DRIVERS OF DEMAND, INTERRELATIONSHIPS, AND NUTRITIONAL IMPACTS WITHIN THE NONALCOHOLIC BEVERAGE COMPLEX

A Dissertation

by

GRANT FALWELL PITTMAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2004

Major Subject: Agricultural Economics

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Approved as to style and content by:

Oral Capps, Jr. (Chair of Committee)	Rodolfo M. Nayga (Member)
H. Alan Love (Member)	James M. Griffin (Member)
A. Gene Nelson (Head of Department)	

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ABSTRACT

Drivers of Demand, Interrelationships, and Nutritional Impacts Within the Nonalcoholic Beverage Complex.

(August 2004)

Grant Falwell Pittman, B.S., Murray State University;

M.B.A., Murray State University

Chair of Advisory Committee: Dr. Oral Capps, Jr.

This study analyzes the economic and demographic drivers of household demand for at-home consumption of nonalcoholic beverages in 1999. Drivers of available intake of calories, calcium, vitamin C, and caffeine associated with the purchase of nonalcoholic beverages also are analyzed. The 1999 ACNielsen HomeScan Panel, purchased by the U. S. Department of Agriculture, Economic Research Service, is the source of the data for this project.

Many different classifications of beverages were analyzed including milk(whole, reduced fat, flavored, and non-flavored), regular and low-calorie carbonated soft drinks, powdered soft drinks, isotonics(sports drinks), juices(orange, apple, vegetable, and other juices), fruit drinks, bottled water, coffee(regular and decaffeinated), and tea(regular and decaffeinated).

Probit models were used to find demographic drivers that affect the choice to purchase a nonalcoholic beverage. Heckman sample selection models and cross

tabulations were used to find demographic patterns pertaining to the amount of purchase of the nonalcoholic beverages.

The nutrient analysis indicated that individuals receive 211 calories, 217 mg of calcium, 45 mg of vitamin C, and 95 mg of caffeine per day from all nonalcoholic beverages. A critical finding for the nutrient analysis was that persons within households below 130% of poverty were receiving more calories and caffeine from nonalcoholic beverages compared to persons within households above 130% of poverty. Likewise, persons in households below 130% of poverty were receiving less calcium and vitamin C from nonalcoholic beverages compared to persons in households above 130% of poverty.

Price and cross-price elasticities were examined using the LA/AIDS model. Methodological concerns of data frequency, beverage aggregations, and censoring techniques were explored and discussed. Own-price and cross-price elasticities for the beverages were uncovered. Price elasticities by selected demographic groups also were investigated. Results indicated that price elasticities varied by demographics, specifically for race, region, and presence of children within the household.

The information uncovered in this dissertation helps to update consumer demand knowledge and nutritional intake understanding in relation to nonalcoholic beverages. The information can be used as a guide for marketing strategists for targeting and promotion as well as for policy makers looking to improve nutritional intake received from nonalcoholic beverages.

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I must thank Dr. Oral Capps and his family for their support. He gave me academic guidance and assisted with my employment throughout the majority of my graduate studies. He and his family also often included me in family gatherings and activities because “you shouldn’t study all of the time” and “you’ve still got to eat”. For those times I am grateful. I appreciate Dr. Capps’s kindness, willingness to always help, love of baseball, and friendship.

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I must thank USDA/ERS/FRED for allowing Dr. Capps and me to work on the cooperative project concerning nonalcoholic beverages and nutrition with them. The work funded my education as well as served for the basis of this dissertation. The data provided by this project alone was a great thing for a graduate student to have but the funding was also appreciated. A special thanks goes to Annette Clauson for help with all aspects of this project and for including me in meetings, articles, and events concerning the project.

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CHAPTER I

INTRODUCTION

Justification

The nonalcoholic beverage industry has changed dramatically over the past two decades. To illustrate, from the *Statistical Abstract of the United States: 2001*, bottled water consumption has increased from 2.4 gallons consumed per person per year in 1980 to 18.1 gallons per person per year in 1999. Carbonated soft drink consumption has increased from 35.1 gallons to 50.8 gallons per person per year over the same time period. Overall milk consumption has decreased by 4 gallons over this nineteen-year period from 27.6 gallons per person to 23.6 gallons per person per year. Whole milk consumption decreased greatly while reduced fat milk consumption increased over this time period. Consumer tastes and preferences as well as availability of new products are key elements of these changing trends. Figures 1-3 illustrate the changing trends of selected nonalcoholic beverages from 1980 to 1999. Per person average intake over this time period was obtained from various issues of the *Statistical Abstract of the United States*.

This dissertation follows the style and format of the *American Journal of Agricultural Economics*.

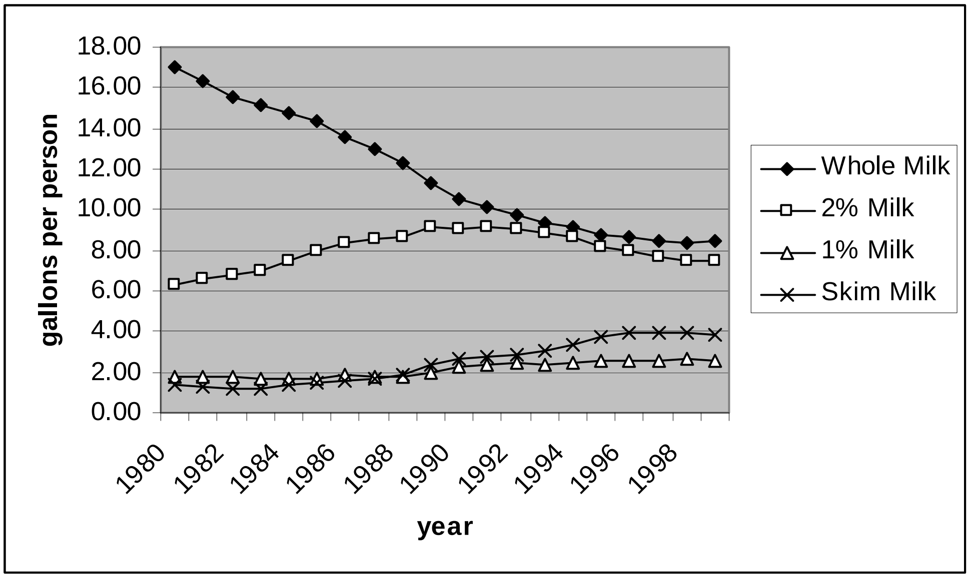

Figure 1. Milk consumption, 1980-1999

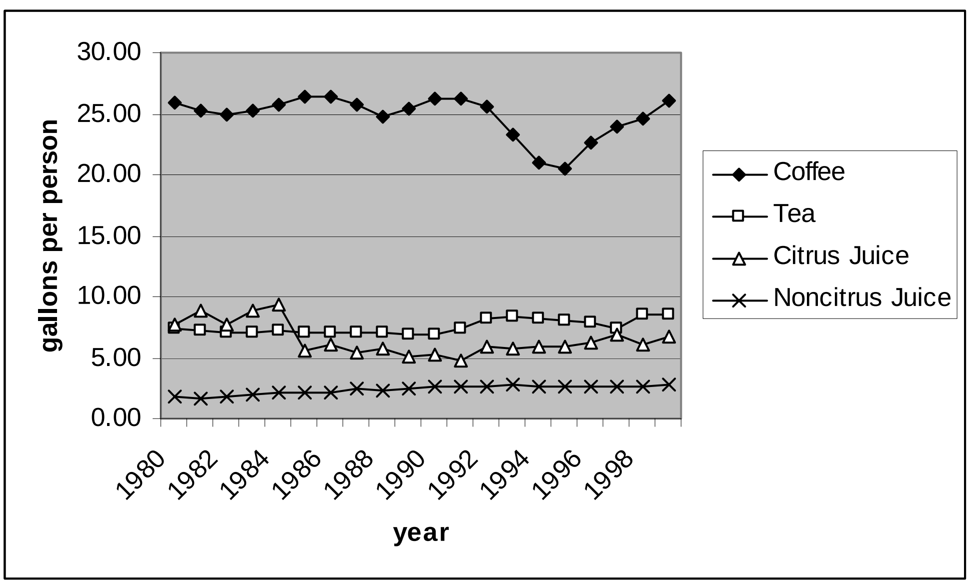

Figure 2. Coffee, tea, citrus juice, and noncitrus juice consumption, 1980-1999

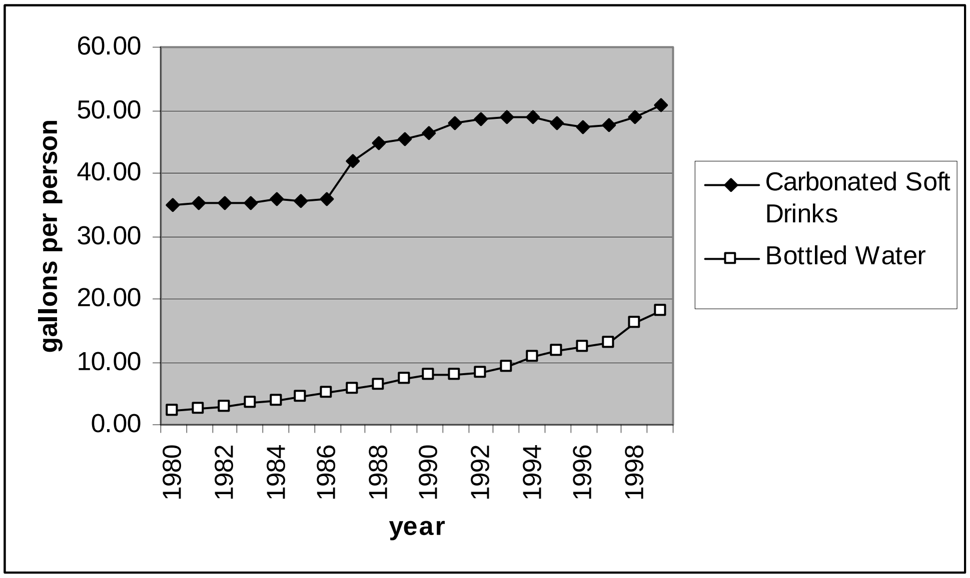

Figure 3. Carbonated soft drink and bottled water consumption, 1980-1999

The nonalcoholic beverage industry is a very competitive industry with hundreds of new products introduced annually. Advertising expenditures in the industry are indicative of its monopolistically competitive nature. In 1999, $ 165.6 million were spent in magazine advertising and $ 355 million were spent on network advertising on television (*Statistical Abstract of the United States: 2000*) These advertising expenditures are lower bounds because these figures do not include the dairy industry's advertising expenses.

With all of the competing products in this segment, substitution effects are dominant. A study in 1999 revealed that soft drinks were found to displace milk and fruit juice (Harnack, Stang, and Story (1999)). The knowledge of such effects is important to understand trends and to monitor the changing environment of the nonalcoholic beverage industry.

The trends in the consumption of these beverages are primarily unfavorable for those concerned with health-conscious food and beverage choices. The average American consumer is consuming less than half of the daily recommended serving of milk and fruits (*Statistical Abstract of the United States* (1999)). Nonalcoholic beverages are essential suppliers of calcium and vitamin C. Caffeine and calories also are supplied from this segment. A recent article in *The Journal of the American Dietetic Association* stated that "consumers who are concerned about energy intake should be made aware of the energy content of beverages, especially soft drinks and alcoholic beverages" (Chanmugan, Guthrie, Cecilio, Morton, Basiotis, and Anand (2003)). Energy content is directly related to obesity in children and adults. Obese children are more likely to have health problems and stress than those who are not (Gortmaker, Must, Perrin, Sobol, and Dietz (1993)).

Many government programs tied to nutrition are in need of information pertaining to the nonalcoholic beverage complex. The Food Stamp Program, National School Lunch Program, School Breakfast Program, and Special Supplemental Food Program for Women, Infants and Children are examples of programs that target households that are in need of nutrients, many of which are supplied via beverages. A study that examines demographic tendencies for consumption and nutrient intake would be of great use for this reason. Future policies need to be made based on the most recent evidence. Consequently, a study updating the current situation within the nonalcoholic beverage complex is warranted.

Articles dealing with nonalcoholic beverages have been a mainstay in the press as a result of the nutritional aspects and heavy consumption of specific beverages in the segment. Recent articles such as "Obesity Campaign Eyes School Drinks" (Buckley (2003)) and "Legislators try to Limit Soft Drinks, Sugary Snacks at Schools" (Hellmich (2003)) address the trend of children over-consuming the wrong types of beverages and address ways to correct the problem through various forms of action.

A thorough analysis of the nonalcoholic beverage industry is beneficial for businesses and promotion boards as well. Demographic profiling is useful for tracking changing tastes and preferences as well as forecasting levels of consumption. A regional analysis is important for marketing, planning, and new product introduction. The findings of this research can be used as cornerstones in the construction of marketing guidelines for various beverage producers and promotion boards. Manufacturers and retailers then can compare these results to their current marketing strategies. The models produced by the study may be used to predict either the probability of consumption or the amount of actual intake of the selected products for any demographic profile. Once the respective predictions have been made, the question of which consumers to target and which marketing strategies to use can be addressed. The degree of substitutability within the complex also will be revealed, allowing promoters of certain beverages to know which types of beverages in the segment are major competitors.

This work uses a specialized scanner data set with demographics attached. This data set is a relatively new form of information, and few analyses have employed these data in research studies. Care will be taken to show the intricacies of the data and the added benefit of a combination of scanner and demographic data. Explanations of the data use will be helpful for future users of such data.

Many partial analyses of nonalcoholic beverages have been done in the past. Large proportions of these works have focused on milk. Advertising is often a key focus of these studies. The works of Kinnucan and Forker (1986) and Kaiser and Reberte (1996) are two examples of studies involving milk and advertising. Typically, a few nonalcoholic beverages were added into these studies, but the extant literature rarely has included all beverages in any type of analysis. Examples include the works of Xiao, Kinnucan, and Kaiser (1998) which had milk, juices, soft drinks, and coffee and tea combined; Heien and Wessels (1988) which had milk, soda, coffee and tea combined, fruit ades, and citrus juices; Richertson (1998) which had hot drinks, milk, soft drinks, alcohol, and all other food.

Many works with demand systems also have explored economic relationships among nonalcoholic beverages. Again, only a few other beverages have been implemented into these studies. Thus, research considering substitution possibilities among nonalcoholic beverages has been limited. Ueda and Frechette(2002), Gould, Cox, and Perali(1990), Gould(1996), Kinnucan(1986), and Kaiser and Reberte(1996) all have done demand systems work focusing primarily on milk. Nutrition also is mentioned as a justification for some of the aforementioned works. Typically the consideration given to nutrition issues is made to see which beverages are displacing or competing with milk or fruit juices. An investigation of demographic drivers responsible for nutrient or calorie intake is not combined in any of these studies.

A thorough and complete analysis of all nonalcoholic beverages is needed. Trends are changing and demographic drivers of consumption need periodic assessment. Economic relationships also are altered with these changes. Obesity in American consumers, specifically children, is of major interest at this point in time. Media and research attention given to this subject often focus upon nonalcoholic beverage consumption. This work will look at the nutrition and economic aspects of all goods in the nonalcoholic beverage complex to provide a complete and updated analysis.

Purpose and Objectives of This Research

This study will analyze the household demographic and economic factors that drive the decision made by households to consume nonalcoholic beverages and the factors that determine their intake level of nonalcoholic beverages. The study also will analyze the nutrient and caloric intakes from nonalcoholic beverages and analyze how households compare in terms of nutrient intake. For example, poverty status of the household is of great concern for vitamin C and calcium intake. Policymakers fear that households within poverty thresholds may be failing to meet minimal nutritional requirements. These two nutrients are received largely from nonalcoholic beverages. The study will be centered only on at-home intakes of households in 1999. The focus of this study will be to find:

1. The key determinants or drivers affecting the *probability* of consuming nonalcoholic beverages in at-home markets. Probit models will be used to

determine the key demographic factors that affect the decision to consume nonalcoholic beverages.

2. The key demographic drivers associated with the *volume* of nonalcoholic beverages in at-home markets. Cross tabulations will be used initially to get a comparison in gallons consumed per household by comparing differing demographic households. Subsequently, the determinants of the intakes of the selected products will be based on the Heckman sample selection procedure(Heckman (1976)). This econometric technique will allow for statistical significance of associated drivers of consumption levels.
3. The average per person, per day intake of nutrients and calories from all nonalcoholic beverages as well as from selected commodities responsible for specific nutrients and caloric intake. Cross tabulations also will reveal differing averages for nutrient levels across household demographic classifications.
4. The key demographic drivers associated with the *volume* of nutrients and calories derived from all nonalcoholic beverages in at-home markets. Statistically significant drivers of nutrient and caloric intake levels will be captured through a nutrient regression analysis.
5. The *own-price and cross-price elasticities* of demand for nonalcoholic beverages in the at-home market. The Linear Approximation Almost Ideal Demand System (LA/AIDS)(Deaton and Muellbauer (1980a)) will be used to determine the own-price and cross-price elasticities of the nonalcoholic beverages. This analysis will provide insight to the interrelationships within the complex of nonalcoholic

beverages. Importantly, estimation techniques will be used to handle censoring within the demand system since not all households consume all nonalcoholic beverages.

These results will allow for the identification of potential target market areas to alter the probability of consumption and to alter the consumption of the selected products within at-home markets. Household attributes associated with nutrient and caloric intake from beverages also will identify targets for improvement for households that are under- or over-consuming specific nonalcoholic beverages. Own-price elasticities will exhibit the sensitivity of households to changes in the prices of beverage products, while cross-price elasticities will show the substitution and complementary effects among the beverages in the segment.

A comparative investigation of both at-home and away-from-home intakes of the selected products would be the ideal path to follow. This study however, will center attention only on at-home intakes of the selected products due to two major reasons. First, data on away-from-home consumption with household demographic variables are not generally available for such research. Data available for this study are focused on at-home consumption and do not reflect away-from-home consumption patterns. Second, available price series are limited to commodities and products consumed in the at-home market.

Extant Literature

The substantial portion of all economic studies concerning the effect of price, income, selected demographics, and often advertising dealt with only milk. Seven studies that included milk as well as other nonalcoholic beverages will first be discussed. Studies concerning only milk then will be analyzed. Special attention is given to articles that utilize demand systems since, in more recent times, demand systems are often used when analyzing economic relationships for related goods. The authors, estimates, methodologies, and data used will be given but not discussed. Following this, selected articles concerning demographic impacts or nutrition for nonalcoholic beverages will be discussed. Lastly, key points concerning methodologies, data used, and implications for this work will be addressed. In March of 2003, Capps conducted an expansive review for the International Dairy Foods Association of dairy demand studies that are summarized in Appendix A.

Xiao, Kinnucan, and Kaiser focused attention on beverage demand in an integrated framework that considered a full array of substitution effects between the beverages. The primary focus was advertising and structural change. The analysis was interested in looking at how advertising for one beverage could affect consumption changes in other beverages due to substitution, complementary effects, or overall beverage demand.

A demand system analysis was used to consider interaction of the various beverages. The Rotterdam model was selected since it is flexible, consistent with demand theory, and handles advertising effects well. The model was estimated using a iterative seemingly unrelated regression(ITSUR) routine. The common restrictions--adding up, homogeneity, and symmetry, were imposed in the system. Elasticities were calculated at the sample means.

Annual time-series data covering the period 1970-1994 were used. Consumption data for fluid milk, fruit juices, soft drinks, tea, and coffee were obtained from Putnam and Allhouse. Tea and coffee were combined due to the modest consumption of tea. Bottled water was ignored since it was not a complete series for the time period. The included beverages accounted for 92.5% of nonalcoholic beverages in 1993. Price data were obtained primarily from U.S. Department of Labor CPI Detailed Report. The prices were converted to real values and placed in per gallon units. Advertising data were obtained from Leading National Advertisers, Inc.. Elasticities derived in the article for the beverages are given in table 1 below. An asterisk notes significance at the 95% level.

Table 1. Beverage Elasticities Derived by Xiao, Kinnucan, and Kaiser, 1998

	Milk	Juices	Soft Drinks	Coffee & Tea	Expenditure
Milk	-0.1685*	0.0917*	0.0405	0.0363*	0.406*
Juices	0.1642*	-0.3609*	0.1833	0.0127	0.6976
Soft Drinks	0.0262	0.0663	-0.1372*	0.0447	1.2383*
Coffee & Tea	0.0803*	0.0157	0.1528	-0.2488*	1.8756*

The results of advertising varied by beverage and across beverages. Xiao, Kinnucan, and Kaiser looked at two socio-demographic factors, the effect of age and food away from home. Milk was the only beverage significantly affected. As age increased and the consumption of food away from home increased, milk was consumed less.

In 1988 Heien and Wessels conducted an analysis in order to help promoters of dairy products. Per capita milk consumption has been declining over the postwar period and this has policy makers and producers concerned. Several attempts have been made to augment the demand for dairy products. A need for better information to make these decisions exists and must be found. This article sought to present estimates of the demand structure for dairy products. Special attention was given to cross price effects with other food items, income effects on each commodity, and specific demographic tendencies to consume the food commodities. The estimates were then used to make predictions of future consumption so that better dairy policy decisions could be made. The predicted values were then compared to actual consumption to see how well the method worked.

Data were needed that had a high degree of commodity and demographic detail. Cross sectional data were selected for this reason. The Household Food Consumption Survey for 1977-78, conducted by USDA was used. This survey had data on prices and expenditures for over 1,000 food items as well as detailed demographic information for each household. Milk was divided into whole, skim, chocolate. Other goods included in the data were; yogurt, buttermilk, cheese, cottage cheese, butter, margarine, fruit, meat, coffee and tea, sodas-colas, fruit, diet, carbonated water, fruit ades and vegetable juice, citrus juice, and all other food.

Heien and Wessels regressed observed prices on regional and seasonal dummies in order to fill in missing prices. A complete system approach was used in the analysis. The almost ideal demand system(AIDS) was chosen to handle the own-price, cross-price, and demographic effects. The system was estimated by iterative three-stage least squares(3SLS). All elasticities were evaluated at the means of the data.

The elasticities for the nonalcoholic beverages within the system are given below in table 2. Significant elasticities were not noted.

Table 2. Beverage Elasticities Derived by Heien and Wessels, 1988

	Milk	**Coffee & Tea**	**Soda**	**Fruit Ade & Veg. Juice**	**Citrus Juices**	**Expenditure**
Milk	-0.63	0.08	-0.04	0.02	0.04	0.77
Coffee & Tea	0.12	-1.07	0.03	0.04	0.03	0.78
Soda	-0.11	0.04	-0.58	0.03	-0.02	0.78
Fruit Ade & Veg. Juice	0.14	0.17	0.07	-1.77	0.17	0.94
Citrus Juices	0.11	0.06	-0.02	-0.07	-1.14	0.73

The demographic findings for only dairy products were given. The more meals eaten at home, the more milk consumed. Also, as age increased, less milk was consumed. These two findings were in accordance with Xiao, Kinnucan, and Kaiser’s. Heien and Wessels concluded that demographics, especially age-gender population and proportion of meals at home, had sizable negative impacts on demand for dairy as did own-price impacts. The importance of the large negative impact of the own-price effect was emphasized due to the policy implications.

Heien and Wessels (1990) did a follow up paper to the previous study. The focus of this paper was to look at censored demand systems. Censoring is an issue involving zeros in the system that can bias estimates if corrections are not made. This problem is common in studies since not all households will consume or purchase all of the goods, thus leaving a zero in the consumption category for that time frequency. The procedure proposed was to add the inverse of the Mill's ratio to the end of each equation in the system as an extra regressor, based on the work of Heckman. The same data set was used for this analysis, the Household Food Consumption Survey 1977-78, conducted by the USDA. The same goods were used as well, of note are milk, coffee & tea, sodas & fruit ades, vegetable & citrus juices and many other non-beverage food goods. More demographics were included in this study.

The censored correction technique proposed was deemed successful by Heien and Wessels and comparisons between an LA/AIDS system that was corrected for censoring and an LA/AIDS system that was not corrected for censoring were made. Key results from the censored system concerning nonalcoholic beverages included the following. Milk's own-price elasticity was -.77 and it was a significant substitute for coffee & tea and vegetable & citrus juices. Coffee and tea's own-price elasticity was -1.01 and it was a significant substitute for milk, sodas & fruit ades, and vegetable & citrus juices. Soda and fruit ade's own-price elasticity was -1.1 and it was a significant substitute for coffee & tea. Vegetable and citrus juice's own-price elasticity was -.87 and it was a significant substitute for coffee & tea.

Demographic effects that were significant at the 95% level for nonalcoholic beverages found by Heien and Wessels are as follows. More milk is consumed: for meals at home, in rural households, in the West compared to the East, and by food stamp recipients. Less milk is consumed: in the spring and summer months when compared to the winter, by female shoppers, and by blacks. More coffee & tea is consumed: in rural households, in the winter compared to the spring and summer, in Eastern households compared to those in the West. Less coffee & tea is consumed: by male shoppers, by consumers with a Spanish background, by households that have the male employed as a nurse. More sodas & fruit ades are consumed: in the spring and summer compared to the winter, in the North Central, South, and West as compared to households in the East, by male shoppers, by consumers with a Spanish background. Less sodas & fruit ades are consumed when the percentage of meals at home is higher. Households of Spanish descent consume more vegetable & citrus juice. Less vegetable & citrus juice is consumed: in metro and rural households compared to suburban households, in the spring and summer compared to the winter, in North Central and Southern households compared to Eastern ones, and by female shoppers.

In 1990, Gould, Cox, and Perali investigated the dramatic change in recent years of the demand for fluid milk products. Concern was placed on the declines in consumption as well as the changing composition of products consumed. After a discussion of the changing trends, an economic and demographic analysis of whole milk, lowfat milk, juices, other beverages, and other food was conducted. The differing milk types were studied to note their effect upon each other, and other goods were included to analyze their effect on milk. Demographic effects studied were the age of the population, percentage of the population that was nonwhite, and the median number of years of education for people over age 25.

Times series data from 1955-85 were used. The quantity data on whole and lowfat milk consumption were obtained from Manchester, Bunch and Simon, and from *Dairy Field*. Retail milk prices were obtained from the U.S. Bureau of Labor Statistics. Per capita juice and other beverage data were from the U.S Department of Agriculture's *Food Consumption, Prices, and Expenditures*(USDA 1968-85). A demand systems approach was used to look at the price effects of each type of good. The demographic variables were included in the system to see their effect upon each respective beverage and food item.

Compensated Elasticities from the AIDS system is given below in table 3. An asterisk notes significance at the 95% level.

Table 3. Beverage Elasticities Derived by Gould, Cox, and Perali, 1990

	Whole Milk	Lowfat Milk	Juices	Other Beverages	Other Food	Expenditure
Whole Milk	-0.324	0.059	-0.023	0.168*	0.168	0.658*
Lowfat milk	0.27*	-0.437*	0.117*	0.18*	0.18	0.062
Juices	-0.051	0.058*	-0.327*	0.376	0.376	0.539
Other Beverages	0.066*	-0.016*	-0.014	0.156*	0.156	0.492*
Other Food	0.01	0.002	0.01	-0.04	-0.04	1.102*

Lowfat milk was a significant substitute for whole milk, juices and other beverages. Juices were a significant substitute for lowfat milk. Other beverages were a significant substitute for whole milk. The significant demographic effects found in the demand system analysis are as follows. Age of the population was significant for consumers of lowfat milk and juices with person over sixty-five drinking more while those under sixty-five drank less. Juices were affected by the race variable. As the percentage of nonwhites increased less juices were consumed. Education was tied to three of the goods. Persons with more years of education indicated higher levels of consumption of lowfat milk and other beverages. Persons with more education indicated a lower level of consumption of juices.

Richertson investigated the demand for food and beverages in Norway. Four beverages; soft drinks, hot drinks, alcoholic beverages, and milk & cream, along with all other food were analyzed. Economic aspects concerning substitution and complementary effects among food and beverages was the focus. The LA/AIDS demand system was used similar to the work of Xiao, Kinnucan, and Kaiser. Annual private-consumption expenditure data from 1962-91 from the Central Bureau of Statistics, Oslo were used.

The elasticities generated from this study will not be summarized explicitly since this piece of research concerns Norway. This dissertation centers attention on nonalcoholic beverages in the United States. Significant substitutes among the four beverages were; soft drinks and alcoholic beverages, soft drinks and milk, hot drinks and alcoholic beverages, soft drinks and hot drinks, milk and alcoholic beverages. No demographic analysis was conducted in this study.

Kinnucan and Forker studied the consumer response to milk advertising in 1986. The crux of the article looked at advertising levels, frequency, and a simulation of possible consumption in past years given appropriate advertising by using the knowledge of this study. The initial models give information important to this study.

Data from the New York City metropolitan area from 1971-1980 were used. The frequency was monthly and contained advertising levels for milk. A single equation double-log model was used to only look at milk. Per capita income, milk price, cola price, coffee price, and race were added to the model along with advertising. Two models were utilized, one with twelve monthly advertising figures, the other with one annual level of advertising.

The single equation models produced elasticities and demographic findings for milk. The own price elasticity of milk was negative but insignificant in both models. Cola was a significant substitute with milk in both models and coffee was a substitute at the 90% significant in the monthly advertising model. The income elasticity was significant and positive. The race variable indicated that as the percentage of nonwhites increased, the quantity of milk consumed significantly decreased in both models.

Kaiser and Reberte conducted a study similar to that of Kinnucan and Forker looking into the generic advertising of fluid milk's impact on demand for whole, lowfat, and skim milks. The analysis utilized a single-equation double-log model. Each milk types quantity was regressed onto its own price, the prices of the other milk types, the price of orange juice, a health index, advertising expenditure, and quarterly dummies. Milk price data for the analysis were for the New York City area collected from the New York Department of Agriculture. Orange juice retail prices were gathered from the Consumer price Index for the northeastern United States. Income data came from the

New York metropolitan area. The data were monthly and ranged from 1986 through 1992.

The results indicated that long-term generic milk advertising had a positive impact on whole, lowfat, and skim milks. Orange juice was a significant substitute for whole, lowfat, and skim milk. Income positively affected the consumption of all three milk types as well. The own-price elasticities for whole, lowfat, and skim were all negative but none were significantly different from zero. The three milk types were seasonal; all three types of milk were more heavily consumed in the fourth quarter.

The seven articles previously discussed contain an economic analysis and in some cases, a demographic analysis of nonalcoholic beverages. The next grouping of articles deal with economic relationships of only dairy commodities. The literature is full of demand, advertising, and promotional studies concerning milk and dairy products, some articles dating back as far as 1957 examining milk disappearance in 1924. The following articles look only at milk analyses in recent times.

Ueda and Frechette's work noted that per capita consumption of lowfat and skim milk types had increased substantially over the past decade. The study investigated whether the change is due to price and expenditure effects or due to a fundamental preference change in milk demand. Tests for structural change in milk consumption in New York State were performed. Following the structural tests, effects of different time frames on own-price and expenditure fluid milk elasticities were examined to see if there was a significant change based on price and expenditure effects.

Monthly data on prices and sales for New York fluid milk sales were used, from 1991-1998. The data were obtained from the New York State Department of Agriculture and Markets, partly from various issues of the New York State Dairy Statistics, Annual Summary, and the remainder from the staff in that department. Prices were for whole, skim, 2%, and 1%. Lowfat prices were garnered from an average of skim, 2%, and 1%. Quantities were retrieved for whole, skim, and lowfat(1and 2%) from sales from New York plants. Quantities demanded were computed by converting pounds sold into gallons using conversions from the New York State Department of Agriculture and Markets since prices were in gallons.

A demand system approach was used. Four alternative models were estimated using the seemingly unrelated regression(SUR) technique. More specifically, the AIDS model was used. The variables in each equation were the own price, cross prices of the other two milk types, and total expenditures. The four models were; level data with no restrictions imposed, level data with restrictions imposed, differenced data with no restrictions imposed, and differenced data with restrictions imposed. The restrictions imposed were adding up, homogeneity, and symmetry.

Many elasticities were given, here the means from the many procedures are given. The mean own-price elasticities are as follows; -.652 whole, -.218 lowfat, 1.435 skim. Cross price elasticities; -.556 whole/lowfat, .064 whole/skim, -.714 lowfat/whole, .003 lowfat/skim, .211 skim/whole, and –2.941 skim/lowfat. Mean expenditure elasticities were also given; -.013 whole, .043 lowfat, and .053 for skim. This indicates that whole milk is an inferior good. Whole milk and lowfat are complementary goods. Whole and skim milk are substitute goods.

Gould(1996) also noted that per capita milk consumption has changed dramatically since 1970. Research to determine the causes for changes in fluid milk consumption patterns has primarily focused on attitudinal factors or is based on demographics, prices and income. This paper uses a demand systems approach that incorporates random household data for the entire U.S., expenditure data on fluid milk for an entire year, prices and budgets for dairy intake, and does this while correctly handling censoring. This paper sought to appropriately present and update the demographics related to the changed consumption patterns.

The milk purchase data used by Gould were obtained from April 1991-March 1992. It was an U.S. consumer panel maintained by Nielson Marketing Research (NMR). Only fluid milk purchases for at-home consumption were included. Demographics were included for every household participating in the consumer panel.

The data set contained many zeros, which necessitated a censored demand system approach in order to avoid sample selection bias. Although strenuous to implement, the Lee and Pitt approach was used. This procedure allows for sample selection correction while at the same time capturing cross-commodity censoring impacts. Own and cross-price substitution elasticities are estimated along with household demographic characteristics that were included in the model. Significance tests were then computed on the demographic categories to indicate their importance in the changed consumption of milk. Own-price elasticities derived are as follows; Whole -

.803, Skim/1% -.593, 2% -.512. Expenditure elasticities; Whole 1.006, Skim/1% .983, 2% 1.009. All three milk types were substitute goods with each other.

Maynard and Liu(1999) discussed how U.S. dairy product marketers are increasingly concerned that their pricing policies are being based on outdated elasticities. It is expected that milk own price elasticities are more price elastic due to an increase in substitute products, declining cereal consumption, altering promotional activities, and changed eating patterns across society. Varying elasticities estimated by many researchers over the past 25 years also has these marketers concerned. This article looks at the impact of model selection alone on the variability of dairy own-price estimates.

The analysis used weekly national average retail scanner data provided by ACNielsen provided via the International Dairy Foods Association for the period November 1996 through October 1998. Price and quantity data was available for white and flavored milk as well as other dairy products. Personal consumer expenditure data was gathered from the Bureau of Economic Analysis. Seasonality was represented in the data with dummy variables.

Maynard and Liu used three model specifications to gauge the robustness of the results. A double-log specification was used with ordinary least squares. The linearized AIDS model was used. Symmetry, homogeneity, and Engel aggregation were imposed on the system. Lastly, the general demand system used by Lee, Brown, and Seale that nests four differential demand systems: Rotterdam, AIDS, CBS, and NBR was used.

Results of the econometric analysis are as follows. Double Log own-price estimates for white milk; -.54, flavored milk; -1.41. LA/AIDS own-price estimates for white milk; -.63, flavored milk; -1.40. NBR own-price estimates for white milk; -.78, flavored milk; -1.47. This result showed the model selected alone could affect elasticities.

Schmit, Chung, Dong, Kaiser, and Gould(2001) conducted a study concerning generic milk advertising in 2001. U.S. dairy producers and milk processors contribute substantial dollars each year to fund national generic advertising programs for fluid milk and cheese. Producers, marketers, and legislators are all interested in whether generic advertising increases consumer demand for dairy products. This work evaluated advertising programs to determine if the message is delivered to new or current customers. This helped to provide valuable information to dairy product marketers in developing future advertising campaigns with respect to their target audience.

Fluid milk and cheese purchase data for at-home consumption and annual household demographic data were obtained from the ACNielsen Homescan Panel Sample of U.S. households from January 1996 through December 1999. The dairy product purchase data are purchase-occasion data where households use hand-held scanners to record food purchases. This data set includes total expenditure and quantities purchased. Demographic data were combined with the data set. Data was aggregated to the monthly level and was in gallons for milk and pounds for butter. Milk was separated into whole, reduced fat, light, and skim milk types.

The authors employed a Heckman–style two stage sample selection model for the analysis. With this procedure, the first stage is represented by the dichotomous choice of whether to purchase, and the second stage determines the level of consumption given the decision to consume. Effects of the various variables are then isolated and reported. The first stage is a probit using maximum likelihood estimation. Murphy and Topel corrections procedures were then used to derive a consistent asymptotic covariance matrix. Single equation models utilizing this two-stage procedure were then estimated and elasticities were calculated using the means.

Economics results are as follows. Own-price elasticities; Total milk -.173, Whole -.772, Reduced Fat -.657, Light -.535, Skim -.529. Income elasticities; Whole -.204, Reduced Fat -.039, Light .179, Skim .203. Advertising elasticities; Total milk .081, Whole .074, Reduced Fat .081, Light .072, Skim .082. This showed that generic advertising did in fact help to increase milk consumption.

Park's 1996 dissertation analyzed the demand for prepared foods by U.S. households. The 1987-88 Nationwide Food Consumption Survey was used to look at many food categories. The beverage category was split into two groups; alcoholic and nonalcoholic. Here, only the results from the nonalcoholic category will be discussed.

A probit procedure was first run to determine significant demographic drivers for the decision to consume a beverage. A prediction of consumption was then conducted using these results to see how knowing the demographics of a household would help in identifying a consuming household. The knowledge of demographics combined with the probit findings lead to a 64% prediction rate of whether or not a household would consume a beverage.

A level analysis was then completed to see which demographic variables were responsible for increasing or decreasing the level of consumption once the decision to consume had been made. The level procedure utilized the Heckman procedure to correct for households in the survey that did not respond or consume a beverage in the time period. Results of the dissertation pertaining to the nonalcoholic beverage group will be discussed.

The probit results indicated that Asians, households living in the West compared to those in the Midwest, and household managers with higher age or education level were less likely to consume nonalcoholic beverages. Households with higher incomes were more likely to choose to consume. In the month of April households were more likely to choose to consume a nonalcoholic beverage compared to the base month of December.

The Heckman level results indicated that making the decision to consume at least one drink during the time frame increased the level of nonalcoholic beverage consumption. The months of June and July positively affected the level of consumption. Having males under the age of 65 and females in their teenage years increased the level of consumption of nonalcoholic beverages in a household.

Yen and Lin(2001) conducted a study concerning milk, soft drink, and juice consumption for children and adolescents in the USA. Several of the health effects; obesity, diabetes, heart disease, and stress that can come about from childhood obesity were discussed. Recent articles that found that soft drinks are replacing milk and fruit were then discussed. Based on these problems and the evidence of replacement, Yen and Lin sought to quantify these findings of others and look at demographics associated with milk, soft drink, and juice consumption.

The study used the United States Department of Agriculture's 1994-96 Continuing Surveys of Food Intakes by Individuals. The methodology was a core portion of the article. A full-information maximum likelihood estimator and a parsimonious quasi maximum-likelihood alternative were used to estimate a censored system of beverage equations. The results of the analysis are as follows.

Continuous variable effects first were analyzed. As age increased, milk consumption significantly decreased while soft drink consumption increased. As income increased, both soft drinks and juice consumption increased. As the amount of time watching television increased, milk consumption decreased and soft drink consumption increased. On weekends, less milk was consumed while more juice and soft drinks were consumed.

Discrete variable effects then were analyzed. Males and city dwellers consumed more milk compared to females and individuals living in rural areas, whereas blacks and people in the South consumed less milk when compared to whites and those in the West. Males and individuals living in the Midwest consumed more soft drinks than females and individuals residing in the West. Individuals living in the Northeast consumed fewer soft drinks than those living in the West. City and Suburban dwellers and individuals in the Northeast and college educated individuals consumed more juices when compared to rural dwellers, individuals in the West, and those with a high school education or less.

Harnack, Stang, and Story looked at the effects of soft drink consumption on U.S. children and adolescents. This nutrition article looked at how soft drink consumption effected the intake of other foods and nutrients. In the literature, it often is hypothesized that soft drinks displace more nutritious beverages for children and adolescents.

After a discussion of trends in consumption and obesity awareness, the authors performed a logistic regression analysis to determine the probability of low milk and juice consumption while taking into account soft drink consumption level. Multiple linear regression modeling was used to determine whether intake of select nutrients varied by soft drink consumption. The 1994 United States Department of Agriculture's Continuing Surveys of Food Intakes by Individuals was used for the analysis.

Results indicated that energy intake was positively associated with consumption of non-diet soft drinks. Children and adolescents that were in the highest level of soft drink consumption category consumed less milk and fruit juice compared with those in the lowest consumption category of soft drinks. This finding solidified the hypothesis that soft drinks are displacing healthy beverages.

Chanmugan, Guthrie, Cecilio, Morton, Basiotis, and Anand performed a study analyzing consumption changes between the 1989-91 and the 1994-96 Continuing Surveys of Food Intakes by Individuals. Key findings of the paper for nonalcoholic beverages were that whole milk consumption had decreased while lowfat milk, fruit drinks, coffee & tea, and soft drink consumption had increased. Soft drink consumption had greatly increased when compared to the other beverages. The authors cautioned that consumers that are concerned about energy content should be aware of the amount in most beverages, especially soft drinks.

There are numerous other nutrition/dietetics articles that analyze the problems and trends associated with consumer beverage choices. Many of these articles also look at specific demographic choices. For example, children consuming juice or soft drinks or elderly individuals under-consuming calcium rich beverages.

In recent years, nonalcoholic beverages have been a mainstay in the popular press as well. Articles such as “Obesity Campaign Eyes School Drinks” and “Legislators Try to Limit Soft Drinks, Sugary Snacks, and School” bring attention to the nutritional and energy content problems. Obesity is receiving constant attention as well, and based on the article by Chanmugan, Guthrie, Cecilio, Morton, Basiotis, and Anand, nonalcoholic beverages are partly responsible.

Concluding Remarks

A key finding of this literature review is similar to what Asatryan found in his recent dissertation literature review concerning consumer demand studies of pork. The studies that emphasized income and price factors were usually based on analysis of demand systems. Many of those studies which emphasize the demand system approach use a seemingly unrelated regression (SUR) procedure due to three main reasons (Capps (1993), Piggott(1997)). First, the demand system allows imposition of restrictions implied by the economic theory not only within an equation (such as homogeneity) but also across different equations (such as symmetry and adding up) which improves efficiency by estimating as a demand system. Second, a system of equations approach is more efficient than single-equation models if disturbances in different equations are contemporaneously correlated. Third, a system of equations approach is more efficient than a single-equation model if the exogenous variables are not the same in each equation (which is the case in censored demand systems).

These studies used several commonly accepted models. The Rotterdam model of Theil(1965) and Barten(1964) and the Almost Ideal Demand System (AIDS) model of Deaton and Muellbauer (1980a) were the most popular models in the literature. Further, many of these studies were based on classical demand theory and, therefore, included only income and price determinants. Others however, were based on more generalized theories of demand (e.g., household production theory) and, therefore, integrated advertising, health, and other factors in addition to prices and income (Bryant and Davis(2003)).

Bryant and Davis investigated the magnitude of impact on the estimates in the demand systems when one of the following is changed: (a) the functional form of the model; (b) the points used for calculation of elasticities; and (c) the presence of non-economic variables. They studied those impacts using a demand system for meats (pork, beef, poultry, and fish). The study included four functional forms: (a) the Rotterdam model (Barten(1964) and Theil(1965)), (b) the first-differenced AIDS model (Deaton and Muellbauer (1980a)), (c) the Central Bureau of Statistics (CBS) model (Keller and van Driel(1985)), and (d) the National Bureau of Research (NBR) model (Neves(1994)); three non-economic variables: (i) advertising; (ii) health information; and (iii) woman's labor force participation; and four possible combinations of theoretical restrictions. By comparing all these possible combinations (576 demand systems) they came to the conclusion that the theoretical restrictions and the points of evaluation for the calculation of elasticities were more important in terms of affecting the variation of the elasticity estimates than functional form considerations and the presence of non-economic variables.

The nonalcoholic beverage studies in this literature review were based on macro-level annual, quarterly, monthly time-series, or cross sectional data with demographics, prices, and the corresponding quantities. Not all studies included demographics. Macro-level time-series data such as annual disappearance data (e.g. Xiao, Kinnucan, and Kaiser(1998)) do not contain detailed information in terms of disaggregate products and prices. Other studies which use micro-level data to estimate demand systems are based on either weekly time series scanner information (e.g., Maynard and Liu(1999)) or scanner data containing demographic information for households (e.g., Schmit, Chung, Dong, Kaiser, and Gould(2001)). Cross sectional data with quantity and demographics used were either Household Food Consumption Surveys(Heien and Wessels(1988)) or Homescan data sets (Gould(1996)).

The demand systems or single equation models in these studies mainly consisted of milk, soft drinks, juices, coffee and tea combined, and differing breakdowns of milkfat types. Many other nonalcoholic beverages for consideration exist and could be included. Bottled water, powdered soft drinks, isotonics(sports drinks), and vegetable juice could be added or separated out from aggregate categories. Also, breakdowns of other items such as regular and low calorie soft drinks, orange, apple, and other fruit juices, regular and decaffeinated coffee, and regular and decaffeinated tea could be added to look closer into economic relationships. These breakdowns would help in terms of nutritional concerns as well. Data availability and the overriding focus of the research are some reason why more beverages were not added as economic drivers.

Usually a select number of demographics were placed into the models to see the effect. Rarely were several key demographic factors placed into the models. The most common factors in the literature were race, age of population, income, education, region, percentage of food away from home, and gender. It is important to note that these were never all in one study. Many key demographic drivers exist and a study that places several of them into one analysis would add to the literature. For example, the presence of children, poverty status, household size, employment status of the female head, education of the female head, and the ethnic background in the household have not jointly been combined into one study.

Nutrition was a common justification for studies concerning demographic drivers and economics relationships of nonalcoholic beverages. The typical argument is that humans, especially children, need certain levels of calcium or vitamin C and that “unhealthy” beverages are displacing certain “healthy” beverages. A demand study is then conducted to see which beverages are substituting in place of milk or citrus juices. The remainder of the article then focuses on the demand study and fails to investigate the nutrition aspect any further.

Nutrition articles in health or nutrition journals have primarily dealt with one beverage and one specific health related impact. It may be of use to summarize nutritional intakes for a household while looking across the entire complex of nonalcoholic beverages. Actual nutritional levels associated with the same data set that is used for the demand relationships could be helpful to show actual levels for complete intake by a household. Of course, demographics could be looked at in terms of drivers of nutrient and caloric intake.

The Distinct Contribution of This Study to the Literature

A unique contribution of this project is the examination of the drivers associated with the decision to consume and the level of intake of nonalcoholic beverages. From a micro perspective, no published study to date has provided predictions of consumption of finely classified nonalcoholic beverages. The findings of this dissertation will add to this piece by more closely examining the beverages that make up this category.

Further, this study contributes to the literature by evaluating the interaction between a greater number of nonalcoholic beverages. Key beverages previously ignored that will be added include bottled water, powdered soft drinks, sports drinks, and differing classifications of milk, coffee, tea, and soft drinks. For example, decaffeinated and regular tea and coffee, flavored and unflavored milk, and regular and low-calorie soft drinks. The economic interactions, own-, cross-price, and expenditure elasticities in the at-home market, between these specific types will add to the literature. Also, these specific classifications will contribute to important demographic findings concerning nutrient and caloric specific beverage types. Lastly, the nutrient regressions and level analysis will fill a void in the literature concerning demographic tendencies for certain types of beverages based on nutrient content and levels of intake by specific household types.

In summary, a study examining the economic and demographic aspects of a large number of finely classified beverages combined with a more detailed set of demographics is the thrust of this dissertation. This work will add significantly to the existing literature by expanding the beverage set examined and the set of demographic drivers associated with the decision to consume and the level of consumption of those beverages. The economic interactions of this larger set of nonalcoholic beverages also will be a noteworthy addition to current literature. Information concerning actual nutritional intakes and demographic tendencies associated with nutrition also will add to the literature.

Organization

The organization of the dissertation will be as follows. Chapter I of this dissertation will serve as the introduction to the research. It will include the purpose, the objectives, and the literature review of the study. Chapter II will address the data used for the analysis. The preparation of the data will be described in detail since working with the raw scanner data set is tedious. Descriptive statistics of the data will also be included in this chapter.

Chapter III will address the development of the probit, Heckman, and censored corrected linear approximate Almost Ideal Demand System (LA/AIDS) models used in the analysis. This chapter will have three subsections: (1) probit model; (2) Heckman type model; and (3) censored corrected LA/AIDS model.

Empirical results will be discussed in Chapter IV through Chapter VIII. Chapters IV, V, and VI will be similar in that they will all identify demographic tendencies. Chapter IV will discuss the results of the probit analysis on the choice of consumption of nonalcoholic beverages. Chapter V will discuss the volume analysis of nonalcoholic beverages, which will involve both the cross tabulations and Heckman analysis. Chapter VI will discuss the nutrients and calories derived from nonalcoholic beverages. Both cross tabulations and regressions will be used to reveal drivers of nutrient intake levels. Chapter VII will discuss the interrelationships within the nonalcoholic beverage complex, primarily discussing the own-price and cross-price elasticities from the different groupings of beverages. Chapter VIII will identify demographic sensitivities in terms of elasticities for various beverages. The conclusions of this study will be given in Chapter IX.

CHAPTER II

DATA

Introduction

The data used for this dissertation is the 1999 ACNielsen HomeScan data set. These are scanner data with attached demographic information. The first portion of this chapter will look at the demographic breakdown of the data. Attention will be given to the demographics that will be used in the study. The raw scanner data then will be discussed followed by the selection and cleaning up of the data pertinent to this study. Final data sets will be constructed and described for each analysis to be performed.

Demographic Discussion

The 1999 ACNielsen HomeScan data are unique in that it is similar to a survey. Each panelist was supplied with a scanner device that they used to record items purchased at the grocery store throughout a given time period. Each panelist represented a unique household, with each household having eighteen known demographic characteristics. For a complete list of the demographics variables see table 4.

