THE GROWING EFFECTS THE ORGANIC FOOD INDUSTRY HAS ON THE CONSUMERS OF SAN LUIS OBISPO COUNTY

Presented to the

Faculty of the Agribusiness Department

California Polytechnic State University

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

by

Jennifer Azevedo

June 2010

ABSTRACT

This study was undertaken to determine why the demand for organic food products is continuing to grow substantially within San Luis Obispo County.

This report represents a few important techniques when performing the analysis. Contingency tables, chi-square tests and frequency tables were all used to determine the frequencies and differences between subject variables. For each test that was done, the percentages were calculated to show a numerical interpretation as well.

It was concluded that the majority of consumers are not willing-to-pay higher prices for organic products. Also, the vast majority of consumers feel that organic products are safer and healthier than conventional products. There was a high level of uncertainty about this issue too. This study proved that more education was needed for the consumers regarding the organic food industry. If more education was available, more consumers would be purchasing organic products more frequently.

TABLE OF CONTENTS

Chapter **Page**

I. INTRODUCTION……. 4
Statement of the Problem……... 6
Hypotheses……. 6
Objectives of the Study…….. 6
Justification…… 7

II. REVIEW OF THE LITERATURE……. 9

III. METHODOLOGY…… 18
Procedures for Data Collection……. 18
Procedures for Data Analysis…… 20
Assumptions……...……21
Limitations……21

IV. DEVELOPMENT OF THE STUDY……. 22
Data Collection Problems…….. 22
Analysis……. 22
Tables…… 23
Figures……..... 27

V. SUMMARY, CONCLUSIONSC, AND RECOMMENDATIONS…… 29
Summary…… 29
Conclusions…… 29
Recommendations…….. 30

References Cited…… 31

APPENDIX…… 33

LIST OF TABLES

Table **Page**

1 Consumers occupations versus being better educated on organic food…….…...23

2 Retail Stores versus consumers willingness-to-pay more…..……..……...24

3 Consumers ethnicity versus their willingness-to-pay more……25

4 Ages of consumers versus organic products are healthier/safer…….26

5 Retail stores versus if consumers have ever purchased and organic product…….26

LIST OF FIGURES

Figure **Page**

1 Difference in taste between organic and conventional products……...…….27

2 Organic products being pesticide free……...…….28

3 Number of respondents per store……..…….28

Chapter 1

INTRODUCTION

Organic farming is the use of holistic methods process of food production, with the help of methods like crop rotation, environmental management and good animal husbandry and pest and disease control methods (Organic Trade Association 2008). Organic food production is characterized by: a very restricted use of fertilizers and pesticides, added emphasis on animal welfare, proper use of conventional veterinary medicines, extra emphasis on soil health and application of manure, compost and crop rotation and no use of genetically modified organisms on their products (Organic Trade Association 2008). Another view of organic farming is as an agricultural production system used to produce food and fiber products, it's considered a process not a product. There are a variety of organic products produced such as: produce, grains, meat dairy, eggs, fibers, flowers and processed food products. There are a limited number of additives appropriate inputs used in organic food production. A certified organic item for consumption refers to the agricultural products that have been grown and processed according to uniform standards that are verified by independent state or private organizations accredited by the United States Department of Agriculture. Any product that is sold as organic must be certified (*About Organic 2008*).

"Organic production is a system that is managed in accordance with the Organic Food Production Act (OFPA of 1990 and regulations in Title 7, Part 204 of the Code of Federal Regulations to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve

biodiversity" (National Organic Program 2010). Organic farming entails many things, one is using cover crops, green manures, animal manures and crop rotations to fertilize the soil maximize biological activity and maintain long-term soil health. Another is using biological control, crop rotations and other techniques to manage weeds, insects and diseases. Organic farming has an emphasis on biodiversity of the agricultural system and the surrounding environment. By using rotational grazing and mixed forage pastures for livestock operations and alternative health care for animal wellbeing is considered to be organic. The reduction of external and off-farm inputs and eliminating synthetic pesticides and fertilizers and other materials, such as antibiotics and hormones is categorized as organic. Finally, the last thing that makes a product or production organic is focusing on renewable resources, soil and water conservation, and management practices that restore, maintain and enhance ecological balances (National Organic Program 2010).

The largest single organic food distribution channel is the mass market grocery stores, with thirty-eight percent of organic food sales in 2006. Larger grocery natural food stores sales combined with the smaller independent natural food stores and chains account for about forty-four percent of organic food and beverage sales. On the other hand, club stores and mass merchandisers represent about 8 percent of organic food sales. The ratios for food service represent 4 percent, internet and mail orders represent 2.2 percent, and farmers' markets represent 2 percent of the total market consumption (Organic Trade Association 2008).

Organic crops can be a profitable and sustainable business for producers that are interested in getting certified to enter the organic market. On average, the organic industry has grown about twenty percent every year for the past seven years. The industry experts are still forecasting a slow but steady growth for the industry (Organic Trade Association 2008). An industry that is continuing to grow worldwide is organic agriculture. San Luis Obispo County

has taken an added interest in this industry. Typical consumers in San Luis Obispo are in the top income bracket leading them to have more disposable income to spend on organic products (Income-Main 2010).

Problem Statement

Why is the demand for organic food products continuing to grow substantially within San Luis Obispo County?

Hypotheses

Hypothesis #1: Consumers are willing-to-pay higher prices for organic products because they believe that they are receiving a higher quality and safer product.

Hypothesis #2: Consumers are not properly educated regarding organic products, which lead to the belief that by purchasing organic consumers are obtaining products completely free of synthetic pesticides, additives and preservatives.

Objectives

1. To evaluate the typical consumer is San Luis Obispo County who are purchasing organic food and beverages.
2. To determine what consumers believe are the benefits of purchasing organic products.
3. To determine why consumers are willing-to-pay higher prices for organic products.

