Loisaba experiences high lead times for their products. This is a problem for the company because they cannot meet consumer wants and demands in a timely manner. Another problem that Loisaba is currently experiencing is consumers cannot purchase products on the internet. Loisaba also experiences high shipping costs.

MARKETING OBJECTIVES AND GOALS

Our marketing objective is to obtain brand equity and brand awareness to try to create brand loyalty. The message of the products would be very important to our strategy. Our promotions would emphasize Loisaba's goals. The distribution of our products is somewhat selective. We hope to deliver high quality and unique merchandise to our target audience. Though our wide variety of target markets we will increase knowledge about the products and attain favorable thoughts and feelings about the message and goal of Loisaba. We hope to achieve a positive feeling about the benefits that Loisaba delivers to both its employees in Kenya as well as the overall economy in Kenya. We hope to attain favorable attitudes towards our products as well as the company that will translate into overt consumer behavior. This will increase Loisaba's revenues and therefore profits.

MARKETING STRATEGY

In order to effectively implement the marketing goals and objectives, we need to have a superb marketing strategy. We will use a selective distribution strategy.

A. Beaded Bracelets:

Target Audience:

The target audience for beaded bracelets should be middle-class girls and women from the ages of 13 to 30. This segment would be interested in jewelry products, and they may also be more likely to help women in developing nations. The message that will be stressed to this segment is that "the Koija Women's Group provides these women with a source of family income, as well as a sense of pride and accomplishment outside the traditional family role of women", so when a women purchases one of these products, they are helping their fellow sisters. For the most part, we will be targeting the Caucasian portion of this age group because we will be focusing in the Upstate New York area, but the product can appeal to Hispanics or African American women as well.

Market Strategy:

Product:

Loisaba offers thin, bangle bracelets made out of wire and colorful beads. There will be a variety of patterns, colors and sizes. Each product is custom made, so no one bracelet is exactly like another. There will be small, medium and large sizes. The sizes will be 5, 7, and 9 inches. Sets of 5 bracelets, as well as package deals that consist of a bracelet, necklace, and ring will also be available. The women of the Koija Women's Group make all the accessories used on the warriors and throughout the community, which shows that these women are highly trained and skilled, and therefore, the consumer is getting a quality product. Please see Appendix A for product pictures.

Price:

Individual cost: $2.00

The bracelets are currently being sold in the Loisaba gift store for a $1.00 each. We recommend that these bracelets be priced a dollar higher when being sold in America because we feel that the increasing demand for bangle bracelets such as these will make this product a hot commodity, and therefore, the price should be increased one dollar to further benefit the lives of these women in the Koija Women's Group.

Bundle of 5: $8.50

This price strategy was chosen because consumers will recognize the value they are getting since one bracelet is usually worth $2.00. Therefore, this $8.50 package will be more appealing than a single bracelet (mental marketing), and this will create more sales.

Package deals of bracelet/necklace/ring: $16.00

This concept of bundling can be very effective. The consumer may initially be interested in one of the products, but then they will see that the product they want is available in a package with complimentary items, which will expand their product interest and influence the idea that they are getting more for their money.

In addition, the above prices are reasonable for the middleclass women we are targeting.

Distribution:

These beaded bangle bracelets, as well as the variety of packages of the bracelets that we are offering, could be a successful product of the Siena College Women's Center. The Sister Thea Bowman Center for Women at Siena College promotes fair trade products, and "hosts sales of handcrafted goods made by women in developing countries". While the Koija Women's Group is not certified fair trade, the center would be more than willing to promote jewelry products that are produced by women in Kenya, in which the profits of the products are going towards the improvement of the community and its people's lives. The women's center sells their fair trade products in the Sarazen Student Union, and if a variety our beaded bangle bracelets were displayed on a table as they do with many other fair trade products, we feel that this Koija product would be a great success with female students on campus. The Women's Center groups at other local colleges, such as Union College, St. Rose College, and University at Albany could also be possible promoter and distributors.

Not only could people purchase the bracelets that are sold in the Sarazen Student Union, but they could also place orders. These orders could then be fulfilled through the Loisaba website once this feature is working. The ultimate goal is for stores to want to place orders for the products, rather than only selling them on consignment.

The bracelets will also be sold at farmer's markets, church fairs and other church functions, as well as boutiques such as Gracies Boutique, Speck Boutique, and the Adirondack Cotton Company. Gracies Boutique is located in a strip mall in Latham, NY which is a heavily traveled area, strategically located down the street from a grocery store, so the products will have significant exposure. Speck Boutique offers one of a kind jewelry and often supports good causes such as the "Green Movement", so they are likely to support a cause such as ours. Both boutiques attract the middle to upper class females we are targeting. In addition, church functions are a great option because the members will be willing to support a good cause.

Promotion:

To target the college age portion of our target market, promotion will be campus wide. This will include flyers, posters, as well as student-wide emails. To catch the attention of the girls ages 15-18 of our target market, flyers will be issued throughout high schools to advertise the product and let the potential consumer know the locations where the products are being offered. Church functions and catechism classes could also be an ideal location to post flyers because the children see the flyer, and then they go home and express their interest to their mothers. Direct mail and emails to individuals that are on mailing lists from the specialty stores will also be a way to promote these bracelets to more people.