Table 4. Demographic Variables

	Demographic Information Panelist ID	Number of Categories
1	Household Size	9
2	Household Income	16
3	Age of Female Head	10
4	Age of Male Head	10
5	Age and Presence of Children	8
6	Male Head Employment	5
7	Female Head Employment	5
8	Male Head Education	7
9	Female Head Education	7
10	Martial Status	5
11	Male Head Occupation	12
12	Female Head Occupation	12
13	Household Composition	8
14	Race	4
15	Hispanic Origin	2
16	Region	4
17	Scantrack Market Identifier	53
18	Projection Factor	?

The households represented 52 different cities, 84.34%, and unidentified rural areas, 15.66%, spread over four regions of the lower 48 states of the U. S., Northeast, Southeast, Central, and West. See tables 5 and 6.

Table 5. Cities in the Data

	Scantrack Market	Percent		Scantrack Market	Percent
1	Rural	15.66	28	San Diego	0.61
2	Boston	1.30	29	St.	0.96
3	Chicago	10.46	30	Tampa	0.77
4	Houston	0.56	31	Baltimore	4.30
5	Indianapolis	1.27	32	Birmingham	0.25
6	Jacksonville	0.28	33	Buffalo - Rochester	1.04
7	Kansas City	0.76	34	Hartford- New Haven	1.17
8	Los Angeles	11.26	35	Little Rock	0.15
9	Surburban New York	5.47	36	Memphis	0.08
10	Urban New York	3.81	37	New Orleans - Mobile	0.18
11	ExUrban New York	2.79	38	Oklahoma City - Tulsa	0.13
12	Orlando	0.48	39	Phoenix	1.83
13	San Francisco	0.64	40	Reliegh - Durham	0.23
14	Seattle	0.71	41	Salt Lake City	1.57
15	Alanta	13.79	42	Columbus	0.58
16	Cincinnati	0.94	43	Washington, D. C.	8.83
17	Cleveland	1.01	44	Albany	0.49
18	Dallas	0.40	45	Charlotte	0.56
19	Denver	0.86	46	Des Moines	0.49
20	Detroit	1.32	47	Grand Rapids	0.91
21	Miami	0.64	48	Louisville	0.18
22	Milwaukee	0.63	49	Omaha	0.56
23	Minneaplois	0.56	50	Richmond	0.28
24	Nashville	0.16	51	Sacramento	0.48
25	Philadelphia	1.80	52	San Antonio	7.51
26	Pittsburg	1.43	53	Syracuse	1.45
27	Portland , Oregon	1.09			

Table 6. Regions in the Data

Region	Percent of data
East	20.3
West	20.0
South	34.3
Central	25.3

The household size demographic has nine categories ranging from one household member to nine. No household had more than nine family members with the mean household size in the panel being 2.57 members. The most common category was the household size of two that had 2,704 observations of the 7,195 households in the data set.

Three demographics concerning the female head of household are used. The female head typically is largely responsible for food at home purchases. 671 of the households had no female head of household or the household gave no information regarding age, employment, or education of a female head. There are eight categories of age for female head of households. There are four categories of employment ranging from not employed to three different categories of hours worked per week. There are six categories for education ranging from grade school education to post college education. 2187 of the households in the data set had a female head that attained some college education followed by 1821 households with a female head that graduated from college.

The demographic for race had four categories: white, black, oriental, and other. 83.5 % of the households in the panel are white. The demographic category for Hispanic origin contained a yes or no classification. 457 of the 7195 households in the panel were of Hispanic origin.

This study specifically focuses on consumption choice, nutrient consumption levels, and elasticity differences of households within poverty level thresholds. Poverty standing is not given in the data, thus a poverty threshold demographic was calculated. Both income and household size are utilized for this measure. Guidelines for the poverty threshold for 1999 are given in Appendix B. 130% of poverty is commonly used in many government programs and is therefore selected for use in this study. Only 423 of the 7195 households fell into the below 130% poverty range. The income category also will be used in some analyses. The average household income in the data was slightly more than $50,000 dollars.

Raw Scanner Data

The scanner data were collected by date of purchase and included only panelist that purchased some kind of grocery product in 10 out of the 12 months, making a total of 7195 participating households. The overall data set is divided into four product type groups:

(1) Dry grocery (4,111,719 records)

(2) Dairy, (873,899 records)

(3) Frozen, (1,002,851 records)

(4) Random weights, (507,306 records),

with each group having numerous product modules. Each of the product modules was further subdivided into brand, size, flavor, form, formula, container, style, type and variety represented each by a unique UPC number. Table 7 gives an overall summary of the number of modules in each product type group.

Table 7. Number of Modules in Each Data Group

Sub- Group	Number of Modules
Dry Grocery	417
Dairy	43
Frozen	43
Random Weights	119

In addition to demographic information total expenditure and quantity information was recorded for each transaction. This information enabled the imputation of price per unit, depending on the specified units.

Data Selection Process

This step includes the process of cleaning and organizing the data in such a way so that it may be usable for analytical and descriptive purposes. The primary objective of the dissertation is aimed at discovering demand and nutritional issues associated with nonalcoholic beverages, which includes all milks, isotonics, bottled water, fruit juices, carbonated and non-carbonated soft drinks.

The process of obtaining a usable data set was to determine which modules were needed to construct the appropriate final data set. Of the many hundreds of modules, fifty-three beverage modules were selected. Many of the fifty-three modules were further disaggregated or aggregated to create other modules, which also were used in constructing the final data set making the total number seventy-seven different modules. The purpose of the aggregation / disaggregation was to allow for a thorough analyses. Not only might the effects of the individual beverage, such as milk as a whole be important, but so might the single effects such as the different types of milk; flavored, unflavored skim, low-fat, etc.. A complete table of the different modules can be seen in table 8. Figure 4 gives a visual breakdown of the beverages from the aggregate groups to the more specific beverage categories.

Table 8. Summary of Modules in Each Data Group

#	**Module #**	**Beverage Description**
Dry Goods Beverages		
1	Aggregate	All dry goods beverages
2	Aggregate	Ready-to-drink fruit juices (1030 to 1045, except 1041,1042)
3	Aggregate	Apple juice (1031,1033)
4	Aggregate	Orange juice (1037,1040)
5	Aggregate	Other fruit juices (1030,1032,1034,1035,1038,1039,1044,1045)
6	1030	Fruit drinks & juices-cranberry
7	1031	Cider
8	1032	Fruit juice - Grapefruit - other containers
9	1033	Fruit juice – Apple
10	1034	Fruit juice – Grape
11	1035	Fruit juice -Grapefruit-canned
12	1037	Fruit juice -Orange-canned
13	1038	Fruit juice – Pineapple
14	1039	Fruit juice -Prune
15	1040	Fruit juice - Orange – other container
16	1044	Fruit juice -Remaining
17	1045	Fruit juice -Nectars
18	Aggregate	Ready-to-drink fruit drinks (1041,1042)
19	1041	Fruit Drinks-Canned
20	1042	Fruit Drinks-Other container
21	Aggregate	Isotonics – All (1041, 1042, 1484, 1553)
22	isotonics	Isotonics – Fruit Drinks (1041,1042)
23	isotonics	Isotonics – Carbonated Soft Drinks (1484, 1553)
24	1050	Soft Drinks - Powdered--(1050)

Table 8. continued

#	Module #	Beverage Description
25	Aggregate	Vegetable Juices and Drinks--(1054,1055)
26	1054	Vegetable Juice – Tomato
27	1055	Vegetable Juice and Drink remaining
28	Aggregate	Tea (1456,1457,1458,1460,1461)
29	Aggregate	Regular Tea (1456,1457,1458,1460,1461) has caffeine
30	Aggregate	Decaffeinated Tea (1456,1457,1458,1460,1461)
31	1456	Tea - Herbal Bags
32	1457	Tea – Packaged
33	1458	Tea – Bags
34	1460	Tea – Instant
35	1461	Tea – Liquid
36	Aggregate	Coffee (Including liquid coffee) (1463,1464,1465,1466)
37	Aggregate	Coffee (Excluding liquid coffee) (1463,1464,1465)
38	Aggregate	Regular Coffee (1463,1464,1465)
39	Aggregate	Decaffeinated Coffee (1463,1464,1465)
40	1463	Coffee – Ground
41	1464	Coffee – Soluble Flavored
42	1465	Coffee – Soluble
43	1466	Coffee – Liquid
44	Aggregate	Carbonated Beverages – All - (1484, 1553)
45	Aggregate	Carbonated Soft Drinks - All - (1484, 1553)
46	1484	Carbonated Beverages
47	1484	Carbonated Soft Drinks
48	1553	Carbonated Beverages - low calorie
49	1553	Carbonated Soft Drinks - low calorie
50	1487	Water-Bottled
Dairy Beverages		
51	Aggregate	Milk—Flavored and Non-Flavored
52	Aggregate	Milk—Flavored
53	Aggregate	Milk—Non-Flavored
54	Aggregate	Milk-Lowfat Flavored- anything but whole
55	Aggregate	Milk-Lowfat Non-Flavored-anything but whole
56	3592	Whole flavored
57	3592	2% flavored
58	3592	1% flavored

Table 8. continued

#	Module #	Beverage Description
59	3592	Skim nonfat flavored
60	3592	Other lowfat flavored--not 2% 1% or skim/nonfat
61	3625	Whole
62	3625	2%
63	3625	1%
64	3625	Skim nonfat
65	3625	Other lowfat flavored--not 2% 1% or skim/nonfat
Frozen Beverages		
66	Aggregate	All Fruit Juice/Drinks Frozen (2662, 2663,2666, 2667,2668,2669,2670,2674)
67	Aggregate	Fruit Juice--Frozen (2662,2663,2666,2667,2668,2674)
68	Aggregate	Fruit Drinks-Frozen (2669,2670)
69	Aggregate	Other Fruit Juice--Frozen (2662,2663,2668,2674)
70	2662	Fruit Juice - Unconcentrated – Frozen
71	2663	Fruit Juice - Grapefruit - Frozen
72	2666	Fruit Juice – Apple – Frozen
73	2667	Fruit Juice – Orange - Frozen
74	2668	Fruit Juice – Grape – Frozen
75	2669	Fruit Drinks – Orange - Frozen
76	2670	Fruit Drinks & Mixes - Frozen
77	2674	Fruit Juice – Remaining - Frozen

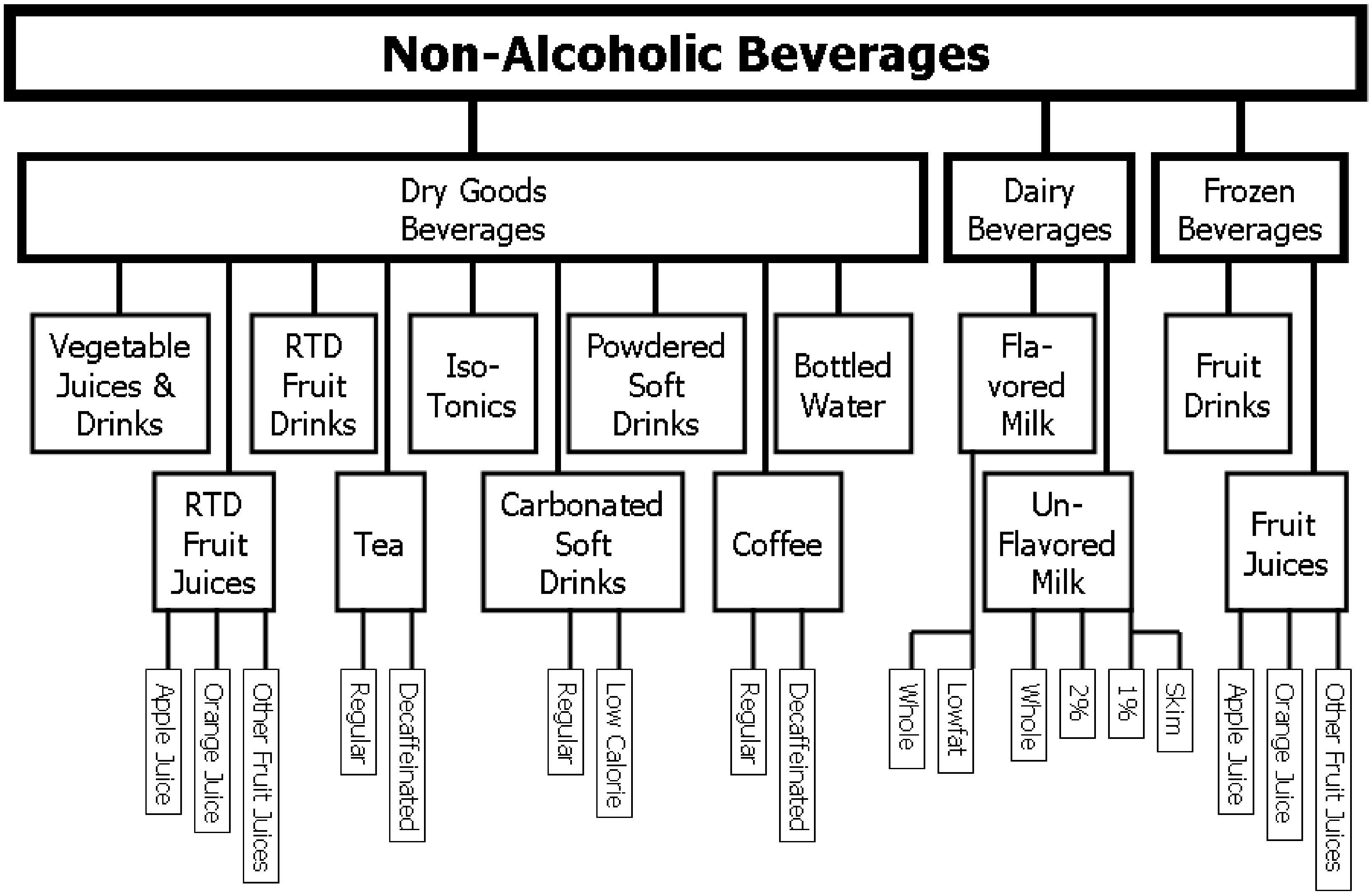

Figure 4. Overview of beverage breakdowns

For each of the seventy-seven modules to be comparable, each was converted into a common measure, gallons. This process required two things. First a knowledge of the form, size and quantity of the products in the modules, and second the rate of conversion for each form, size, and quantity. The first step was simple since the form, size, and quantity were part of each record. The second criterion for conversion was not as simple and required information from the USDA and in some cases actual physical examination of the product in question. Conversion rates for beverages not expressed in liquid measures, excluding concentrated liquid measures, are given in Appendix C.

Once the appropriate beverage product modules were extracted and converted to gallons further checking of the raw data showed it to have a very limited number of records, less then one thirteenth of a percent, which contained positive quantities of product purchased at no cost, making those records unusable. Of the nine hundred and eighty nine thousand and sixty two records to be used, one thousand two hundred and fifty seven were discarded for this anomaly.

After removing the records for which prices were unimputable, the imputation of remaining record prices were completed. The simple descriptive statistics, mean and frequency, showed some of the modules to have prices greater than five standard deviations from their means. By using Chebyschev's inequality these outliers were removed. The mathematical relationships between distribution and dispersion, specified by Chebychev's inequality, indicates not more than four percent of the data will lie outside five standard deviations from the mean, regardless of the distribution of the data. In this case the number of observations lying outside the five standard deviations for any one module was less than one and a quarter percent and on average for all modules was less than one quarter of a percent. See table 9 for complete results.

Table 9. Outliers and Missing Data Removed from Each Data Group

#	# of Records	# Records With Missing Data	% Missing	# Records no zero prices	# Records With Price Outliers	% Outliers	# Records with no zeros or outliers
1	697757	635	0.09	697122	1975	0.28	695147
2	136327	202	0.15	136125	385	0.28	135740
3	20110	75	0.37	20035	34	0.17	20001
4	61208	74	0.12	61134	66	0.11	61068
5	55009	53	0.10	54956	253	0.46	54703
6	20104	19	0.09	20085	51	0.25	20034
7	2370	40	1.69	2330	8	0.34	2322
8	5247	12	0.23	5235	12	0.23	5223
9	17740	35	0.20	17705	27	0.15	17678
10	6518	2	0.03	6516	12	0.18	6504
11	1464	0	0.00	1464	2	0.14	1462
12	430	0	0.00	430	1	0.23	429
13	2016	0	0.00	2016	1	0.05	2015
14	1872	7	0.37	1865	1	0.05	1864
15	60778	74	0.12	60704	66	0.11	60638
16	14185	13	0.09	14172	130	0.92	14042
17	3603	0	0.00	3603	4	0.11	3599
18	62132	75	0.12	62057	202	0.33	61855
19	2511	3	0.12	2508	2	0.08	2506
20	59621	72	0.11	59549	253	0.42	59296
21	13177	5	0.04	13172	33	0.25	13139
22	12137	4	0.03	12133	28	0.23	12105
23	1040	1	0.10	1039	5	0.48	1034
24	27917	10	0.04	27907	1	0.00	27906
25	14786	18	0.12	14768	32	0.22	14736
26	3742	0	0.00	3742	5	0.13	3737
27	11044	18	0.16	11026	24	0.22	11002

Table 9. continued

#	# of Records	# Records With Missing Data	% Missing	# Records no zero prices	# Records With Price Outliers	% Outliers	# Records with no zeros or outliers
28	35751	63	0.18	35688	126	0.35	35562
29	26615	39	0.15	26576	77	0.29	26499
30	9037	15	0.17	9022	57	0.63	8965
31	4637	7	0.15	4630	4	0.09	4626
32	166	0	0.00	166	2	1.20	164
33	16023	23	0.14	16000	36	0.22	15964
34	816	1	0.12	815	0	0.00	815
35	14109	24	0.17	14077	53	0.38	14024
36	50973	59	0.12	50914	424	0.83	50490
37	48930	50	0.10	48880	45	0.09	48835
38	39219	45	0.11	39174	35	0.09	39139
39	8164	5	0.06	8159	10	0.12	8149
40	37009	38	0.10	36971	29	0.08	36942
41	5833	7	0.12	5826	12	0.21	5814
42	6088	5	0.08	6083	6	0.10	6077
43	2043	9	0.44	2034	15	0.73	2019
44	319117	118	0.04	318999	623	0.20	318376
45	297275	101	0.03	297174	475	0.16	296699
46	209215	93	0.04	209122	446	0.21	208676
47	195801	87	0.04	195714	317	0.16	195397
48	109902	25	0.02	109877	376	0.34	109501
49	101474	14	0.01	101460	104	0.10	101356
50	38625	94	0.24	38531	75	0.19	38456
51	257431	603	0.23	256828	165	0.06	256663
52	10316	33	0.32	10283	12	0.12	10271
53	247115	570	0.23	246545	237	0.10	246308
54	5750	25	0.43	5725	6	0.10	5719
55	197630	448	0.23	197182	229	0.12	196953
56	4566	8	0.18	4558	11	0.24	4547
57	1761	12	0.68	1749	1	0.06	1748
58	2494	10	0.40	2484	6	0.24	2478
59	717	0	0.00	717	0	0.00	717

Table 9. continued

#	# of Records	# Records With Missing Data	% Missing	# Records no zero prices	# Records With Price Outliers	% Outliers	# Records with no zeros or outliers
60	759	3	0.40	756	0	0.00	756
61	49485	122	0.25	49363	114	0.23	49249
62	84796	194	0.23	84602	276	0.33	84326
63	39499	124	0.31	39375	71	0.18	39304
64	69420	119	0.17	69301	141	0.20	69160
65	3583	11	0.31	3572	1	0.03	3571
66	33874	19	0.06	33855	14	0.04	33841
67	22269	17	0.08	22252	9	0.04	22243
68	11605	2	0.02	11603	4	0.03	11599
69	4832	5	0.10	4827	3	0.06	4824
70	286	0	0.00	286	0	0.00	286
71	496	3	0.61	493	1	0.20	492
72	1852	2	0.11	1850	5	0.27	1845
73	15585	10	0.06	15575	5	0.03	15570
74	1424	2	0.14	1422	0	0.00	1422
75	278	0	0.00	278	1	0.36	277
76	11327	2	0.02	11325	4	0.04	11321
77	2626	0	0.00	2626	3	0.11	2623

The 1999 ACNielsen Home Scan data set is a collection of transactions during the year as recorded by a scanner at home at the time of scanning. This data set could be considered a panel data set having both cross sectional and time series characteristics. The random occurrence of purchases in the data set made it more practical to convert it to a cross sectional annual data set or keep the frequency of time periods to a minimum. Therefore, a quarterly data set and an annual set were constructed. The probit, Heckman, and nutrient analyses will utilize the annual data set. The demand systems portion will look at the annual as well as the quarterly data set. When aspects of seasonality are considered, the quarterly data will be used.

The annual data set descriptive statistics will now be given for all 77 beverage groupings. Annual average household consumption (Q) in gallons for the entire year, average household total expenditure (T) for the year, and the average annual price (P) per gallon paid will be given. There are 7195 households in the data set. Demographic information is also given at the end of table 10.

Table 10. Summary Statistics for Annual Data Set: Consumption(Q), Expenditure(T), Price Per Gallon(P)

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
1	All Dry Goods Beverages Aggregate	P1	7193	2.2	0.8
		Q1	7193	136.5	102.4
		T1	7193	278.9	213.6
2	Ready-to-Drink Fruit Juices Aggregate	P2	6766	4.7	1.3
		Q2	6766	13.5	15.5
		T2	6766	60.3	69.7
3	Apple Juice Aggregate	P3	3878	3.7	1.5
		Q3	3878	3.8	6.1
		T3	3878	12.3	19.0
4	Orange Juice Aggregate	P4	5359	4.6	1.4
		Q4	5359	8.3	10.9
		T4	5359	36.1	47.6
5	Other Fruit Juices Aggregate	P5	5746	5.4	1.4
		Q5	5746	5.6	7.7
		T5	5746	29.1	40.7
6	Fruit Drinks & Juices-Cranberry	P6	3819	5.6	1.5
		Q6	3819	3.4	5.3
		T6	3819	18.3	28.3
7	Cider	P7	1233	3.4	1.3
		Q7	1233	1.6	1.9
		T7	1233	5.1	6.3

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
8	Fruit Juice – Grapefruit - Other Containers	P8	1330	4.9	1.6
		Q8	1330	2.5	4.2
		T8	1330	12.1	21.3
9	Fruit Juice – Apple	P9	3401	3.7	1.6
		Q9	3401	3.8	6.3
		T9	3401	12.2	19.4
10	Fruit Juice – Grape	P10	1860	5.8	1.7
		Q10	1860	2.1	3.8
		T10	1860	11.2	19.8
11	Fruit Juice –Grapefruit-Canned	P11	387	4.0	1.8
		Q11	387	2.3	4.9
		T11	387	7.3	13.0
12	Fruit Juice -Orange-Canned	P12	182	5.8	1.9
		Q12	182	1.2	2.3
		T12	182	6.7	12.8
13	Fruit Juice - Pineapple	P13	961	5.1	1.5
		Q13	961	1.0	2.4
		T13	961	4.9	11.8
14	Fruit Juice -Prune	P14	463	5.8	1.5
		Q14	463	1.9	3.8
		T14	463	10.2	19.8
15	Fruit Juice – Orange - Other Container	P15	5320	4.6	1.4
		Q15	5320	8.3	10.9
		T15	5320	36.1	47.6
16	Fruit Juice -Remaining	P16	2967	5.7	1.9
		Q16	2967	2.6	4.5
		T16	2967	13.9	23.4
17	Fruit Juice -Nectars	P17	746	6.4	2.1
		Q17	746	1.6	3.2
		T17	746	9.4	19.6
18	Ready-to-Drink Fruit Drinks Aggregate	P18	5321	3.9	1.7
		Q18	5321	8.1	12.3
		T18	5321	27.3	37.8
19	Fruit Drinks-Canned	P19	895	4.1	3.2
		Q19	895	2.5	4.7
		T19	895	6.8	11.7
20	Fruit Drinks-Other Container	P20	5244	3.9	1.6
		Q20	5244	7.8	11.9
		T20	5244	26.5	36.8

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
21	Isotonics - All Aggregate	P21	2258	4.5	1.1
		Q21	2258	3.6	5.8
		T21	2258	15.4	24.6
22	Isotonics – Fruit Drinks Isotonics	P22	2184	4.6	1.1
		Q22	2184	3.5	5.7
		T22	2184	15.1	24.2
23	Isotonics - Carbonated Soft Drinks isotonics	P23	304	4.1	1.2
		Q23	304	1.6	2.9
		T23	304	5.8	10.9
24	Soft Drinks – Powdered	P24	3491	1.0	0.6
		Q24	3491	17.9	26.9
		T24	3491	14.1	20.9
25	Vegetable Juices and Drinks Aggregate	P25	3390	5.9	2.4
		Q25	3390	2.3	3.9
		T25	3390	13.0	24.3
26	Vegetable Juice – Tomato	P26	1264	4.0	1.8
		Q26	1264	1.3	2.2
		T26	1264	4.5	7.5
27	Vegetable Juice and Drink remaining	P27	2680	6.6	2.4
		Q27	2680	2.3	4.0
		T27	2680	14.3	26.2
28	Tea Aggregate	P28	5302	1.9	1.5
		Q28	5302	15.0	21.9
		T28	5302	18.6	26.7
29	Regular Tea Aggregate	P29	4648	2.0	1.9
		Q29	4648	13.1	20.9
		T29	4648	15.1	24.6
30	Decaffeinated Tea Aggregate	P30	2471	1.8	0.8
		Q30	2471	7.4	10.9
		T30	2471	11.4	14.9
31	Tea - Herbal Bags	P31	1619	2.0	0.6
		Q31	1619	4.4	5.9
		T31	1619	8.7	12.0
32	Tea – Packaged	P32	61	1.4	1.1
		Q32	61	13.0	16.4
		T32	61	13.2	14.7
33	Tea - Bags	P33	3855	1.1	0.7
		Q33	3855	15.5	22.7
		T33	3855	11.5	14.8

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
34	Tea – Instant	P34	291	1.7	0.4
		Q34	291	5.8	8.2
		T34	291	9.4	13.6
35	Tea - Liquid	P35	2453	4.5	2.7
		Q35	2453	4.2	8.3
		T35	2453	14.9	28.8
36	Coffee (Including Liquid Coffee)	P36	5584	1.4	1.5
	Aggregate	Q36	5584	42.6	51.1
		T36	5584	43.6	48.7
37	Coffee (Excluding Liquid Coffee)	P37	5513	1.2	0.6
	Aggregate	Q37	5513	43.1	51.2
		T37	5513	42.8	47.6
38	Regular Coffee	P38	5059	1.1	0.6
	Aggregate	Q38	5059	38.8	48.0
		T38	5059	36.9	43.5
39	Decaffeinated Coffee	P39	1990	1.5	0.8
	Aggregate	Q39	1990	17.7	29.5
		T39	1990	21.3	30.1
40	Coffee - Ground	P40	4670	1.2	0.7
		Q40	4670	38.4	45.0
		T40	4670	39.0	43.3
41	Coffee - Soluble Flavored	P41	1395	1.0	0.6
		Q41	1395	21.7	49.8
		T41	1395	16.2	36.7
42	Coffee - Soluble	P42	1541	1.3	0.5
		Q42	1541	18.1	25.6
		T42	1541	20.4	27.9
43	Coffee - Liquid	P43	623	14.0	3.2
		Q43	623	1.0	2.2
		T43	623	13.8	30.4
44	Carbonated Beverages – All	P44	7073	2.5	0.8
	Aggregate	Q44	7073	54.0	63.3
		T44	7073	126.7	155.0
45	Carbonated Soft Drinks - All	P45	7041	2.5	0.7
	Aggregate	Q45	7041	51.9	62.5
		T45	7041	121.2	152.9
46	Carbonated Beverages	P46	6847	2.5	0.9
		Q46	6847	34.9	47.6
		T46	6847	81.7	115.1

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
47	Carbonated Soft Drinks	P47	6734	2.5	0.9
		Q47	6734	33.9	47.2
		T47	6734	79.2	114.9
48	Carbonated Beverages - low calorie	P48	5212	2.5	0.8
		Q48	5212	27.4	43.7
		T48	5212	64.3	106.0
49	Carbonated Soft Drinks - low calorie	P49	5047	2.5	0.8
		Q49	5047	27.1	43.5
		T49	5047	63.5	105.5
50	Water-Bottled	P50	4898	2.0	1.5
		Q50	4898	14.3	32.1
DAIRY BEVERAGES		T50	4898	17.7	33.8
51	Milk--Flavored and Non-Flavored	P51	7036	3.1	0.9
	Aggregate	Q51	7036	33.9	35.2
		T51	7036	93.5	90.1
52	Milk--Flavored	P52	2056	5.0	1.8
	Aggregate	Q52	2056	2.3	5.6
		T52	2056	9.8	24.9
53	Milk--Non-Flavored	P53	7023	3.0	0.8
	Aggregate	Q53	7023	33.3	34.7
		T53	7023	90.8	87.6
54	Milk-Lowfat Flavored	P54	1427	4.6	1.9
	Aggregate	Q54	1427	2.2	5.7
	anything but whole	T54	1427	8.2	24.3
55	Milk-Lowfat Non-Flavored	P55	6311	3.0	0.9
	Aggregate	Q55	6311	30.2	33.5
	anything but whole	T55	6311	81.3	83.7
56	Whole flavored	P56	1206	5.7	1.6
		Q56	1206	1.4	3.3
		T56	1206	6.9	16.9
57	2% flavored	P57	574	4.2	1.7
		Q57	574	1.6	3.7
		T57	574	5.5	11.0
58	1% flavored	P58	800	5.0	1.8
		Q58	800	1.3	2.0
		T58	800	5.6	7.6
59	Skim nonfat flavored	P59	186	4.9	1.8
		Q59	186	3.0	12.2
		T59	186	13.0	59.3

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
60	Other lowfat flavored--	P60	273	3.8	1.9
	not 2% 1% or skim/nonfat	Q60	273	2.1	3.8
		T60	273	5.9	10.9
61	Whole	P61	3378	3.3	1.0
		Q61	3378	12.9	22.8
		T61	3378	36.9	61.7
62	2%	P62	4675	3.0	0.9
		Q62	4675	18.2	26.3
		T62	4675	48.5	67.0
63	1%	P63	2827	3.1	0.9
		Q63	2827	13.6	24.1
		T63	2827	37.1	61.5
64	Skim nonfat	P64	3470	3.2	1.2
		Q64	3470	18.1	26.1
		T64	3470	49.2	65.1
65	Other lowfat flavored--	P65	493	3.1	1.1
	not 2% 1% or skim/nonfat	Q65	493	7.1	15.6
FROZEN BEVERAGES		T65	493	19.3	41.5
66	All Fruit Juice/Drinks Frozen	P66	3668	3.1	1.0
	Aggregate	Q66	3668	7.6	11.8
		T66	3668	22.5	35.1
67	Fruit Juice-- Frozen	P67	2927	3.2	0.8
	Aggregate	Q67	2927	6.8	10.4
		T67	2927	20.8	32.6
68	Fruit Drinks- Frozen	P68	2262	2.9	1.3
	Aggregate	Q68	2262	3.6	6.8
		T68	2262	9.6	17.6
69	Other Fruit Juice	P69	1209	3.4	0.9
	Aggregate	Q69	1209	2.9	5.6
		T69	1209	9.7	19.6
70	Fruit Juice - Unconcentrated	P70	104	2.2	0.8
		Q70	104	3.8	8.2
		T70	104	6.9	18.1
71	Fruit Juice - Grapefruit	P71	141	3.1	0.7
		Q71	141	2.9	5.2
		T71	141	8.7	15.2
72	Fruit Juice - Apple	P72	601	2.8	0.7
		Q72	601	2.2	4.2
		T72	601	6.3	12.1

Table 10. continued

#	Beverage (all prices per gallon and quantities in gallons)		Count	Mean	StDev
73	Fruit Juice - Orange	P73	2499	3.2	0.8
		Q73	2499	6.0	9.5
		T73	2499	18.1	29.3
74	Fruit Juice - Grape	P74	471	3.5	1.0
		Q74	471	2.2	4.6
		T74	471	7.9	18.4
75	Fruit Drinks - Orange	P75	90	2.0	0.5
		Q75	90	2.4	5.2
		T75	90	4.8	10.6
76	Fruit Drinks & Mixes	P76	2230	2.9	1.3
		Q76	2230	3.6	6.7
		T76	2230	9.6	17.5
77	Fruit Juice - Remaining	P77	744	3.6	0.8
		Q77	744	2.3	4.4
		T77	744	8.3	16.4
	DEMOGRAPHICS				
hs	household size	hs	7195		
hinc	household income	hinc	7195	51740.2	26254.9
agef	age of female head	agef	7195		
agem	age of male head	agem	7195		
agepc	age and presence of children	agepc	7195		
empm	male employment	empm	7195		
empf	female employment	empf	7195		
edum	male education	edum	7195		
eduf	female education	eduf	7195		
mar	marital status	mar	7195		
occm	male occupation	occm	7195		
occf	female occupation	occf	6524		
hcomp	household composition	hcomp	7195		
race	race	race	7195		
hisp	hispanic origin	hisp	7195		
reg	region	reg	7195		
pov	1 if below 1999 poverty threshold level	pov	228		
pov130	1 if below 1999 poverty threshold level times 1.3	pov130	423		
pov185	1 if below 1999 poverty threshold level times 1.85	pov185	884		

Final Data Sets

The majority of this study will focus on a fine classification of goods as discussed earlier. For these data sets, only households that purchased at least one beverage in all twelve months are used to avoid scaling problems associated with households that only purchased for a portion of the year. The number of households that purchased a beverage in all twelve months was 5715.

Of the 77 different beverage groupings, two different groupings will be used for the demand system analysis. A grouping of eight first will be looked at followed by a much finer grouping of sixteen goods. Eight other breakdowns of milk will be added to the more refined grouping of sixteen for the probit, cross tabulations, and Heckman analysis. The listing of the eight group set of goods and their summary statistics are given below in table 11. The average quantity in gallons, price per gallon, and total expenditures per household are given.

Table 11. Summary Statistics for 8 Goods Used in the Demand Analysis: Price Per Gallon(P), Consumption(Q), and Expenditure(T)

Good		Mean	Std Dev
Milk	P1	3.05	0.82
	Q1	37.47	36.66
	T1	103.04	93.64
Carbonated Soft Drinks	P2	2.44	0.71
	Q2	56.72	66.36
	T2	132.35	163.01
Powdered Soft Drinks	P3	0.99	0.56
	Q3	18.53	28.05
	T3	14.74	21.93
Isotonics	P4	4.52	1.04
	Q4	3.79	6.06
	T4	16.24	25.81
Bottled Water	P5	1.98	1.46
	Q5	15.20	34.20
	T5	18.65	35.51
Juices and Fruit Drinks	P6	4.18	1.18
	Q6	26.08	23.81
	T6	104.09	94.44
Coffee	P7	1.17	0.59
	Q7	45.24	53.62
	T7	44.68	49.24
Tea	P8	1.86	1.52
	Q8	15.86	22.67
	T8	19.83	28.26

The listing of the sixteen group set of goods and their summary statistics are given below in table 12. The first sixteen will be the ones used in the finely classified demand systems. The last eight are the breakdowns of milk. The average quantity in gallons, price per gallon, and total expenditures per household are given.

Table 12. Summary Statistics for Goods Used in the Demand, Probit, and Heckman Analysis: Price Per Gallon(P), Consumption(Q), and Expenditure(T)

Good		Mean	Std Dev
Whole Fat Flavored and Unflavored Milk	P1	3.74	1.39
	Q1	12.17	22.89
	T1	35.87	62.83
Reduced Fat Flavored and Unflavored Milk	P2	3.07	0.94
	Q2	33.24	35.34
	T2	89.97	89.08
Carbonated Soft Drinks - Regular	P3	2.46	0.83
	Q3	36.68	50.29
	T3	85.56	122.50
Carbonated Soft Drinks - Low Calorie	P4	2.47	0.82
	Q4	28.94	45.63
	T4	67.56	111.07
Powdered Soft Drinks	P5	0.99	0.56
	Q5	18.53	28.05
	T5	14.74	21.93
Isotonics	P6	4.52	1.04
	Q6	3.79	6.06
	T6	16.24	25.81
Bottled Water	P7	1.98	1.46
	Q7	15.20	34.20
	T7	18.65	35.51
Orange Juice	P8	4.19	1.35
	Q8	10.42	12.14
	T8	41.83	49.46
Apple Juice	P9	3.56	1.41
	Q9	4.16	6.65
	T9	13.28	20.41
Other Juices	P10	5.25	1.41
	Q10	6.39	8.51
	T10	32.13	43.31
Fruit Drinks	P11	3.66	1.52
	Q11	9.53	13.55
	T11	30.93	40.72
Vegetable Juice	P12	5.89	2.44
	Q12	2.37	4.01
	T12	13.49	25.58
Coffee Regular	P13	1.13	0.61
	Q13	41.39	50.64
	T13	39.26	45.43

Table 12. continued

Good		Mean	Std Dev
Coffee Decaffeinated	P14	1.48	0.75
	Q14	18.62	31.13
	T14	22.37	31.64
Tea Regular	P15	2.03	1.88
	Q15	13.75	21.45
	T15	16.09	26.19
Tea Decaffeinated	P16	1.81	0.79
	Q16	7.77	11.34
	T16	11.75	15.32
Flavored Milk	P17	5.06	1.87
	Q17	2.46	5.82
	T17	10.45	26.66
Unflavored Milk	P18	3.02	0.81
	Q18	36.77	36.18
	T18	100.03	91.03
Flavored Milk -- Whole	P19	4.66	1.88
	Q19	2.29	5.86
	T19	8.67	25.90
Flavored Milk -- Reduced Fat	P20	5.70	1.67
	Q20	1.45	3.51
	T20	7.37	18.20
Whole Milk Unflavored	P21	3.34	0.98
	Q21	13.69	24.08
	T21	39.18	65.15
2% Milk Unflavored	P22	3.03	0.91
	Q22	19.73	27.66
	T22	52.42	70.53
1 % Milk Unflavored	P23	3.06	0.92
	Q23	14.83	25.36
	T23	40.11	64.52
Skim Milk Unflavored	P24	3.18	1.13
	Q24	19.87	27.56
	T24	53.97	68.90

Nutrient information is needed for this study and is not included in the data set. The conversions of intakes to calories and milligrams for each beverage was accomplished using information from the United States Department of Agriculture. The nutrient conversions are given in Appendix D. These figures were divided by 365 and further divided by household size. The result placed the nutritional numbers in terms of intake per person per day. This data set is used for the nutrient cross-tabulations and regression analysis to analyze demographic drivers associated with nutrient intake. Descriptive statistics for Average Calorie, Calcium, Vitamin C, and Caffeine intake for all nonalcoholic beverages is given in table 13. Units are Calories(kcal), Calcium(mg), Vitamin C(mg), and Caffeine(mg).

Table 13. Summary Statistics for Nutrients Per Person/Per Day for Nonalcoholic Beverages in 1999

Units: Calories (kcal)
Calcium (mg)
Vitamin C (mg)
Caffeine (mg)

	Nutrient	# of Observations	Avg Intake	StDev
total	Calories	5715	211.29	141.79
total	Calcium	5715	216.85	174.14
total	VitC	5715	44.61	39.09
total	Caffeine	5715	94.96	114.13
1	CALcsdfdpsd	5715	93.46	110.11
2	CALfjuices	5715	38.69	42.26
3	CALmilk	5715	72.82	64.50
4	CAFFcsd	5715	25.50	32.65
5	CAFFcoff	5715	63.87	107.65
6	CAFFtea	5715	5.49	11.08
7	VITCfjuices	5715	26.63	30.72
8	VITCcsdfdpsd	5715	15.38	22.09
9	CALCmilk	5715	191.80	170.59

1=Calories from carbonated soft drinks, fruit drinks, and powdered soft drinks
2=Calories from fruit juices
3=Calories from milk
4=Caffeine from carbonated soft drinks
5=Caffeine from coffee
6=Caffeine from tea
7=Vitamin C from fruit juices
8=Vitamin C from carbonated soft drinks, fruit drinks, and powdered soft drinks
9=Calcium from milk

CHAPTER III

MODEL DEVELOPMENT

Three quantitative methods used in this study are discussed in this chapter. The literature reviewed in Chapter I affirm that there are key demographic and economic drivers affecting the consumption of nonalcoholic beverages. A probit model will be used to look at the demographic factors that affect the choice of consumption. The Heckman model will be used to analyze demographic factors that affect the level of consumption. Lastly, a LA/AIDS demand system will be used to capture price effects. The technique selected to correct for censoring will be covered following the overview of the demand system. Each section of this chapter will explain the procedure, variables used in the procedure, and the results that will be given.

Choice to Consume – Probit Analysis

The key determinants or drivers affecting the probability of consuming nonalcoholic beverages in at-home markets was the first objective given in Chapter I. In this case the dependent variable, the choice to consume, is a “yes” or “no” type decision. A probit model is commonly used for this type of analysis. The predicted value of the dependent variable is interpreted as the probability that the household will consume a nonalcoholic beverage given the households characteristics. The probit analysis will provide statistically significant findings of which demographics increase or decrease the probability of consumption.

The demographics along with the categories in each that are used for the probit analysis are given below in table 14. All of the demographic categories are expressed by dummy variables; a “1” is indicative of that demographic being present in the household. The base categories listed are not placed into the probit equations to avoid perfect multicollinearity. As a result, the findings must be compared relative to the base category. For example, households in Central regions are statistically more likely to consume powdered soft drinks than households in Eastern regions. The choice of the base category is arbitrary. For the household variable the female head was used. If there was no female head present then the male heads information was used for age, employment, and education.

Long and Freese present a detailed discussion of the probit model. The probit model is based on the following general framework of an index function

(1) $$P(y=1 \mid x) = G(x\beta)$$

The probit model is a special case of equation (1) with

(2) $$G(x\beta) \equiv \Phi(x\beta) \equiv \int_{-\infty}^{x\beta} \phi(v)d(v)$$

where $\phi(\chi\beta)$ is the standard normal density

(3) $$\phi(xb) = (2\pi)^{-1/2} \exp(-(xb)^2/2)$$

Table 14. Household Demographics Used in Probit Analysis

Description	Variable
household size 1 – BASE	
household size 2	hs2
household size 3	hs3
household size 4	hs4
household size 5 +	hsp5
age household head less 25-BASE	
age household head 25-39	age2539
age household head 40-49	age4049
age household head 50-64	age5065
age household head 65 +	age65plus
has no children under 18-BASE	
has children under 18	agepcchild
household head employment not employed-BASE	
household head employment part-time	empparttime
household head employment full-time	empfulltime
household head edu - less than high school-BASE	
household head edu - high school	eduhighschool
household head edu - some college	edusomecollege
household head edu - college plus	educollegeplus
white-BASE	
black	black
oriental	oriental
other	other
not hispanic-BASE	
hispanic	hispyes
east region-BASE	
central region	central
south region	south
west region	west
above 130% poverty-BASE	
under 130% poverty	pov130

The calculation of marginal effect of the kth factor is based on the following formula

$$\frac{\partial p(x)}{\partial x_k} = \frac{dG(x\beta)}{d(x\beta)}\beta_k$$

If the x_k is a binary explanatory variable, then the partial effect from changing x_k from zero to one, holding all other variable constant, is

$$\Phi(\beta_1 + \beta_2 x_2 + \cdots + \beta_{k-1}x_{k-1} + \beta_k) - \Phi(\beta_1 + \beta_2 x_2 + \cdots + \beta_{k-1}x_{k-1})$$

The estimation of the probit models is based on the following log-likelihood function

(4) $$L = \sum_{k\in S} \ln\left\{\Phi\left(\boldsymbol{x}_{1k}^{'}\boldsymbol{\beta}_1\right)\right\} + \sum_{k\notin S} \ln\left\{1-\Phi\left(\boldsymbol{x}_{1k}^{'}\boldsymbol{\beta}_1\right)\right\}.$$

The model for each nonalcoholic beverage is:

(5) $$\begin{aligned} Y_k = F(&\alpha_k + \beta_1 \mathit{hs2}_k + \beta_2 \mathit{hs3}_k + \beta_3 \mathit{hs4}_k + \beta_4 \mathit{hsp5}_k + \beta_5 \mathit{age2539}_k \\ &+ \beta_6 \mathit{age4049}_k + \beta_7 \mathit{age5065}_k + \beta_8 \mathit{age65plus}_k + \beta_9 \mathit{agepcchild}_k + \\ &\beta_{10} \mathit{empparttime}_k + \beta_{11} \mathit{empfulltime}_k + \beta_{12} \mathit{eduhighschool}_k + \\ &\beta_{13} \mathit{edusomecollege}_k + \beta_{14} \mathit{educollegeplus}_k + \beta_{15} \mathit{black}_k + \beta_{16} \mathit{oriental}_k + \\ &\beta_{17} \mathit{other}_k + \beta_{18} \mathit{hispyes}_k + \beta_{19} \mathit{central}_k + \beta_{20} \mathit{south}_k + \beta_{21} \mathit{west}_k + \beta_{22} \mathit{pov130}_k\ ) \end{aligned}$$

Where $k = 1,...,T$ is the number of observations in the model. Y_k corresponds to the decision to drink the selected beverage. The variables are defined in table 1.

Marginal effects associated with each variable also are calculated. For all statistical analysis the level of significance chosen is 0.05. An F-test is conducted on the categories in each demographic to find the statistically significant demographics. Results of the probit analysis are discussed in Chapter IV.

Consumption Level Analysis – Cross Tabulations and Heckman Procedure

Determining the key demographic drivers associated with the volume of nonalcoholic beverages in at-home markets was the second objective given in Chapter I. Cross tabulations will be used to get an initial comparison in gallons consumed per household for differing demographic households. For this method, a demographic category is selected and mean levels of consumption for all households in that demographic category are computed. This task is done for each demographic category and then comparisons can be made based on the mean consumption findings between the different demographics. A weakness of this method is that it presents no statistical proof for important factors associated with levels of consumption and it does not adjust or hold constant all other demographic factors. Therefore a Heckman analysis will be performed. This econometric technique will allow for statistical significance of associated drivers of consumption levels.

Heckman sample selection models are used to analyze the demographic factors affecting the decision to consume and the actual at-home intake of the twenty-four nonalcoholic beverages. The twenty-four beverages to be analyzed were discussed in Chapter II and are given below. Asatryan utilized this model in his 2003 dissertation analyzing the effect of demographics on pork consumption. This overview uses much of Asatryan's description and discussion.

Zero levels of consumption are common in micro-level data (Park and Capps (2002)) and the 1999 ACNielsen HomeScan Panel data set is not an exception. The data we use contain a large number of zeros for all twenty-four products (see table 15).

Cheng and Capps(1988) mention that the reasons for non-consumption might be nonpreference, inventory effects, price effects, or the duration of the survey period. They suggest that the longer the period of survey, the higher the chance of revealing nonpreference toward a particular commodity. The fact that our data corresponds to an annual period allows us to assume that these zeros are primarily due to nonpreference. Not adjusting for sample selection, these zeros of consumption, may result in biased estimates of the demand parameters (Heckman (1976)).

Tobit, double-hurdle, and Heckman sample selection models are designed to deal with zero consumption. All these procedures are designed to model a two-stage decision process. The first stage (selection stage) models the decision to drink and the second stage (intake stage) models the decision about how much to drink.

There are two major estimation procedures facilitating Heckman-type correction: (1) Heckman's (1976, 1979) two-step procedure and (2) the full-information maximum likelihood estimator (Amemiya(1985)). Shonkwiler and Yen(1999) warn about relative inefficiency of two-step models compared to maximum likelihood procedures. Puhani

Table 15. Data Density for Household Consumption of Nonalcoholic Beverages

#	Beverage	Total # of households that consumed out of 5715	% non-zero
1	whole fat flavored and unflavored milk	3157	55.24
2	reduced fat flavored and unflavored milk	5210	91.16
3	carbonated soft drinks - regular	5419	94.82
4	carbonated soft drinks - low calorie	4166	72.90
5	powdered soft drinks	2863	50.10
6	isotonics	1870	32.72
7	bottled water	3996	69.92
8	orange juice	4981	87.16
9	apple juice	3323	58.15
10	other juices	4800	83.99
11	fruit drinks	4661	81.56
12	vegetable juice	2798	48.96
13	coffee regular	4131	72.28
14	coffee decaffeinated	1675	29.31
15	tea regular	3860	67.54
16	tea decaffeinated	2072	36.26
17	flavored milk	1701	29.76
18	unflavored milk	5642	98.72
19	flavored milk -- whole	1186	20.75
20	flavored milk that is reduced fat	1011	17.69
21	whole milk unflavored	2700	47.24
22	2% milk unflavored	3821	66.86
23	1 % milk unflavored	2360	41.29
24	skim milk unflavored	3017	52.79

recommended using Heckman's two-step procedure over the full-information maximum likelihood estimator under strong collinearity conditions. Puhani noted that strong collinearity is expected in models with a large number of same variables involved in both stages.

Many of our demographic factors appear in both the selection and intake stages of the two-stage decision model. Hence, the two-step Heckman-type correction for zero consumption is preferred in our models. The two-step Heckman sample selection procedure adjusting for zero intakes is basically the single-equation version of Shonkwiler and Yen's (1999) procedure facilitating zero consumption in demand systems. This two-stage estimation technique requires two measures of products consumed: *the decision to drink the product within the year 1999* (in the selection stage) and *the 1999 household consumption of product in gallons* (in the intake stage).

Selection Stage: To Drink or Not to Drink

The selection stage of the two-stage Heckman sample selection procedure models the decision to drink or not to drink the selected product.

(6) $$y_{1k}^{*} = \boldsymbol{x}_{1k}^{'}\boldsymbol{\beta}_{1} + \varepsilon_{1k} \qquad \textit{latent selection equation}$$

where y_{1k}^{*} represents a latent selection variable, x_{1k} is a vector of explanatory variables in the latent selection equation, β_1 is a vector of parameters in the latent selection equation, ε_{1k} represents the error term, and $k = 1, 2, ..., T$ is the number of observations in the sample. A binary variable is observed depending on the latent dependent variable being greater than zero or not.