Justification

The organic food industry is a growing production in the agriculture industry. The global demand for organic products continues to rise, having sales increasing by over $5 billion a year (Organic Trade Association 2008). The Organic Monitor, London, is a specialist research and consulting company that focuses on the global organic and related products. The Organic Monitor, from the United Kingdom branch of London, estimated that international sales reached $38.6 billion dollars in 2006, which doubled what it was in 2000. The consumers of today's economy are showing trends of increased purchases of organic products. Organic food and beverage sales have increased from $1 billion in 1990 to approximately $20 billion in 2007. From the years 2007 to 2010, the organic food sales are expected to increase an average of eighteen percent each year. The total sales for organic products, both food and non-food products were $17.7 billion in 2006, which is up twenty-one percent from 2005. It is estimated that the sales will be greater than $25 billion in 2008 (Organic Trade Association 2008).

According to The World of Organic Agriculture 2008 report it is estimated that about 30.4 million hectares (100 acres) were being managed organically by more than 700,000 farms in 138 countries in 2006. The United States was fourth in the rankings, with 1.6 million hectares in 2005 (Organic Trade Association 2008).

In 2000, there were 6,592 certified organic operations in the United States. In 2007 the number of certified organic operations substantially increased to 10,159 (Greene and Slattery 2009). This number continues to increase because the United States' consumers are becoming more aware of the organic industry. More specifically in 2007, California had 2,026 certified organic operations. California is by far the leading state for organic operations. The second highest state would be Wisconsin, having 905 certified organic operations (Greene and Slattery 2009). Both consumers and producers in the United States will be affected by this study. As

California at least doubles any other state in organic production, California will greatly be affected by my study.

Chapter 2

LITERATURE REVIEW

Consumer's Willingness-to-Pay for Organic Products

A project done by Allen (1996) dealt with the issue of consumers paying higher prices for organic tomatoes. The spike in prices resulted from the growing expenses and inflated prices by the grocer due to higher demand and lower supply. Allen surveyed produce managers and merchandising managers in California grocery stores in the mid 90's by telephone interviews. She also interviewed both conventional and organic tomato farmers throughout California. She concluded that organic tomatoes are still in the developmental stage and it was difficult to gather information on this product (Allen 1996).

Furthermore, Yue and Tong (2009) conducted a hypothetical experiment to determine why consumers were willing-to-pay for local organic fresh produce. The authors' conducted a study on the marketing segmentation of organic and locally grown produce versus organic non-locally grown produce. In this experiment, the consumers did not actually purchase any products, instead they were asked questions regarding where they prefer to shop for organic products and about their attitudes towards locally grown organic produce. Another experiment was conducted to find where people purchased the product that they preferred. The purchase test results indicated that when the product purchased was observed in their experiment, there was not a significant difference between what people said they would pay and what they actually paid. They also found that consumers' socio-demographics affected their choice between locally

and organically grown produce. The findings from their research will have a great importance on fresh produce stakeholders to help them make correct production and marketing decisions (Yue and Tong 2009).

Lester (2006) stated that the demand for organic food products was continuing to expand worldwide, especially in developing countries. Consumers were willing-to-pay higher prices for organic produce. They were prepared to pay these prices because consumers feel that they are getting a healthier, cleaner, safer and more nutritious product. Worthington (2004), concluding that organic produce contained more vitamins, iron, and magnesium, yet less protein, nitrates, and other metals than conventional crops. Both consumers of conventional and organic products believe that the pesticides that are used are not properly and safely applied, and the risks to humans from this are underrated. According to organic consumers, only 23 percent of the U.S. population consumes organic produce on a daily basis. Comparative studies of conventional versus organic produce are difficult to design and execute because of the uncontrollable and unpredictable production variables including weather variation (Lester 2006).

The organic food industry is drastically changing. The organic foods are now occupying more shelf space in the dairy and produce aisles at most U.S. grocery stores. The organic market boom has pushed the retail sales from $3.6 billion in 1997 to $21.1 billion in 2008 (Dimitri and Oberholtzer 2009). The U.S. organic industry growth is evident by the amount of retailer's expanding and selling a wider variety of foods. The organic handlers who buy their products from farmers often offer them to the retailers and sell more products to the conventional retailers and club stores than they ever have before. Organic farms have struggled from time to time to produce a sufficient supply that would keep up with the rapid growth demand, which has led to occasional shortages of organic products (Dimitri and Oberholtzer 2009).

Consumer's Willingness to Follow the New Trend

Stow (2002) dealt with the issue of increased consumption and demand for organic products. His issue was the public's perception of what constitutes organic produce and seeing if they were attracted to the new and fashionable trend of organic food. He used personal interview responses with 225 randomly selected purchasers of organic produce from the United States, another 254 respondents from Italy, and 189 respondents from Ireland. Stow was trying to measure the difference in purchasing behaviors between the three countries and to see which if any country would follow the new trend of purchasing organic products. He found that there was not a significant difference between the three countries when purchasing organic products (Stow 2002).

Quirgoa (2000) assessed consumer preferences for stores that the consumers could do all of their shopping at once or in a specialized venue. He asked randomly selected consumers if they would buy their produce if it was sold in supermarkets and why they would purchase it. He obtained his information from a mixture of surveys and personal interviews and found that over 50 percent of the respondents would buy organic produce in the stores. Consumers were also willing to pay more for organic produce because 65 percent of the respondents felt that it was healthier (Quirgoa 2000).

The 2008 Farm Act allocated about $5 million in spending for expanding the organic data collection initiative. While the new data is being collected and analyzed the researchers are taking a particular interest in consumer types purchasing organic food and why the increases in the supply of organic products at the farm level lag behind the growth in demand at the retail level. This study found that the one and only factor that is consistently influencing the likelihood of a consumer's buying organic products is the consumer's education level (Dimitri and Oberholzter 2009). The higher the education level the higher the chances the consumer will

purchase organic products. Factors of race, number of children in the household, and income do not have a constant effect on the likelihood of buying organic products. The Economic Research Service conducts global food security. This projected ERS research was combined with the existing ERS and academic research, studies the industry and any available public data were analyzed from 1997 to 2007. Organic products are usually more expensive than conventional foods often costing at least 10 to 30 percent more. The surveys indicate a mixed reaction about consumer's response to higher priced organic food (Dimitri and Oberholtzer 2009).