Marketing Tactics:

We will be introducing the Koija beaded bangle bracelets which are similar to other products in the market. There is product differentiation because each bracelet will be uniquely handmade and proceeds will go to a good cause. Meet the competition pricing will be implemented because of the time and effort put into these products, in addition to being high quality products. Originally sold by the Koija Women's Group for $1 each, we are increasing the price to $2 each to met competition. We plan on distributing these bracelets to local boutiques and church functions, as well as through the Siena College Women's Center fair trade sales. Promotion will include flyers and direct/electronic mailing.

Implementation and Control:

In order to implement our marketing strategy, we will first contact the Siena College Women's Center to set up an agreement for them to sell our Koija Women's Group products at their fair trade sales. We will also contact local boutiques such as Gracies Boutique, located in Newton Plaza in Latham, as well as Speck Boutique, located in Saratoga Springs to come to an agreement for them to start offering these unique beaded bangle bracelets. We will also continue selling the Jewelry at the Adirondack Cotton Company. These three stores, as well as the Women's Center will be our initial distribution channels, and if there is success we will expand to other local privately-owned boutiques, as well as other college campus Women's Centers such as University at Albany and Saint Rose. We will also contact local churches to see if they would be interested in supporting our products. Although bracelets can be made in one day, stores should expect a 2 month lead time before they will have the Koija bracelets on their shelves. In regards to advertising, we will contact local college campuses, high schools, and churches to receive permission to post flyers and posters, and campus wide e-mails can be sent out through the Women's Center.

B. <u>Beaded Dog Collars:</u>

Target Audience:

The target audience for dog collars made by the Koija Women's Group will be female dog owners between the ages of 23-40. The age range will begin at 23 because this will include upperclassmen women and those who have just graduated college. Since the majority of female college students in the capital region reside on their campus, and are generally not allowed to have pets, we will target those students who are graduating or that are upperclassman and may have an off-campus apartment. The educational level for the target audience would be high

school or college graduates. In terms of socioeconomic status, the target market would comprise middle to upper class Caucasian and African American women.

Marketing Strategy:

Product:

The dog collars that will be marketed are made out of leather with a variety of different colored beads on them. The beads will also be arranged in various patterns. Other product attributes include a range of sizes to accommodate most dogs. The collars will be available in small (12"), medium (14"), and large (16"). Furthermore, the collars will have an adjustable strap, much like that of a belt, with a buckle and several holes for further flexibility in sizing. Please see Appendix B for product pictures.

Pricing:

To market the beaded dog collars a simple cost-plus pricing strategy will be implemented. Under this strategy, the selling price will be derived from adding a percentage (the profit) to the cost of producing the product. The selling price for a small dog collar will be $19.95, $29.95 for a medium collar, and $39.95 for a large collar. Using these prices also implements a psychological pricing strategy whereby consumers are more likely to purchase a product for $19.95 instead of $20.00 because they perceive the difference to be larger than it is.

Placement / Distribution:

The beaded dog collars made by the Koija Women's Group will be sold at specialty dog stores that are privately owned, rather than corporate chains or franchises. Sloppy Kisses Dog Boutique (Clifton Park and Saratoga) and Benson's Pet Center (Colonie, Clifton Park, Saratoga, and Queensbury) are two examples of where these collars will he distributed. They will also be sold in pet grooming stores like Pretty Paws in Albany, NY. Since the decision of whether or not to carry a product in a store such as PetsMart is generally made at the corporate level, taking hoth time and money, we believe that targeting privately owned stores first would be most effective. Furthermore, the number of dog collars needed to stock the shelves at privately owned pet stores would currently be more manageable on the Koija Women's Group, than the number that would be needed for a franchise of stores.

Choosing to place the dog collars in privately owned pet stores will help to attract our target audience. The store image associated with Benson's Pet Center is casual and relaxed. The layout and parking lots are spacious, as the stores are larger than Sloppy Kisses, and having four locations will help to reach a larger population of female dog owners. Based on the demographics of this area, stores in Clifton Park and Colonie are more likely to be patronized by middle class women, while the Saratoga and Queensbury stores are likely to attract upper class women. The store image associated with Sloppy Kisses is a bit more upscale. Although smaller in size than Benson's, this boutique hosts a variety of events which attract upper class dog owners. For example, their Pampered Pooch Contest and their annual Canine Costume Parade are two events held in Saratoga which can attract middle to upper class female dog owners. Having locations in Clifton Park and Saratoga will help us to reach our target market of females between the ages of 23-40. Furthermore, since Saratoga is a popular summer destination for tourists and race track visitors, distributing the dog collars in Saratoga will give us a chance to tap into that vacationing population of dog owners.

Promotion:

To promote the dog collars, we will use emails and direct mailings of brochures to individuals that are on mailing lists at the pet stores selling our products. The brochures sent via email or thru the mail will contain pictures of the dog collars, pricing information, sizing and color options, as well as information on the mission and purpose of the Koija Women's Group.