(7) $$y_{1k} = \begin{cases} 1 & \text{if } \; y_{1k}^* > 0 \\ 0 & \text{if } \; y_{1k}^* \leq 0 \end{cases} \qquad \textit{selection equation}$$

The selection stage is estimated using a qualitative choice probit model (Heckman (1976)). The normal cumulative distribution (cdf) and the normal probability density (pdf) function are calculated in this stage and used to adjust for the sample selection in the intake stage. This step was performed in the probit analysis.

Intake Stage: Adjustment for Sample Selection

We use the results of the selection stage to adjust for zero consumption in the intake stage. The general framework of the intake stage is given by

(8) $$y_{2k}^* = \boldsymbol{x}_{2k}^{'} \boldsymbol{\beta}_2 + \varepsilon_{2k} \qquad \textit{latent equation}$$

where y_{2k}^* is the latent intake variable, x_{2k} is a vector of explanatory variables in the latent intake equation, β_2 is a vector of parameters in the latent intake equation, ε_{2k} represents the error term, and $k = 1, 2, ..., T$ is the number of observations in the sample. We observe two types of measures for the dependent variables: (1) continuous values of intake are observed if an individual selects to consume the product and (2) zeros are observed if an individual does not prefer to drink the corresponding product. We also observe their corresponding probabilities of selecting the product or not selecting the product. This decision process can be presented by the following system:

(9) $$y_{2k} = \begin{cases} y_{2k}^* & \text{if } \; y_{1k} = 1: \qquad \Pr\text{ob}(y_{1k} = 1) \\ 0 & \text{if } \; y_{1k} = 0: \qquad \Pr\text{ob}(y_{1k} = 0) \end{cases}$$

where $corr(\varepsilon_{1k}, \varepsilon_{2k}) = \rho$. As discussed in the first stage, $\Pr ob(y_{1k} = 1)$ represents the probability of consuming the selected product and $\Pr ob(y_{1k} = 0)$ represents the probability of not consuming the selected product.

When $\rho = 0$, OLS regression provides unbiased estimates, when $\rho \neq 0$ the OLS estimates are biased (Heckman (1976)). The unbiased unconditional expectation of the consumption is

(10) $$E[y_{2k}] = \Phi(y_{1k} = 1) * E[y_{2k} \mid y_{1k} = 1] + \Phi(y_{1k} = 0) * E[y_{2k} \mid y_{1k} = 0].$$

where $\Phi(y_{1k} = 1) \equiv \text{Prob}(y_{1k} = 1)$, $\Phi(y_{1k} = 0) \equiv \text{Prob}(y_{1k} = 0)$. The expected value of y_{2k} conditional on $y_{1k} = 1$ is given by

(11) $$E[y_{2k} \mid y_{1k} = 1] = \boldsymbol{x}'_{2k}\beta_2 + \sigma_{\varepsilon_{1k}\varepsilon_{2k}} * \lambda_k$$

where $\lambda_k = \dfrac{\phi(y_{1k} = 1)}{\Phi(y_{1k} = 1)}$ is the Mills ratio (Heckman (1976)), $\sigma_{\varepsilon_{1k}\varepsilon_{2k}}$ is the parameter associated with the Mills ratio.

In summary, much of the work is done in the probit analysis. The inverse of the Mill's ratio is saved from the probit portion and added as an extra regressor. All zero consumption observations are then dropped. The dependent variable is the actual level of consumption in gallons and the same demographics are used that were used in the probit analysis. Ordinary least squares estimation is then used.

The model for each nonalcoholic beverage is:

$$Q_k = F(\alpha_k + \beta_1 \mathit{hs2}_k + \beta_2 \mathit{hs3}_k + \beta_3 \mathit{hs4}_k + \beta_4 \mathit{hsp5}_k + \beta_5 \mathit{age2539}_k + \beta_6 \mathit{age4049}_k + \beta_7 \mathit{age5065}_k + \beta_8 \mathit{age65plus}_k + \beta_9 \mathit{agepc}_k + \beta_{10} \mathit{empparttime}_k + \beta_{11} \mathit{empfulltime}_k + \beta_{12} \mathit{eduhighschool}_k + \beta_{13} \mathit{edusomecollege}_k + \beta_{14} \mathit{educollegeplus}_k + \beta_{15} \mathit{black}_k + \beta_{16} \mathit{oriental}_k + \beta_{17} \mathit{other}_k + \beta_{18} \mathit{hispyes}_k + \beta_{19} \mathit{central}_k + \beta_{20} \mathit{south}_k + \beta_{21} \mathit{west}_k + \beta_{22} \mathit{pov130}_k + \beta_{23} \mathit{invm}_k) \quad (12)$$

Where $k = 1, \ldots, T$ is the number of observations in the model that consumed a quantity of beverage. Q_k corresponds to the level of intake for the year in gallons for the selected beverage. The variables are defined in table 1 with the exception of invm, which is the inverse of the Mill's ratio variable.

For all statistical analysis the level of significance chosen is 0.05. An F-test is conducted on the categories in each demographic to find the statistically significant demographics. Cross tabulation and Heckman results are discussed in Chapter V.

Economic Analysis – Demand Systems

The fifth objective in Chapter I was to provide insight into the interrelationships within the complex of nonalcoholic beverages. In order to do this, the own-price and cross-price elasticities of demand for nonalcoholic beverages in the at-home market must be found. Demand systems were most commonly used in the literature reviewed when investigating these interrelationships. The two main systems considered were the Rotterdam system and the Linear Approximation Almost Ideal Demand System (LA/AIDS). The Rotterdam system is only appropriate for time series data and thus cannot be used with the annual data set that was constructed. In this section we cover the

LA/AIDS model and select a method to adjust for the problem of censoring. First, the basic model will be covered.

The AIDS model of Deaton and Muellbauer (1980a,b) has been very popular in applied demand analysis as mentioned previously. It is derived from a specific cost function and consists of the share equations in an n-good system given by

(13) $$w_{ik} = \alpha_i + \sum_i \gamma_{ij} \ln p_{jk} + B_i \ln\left(y_k / P_k\right) + \varepsilon_{ik},$$

where

$k = 1, 2, ..., T$ is the number of observations
$i = 1, ..., N$ is the number goods in the system

y is the total expenditure on the system of goods given by $y_k = \sum_i p_{ik} q_{ik}$. P_k is the price index for the group and is defined as

(14) $$\ln P_k = \alpha_0 + \sum_j \alpha_j \ln p_{jk} + \frac{1}{2} \sum_j \sum_i \gamma_{ij} \ln p_{ik} \ln p_{jk},$$

w_{ik} is the average budget share associated with good i given by

$$w_{ik} = \frac{p_{ik} q_{ik}}{y_k},$$

α_i is the constant coefficient in the share equation i, γ_{ij} is the slope coefficient associated with good j in the share equation i, p_{jk} is the price on good j, and q_{ik} is the quantity consumed of good i. The model implies non-linear Engel curves and automatically satisfies the adding-up restriction. Moreover, homogeneity and symmetry can be imposed through simple parametric restrictions. However, the fact that the price index is not linear in parameters makes the AIDS model difficult to estimate. Deaton and Muellbauer (1980a) also suggested a linear approximation of the nonlinear AIDS model by replacing P_k with Stone's price index (P_k^*):

$$\text{(15)} \qquad \ln(P_k^*) = \sum_j w_{jk} \ln p_{jk} \, .$$

The model with Stone's index is known as linear approximate AIDS (LA/AIDS) (Blanciforti and Green(1983)) and is simple to estimate. Both models imply the following restrictions on the parameters:

$$\text{(16)} \qquad \sum_{i=1}^{n} \alpha_i = 1, \sum_{i=1}^{n} \beta_i = 0, \sum_{i=1}^{n} \gamma_{ij} = 0$$

Homogeneity is satisfied if and only if, for all i $\sum_{j=1}^{n} \gamma_{ij} = 0$, and symmetry is satisfied if and only if $\gamma_{ij} = \gamma_{ji}$.

The general framework of calculating own-price, cross-price and expenditure elasticities are based on the formulas provided by Green and Alston(1990). All elasticity estimates are evaluated at the sample means. The formulas for the elasticities will be given following the discussion of censoring correction techniques.

As mentioned previously, the total expenditure, y_k, acts as a denominator in calculation of the average budget share. Consequently, only observations corresponding to non-zero total expenditures can be used in the empirical estimation of the AIDS model. That is, the AIDS model is designed to be conditional on total expenditure being positive. Having zero total expenditure is equivalent to not consuming any product from the group of goods. This issue was not a problem with this data since every household purchased at least one nonalcoholic beverage in the year 1999. However, there is a problem with censoring. Censoring occurs if each household fails to purchase a good from each of the groupings in the system. Censoring is common since some households do not prefer certain beverages. Consequently, zero budget shares exist for certain observations, and if not handled correctly can bias the results. Censoring affects the system both within each equation and across equations.

Asatryan conducted an in-depth look into censored corrected demand systems, the following is from his 2003 dissertation. In the literature different procedures have been developed to deal with censored demand systems (i.e., demand systems involving zero budget shares). These studies, described thoroughly by Yen, Lin, and Smallwood, can be broadly grouped into four categories. The first group includes the procedures developed by Amemiya (1974); Wales and Woodland (1983); Lee and Pitt (1986, 1987); and Lee (1993). Amemiya (1974) developed a full-information maximum likelihood estimation procedure to handle the censoring problem. Wales and Woodland (1983) built the likelihood function from the Kuhn-Tucker conditions of constrained maximization of a stochastic direct utility function. Lee and Pitt (1986, 1987), and Lee (1993) proposed a dual approach to Wales and Woodland's (1983) procedure. The common factor for those procedures is that all of them are based on the incorporation of multiple probability integrals in the likelihood function.

The second group of procedures produces consistent estimators based on two-step or multi-step estimation of a censored demand system. Hein and Wessels(1990) with their two-step censored-system estimator, Shonkwiler and Yen(1999) with their estimator based on probit estimation in the first stage and a selectivity-adjusted equation system in the second stage, and Perali and Chavas(2000) with their multi-step procedure belong to the second group.

The third group of procedures, known as the simulated-maximum-likelihood (SML) techniques, were developed by Börch-Supan and Hajivassiliou(1993), Geweke(1991), and Keane(1993). These methods are based on the simulation of the multivariate normal probabilities. An application of this approach is given in Kao, Lee, and Pitt(2001).

The fourth group, known as quasi-maximum-likelihood methods (QML), was initiated by Avery, Hansen, and Hotz(1983); and Avery and Hotz(1985) in the context of a multivariate probit model. These procedures are based on the approximation of the multivariate likelihood function with a sequence of bivariate specifications. Harris and Shonkwiler(1997) as well as Yen and Lin(2002) have used the QML approach in the estimation of a censored linear single-equation model. Yen, Lin, and Smallwood(2003) proposed and applied the QML approach to a censored Translog demand system for foods, using a sample of food stamp recipients in the United States. They found that the QML procedure produces remarkably close parameter and elasticity estimates to those of SML procedure. A two-step procedure also was considered but that procedure produced slightly different elasticities from the QML method.

Overall, there are many methods to correct for censoring in demand systems. The majority of the methods discussed dealt with demand systems of four groupings of goods or less. The complications of using some of the methods for larger systems, like the two systems considered in this study, increase greatly as system size increases. The two-step procedures differ in this degree. The results garnered in the literature from the consistent two-step procedure of Shonkwiler and Yen are comparable to the findings of selected other methods when compared. Therefore the Shonkwiler and Yen procedure is selected to handle censoring for the purposes of this dissertation.

In the next section we present the linear approximate Almost Ideal Demand System (LA/AIDS) model of Deaton and Muellbauer (1980a,b) that is corrected for censoring via the Shonkwiler and Yen consistent two-step procedure.

First (or Selection) Stage: Estimate Probit Models for Each Good

In the first stage Shonkwiler and Yen suggest estimating the probability of consuming each individual product in the system of goods through qualitative choice probit models. The qualitative choice models can be represented by this general form

$$y_{1ik}^{*} = \mathbf{x}_{1ik}^{'}\boldsymbol{\beta}_{1i} + \varepsilon_{1ik} \qquad \textit{latent selection equations}$$

where $i = 1,...,N$ is the number of goods in the system, and $k = 1,2,...,T$ is the number of observations in the sample, y_{1ik}^{*} represents a latent selection variable for good i, $\mathbf{x}_{1ik}$ is a vector of explanatory variables in the latent selection equation for good i, $\boldsymbol{\beta}_{1i}$ is a vector of parameters in the latent selection equation for good i, and the error term in the latent selection equation for good i has a standard normal distribution (i.e., ε_{1ik} ~N(0,1)).

Hence, we observe only

$$y_{1ik} = \begin{cases} 1 & \text{if } \; y_{1ik}^{*} > 0 \\ 0 & \text{if } \; y_{1ik}^{*} \leq 0 \end{cases} \qquad \textit{probit selection equations}$$

The cumulative distribution function and the probability distribution function are calculated in this stage and further applied in the second stage.

Second (or Intake) Stage: Adjust for Zero Consumption in the System of Equations Model

$$y_{2ik}^{*} = \boldsymbol{x}_{2ik}^{'}\boldsymbol{\beta}_{2i} + \varepsilon_{2ik} \qquad \textit{latent equations}$$

$$y_{2ik} = \begin{cases} y_{2ik}^{*} & \text{if } \; y_{1ik} = 1: \quad \Pr ob(y_{1ik} = 1\ ) \\ 0 & \text{if } \; y_{1ik} = 0: \quad \Pr ob(y_{1ik} = 0\ ) \end{cases} \qquad \textit{System of equations}$$

where $i = 1,..., N$ is the number of goods in the system, and $k = 1, 2,..., T$ is the number of observations in the sample, y_{2ik}^{*} is the latent intake variable for good i, $\boldsymbol{x}_{2ik}$ is a vector of explanatory variables in the latent intake equation for good i, $\boldsymbol{\beta}_{2i}$ is a vector of parameters in the latent intake equation for good i, and ε_{2ik} represents the error term in the latent intake equation for good i.

The expectation of y_{2ik} conditional on $y_{1ik} = 1$ for the ith product is

$$E\left[y_{2ik} \mid y_{1ik} = 1\right] = \boldsymbol{x}_{2ik}^{'}\boldsymbol{\beta}_{2i} + \sigma_{\varepsilon_{1ik}\varepsilon_{2ik}} * \frac{\phi\left(y_{1ik} = 1\right)}{\Phi\left(y_{1ik} = 1\right)}$$

where $\Phi\left(y_{1ik} = 1\right) \equiv \text{Prob}\left(y_{1ik} = 1\right)$ is the cumulative distribution function (cdf) for good i, $\phi\left(y_{1ik} = 1\right)$ is the probability distribution function (pdf) for good i, $\dfrac{\phi\left(y_{1ik} = 1\right)}{\Phi\left(y_{1ik} = 1\right)}$ is the Mills ratio representing good i (Heckman (1976)), $\sigma_{\varepsilon_{1ik}\varepsilon_{2ik}}$ is the parameter associated with the Mills ratio for good i, and $E\left[y_{2ik} \mid y_{1ik}=1\right]$ is the expected value of y_{2ik} conditional on $y_{1ik}=1$. The expectation of y_{2ik} conditional on $y_{1ik}=0$ is $E\left[y_{2ik} \mid y_{1ik}=0\right]=0$, because nonparticipation is reflected in zero consumption of a good. Then, the unconditional expectation of the good i involved in Seemingly Unrelated Regressions is

$$\begin{aligned} E\left[y_{2ik}\right] &= \Phi\left(y_{1ik}=1\right) * E\left[y_{2ik} \mid y_{1ik}=1\right] + \Phi\left(y_{1ik}=0\right) * E\left[y_{2ik} \mid y_{1ik}=0\right] \\ &= \Phi\left(y_{1ik}=1\right) * x_{2ik}^{'}\beta_{2i} + \sigma_{\varepsilon_{1ik}\varepsilon_{1ik}} * \phi\left(y_{1ik}=1\right) \end{aligned} \tag{17}$$

where $\Phi\left(y_{1ik}=0\right) \equiv \text{Prob}\left(y_{1ik}=0\right)$.

In summary, a probit is run for each beverage in the system, one probit for each equation. These are the same probit models that were discussed earlier. The cdf and pdf is saved from the probit for each beverage equation. The right-hand side variables are all of the prices in the system and the total expenditure portions including the Stone's price index as given above. All right-hand side variables in the LA/AIDS model are multiplied by the appropriate cdf for each equation. The pdf is added to each respective equation as an extra regressor. The dependent variable is the budget share as is usual in the LA/AIDS model. Seemingly unrelated regression(SUR) estimation is then used.

The Shonkwiler and Yen technique does not affect the homogeneity restriction. However, the symmetry restriction must be handled carefully. Recall the condition that must hold in order for symmetry to be satisfied $\gamma_{ij}=\gamma_{ji}$. With the cdf's being multiplied through, the condition becomes $\text{cdf}_i\gamma_{ij}=\gamma_{ji}\text{cdf}_j$.

Next, we give the formulas for elasticities of the prices and expenditures for the LA/AIDS model. Model (iii) of Green and Alston(1990), i.e. treating shares as exogenous, is used in the elasticity calculation.

Own-price Elasticity

The uncompensated own-price elasticity for the ith good is as follows.

(18) $$\varepsilon_{ii} = \frac{\gamma_{ii}}{w_i} - \beta_i - 1$$

Own-price Elasticity Evaluated at Mean Budget Share $\overline{w_i}$

Cross-price Elasticity

The uncompensated cross-price elasticity between ith and jth commodities is as follows.

(19) $$\varepsilon_{ij} = \frac{\gamma_{ij} - \beta_i w_j}{w_i}$$

Cross-price Elasticity Evaluated at Mean Budget Shares $\overline{w_i}$ *and* $\overline{w_j}$

Compensated cross-price elasticities are calculated based on Slutsky's equation

$$\varepsilon_{ij}^{\bullet} = \varepsilon_{ij} + w_j \eta_i \, .$$

Expenditure Elasticity

The expenditure elasticity is derived from the following formula

(20) $$\eta_i = \frac{\beta_i}{w_i} + 1$$

Expenditure Elasticity Evaluated at Mean Budget Share $\overline{w_i}$

As discussed in Chapter II, two different groupings of nonalcoholic beverages will be analyzed with the demand systems. The two groupings for the annual data set are given in table 16 and table 17. The two groupings for the quarterly data set are given in table 18 and table 19.The percentage of households that consumed each beverage and the average budget shares for each beverage are given. Note the decrease in data density of the quarterly data compared to the annual data.

Table 16. Beverages Analyzed in the 8 Good Annual Demand System

#	Beverage	Total = 5715	Data Density	Budget Share
1	milk	5648	98.83	25.43
2	carbonated soft drinks	5630	98.51	29.28
3	powdered soft drinks	2863	50.10	1.81
4	isotonics	1870	32.72	1.15
5	bottled water	3996	69.92	3.21
6	juices and fruit drinks	5655	98.95	25.58
7	coffee	4469	78.20	9.45
8	tea	4359	76.27	4.09

Table 17. Beverages Analyzed in the 16 Good Annual Demand System

#	Beverage	Total = 5715	Data Density	Budget Share
1	whole fat flavored and unflavored milk	3157	55.24	4.84
2	reduced fat flavored and unflavored milk	5210	91.16	20.59
3	carbonated soft drinks - regular	5419	94.82	18.27
4	carbonated soft drinks - low calorie	4166	72.90	11.00
5	powdered soft drinks	2863	50.10	1.81
6	isotonics	1870	32.72	1.15
7	bottled water	3996	69.92	3.21
8	orange juice	4981	87.16	9.36
9	apple juice	3323	58.15	1.87
10	other juices	4800	83.99	6.77
11	fruit drinks	4661	81.56	5.88
12	vegetable juice	2798	48.96	1.71
13	coffee regular	4131	72.28	7.64
14	coffee decaffeinated	1675	29.31	1.81
15	tea regular	3860	67.54	2.86
16	tea decaffeinated	2072	36.26	1.23

Table 18. Beverages Analyzed in the 8 Good Quarterly Demand System

#	Beverage	Total = 22860	Data Density	Budget Share
1	milk	15816	69.19	26.39
2	carbonated soft drinks	15062	65.89	28.48
3	powdered soft drinks	4023	17.60	1.67
4	isotonics	2548	11.15	1.14
5	bottled water	6661	29.14	3.12
6	juices and fruit drinks	15270	66.80	25.58
7	coffee	9728	42.55	9.57
8	tea	7938	34.72	4.05

Table 19. Beverages Analyzed in the 16 Good Quarterly Demand System

#	Beverage	Total = 22860	Data Density	Budget Share
1	whole fat flavored and unflavored milk	5529	24.19	4.54
2	reduced fat flavored and unflavored milk	14042	61.43	21.85
3	carbonated soft drinks - regular	13228	57.87	17.26
4	carbonated soft drinks - low calorie	9229	40.37	11.22
5	powdered soft drinks	4023	17.60	1.67
6	isotonics	2548	11.15	1.14
7	bottled water	6661	29.14	3.12
8	orange juice	11155	48.80	9.67
9	apple juice	5216	22.82	1.87
10	other juices	9582	41.92	6.75
11	fruit drinks	9251	40.47	5.65
12	vegetable juice	4043	17.69	1.65
13	coffee regular	8506	37.21	7.64
14	coffee decaffeinated	2738	11.98	1.93
15	tea regular	6413	28.05	2.79
16	tea decaffeinated	2950	12.90	1.26

The demand analysis will generate compensated elasticities, uncompensated elasticities, and expenditure elasticities. The two groupings of goods as well as the annual and quarterly data sets will be utilized. In addition, a comparison will be made between systems corrected for censoring and systems that are not corrected for censoring. Lastly, separate demand systems will be estimated for each region, poverty status level, race, and for households with and without children present using the eight good annual data set. For all statistical analysis the level of significance chosen is 0.05. Results, which will include a detailed analysis of substitution and complementary effects, are discussed in Chapter VII.

CHAPTER IV

EMPIRICAL RESULTS ASSOCIATED WITH THE CHOICE TO CONSUME

Introduction

In this chapter, we discuss the results of the twenty-four probit models concerning the choice of consumption of nonalcoholic beverages. The demographics associated with choice of consumption are of interest. A probit analysis is used to determine which demographics are responsible for a household choosing to consume or choosing not to consume a beverage. This analysis will reveal the statistically significant demographics associated with the choice of consumption. The demographic variables along with the categories in each group and the beverages to be analyzed in the probit analysis were discussed in Chapter III.

The probit results are summarized in table 20. Each beverage is listed along with the demographic category. If the demographic category was statistically significant at the .05 level in affecting the decision to consume the beverage, then an "X" is presented in the table. An F-test was conducted on the categories in each demographic group to find the statistically significant drivers.

Table 20. Summary of Probit Findings: Significant Demographic Categories

		Household Size	Age of Household Head	Presence of Children	Household Head Employment	Household Head Education	Race	Hispanic	Region	Poverty Status
1	Whole Fat Flavored And Unflavored Milk	X		X	X	X	X		X	X
2	Reduced Fat Flavored And Unflavored Milk	X		X		X	X	X		X
3	Carbonated Soft Drinks - Regular	X								
4	Carbonated Soft Drinks - Low Calorie	X					X			X
5	Powdered Soft Drinks	X		X						
6	Isotonics	X		X	X				X	X
7	Bottled Water	X			X		X			X
8	Orange Juice	X					X		X	
9	Apple Juice	X		X		X				
10	Other Juices	X							X	
11	Fruit Drinks	X		X			X			
12	Vegetable Juice	X					X		X	
13	Coffee Regular	X	X	X	X		X		X	X
14	Coffee Decaffeinated	X			X		X		X	X
15	Tea Regular	X		X			X		X	
16	Tea Decaffeinated	X				X			X	
17	Flavored Milk	X					X		X	
18	Unflavored Milk	X					X			
19	Flavored Milk -- Whole	X					X	X	X	
20	Flavored Milk – Reduced Fat	X							X	
21	Whole Milk Unflavored			X	X	X	X		X	X
22	2% Milk Unflavored	X					X		X	
23	1 % Milk Unflavored	X	X				X		X	
24	Skim Milk Unflavored					X			X	X

This table shows which demographics are significant(95 % level) in determining whether or not a household consumes any of the beverages.
If an "X" appears then the demographic is significant.

Race, region, and presence of children within the household are important in the decision to consume many of the beverages. Household size affected the decision to consume for twenty-two of the twenty-four beverages examined. The demographic affect pertaining to household size is understandable since larger households typically purchase more goods at grocery stores and would be less apt to eat or drink away from the home. The presence of a child in a household affected the decision of a household to consume whole and reduced fat milk, apple juice, fruit drinks, isotonics, powdered soft drinks, and coffee. Poverty status of the household affected nine of the beverages studied: whole and reduced fat milk, skim milk, low-calorie soft drinks, coffee, fruit juices, isotonics, powdered soft drinks, and bottled water.

Appendix E gives the probit results beverage by beverage in detail. The results for each beverage subsequently are discussed. For each beverage, a probit model was run and the p-values associated with each demographic category were retrieved. The marginal effects of each demographic category were computed which shows the magnitude of the increase or decrease in the probability of consumption of the beverage, relative to a base category. Lastly, an F-test on each demographic group also was conducted. All estimations were performed using TSP. Discussions of each beverage and the demographics important concerning choice now are given. Key demographic marginal effects for selected beverages are given in graphical form.

Beverage #1. Whole - Flavored and Unflavored Milk

Household size, presence of children, household head employment, household head education, race, region, and 130% of poverty are demographics that affect the choice to consume whole milk. Having a larger household size increases the probability of consumption of whole milk.

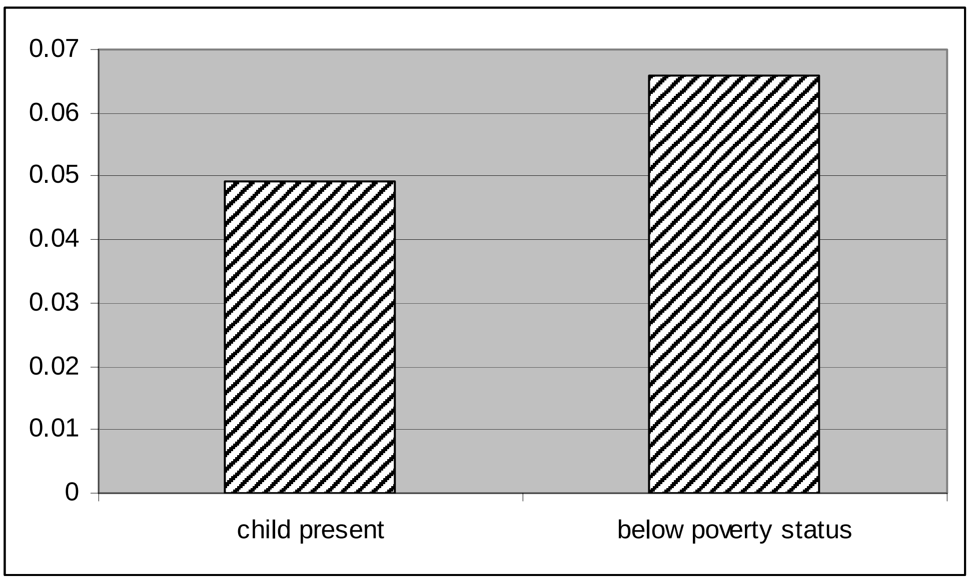

Figure 5. Marginal effects for whole milk

Households with a child present are more likely to consume whole milk at home than households with no children present. Figure 5 indicates that households with a child present are five percent more likely to purchase whole milk. Households with a head that is employed are less likely to consume whole milk. Households containing a head that is more educated are less likely to consume whole milk. Black households are more likely to consume whole milk compared to white households. Households in the Central and West regions are less likely to consume whole milk compared to households in the East region. Households under 130% of poverty are more likely to consume whole milk than households over 130% of poverty. Figure 1 indicates that households under 130% of poverty are over six percent more likely to purchase whole milk.

Beverage #2. Reduced Fat - Flavored and Unflavored Milk

Household size, presence of children, household head education, race, Hispanic origin, and 130% of poverty are demographics that affect the choice to consume reduced fat milk. Having a larger household size increases the probability of consumption of reduced fat milk. Households with a child present are more likely to consume reduced fat at home than households with no children present. Households containing a head that is more educated are more likely to consume reduced fat milk.

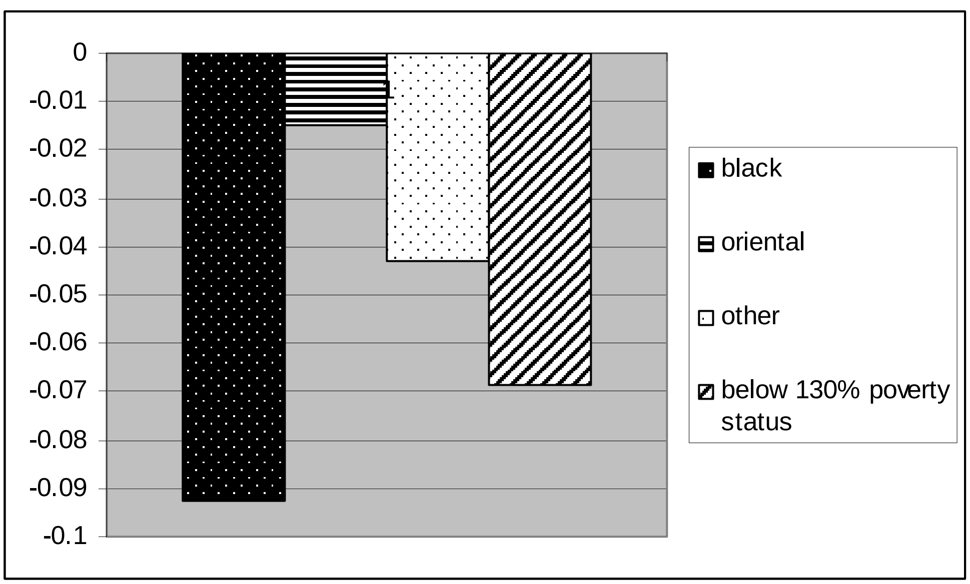

Figure 6. Marginal effects for reduced fat milk

Black and other race households are less likely to consume reduced fat milk when compared to white households. Figure 6 indicates that black households are much less likely to purchase reduced fat milk. Households of Hispanic origin are less likely to consume reduced fat milk. Households under 130% of poverty are less likely to consume reduced fat milk than households over 130% of poverty, figure 2 indicates that households below 130% are almost seven percent less likely to consume reduced fat milk compared to households above 130% of poverty.

Beverage #3. Carbonated Soft Drinks - Regular

Household size was the only demographic that affects the choice to consume carbonated soft drinks.

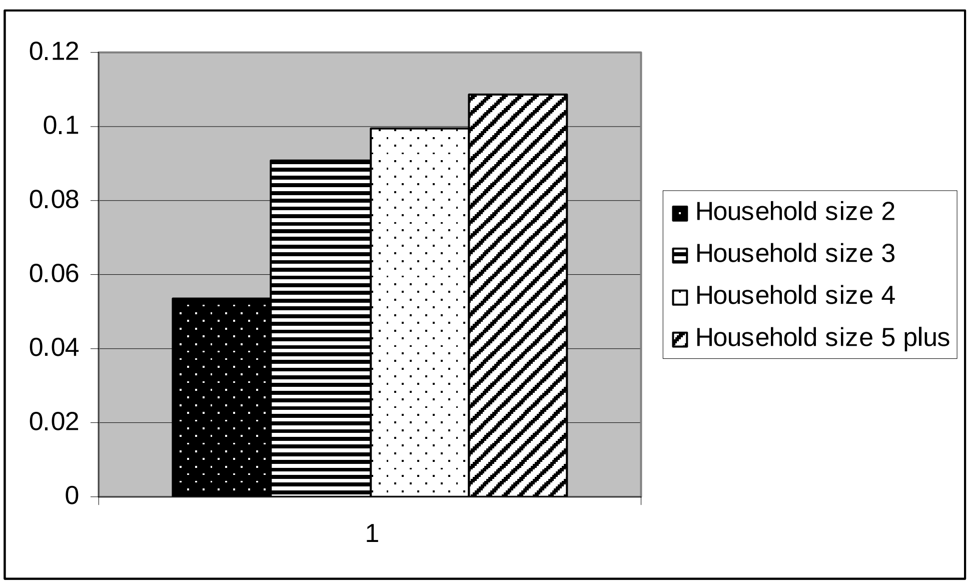

Figure 7. Marginal effects for regular carbonated soft drinks

Having a larger household size increases the probability of consumption of carbonated soft drinks. Figure 7 indicates how the probability of consumption increases as household size increases. No other demographics were found to affect the choice of consumption.

Beverage #4. Carbonated Soft Drinks – Low Calorie

Household size, race, and 130% of poverty are demographics that affect the choice to consume low-calorie soft drinks. Having a larger household size increases the probability of consumption of low -calorie carbonated soft drinks. Black and other race households are less likely to consume low -calorie carbonated soft drinks when compared to white households. Households under 130% of poverty are less likely to consume low -calorie carbonated soft drinks than households over 130% of poverty.

Beverage #5. Powdered Soft Drinks

Household size and the presence of children are demographics that affect the choice to consume powdered soft drinks. Having a larger household size increases the probability of consumption of powdered soft drinks.

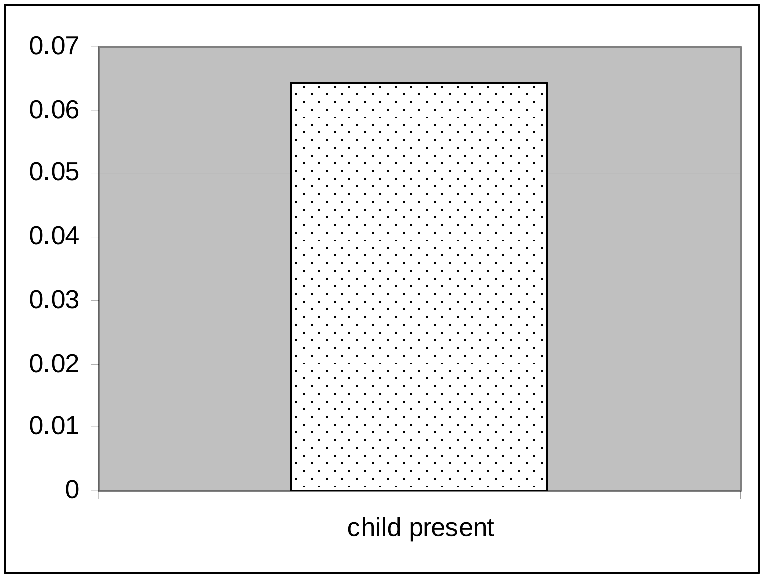

Figure 8. Marginal effects for powdered soft drinks

Figure 8 indicates that households with a child present are more likely to consume powdered soft drinks by almost six percent when compared to households with no children present. Households below 130% of poverty status were shown to be more likely to purchase powdered soft drinks when compared to households above 130% of poverty status, but the result was not statistically significant.

Beverage #6. Isotonics

Household size, presence of children, region, and 130% of poverty are demographics that affect the choice to consume isotonics. Having a larger household size increases the probability of consumption of isotonics. Households with a child present are more likely to consume isotonics at home than households with no children present. Households in the Central, South, and West regions are more likely to consume isotonics compared to households in the East region. Households under 130% of poverty are less likely to consume isotonics than households over 130% of poverty.

Beverage #7. Bottled Water

Household size, household head employment, race, and 130% of poverty are demographics that affect the choice to consume bottled water. Having a larger household size increases the probability of consumption of bottled water. Households with a head that is employed are more likely to consume bottled water.

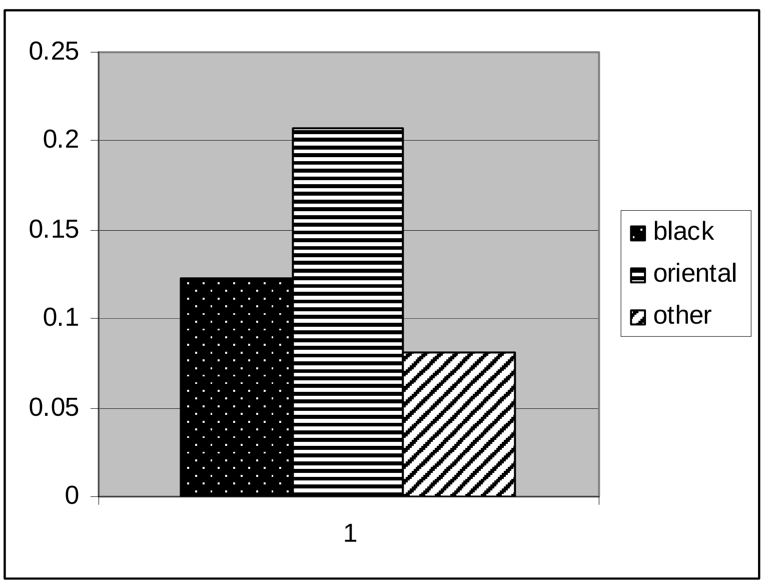

Figure 9. Marginal effects for bottled water

Non-white households are more likely to consume bottled water compared to white households with Oriental households being the most likely to consume as indicated in figure 9. Households under 130% of poverty are less likely to consume bottled water than households over 130% of poverty.

Beverage #8. Orange Juice

Household size, race, and region are demographics that affect the choice to consume orange juice. Having a larger household size increases the probability of consumption of orange juice.

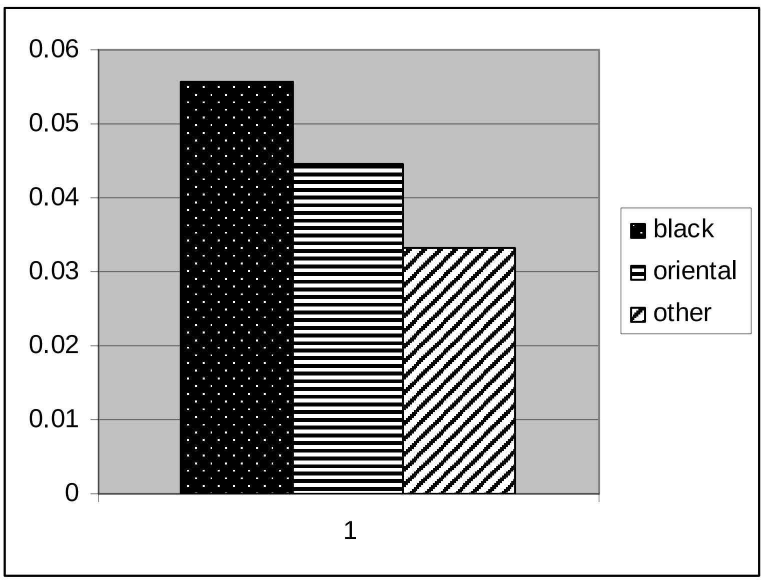

Figure 10. Marginal effects for orange juice

Black households are more likely to consume orange juice compared to white households. Figure 10 indicates that all non-white households are more likely to purchase orange juice. Households in the Central, South, and West regions are less likely to consume orange juice compared to households in the East region.

Beverage #9. Apple Juice

Household size, presence of children, and household head education are demographics that affect the choice to consume apple juice. Having a larger household size increases the probability of consumption of apple juice. Households with a child present are more likely to consume apple juice at home than households with no children present. Households containing a head that is more educated are more likely to consume apple juice.

Beverage #10. Other Juice

Other juice is defined as any juice that is not orange, apple, vegetable, or fruit drinks. Examples include; cranberry, grape, grapefruit, and pineapple. Household size and region are demographics that affect the choice to consume other juices. Having a larger household size increases the probability of consumption of other juices. Households in the Central and South regions are less likely to consume other juices compared to households in the East region.

Beverage #11. Fruit Drinks

Household size, presence of children, and race are demographics that affect the choice to consume fruit drinks. Having a larger household size increases the probability of consumption of fruit drinks. Households with a child present are more likely to consume fruit drinks at home than households with no children present.

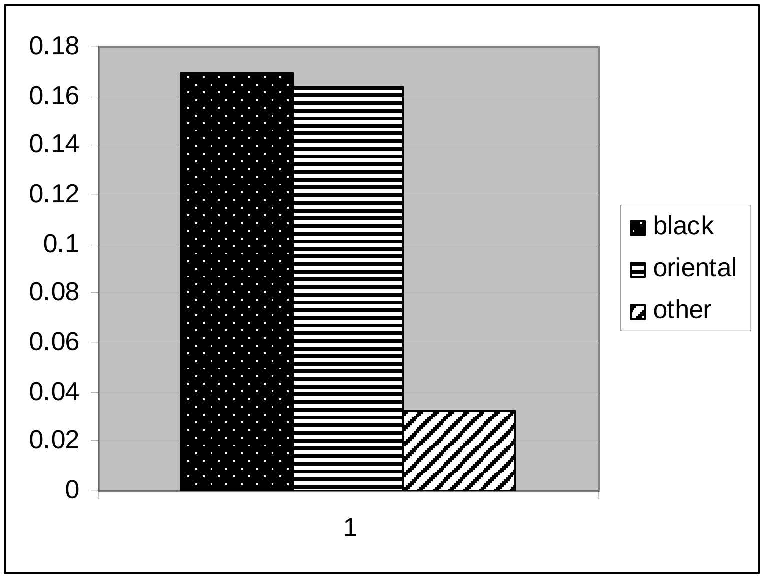

Figure 11. Marginal effects for fruit drinks

Black and Oriental households are more likely to consume fruit drinks compared to white households. Figure 11 indicates that the change in probability of consumption is large for black and Oriental households.

Beverage #12. Vegetable Juice

Household size, race, and region are demographics that affect the choice to consume vegetable juice. Having a larger household size increases the probability of consumption of vegetable juice. Households of other races(not Black or Oriental) are less likely to consume vegetable juice compared to white households. Households in the Central and South regions are more likely to consume vegetable juice compared to households in the East region.

Beverage #13. Coffee – Regular

Household size, age of the household head, presence of children, household head employment, race, region, and 130% of poverty are demographics that affect the choice to consume regular coffee. Having a larger household size increases the probability of consumption of regular coffee.

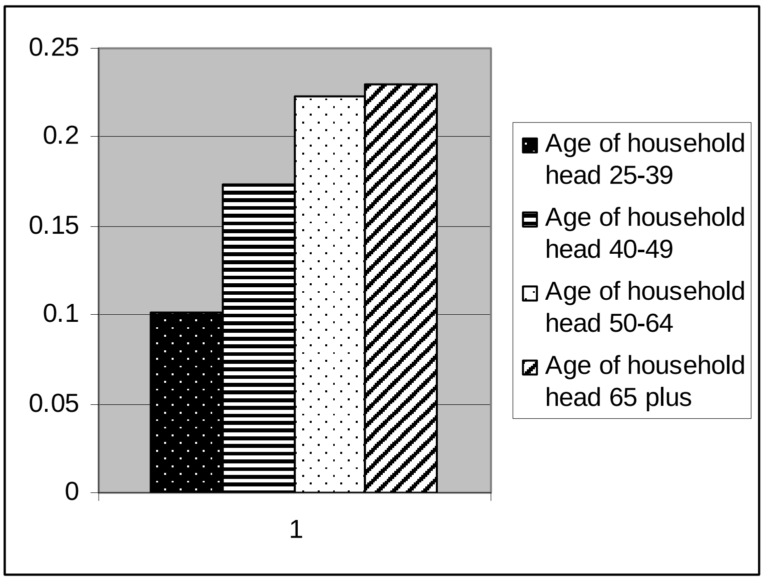

Figure 12. Marginal effects for regular coffee

Household with a head older than forty are much more likely to consume regular coffee when compared to household heads under age twenty-five as indicated in figure 12. Households with a child present are less likely to consume regular coffee at home than households with no children present. Households with a head that is employed are less likely to consume regular coffee. Black households are less likely to consume regular coffee compared to white households. Households in the Central, South, and

West regions are less likely to consume regular coffee compared to households in the East region. Households under 130% of poverty are less likely to consume regular coffee than households over 130% of poverty.

Beverage #14. Coffee – Decaffeinated

Household size, household head employment, race, region, and 130% of poverty are demographics that affect the choice to consume decaffeinated coffee. Having a larger household size increases the probability of consumption of decaffeinated coffee. Households with a head that is employed full time are less likely to consume decaffeinated coffee. Black households are less likely to consume decaffeinated coffee compared to white households. Households in the Central and West regions are less likely to consume decaffeinated coffee compared to households in the East region. Households under 130% of poverty are less likely to consume decaffeinated coffee than households over 130% of poverty.

Beverage #15. Tea – Regular

Household size, presence of children, race, and region are demographics that affect the choice to consume regular tea. Having a larger household size increases the probability of consumption of regular tea. Households with a child present are less likely to consume regular tea at home than households with no children present.

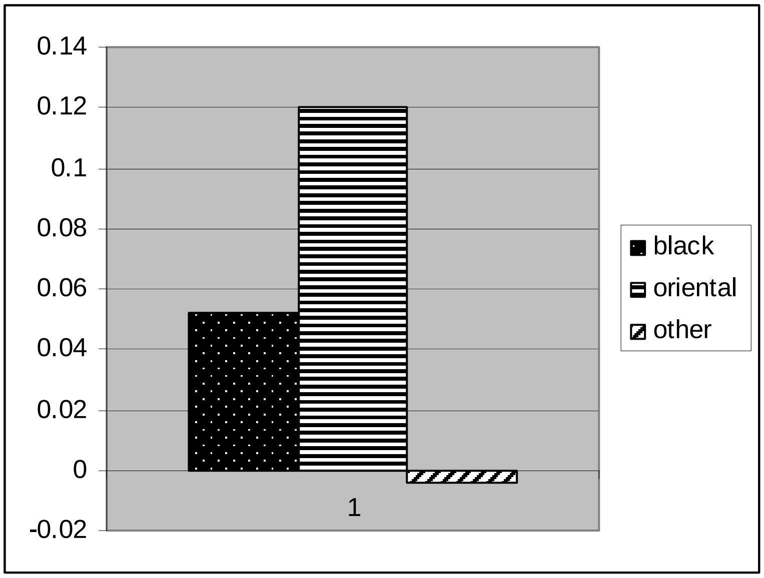

Figure 13. Marginal effects for regular tea

Figure 13 reveals that Black and Oriental households are more likely to consume regular tea compared to white households. Households of other race are less likely to consume regular tea when compared to white households. Households in the Central, South, and West regions are less likely to consume regular tea compared to households in the East region.

Beverage #16. Tea – Decaffeinated

Household size, education of the household head, and region are demographics that affect the choice to consume decaffeinated tea. Having a larger household size increases the probability of consumption of decaffeinated tea. Households with heads that have some college education are more likely to consume decaffeinated tea compared to household heads with a high school degree or lower. Households in the Central and

West regions are less likely to consume decaffeinated tea compared to households in the East region.

Beverages seventeen through twenty-four are finer classifications of milk.

Beverage #17. Flavored Milk

Household size, race, and region are demographics that affect the choice to consume flavored milk. Having a larger household size increases the probability of consumption of flavored milk. Black households are less likely to consume flavored milk compared to white households. Households in the Central and South regions are more likely to consume flavored milk compared to households in the East region.

Beverage #18. Unflavored Milk

Household size and race are demographics that affect the choice to consume flavored milk. Having a larger household size increases the probability of consumption of unflavored milk. Black and other race households are less likely to consume flavored milk compared to white households.

Beverage #19. Flavored Milk - Whole

Household size, race, Hispanic origin, and region are demographics that affect the choice to consume whole flavored milk. Having a larger household size increases the probability of consumption of whole flavored milk. Black households are less likely to consume whole flavored milk compared to white households. Households of Hispanic origin are less likely to drink whole flavored milk. Households in the Central region are more likely to consume whole flavored milk compared to households in the East region.

Beverage #20. Flavored Milk - Reduced Fat

Household size and region are demographics that affect the choice to consume whole flavored milk. Having a larger household size increases the probability of consumption of reduced fat flavored milk. Households in the Central and South regions are more likely to consume whole flavored milk compared to households in the East region while households in the West are less likely to consume whole flavored milk.

Beverage #21. Whole Milk - Unflavored

Presence of children, household head employment, household head education, race, region, and 130% of poverty are demographics that affect the choice to consume whole milk. Households with a child present are more likely to consume whole milk at home than households with no children present. Households with a head that is employed are less likely to consume whole milk. Households containing a head that has at least some college education are less likely to consume whole milk. Black and Oriental households are more likely to consume whole milk compared to white households. Households in the Central and West regions are less likely to consume whole milk compared to households in the East region. Households under 130% of poverty are more likely to consume whole milk than households over 130% of poverty.

Beverage #22. 2 % - Unflavored

Household size, race, and region are demographics that affect the choice to consume two percent milk. Having a larger household size increases the probability of two percent milk consumption. Black households are less likely to consume two percent milk compared to white households. Households in the Central, South, and West regions are more likely to consume two percent milk compared to households in the East region.

Beverage #23. 1 % - Unflavored

Household size, age of the household head, race, and region are demographics that affect the choice to consume one percent milk. Having a larger household size increases the probability of one percent milk consumption. Households with heads over the age of fifty were more likely to consume one percent milk than household heads under age twenty-five. Black and other race households are less likely to consume one percent milk compared to white households. Households in the Central, South, and West regions are less likely to consume one percent milk compared to households in the East region.

Beverage #24. Skim Milk - Unflavored

Education of the household head and region are demographics that affect the choice to consume skim milk. Households with heads obtaining at least some college education were more likely to consume skim milk than household heads with less education. Households in the South and West regions are less likely to consume skim milk compared to households in the East region.

Prediction Success of the Probit Models

After finding that demographics of a household are significant drivers associated with the choice of consumption for each household of a nonalcoholic beverage, an attempt to predict the decision is made. That is, given the information derived from the probit analysis, an in-sample prediction is done. The probability of consumption for each household was estimated following the probit analysis through the use of the software package TSP. If the probability was greater than or equal to the percentage of households in the data set that actually consumed, then the household was predicted to be a purchaser (consumer). For example, if we predict a probability of 0.65 that a household consumed powdered soft drinks, it would be given a “1” for consumption since 0.65 is greater than 0.4852 (the percentage of households in the panel that consumed powdered soft drinks). This process was done for all twenty-four beverages. The results of the prediction evaluations are included in table 21.