Factors Affecting Consumer's Consumption Patterns

Grebitus (2007) touched on the issue that consumers were showing interest in purchasing organic foods and were willing-to-pay higher prices for the products. Consumer choice is affected by price, attitudes and beliefs about food quality. The author focused on the consumption of both organic and conventional potatoes, pork and milk. He gathered survey data in Germany in 2004, from respondents over eighteen years of age and living in private households. The survey was a face to face interview that consisted of 260 participants. Consumption patterns and attitudes regarding food were asked during this survey. He concluded that German consumers did not necessarily trust meat that is coming from a supermarket (Grebitus 2007). Consumers also felt that when they are paying a higher price for food, it meant that they are getting a higher quality product. Some consumers felt that price was more important than production methods. The consumers of conventional pork had an attitude that they didn't care about the production method and animal husbandry. The results from the survey found that the only factor affecting the consumption for conventional potatoes was the availability of information within the store. The survey concluded that women purchased more

organic milk than men, and elder consumers bought less organic milk than others (Grebitus 2007).

Smith (2009) was concerned with a worldwide belief that price and income are less relevant to measures of organic sales. The organic food market used to be considered a niche market in the early development stage. Smith (2009) stated that the majority of organic consumers are white, young females who are well educated. The Hartman Group, Ann Arbor Michigan, conducted a study that later found this statement to be incorrect, showing that half of the respondents who purchase organic food have income below $50,000 and were African Americans, Asian Americans and Hispanics. The Hartman Group examined the organic purchase decisions of vegetables and fresh fruits based on socio-demographic and economic factors. The data found that the demand for organic fresh produce will probably continue expanding as household income increases. This study also found that the most important factor was that the geographical locations would affect the probability of household's to become organic friendly users. Households in the West are more likely to purchase organic produce from the West. The households in the North Central areas are the least likely to be organic consumers. The second leading role in the organic produce decision is educational attainment. Households with people aged fifty-five years old and older households with children under the age of six were more likely to be an organic purchaser (Smith 2009).

Govindasamy, Italia and Liptak (1997) evaluated the characteristics and beliefs of consumers while selecting and purchasing produce in grocery stores. The authors collected health and environmental risk perceptions of many agricultural products as well as demographic information. They chose nineteen produce characteristics and had them ranked by the consumers. At that time the least important characteristics were locally grown produce and the country of origin. On the other side, the most important characteristics were: taste and flavor,

freshness, health value, absence of pesticides and cleanliness. Their survey showed that most of the consumers looked at the labeling and nutritional information while shopping. There was a clear preference among consumers for low-input methods of agricultural production, such as the minimization of pesticides. Consumers believed that there were health benefits to organic produce and that they would continue to purchase more organic produce if it were readily available. The overall goal of this research was to provide food marketing agents with a better understanding of consumer purchase behavior, beliefs, and preferences (Govindasamy, Italia, Liptak 1997).

Consumers are attracted to organic foods because of their characteristics such as being environmentally friendly and pesticide free. The recent increases in organic food demand is attributed to the increased availability, which potentially lowers search costs and increased selection and variety (Dimitri and Oberholtzer 2009). The profits that are associated with organic foods have attracted producers to this market. The main factors that prevent conventional farmers from converting over to organic farming include certification costs, the time required for transition, lack of understanding of organic production technologies and higher labor costs for organic products (Jinghan, Zepeda, and Gould 2007).

There have been numerous researchers that have investigated the determinants of organic food purchases and consumers' willingness-to-pay the premiums associated with organic foods, but very few have focused on the determinants of organic food expenditures. Data from the 2003 University of Wisconsin's Study of Food Buying sought views of U.S. households toward organic food and beverage purchases. Telephone and mail surveys were given to 1,430 telephone numbers and 1,095 households by mail. The response rate for the phone surveys was 30.3 percent and the mail response rate was slightly higher at 47.7 percent (Jinghan, Zepeda, and Gould 2007). The result of the 726 respondents in the sample concluded that 56.9 percent of the

respondents purchased organic food occasionally. The respondents were screened to be sure that they were eighteen years old or older and identified themselves as the primary shopping consumer within the household. The results from this survey suggested that the limiting factors of the organic food market are search costs, diet patterns and awareness of the organic label. Income did not directly influence the household selection of organic food purchases (Jinghan, Zepeda and Gould 2007).

However, one factor is the indirect effect of search costs. Search costs are those limiting factors of the organic food market including search costs, dietary patterns and awareness of the organic food label. Increasing the available shopping venues and the availability of organic products in conventional stores might help to reduce search costs for organic food (Jinghan, Zepeda and Gould 2007). Consumers always look for the most affordable, highest quality product, given their household budgets and perceptions of a product quality. Labels are used a cues and are to be understood by the consumers. Having universal labels, such as national organic certifications, would help reduce search costs. A product with an easy identification or quality makes the price comparison and choice easier. Organic labeling can be difficult to understand for the consumers, because different label signify different standards (Lohr 2010.)

Organic Marketing Channels and How to Fix the Food Crisis

Although the organic industry is a growing industry, sustainable agriculture still remains a tiny enterprise having less than 1 percent of American cropland being farmed organically and having revenues of 4 percent (Walsh 2009). Organic food was more expensive than conventional food and relatively harder to find. Walsh (2009) discussed hog producers keeping animals in small confinement pens and constantly loading the hogs with antibiotics to keep them

healthy. Further, the hog waste pollutes the environment by running off into the Gulf of Mexico to kill the fish (Walsh 2009).

Walsh (2009) also states that the agricultural industry can produce vast amounts of grains and meats are relatively cheap, but lower priced hogs were taking a high toll on the environment, animals and humans. An outbreak of salmonella from peanuts killed eight people and made six hundred people sick. The public has become more aware of the animal issues since the passing of Proposition 2 passing, which makes sure that animals are able to lie down, stand up and turn around in their cages (Walsh 2009.)