Marketing Tactics:

We will be introducing the Koija beaded dog collars. We will be using the cost plus pricing strategy on these products because the selling price will be derived from adding a percentage (the profit) to the cost of producing the product. We also will be using the psychological pricing strategy because consumers will believe the $19.95 price is a better value than $20.00. We plan on distributing these dog collars at several specialty dog stores located in the capital region and surrounding areas. Such stores include: Sloppy Kisses and Benson's Pet Center. Promotion will include brochures sent via email to the store's mailing lists as well as using direct mail.

***Implementation and Control*:**

To implement our marketing strategy, we will contact local privately owned pet stores, such as Sloppy Kisses and Benson's Pet Center, to come to an agreement on stocking our product in their stores. Since production times for these collars can vary, and the Koija Women's Group does not have a website or internet access, we will not allow individual special orders. Rather, the collars will be pre-made and a batch (the # will vary for each privately owned store) will be delivered to each store to be stocked on the shelf. When the dog collar inventory becomes low, the store can contact the Koija Women's Group and more collars will be shipped to them.

C. Beaded Flip Flops:

***Target Audience*:**

The target market is girls and women ages 10 to 40 that live in the Albany area. The girls and women we are targeting are middle class to upper class and are concerned with fashion. They are willing to spend extra money to look good, while helping out a good cause.

Marketing Strategy:

Product:

The product that we choose to sell is an assortment of girls and women's flip flips. The first type is a rubber beaded flip flop. It will come in a variety of colors, styles, and sizes. It will be available in green, brown, and black with a variety of colored beads. The second type is a brown leather thong sandal with multi color beads in multiple sizes. The third style is a dark brown beaded leather thong with strap and buckle around ankle. The sizes offered would be women's 5-10. Please refer to Appendix C for product pictures.

Distribution:

We plan on distributing our product to the Siena College Women's Center. From there, we will be able to sell the flip flops in the Sarazen student union. We can also have other women's groups of local colleges, such as St. Rose and the University of Albany, sell these products to their students. We also plan on selling the flip flops at local boutique style shoe stores in the Albany area. For example, we would sell in two stores in Newton Plaza called Gracies and Me. Furthermore, we would sell these products where other Loisaba products are already sold at Sutton's Marketplace in Queensbury and Adirondack Cotton Company located in Bolton Landing, New York.

Pricing:

We plan on pricing the flip flops at $14.99 for the rubber style ones and $24.99 for both the leather style ones. We will use cost plus pricing. These prices are chosen because we need to cover the cost of buying the flip flops and sending them back and forth to Kenya. These prices will cover the cost and we will still be able to make a profit.

Promotion:

We would want to promote our product so that our customers receive the emotional appeal to buy this product. We would want them to know that by buying these products they are helping out the Koija Women's Group in Kenya. We would incorporate this message into our promotions. In order to promote our product, we plan on making flyers and putting them around campus and at local high schools. Included in these flyers would be pictures of the product, a background about Loisaba, and where the product is sold. We also plan on putting these flyers in the Times Union, Saratoga Post, and Schenectady Gazette Sunday newspaper advertisement section. We plan on doing radio advertisements through retail stores on the local radio stations such as 92.3 and 102.3. We also plan to send emails to existing customers from the mailing lists of the boutique style shoe stores.

Marketing Tactics:

We will be introducing the Koija Flip Flops into the market. Cost plus pricing strategy will be used. We plan on distributing these products at local boutique style stores such as Me Boutique, Gracies Boutique, and the Siena College Women's Center sales in the Sarazen Student Union. Promotion strategy will consist of flyers in the

Sunday Newspaper, as well as around local campuses and high schools. We will also contact the local radio stations (92.3 and 102.3) to arrange an agreement for them to air our radio jingle which will be produced by a local band.

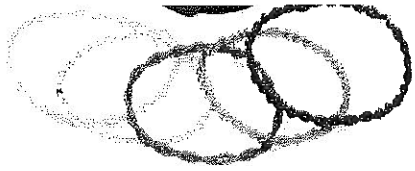
***Implementation and Control*:**

In order to implement our marketing strategy, we plan on getting our materials for making the product. We plan on contacting wholesalers, such as BJ's, to try and purchase the flip flops in bulk at a discounted rate. Then we would send the flip flops to Kenya finalize the product. We then plan on contacting the local stores and the Siena College Women's group and other local college groups, to come to an agreement on selling our product in their stores (Gracies, Me, Sutton's Marketplace, and Adirondack Cotton Company) and student unions. We plan on contacting the local high schools and colleges (University of Albany and Saint Rose) to ask permission to put up flyers around the campuses. We also plan on contacting the local newspapers (Times Union, Saratoga Post, and Schenectady Gazette) to ask permission to put our advertisement in their Sunday advertisement sections of their newspapers every Sunday. Furthermore, we will come to an agreement with the stores and local radio stations to see if they will come up with an advertisement for their store that includes saying, "now selling a variety of flip flops made from Loisaba in Kenya, please purchase these items to help a great cause."