Table 21. Probit Evaluations: Contingency Table

		No HID's that consumed	% that actually consumed	PC AC	PNC ANC	PC ANC	PNC AC	Sum check	Correct Predictions	% Correct	% Incorrect	Conditional Measures	
												given ANC	given AC
1	Whole Fat Flavored and Unflavored Milk	3157	55.24	1804	1634	924	1353	5715	3438	0.602	0.398	0.639	0.571
2	Reduced Fat Flavored and Unflavored Milk	5210	91.16	3593	311	194	1617	5715	3904	0.683	0.317	0.616	0.690
3	Carbonated Soft Drinks - Regular	5419	94.82	3551	230	66	1868	5715	3781	0.662	0.338	0.777	0.655
4	Carbonated Soft Drinks – Low Calorie	4166	72.90	2816	801	748	1350	5715	3617	0.633	0.367	0.517	0.676
5	Powdered Soft Drinks	2863	50.10	1743	2080	772	1120	5715	3823	0.669	0.331	0.729	0.609
6	Isotonics	1870	32.72	1142	2579	1266	728	5715	3721	0.651	0.349	0.671	0.611
7	Bottled Water	3996	69.92	2331	1039	680	1665	5715	3370	0.590	0.410	0.604	0.583
8	Orange Juice	4981	87.16	3011	434	300	1970	5715	3445	0.603	0.397	0.591	0.604
9	Apple Juice	3323	58.15	1848	1617	775	1475	5715	3465	0.606	0.394	0.676	0.556
10	Other Juices	4800	83.99	2861	553	362	1939	5715	3414	0.597	0.403	0.604	0.596
11	Fruit Drinks	4661	81.56	2550	880	174	2111	5715	3430	0.600	0.400	0.835	0.547
12	Vegetable Juice	2798	48.96	1680	1501	1416	1118	5715	3181	0.557	0.443	0.515	0.600
13	Coffee Regular	4131	72.28	2537	944	640	1594	5715	3481	0.609	0.391	0.596	0.614
14	Coffee Decaffeinated	1675	29.31	1040	2470	1570	635	5715	3510	0.614	0.386	0.611	0.621
15	Tea Regular	3860	67.54	2172	1108	747	1688	5715	3280	0.574	0.426	0.597	0.563
16	Tea Decaffeinated	2072	36.26	1202	1958	1685	870	5715	3160	0.553	0.447	0.537	0.580
17	Flavored Milk	1701	29.76	1082	2553	1461	619	5715	3635	0.636	0.364	0.636	0.636
18	Unflavored Milk	5642	98.72	3972	50	23	1670	5715	4022	0.704	0.296	0.685	0.704
19	Flavored Milk -- Whole	1186	20.75	745	2774	1755	441	5715	3519	0.616	0.384	0.612	0.628
20	Flavored Milk -- Reduced Fat	1011	17.69	665	2977	1727	346	5715	3642	0.637	0.363	0.633	0.658
21	Whole Milk Unflavored	2700	47.24	1567	1915	1100	1133	5715	3482	0.609	0.391	0.635	0.580
22	2% Milk Unflavored	3821	66.86	2274	1014	880	1547	5715	3288	0.575	0.425	0.535	0.595

Table 21. continued

	No HID's that consumed	% that actually consumed	PC AC	PNC ANC	PC ANC	PNC AC	Sum check	Correct Predictions	% Correct	% Incorrect	Conditional Measures given ANC	Conditional Measures given AC
23 1 % Milk Unflavored	2360	41.29	1410	1914	1441	950	5715	3324	0.582	0.418	0.570	0.597
24 Skim Milk Unflavored	3017	52.79	1853	1426	1272	1164	5715	3279	0.574	0.426	0.529	0.614

PC=Predicted quantity consumed
PNC=Predicted quantity not consumed
AC=Actually quantity consumed
ANC=Actually quantity not consumed

Overall, knowing the demographics helps in predicting consumption of a beverage within this data set. Table 21 breaks down the findings into several categories. The percentage of total correct predictions (correctly predicting if the beverage was consumed and correctly predicting if the beverage was not consumed) is given in one column. The hardest beverage to predict was decaffeinated tea with only a 55.3 percent correct prediction. The choice of consumption of unflavored milk was the easiest with correct predictions of over 70 percent. The last two columns show that the probit analysis helps predict which households will consume, given that they actually do, as well as predicting which households will not consume, given that they actually do not. For the nonalcoholic beverages considered, the probit models correctly predicted household purchase behavior in 54.7 percent (fruit drinks) to 80.9 percent (unflavored milk) of the sample of 5,715 households. For non-purchase behavior, the probit models were correct in 51.5 percent (decaffeinated tea) to 83.5 percent (fruit drinks) of the sample.

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CHAPTER V

EMPIRICAL RESULTS ASSOCIATED WITH CROSS TABULATIONS AND THE HECKMAN SAMPLE SELECTION MODEL

Introduction

In this chapter results concerning the level of consumption of nonalcoholic beverages are discussed. Two procedures were used to analyze level consumption drivers. First, the results of the cross tabulations are discussed. Subsequently, the Heckman results are reported and discussed beverage by beverage.

Cross Tabulations

Cross tabulations were used to examine the demographic tendencies to consume various levels of nonalcoholic beverages. With this procedure, a specific demographic variable is identified and summary statistics are computed for the records in the data set that correspond to only those demographic criteria. For example, the average consumption in gallons per household of a selected beverage is calculated for each demographic category. The average that is calculated includes only the average of households that consume. After all demographic variables are tabulated comparisons can be made. To illustrate, the demographic variable, ‘household region,’ includes four categories: East, Central, South, and West. Average levels of consumption for the households in each region were calculated. A comparison among the households in the four regions quickly reveals if there is a difference in the level of consumption from one region to another. The number of households consuming each beverage in each demographic category also is included in this treatment.

The demographic variables used in the cross tabulation analysis include poverty level, household size, presence of children, age of female household head, female household head employment, female household head education, race, region, Hispanic origin, and seasonality. The cross tabulation tables are exhibited in Appendix F. Each demographic table is discussed below. Beverage consumption differences within each demographic are emphasized.

130 Percent of Poverty

Instead of using only the income demographic given in the ACNielsen HomeScan data, a poverty threshold demographic also was calculated according to Bureau of Census poverty specifications. Both income and household size were used for determining households below and above the poverty threshold. Guidelines for this delineation are given in Appendix B. We are using 130% of poverty in this study because it is cut-off level for Food Stamp eligibility and for free school meals. 277 of the 5715 households fell into the below 130% poverty range.

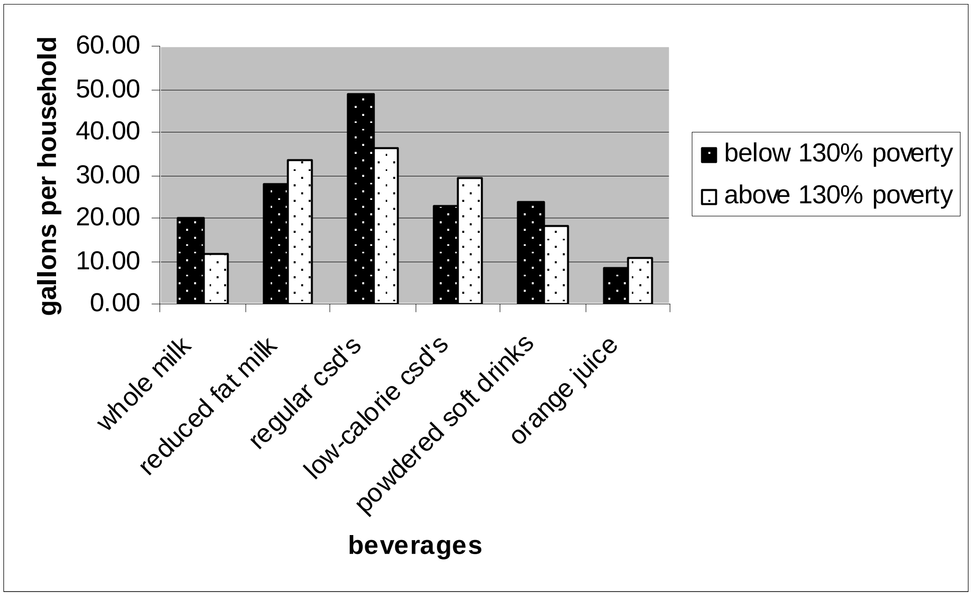


Figure 14. Household intake of selected nonalcoholic beverages by poverty status

Figure 14 reveals that households above 130% of poverty consumed more orange juice on average. Households below 130% of poverty consumed over five more gallons of powdered soft drinks a year and consumed over twelve more gallons of regular carbonated soft drinks per year when compared to households above 130% of poverty. Above 130% poverty households consumed more low-calorie soft drinks and over five more gallons of bottled water per year as compared with the households below 130% of poverty. Above poverty households also consumed more 2 percent, 1 percent, and skim milk while households below 130% of poverty consumed more unflavored whole milk.

Household Size

The household size demographic has nine categories ranging from one household member to nine or more and includes average purchases by household size for those that bought. No household had more than nine members with the mean household size in the panel being 2.61 members. The largest category was the household size of two that had 2,233 observations of the 5,715 households in the data set.

As household size increases, the average consumption typically increases. This finding is largely due to the fact that our data deal primarily with food-at-home purchases. As family size increases, the household is less apt to dine out or eat away from home for budgetary reasons. Almost every beverage listed is consumed in greater amounts in households with two or more persons compared to single-person households. Single-person households are either eating more on the go or away from home than multi-person households. As household size increases powdered soft drinks, milk, and carbonated soft drinks are more heavily consumed at home.

Presence of Children

For comparison purposes, two categories for the presence of children demographic were constructed. 1772 of the 5715 households had at least one child present under the age of eighteen. Figure 15 gives intake levels by presence of children.

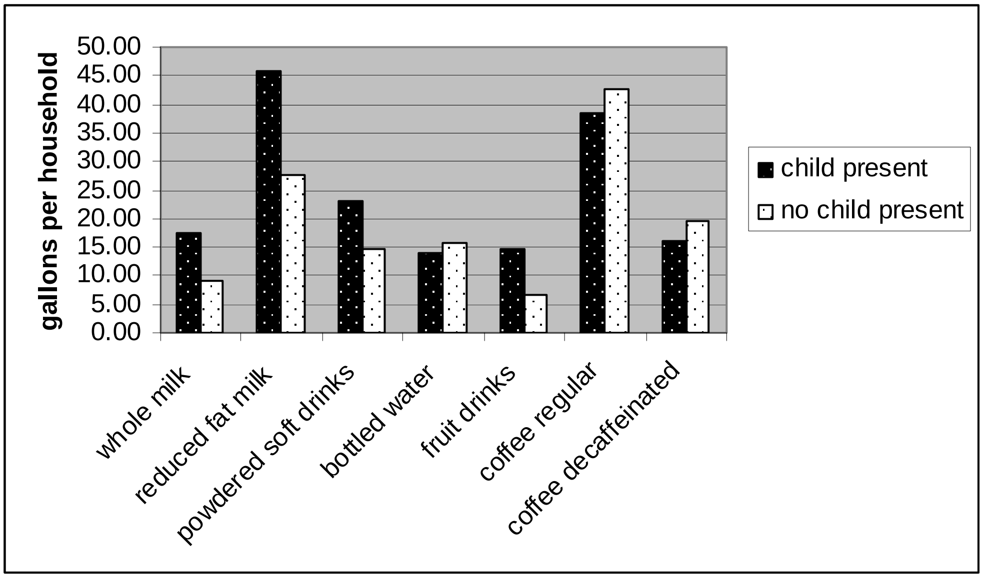


Figure 15. Household intake of selected nonalcoholic beverages by presence of children within the household

Households with a child present consumed more milk across all milk types than did households with no child present. Households with a child present consumed 23 more gallons of unflavored white milk on average than did households without a child present. Households with children present also consumed greater quantities of powdered soft drinks and fruit drinks. Households without a child present consumed more coffee and bottled water.

Female Head of Household

Three demographics concerning the female head of household were looked at next. We assume that the female head is largely responsible for food at home purchases. Age, employment status, and education level of the household head are now discussed.

474 of the households had no female head of household or the household gave no information regarding age, employment, or education of a female head.

Age of the Female Head of Household

There are ten categories of age for female head of households. Households with the female head under twenty-five years of age drank more powdered soft drinks than all remaining households with female heads that are older.

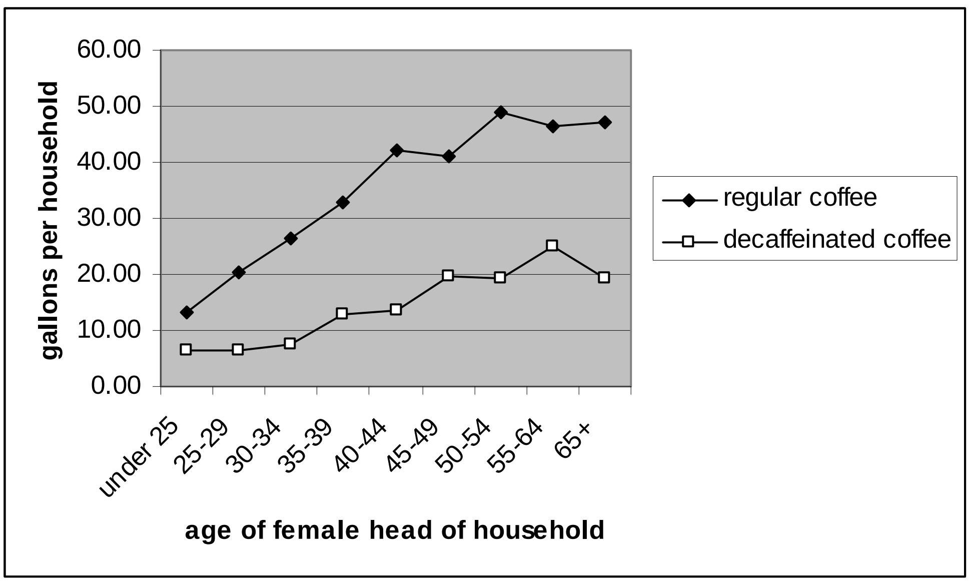


Figure 16. Household intake of coffee by age of female head of household

Figure 16 indicates that households with older female heads drink considerably more regular coffee than households with younger female heads. Regular coffee consumption ranges from 13.24 gallons for households with female heads under age of 25, compared to 46.96 gallons for households with 65 plus aged female heads.

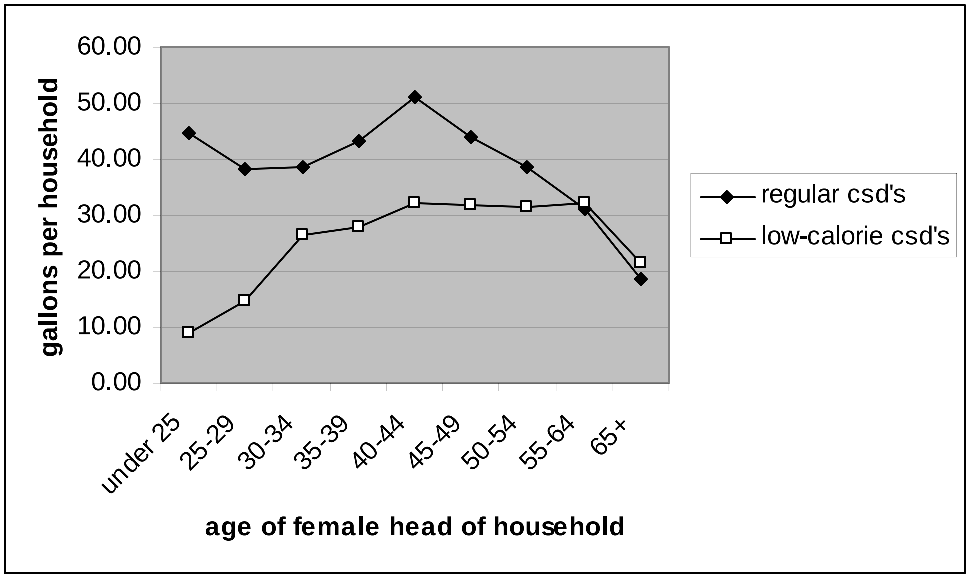


Figure 17. Household intake of carbonated soft drinks by age of female head of household

Regular carbonated soft drink consumption for households with female heads at age 40-44 is highest at 51 gallons. Regular carbonated soft drink consumption decreases within households as the age of the female head increases from age 45 according to figure 17.

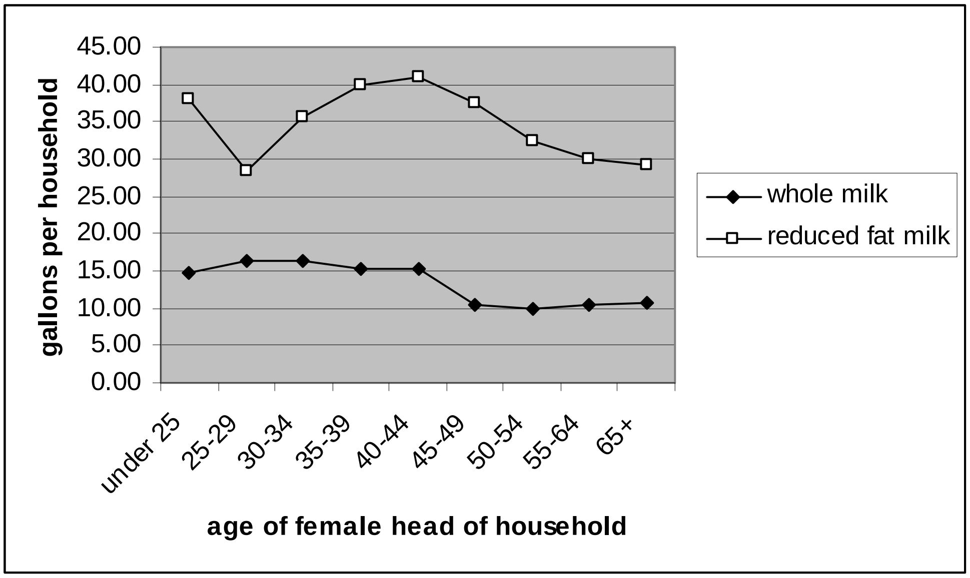


Figure 18. Household intake of milk by age of female head of household

Figure 18 indicates that reduced fat and whole milk consumption also varies for the differing aged female head households. Reduced fat milk household intake is 38.13 gallons for female heads under the age of twenty-five and then drops to 28.27 gallons for age 25-29 female heads. From this level it slowly increases until the female head is 45, then the average household consumption of reduced fat milk decreases. Whole milk consumption does not vary as much among household heads of different ages.

Employment of Female Head of Household

There are four categories of employment ranging from not employed to three different categories of hours worked per week. The majority of the beverage consumption changes little from one classification to the next. One notable difference is the consumption of regular coffee for households where the female head is not employed for pay. See figures 19-20 for the intakes by households by employment status of the female head.

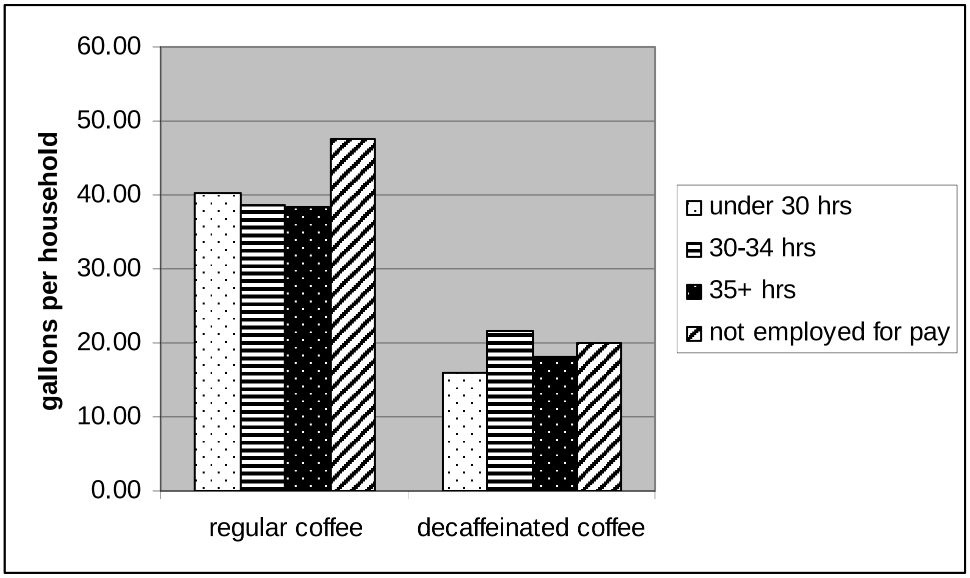


Figure 19. Household intake of coffee by employment of female head of household

Households with unemployed female heads drink more coffee than households with employed female heads. The average consumption is 47.66 gallons per year for unemployed female head households. This is seven gallons greater than a household with a part-time employed female head.

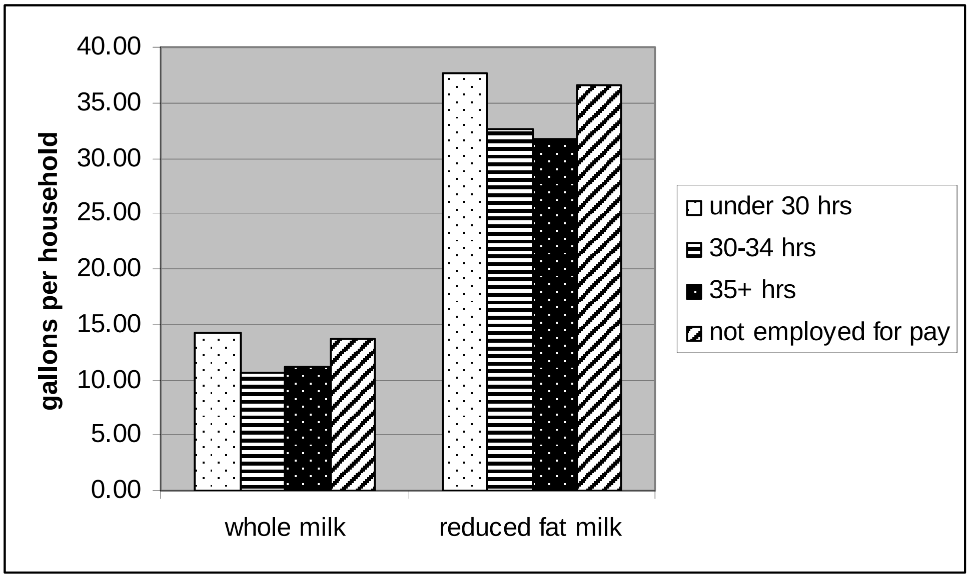


Figure 20. Household intake of milk by employment of female head of household

Lastly, households that contain a female head who works less than 30 hours per week drink more whole and reduced fat milk on average than other households.

Education of Female Head of Household

There are six categories for education ranging from grade school education to post college education. There were 1781 of the households in the data set that included a female head that attained some college education followed by 1464 households where the female head had graduated from college.

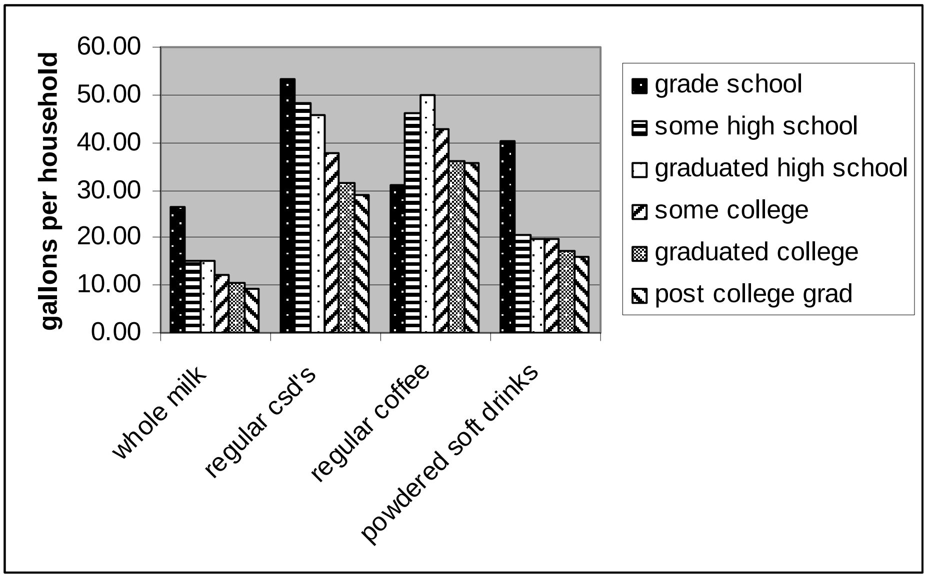


Figure 21. Household intake of selected beverages by education of female head of household

Figure 21 indicates that powdered soft drink consumption per household decreases as female head of household education level increases, ranging from 40.29 gallons to 15.96 gallons from grade school education to post college education. From high school to post college education, regular coffee and regular carbonated soft drink consumption decrease for households where the female heads are more educated, similar to powdered soft drinks. This finding also is true for whole milk; average consumption in households decreases as the education level of the female head increases.

Race

The demographic for race had four categories: white, black, Oriental, and other. In the data, 85 percent of the households are white.

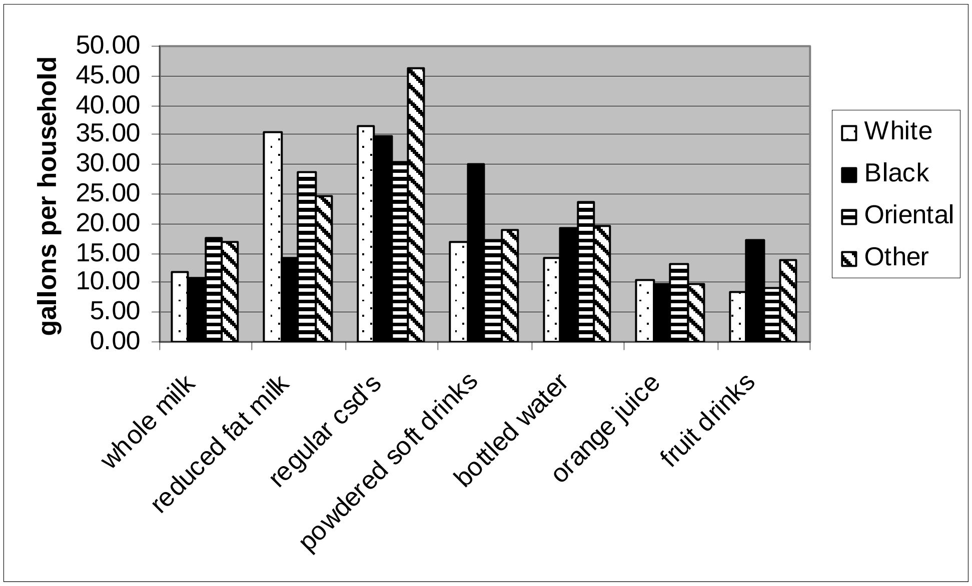


Figure 22. Household intake of selected beverages by race

Oriental households consumed more bottled water and orange juice than households of other race classifications did. Consuming only 30.28 gallons, Oriental households drank substantially fewer gallons of regular carbonated soft drinks per year when compared to white, black, and other households who consume 36.41, 34.76, and 46.21 gallons on average per year. Figure 22 indicates that black households consume more powdered soft drinks and ready to drink fruit drinks than do households of other races. Black households also drink less tea than do other households. White households consume the greatest amount of coffee at 43.44 gallons compared to the other races. White households also consume the largest amounts of low-calorie carbonated soft drinks and unflavored milk, yet less bottled water on average than do households of different races.

Region

The demographic for region had four categories: East, Central, South, and West. The regions were equally represented with the South having more households represented than any other region. Figure 23 indicates intake by region.

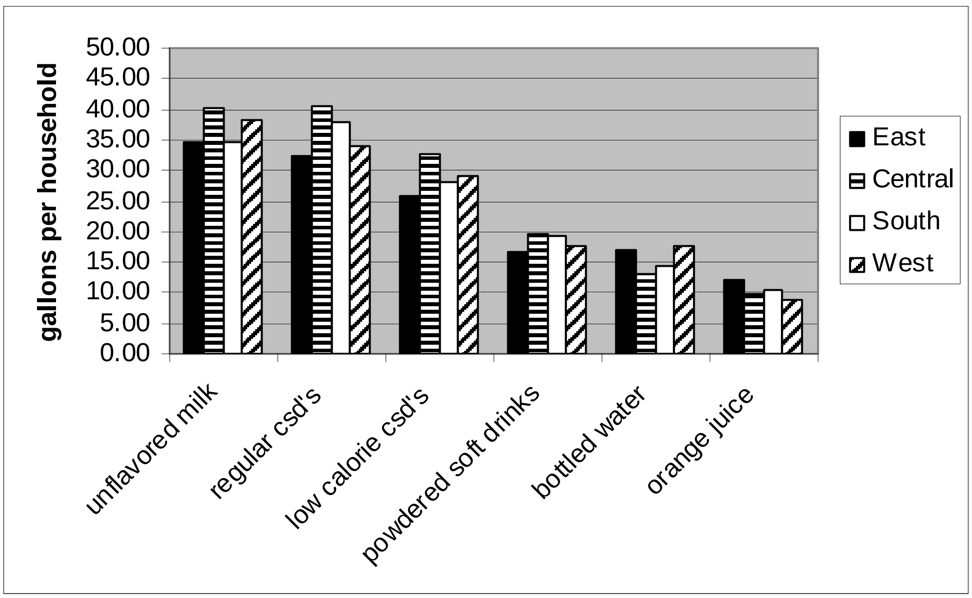


Figure 23. Household intake of selected beverages by region

The East region households consume more orange juice, apple juice, other juices, tea, and regular coffee than households from other regions. The East and South region households consume the least unflavored milk of any region at about 34 gallons per year per household. The Central region households consume more unflavored milk, carbonated soft drinks, and powdered soft drinks than other household regions on average. Southern households consume high levels of powdered soft drinks, though slightly less than Central households. Southern households also consume high levels of carbonated soft drinks. Households in the West consume more gallons of bottled water per year than other household regions at 17.5 gallons per year. Western households consume less orange juice and tea than do households from other regions.

Hispanic Origin

The Hispanic origin question contained a yes or no classification, with 365 of the 5715 households in the panel indicating they were of Hispanic origin.

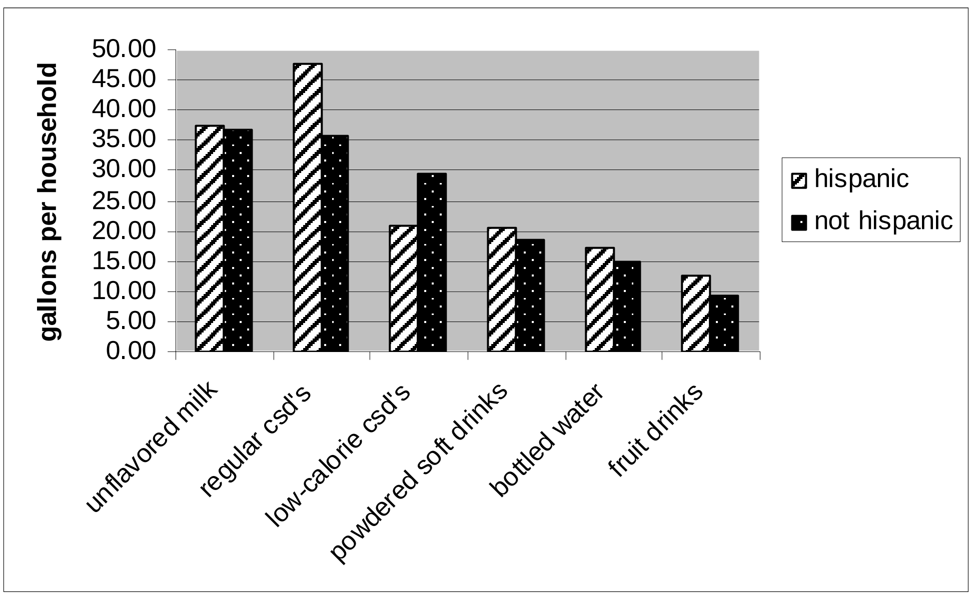


Figure 24. Household intake of selected beverages by Hispanic origin

Figure 24 indicates that Hispanic households consumed more ready to drink fruit drinks, powdered soft drinks, regular carbonated soft drinks, bottled water, and unflavored milk than households that were not of Hispanic origin. Households not of

Hispanic origin consumed more tea and coffee than Hispanic households. Although Hispanics consumed more unflavored milk than non-Hispanic households; a look at the break down of the milk fat types reveals that households of Hispanic origin consume more whole and two percent milk while non-Hispanic households consume more one percent and skim milk.

Seasonality

The purchases of nonalcoholic beverages in the data set were divided into four quarters, based on when the items were bought so that seasonality could be analyzed. Overall, the number of households that consume the beverages across all four quarters and the average consumption of each beverage remain stable. The average does increase slightly for carbonated soft drinks during the second and third quarter. Unflavored milk consumption decreases slightly in the third and fourth quarters. See figure 25.

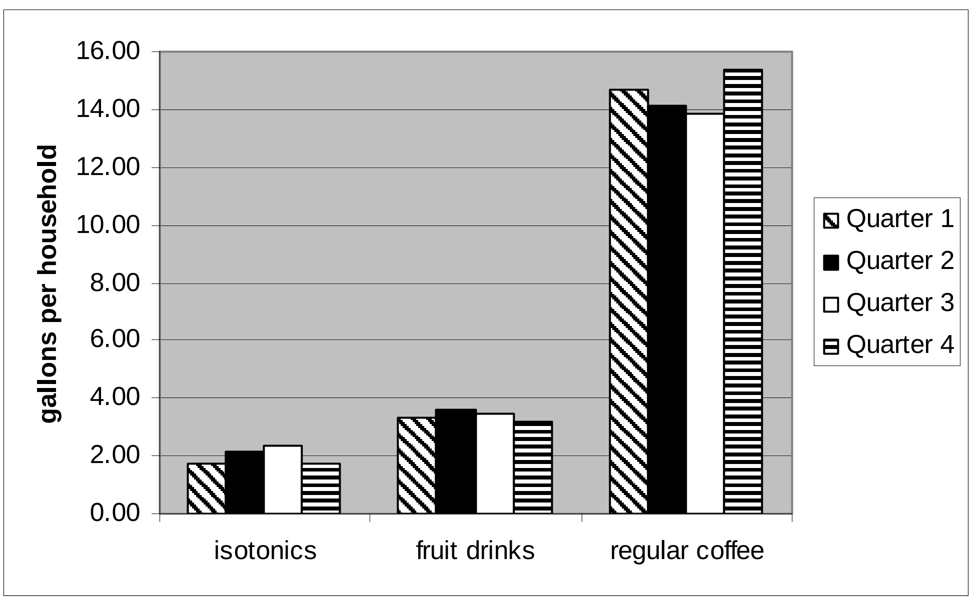


Figure 25. Household intake of selected beverages by quarter

Regular coffee consumption is greatest in the fourth quarter at 15.36 gallons consumed for that quarter. Household intake of fruit drinks was the greatest in the second quarter. Powdered soft drink consumption is the most seasonal beverage. The average intake increases slightly for the second and third quarters. The number of households purchasing powdered soft drinks almost doubles for the second and third quarters, which includes the summer months when children are out of school, compared to the first and fourth quarters. These two effects combined show the large rise in overall consumption of powdered soft drinks during warmer seasons.

Heckman Results

The cross tabulations gave an indication of which demographics were important for the level of consumption for nonalcoholic beverages. The Heckman analysis is used to determine which demographic variables are statistically responsible for the level of consumption of a household. The demographics along with the categories in each group and the beverages to be analyzed in the Heckman analysis were discussed in Chapter III. A key difference in the demographics used for the Heckman procedure and those discussed in the cross tabulations is that the head of the household is slightly altered. If there was no female head present then the male heads information was used for age, employment, and education.

The Heckman model is given below.

$$Q_k = F(\alpha_k + \beta_1 hs2_k + \beta_2 hs3_k + \beta_3 hs4_k + \beta_4 hsp5_k + \beta_5 age2539_k + \beta_6 age4049_k + \beta_7 age5065_k + \beta_8 age65plus_k + \beta_9 agepc_k + \beta_{10} empparttime_k + \beta_{11} empfulltime_k + \beta_{12} eduhighschool_k + \beta_{13} edusomecollege_k + \beta_{14} educollegeplus_k + \beta_{15} black_k + \beta_{16} oriental_k + \beta_{17} other_k + \beta_{18} hispyes_k + \beta_{19} central_k + \beta_{20} south_k + \beta_{21} west_k + \beta_{22} pov130_k + \beta_{23} invm_k)$$

Where $k = 1,...,T$ is the number of observations in the model that consumed a quantity of beverage. Q_k corresponds to the level of intake for the year in gallons for the selected beverage. Recall that the inverse of the Mill's ratio($invm_k$), obtained through a probit model, is placed into the Heckman model to correct for sample selection bias. If the parameter associated with $invm_k$ is insignificant, then sample selection was not going to be a problem for that specific equation.

The Heckman results are summarized in table 22. Each beverage is listed along with the demographic category. If the demographic category was statistically significant at the .05 level in affecting the level of consumption of the beverage, then an "X" is presented in the table. An F-test was conducted on the categories in each demographic group to find the statistically significant drivers.

Table 22. Summary of Heckman Findings: Significant Demographic Categories

#	Beverage	Household Size	Age of Household Head	Presence of Children	Household Head Employment	Household Head Education	Race	Hispanic	Region	Poverty Status
1	Whole Fat Flavored and Unflavored Milk									
2	Reduced Fat Flavored and Unflavored Milk	X			X		X		X	
3	Carbonated Soft Drinks - Regular	X	X			X			X	
4	Carbonated Soft Drinks – Low Calorie			X					X	
5	Powdered Soft Drinks	X								
6	Isotonics									
7	Bottled Water									
8	Orange Juice	X				X			X	X
9	Apple Juice						X			
10	Other Juices						X			
11	Fruit Drinks	X		X			X			X
12	Vegetable Juice									
13	Coffee Regular		X				X			
14	Coffee Decaffeinated									
15	Tea Regular	X		X					X	
16	Tea Decaffeinated									
17	Flavored Milk							X		
18	Unflavored Milk	X		X	X		X			
19	Flavored Milk -- Whole									
20	Flavored Milk – Reduced Fat									
21	Whole Milk Unflavored	X								
22	2% Milk Unflavored			X						
23	1 % Milk Unflavored							X		X
24	Skim Milk Unflavored	X								

This table shows which demographics are significant(95 % level) for determining the level a household consumes.
If an "X" appears then the demographic is significant.

Race, region, and presence of children within the household are important for the intake level for many of the beverages. Household size affected the household level of consumption for nine of the beverages examined. The demographic of household size is understandable since a greater number of persons would need more quantity. The presence of a child in a household affected the level of consumption for a household for low calorie carbonated soft drinks, fruit drinks, regular tea, unflavored milk, and two percent milk. Poverty status of the household affected three of the beverages studied: orange juice, fruit drinks, and one percent milk.

After examining the summary table of the Heckman findings a closer look is taken. Appendix G gives the Heckman results beverage by beverage in detail. The results for each beverage subsequently are discussed. For each beverage, a regression model was run and the p-values associated with each demographic category were retrieved. An F-test on each demographic group also was conducted to see which demographics affected the level of consumption. All estimations were performed using TSP. A discussion of each beverage and the demographics important concerning the level of intake are now given. Key demographic marginal effect figures for intake level are given for selected beverages.

Beverage #1. Whole Fat - Flavored and Unflavored Milk

The F-test indicated that no group of demographics was significant in affecting the level of consumption. The only parameters that were statistically significant were the log of the price of whole milk and the indicator parameter for households in the South. A household in the South was shown to consume higher levels of whole milk.

Beverage #2. Reduced Fat - Flavored and Unflavored Milk

Household size, household head employment, race, and region are demographics that affect the level of consumption of reduced fat milk. Having a larger household size increases the level of consumption of reduced fat milk. Households containing a head that is employed consume less reduced fat milk.

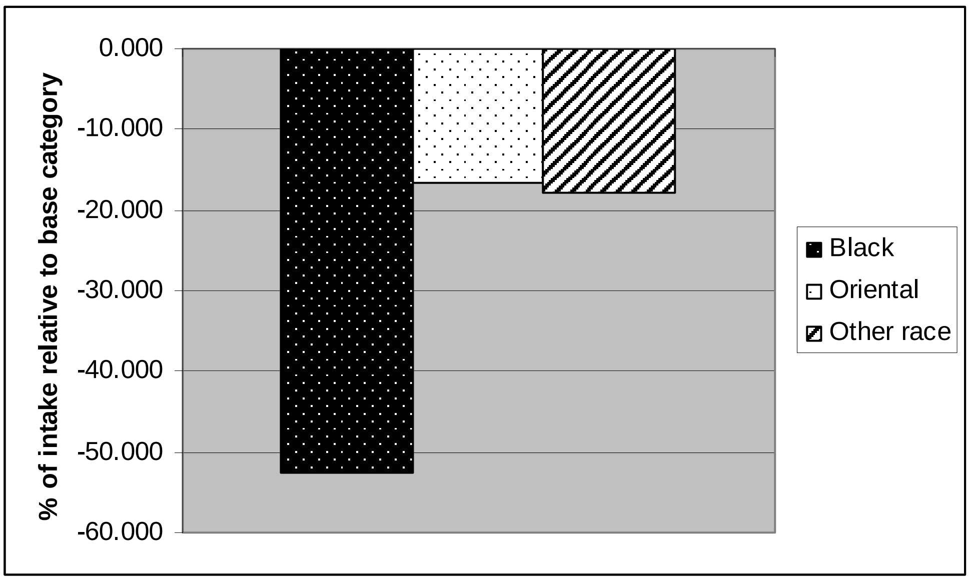


Figure 26. Effect of race on household intake of reduced fat milk

Figure 26 indicates that black households consume less reduced fat milk when compared to white and all other households. Black households consume over fifty percent less reduced fat milk when compared to white households. Households in the West consume higher levels of reduced fat milk than households consume in the East.

Beverage #3. Carbonated Soft Drinks - Regular

Household size, age of the household head, household head education, and region are demographics that affect the level of consumption of carbonated soft drinks. Having a larger household size increases the level of consumption of carbonated soft drinks. Households with heads over the age of sixty-five drank less regular carbonated soft drinks than households with younger heads. Households with heads that were more educated consumed less regular carbonated soft drinks than households with less educated heads.

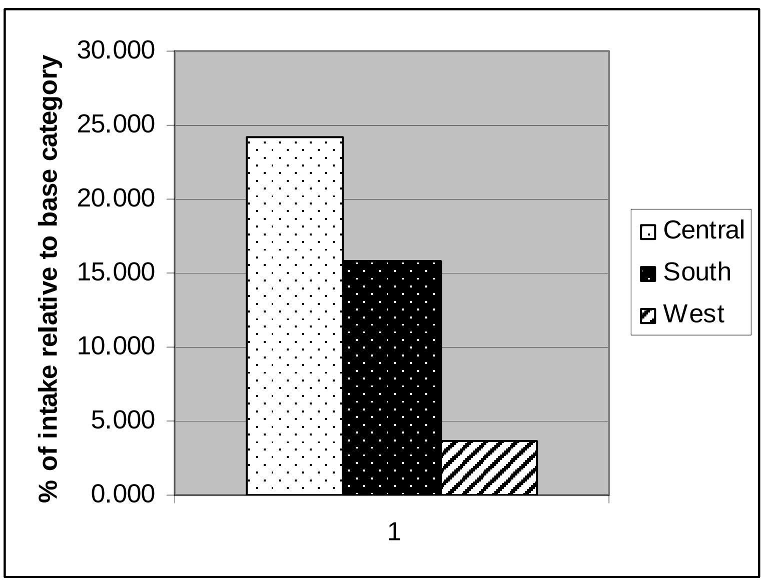


Figure 27. Effect of region on household intake of regular carbonated soft drinks

Figure 27 reveals that households in the Central and South consume higher levels of regular carbonated soft drinks than Eastern households consume. Households in the

Central region consume twenty four percent more volume of regular carbonated soft drinks than do households in the East.

Beverage #4. Carbonated Soft Drinks – Low Calorie

Presence of children and region are demographics that affect the level of consumption of low-calorie soft drinks. Households with children present drank fewer low -calorie carbonated soft drinks.

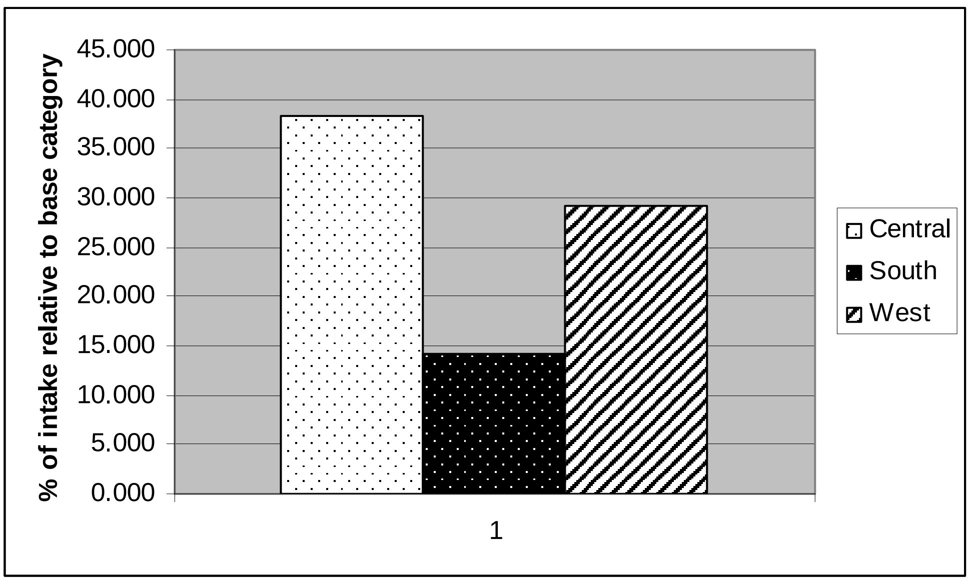


Figure 28. Effect of region on household intake of low-calorie carbonated soft drinks

Figure 28 indicates that households in the Central and West consume higher levels of low-calorie carbonated soft drinks than Eastern households consume. Central households consume over thirty-five percent more low-calorie carbonated soft drinks when compared to Eastern households.

Beverage #5. Powdered Soft Drinks

Household size was the only demographic that affected the level of consumption of powdered soft drinks.

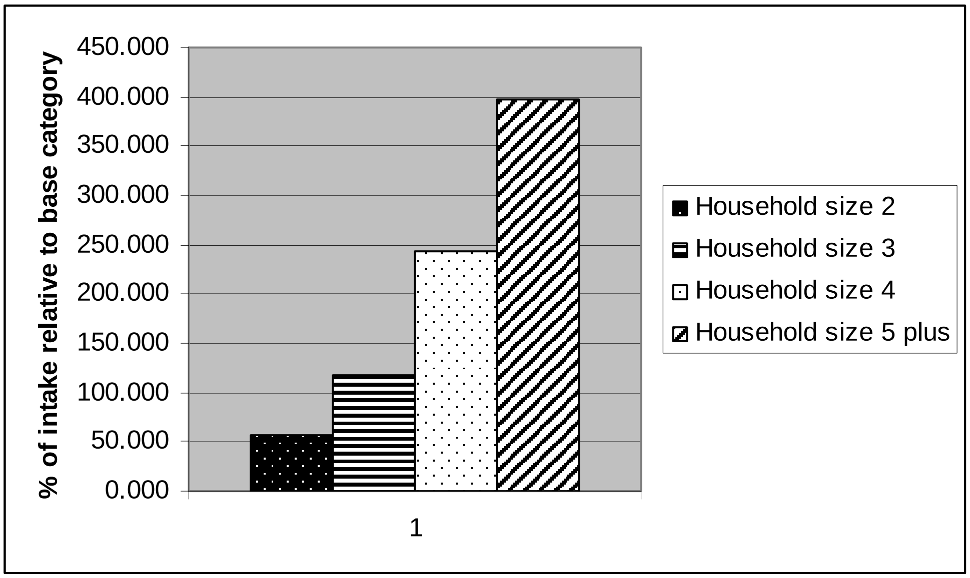


Figure 29. Effect of household size on household intake of powdered soft drinks

Figure 29 reveals that as household size increases the level of consumption of powdered soft drinks for a household.

Beverage #6. Isotonics

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of isotonics. The only parameter that was statistically significant was the log of the price.

Beverage #7. Bottled Water

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of bottled water. The only parameter that was statistically significant was the log of the price.

Beverage #8. Orange Juice

Household size, household head education, region, and poverty status are demographics that affect the level of consumption of orange juice. Having a larger household size increases the level of consumption of orange juice.