There has been a decline in the number of U.S. farms from 6.8 million to less than 2 million, with the average farmer feeding 129 Americans now. For most consumers organic prices will remain the biggest obstacle as it will continue to cost more than its conventional opponents (Walsh 2009). Park (2009) stressed that producers' demographics and farm factors will make them more profitable given the choice of their marketing outlets. There is continued growth in organically grown food markets in the United States, internationally and nationally. Park concluded that they were able to highlight difficulties in finding the best prices as a constraint on organic earnings. The total amount of labor on organic operations has effects on both the choice of marketing outlets and the earning in that particular outlet. Organic farmers are being faced with more pressures to develop different marketing channels within their farms. The marketing channels may have a variety of pricing strategies or service provision requirements (Park 2009).

Organic Agricultural Production and Funding

Klonsky (2002) did a study on the organic agricultural production in California. Organic agriculture in California is expanding rapidly, having a double digit average annual growth in registered acreage and sales. The growth of agriculture as a whole in California is relatively

lower than the growth rate of organic agriculture in California. In contrast to this, organic agriculture only represents 1 percent of total crop sales and an even smaller percentage of the livestock sales. Produce remains the dominant area for organic agriculture within California. This study showed that a continuing issue will be if the current consumers of organic commodities change their purchasing habits to include a wider variety or organic products (Klonsky 2002). It is projected that organic agriculture will represent ten to twenty percent of California's cropland by 2024. The federal government supported UC Santa Cruz to lead a research program that will give organic farmers the same kind of help the university gives to the conventional farmers. Marc Los Huertos, a scientist with the Center for Agro-Ecology and Sustainable Food Systems, Monterey, helps farmers on the Central Coast manage nitrogen level to maximize harvests and minimize their pollution. When nitrogen accumulates, it reduces biodiversity, acidifies soil and water, degrades costal environments, reduces forest productivity, contributes to the greenhouse effect and depletes the ozone. Researchers have been working with the government to address the nitrogen problem. California is considering a permit-like approach that would encourage farmers to take short courses for them to learn about nitrogen pollution (McNulty 2004). Huertos said, "Farmers are afraid to cute back on fertilizer because they're afraid their harvests will drop, but some of what they apply ends up in out waterways" (MchNulty 2004).

Chapter 3

METHODOLOGY

Procedures for Data Collection

Why is the organic food industry becoming more popular within San Luis Obispo County? To collect data for this study, a survey was distributed to residents in San Luis Obispo County. This county has a population of approximately 267,154 residents in 2009 (California Counties, 2009). The questionnaire was distributed to 300 mall intercepts respondents within the county. An online sample size calculator suggested a sample of 271 people to be the ideal sample size. This number was calculated by have the margin of error at 5 percent, the confidence level of 90 percent, the response distribution at 50 percent and putting in the current population for San Luis Obispo County (Raosoft 2010.)

At grocery stores, the survey was administered by the exit door of each store leaving the consumers to take the survey when they were finished shopping. The location for both types of grocery stores was determined by the variety of organic products that each store had to offer and by the convenience of their location. The conventional grocery stores that were chosen were Vons and Albertsons because these are both fairly large conventional supermarkets that the majority of shoppers shop at in this area. Vons' in Grover Beach, California and Vons' in San Luis Obispo, California both were used to collect data for this study. The three Albertson's stores that were used to collect data from were located in: Paso Robles, Atascadero, and Morro Bay. All of these stores are located in busy shopping centers that are in different cities within

San Luis Obispo County. The survey was also distributed to consumers at New Frontiers Market located in San Luis Obispo at two Trader Joes stores. The two Trader Joes stores were in Arroyo Grande, and San Luis Obispo, California. These stores were chosen because they both carry specialty foods and offer a variety of organic products in San Luis Obispo County. By choosing conventional and specialty stores it gave a diverse survey opinion for organic products.

The consumers showed a fairly high interest level when they were asked to participate in survey. People that were excluded from this study included young children who did not make the majority shopping decisions for their family. The questionnaire was given out on the first Monday of May in the afternoon, the first Wednesday of May in the morning, and finally on the first Friday of May in the early evening. This study was also designed to see if education on organic products was a factor that would affect consumers purchasing patterns. In all cases, the respondents were asked to fill out the survey anonymously and with complete honesty.

The questions asked in the survey pertained to evaluating the typical consumer's organic purchasing habits, determining what consumers believe the benefits are of purchasing organic products, and concluding why consumers are willing to pay higher prices for these products (see App. Figure 1). The first objective dealt with what consumers felt they are getting when purchasing "organic" food products and this objective had one question pertaining to it on the survey. The second objective had two questions regarding the issue of why consumers are willing-to-pay more for organic foods and beverages. The final objective, evaluating who is purchasing the organic food products had five questions to conclude this issue. There were also two questions that dealt with the difference in conventional and organic products. All questions asked in the survey were directly related to the issue of why the organic foods are becoming more popular within San Luis Obispo County.

Before the survey could be conducted, a mandatory Human Subjects Protocol Approval Form had to submitted and reviewed by the Cal Poly Human Subjects Committee. This form pertained to what type of study would be conducted and listed any possible risks that were involved. Once the form was approved, the surveying process started.

Procedures for Data Analysis

The data that was gathered from the surveys was entered into a Microsoft Excel Spreadsheet. The variables that were analyzed in this study were organic products and who the consumers were. While using non-parametric techniques, such as contingency and frequency tables to interpret the data for the study, it was important to look out for "lurking valuables." A lurking variable is a hidden variable the stands behind a relationship and determines it by affecting other variables (De Veaux, Velleman, and Bock p.177). There were no significant variable lurkers in this study. The most common analysis used for this study was frequency distributions by questions. The two types of statistical analysis that was performed on this data were contingency tables and frequency tables. Contingency tables categorize the total count or frequency of similar responses on two or more variables so that we can see whether the distribution of counts on one variable is contingent to the other (De Veaux, Velleman, and Bock p.709). Frequency tables record the total cumulative response by alternate answers that were collected from the sample survey. By using the contingency tables it was easy to calculate the proportions and percentages pertaining to the data sets, also allows one to check for correlation subject to a chi-square test. This allowed for the computation of who was purchasing organic food and beverages and at what frequency. Another tool used was the relative frequency bar chart. The bar charts were used to visually compare frequencies of different questions from the survey. Using a variety of methods to analyze the data for the study gives both a graphical

interpretation as well as a numeric interpretation. The questions on the instrument were formulated to conclude why the demand for organic products is continuously growing within San Luis Obispo County.