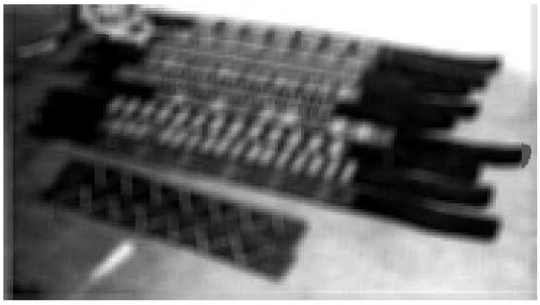
SUMMARY

Out of the three products for which we have created marketing strategies, we will implement the flip flop marketing strategy. We will also sell the browbands and belts. The advantages of these products are that they are unique, high quality, and custom made products. Our products are differentiated from our competitors because they are high quality for a reasonable price and the profits benefit a non-profit organization. Costs to make these products will be relatively cheap because most of our materials are donated or bought at a discounted price. The only exception is with the flip flops, which will depend on buying whether we can obtain them from a wholesaler. We expect profits to be significant since a lot of people in the Capital Region are willing to support an organization that is working to improve the lives of women in Kenya. With today's current fashion trends, we believe that the beaded accessories will greatly appeal to our target market, which consists mainly of teenagers and young women.

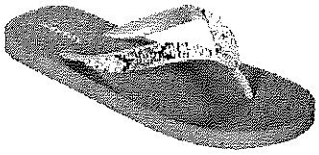
Appendix A: ***Beaded Bracelets***



Appendix B: ***Dog Collars***



Appendix C: ***Flip Flops***



Appendix D: ***Strategic Rationale for Print Ad Development***

In creating our print ad for the dressage browbands and belts we used a perceptual strategy. Specifically, we used bright colors, such as blue, green, and purple, to catch the eye of and, appeal to our target market of college and university Equestrian Teams. Our ad also focuses on affective and cognitive aspects such as functional and psychosocial benefits. For our ad, one of the functional benefits depicted would be standing out among other riders, which would gain the psychosocial benefit of being a trendsetter, and being perceived as stylish. Another functional benefit of the products in this ad is that they perform the purpose for which they were designed. The belts hold the show shirts in the breeches of the rider, and the browbands complete the harness of the bridle. The psychosocial benefits presented also include the fact that these products may make the judges look upon the rider in a more favorable way, which could lead to higher placement in show classes.

Aside from a perceptual and affective/cognitive approach, we also used a motivational and a self oriented method. For instance, our ad seeks to meet the social and esteem levels found in Maslow's Hierarchy of Needs. The ad's discussion of meeting a rider's fashion needs and of getting noticed represents the social need of gaining acceptance by other riders. This acceptance also leads to the self-esteem need of being recognized, and having others desire a similar appearance through the purchase of these products. Moreover, the ad presents a self-approach by targeting the audience's ideal self and self-concept. For instance, the uniqueness of the belts and browbands marketed in the ad correlate to how the rider wants to be perceived by others. In wearing these accessories, riders can feel confident as they ride and feel capable in performing better.
Our print ad also engages in a personality approach to marketing. The individuals that would be attracted to our ad are those that feel a social responsibility to help those in need. By placing a paragraph on the ad which discusses the beneficial aspects of Loisaba and the Koija Women's Group, we are appealing to those that are more willing to purchase these products over our competitors simply because they want to give aid to less privileged individuals.

Since we are trying to highlight the emotional message of what Loisaba represents, we included a paragraph on our print ad pertaining to the advantages of purchasing products from the Koija Women's Group. Including this information will help to attract consumers who feel that they have a moral responsibility to help those in need.

The design of our ad was created with the intention of being placed in local magazines, such as *Saratoga Living Magazine*. Magazines such as this are geared towards middle to upper class families, especially those that are in the Saratoga Springs area and have an interest in the Equestrian sport.

Appendix E: ***Strategic Rationale for Brochure Development***

In creating our brochure for the dressage browbands and belts, we incorporated the Theory of Vicarious Learning, or Modeling. This theory suggests that people may change their behaviors after having observed the actions of other people and the consequences that have occurred. To allow our target market to view the products being used, we included a picture of a rider wearing the beaded belt while standing next to a horse that has a beaded browband on its bridle. We also depicted the consequences of using these products by including a 1st place blue ribbon on the rider's shirt. We chose to use modeling because it can be used to facilitate the occurrence of desired behaviors (purchasing these products from the Koija Women's Group) if the positive consequences of using the product are displayed (rider winning 1st place and wearing blue ribbon). Aside from a learning theory, a need theory is also incorporated into the brochure. Specifically, the need for achievement is presented through the rider's blue ribbon and the phrase "If you can't win with the judges, you can win with your style!" Those that view this ad are encouraged to purchase the products in order to meet their need for achievement. Our ad allows the target market to perceive our products as a means of getting noticed, complimented, and awarded.