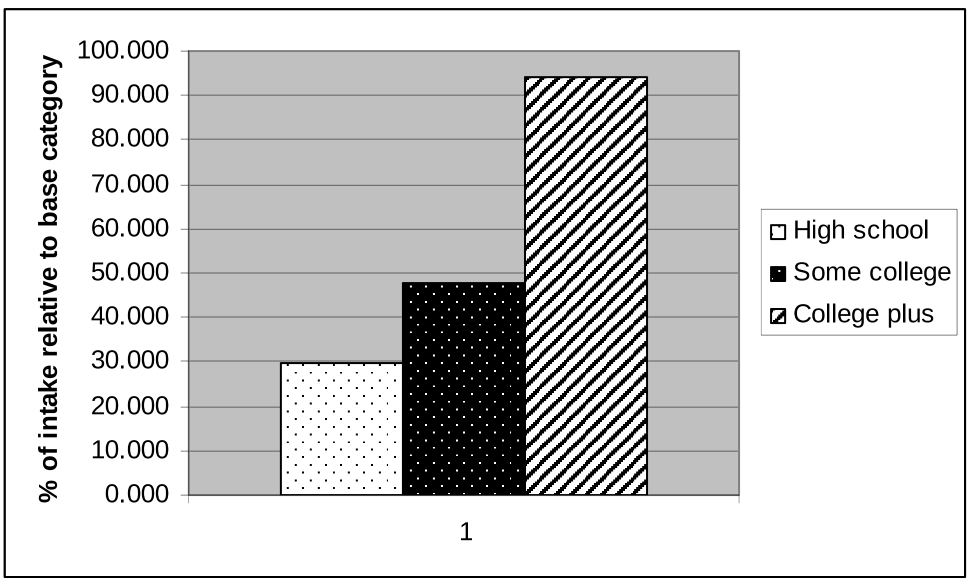


Figure 30. Effect of household head education on household intake of orange juice

Households that have a head with at least a high school education consume more orange juice compared to households with heads that have below a high school education. Figure 30 indicates that households with a head that has a college degree or greater education consume almost twice as much orange juice when compared to households that have heads with less than a high school education. Households in the East consume more orange juice than other regions. Households below 130% of poverty consume less orange juice.

Beverage #9. Apple Juice

Race is the only demographic that affects the level of consumption of apple juice. Other races consume more apple juice than white households. See figure 31.

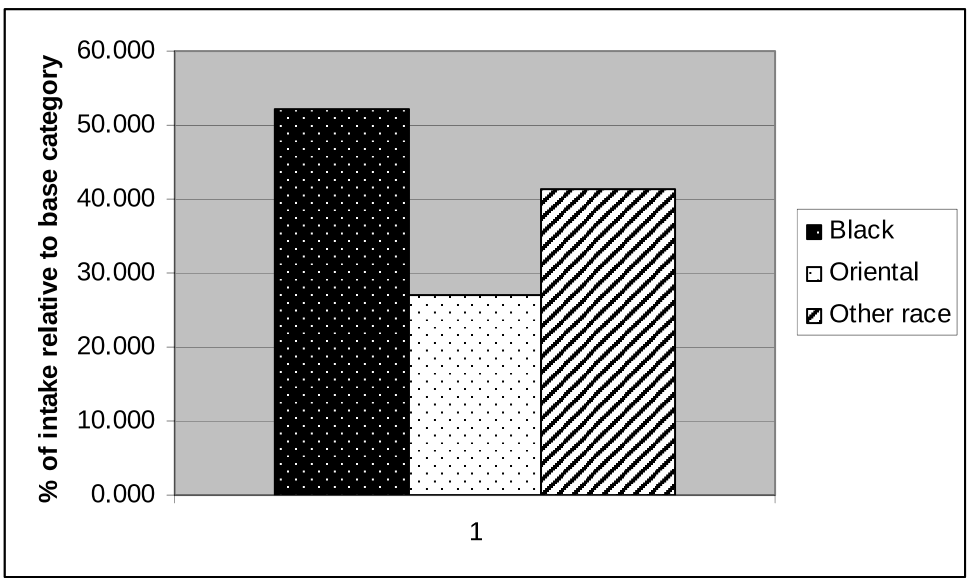


Figure 31. Effect of race on household intake of apple juice

Black households consume over fifty percent more apple juice than do white households. Oriental households consume over twenty-five percent more apple juice than do white households.

Beverage #10. Other Juice

Race is the only demographic that affects the level of consumption of other juice. Oriental races consume more other juice than white households.

Beverage #11. Fruit Drinks

Household size, age of the household head, presence of children, race, and poverty are demographics that affect the level of consumption of fruit drinks. Having a larger household size increases the level of consumption of fruit drinks.

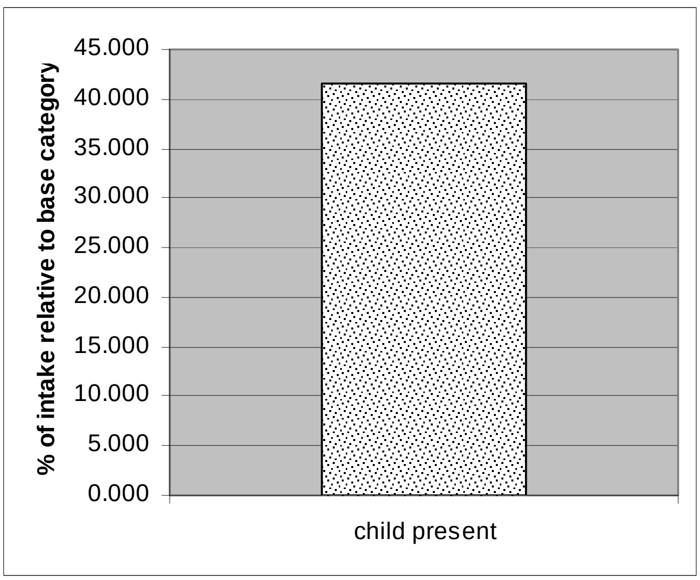


Figure 32. Effect of presence of children on household intake of fruit drinks

Figure 32 reveals that households with a child present consume over forty percent more fruit drinks at home than households with no children present. Black and other households consume greater levels of fruit drinks compared to white households.

Households below 130% of poverty consume fewer fruit drinks than households above 130% of poverty.

Beverage #12. Vegetable Juice

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of vegetable juice. The only parameter that was statistically significant was the log of the price.

Beverage #13. Coffee – Regular

Age of the household head and race are demographics that affect the intake level of regular coffee. See figure 33 below.

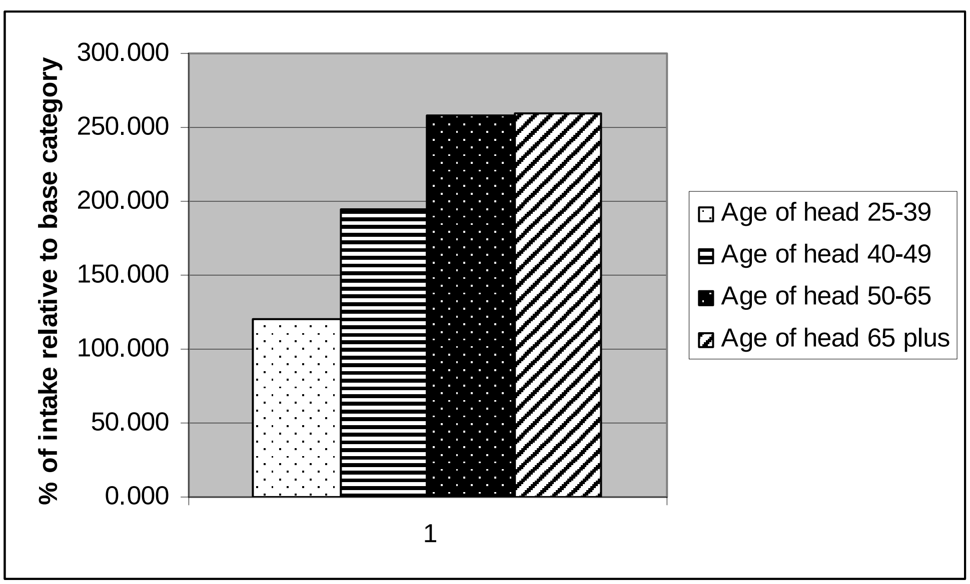


Figure 33. Effect of age of head of household on household intake of regular coffee

As the head of household's age increased the level of intake for the household increased. Black households consume less regular coffee compared to white households.

Beverage #14. Coffee – Decaffeinated

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of decaffeinated coffee. The only parameter that was statistically significant was the log of the price.

Beverage #15. Tea – Regular

Household size, presence of children, and region are demographics that affect the level of consumption of regular tea. Having a larger household size increases the level of consumption of regular tea. Households with a child present consume less regular tea at home than households with no children present.

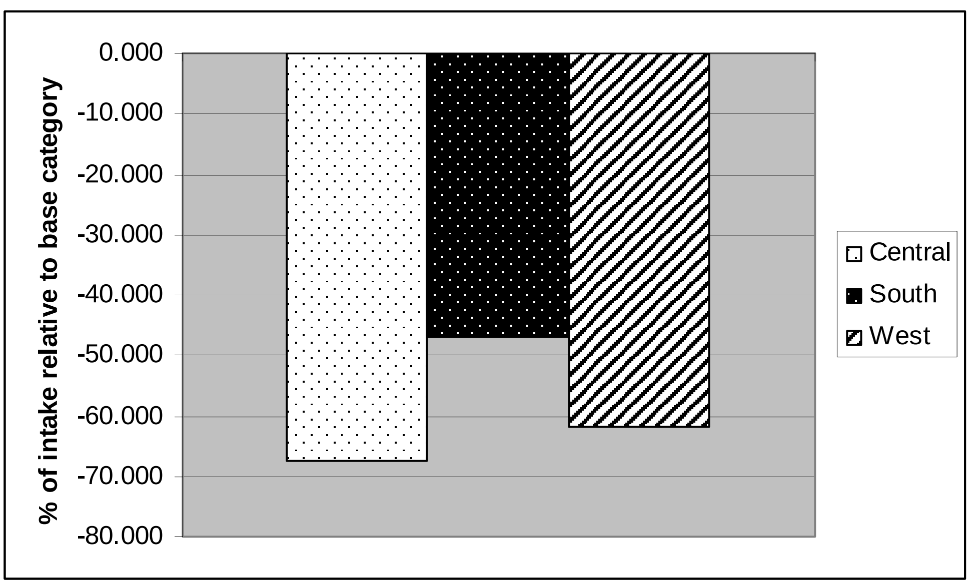


Figure 34. Effect of region on household intake of regular tea

Figure 34 reveals that households in the Central, South, and West regions consume less regular tea compared to households in the East region.

Beverage #16. Tea – Decaffeinated

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of decaffeinated tea. The only parameter that was statistically significant was the log of the price.

Beverage #17. Flavored Milk

Hispanic origin was the only demographic that affected the intake level of flavored milk.

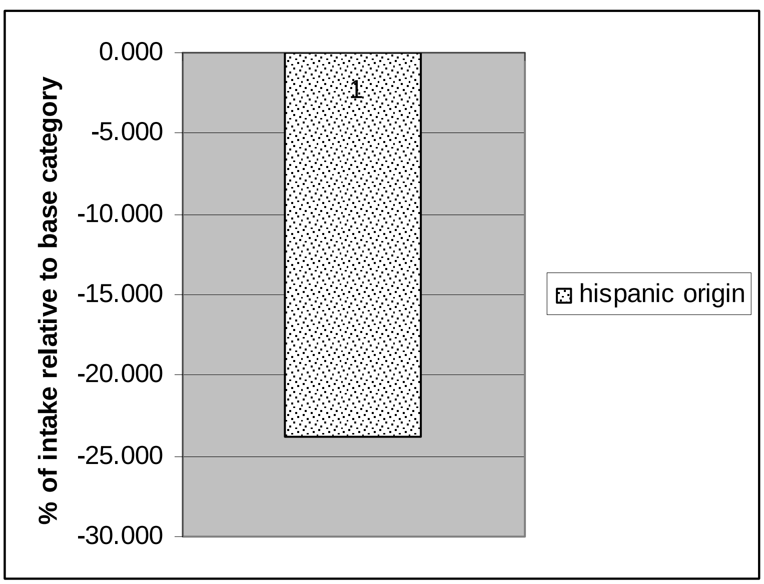


Figure 35. Effect of Hispanic origin on household intake of flavored milk

Hispanic households consume less flavored milk than non-Hispanic households. Figure 35 indicates that the level of intake of flavored milk is nearly twenty-five percent less for households of Hispanic origin when compared to households that are not of Hispanic origin.

Beverage #18. Unflavored Milk

Household size, presence of children, household head employment, and race are demographics that affect the level of consumption of unflavored milk. Having a larger household size increases the level of consumption of unflavored milk. Households with a child present consumed more unflavored milk than households without a child present consume. Households containing a head that is employed consume less unflavored milk. Black and other race households consume less unflavored milk compared to white households.

Beverage #19. Flavored Milk - Whole

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of whole flavored milk. The only parameter that was statistically significant was the log of the price.

Beverage #20. Flavored Milk - Reduced Fat

The F-tests indicated that no group of demographics was significant in affecting the level of consumption of reduced fat flavored milk. The only parameters that were statistically significant were the log of the price and two age categories of the household head. Households with heads ages 25-49 consume more reduced fat flavored milk when compared to households with heads under twenty-five years of age.

Beverage #21. Whole Milk - Unflavored

Household size was the only demographic that affected the level of consumption of unflavored whole milk. Having a larger household size increases the level of consumption of unflavored whole milk.

Beverage #22. 2 % - Unflavored

The presence of a child in the household was the only demographic that affected the level of consumption of unflavored two percent milk. Having a child in the household increases the level of consumption of unflavored two percent milk.

Beverage #23. 1 % - Unflavored

Hispanic origin and poverty status are demographics that affect the level of consumption of one percent milk. Households of Hispanic origin consumed less one percent milk than households that were not of Hispanic origin. Households below 130% of poverty consume less one percent milk than households above 130% of poverty.

Beverage #24. Skim Milk - Unflavored

Having a larger household size increases the level of consumption of unflavored skim milk. Household size was the only significant demographic for this beverage.

CHAPTER VI

EMPIRICAL RESULTS ASSOCIATED WITH NUTRIENT AND CALORIE INTAKE

Introduction

This chapter deals with average intakes on a per person per day basis of calories (kcal), calcium (mg), vitamin C (mg), and caffeine (mg) for all nonalcoholic beverages by demographic category. We also look into specific nutrient intakes from certain beverages, for example, calcium from milk or vitamin C from juices. All results are given on a per person basis. The average intakes of nutrients from all nonalcoholic beverages first will be covered followed by an intake level analysis using cross-tabulations and a regression analysis to look at demographic drivers of nutrient intake. Summary statistics, cross tabulation tables, and the nutrient regression output are given in Appendix H.

Average Intakes of Calories, Calcium, Vitamin C, and Caffeine

On average, at-home consumption of nonalcoholic beverages accounts for roughly, 211 calories per day, 217 mg of calcium per day, 45 mg of vitamin C per day, and nearly 95 mg of caffeine per day. Major contributors of caloric intakes from nonalcoholic beverages are carbonated soft drinks, fruit drinks and powdered soft drinks (about 44 percent), fruit juices (about 19 percent), and milk (about 35 percent). Milk also is responsible for roughly 88 percent of the calcium intake from the nonalcoholic beverage category. Fruit juices contribute almost 60 percent of the vitamin C intake from nonalcoholic beverages, while carbonated soft drinks, fruit drinks, and powdered soft drinks contribute 33 percent of the vitamin C intake, on average. Coffee, carbonated soft drinks, and tea account for 67 percent, 27 percent, and 6 percent, respectively, of the caffeine intake from nonalcoholic beverages.

To give these descriptive findings more perspective, using the same 2,000 calories per day standard as is used for nutrition labeling of food, 10 percent of calories would come from at-home consumption of nonalcoholic beverages. On average, about 20 percent of the nutrition label daily value (DV) for calcium and close to 70 percent of the daily value for vitamin C come from nonalcoholic beverages. Finally, on average, the daily intake of caffeine from nonalcoholic beverages is equivalent to almost two 12-ounce cans of Coca-Cola, about one 7-ounce cup of coffee, or roughly a 15-ounce glass of iced tea.

Cross Tabulations

130 percent of Poverty

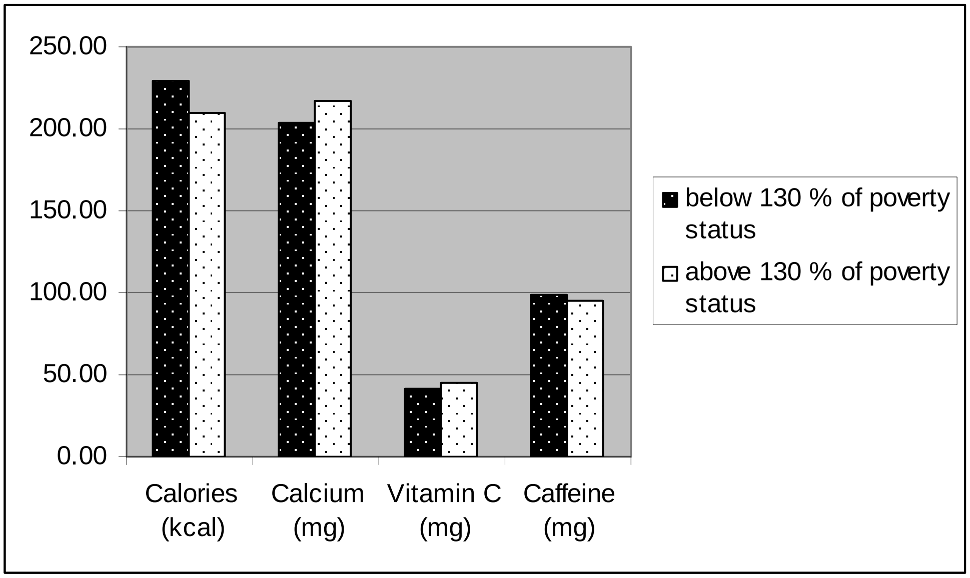


Figure 36. Nutrient intake per person/per day by poverty status for all nonalcoholic beverages

In households classified below the 130% poverty threshold, caloric intake on a per person, per day basis is about 18 kcal higher than in households classified as above the 130% poverty threshold. Calcium intake and vitamin C intakes, however, are about 13 mg and 4 mg lower for households below the 130 percent poverty threshold than for households above the 130% poverty threshold. Figure 36 also reveals that caffeine intake is 4 mg greater for households below the 130% poverty threshold.

Household Size

Except for households with eight members, daily per person intakes of calories, calcium, vitamin C, and caffeine decrease almost monotonically with household size.

Presence of Children

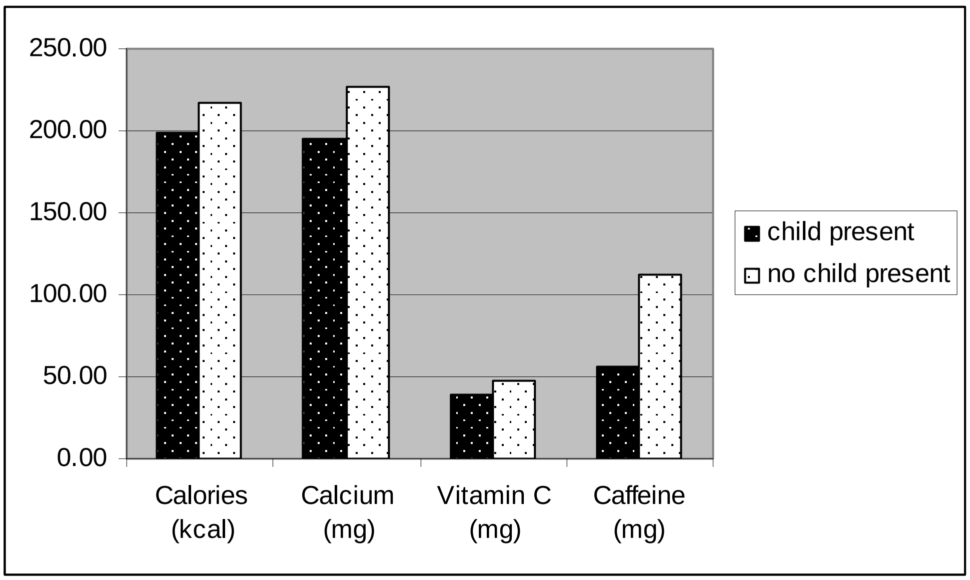


Figure 37. Nutrient intake per person/per day by presence of children within the household for all nonalcoholic beverages

Figure 37 indicates that average calorie, calcium, vitamin C, and caffeine intakes from nonalcoholic beverages on a per person, per day basis are higher in households with no children relative to households with children. Households with children obtain more of their calories through carbonated soft drinks, fruit drinks, and powdered soft drinks than households that do not have children. Households with no children have higher levels of vitamin C intake through juices and more calcium through milk when compared to households that have children.

Age of the Female Head of Household

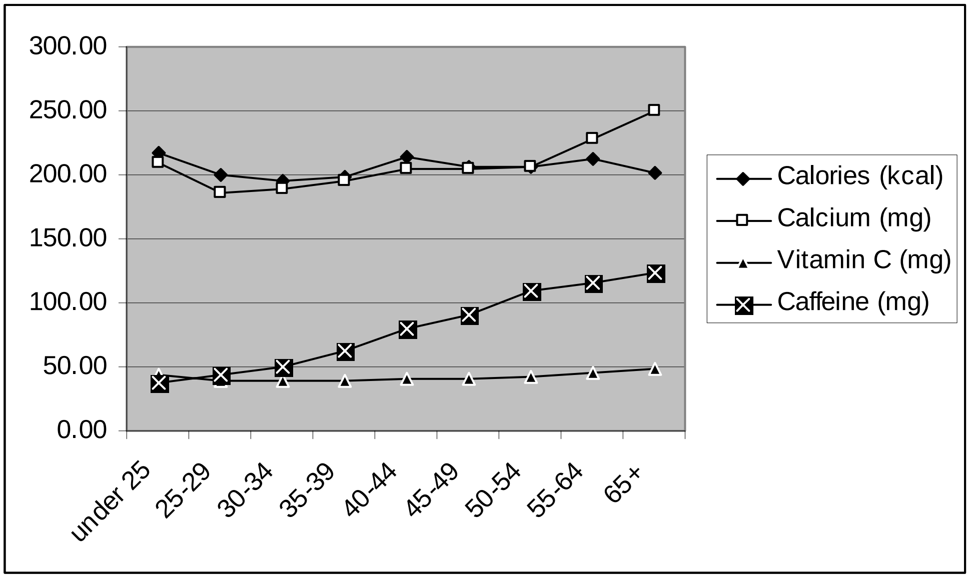


Figure 38. Nutrient intake per person/per day by age of the household head for all nonalcoholic beverages

In households where the female head is less than 25 years of age, caloric intakes from nonalcoholic beverages, principally for home consumption, are highest. See figure 38 above. Caloric intakes, on average, are lowest for female heads between 30 and 34 years of age. Calcium, vitamin C, and caffeine intakes from nonalcoholic beverages are highest for female heads at least 55 years of age. Calcium and vitamin C intakes are lowest for female heads between 25 and 34 years of age. Caffeine intakes are lowest for female heads less than 25 years of age.

Employment of Female Head of Household

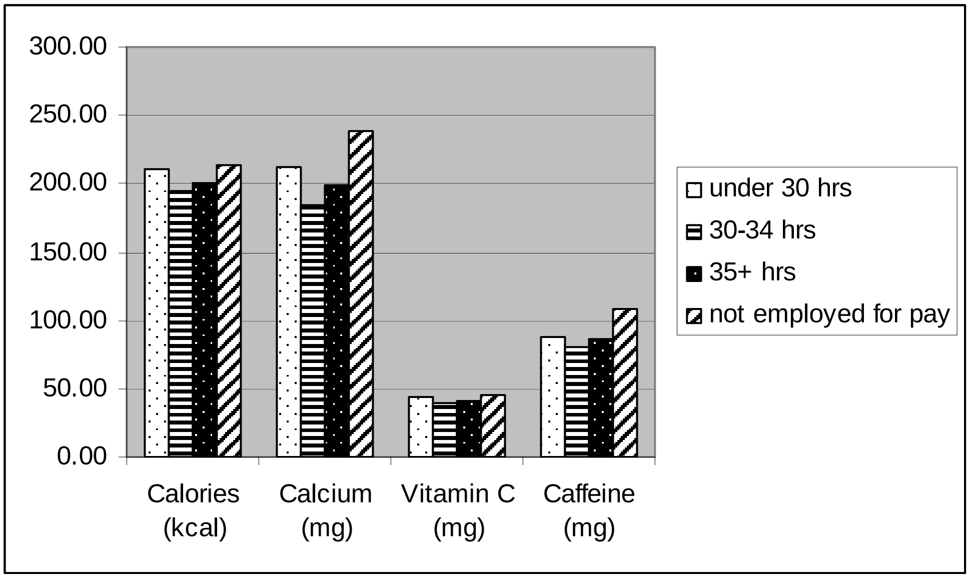


Figure 39. Nutrient intake per person/per day by employment of the household head for all nonalcoholic beverages

In households where the female head is not employed for pay, average intakes of calories, calcium, vitamin C, and caffeine from nonalcoholic beverages are higher in comparison to households where the female head is employed. Figure 39 shows the magnitude of intake across employment types. These data, however, are associated with at-home consumption of nonalcoholic beverages, and as such, this result is perhaps not too surprising because we suspect that households with an employed female head eat more away-from-home meals than unemployed female headed households.

Education of Female Head of Household

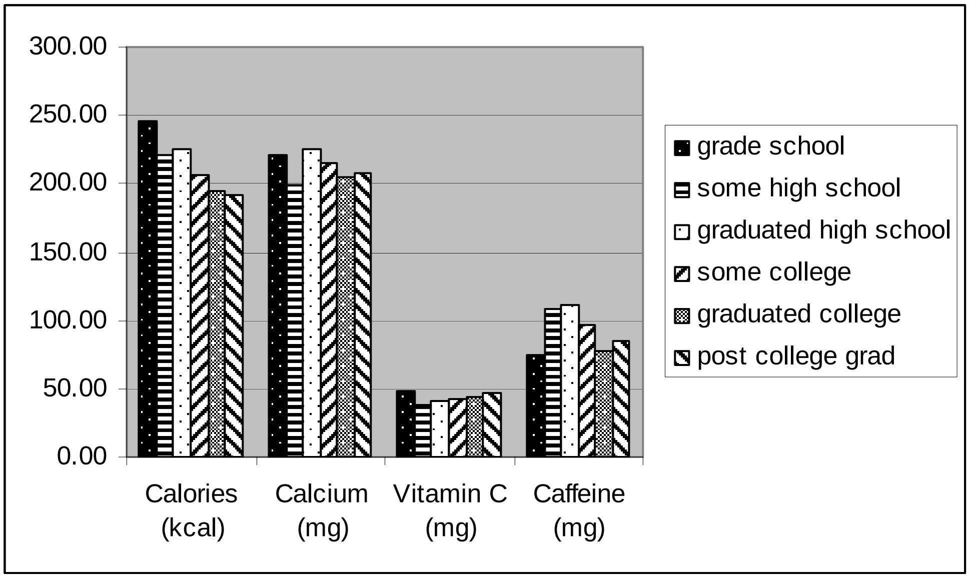


Figure 40. Nutrient intake per person/per day by education of the household head for all nonalcoholic beverages

In households where the female head is a college graduate, caloric intakes from nonalcoholic beverages on a per person per day basis are lower than in households where the female head is not a college graduate. The situation is the reverse in the case of vitamin C with the exception of female heads only obtaining a grade school education. Figure 40 reveals that caffeine and calcium intakes for college graduate female head households are also less than the average household intake.

Race

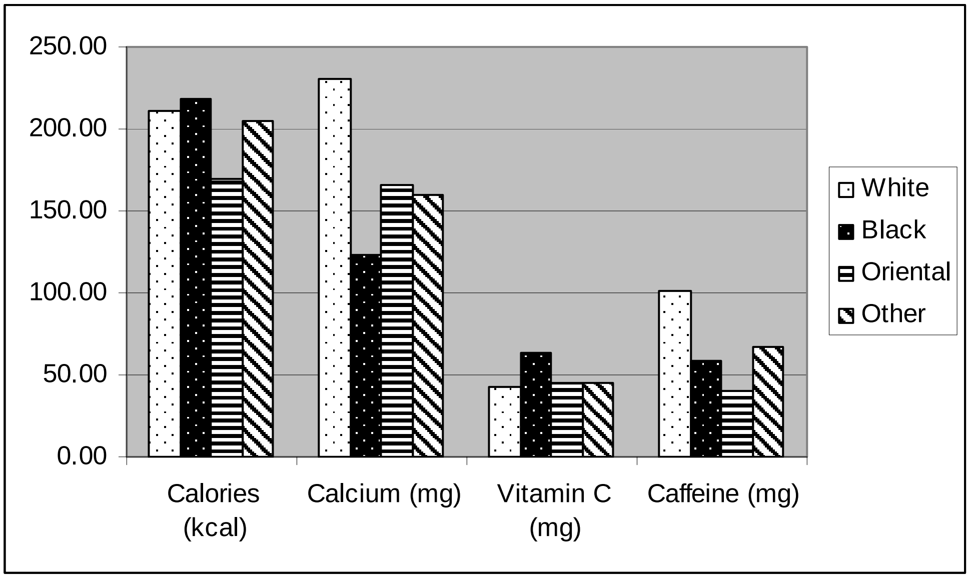


Figure 41. Nutrient intake per person/per day by race for all nonalcoholic beverages

Figure 41 indicates that on a per person per day basis, Orientals have the lowest intake of calories and caffeine on average. Whites have the highest intake of calcium and caffeine on average. Blacks have the highest intake of calories and vitamin C per person per day, and blacks have the lowest intake of calcium per person per day.

Region

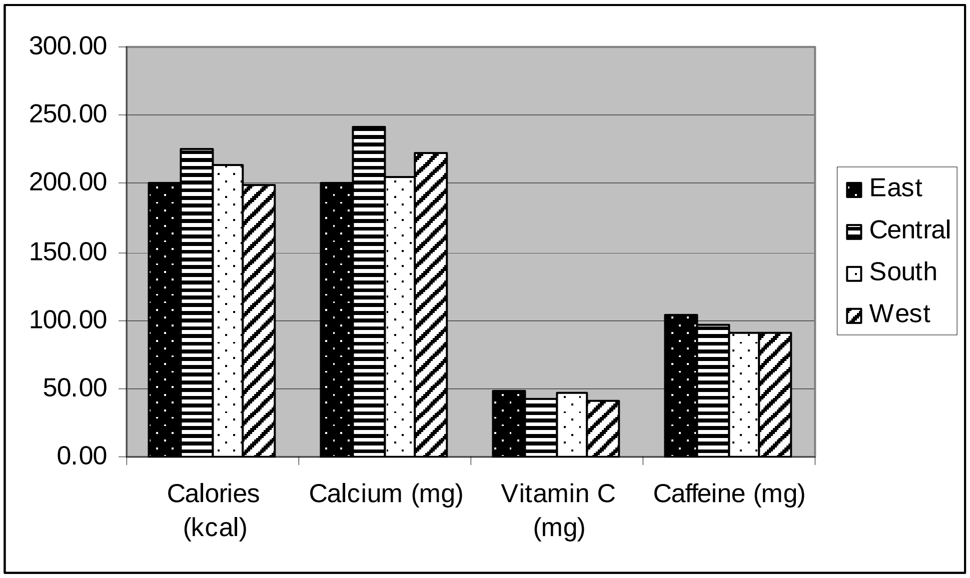


Figure 42. Nutrient intake per person/per day by region for all nonalcoholic beverages

Figure 42 reveals that caloric intakes on a per person, per day basis from nonalcoholic beverages is lowest in the West, 199 kcal and highest in the Central region, 225 kcal. Calcium intakes, on average, range from 201 mg per person per day in the East to 242 mg per person per day in the Central region. Vitamin C intake from nonalcoholic beverages, on average, varies from 40 mg in the West to 48 mg in the East. Caffeine intakes, on average, are lowest in the West and South (90 mg) and highest in the Central and the East regions(97 mg and 104 mg, respectively).

Hispanic Origin

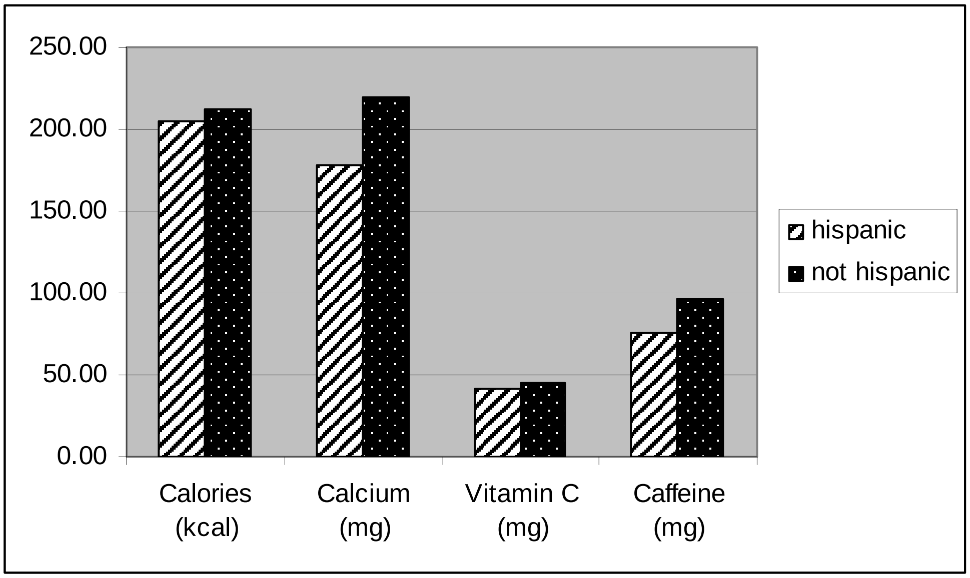


Figure 43. Nutrient intake per person/per day by ethnicity for all nonalcoholic beverages

On average, intakes of calories, calcium, vitamin C, and caffeine are lower for Hispanics than for non-Hispanics. Figure 43 exhibits noteworthy differences in intakes for Hispanics and non-Hispanics that center on calcium and caffeine. Calcium intakes for Hispanics are lower by roughly 40 mg per day in comparison to non-Hispanics. This difference is accounted for by lower milk consumption by Hispanics. Caffeine intakes for Hispanics are lower by about 20 mg per day relative to non-Hispanics.

Regression Analysis of Caloric, Calcium, Vitamin C, and Caffeine Intakes

Regression analysis of nutrients per person per day derived from nonalcoholic beverages as a function of demographic variables is the subject of this section. The purpose is to understand key drivers, at least by demographic groups, associated with daily nutrient intakes. We direct attention to the household head (age, employment status, and education). We assume the female household head is the household manager, the person primarily responsible for food shopping and/or food preparation. If there is no female household head, we use the male household head as the household manager.

The regression equation for each nutrient is given below.

$$\begin{aligned}Q_k = F(&\alpha_k + \beta_1 \mathit{age2539}_k + \beta_2 \mathit{age4049}_k + \beta_3 \mathit{age5065}_k + \beta_4 \mathit{age65plus}_k + \beta_5 \mathit{agepc}_k \\ &+ \beta_6 \mathit{empparttime}_k + \beta_7 \mathit{empfulltime}_k + \beta_8 \mathit{eduhighschool}_k + \\ &\beta_9 \mathit{edusomecollege}_k + \beta_{10} \mathit{educollegeplus}_k + \beta_{11} \mathit{black}_k + \beta_{12} \mathit{oriental}_k + \\ &\beta_{13} \mathit{other}_k + \beta_{14} \mathit{hispyes}_k + \beta_{15} \mathit{central}_k + \beta_{16} \mathit{south}_k + \beta_{17} \mathit{west}_k + \beta_{18} \mathit{pov130}_k)\end{aligned}$$

Where $k = 1,\ldots,T$ is the number of observations that consumed the nutrient. Q_k corresponds to the per person per day nutrient intake. All demographic variables were defined in Chapter III. The level of significance chosen for these analyses is 0.05.

The results of the nutrient regressions are discussed below, complete results are given in Appendix H.

Calories

Presence of children, employment status of the household head, and region are statistically important in the determination of daily caloric intakes per person. Households with a child present consumed fewer calories than households without a child present consume. Households where the household manager is employed either part-time or full-time, have lower caloric intakes derived from nonalcoholic beverages than households where the household head is not employed for pay. The difference is the daily caloric intake is between 12 kcal for household heads employed full time to 8 kcal for household heads employed part time.

Regional differences in caloric intakes exist. Relative to the East, caloric intakes in the Central region are higher by 25 kcal, and the caloric intakes in the South are higher by 12 kcal. Daily caloric intakes in the West are lower by 1.3 kcal relative to the East.

In households where children are present, caloric intakes are lower by 28 kcal in comparison to households where children are not present. Importantly, poverty status of the household is not a driver of calories generated from nonalcoholic beverages.

Calcium

Age of the household manager is not a factor in affecting the daily calcium intake derived from nonalcoholic beverages. In households where the household manager is employed, calcium intakes are lower by 25 to 27 mg relative to households where the household manager is not employed for pay. Households with a child present consumed less calcium than households without a child present.

Calcium intakes are lower by 98 mg for blacks relative to whites; also they are lower by 52 mg for Orientals in comparison to whites. Calcium intakes are lower by 50 mg for other races relative to whites. No statistically significant differences exist in daily calcium intakes derived from nonalcoholic beverages between Hispanics and non-

Hispanics.

Daily intakes of calcium are higher by almost 37 mg for the Central region relative to the East. Daily intakes of calcium are higher by almost 20 mg for the Central region relative to the East. No significant differences exist however in calcium intakes between the South and the East.

Vitamin C

In households where children are present, daily vitamin C intake is lower by 8 mg relative to households where children are not present. In households where the household manager has more than a college education, vitamin C intakes are higher by almost 10 mg relative to households where the household manager does not have a high school education.

Vitamin C intakes are higher by nearly 22 mg for blacks compared to whites. No significant differences exist in vitamin C intake generated from nonalcoholic beverages between whites, other races, and Orientals. No significant differences exist in vitamin C intake between Hispanics and non-Hispanics.

Daily vitamin C intake is highest in the East. The difference in vitamin C intake between the East and the Central region is slightly more than 4 mg; and between the East and the West nearly 7 mg.

Caffeine

Unlike the situation for calories, calcium, and vitamin C, age of the household manager is a determinant of daily intakes of caffeine. Daily caffeine intakes are higher by 32 mg for household managers 25 to 39 years of age, higher by 55 mg for household managers 40 to 49 years of age, higher by 66 mg for household managers 50 to 64 years of age, and higher by 60 mg for elderly household managers compared to household managers less than 25 years of age. In households where children are present, daily caffeine intakes are lower by roughly 41 mg relative to households where children are not present.

In households where the household manager is employed, daily caffeine intake is lower by 9 to 11 mg relative to households where the household manager is not employed for pay. Caffeine intake is lower by 36 mg, 36 mg, and 18 mg for blacks, Orientals, and other races, compared to whites. No significant differences exist in caffeine intake between Hispanics and non-Hispanics.

In households located in the Central, the South, and the West region, caffeine intakes are lower by 9 mg, 12 mg, and 17 mg, respectively relative to households located in the East. No statistically significant differences exist in caffeine intake between households above or below the 130% of poverty threshold.

CHAPTER VII

BEVERAGE INTERRELATIONSHIPS AND MODEL COMPARISONS

Introduction

In this part of the study we discuss price elasticities estimated using the demand system models. This chapter reports own and cross-price elasticities which show how a change in a price would affect the change in quantity sold of a beverage or a related beverage. In this chapter we analyze the demand system models proposed and explained in chapter III. Specifically, we compare results of two aggregations of beverages; groupings of eight and sixteen. Data frequency effects on elasticities also are compared. The annual and quarterly data sets that were constructed in Chapter II are used in this investigation. Finally, censored and non-censored corrected estimates are looked at using the Shonkwiler and Yen technique applied to the LA/AIDS model. The robustness of the results are compared, key findings are discussed, and conclusions are drawn. Complete tables of elasticities from each of the models are given in Appendix I.

Eight Good – Own-price and Expenditure Elasticity Discussion

The own-price and expenditure elasticities for the demand systems analyzing eight nonalcoholic beverages are discussed initially. In tables 23 and 24, the own-price and expenditure elasticities for the eight goods are exhibited. The p-values are given beneath each estimate in these tables.

Table 23. Own-Price Elasticities – Eight Beverage Grouping

#	**Beverage**	**Annual Own-Price Elasticity**	**Annual Censored-Corrected Own-Price Elasticity**	**Quarterly Own-Price Elasticity**	**Quarterly Censored-Corrected Own-Price Elasticity**
1	Milk	-1.436	-1.642	-1.258	-1.776
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	-1.075	-1.160	-0.975	-0.996
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	-0.662	-0.384	-0.203	1.197
		[.000]	[.000]	[.000]	[.000]
4	Isotonics	-2.082	-2.555	-1.920	-1.327
		[.000]	[.000]	[.000]	[.071]
5	Bottled Water	-1.493	-1.760	-1.456	-2.140
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	-0.856	-0.796	-0.775	-0.720
		[.000]	[.000]	[.000]	[.000]
7	Coffee	-1.376	-1.355	-1.174	-1.075
		[.000]	[.000]	[.000]	[.000]
8	Tea	-0.848	-0.760	-0.823	-0.652
		[.000]	[.000]	[.000]	[.000]

Table 24. Expenditure Elasticities – Eight Beverage Grouping

#	Beverage	Annual Expenditure Elasticity	Annual Censored-Corrected Expenditure Elasticity	Quarterly Expenditure Elasticity	Quarterly Censored-Corrected Expenditure Elasticity
1	Milk	0.899	1.019	0.848	0.775
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	1.266	1.264	1.244	1.282
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	1.271	1.425	1.408	2.374
		[.000]	[.000]	[.000]	[.000]
4	Isotonics	1.243	1.209	1.257	0.863
		[.000]	[.000]	[.000]	[.000]
5	Bottled Water	1.033	1.039	1.145	1.215
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	0.770	0.715	0.783	0.735
		[.000]	[.000]	[.000]	[.000]
7	Coffee	1.108	1.008	1.193	1.221
		[.000]	[.000]	[.000]	[.000]
8	Tea	0.693	0.480	0.829	0.939
		[.000]	[.000]	[.000]	[.000]

The own-price elasticity estimates are rather robust across the four model specifications. All estimates were statistically different from zero except for the isotonics(4) own-price elasticity in the quarterly censored-corrected model. Isotonics(4) were the most elastic beverage in three of the four models. Bottled water(5) was the most elastic beverage in the quarterly censored-corrected model. Milk(1), isotonics(4), and bottled water(5) were the most elastic beverages in the grouping of eight. Powdered soft drinks(3), juices and fruit drinks(6), and tea(8) were relatively insensitive to own-price(inelastic) beverages. The demand for carbonated soft drinks(2) was almost unitary elastic across all models.

Comparing the annual model to the quarterly model, both uncorrected for censoring, reveals that all of the quarterly own-price elasticity estimates are less elastic compared to the annual estimates for the non-censored corrected models. Five of the eight estimates for quarterly censored-corrected models are less elastic than the annual censored corrected estimates. The annual estimates provide a longer-term horizon and allow for more time adjustment to make economic decisions. The quarterly estimates are lower as there is less time for adjustment.

The own-price elasticities for beverages with low budget shares were less robust across models. Powdered soft drinks(3), with a budget share of 1.67 %, changed the most from model to model. The impacts of censoring and a small budget share gave a positive own-price elasticity for powdered soft drinks for the quarterly censored-corrected model.

The expenditure elasticity estimates also are robust across the four model specifications. All estimates were statistically different from zero. Milk(1), juices and fruit drinks(6) and tea(8) were all necessity goods. Carbonated soft drinks(2), powdered soft drinks(3), isotonics(4), and coffee(7) were all luxury goods since their expenditure elasticities were over 1. Thus, if one were to give a household extra income to expend within this set of eight beverages, they would purchase more proportionally in carbonated soft drinks(2), powdered soft drinks(3), isotonics(4), coffee(7), juices and fruit drinks(6), tea(8), milk(1), and bottled water(5).

The annual expenditure elasticities yield very similar results to the quarterly expenditure elasticities. Correcting for censoring altered the elasticities for the quarterly estimates more than the annual estimates. This result is due to the greater degree of censoring within the quarterly data. The expenditure elasticities for powdered soft drinks(3), isotonics(4), bottled water(5), and tea(8) changed more noticeably from model to model than did the other beverages. These beverages also have the lowest budget shares.

Eight Good – Cross-price Elasticity Discussion

After analyzing own-price and expenditure effects for the eight goods, a look at the interrelationships within this eight good complex are considered. Substitutability and complementarity are based on compensated elasticities. Magnitudes of each can be seen for all four models using a chart. Model 1 corresponds to the use of annual data without the censoring correction. Model 2 corresponds to the use of annual data with the censoring correction. Model 3 denotes the use of quarterly data without the censoring correction. Model 4 denotes the use of quarterly data with the censoring correction. Below the chart each beverage and its interrelationships with other beverages are discussed. For each beverage, we provide an accompanying chart that graphically displays the statistically significant own-price and cross-price elasticities.

Milk

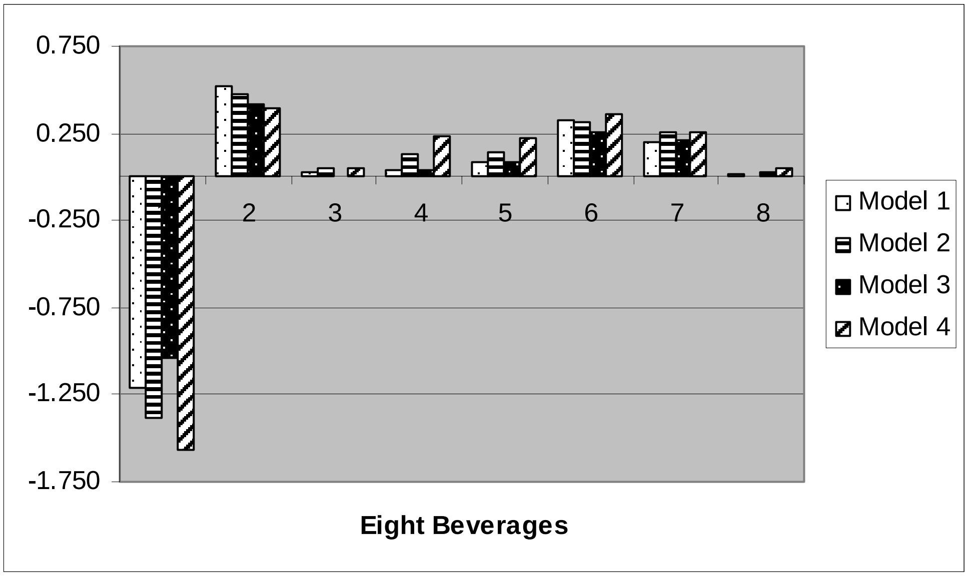


Figure 44. Eight good system compensated elasticities for milk

Figure 44 indicates that milk(1) had three main substitute beverages; carbonated soft drinks(2), juices and fruit drinks(6), and coffee(7). The compensated own-price estimates were all positive and statistically significant. Bottled water(5), isotonics(4), and tea(8) were weak substitutes with milk(1).

Carbonated Soft Drinks

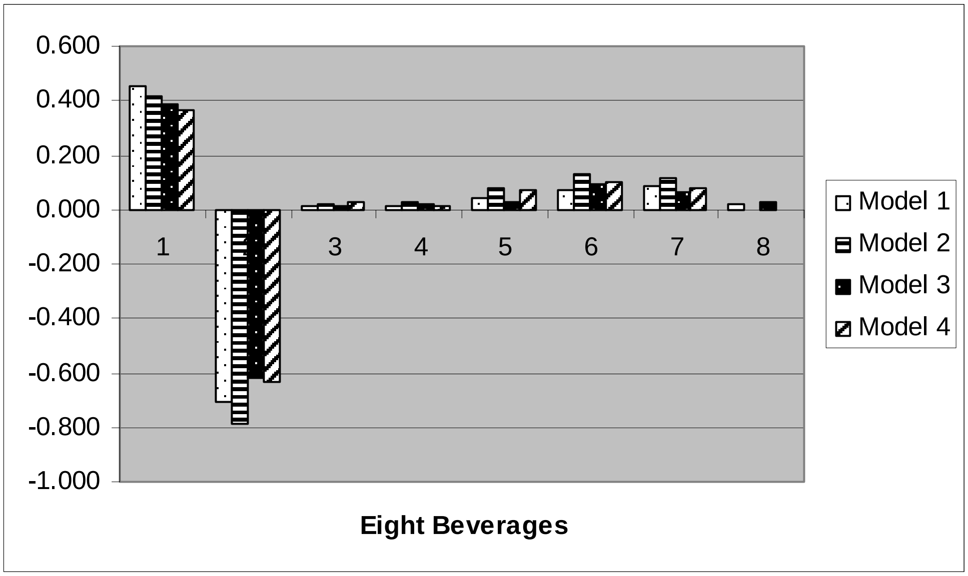


Figure 45. Eight good system compensated elasticities for carbonated soft drinks

The compensated elasticities for carbonated soft drinks are given graphically in figure 45. Carbonated soft drinks(2) had one key substitute beverage, milk(1). The compensated own-price estimates were all negative and statistically significant. Bottled water(5), juices and fruit drinks(6), and coffee(7) were weak substitutes with carbonated soft drinks(2). Powdered soft drinks(3) and isotonics(4) were essentially independent to carbonated soft drinks(2).