Assumptions

This study assumes that some consumers prefer to purchase organic food and beverages over conventional products. Based on previous studies regarding the organic food industry there appears to be several factors why consumers are willing-to pay-higher prices for organic products. It is assumed that mall intercepts and arbitrary store selection will provide a representative sample.

Limitations

The assumptions preclude adjustments for the growing organic food industry; however, the data findings are only in San Luis Obispo County.

Chapter 4

DEVELOPMENT OF THE STUDY

Data Collection Problems

While gathering information for this study there was a couple of common obstacles that needed to be identified. When asking the consumers if they were willing to participate in the survey, some consumers denied taking the survey. There were a few reasons why consumers would refuse the survey. The first reason was because they were too busy or rushed and did not have the time to participate in the survey. Another reason was because they felt it was a waste of their time. Some consumers were rude when asked to participate in the survey, while others gladly accepted the survey. To overcome this minor issue, it was necessary to keep a positive, open-minded outlook and to be understanding of the people who were too busy or just did not wish to participate in the survey.

Analysis

A study was done to conclude why the demand for organic products is continuously increasing among San Luis Obispo County residents. To do this study, a questionnaire was distributed among consumers at both conventional and specialty grocery stores within the county. The surveys were distributed at mall intercepts. From the eight stores surveyed there were a total of three hundred respondents. It was concluded that Albertsons, in Paso Robles, California was the most receptive to participating in the survey.

While comparing the consumer's occupations to the purchasing habits of organic products, studies show on the whole consumers felt more education is needed regarding the organic industry. Table 1 shows when comparing consumers' ages to whether they felt that organic products were healthier and safer it was interesting to see the amount of people who said yes or that they were unsure. 58 percent of people that were 17 years old and younger thought that organic products are safer and healthier than the conventional product. 68 percent of consumers aging from 18 to 25 years old also felt that organic meant safer. From the consumers aging from 26-34 years old, 43 percent felt that organic products were safer than conventional. Skipping to the consumers whom are 61 years old and older, 45 percent also felt that they are safer. This contingency table could be linked to the education table. It is proven that if consumers were better educated they might not necessarily buy more organic products, but they would be aware of what was actually in an organic product (Table 1). While comparing the students versus people whom are currently unemployed; 65.7 percent of students felt more education is needed. Whereas, only 43.5 percent of unemployed consumers felt more education was necessary.

Table 1. Occupation vs. More Education

	Occupation						
	Student	**Full Time**	**Stay at Home**	**Unemployed**	**Retired**	**Other**	**Total**
Yes	44	75	12	10	18	23	182
No	9	16	4	5	6	5	45
Unlikely	14	25	6	8	9	11	73
Total	67	116	22	23	33	39	300
Yes %	65.67%	64.66%	54.55%	43.48%	54.55%	58.97%	60.67%
No %	13.43%	13.79%	18.18%	21.74%	18.18%	12.82%	15.00%
Unlikely %	20.90%	21.55%	27.27%	34.78%	27.27%	28.21%	24.33%

To no surprise while surveying the willingness to pay more for organic products, 37 percent of consumers shopping at New Frontiers Market were more than happy to pay the increase in price. As opposed to this, Vons having 59.2 percent of shoppers unwilling to pay the higher price for an organic product (Table 2). When comparing the eight San Luis Obispo County stores with their willingness to pay more for organic products, there was sufficient data to determine that the vast majority of consumers actually are not willing to pay more for organic products. The two stores selling a variety of organic products, Trader Joes and New Frontiers Market, both also had the lowest response rate to be opposed to paying more for an organic product. There was a common trend amongst the strictly conventional grocery stores, having low percentages being for paying the higher prices, and very high percents for being opposed to paying more for an organic product (Table 2).

Table 2. San Luis Obispo County Stores vs. Willingness to Pay More

	Stores								
	T.J-SLO	**T.J-A.G**	**Alb-Paso**	**Alb-Atasc**	**Alb-Morro**	**Vons-SLO**	**Vons-G.B**	**N.F SLO**	**Total**
Yes	2	6	12	1	13	3	8	10	55
No	19	15	26	29	27	21	24	9	170
Sometimes	10	13	13	6	5	6	14	8	75
Total	31	34	51	36	45	30	46	27	300
Yes %	6.45%	17.65%	23.53%	2.78%	28.89%	10.00%	17.39%	37.04%	18.33%
No %	61.29%	44.12%	50.98%	80.56%	60.00%	70.00%	52.17%	33.33%	56.67%
Sometimes	32.26%	38.24%	25.49%	16.67%	11.11%	20.00%	30.43%	29.63%	25.00%

According to Table 3, it was concluded that 34.6 percent of the sample proportion were of the Asian ethnicity. However, 69.2 percent of African Americans were opposed to paying

higher prices for the product. Over half of every ethnicity except Asians was against paying more for an organic product (Table 3).

Table 3. Ethnicity vs. Willingness to Pay More

			Ethnicity				
	Caucasian	**African American**	**Hispanic**	**Native American**	**Asian**	**Other**	**Total**
Yes	30	2	7	1	9	6	55
No	116	9	20	5	12	13	175
Sometimes	49	2	9	2	5	3	70
Total	195	13	36	8	26	22	300
Yes %	15.38%	15.38%	19.44%	12.50%	34.62%	27.27%	18.33%
No %	59.49%	69.23%	55.56%	62.50%	46.15%	59.09%	58.33%
Sometimes %	25.13%	15.38%	25.00%	25.00%	19.23%	13.64%	23.33%

Table 4 shows that the majority of people sampled believe that organic products are both safer and healthier than the conventional product. Out of that majority, 68 percent of those polled were between the ages of eighteen and twenty-five. In contrast, 26 percent of consumers between the age of twenty-six and thirty-four felt that organic products were overrated and not safer nor healthier than conventional products. Another interesting fact regarding this issue, there was a lot of uncertainty pertaining to organic products being completely free of synthetic pesticides, additives and chemicals. Seeing the number of people who said that organic products are safer and healthier or that they were unsure was always higher than the no responses. Shockingly, those who believed organic products were pesticide free only lead by a small percentage. Skipping to the consumers whom are 61 years old and older, 45 percent also felt that they are safer. This chi-square test could also be linked to the education table. It is proven that if consumers were better educated they might not necessarily buy more organic products, but they would be aware of what was actually in and organic product (Table 4).