In terms of appeals, our ad uses both a rational and an emotional approach. The rational appeal in our ad is presented through the product attributes and functionality. Specifically, we discuss the quality of the materials used, the uniqueness of each product, the sizes and colors offered, and the quality/durability of the craftsmanship that goes into making each belt or browband. In contrast, the emotional aspect of our brochure is achieved through the discussion of who Loisaba and the Koija Women's Group are, as well as the social benefits that result from purchasing our products (building of the school, a cafeteria, a water well, etc). Thus, our ad is appealing to the emotions of individuals who care about helping those in need.

In creating this brochure, we incorporated a perceptual approach to marketing through the use of color. The bold red/purple used throughout the ad, along with the variety of colorful pictures, make the brochure stand out and entices individuals to pick it up or look through it.
Lastly, our brochure seeks to create demand for the browbands and belts by offering a situation in which the products can be used (Collegiate Equestrian Teams). Demand is further creating through our emphasis on the products' uniqueness. Since all riders tend to be dressed in the same manner for Intercollegiate Equestrian Shows (tan breeches, tall black boots, black gloves, a solid colored show shirt, and a dark colored jacket), demand for the products will increase as riders will want to distinguish themselves from all of the rest. Going along with demand,

awareness is also created through this brochure as a discussion of how the products are made, who makes them, and the benefits of purchasing them from the Koija Women's Group are explained.

INTRAPERSONAL AGENTS AND THEIR ROLE IN CONSUMER DECISION MAKING

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ABSTRACT

The theory of intraperson games propounded by Ding (2007) holds promise for consumer behavior scholars engaged in research regarding consumer variety seeking behavior. However, the next important step in theory development is the development of empirically validated scales for the theoretical constructs of intraperson games theory. We operationalize the theoretical constructs of efficiency and equity agents and proceed to develop multi-item measures of the constructs. We empirically validate the scales using a national random sample of three hundred respondents and arrive at validated scales that may be used for future studies. Additionally, we examine the impact of consumer characteristics upon the equity and efficiency agents, the intraperson drivers of variety seeking behavior. Our results will be of interest to academic scholars and marketing practitioners that would like to use intraperson game theoretic constructs in their strategy formulations.

INTRODUCTION

Variety seeking behavior is a phenomenon that has been widely studied in the field of marketing. The study of variety seeking and brand switching has produced various theories and constructs that attempt to capture this concept in a way that is beneficial to marketers (Bass 1973, 1974; Kahn 1995; van Trijp 1996; Ding 2007). Most of the past research in the area has emphasized external variables such as demographics, branding, pricing, etc. to influence such behavior (Chen 2004, Raju 1980). However, very few studies have analyzed possible internal constructs and processes that could have an influence on variety seeking behavior and consumer decisions.

A study conducted by Hans van Trijp (Van Trijp, Hoyer, and Inman 1996) differentiates between internal and external motivations for variety seeking. This study blends internal factors such as need for variety with external factors such as product category. The study is successful in identifying some key variables that contribute to a variety seeking decision. However, once again, these variables are driven by external factors.

In order to truly capture the dynamic of variety seeking behavior, this research proposes that a deeper knowledge of the internal variables that drive consumer decision is warranted. A recent paper by Min Ding (2007) in the Journal of Marketing proposes theory of intraperson games as a possible explanation in which factors from within an individual's mind compete to make a decision. The theory of intraperson games finds its conceptual inspiration from existing theories of the human mind as well as game theory. Ding (2007) proposed a predictive quantitative model based on his theoretical constructs. Most relevant to our research, the theory of intraperson games draws attention to the *internal* factors that impact consumer variety seeking purchase decisions.

This research aims to develop empirical scales for measuring two proposed intraperson games theory constructs theorized by Ding (2007): Efficiency and Equity Agents. The efficiency agent strives for instant gratification while the equity agent considers long term benefits. We develop multi-item scales to measure these constructs of intraperson games in the context of consumer variety seeking behavior. A survey based methodology with a random national sample of three hundred respondents is used to examine the relevance, validity, and reliability of the empirical scales. Assessing the impact of these intrapersonal factors on consumer variety seeking

behavior would not be possible without first understanding the underlying theories and concepts. The following literature review highlights the existing theories, as well as where the current study will add to the literature.

VARIETY SEEKING BEHAVIOR

Variety seeking is a desire that often manifests itself in the behavior of brand switching (Givon 1984). Consumer buying choices can be broken down into three actions: a repeat purchase, a derived switch, or a variety switch (Van Trijp, Hoyer, and Inman 1996). Repeat purchases are continuations in a previous buying pattern of an individual. Derived switching behavior is understood to be the product of extrinsic motivations. A particular store being closed for the night, a friend's product recommendation, and an item being out of stock would all be considered extrinsic motivations. True variety seeking behavior differs from derived variety seeking behavior in that such actions are the result of *intrinsic* motivations from within an individual (Van Trijp 1995).