Powdered Soft Drinks

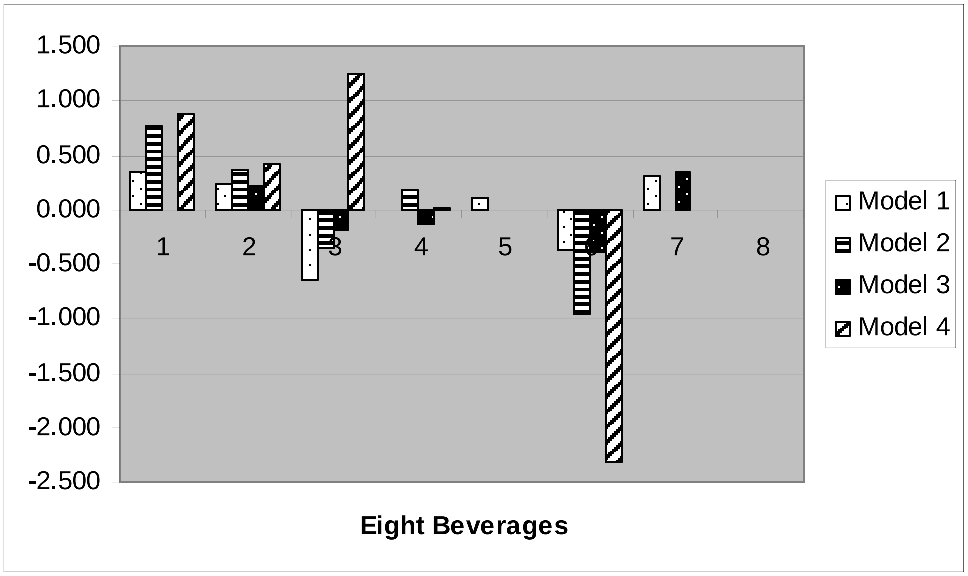


Figure 46. Eight good system compensated elasticities for powdered soft drinks

Figure 46 reveals that powdered soft drinks(3) are complemented by juices and fruit drinks(6). Three of the four models indicated that milk(1) is a major substitute good for powdered soft drinks(3). The quarterly non-censored model did not support this finding. Carbonated soft drinks(2) were a substitute good for powdered soft drinks(3). Three of the compensated own-price estimates were negative and statistically significant. The quarterly censored-corrected model(Model 4) gave a positive own-price elasticity.

Isotonics

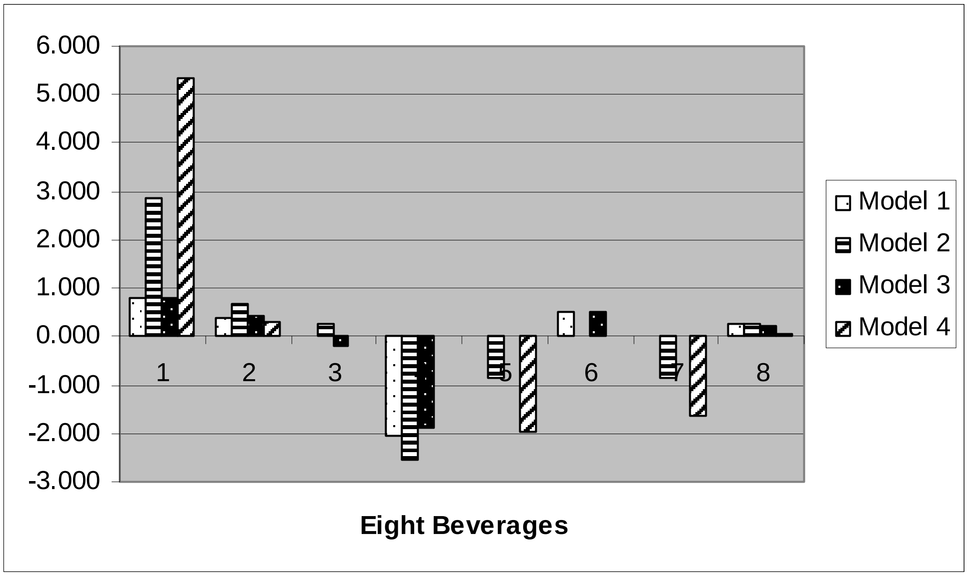


Figure 47. Eight good system compensated elasticities for isotonics

The compensated elasticities for isotonics are given in figure 47. Milk(1), carbonated soft drinks(2), and tea(8) were all shown to be substitutes for isotonics(4). The censored corrected models indicated that bottled water(5) and coffee(7) are complementary goods for isotonics(4). The non-censored models indicated that juices and fruit drinks(6) were substitutes for isotonics(4). The compensated own-price estimates for isotonics(4) were all negative and statistically significant.

Bottled Water

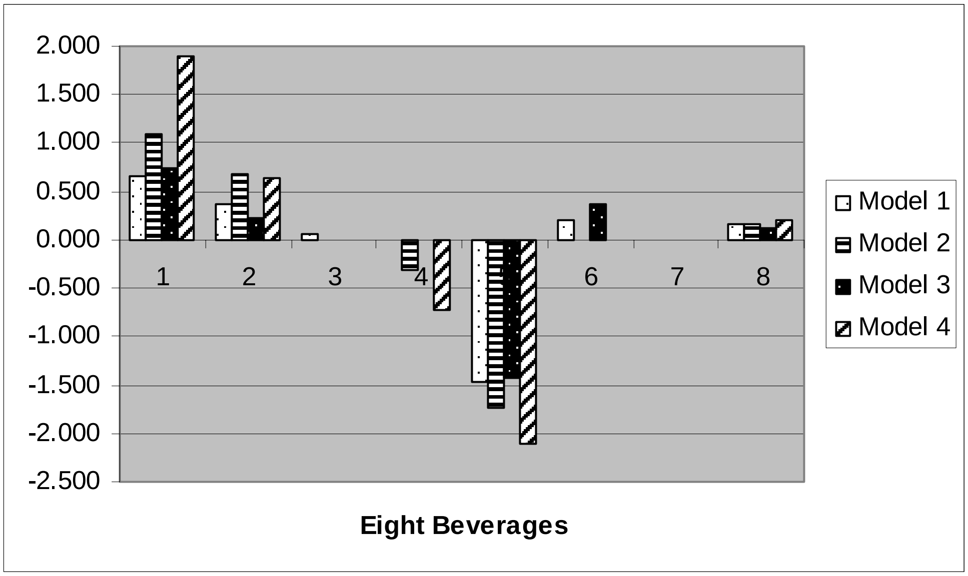


Figure 48. Eight good system compensated elasticities for bottled water

Bottled water(5) had two main substitute beverages; milk(1) and carbonated soft drinks(2). Tea(8) also was a substitute but to a lesser degree. Figure 48 reveals that the compensated own-price estimates were all negative and statistically significant. The censored corrected models indicated that isotonics(4) were a complement for bottled water(5). The models not corrected for censoring indicated that juices and fruit drinks(6) were substitutes for bottled water(5).

Juices and Fruit Drinks

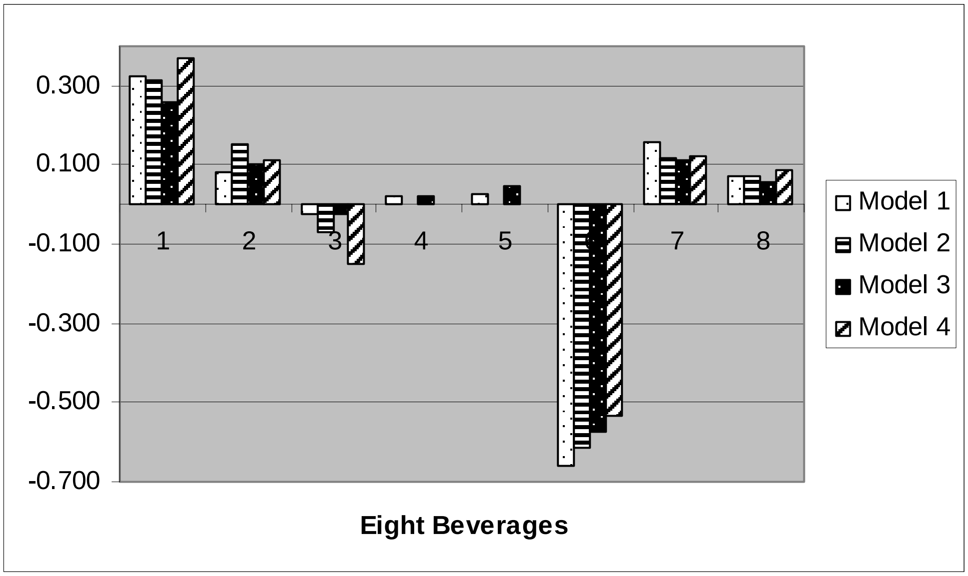


Figure 49. Eight good system compensated elasticities for juices and fruit drinks

Figure 49 indicates that juices and fruit drinks(6) had four main substitute beverages; milk(1), carbonated soft drinks(2), coffee(7), and tea(8). Powdered soft drinks(3) were shown to be complementary with juices and fruit drinks(6). The compensated own-price estimates were all negative and statistically significant. Isotonics(4) and bottled water(5) were substitutes when the models were not corrected for censoring.

Coffee

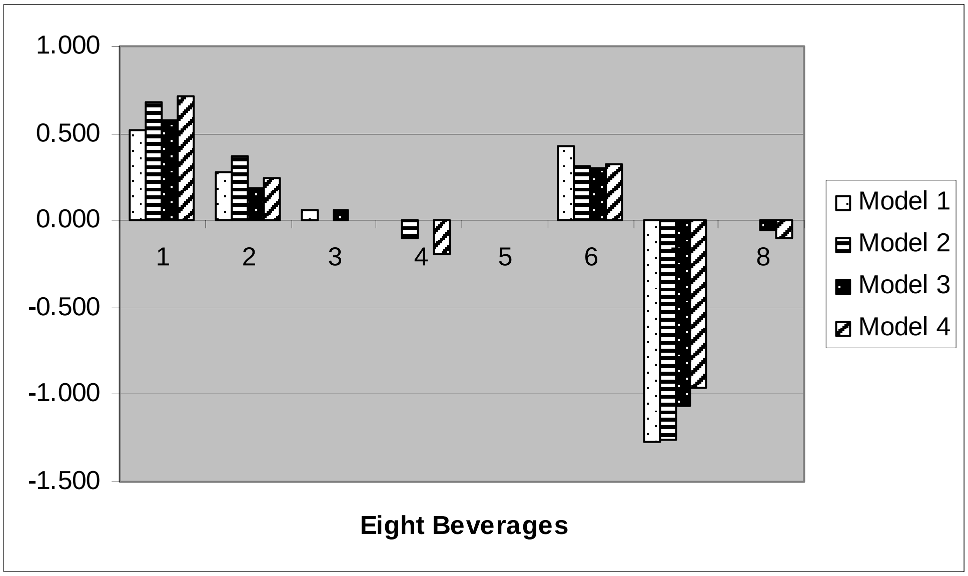


Figure 50. Eight good system compensated elasticities for coffee

The compensated elasticities for coffee are given in figure 50. Coffee(7) had three substitute beverages; milk(1), carbonated soft drinks(2), and juices and fruit drinks(6). Tea(8) and isotonics(4) were statistically significant complements for coffee(7) in two of the four models. The compensated own-price estimates were all negative and statistically significant. Coffee(7) had no significant relationship with bottled water(5) in any of the four models.

Tea

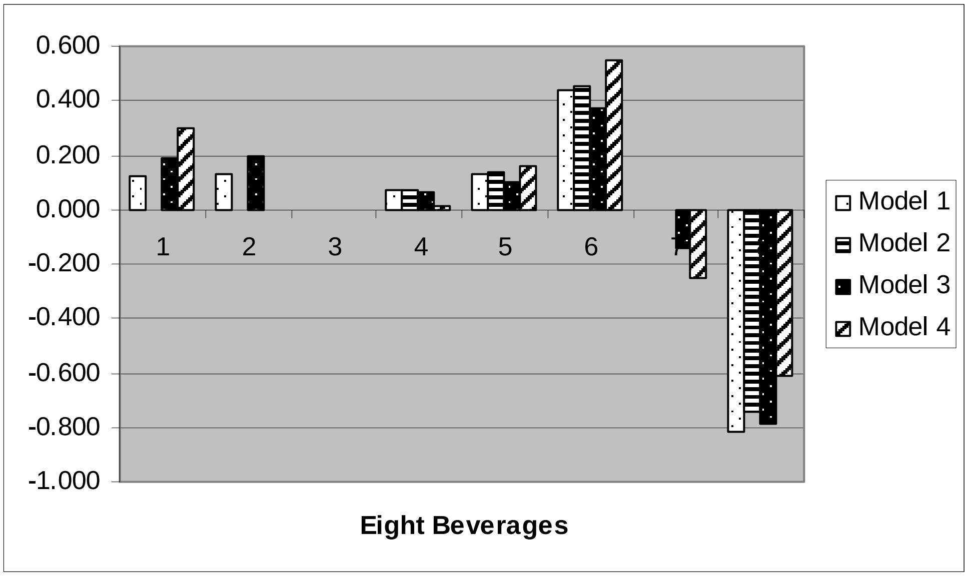


Figure 51. Eight good system compensated elasticities for tea

Figure 51 indicates that substitute beverages for tea(8) were, juices and fruit drinks(6), isotonics(4), and bottled water(5). Milk(1) was a substitute good in three of the four models. Carbonated soft drinks(2) were substitute goods when using the non-censored models. Coffee(7) was a complement to tea(8) when the quarterly data were used. The compensated own-price estimates were all negative and statistically significant.

Sixteen Good – Own-price and Expenditure Elasticity Discussion

After analyzing and discussing the results of the eight good groupings we now look at a further disaggregation of the nonalcoholic beverages. The own-price and expenditure elasticities for the demand systems analyzing sixteen nonalcoholic beverages are discussed. Tables 25 and 26 give the own-price and expenditure elasticities for the sixteen goods. The p-values are given beneath each own-price elasticity estimate.

Overall, the own-price elasticity estimates are robust across the four model specifications as they were with the eight good aggregation scheme. Estimates from the quarterly data set were less stable compared to the annual estimates. All estimates, except for two, were statistically different from zero at the .05 level. The own-price elasticity for apple juice(9) in the quarterly censored-corrected model and the estimate for vegetable juice(12) in the annual censored-corrected model were insignificant at the .05 level.

Whole milk(1) was the most price elastic beverage for each of the models. Isotonics(6) and decaffeinated coffee(14) were price elastic beverages as well. The demand for regular carbonated soft drinks(3), powdered soft drinks(5), orange juice(8), and regular tea(15) was inelastic.

Table 25. Own-Price Elasticities – Sixteen Beverage Grouping

#	Beverage	Annual Own-Price Elasticity	Annual Censored-Corrected Own-Price Elasticity	Quarterly Own-Price Elasticity	Quarterly Censored-Corrected Own-Price Elasticity
1	Whole Flavored	-3.279	-4.867	-3.402	-7.078
	and Unflavored Milk	[.000]	[.000]	[.000]	[.000]
2	Reduced Fat Flavored	-1.865	-1.912	-1.633	-1.652
	and Unflavored Milk	[.000]	[.000]	[.000]	[.000]
3	Carbonated Soft	-0.938	-0.980	-0.838	-0.806
	Drinks - Regular	[.000]	[.000]	[.000]	[.000]
4	Carbonated Soft	-1.316	-1.331	-1.116	-1.012
	Drinks - Low Calorie	[.000]	[.000]	[.000]	[.000]
5	Powdered Soft Drinks	-0.653	-0.510	-0.129	0.672
		[.000]	[.000]	[.031]	[.000]
6	Isotonics	-2.321	-3.864	-2.584	-6.146
		[.000]	[.000]	[.000]	[.000]
7	Bottled Water	-1.451	-1.637	-1.400	-1.937
		[.000]	[.000]	[.000]	[.000]
8	Orange Juice	-0.616	-0.612	-0.452	-0.292
		[.000]	[.000]	[.000]	[.000]
9	Apple Juice	-1.004	-1.023	-0.556	-0.029
		[.000]	[.000]	[.000]	[.902]
10	Other Juices	-1.052	-1.054	-0.831	-0.690
		[.000]	[.000]	[.000]	[.000]
11	Fruit Drinks	-1.049	-1.034	-0.942	-0.903
		[.000]	[.000]	[.000]	[.000]
12	Vegetable Juice	-0.287	0.428	0.341	3.660
		[.017]	[.064]	[.002]	[.000]
13	Coffee Regular	-1.361	-1.394	-1.156	-1.202
		[.000]	[.000]	[.000]	[.000]
14	Coffee Decaffeinated	-2.109	-3.731	-1.986	-3.562
		[.000]	[.000]	[.000]	[.000]
15	Tea Regular	-0.820	-0.718	-0.738	-0.313
		[.000]	[.000]	[.000]	[.000]
16	Tea Decaffeinated	-1.239	-3.221	-0.730	-3.509
		[.000]	[.000]	[.000]	[.001]

Table 26. Expenditure Elasticities – Sixteen Beverage Grouping

#	Beverage	Annual Expenditure Elasticity	Annual Censored-Corrected Expenditure Elasticity	Quarterly Expenditure Elasticity	Quarterly Censored-Corrected Expenditure Elasticity
1	Whole Flavored	1.084	1.207	0.964	1.031
	and Unflavored Milk	[.000]	[.000]	[.000]	[.000]
2	Reduced Fat Flavored	0.857	0.820	0.820	0.777
	and Unflavored Milk	[.000]	[.000]	[.000]	[.000]
3	Carbonated Soft	1.249	1.291	1.232	1.277
	Drinks - Regular	[.000]	[.000]	[.000]	[.000]
4	Carbonated Soft	1.307	1.379	1.280	1.375
	Drinks - Low Calorie	[.000]	[.000]	[.000]	[.000]
5	Powdered Soft Drinks	1.292	1.410	1.430	2.445
		[.000]	[.000]	[.000]	[.000]
6	Isotonics	1.208	1.285	1.235	1.176
		[.000]	[.000]	[.000]	[.000]
7	Bottled Water	1.034	1.032	1.150	1.264
		[.000]	[.000]	[.000]	[.000]
8	Orange Juice	0.651	0.586	0.665	0.518
		[.000]	[.000]	[.000]	[.000]
9	Apple Juice	0.952	0.943	0.937	0.791
		[.000]	[.000]	[.000]	[.000]
10	Other Juices	0.648	0.594	0.686	0.539
		[.000]	[.000]	[.000]	[.000]
11	Fruit Drinks	1.098	0.853	1.070	0.936
		[.000]	[.000]	[.000]	[.000]
12	Vegetable Juice	0.505	0.410	0.594	-0.671
		[.000]	[.000]	[.000]	[.000]
13	Coffee Regular	1.128	1.056	1.225	1.427
		[.000]	[.000]	[.000]	[.000]
14	Coffee Decaffeinated	1.025	1.329	1.103	1.640
		[.000]	[.000]	[.000]	[.000]
15	Tea Regular	0.744	0.592	0.890	0.893
		[.000]	[.000]	[.000]	[.000]
16	Tea Decaffeinated	0.557	1.639	0.711	0.504
		[.000]	[.000]	[.000]	[.178]

The own-price elasticities for beverages with low budget shares were less robust across models. Powdered soft drinks(5), vegetable juice(12), decaffeinated coffee(14), and decaffeinated tea(16) had budget shares of 1.67%, 1.65 %, 1.93 %, and 1.26 % respectively. The impacts of censoring and the small budget shares lessened robustness and are likely responsible for the positive own-price elasticities for powdered soft drinks(5) and vegetable juice(12). Vegetable juice(12) had a positive own-price elasticity for both of the quarterly models and one positive but insignificant own-price elasticity using the annual data. The further disaggregated grouping of sixteen provided less stable elasticity estimates across models compared to the initial grouping of eight nonalcoholic beverages.

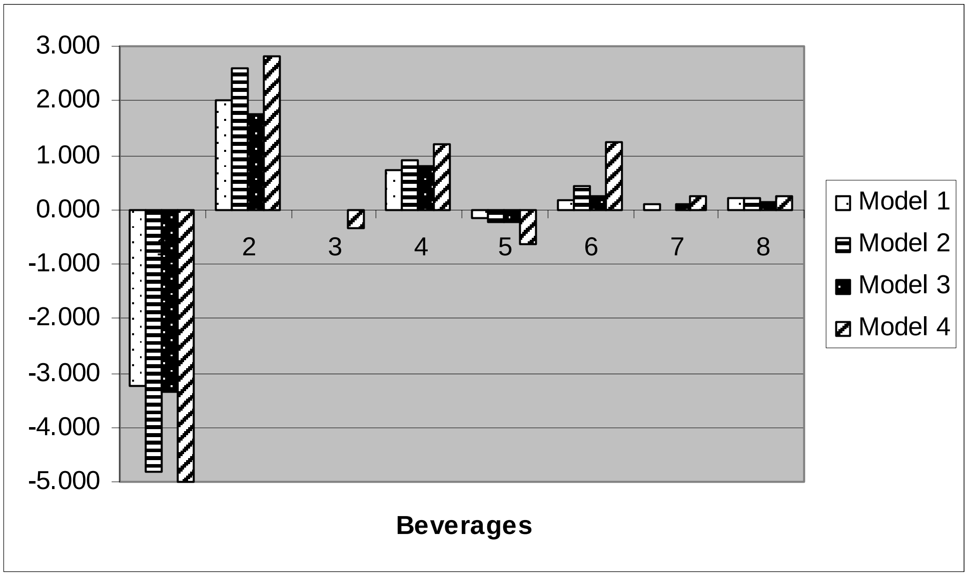
The expenditure elasticity estimates for the sixteen beverages also are robust across the four model specifications. All estimates were statistically different from zero except for one. The expenditure elasticity for decaffeinated tea(16) was not statistically different from zero for the censored-corrected quarterly model. Reduced fat milk(2), orange juice(8), apple juice(9), other juices(10), and regular tea(15) were all necessity goods. Vegetable juice(12) is a necessity good for three of the four models. Regular carbonated soft drinks(3), low-calorie carbonated soft drinks(4), and powdered soft drinks(5) were all luxury goods since their expenditure elasticities were over 1. Thus, if one were to give a household some extra income to expend within this set of sixteen beverages, they would allocate this extra income to buy in greater proportion these luxury beverages.

Similar to the eight good aggregation, the annual expenditure elasticities gave very similar results to the quarterly expenditure elasticities. Correcting for censoring altered the elasticities for the quarterly estimates more than the annual estimates. This is due to the greater degree of censoring within the quarterly data. The expenditure elasticities for beverages with the lowest budget shares changed more across the models, particularly vegetable juice(12).

Sixteen Good – Cross-price Elasticity Discussion

After analyzing own-price and expenditure effects for the sixteen goods, a look at the interrelationships within this sixteen good complex is undertaken. Definition of substitutes and complements rests on the estimated compensated cross-price elasticities. Each beverage has an accompanying chart that graphically displays the statistically significant own-price and cross-price elasticities. Magnitudes of each can be seen for all four models. Model 1 corresponds to the use of annual data without the censoring correction. Model 2 corresponds to the use of annual data with the censoring correction. Model 3 pertains to the use of quarterly data without the censoring correction. Model 4 pertains to the use of quarterly data with the censoring correction. Below, each beverage and its interrelationships with other beverages are discussed.

Whole Fat Milk – flavored and unflavored



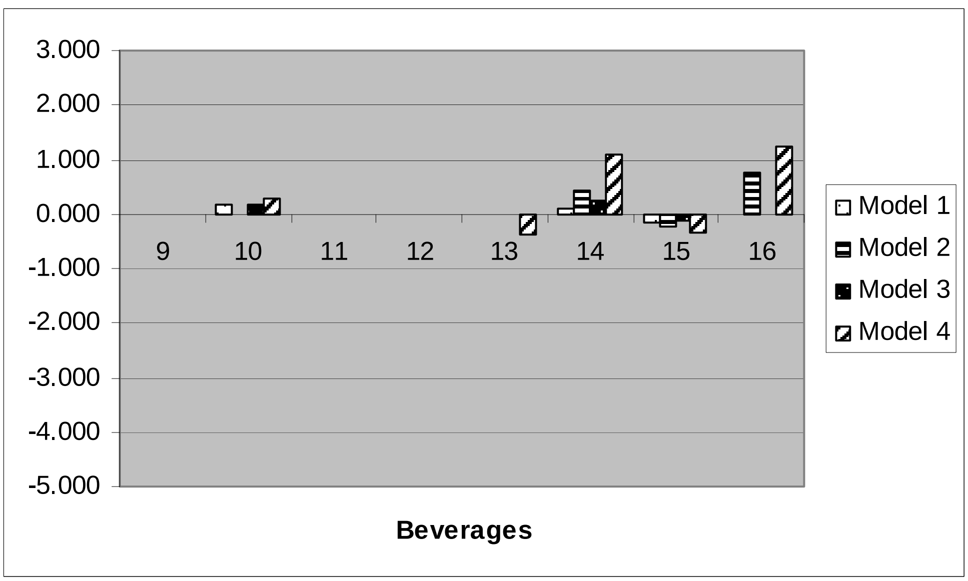


Figure 52. Sixteen good system compensated elasticities for whole milk

Reduced fat milk(2), low-calorie carbonated soft drinks(4), isotonics(6), orange juice(8), and decaffeinated coffee(14) were all shown to be substitutes for whole milk(1). Figure 52 indicates that reduced fat milk(2) and low-calorie carbonated soft drinks(4) were the greatest substitutes in terms of the magnitudes of the cross-price elasticities. Three of the four models indicated that bottled water(7) and other juices(10) were substitutes for whole milk(1). Only the censored-corrected models for decaffeinated tea(16) revealed a substitute relationship with whole milk(1). Powdered soft drinks(5) and regular tea(15) were complementary goods for whole milk(1). The compensated own-price estimates for whole milk(1) were all negative and significant.

Reduced Fat Milk – flavored and unflavored

The compensated elasticities for reduced fat milk are given in figure 53. Reduced fat milk(2) had three main substitutes; whole fat milk(1), regular carbonated soft drinks(3), and low-calorie carbonated soft drinks(4). Bottled water(7), orange juice(8), apple juice(9), other juices(10), fruit drinks(11), and regular(13) and decaffeinated(14) coffee were shown to be substitutes to a lesser degree for reduced fat milk(2). The compensated own-price estimates for reduced fat milk(2) were all negative and statistically significant.

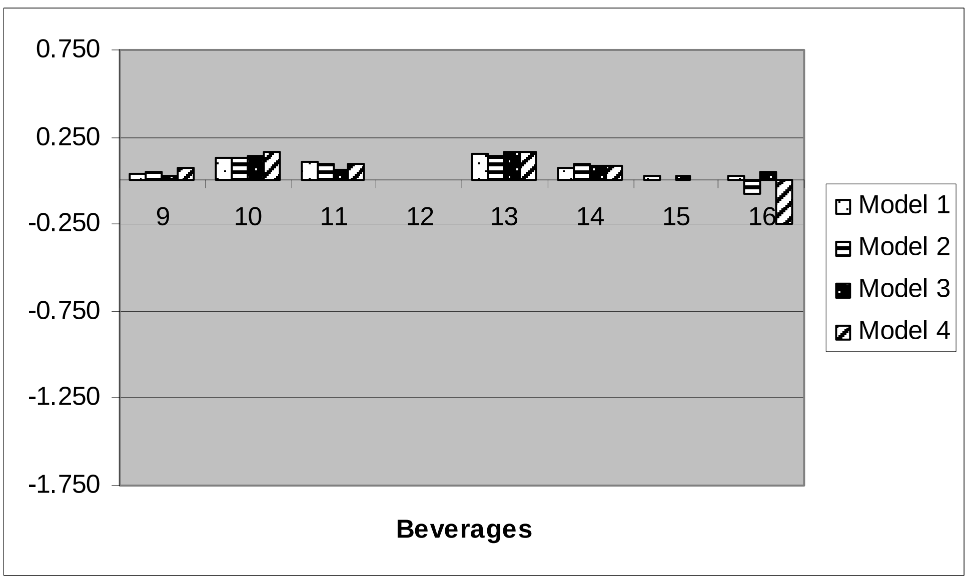


Figure 53. Sixteen good system compensated elasticities for reduced fat milk

Carbonated Soft Drinks – regular

Figure 54 reveals that regular carbonated soft drinks(3) had five main substitutes; reduced fat milk(2), low-calorie carbonated soft drinks(4), bottled water(7), other juices(10), and regular coffee(13). Powdered soft drinks(5) were shown to be complements with regular carbonated soft drinks(3). The compensated own-price estimates for regular carbonated soft drinks(3) were all negative and significant.

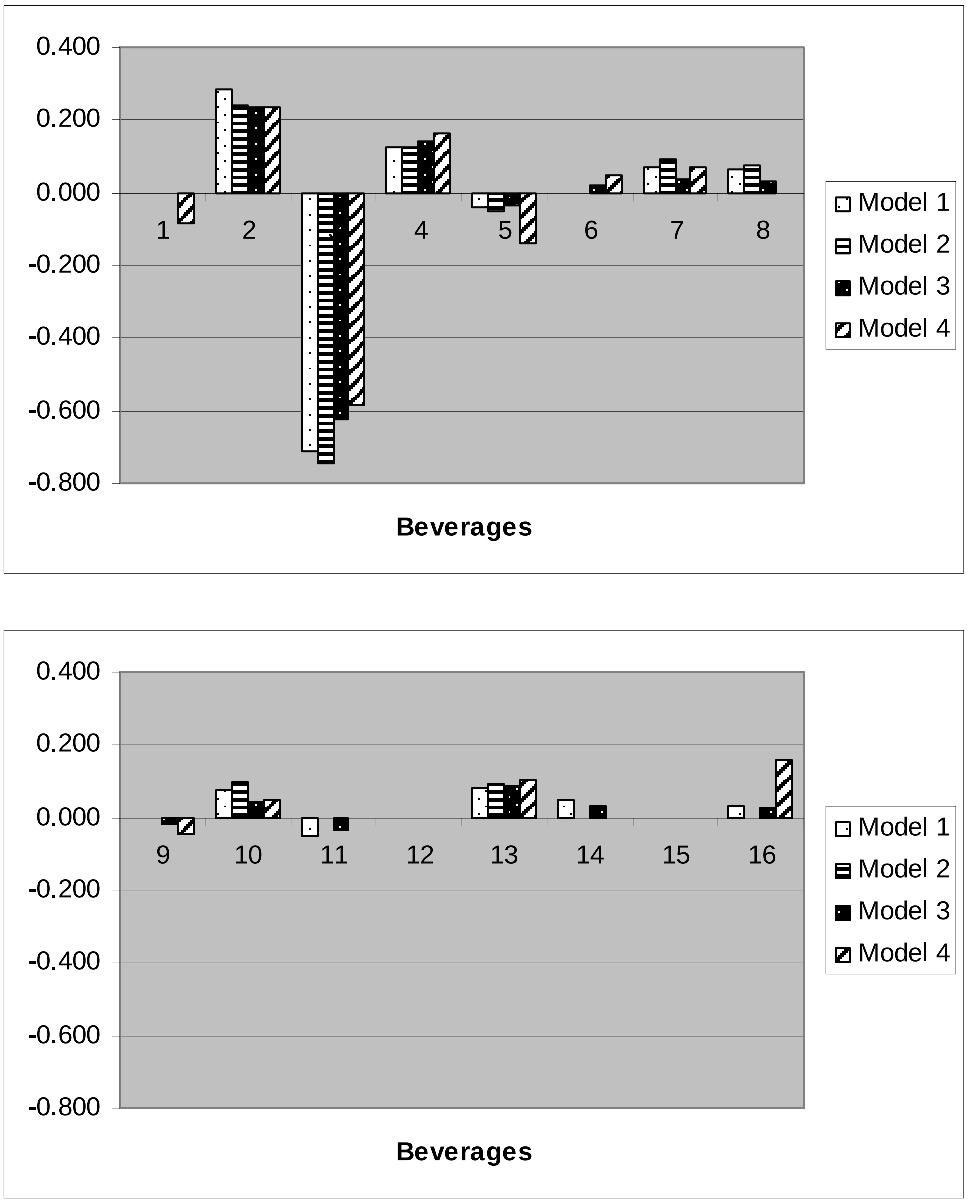
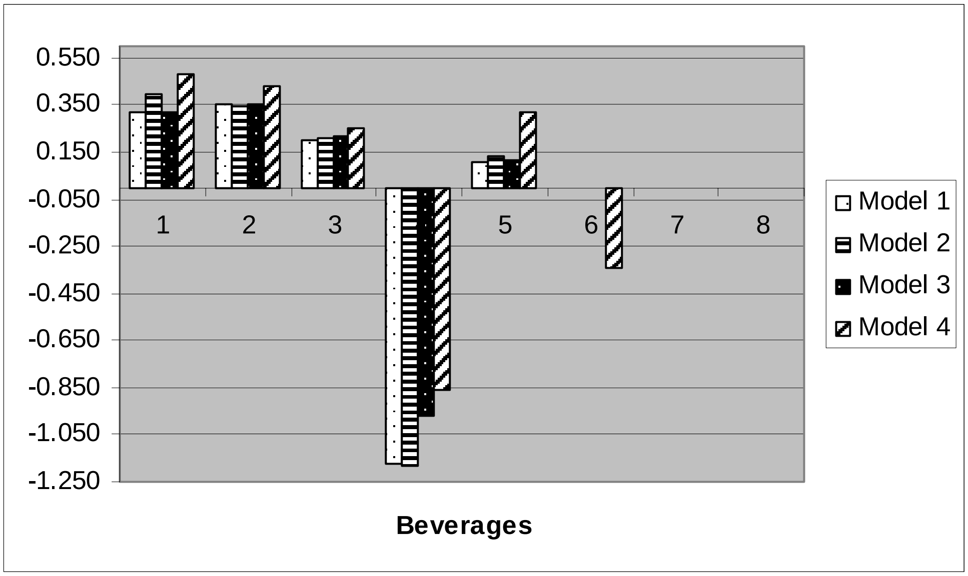


Figure 54. Sixteen good system compensated elasticities for regular carbonated soft drinks

Carbonated Soft Drinks – low-calorie



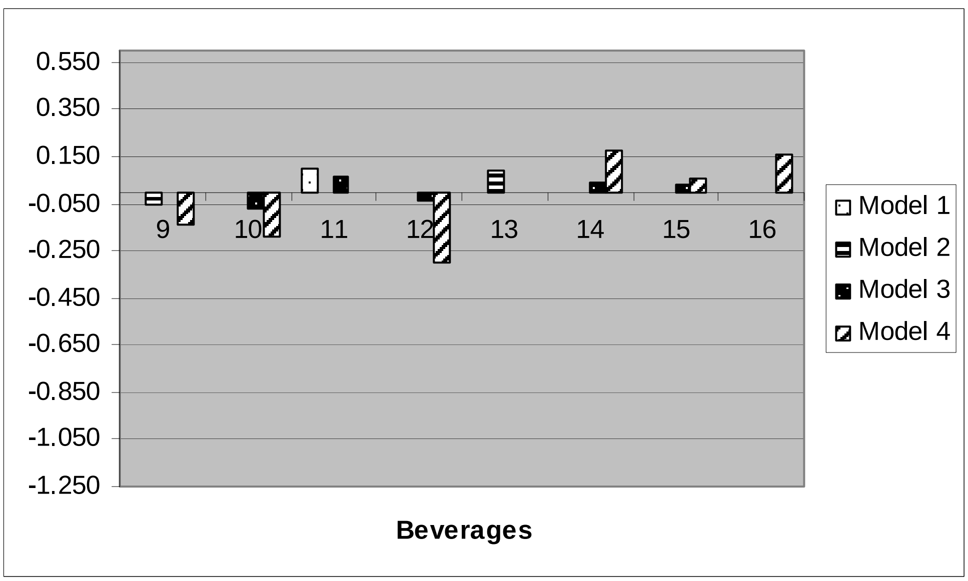


Figure 55. Sixteen good system compensated elasticities for low-calorie carbonated soft drinks

Figure 55 displays four key substitute beverages for low-calorie carbonated soft drinks(4). Whole fat milk(1), reduced fat milk(2), regular carbonated soft drinks(3), and powdered soft drinks(5) were clearly substitute goods across all models. The compensated own-price estimates for low-calorie carbonated soft drinks(4) were all negative and statistically significant. The two quarterly data models indicated that other juices(10) and vegetable juice(12) are complements for low-calorie carbonated soft drinks(4). The two quarterly data models indicated that decaffeinated coffee(14) and regular tea(15) were weak substitutes for low-calorie carbonated soft drinks(4).

Powdered Soft Drinks

The compensated elasticities for powdered soft drinks are given in figure 56. Powdered soft drinks(5) were complemented by whole fat milk(1), regular carbonated soft drinks(3), and fruit drinks(11). Low-calorie carbonated soft drinks(4) is the main substitute good with powdered soft drinks(5). Three of the four models indicated that bottled water(7), other juices(10), and regular coffee(13) were substitutes for powdered soft drinks(5). Two of the compensated own-price estimates were negative and statistically significant. The quarterly model estimates were either insignificant or positive. Again, these anomalies were due to the increased censoring within the quarterly data and the low budget share of powdered soft drinks(5) within the data.

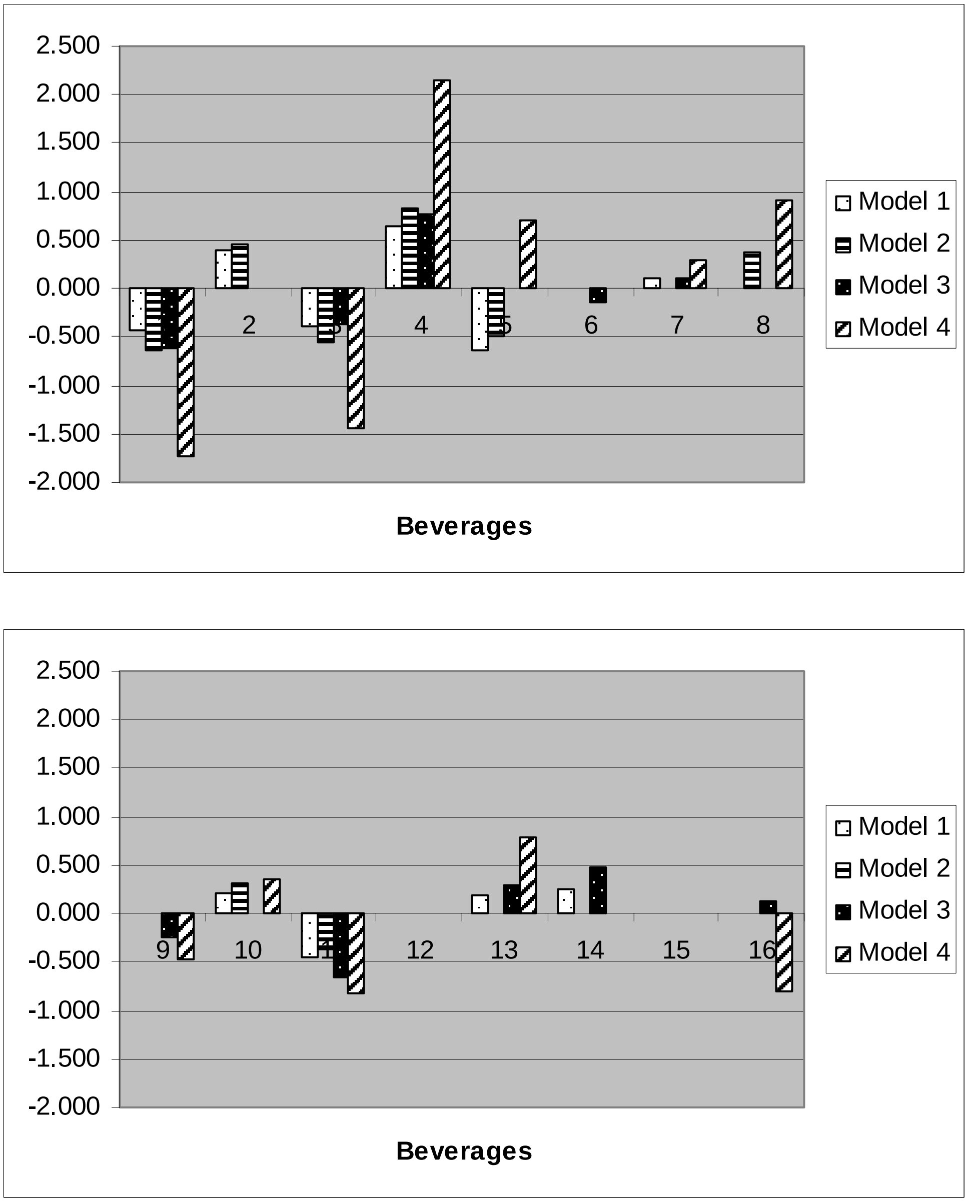
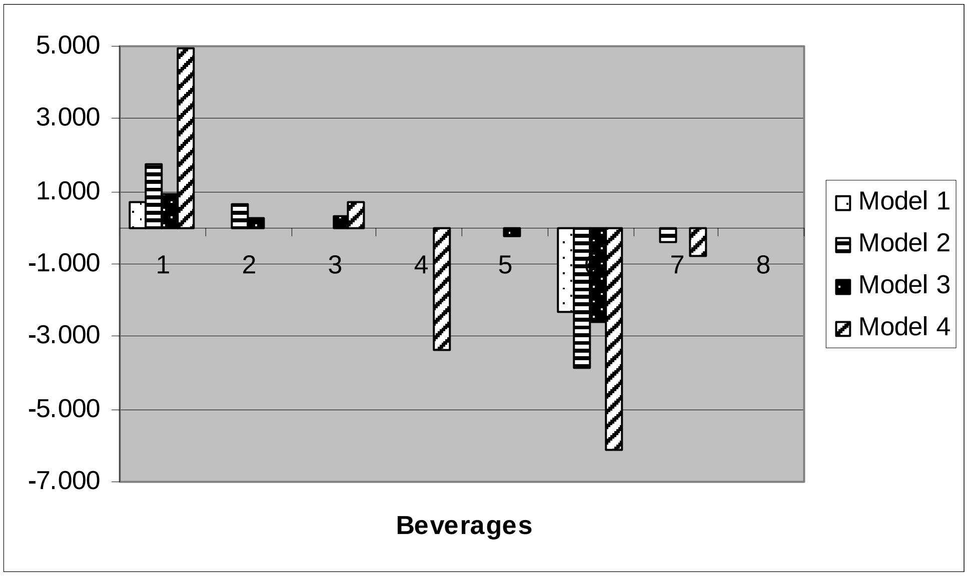


Figure 56. Sixteen good system compensated elasticities for powdered soft drinks

Isotonics



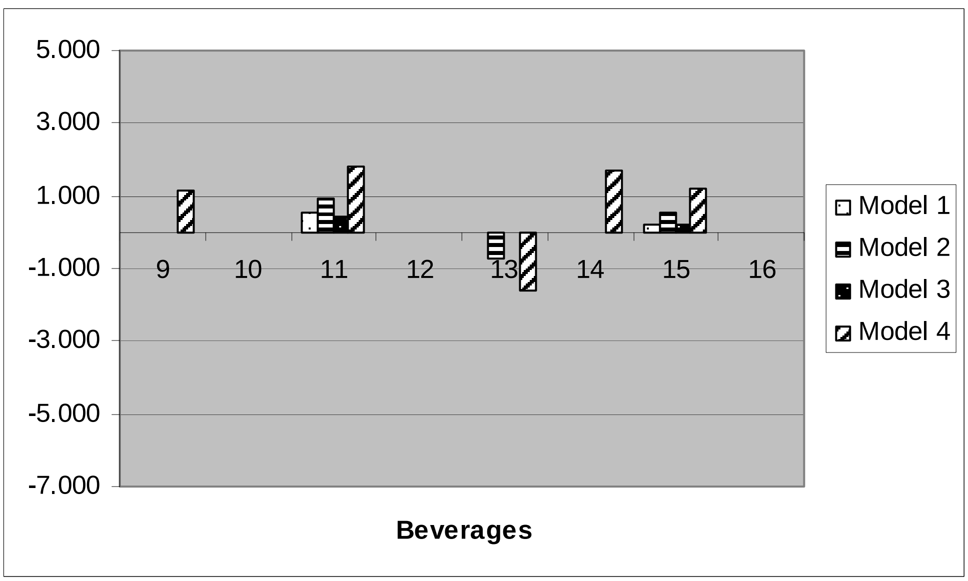
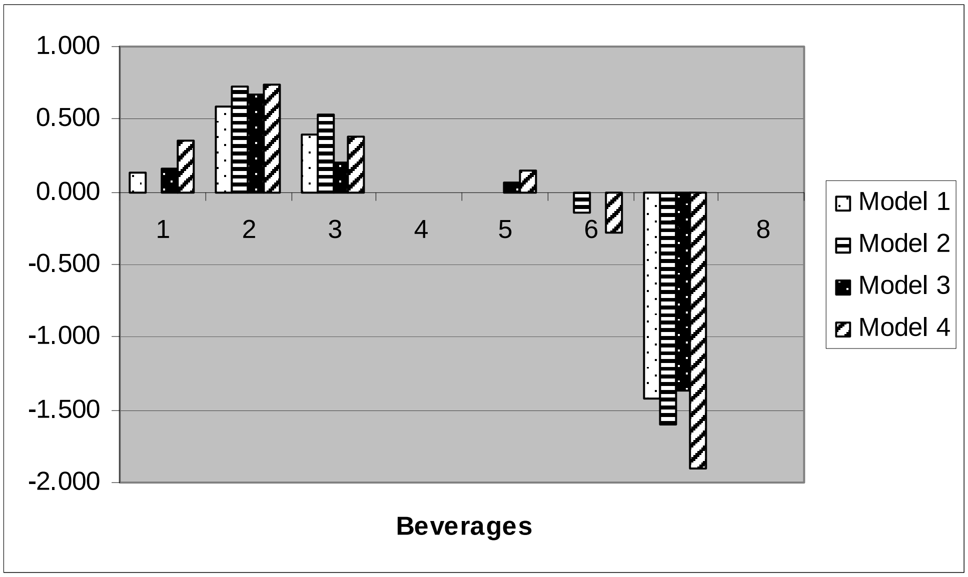


Figure 57. Sixteen good system compensated elasticities for isotonics

Figure 57 indicates three substitute beverages for isotonics(6). Whole milk(1) was the greatest substitute. Fruit drinks(11) and regular tea(15) also were substitutes. The quarterly models indicated that regular carbonated soft drinks(3) was also a substitute goods. The censored corrected models indicated that bottled water(7) and regular coffee(13) were complementary goods for isotonics(6). The compensated own-price estimates for isotonics(6) were all negative and statistically significant.

Bottled Water



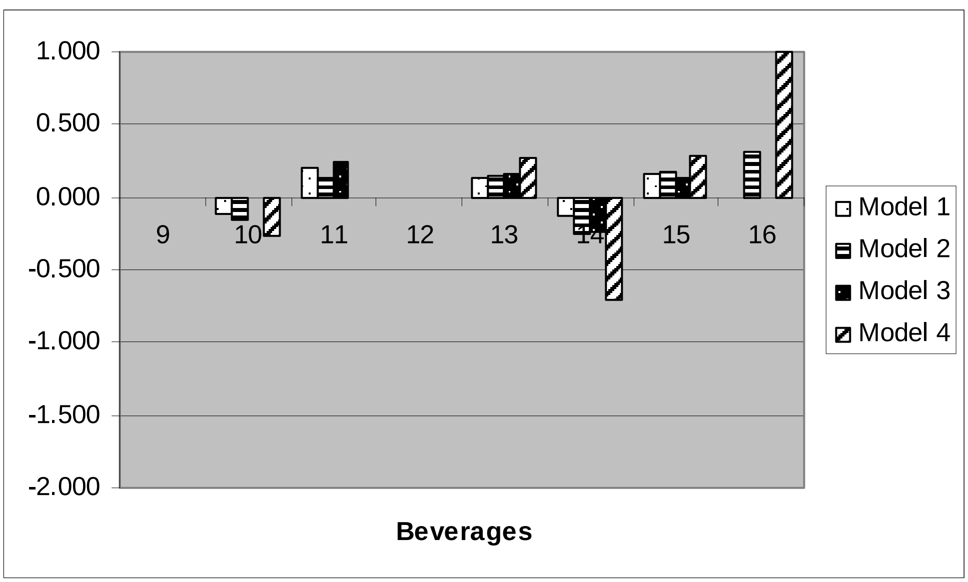


Figure 58. Sixteen good system compensated elasticities for bottled water

Figure 58 reveals four substitute beverages for bottled water(7) across all models. Reduced fat milk(2) was the greatest substitute. Regular carbonated soft drinks(3), regular coffee(13), and regular tea(15) also were substitutes. Three of the four models indicated that whole milk(1) was a substitute for with bottled water(7). Decaffeinated coffee(14) was a complementary good for bottled water(7) across all models. Three of the four models indicated that other juices(10) were complements for bottled water(7). The compensated own-price estimates for bottled water(7) were all negative and statistically significant.

Orange Juice

The compensated elasticities for orange juice are given in figure 59. Whole milk(1) and reduced fat milk(2) were substitutes for orange juice(8). Three of the four models indicated that regular carbonated soft drinks(3) and regular coffee(13) were also substitutes for orange juice(8). All four models indicated that apple juice(9) was a complement good for orange juice(8). The censored corrected model indicated that decaffeinated tea(16) was a complement as well. All of the compensated own-price estimates for orange juice(8) were negative and statistically significant.