Table 4. Age vs. Safer/Healthier								
	Ages in Years							
	17 & younger	18-25	26-34	35-42	43-51	52-60	61 & older	Total
Yes	7	38	23	27	29	27	17	168
No	1	9	14	6	5	4	8	47
Unsure	4	9	17	11	20	11	13	85
Total	12	56	54	44	54	42	38	300
Yes %	58.33%	67.86%	42.59%	61.36%	53.70%	64.29%	44.74%	56.00%
No%	8.33%	16.07%	25.93%	13.64%	9.26%	9.52%	21.05%	15.67%
Unsure %	33.33%	16.07%	31.48%	25.00%	37.04%	26.19%	34.21%	28.33%

From each individual store it was evident that the majority of consumers have purchased a product in the past. Albertson's in Morro Bay had the lowest amount of respondents agreeing, with 53 percent (Table 5). Table 5 is a chi-square test that shows the percentage of consumers who have purchased organic products, 100 percent of consumers shopping at Trader Joes have purchased organic products.

Table 5. Stores vs. Ever Purchased and Organic Product									
Stores									
	T.J SLO	T.J AG	Alb-Paso	Alb-Atasc	Alb-Morro	Vons-GB	Vons-SLO	N.F-SLO	Total
Yes	31	31	29	23	24	40	28	25	231
No	0	3	22	12	21	7	2	2	69
Total	31	34	51	35	45	47	30	27	300
Yes %	100.00%	91.18%	56.86%	65.71%	53.33%	85.11%	93.33%	92.59%	77.00%
No %	0.00%	8.82%	43.14%	34.29%	46.67%	14.89%	6.67%	7.41%	23.00%

While doing the taste comparison, 26 percent of respondents were still unsure if there was a significant difference in taste between a conventional and organic product. Having said

this, 47 percent of consumers were confident that there was a difference in taste in favoring the organic product (Figure 1). Figure 2 shows the number of respondents who think that organic products are completely free of pesticides. Out of the 300 people surveyed, 37 percent feel that organic products are completely free of pesticides and 30 percent of people thinking that organic products are not completely free of pesticides. This left 33 percent of respondents unsure if organic products were completely free of pesticides (Figure 2). Figure 3 shows the number of respondents from each individual store.