Past research suggests that true variety switching behavior generally occurs for one of three intrinsic reasons, satiation, stimulation, or hedging. Satiation occurs as an individual experiences diminishing utility with each successive repeat of a behavior (Coombs and Avrunin 1977). Stimulation is when a consumer is excited about, and inexplicably drawn to, the novelty of a certain choice (Berlyne 1970; Faison 1977). Faison explains that consumers can be drawn to a brand simply for a change of pace. The final intrinsic motive for brand switching is hedging (Ding 2007). Hedging is a concept in which a consumer intentionally chooses something that does not provide the most utility in order to achieve balance. One set of researchers (Ratner, Kahn, and Kahneman 1999) discovered that individuals often trade pleasure for variety. The results show that subjects enjoyed choices in an improving sequence (saving the best for last). It is also found that some of the subjects, after making a less preferred choice, often enjoy their favorite choice more than ever. Existing literature struggles to capture buying outcomes through an intrapersonal lens, intraperson games theory may provide the theoretical rationale necessary to correct this deficiency in the literature.

THEORY OF INTRAPERSON GAMES

Min Ding (2007) has proposed a theoretical model that combines game theory with several famous theories of the human mind. Freud's structural theory (Freud 1923) is the basis for Ding's understanding of the conflicts that take place within one's mind. Freud believed that there are three interacting components of the mind. The Id is a self-centered, primitive drive guided by a constant pursuit of pleasure. Another drive, the Superego, counteracts the Id, acting as a cautious voice of reason that has been shaped by the morals of an individual's society. The Ego is an equity drive that attempts to give each drive a chance to show through at different times.

Ding's research is also shaped by an Artificial Intelligence theory originally published by Marvin Minsky. Minsky's "Society of Minds" theory (Minsky 1986) proposed that the human mind is comprised of thousands of agents that each execute a different task. These agents are arranged in a hierarchy where the higher agents choose a lower agent to utilize in a given situation.

Ding took these concepts and integrated them into a model normally used for multi-person game theory. The model uses two higher level agents, efficiency and equity agents. The Theory of Intraperson Games successfully quantified the idea that individuals' decisions are a result of a battle between competing agents. An empirical study conducted by Ding verified the model's aptitude for predicting buying outcomes. The empirical study provided evidence that effectively measuring an individual's personality could better predict future variety seeking behavior than by simply analyzing past purchases. However, Ding's study did not provide a comprehensive scale for measuring an individual's intrapersonal characteristics. The mathematical model simply shows how each agent would interact in the context of game theory.

The Theory of Intraperson Games fits theories of marketing and psychology together effectively into a mathematical context. However, the current study would like to make this connection more accessible to marketers. This research develops scales for the effective measuring of intrapersonal agents. Further, statistical analysis is also utilized to identify consumer characteristics that impact intrapersonal agents.

THEORY DEVELOPMENT

Building on the successful inclusion of multiple agents of the mind in a previous marketing application (Ding 2007), this study proposes that measuring Ding's two distinct and opposite agents is possible. By measuring a respondent's agreement with statements of equity and efficiency, effective scales could classify consumers as "equity-strong" or "efficiency-strong". Based on this rationale, the emergent preliminary scale (see Table 1 below) contains 9 items in which respondents indicated their level of agreement on a five point scale from strongly disagree to strongly agree. The items are designed to bring forth the respondents beliefs concerning various hypothetical situations. The hypothetical scenario of decisions involving a restaurant visit is chosen with the overall sample frame in mind. It is a challenge to find a product that demands involvement, experience, and considered decisions that also applies to a large cross-section of the target population. Items are either statements that involve instant gratification, lack of compromise, and swift action, or statements that involve trade-offs, long-term consideration, and restraint.

Table 1.

During a typical visit to a restaurant...
After eating a high calorie entrée, I order dessert.
If I am hungry, I order appetizers before the entrée arrives.
I order as much alcohol as I desire with the meal.
After eating a high calorie entrée, I order a low calorie dessert.
I order what I desire the most, regardless of the calorie content.
If I am hungry, I do not order appetizers but wait for the entrée.
I order items I know I have enjoyed in the past.
After eating a high calorie entrée, I skip dessert.
I worry about the price of my meal.
If I have a working day the next morning, I do not drink at all.

In addition to developing measurement scales for the intrapersonal agents, this study explores the impact of consumer characteristics on such agents. Consistent with other constructs in consumer behavior, we hypothesize that intrapersonal agents are impacted by consumer characteristics and demographics. Intrapersonal agents are indeed internal constructs, however, the development of such agents must also be informed by the life circumstances of the individual. Based on the findings of previous research in the area significant consumer characteristics are identified and the following hypotheses emerge:

H1. Consumer age influences intrapersonal agents employed by consumers in decision-making.

H2. Consumer gender influences intrapersonal agent employed by consumer in decision-making.

H3. Consumer's level of education influences intrapersonal agent employed by consumer in decision-making.

H4. Consumer's religious preference influences intrapersonal agent employed by consumer in decision-making.

H5. Consumer's political view influences intrapersonal agent employed by consumer in decision-making.

H6. Consumer's number of siblings influences intrapersonal agent employed by consumer in decision-making.

H7. Consumers' annual household income influences intrapersonal agent employed by consumer in decision-making.