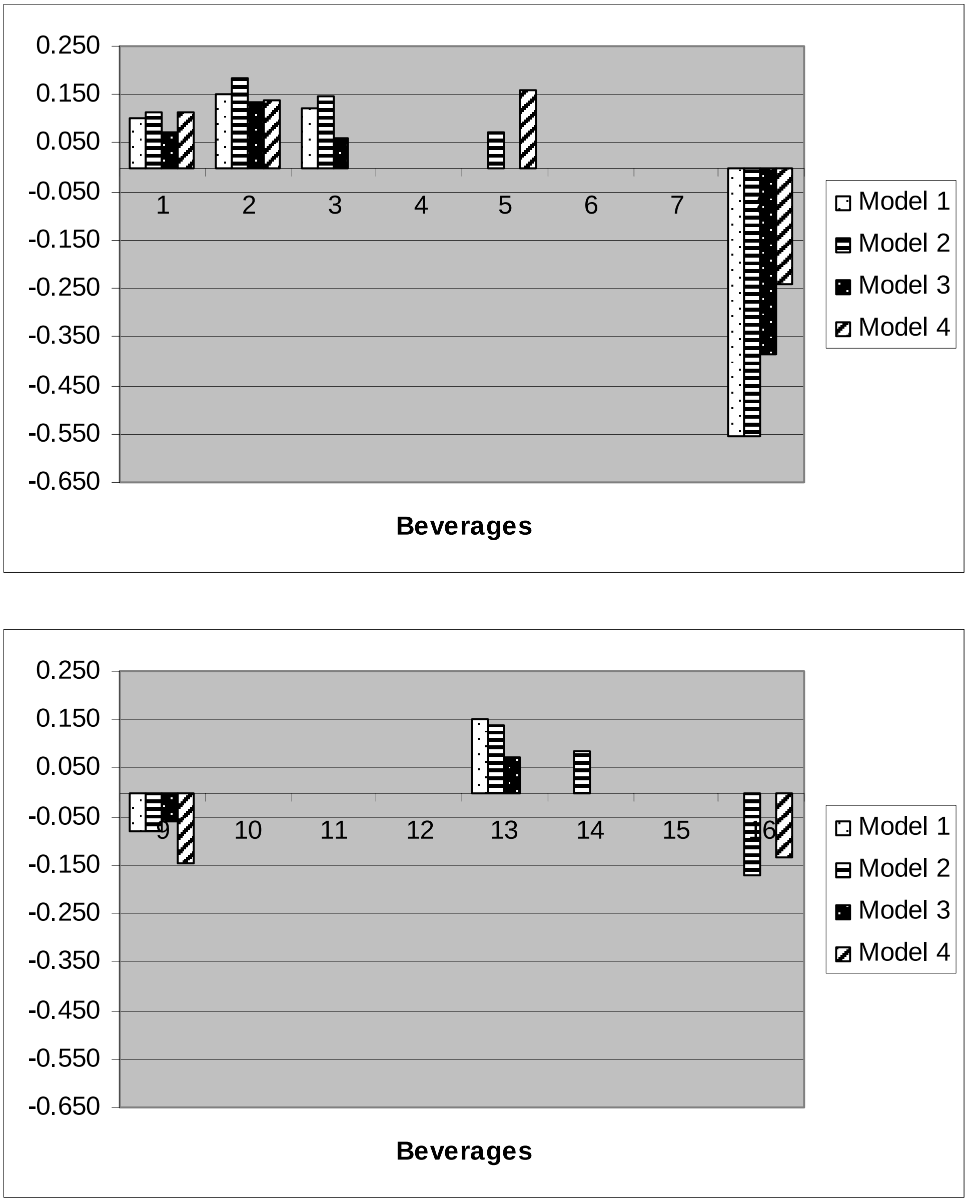
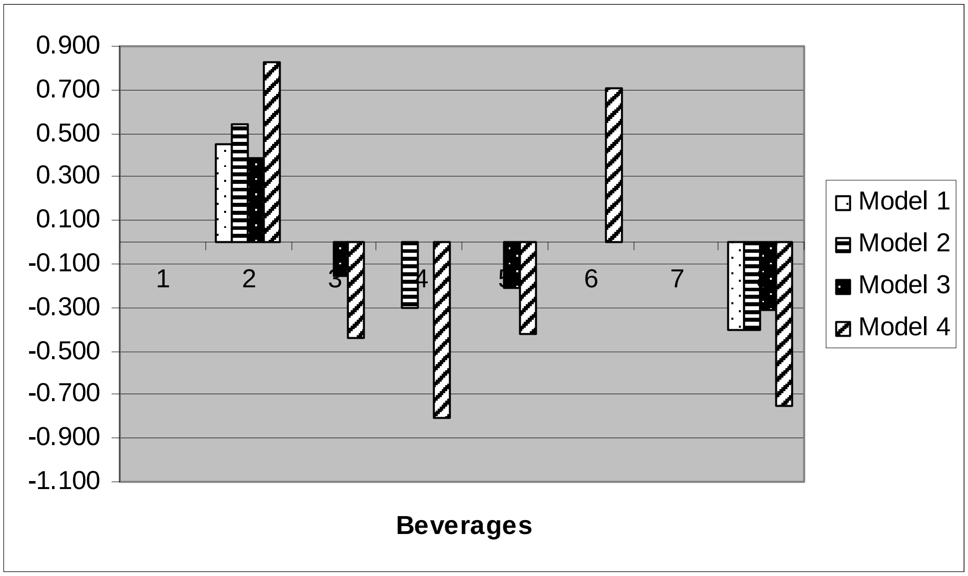


Figure 59. Sixteen good system compensated elasticities for orange juice

Apple Juice



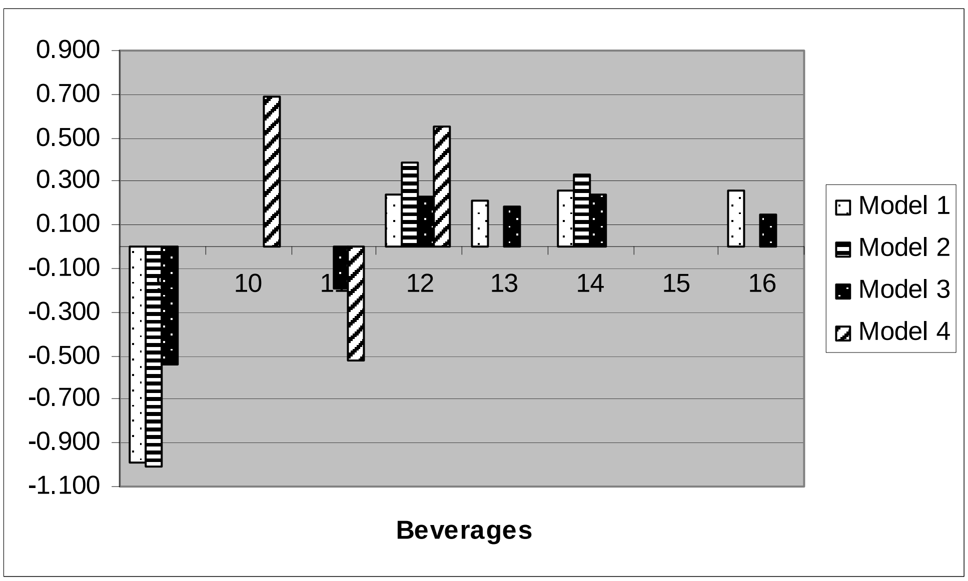
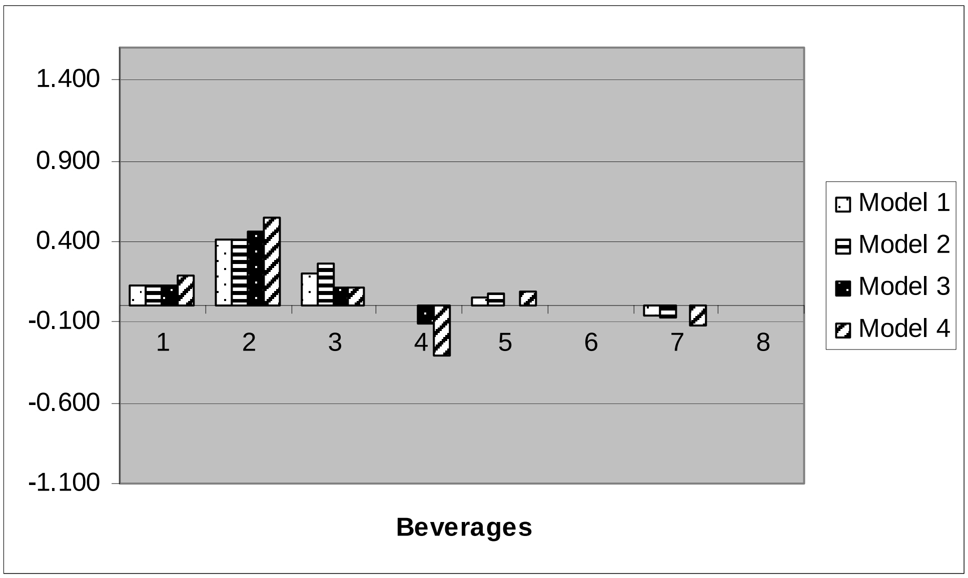


Figure 60. Sixteen good system compensated elasticities for apple juice

Figure 60 reveals that reduced fat milk(2) and vegetable juices(12) were the major substitute beverages for apple juice(9). Three of the four models indicated that decaffeinated coffee(14) is a substitute for apple juice(9). All four models indicated that orange juice(12) was a complementary good for apple juice(9). Three of the four compensated own-price estimates for apple juice(9) were all negative and significant.

Other Juices



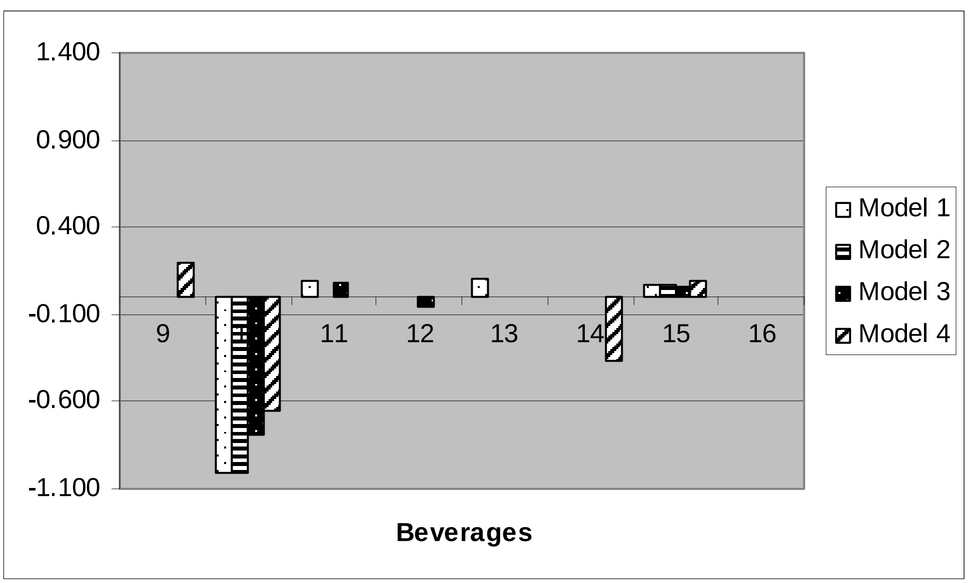
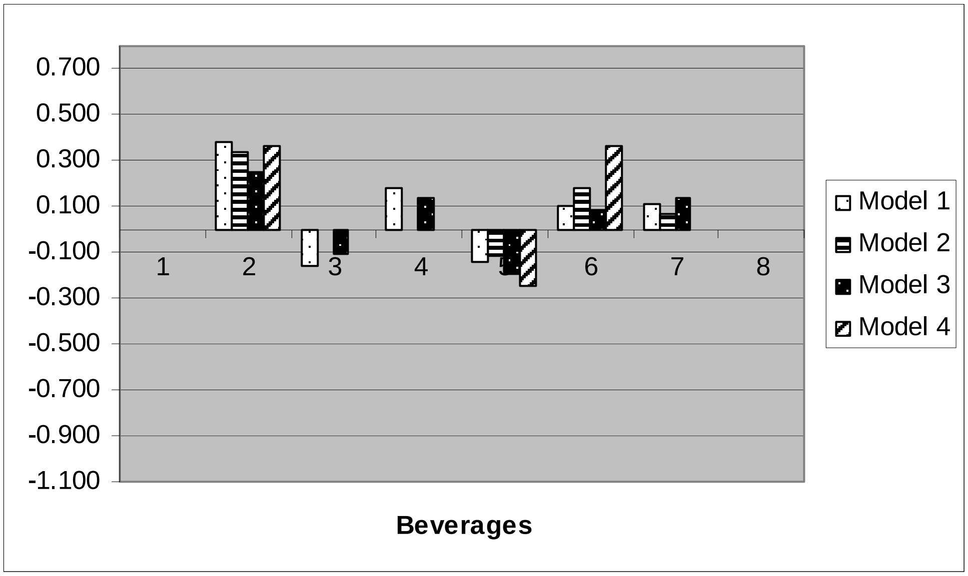


Figure 61. Sixteen good system compensated elasticities for other juices

Figure 61 exhibits the compensated elasticities for other juices. Whole milk(1), reduced fat milk(2), regular carbonated soft drinks(3), and regular tea(15) were shown to be substitutes for other juices(10). Reduced fat milk(2) was the strongest substitute good for other juices(10). Three of the four models showed that powdered soft drinks(5) were substitutes as well. Three of the four models indicated that bottled water(7) was a complementary good for other juices(10). The compensated own-price estimates for other juices(10) were all negative and statistically significant.

Fruit Drinks

The compensated elasticities for fruit drinks are given in figure 62. Fruit drinks(11) were complemented by powdered soft drinks(5). Reduced fat milk(2) was the best substitute for fruit drinks(11). Isotonics(6), vegetable juice(12), regular tea(15), and decaffeinated tea(16) also are substitutes for fruit drinks(11). Three of the four models also indicated that bottled water(7) and regular coffee(13) were substitute goods. The compensated own-price estimates for fruit drinks(11) were all negative and statistically significant.



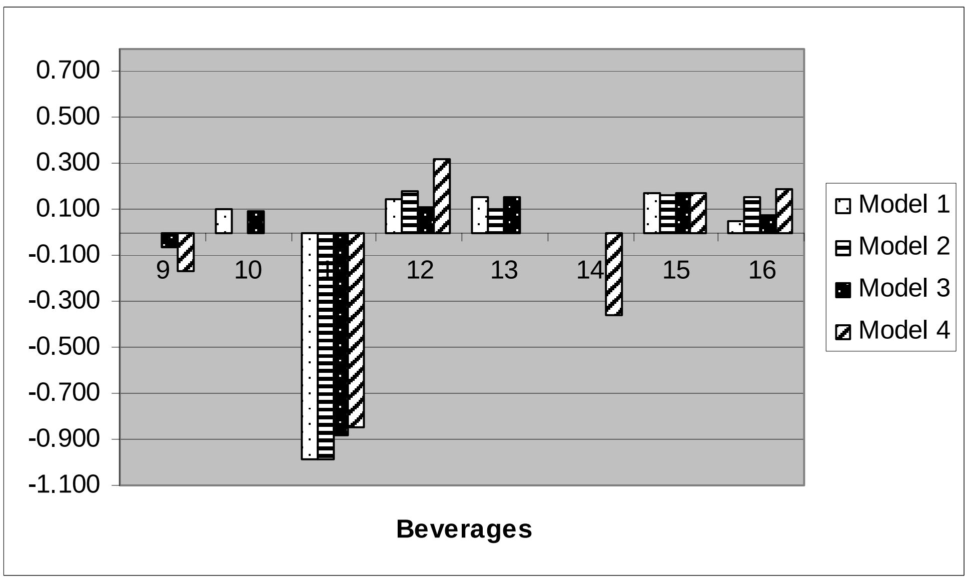


Figure 62. Sixteen good system compensated elasticities for fruit drinks

Vegetable Juice

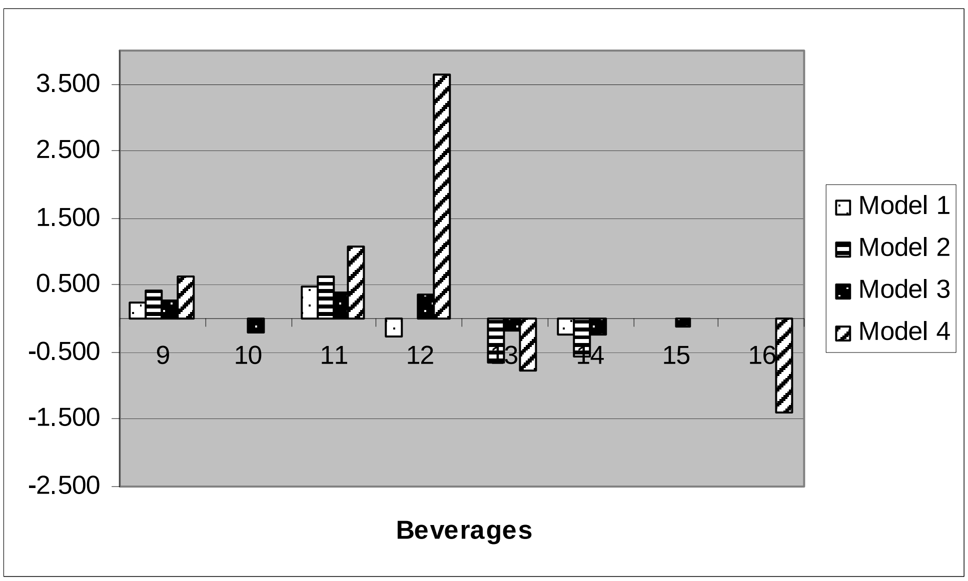


Figure 63. Sixteen good system compensated elasticities for vegetable juice

The key result for vegetable juice(12) was that apple juice(9) and fruit drinks(11) were the main substitute goods. Three of the four models indicated that regular coffee(13) and decaffeinated coffee(14) were complementary goods for vegetable juice(12). Figure 63 indicates that only one of the compensated own-price elasticities was negative. The low budget share of 1.65 % and the degree of censoring within the data were likely the reasons for this anomalous result.

Coffee – regular

The compensated elasticities for regular coffee are given in figure 64. Reduced fat milk(2), regular carbonated soft drinks(3), bottled water(7), and decaffeinated coffee(14) were shown to be substitutes for regular coffee(13). Reduced fat milk(2) was the best substitute good for regular coffee(13). Three of the four models showed that powdered soft drinks(5), fruit drinks(11), and orange juice(8) were substitutes as well. Three of the four models also indicated that vegetable juice(12) and regular tea(15) were complementary goods for regular coffee(13). The compensated own-price estimates for regular coffee(13) were all negative and statistically significant.

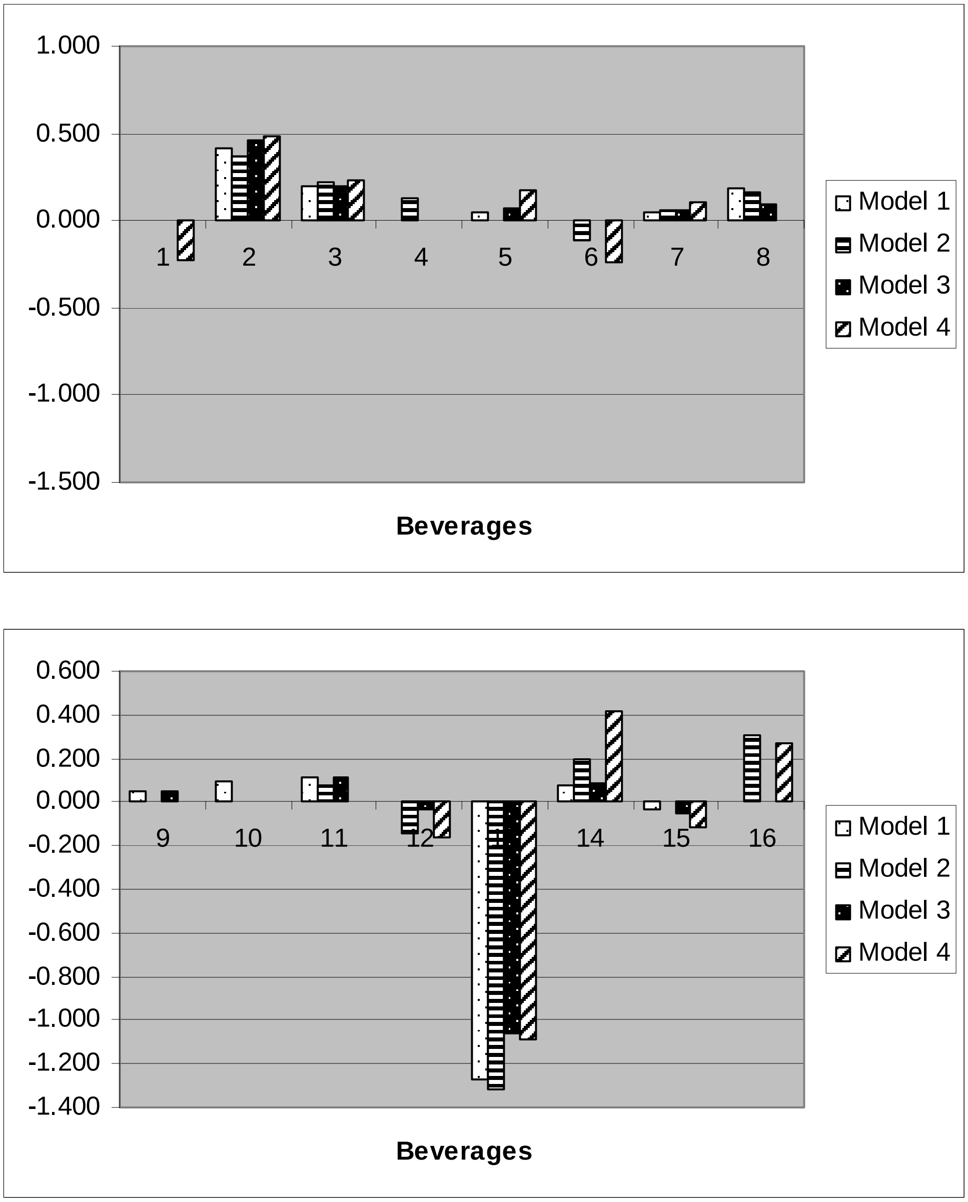


Figure 64. Sixteen good system compensated elasticities for regular coffee

Coffee – decaffeinated

Figure 65. Sixteen good system compensated elasticities for decaffeinated coffee

Figure 65 displays the compensated elasticities for decaffeinated coffee. Whole milk(1), reduced fat milk(2), and regular coffee(13) were shown to be substitutes for decaffeinated coffee(14). All of the models indicated that bottled water(7) is a complementary good for decaffeinated coffee(14). Three of the models indicated that vegetable juice(12) was a complementary good for decaffeinated coffee(14). The compensated own-price estimates for decaffeinated coffee(14) were all negative and statistically significant.

Tea – regular

The compensated elasticities for regular tea are given in figure 66. Isotonics(6), bottled water(7), other juices(10), and fruit drinks(11) were shown to be substitutes for regular tea(15). All four models indicated that whole milk(1) is a complementary good for regular tea(15). Three of the four models indicated that regular coffee(13) was a complementary good for regular tea(15). The models not corrected for censoring indicated that reduced fat milk(2) is a substitute for regular tea(15). The compensated own-price estimates for regular tea(15) were all negative and statistically significant.

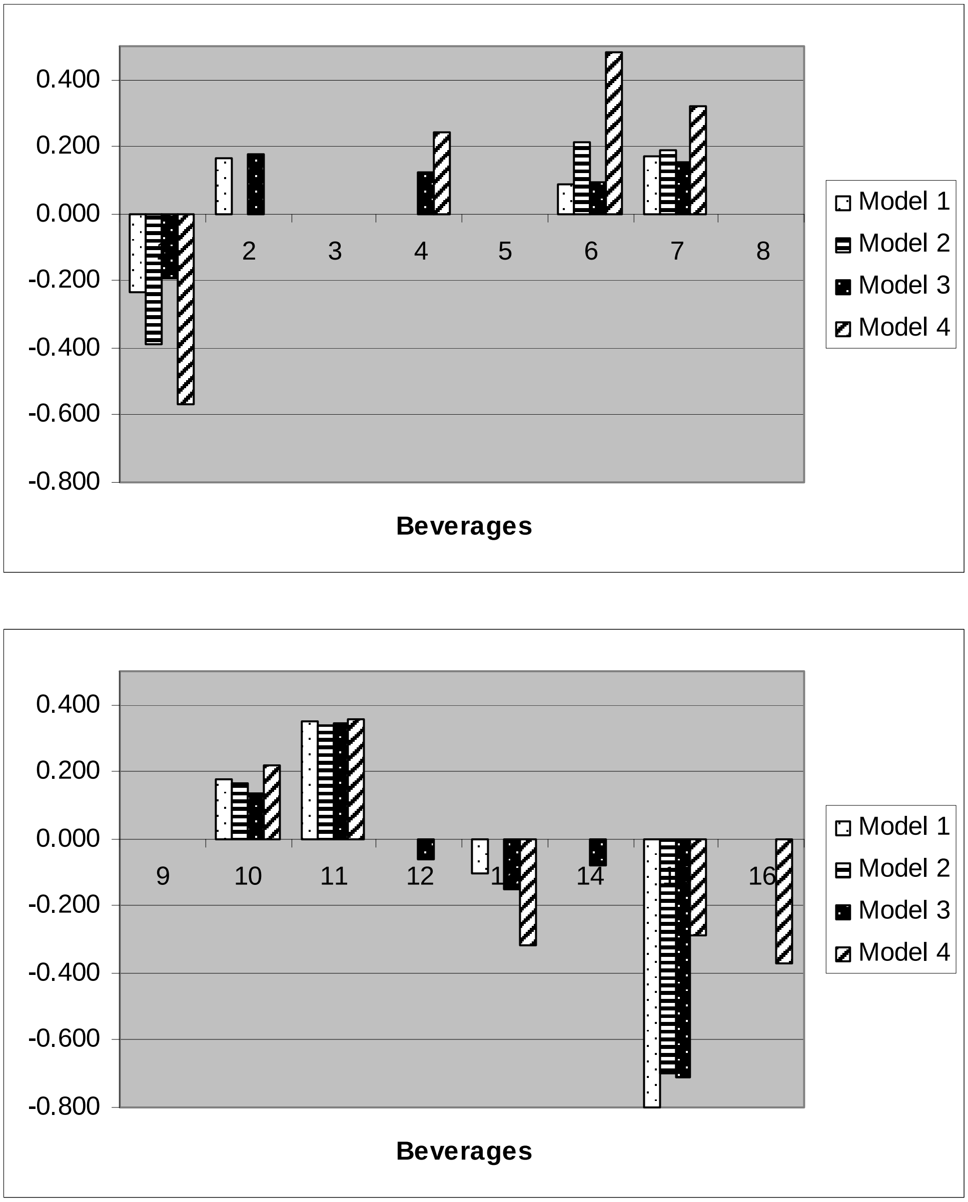


Figure 66. Sixteen good system compensated elasticities for regular tea

Tea – decaffeinated

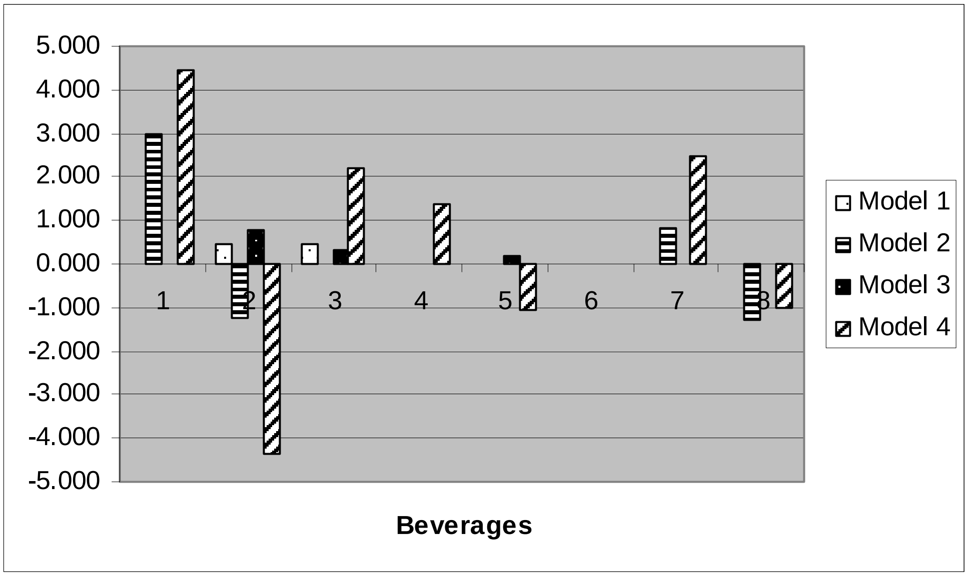


Figure 67. Sixteen good system compensated elasticities for decaffeinated tea

Figure 67 indicates that fruit drinks(11) were shown to be substitutes for decaffeinated tea(16) across all four models. Models corrected for censoring indicated that whole milk(1), bottled water(7), and regular coffee(13) were substitutes with decaffeinated tea(16). Models corrected for censoring indicated that reduced fat milk(2) and orange juice(8) are complements for decaffeinated tea(16). The models that were not corrected for censoring indicated that reduced fat milk(2) and apple juice(9) are substitutes while decaffeinated coffee(14) is a complement for decaffeinated tea(16). The compensated own-price estimates for decaffeinated tea(16) were all negative and statistically significant.

Conclusions – Interrelationships

Overall, the elasticity results from the four models and the aggregation schemes considered provided solid findings for the interrelationships among the nonalcoholic beverages. In many instances, all four models were significant and in agreement in sign and magnitude which strongly supported the estimate of own-price, expenditure, and cross-price elasticities. The agreement of substitutes and complements were common across aggregations of beverages as well.

Every beverage, whether in the eight good grouping or the sixteen grouping, had some significant interaction with at least one other beverage in the group. This finding shows the interrelatedness within the nonalcoholic beverage complex. Substitute beverage relationships occurred more often than complementary relationships. Milk and carbonated soft drinks were the most common substitute or complement with other beverages in the groupings.

Elasticities were more apt to change across models for the beverages that had lower budget shares. Lower budget shares exist in the more refined grouping, yet information concerning interrelationships among a greater number of beverage classifications is retrieved. Pushing the aggregations too far increases the issue concerning low budget shares.

The elasticities were more sensitive when a higher degree of censoring was present. As the time frequency is decreased, a larger amount of zeros exist within the data set. The quarterly data were censored to a much higher degree. Consequently, less robust elasticity results were evident when compared to the annual data. Combining these censoring effects with the low-budget shares of some of the beverages resulted in a few cases of conflicting results across models, but these were limited. Overall, the four models gave similar results and allowed for uniform interpretations of the interrelationships between the beverages.

CHAPTER VIII

ESTIMATION OF ELASTICITIES OF NONALCOHOLIC BEVERAGES BY SELECTED DEMOGRAPHIC CATEGORIES

Introduction

After analyzing elasticities over the entire spectrum of households within the data set in Chapter VII, a closer look into specific differences by demographic categories is undertaken. Chapter IV indicated that demographic characteristics of the household were responsible for decisions to choose to purchase a beverage. Chapter V affirmed that households with different demographic characteristics bought differing quantities of nonalcoholic beverages. This chapter explores price-sensitivity relationships for different demographic characteristics.

To compare price sensitivity for differing demographics a separate demand system is run for each demographic category. Only one model is used in this chapter since the findings were robust across the models in Chapter VII. The annual censored-corrected model utilizing the eight good grouping of nonalcoholic beverages is used in this chapter. The smaller grouping helps to avoid the low budget share problem and the use of the annual data helps to alleviate the censoring issue.

Four demographics are considered; poverty status, region, race, and the presence of children within the household. For each demographic category the results of the analysis is discussed. The own-price and expenditure elasticities are compared for the eight beverages. Subsequently, the cross-price effects are looked at for the demographic categories. Complete tables of elasticities for each demographic category are given in Appendix J.

130 % of Poverty – Analysis of Households Above and Below

The uncompensated own-price and expenditure elasticities for above and below 130% of poverty are given below in table 27. The p-values are given below each estimate.

Table 27. Own-Price and Expenditure Elasticities for 130% of Poverty Status

		Own-Price Elasticity		Expenditure Elasticity	
#	**Beverage**	**Above**	**Below**	**Above**	**Below**
1	Milk	-1.656	-1.324	1.031	0.978
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	-1.177	-0.962	1.271	1.261
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	-0.385	-0.330	1.432	1.226
		[.000]	[.325]	[.000]	[.000]
4	Isotonics	-2.539	-1.556	1.182	0.855
		[.000]	[.710]	[.000]	[.406]
5	Bottled Water	-1.750	-1.946	1.026	0.963
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	-0.823	-0.371	0.692	0.820
		[.000]	[.104]	[.000]	[.000]
7	Coffee	-1.354	-1.595	1.019	0.968
		[.000]	[.000]	[.000]	[.000]
8	Tea	-0.745	-0.942	0.503	0.192
		[.000]	[.000]	[.000]	[.342]

Households below 130% of poverty were more price sensitive for bottled water, coffee, and tea when compared to households above 130% of poverty. Statistical significance for some of the estimates was not achieved. There were only 277 households of the 5,715 that were below 130% of poverty status. The expenditure elasticities indicate that milk, isotonics, bottled water, and coffee, are defined as necessity goods for households below 130% of poverty. These same goods are not necessity goods for households above 130% of poverty. Tea is more of a necessity good for households below 130% of poverty when compared to households above 130% of poverty. If given extra income to spend on this group of eight beverages, households above 130% of poverty would buy a greater amount of powdered soft drinks while households below 130% of poverty would buy a greater portion of carbonated soft drinks.

Next, we look at cross-price elasticities for households above and below 130% of poverty. Discussion will be limited to beverages that have notable significant differences between the two groups of poverty status. A figure indicating each difference for each beverage that had significant differences is given along with discussion.

Figure 68. Compensated elasticities for milk by poverty status of the household

Figure 68 reveals the elasticities by poverty status for milk. Households below 130% of poverty indicated that coffee(7) was a greater substitute for milk(1) compared to households above 130% of poverty. Households above 130% of poverty indicated that carbonated soft drinks(2) were a greater substitute for milk(1). Households below 130% of poverty indicated that powdered soft drinks(3) were a greater substitute for milk(1) compared to households below 130% of poverty. The compensated own-price elasticities also show that households below 130% of poverty were slightly less own-price sensitive than households above 130% of poverty.

Figure 69. Compensated elasticities for carbonated soft drinks by poverty status of the household

Figure 69 indicates that there are more substitutes for carbonated soft drinks(2) for households above 130% of poverty than for households below 130% of poverty. Households below 130% of poverty indicated that tea(8) was a substitute for carbonated soft drinks(2) while households above 130% of poverty did not indicate this relationship. The compensated own-price elasticities show that households above 130% of poverty were more own-price sensitive for carbonated soft drinks(2) than households below 130% of poverty.

Figure 70. Compensated elasticities for powdered soft drinks by poverty status of the household

Figure 70 exhibits the elasticities by poverty status for powdered soft drinks. The compensated own-price elasticity for powdered soft drinks(3) was only significant for households above 130% of poverty. Households below 130% of poverty indicate that milk(1) is a greater substitute for powdered soft drinks(3) than it is for households above 130% of poverty. Households below 130% of poverty indicate that juices and fruit drinks(6) are greater complements for powdered soft drinks(3) than they are for households above 130% of poverty.

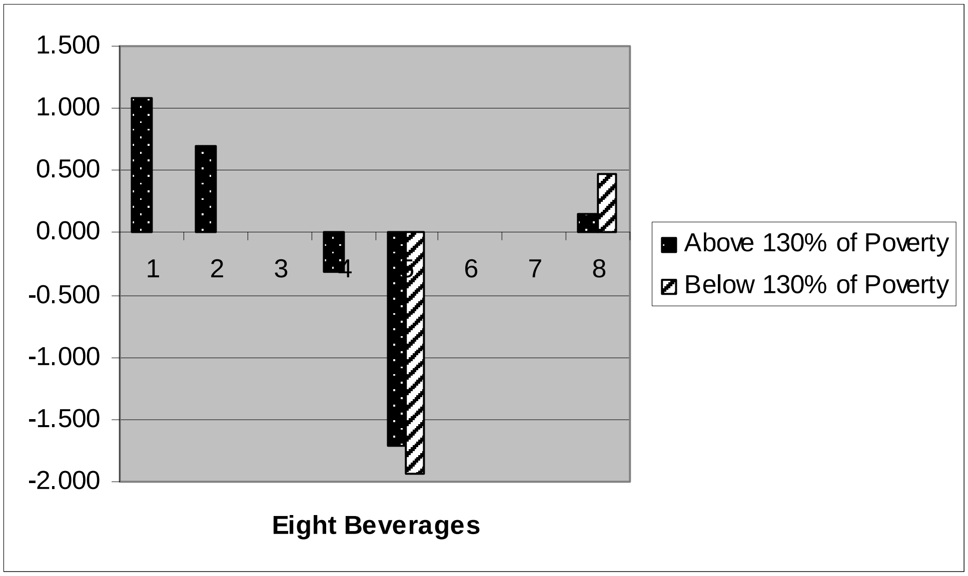


Figure 71. Compensated elasticities for bottled water by poverty status of the household

The compensated own-price elasticities showed that households above 130% of poverty were less own-price sensitive for bottled water(5) than households below 130% of poverty. However, figure 71 reveals that both elasticities were in the elastic range. Households below 130% of poverty indicate that tea(8) was a greater substitute for bottled water(5) than do households above 130% of poverty.

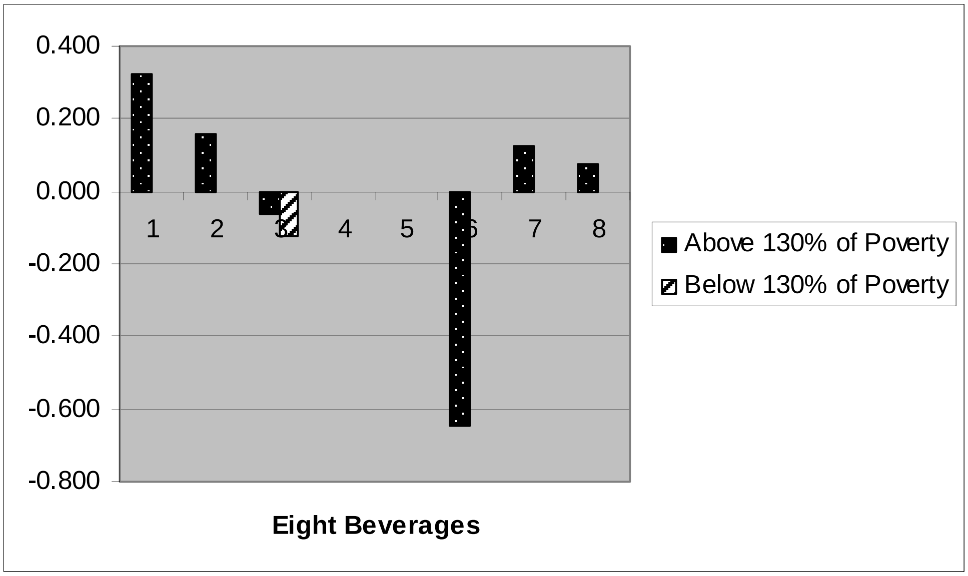


Figure 72. Compensated elasticities for juices and fruit drinks by poverty status of the household

Figure 72 reveals the elasticities by poverty status for juices and fruit drinks. The key result for juices and fruit drinks is that powdered soft drinks(2) are considered a greater complementary good for juices and fruit drinks(6) by households below 130% of poverty compared to households above 130% of poverty.

Figure 73. Compensated elasticities for coffee by poverty status of the household

Households below 130% of poverty indicated that milk(1) was more of a substitute for coffee(7) compared to households above 130% of poverty. The compensated own-price elasticities exhibited in figure 73 indicated that households above 130% of poverty were less own-price sensitive to coffee(7) price than households below 130% of poverty

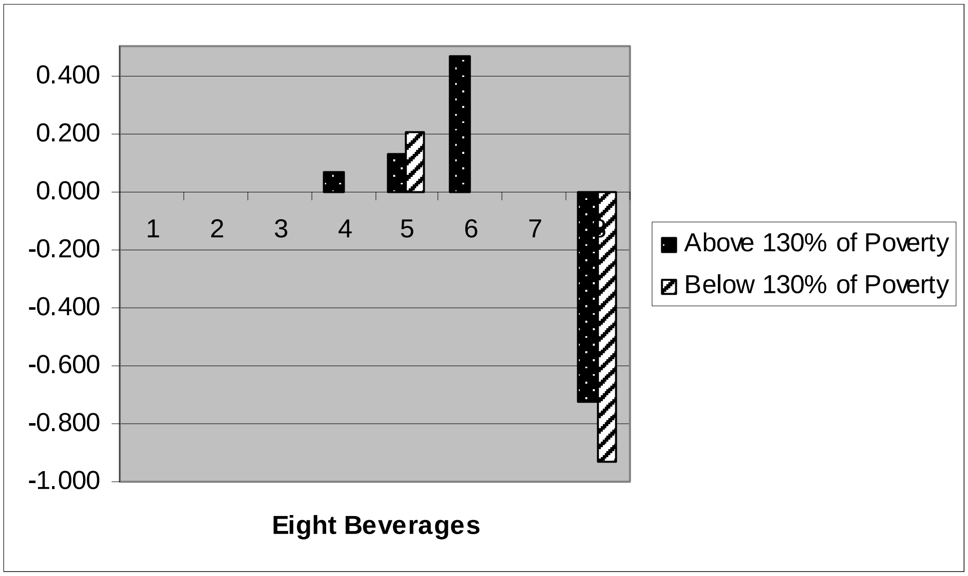


Figure 74. Compensated elasticities for tea by poverty status of the household

Figure 74 reveals the elasticities by poverty status for tea. Households below 130% of poverty indicated that bottled water(5) was more of a substitute for tea(8) compared to households above 130% of poverty. Juices and fruit drinks(6) were a substitute for tea(8) for households above 130% of poverty. The compensated own-price elasticities showed that households above 130% of poverty were less own-price sensitive to tea(8) price than households below 130% of poverty.

Region – Analysis of Households in the East, Central, South, and West

The uncompensated own-price and expenditure elasticities for the four regions are given below in table 28. P-values are reported below each own-price elasticity estimate.

Table 28. Own-Price and Expenditure Elasticities for Region

#	Beverage	Own-Price Elasticity			
		East	Central	South	West
1	Milk	-1.608	-1.561	-1.701	-1.666
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	-1.171	-1.133	-1.177	-1.374
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	-0.510	-0.451	-0.457	0.149
		[.058]	[.010]	[.003]	[.646]
4	Isotonics	-3.851	-2.927	-3.241	-0.662
		[.029]	[.007]	[.000]	[.519]
5	Bottled Water	-1.907	-1.757	-1.459	-1.943
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	-0.777	-0.579	-0.887	-0.865
		[.000]	[.000]	[.000]	[.000]
7	Coffee	-1.421	-1.336	-1.342	-1.430
		[.000]	[.000]	[.000]	[.000]
8	Tea	-0.707	-0.690	-0.824	-0.929
		[.000]	[.000]	[.000]	[.000]

#	Beverage	Expenditure Elasticity			
		East	Central	South	West
1	Milk	1.037	1.007	1.054	0.925
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	1.199	1.239	1.287	1.340
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	1.465	1.362	1.275	1.724
		[.000]	[.000]	[.000]	[.000]
4	Isotonics	1.031	1.330	1.112	1.475
		[.013]	[.000]	[.000]	[.000]
5	Bottled Water	1.117	1.004	0.993	1.134
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	0.741	0.706	0.667	0.718
		[.000]	[.000]	[.000]	[.000]
7	Coffee	1.176	0.956	0.942	0.986
		[.000]	[.000]	[.000]	[.000]
8	Tea	0.672	0.439	0.610	0.433
		[.000]	[.000]	[.000]	[.000]

All uncompensated own-price elasticities were significantly different from zero for the regions with the exception of powdered soft drinks and isotonics in the Western region. Three beverages were price inelastic; juices and fruit drinks, tea, and powdered soft drinks. Isotonics were the most price sensitive(elastic) beverage in three of the four regions. Following isotonics, bottled water is the most price sensitive good among the four regions. Bottled water is most price elastic in the West region. Powdered soft drinks were the most price insensitive(inelastic) beverage in the three of the four regions. The demand for juices and fruit drinks and tea was less inelastic in the South and West compared to the East and Central regions.

The expenditure elasticities were very similar across regions and were all significantly different from zero at the .05 level. Given extra income to spend on this grouping of beverages, households in the West region would buy more carbonated soft drinks. Households in the East, Central, and South would buy more powdered soft drinks.

Now we turn our attention to cross-price elasticities for households in the differing regions. Discussion is limited to beverages that have notable significant differences among the regions. A chart indicating each difference for each beverage that had significant differences is given along with discussion.

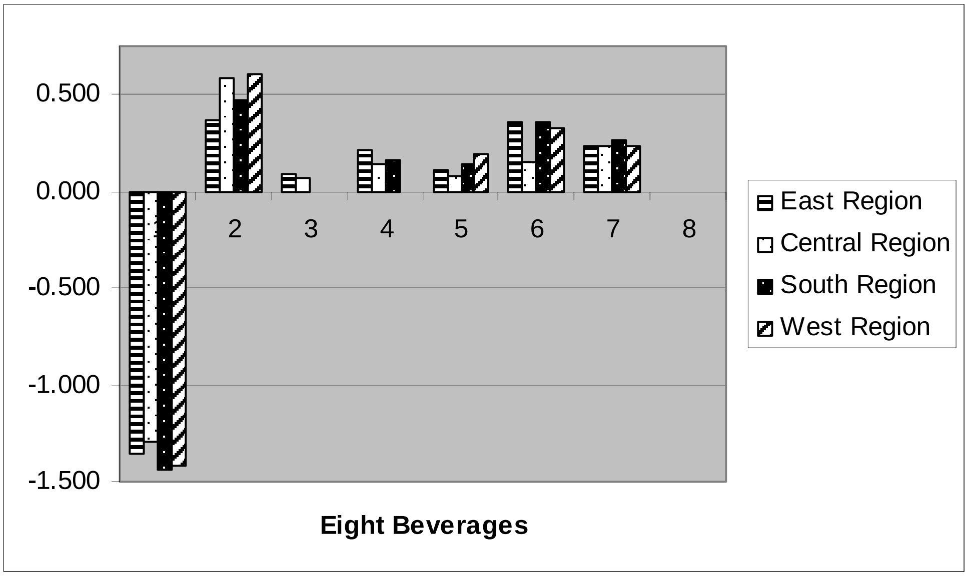


Figure 75. Compensated elasticities for milk by region

Compensated elasticities for milk by region are given above in figure 75. The compensated own-price elasticities indicate that households in the South region are slightly more sensitive to price changes in milk(1) when compared to the other regions. Carbonated soft drinks(2) are substitutes for milk(1) across all regions. For households in the Central and West carbonated soft drinks(2) are a greater substitute for milk(1) than for households in the East and Central regions. The West region did not indicate that isotonics(4) are a significant substitute for milk(1), while all other regions did. The South and West region did not indicate that powdered soft drinks(3) were a substitute for milk(1). The magnitude of substitutability was similar across all regions for coffee(7). Households in the Central region considered juices and fruit drinks(6) to be less of a substitute for milk(1) than the other three regions.

Figure 76. Compensated elasticities for carbonated soft drinks by region

The compensated own-price elasticities exhibited in figure 76 indicate that households in the East and West regions are more sensitive to price changes in carbonated soft drinks(2) when compared to the other two regions. Households in the West region show a stronger substitution relationship between milk(1) and carbonated soft drinks(2) compared to the other regions.

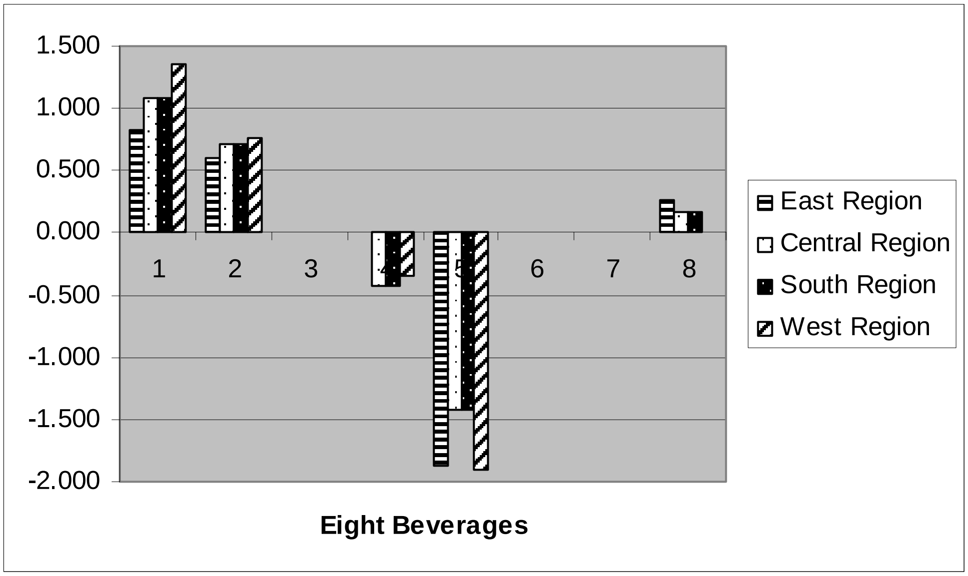


Figure 77. Compensated elasticities for bottled water by region

Compensated elasticities for bottled water by region are given above in figure 77. The compensated own-price elasticities indicate that households in the East and West regions are more sensitive to price changes in bottled water(5) when compared to the other two regions. Households in the West region showed a stronger substitution relationship between milk(1) and bottled water(5) compared to the other regions. Households in the East region show a smaller substitution relationship between carbonated soft drinks(2) and bottled water(5) compared to the other regions.

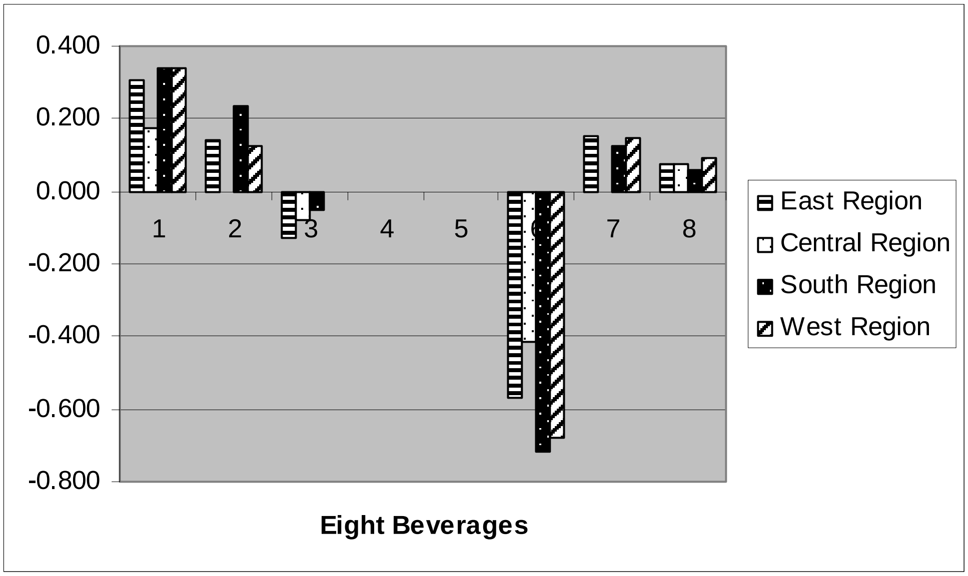


Figure 78. Compensated elasticities for juices and fruit drinks by region

The compensated own-price elasticities exhibited in figure 78 indicate that households in the South and West regions were more sensitive to price changes in juices and fruit drinks(6) when compared to the other two regions. Households in the Central region show a weaker substitution relationship between milk(1) and juices and fruit drinks(6). The West region did not indicate that powdered soft drinks(3) were a significant complementary good for juices and fruit drinks(6), all other regions did. The Central region did not indicate that carbonated soft drinks(2) and coffee(7) were significant substitutes for juices and fruit drinks(6), while all other regions did.