Figure 1. Difference in Taste vs. # of Respondents

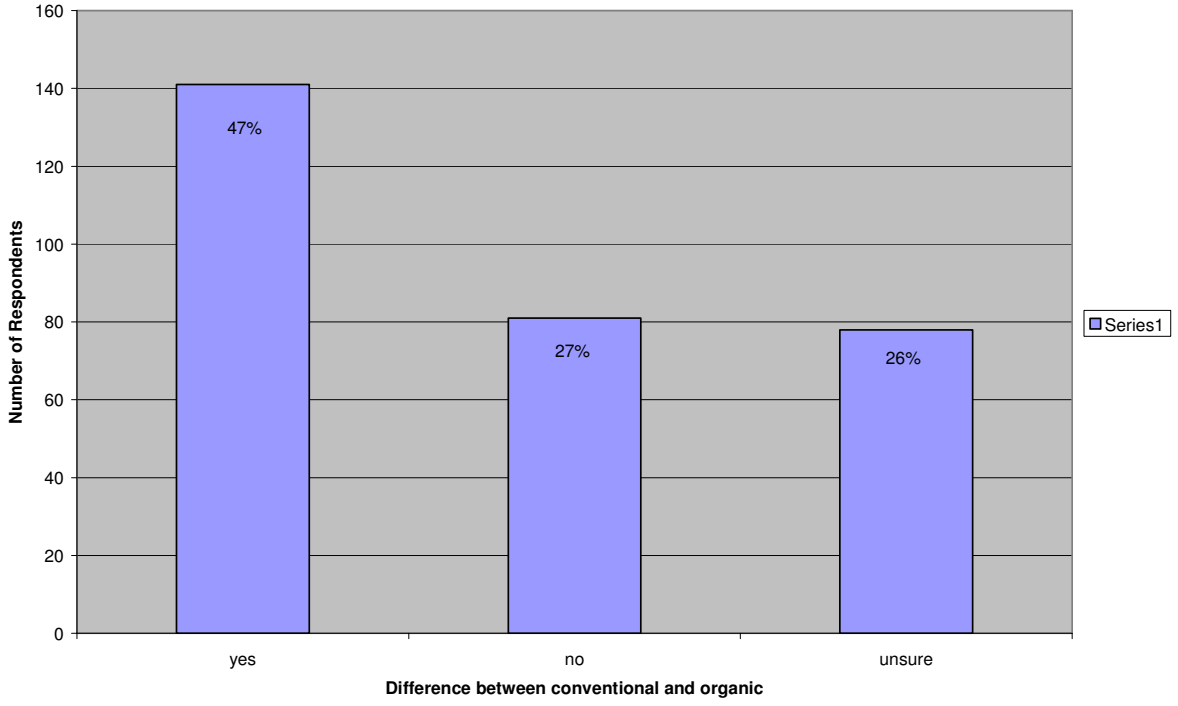


Figure 2. Pesticide Free vs. # of Respondents

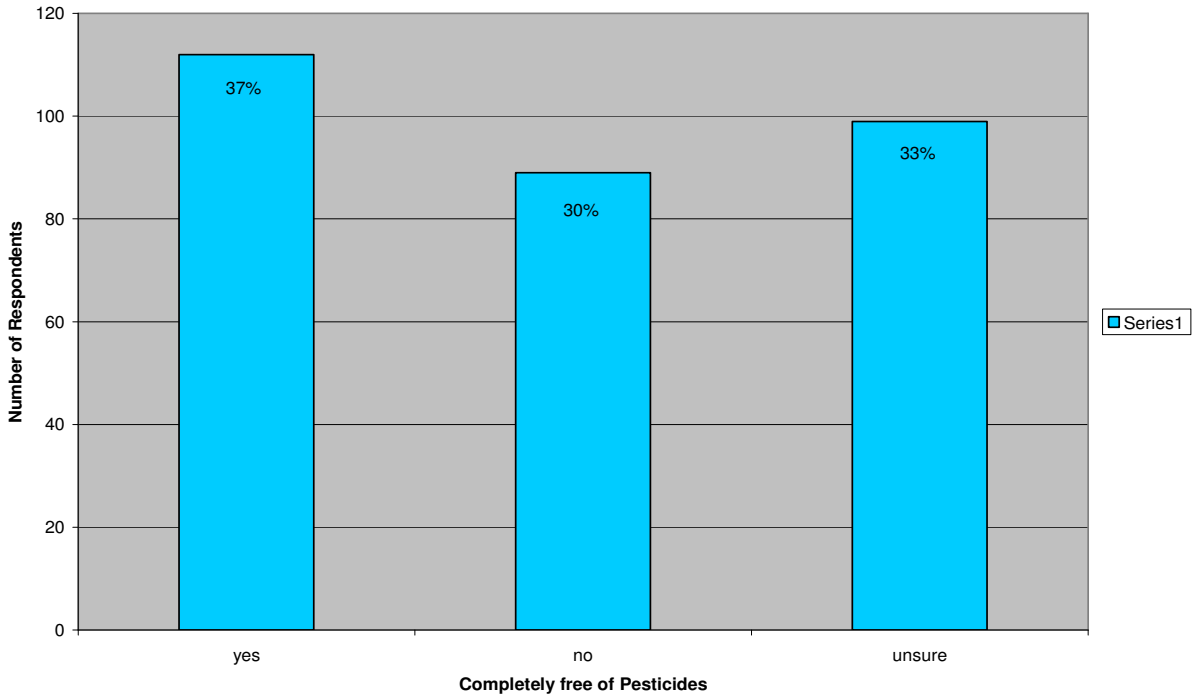
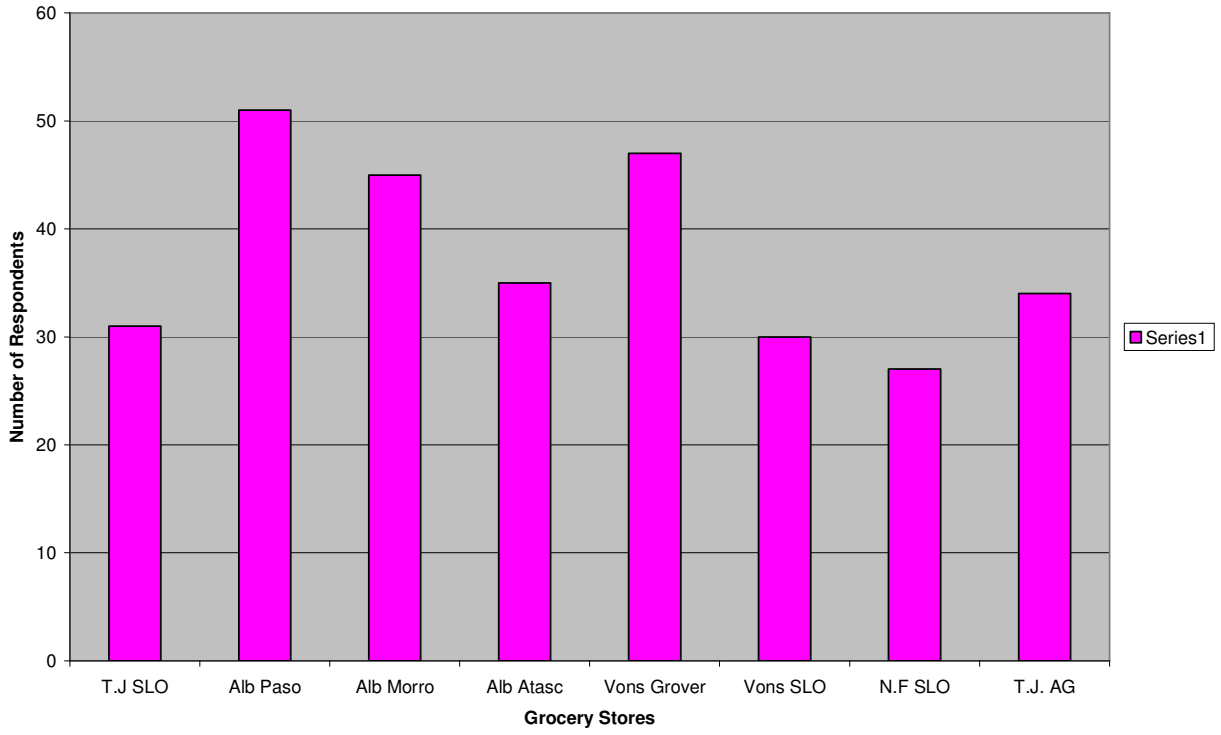


Figure 3. Pesticide Free vs. # of Respondents



Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The data compared while conducting this study, overall was significant in relation to the problem statement for this research. Furthermore, the information obtained from the collected data was the determinant in regards to: age, ethnicity, occupation, taste, price, education, safety and location surrounding the organic boom. It is evident that the organic food industry will continue to grow at an increasing rate.

Conclusion

The vast majority of today's consumers prefer to purchase organic products. However, not all consumers are willing-to-pay the higher prices that coincide with organic products. Even if the differentiator was close, it is evident that the general public's deception regarding organic products being completely free of pesticides and additives is falsely perceived. Although the bulk of consumers believe that organic products are safer and healthier, it was also determined that more education is necessary to the consumers surrounding this industry. It is evident that a consumer's occupation and ethnicity play an important role in the outcome of their purchasing decisions. Although, it was concluded that the majority of consumers had purchased an organic product in the past, going forward consumers may be reluctant to purchase organic products on a

regular basis. Overall, the data collected was a very useful tool in determining facts surrounding the organic food industry.