METHODOLOGY

The scales were introduced in a survey that was distributed to the students, faculty, and friends of a small college in the Northeast USA during a previous phase of this study. Prior to the launch date a pretest survey was conducted with 10 respondents. The pretest was performed using the online survey tool so as to gain insight into the user experience each respondent would have with the survey. With the researchers in the room, the respondents provided immediate feedback which was then recorded and considered during final revisions. In an effort to increase the ease and quickness of the survey for respondents, redundant scale items were combined or deleted. Phrasing was corrected and revised to facilitate more accurate answers. Once the survey passed another brief test round, it was distributed throughout the course of the following week. The survey was approved by the institutional review board and then administered nationally via the web through an online survey service. The online survey format provided ease of use for the respondents and more convenient and accurate data collection for the researchers. The subsequent analysis is based on a convenience based random sample of 300 individuals.

Sample Profile

As is expected in studies utilizing a survey, respondents did not disclose certain demographic information. A summary of the data set (including the percentage of missing responses) is included in Table 2. Adjusting for the missing data, the following discussion refers to percentages and proportions of respondents who actually responded to each individual item.

Keeping with trends in college-based samples in past studies, our sample is two-thirds female (66% female, 34% male). This provides a large enough number of male respondents to be considered representative of all males. Being mostly distributed to students, over 80% of the sample fell between the ages of eighteen and twenty-two. Almost one-tenth of the respondents are forty-six years of age or older. Level of education is spread amongst several choices. "Some high school/ high school graduate" made up 38% of the sample. This segment is likely made up of incoming freshman as this study was sent during a summer before the college was in session. Respondents who are "Currently in college" represented 46% of the sample. The rest of the respondents who answered this question held an undergraduate degree or higher. Household income levels were surprisingly diverse. Respondents from households making $75,000 or less made up 30% of the sample. Forty three percent of respondents indicated a household income of over $101,000. About one-fourth of our sample (27%) reported between $76,000 and $100,000 annual household income. Table 2 provides a more detailed view of the sample profile for this study.

Table 2. Sample Profile (N=300)

Gender	N	%
Male	81	27%
Female	156	52%
Missing	63	21%

Age	N	%
18-22 years old	195	65%
23-29 years old	8	3%
30-45 years old	10	3%
46 years and over	23	8%
Missing	64	21%

Level of Education	N	%

Some high school/ High School Graduate	90	30%
Currently in College	110	37%
Undergraduate degree	18	6%
Currently in graduate school	2	1%
Postgraduate degree	17	6%
Missing	63	21%

Household Income	N	%
$30,000 or less	12	4%
$31,000-$75,000	55	18%
$76,000-$100,000	61	20%
$101,000-$200,000	84	28%
$201,000-$300,000	12	4%
$301,000 or more	1	0%
Missing	75	25%

FINDINGS AND DISCUSSION

We began by testing the nine-item composite IPG (Intraperson Games) scale which yielded a Cronbach's Alpha of 0.300. As theoretically expected, we found this one-dimensional scale to be inadequate in measuring the multidimensional IPG constructs. Based on Ding's (2007) conceptualization of the IPG being a two dimensional construct, we proceeded to subject the nine-item scale to a confirmatory factor analysis. A principles component analysis based factor solution revealed patterns of both efficiency and equity agent measurement scales. The total variance explained by the factor analytic model is 68.726%, which is excellent for a first time use scale. We restricted the principle extraction to Eigen values of 1 or higher and used item loadings of 0.6 or higher only. The model was further refined using a Varimax rotation which yielded three-item efficiency agent scale and a five-item equity agent scale. One of our scale items "I worry about the price of my meal," does not load significantly on either of the components and was therefore excluded from further analysis.

The scale items that emerged from the factor analysis were further analyzed for validity and reliability using a Cronbach's Alpha. The three-item efficiency agent scale reported an Alpha value of .672, which is excellent for a first time use scale (Nunnaly 1978). The equity agent scale is a five-item scale that also provided a good Alpha value of .505, which is acceptable for a newly developed theoretical scale being used for the first time. Table 3 provides a breakdown of which items comprise each scale.

Table 3.

Validated Scales
Efficiency Agent Scale (Three-Item) α = .672
After eating a high calorie entrée, I order dessert.
After eating a high calorie entrée, I skip dessert. (Reverse Coded)
I order what I desire the most, regardless of the calorie content.
Equity Agent Scale (Five-Item) α = .505
After eating a high calorie entrée, I order a low calorie dessert.
If I am hungry, I do not order appetizers but wait for the entrée.
I order as much alcohol as I desire with the meal. (Reverse Coded)
If I am hungry, I order appetizers before the entrée arrives. (Reverse Coded)
If I have a working day the next morning, I do not drink at all.

We then proceeded to use the above-mentioned validated scales to test our proposed hypotheses relating to efficiency and equity agents. A one-way analysis of variance (ANOVA) was employed to determine if the intrapersonal agents were impacted by the previously stated consumer characteristics in a statistically significant manner. As hypothesized: age, gender, and level of education all had a statistically significant impact on both the efficiency and equity agents (At a significance level of .10 or less). Household income can be included as a factor that impacts intrapersonal agents as well, however, the alpha levels are slightly higher than desired (efficiency p:0 .111, equity p: 0 .094). Religious preference, number of siblings, and political views were found to be statistically nonsignificant.