Recommendations

While conducting this study there were a few recommendations that should be addressed. The first being, more education needs to be offered in this area surrounding the organic products. Another suggestion would be to provide consumers with factual information pertaining to a particular product. Finally, the last recommendation would be for the retailer to disclose information that the product is known to be organic, but they can not prove that the product is 100 percent pesticide free.

References Cited

About Organic. Organic Farming Research Foundation, Santa Cruz, CA, 2008. Feb. 2010.

Allen, Heather. 1996 "A Market Research Study of California Growers and Professional Buyers in the Organic Tomato Industry." Unpublished Senior Project, California Polytechnic State College, Project #96-0645.

California Counties. California State Association of Counties, 2009. 16 Feb. 2010.

De Veaux, Richard, Paul Velleman, and David Bock. *Intro Stats*. 3rd edition. Boston: Pearson Education Inc., 2009.

Dimitri, Carolyn and Lydia Oberholtzer. 2009 "Marketing U.S. Organic Foods: Recent Trends From Farmers to Consumers." United States Department of Agriculture, Washington DC, Economic Research Service. September (58): 1-36.

Govindasamy, Ramu, John Italia, and Clare Liptak. 1997 "Quality of Agricultural Produce: Consumer Preference and Perceptions." *Rutgers University, Department of Agricultural, Food and Resource Economics.* (February):1-42.

Greene Catherine and Edward Slattery. *Economic Research Service.* United States Department of Agriculture, September 2009. 10 Feb 2010.

Grebitus, Caroloa. 2007. "What Affects Consumption Patterns of Organic and Conventional Products?" American Agricultural Economics Association Annual Meeting, Portland, Oregon. August 1.

Hartman Group. 2010. "Research Methods." Ann Arbor, Michigan.

"Income-Main." *Census Bureau Home Page.* December 2008. 04 April. 2010.

Industry Statistics and Projected Growth. Organic Trade Association, 2008. 1 Feb. 2010.

Jinghan, Li, Lydia Zepeda and Brian Gould. 2007. "The Demand for Organic Food in the U.S.: An Empirical Assessment." *Journal of Food Distribution Research.* 38:3 (November): 54-69.

Klonsky, Karen. *California Agriculture: Dimensions and Issues.* "Organic Agricultural Production in California." 12 May 2010. pp.248-256.

Lester, Gene. 2006. "Organic versus Conventionally Grown Produce: Quality Differences, and Guidelines for Comparison Studies." *American Society for Horticulture Science.* 41:2(April):296-300.

Lohr, Luanne. "Factors Affecting International Demand and Trade in Organic Food Products." 3 June 2010.

McNulty, Jennifer. "Center Scientist Endorses Nitrogen Management Efforts." *The Cultivator: The Center for Agroecology & Sustainable Food Systems* 2nd ser. 22 (2004): 8 & 14.

National Organic Program. USDA. 3 June 2010.

"Organic Food Trends." Agricultural Marketing Resource Center, Iowa State University, December 2009.

Organic Trade Association. "Cultivating a Strong Organic Industry", 2008. Feb. 2010.

Park, Timothy A. 2009. "Assessing the Returns from Organic Marketing Channels." *Journal of Agricultural and Resource Economics.* 34:3 :483-497

Quirgoa, Andres. 2000 "Demand for Supermarket Organic Produce in Santa Cruz County." Unpublished Senior Project, California Polytechnic State College, Project #00-0847.

Raosoft 2010. "Sample Size Calculator by Raosoft, Inc." *Web Survey Software..* May 2010.

"San Luis Obispo County QuickFacts from the US Census Bureau." *State and County Quickfacts.* May 2010.

Smith, Travis A. 2009 "Does Price or Income Affect Organic Choice? Analysis of U.S. Fresh Produce Users." *Journal of Agricultural and Applied Economics.* 41(December):731-744.

Stow, Justin. 2002 "A Market Analysis of the Organic Food Industry: Ireland, Italy and U.S." Unpublished Senior Project, California Polytechnic State College, Project #02-1676.

Walsh, Bryan. 2009 "America's Food Crisis and How to Fix It." *Time.* 174(August):30-33.

Worthington, Virginia. "Nutritional Quality of Organic Versus Conventional Fruits, Vegetables, and Grains." *The Journal of Alternative and Complementary Medicine* 7:2 (2004): 161-173

Yue, Chengyan and Cindy Tong. 2009 "Organic or Local? Investigating Consumer Preference for Fresh Produce Using a Choice Experiment with Real Economics Incentives." *American Society for Horticulture Science*. 44(April):366-371.

App 1. Survey of SLO County Residents on Organic Food Products

This survey is being given in order to pursue my degree in Agriculture Business at California Polytechnic State University, San Luis Obispo to meet the requirements for my senior project.

1. **Which age category do you fall under?**
   a. 17 years old and younger **b.** 18-25 years old **c.** 26-34 years old **d.** 35-42 years old
   e. 43-51 years old **f.** 52-60 years old **g.** 61 years old and over

2. **What ethnicity are you:**
   a. Caucasian **b.** African American **c.** Hispanic
   d. Native American **e.** Asian **f.** Other (Identify) _____

3. **What is your current occupation?**
   a. Student **b.** Full-Time Employee **c.** Stay at Home Parent
   d. Unemployed **e.** Retired **f.** Other: _____

4. **Have you ever purchased an organic product?**
   a. Yes **b.** No

5. **Do you currently purchase organic products on a regular basis?**
   a. Yes **b.** No **c.** Sometimes
   *If yes, please identify which products you purchase:*_____

6. **Do you believe that "organic" products are completely free of synthetic pesticides, additives, preservatives, etc?**
   a. Yes **b.** No **c.** Unsure

7. **Would you be willing to pay twice as much or the same price for an organic product compared to an inorganic product?**
   a. Yes **b.** No **c.** Sometimes

8. **Do you feel that purchasing organic products is safer/healthier than conventional products?**
   a. Yes **b.** No **c.** Unsure

9. **Do you feel that there is a difference in taste between organic and conventional products?**
   a. Yes **b.** No **c.** Unsure

10. **Would you purchase more organic products if you were better educated about the organic industry?**
    a. Yes **b.** No **c.** Unlikely