To further investigate the direction of the relationship between intrapersonal agents and consumer characteristics, bivariate correlation analysis was utilized. The analysis included Pearson correlation coefficients and a two-tailed test of significance. All correlations reported are significant with a maximum p-value of 0.10, unless otherwise noted.

Surprisingly, age had a negative correlation with both the efficiency and equity agents (-.183 and -.198, respectively). One explanation for this may be that, as individuals age, they become more influenced by tradition and personal habits and rely marginally less on internal agents to make decisions. The correlation is not considered to be very strong but provides an interesting insight into how intrapersonal agents may change, however slightly, over time.

A statistically significant correlation between gender and the intrapersonal agents exists. Males tend to have stronger efficiency agents and weaker equity agents. The reverse is true for females.
Another correlation shows that as the level of education of respondents increased the strength of equity agents decreased (-.212). The correlation between the efficiency agent and level of education showed a negative correlation as well, but fell just outside the range of being statistically significant (p: 0 .122, correlation = -.101). Having both agents decrease at the same time presents a similar situation as in the case of age. As a person grows and becomes more educated they are able to draw on external knowledge and habits they have accumulated when making a decision. They are likely going to depend on internal ("gut") feelings less and external factors more. This could explain why both intrapersonal agents seem to slightly diminish in strength with age. The final statistically significant correlation is found between the efficiency agent and political views. The strength of the efficiency agent is positively correlated with the degree of self-reported liberalism (.113).

Characteristics such as political views, number of siblings, and household income have no significant impact on intrapersonal agents. The factors that have an impact proved to be weak correlations, with the strongest being -.231. These findings are further evidence that intrapersonal agents and the internal decision making process are powerful tools that are not easily influenced by external circumstances.

CONCLUSIONS AND FUTURE RESEARCH AGENDA

The creation of the intrapersonal agent scales allows marketers to measure and classify consumers based on their internal decision making agents. Further development of this concept should lead to useful marketing tools. The research has shown empirical evidence of two distinct intrapersonal agents, efficiency and equity. An individual's decision is ultimately swayed by one of the two agents. The stronger agent is more likely to "win" the argument more often. Marketers should be aware of the predictive powers that may arise from future research. The scale created in this study is an important first step in drawing value from a deeper understanding of consumer decision making.

Recognizing the independence of the internal decision making process is critical to understanding the nature of intrapersonal agents. As competition intensifies, product offerings and price points become seemingly homogeneous, and traditional advertising loses effectiveness, marketers may consider appealing more to a consumer's intraperson agents. Considering that all decisions are the result of an individual's perception of external information, it would be useful to know which agent favors one's value proposition.
Future research is needed to explore the impact of these intrapersonal agents on consumer behaviors. Intrapersonal agents seem to be minimally impacted by demographics but measuring the types of purchase behavior and attitudes that result from the agents will prove to be critical.

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UNITY HOUSE ENDOWMENT FUND PORTFOLIO

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PROJECT DESCRIPTION

The assigned projects involved investing and managing the endowment fund portfolio for Unity House for a three-month period. The primary goal of this project was to gain an understanding of the investment process by becoming an interested participant. We were required to trade an initial wealth of $600,000 (the size of the endowment fund of Unity House) in domestic or international stocks, bonds, mutual funds, options, and futures over the semester. The trading simulation was managed by Stock-Trak, Inc. of Atlanta, Georgia, a comprehensive simulation program for Finance students across the U.S. Through this project, we were able to apply techniques of risk and return analysis, financial statement analysis, and equity and bond valuation in a real context. We produced a comprehensive portfolio report by the end of the semester, and we presented our project to the community partner and to the class. Our portfolio began with $600,000 to invest and ended with a value of $626,143 for a final holding period return on the portfolio of 4.36% (the annualized return was 18.61%). At the start of the exercise, the S&P 500 was at $1,068.30 and closed the exercise at $1,094.90, yielding a return of 2.49%. Based on the S&P 500's return, our portfolio outperformed the market by 1.87 percentage points, or 75.1 percent. The project worked effectively to achieve the learning outcomes of the course. The copies of our portfolio report and presentation were delivered to our community partner.

REFLECTION

We believe this project was appropriate when considering the School of Business mission to prepare students for the real world. We applied our knowledge to develop both intellectually and professionally. We were in a sense working for one real client--Unity House. It allowed us to see what will be expected of us when we enter the professional world. We invested and managed our community partner's portfolio free of charge. It is a win-win situation for both us students and our community partner. We appreciate having the opportunity to participate in a project that would enrich our learning experience and at the same time benefit others. We believe that more courses should have service learning projects that are tied to our major.

FUTURE

We enjoyed creating a stock portfolio for our community partner. We were able to test different investment strategies. We liked the fact that we were given the tools to analyze the stock and bond picks we made. We have a better understanding of investment strategy as a result of completing this project. Overall, we feel that this project was very beneficial to our learning experience with portfolio management. It gave us the chance to apply concepts learned in class to a real-life situation. Some of us are interested in becoming a portfolio manager because this is the type of career we want to obtain after graduation. Doing our service learning project for this class has helped us realize it.