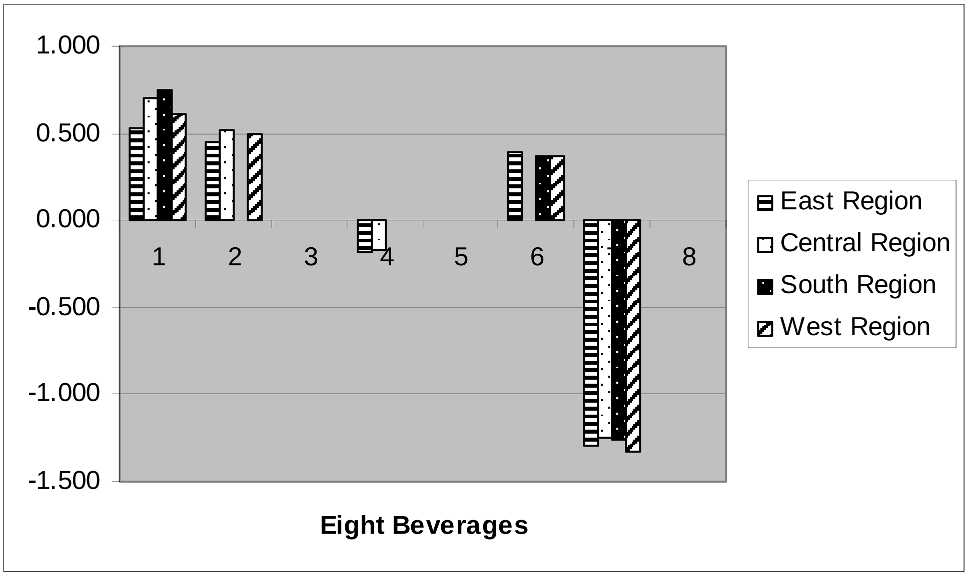


Figure 79. Compensated elasticities for coffee by region

The compensated own-price elasticities exhibited in figure 79 were nearly identical from region to region for coffee(7). Households in the South region did not show a significant substitution relationship between carbonated soft drinks(2) and coffee(7). Households in the Central region did not show a significant substitution relationship between juices and fruit drinks(2) and coffee(7). The East and Central regions indicated a significant complementary relationship between isotonics(4) and coffee(7). Milk(1) was a substitute for coffee(7) in all regions, especially the South and Central regions.

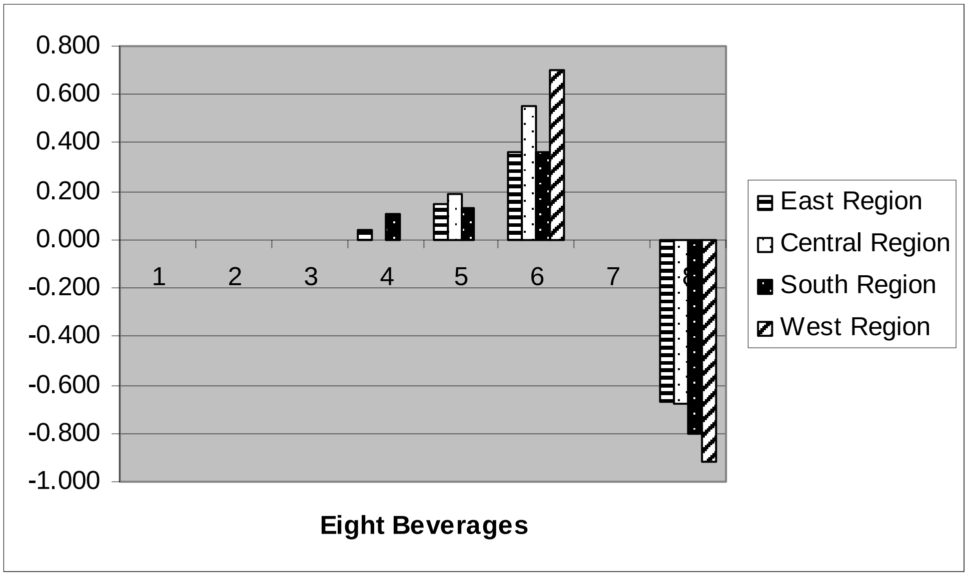


Figure 80. Compensated elasticities for tea by region

Compensated elasticities for tea by region are given above in figure 80. The compensated own-price elasticities indicated that households in the South and West regions were more sensitive to the price of tea(8). Households in the Central and West region indicated a stronger substitution effect between juices and fruit drinks(6) and tea(8) when compared to the other regions. Households in the West did not exhibit a significant substitution relationship between bottled water(5) and tea(8).

Race – Analysis of White, Black, and Other Race Households

The uncompensated own-price and expenditure elasticities for the three races are given below in table 29. P-values are noted in parenthesis below the respective estimates of elasticities.

Table 29. Own-Price and Expenditure Elasticities for Race

#	Beverage	Own-Price Elasticity		
		White	**Black**	**Oriental & Other**
1	Milk	-1.500	-1.659	-1.421
		[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	-1.203	-0.776	-1.065
		[.000]	[.000]	[.000]
3	Powdered Soft Drinks	-0.160	-0.099	-0.084
		[.187]	[.638]	[.812]
4	Isotonics	-2.863	-1.401	0.081
		[.000]	[.550]	[.956]
5	Bottled Water	-1.695	-1.614	-2.163
		[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	-0.675	-0.914	-0.947
		[.000]	[.000]	[.000]
7	Coffee	-1.342	-1.525	-1.338
		[.000]	[.000]	[.000]
8	Tea	-0.780	-0.423	-0.959
		[.000]	[.001]	[.000]

#	Beverage	Expenditure Elasticity		
		White	**Black**	**Oriental & Other**
1	Milk	0.978	0.943	0.985
		[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	1.269	1.130	1.277
		[.000]	[.000]	[.000]
3	Powdered Soft Drinks	1.458	1.332	1.483
		[.000]	[.000]	[.000]
4	Isotonics	1.237	0.932	0.781
		[.000]	[.107]	[.023]
5	Bottled Water	1.154	1.155	1.149
		[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	0.723	0.942	0.758
		[.000]	[.000]	[.000]
7	Coffee	1.005	0.999	1.067
		[.000]	[.000]	[.000]
8	Tea	0.466	0.368	0.545
		[.000]	[.014]	[.002]

All uncompensated own-price elasticities were significantly different from zero for the different races with the exception of powdered soft drinks for all race categories and isotonics for Blacks and Oriental and other races. The demands for juices and fruit drinks and tea were all inelastic across all races with tea being the least sensitive to own-price for Black households. Juices and fruit drinks are the least price sensitive for White and Oriental and other race households. White households were most sensitive to price changes of isotonics. Black households were most sensitive to price changes of milk and other race households were most price sensitive to changes of bottled water.

The expenditure elasticities were robust across all races with the exception of isotonics. All estimates were significantly different from zero at the .05 level with the exception of the isotonic elasticity for Black households. Given extra income to spend on this grouping of beverages, all race types buy more powdered soft drinks.

Now we turn our attention to cross-price elasticities among households of different races. Discussion is limited to beverages that have notable significant differences among the races. A chart indicating each difference for each beverage that had significant differences is given along with discussion.

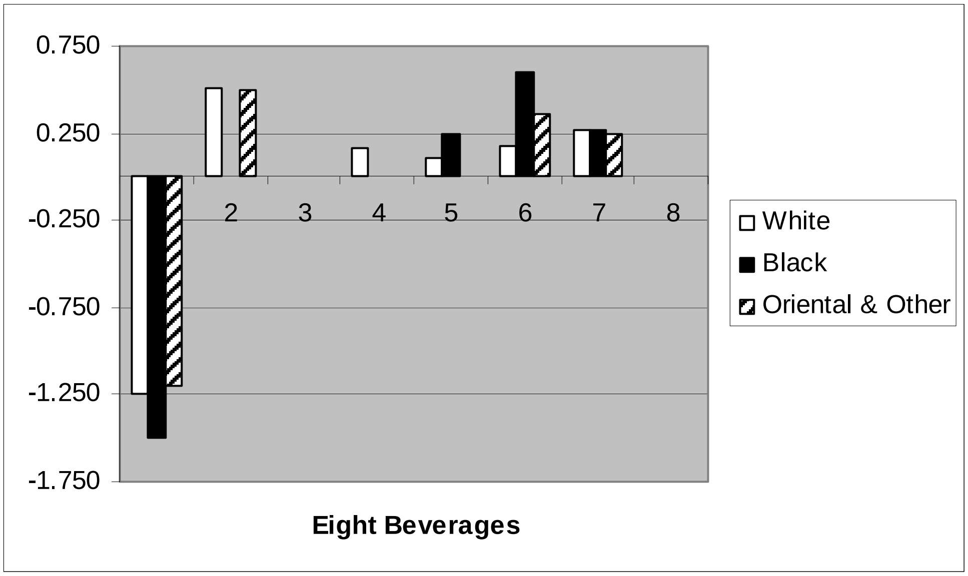


Figure 81. Compensated elasticities for milk by race

The compensated own-price elasticities exhibited in figure 81 were all significant for milk(1). Black households were the most price sensitive. Carbonated soft drinks(2) were a substitute for milk(1) with Black households not exhibiting a significant cross-price elasticity. Black households indicated a larger substitution effect between juices and fruit drinks(6) and milk(1) when compared to the other types of households. Bottled water(5) was a substitute for milk(1) for White and Black households with Black households having the larger magnitude.

Figure 82. Compensated elasticities for carbonated soft drinks by race

Figure 82 indicates that Black households were the least sensitive of the races to the own-price of carbonated soft drinks(2). White and Oriental and other race households showed a substitution effect between milk(1) and carbonated soft drinks(2) while Black households did not. Bottled water(5) had a similar cross-price effect across all races with White households indicating a smaller magnitude of substitution.

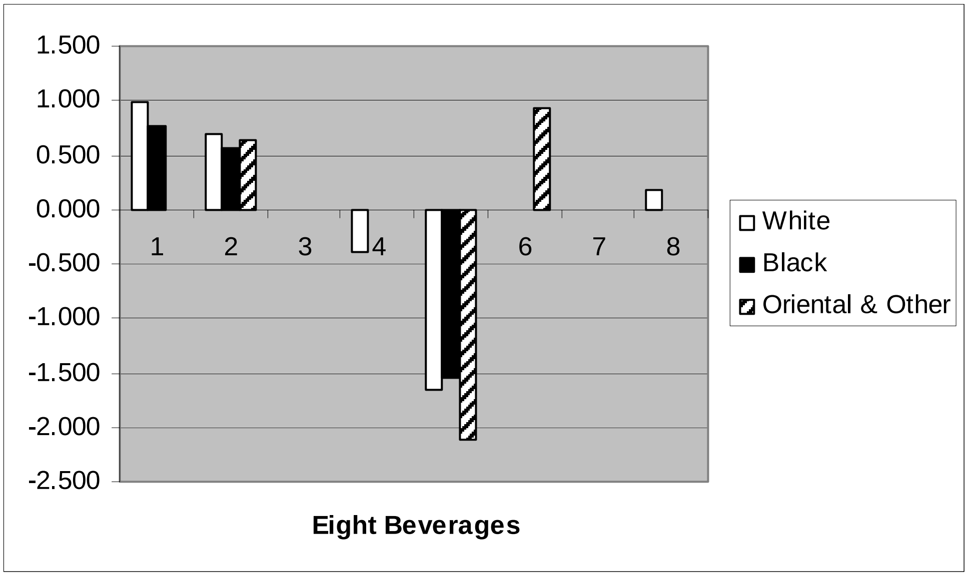


Figure 83. Compensated elasticities for bottled water by race

Figure 83 indicated that the compensated own-price elasticities were all significant for bottled water(5) with Oriental and other race households being the most price sensitive. Milk(1) was a substitute good for bottled water(5) for White and Black households. Juices and fruit drinks(6) were a significant substitute for bottled water(5) for Oriental and other race households only. This result was not significant for White or Black households. Carbonated soft drinks(2) substitute for bottled water(5) across the different race groups.

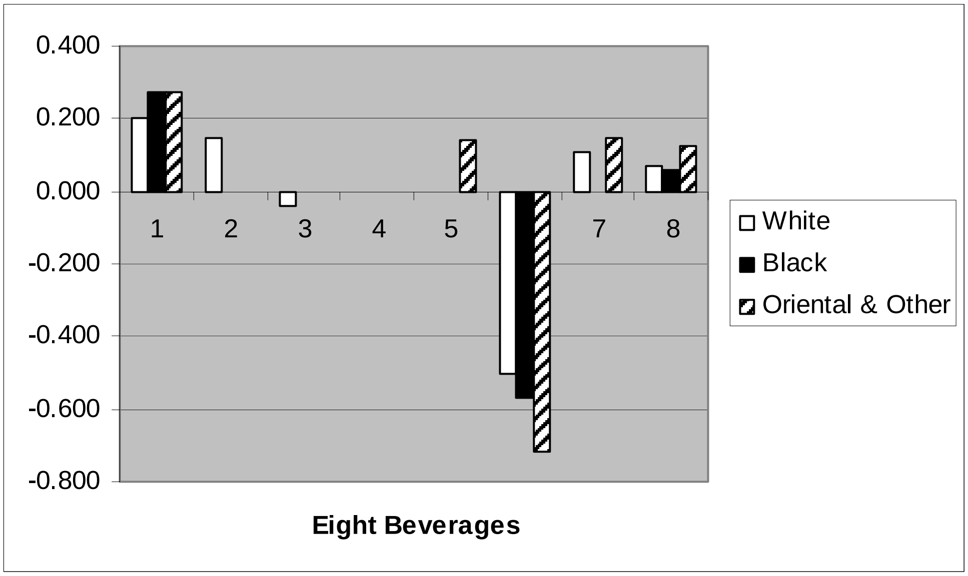


Figure 84. Compensated elasticities for juices and fruit drinks by race

Compensated elasticities for juices and fruit drinks by race are given above in figure 84. The compensated own-price elasticities were all significant for juices and fruit drinks(6) with Oriental and other race households being the most price sensitive. Milk(1) was a substitute good for juices and fruit drinks(6) across all races. Powdered soft drinks(3) were a complementary good for juices and fruit drinks(6) for only White households. Bottled water(5) was a substitute good for juices and fruit drinks(6) for only Oriental and other race households. Coffee(7) was a substitute good for juices and fruit drinks(6) for both White and Oriental and other race households. Tea(8) was a substitute across all races for juices and fruit drinks(6) with Oriental and other race households indicating the greatest magnitude of substitution.

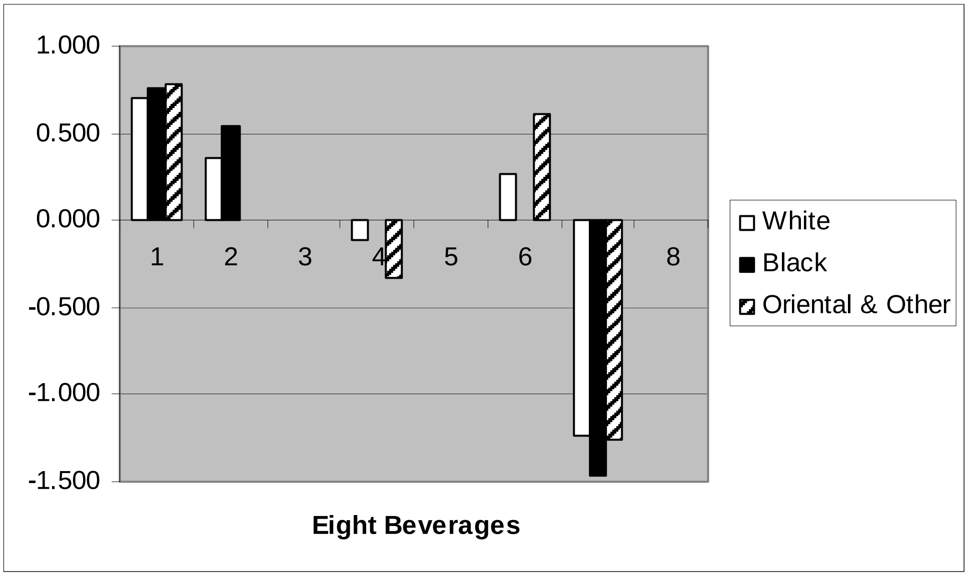


Figure 85. Compensated elasticities for coffee by race

The compensated own-price elasticities were all significant for coffee(7) with Black households being the most price sensitive. Figure 85 indicated that milk(1) was a substitute good for coffee(7) across all races. Carbonated soft drinks(2) were a substitute good for coffee(7) for only White and Black households. Juices and fruit drinks(6) were a substitute good for coffee(7) for White and Oriental and other races.

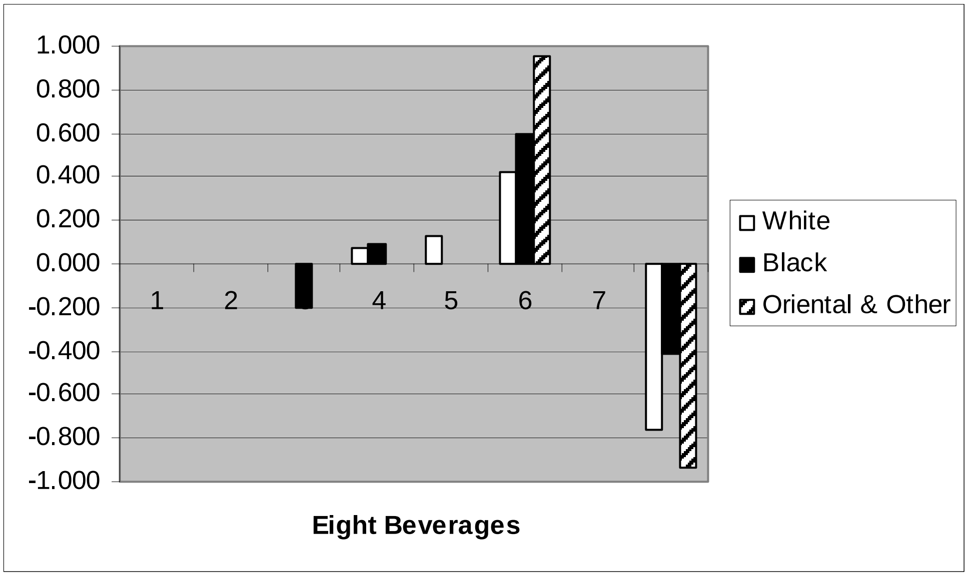


Figure 86. Compensated elasticities for tea by race

Compensated elasticities for tea by race are given above in figure 86. The compensated own-price elasticities were all significant for tea(8) with Black households being the least price sensitive. Powdered soft drinks(3) were a complementary good for tea(8) for Black households. Juices and fruit drinks(6) were the main substitute good for tea(8) across all races with Oriental and other races having the greatest magnitude. Black and White households indicated that isotonics(4) were a substitute for tea(8).

Presence of Children – Analysis of Households With and Without Children

The uncompensated own-price and expenditure elasticities for the presence and non-presence of children within a household are given below in table 30. Statistical significance is given below each estimate via p-values.

Table 30. Own-Price and Expenditure Elasticities for Presence of Children

#	Beverage	Own-Price Elasticity		Expenditure Elasticity	
		NO	YES	NO	YES
1	Milk	-1.603	-1.602	0.915	1.076
		[.000]	[.000]	[.000]	[.000]
2	Carbonated Soft Drinks	-1.210	-1.051	1.304	1.258
		[.000]	[.000]	[.000]	[.000]
3	Powdered Soft Drinks	0.129	-0.503	1.555	0.867
		[.515]	[.000]	[.000]	[.000]
4	Isotonics	-2.346	-2.607	1.011	1.163
		[.021]	[.000]	[.001]	[.000]
5	Bottled Water	-1.750	-1.632	1.163	0.882
		[.000]	[.000]	[.000]	[.000]
6	Juices and Fruit Drinks	-0.747	-0.830	0.680	0.631
		[.000]	[.000]	[.000]	[.000]
7	Coffee	-1.270	-1.526	1.168	1.340
		[.000]	[.000]	[.000]	[.000]
8	Tea	-0.709	-0.827	0.530	0.611
		[.000]	[.000]	[.000]	[.000]

All uncompensated own-price elasticities were significantly different from zero for households with and without children with the exception of powdered soft drinks for households without children present. Isotonics, juices and fruit drinks, coffee, and tea were more price sensitive(elastic) for households with children compared to households without children. Milk, carbonated soft drinks, and bottled water were more price sensitive(elastic) for households without children compared to households with children.

The expenditure elasticities were not as robust among households with children and households without children when compared to the other demographics studied. The expenditure elasticities were all significantly different from zero at the .05 level. The estimate for powdered soft drinks was much greater for households without children. This indicates that if given extra money to spend on beverages, households without children would utilize that extra income to buy more powdered soft drinks. Given extra income to spend on this grouping of beverages, households without children would buy more powdered soft drinks. Households with children would buy more coffee.

Now we turn our attention to cross-price elasticities among households with and without children. Discussion will be limited to beverages that have notable significant differences among the household types. A chart indicating each difference for each beverage that had significant differences is given along with discussion.

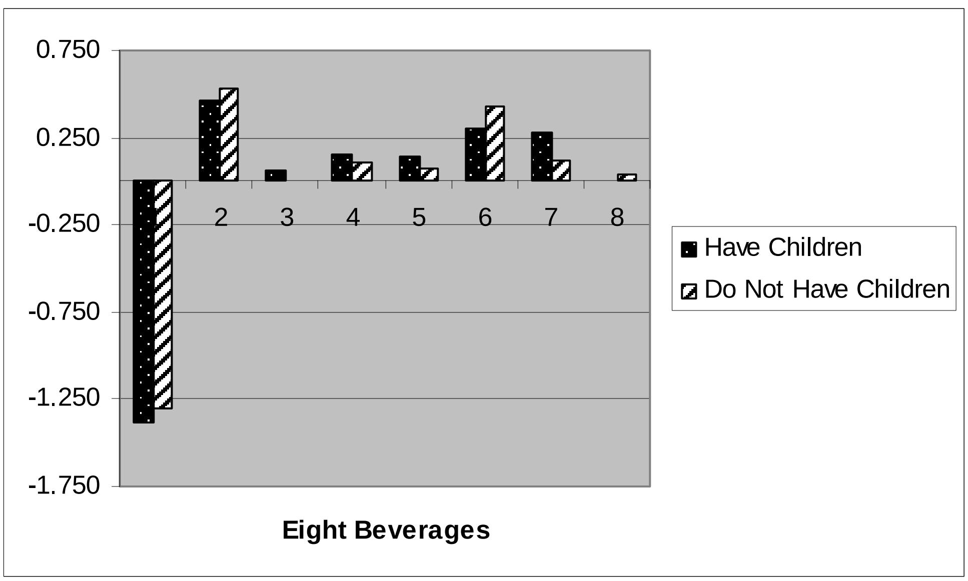


Figure 87. Compensated elasticities for milk by presence of children

The compensated own-price elasticities were all significant for milk(1) with households that have children being the most price sensitive. Figure 87 indicated that carbonated soft drinks(2) were a substitute for milk(1) for both household types with households that do not have children having a greater magnitude of substitution. Juices and fruit drinks(6) were a substitute for milk(1) for both household types with households that do not have children having a greater magnitude of substitution.

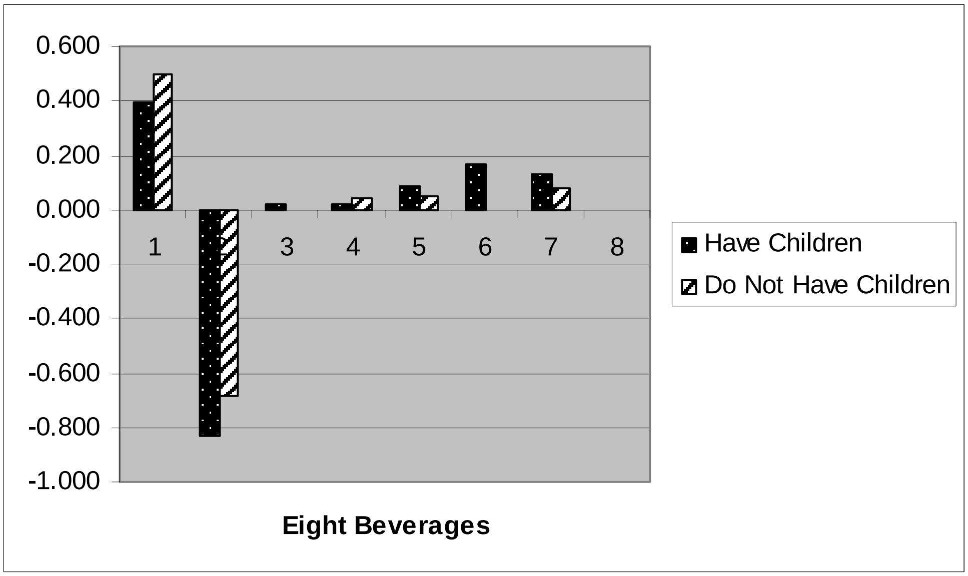


Figure 88. Compensated elasticities for carbonated soft drinks by presence of children

Compensated elasticities for carbonated soft drinks by presence of children are given above in figure 88. The compensated own-price elasticities were all significant for carbonated soft drinks(2) with households that do not have children being the least price sensitive. Bottled water(5) and coffee(7) are substitutes for carbonated soft drinks(2) for both household types with households that have children having a greater magnitude of substitution for each beverage. Milk(1) was the main substitute for carbonated soft drinks(2) for both household types with households that do not have children having a greater magnitude of substitution.

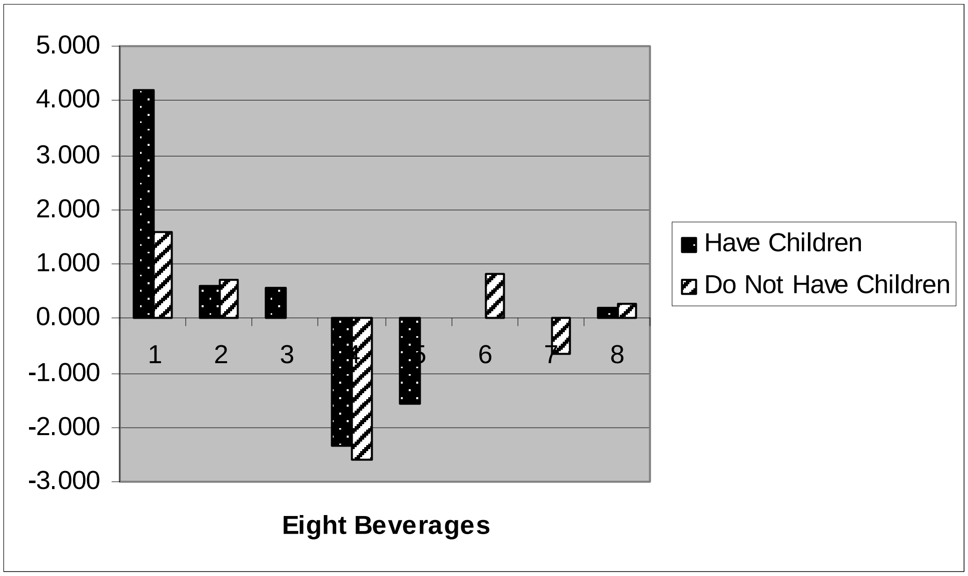


Figure 89. Compensated elasticities for powdered soft drinks by presence of children

The compensated own-price elasticities were all significant for isotonics(4) with households that have children being less price sensitive. Figure 89 indicated that milk(1) was a substitute for isotonics(4), households with children were more apt to substitute away from isotonics(4) with milk(1). Carbonated soft drinks(2) were a substitute good for isotonics(4) with households with no child present having the greater magnitude.

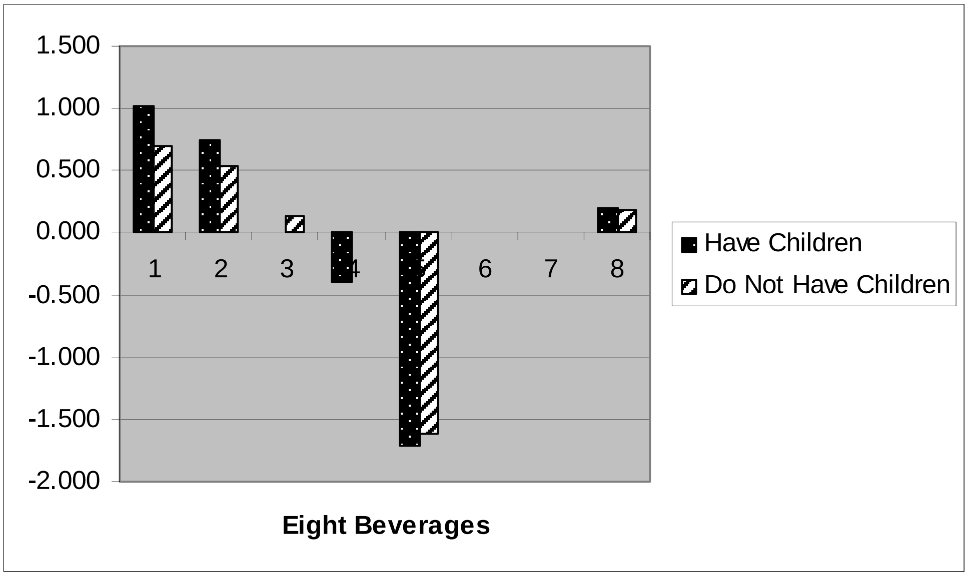


Figure 90. Compensated elasticities for bottled water by presence of children

Compensated elasticities for bottled water by presence of children are given above in figure 90. The compensated own-price elasticities were significant for bottled water(5) with households that do not have children being less price sensitive. Milk(1) was a substitute for bottled water(5), households with children were more apt to substitute away from bottled water(5) with milk(1). Carbonated soft drinks(2) were a substitute good for bottled water(5) with households with a child present having the greater magnitude. Isotonics(4) were a complementary good for bottled water(5) for households that had a child present.

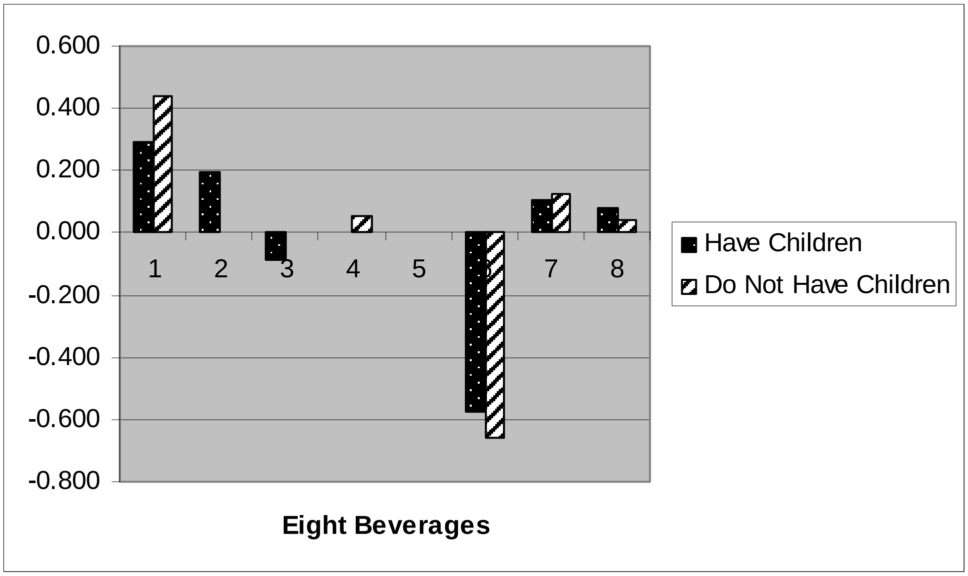


Figure 91. Compensated elasticities for juices and fruit drinks by presence of children

The compensated own-price elasticities were all significant for juices and fruit drinks(6) with households that have children being the least price sensitive. Figure 91 indicated that milk(1) was a substitute for juices and fruit drinks(6), households without children were more apt to substitute away from juices and fruit drinks(6) with milk(1). Carbonated soft drinks(2) were a substitute good for juices and fruit drinks(6) for households with a child present. Powdered soft drinks(3) were a complementary good for juices and fruit drinks(6) for households with children. Isotonics(4) were a substitute for juices and fruit drinks(6) for households without children. Coffee(7) was a substitute for juices and fruit drinks(6) for both household types with households that do not have children having a greater magnitude of substitution. Tea(8) is a substitute for juices and fruit drinks(6) for both household types with households that have children having a greater magnitude of substitution.

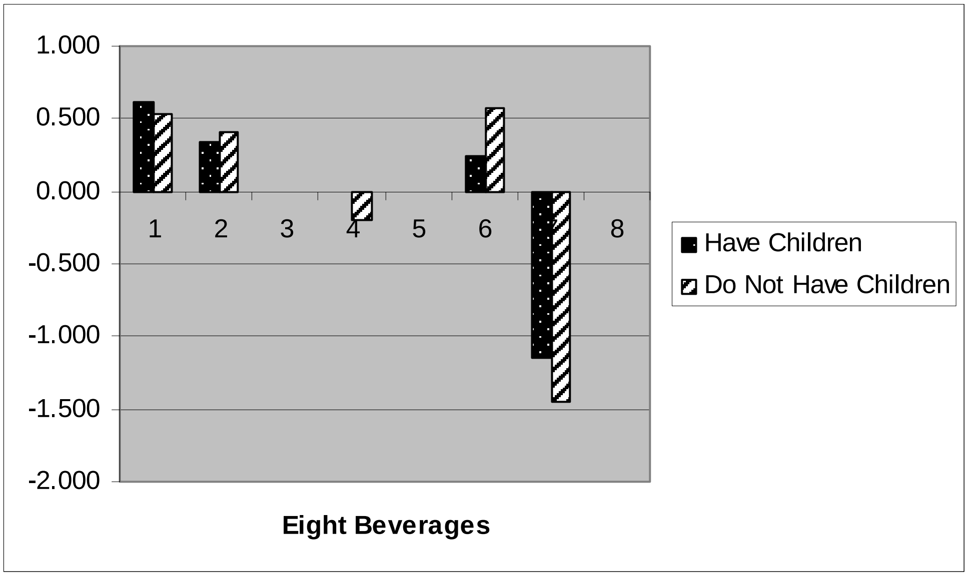


Figure 92. Compensated elasticities for coffee by presence of children

Compensated elasticities for coffee by presence of children are given above in figure 92. The compensated own-price elasticities were significant for coffee(7) with households that have children being the least price sensitive. Milk(1) was a substitute for coffee(7) with households with children present having a greater magnitude of substitution. Carbonated soft drinks(2) were a substitute for coffee(7) with households with no children present having a greater magnitude of substitution. Juices and fruit drinks(6) were a substitute for coffee with households with no child present having the greater magnitude by a substantial margin.

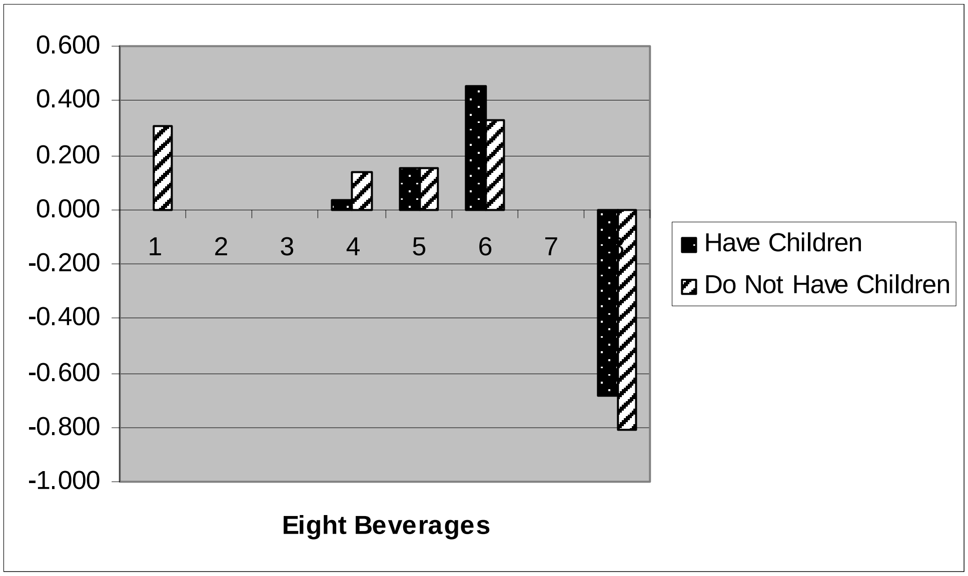


Figure 93. Compensated elasticities for tea by presence of children

Figure 93 indicated that milk(1) was a substitute for tea(8) for households that did not have children. Bottled water(4) was a substitute for tea(8), more so for households that did not have children. Juices and fruit drinks(6) were a substitute for tea(8) with households with children present having a greater magnitude of substitution. The compensated own-price elasticities were significant for tea(8) with households that have children being less price sensitive.

CHAPTER IX

CONCLUSIONS

The information concerning the key factors affecting household decisions to buy, and the amount to buy of nonalcoholic beverages is vital for marketing strategist and for policy makers. Also, information is critical about the drivers associated with available nutrient intakes of calories, calcium, vitamin C, and caffeine derived from the purchase and consumption of nonalcoholic beverages. Most importantly, this information can save substantial unnecessary expenses in terms of targeting and promotion. Some of the key results from the analysis are presented below.

Region, race, and presence of children within a household were demographics that affected the decision to consume for a majority of the beverages. Non-white households were more likely to consume bottled water. The presence of children within a household increased the likelihood of consumption for milk, apple juice, and fruit drinks. Black households were less likely to consume milk than households of other races. Households with older heads of household were more likely to purchase coffee for consumption.

Households with children present consumed greater levels of powdered soft drinks and fruit drinks. Households with heads that have obtained higher levels of education consumed less coffee and regular carbonated soft drinks while households with older heads consumed greater levels of coffee. Households in the Central region consumed more milk, powdered soft drinks, and carbonated soft drinks than households in other regions. Western households consumed more bottled water than households in other regions. Households of Hispanic origin consumed greater levels of whole and two percent milk and lower levels of one percent and skim milk compared to households that are not of Hispanic origin.

The nutrient analysis revealed that nonalcoholic beverages contribute substantially to nutrient intake. Individuals received 211 calories a day on average from all nonalcoholic beverages. The majority of this calorie intake was accounted for by carbonated soft drinks, fruit drinks, powdered soft drinks, and milk. Individuals received 217 mg of calcium per day from all nonalcoholic beverages. Milk accounted for eighty-eight percent of the calcium intake. 45 mg of vitamin C is received per day from nonalcoholic beverages with juices providing approximately sixty percent of the intake. Lastly, 95 mg of caffeine was supplied via nonalcoholic beverages, sixty-seven percent due to coffee intake on average.

A critical finding for nutrient intake is that persons within households below 130% of poverty were receiving more calories and caffeine from nonalcoholic beverages compared to persons within households above 130% of poverty. Likewise, persons in households below 130% of poverty were receiving less calcium and vitamin C from nonalcoholic beverages compared to persons in households above 130% of poverty.

Own-price and cross-price elasticities were examined using the LA/AIDS model. The methodological concerns of data frequency, beverage aggregations, and censoring techniques were explored and discussed in terms of the results of the analysis. Elasticity results for beverages were less robust across models when the budget shares were low or the degree of censoring in the system was large. A trade-off existed between having a fine classification of goods and the low budget shares that come as a result of this level of disaggregation. Also, a trade-off existed between the frequency of the data and the degree of censoring. Although more information can be gained from a finer classification of goods and a higher degree of frequency, the results become less stable and are more heavily influenced by low budget share and censoring problems.

Results across the various models were robust and exhibited significant own-price and cross-price relationships for all nonalcoholic beverages considered. A few of the key results are as follows. Milk was one of the most price sensitive beverages studied in the complex and was most likely to be substituted for by carbonated soft drinks and juices and fruit drinks. Bottled water had four key economic substitutes; reduced fat milk, regular carbonated soft drinks, coffee, and tea. One key complementary relationship found among the beverages studied was that orange and apple juice were complements for each other. Fruit drinks and powdered soft drinks were also shown to be complements.

Price elasticities by selected demographic groups also were investigated. Results indicated that households below the 130% poverty level were more likely to substitute powdered soft drinks for milk than households that were above the 130% poverty level. These households below 130% of poverty status were also more price sensitive for powdered soft drinks, bottled water, and tea when compared to households above 130% poverty level. Households in the West were more price sensitive for bottled water than other regions. Central region households were less sensitive to the price of juices and fruit drinks compared to other regions. Black households were extremely price sensitive to milk and are most willing to substitute away from milk with juices and fruit drinks or bottled water. Black households were not very price sensitive for powdered soft drinks or carbonated soft drinks when compared to White or Oriental and other race households. Lastly, households with children present were less own-price sensitive to juices and fruit drinks and more price sensitive to milk prices when compared to households that did not have children.

Recommendations for Future Analysis

There are several limitations related to this study. This research was not able to study the factors affecting the consumption of the selected nonalcoholic beverages in the away-from-home market due to two major reasons. First, data on away-from-home consumption with linked demographic variables are not generally available for such research. Data available for this study are mainly focused on at-home consumption and do not fully reflect complete consumption patterns. Second, available price series are limited to commodities and products consumed in the at-home market.

Despite the limitations, this study is a genuine addition to the literature in terms of investigating the key demographic and economic factors affecting the consumption of at-home nonalcoholic beverages. The analysis dealt with several beverage types that have not typically been included in past studies concerning beverages. This investigation was possible due to the unique micro-level data obtained from ACNielsen. The inclusion of the nutrient analysis with the economic analysis is unique. Many previous studies have justified their research in terms of nutrition without looking into actual nutrient intake levels and patterns. These studies sought to identify the demographics related to the consumption of specific beverages and identify which beverages are displacing "healthy" beverages. This work breaks down the nutrient intake by demographic characteristics and determines the beverages most responsible for that nutrient intake.

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APPENDIX A

INTERNATIONAL DAIRY FOOD ASSOCIATION – DAIRY STUDIES SUMMARY

A-1. International Dairy Food Association Dairy Studies

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
Fluid Milk Products (Aggregate)--United States					
Rojko (1957, 1958)	1924-1941	Annual Time-Series	Simultaneous-Equation Model	-0.35 To -0.77	0.17 To 0.27
Rojko (1957, 1958)	1924-1941	Annual Time-Series	Single-Equation	-0.22 To -0.27	0.10
Rojko (1957, 1958)	1947-1954	Annual Time-Series	Simultaneous-Equation Model	-0.32 To -0.47	0.27 To 0.41
Brandow (1961)	?	Annual Time-Series	Demand System--Derived	-0.285	0.16
Wilson and Thompson (1967)	1947-1963	Annual Time-Series	Simultaneous-Equation Model	-0.31	0.34
George and King (1971)	?	Annual Time-Series	Demand System--Derived	-0.35	0.38
Prato (1973)	1950-1968	Annual Time-Series	Simultaneous-Equation Model	-0.105	?
Boehm (1975)	1972/1973	MRCA--Cross Section	Single Equation	-1.63	0.05
Boehm (1975)	1972/1973	MRCA--Time Series	Multi-Equation SUR	-0.14	NA
Thraen, Hammond, Buxton (1978)	1972/1973	MRCA	Single Equation	-0.88	0.12
Robinson and Babb (1979)	1950-1976	Annual Time-Series	Single Equation	-0.28	?
Salathe (1979)	1972/1973	CES	Single Equation	NA	0.031 (1972); 0.082 (1973)
Buse/Fleischner (1982)	1977-78	1977-78 NFCS	Single Equation	NA	0.048
Heien (1982)	1947-1979	Annual Time-Series	Almost Complete Demand System	-0.539	-0.55
Blaylock and Smallwood (1983)	1977-78	1977-78 NFCS	Single Equation	NA	-0.009
Huang (1985)	1953-1983	Annual Time-Series	Complete Demand System	-0.259	-0.221
Blaylock and Smallwood (1986)	?	CCES	Single Equation	NA	0.021
Haidacher, Blaylock, Myers (1988)	?	?	?	?	0.02
Heien/Wessels (1988)	1977-78	1977-78 NFCS	Demand System--AIDS	-0.63	0.77
Cox, Lewis, Selenski (1992)	?	?	?	-0.14 To -0.42	?

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
Huang (1993)	?	Annual Time-Series	Complete Demand System	-0.13	?
Kaiser (1995)	1975-1993	Quarterly Time-Series	Single Equation	-0.041	0.27
Xiao,Kinnucan, and Kaiser (1998)	1970-1994	Annual Time-Series	Demand System--Rotterdam	-0.1922	0.0844
Schmit et al. (2001)	1/1996 To 12/1999	A.C. Nielsen Homescan Panel	Heckman Two-Step Procedure	-0.173	0.013
Kaiser (2002)	1975-2001	Quarterly Time-Series	Single Equation	-0.136	0.645
White Milk--United States					
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System—LA/AIDS	-0.63	Not Reported
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--NBRr	-0.78	Not Reported
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--Double Log	-0.54	Not Reported
Flavored Milk--United States					
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System—LA/AIDS	-1.4	Not Reported
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--NBR	-1.47	Not Reported
Maynard and Liu (1999)	11/1996 To 10/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--Double Log	-1.41	Not Reported
Whole Milk--United States					
Boehm (1975)	1972/1973	MRCA--Cross Section	Single Equation	-1.7	-0.07
Boehm (1975)	1972/1973	MRCA--Time Series	Multi-Equation SUR	-0.37	NA
Boehm and Babb (1975)	1975	Weekly Household Diaries	Single Equation	-1.66	1
Salathe (1979)	1972/1973	CES	Single Equation	NA	-0.096 (1972); -

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
					0.043 (1973)
Blaylock and Smallwood (1983)	1977-78	1977-78 NFCS	?	NA	-0.134
Huang and Raunikar (1983)	1977-78	1977-78 NFCS	Single-Equation Tobit	NA	Negative but magnitude not reported
Gould, Cox, and Perali (1990)	1955 To 1985	Annual Time-Series	Demand System--LA/AIDS	-0.324	0.658
Blaylock and Smallwood (1993)	?	?	Single-Equation Tobit	NA	-0.063 To -0.134
Cornick, Cox, and Gould (1994)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Multivariate Tobit Analysis	NA	-0.078 To -0.171
Gould (1996)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Demand System--Indirect Translog	-0.803	1.006
Maynard (1999)	3/1996 To 6/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--LA/AIDS	-0.33 To -0.56	0.3 To 1.23
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.726 (Branded)	1.162--Branded
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.659 (Private Label)	1.003--Private Label
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-3.637 (Organic)	-5.73--Organic
Schmit et al. (2001)	1/1996 To 12/1999	A.C. Nielsen Homescan Panel	Heckman Two-Step Procedure	-0.772	-0.204
Capps, Pittman, and Nyman (2002)	1970 To 1999	Annual Time-Series	Ridge Regression	-0.107 To -0.229	-0.2284
Lowfat Milk--United States					
Salathe (1979)	1972/1973	CES	Single Equation	NA	0.360 (1972); 0.384 (1973)
Blaylock and Smallwood (1983)	1977-78	1977-78 NFCS	?	NA	0.264
Huang and Raunikar (1983)	1977-78	1977-78 NFCS	Single-Equation Tobit	NA	0.280 To 0.429
Gould, Cox, and Perali (1990)	1955 To 1985	Annual Time-Series	Demand System--LA/AIDS	-0.437	0.062

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
Blaylock and Smallwood (1993)	?	?	Single-Equation Tobit	NA	0.079 To 0.264
Cornick, Cox, and Gould (1994)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Multivariate Tobit Analysis	NA	0.007 To 0.021
Schmit et al. (2001)--Reduced Fat	1/1996 To 12/1999	A.C. Nielsen Homescan Panel	Heckman Two-Step Procedure	-0.657	-0.039
Schmit et al. (2001)--Light	1/1996 To 12/1999	A.C. Nielsen Homescan Panel	Heckman Two-Step Procedure	-0.535	0.179
Capps, Pittman, and Nyman (2002)	1970 To 1999	Annual Time-Series	Ridge Regression	-0.362 To -0.408	0.3532
2% Milk--United States					
Boehm (1975)	1972/1973	MRCA--Cross Section	Single Equation	-1.33	0.16
Boehm (1975)	1972/1973	MRCA--Time Series	Multi-Equation SUR	-0.55	NA
Boehm and Babb (1975)	1975	Weekly Household Diaries	Single Equation	-1.33	1
Gould (1996)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Demand System--Indirect Translog	-0.512	1.009
Maynard (1999)	3/1996 To 6/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--LA/AIDS	-0.09 To -0.72	0.29 To 1.48
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-1.302 (Branded)	1.138--Branded
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.832 (Private Label)	0.975--Private Label
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-7.374 (Organic)	-2.836--Organic
1% Milk--United States					
Boehm And Babb (1975)	1975	Weekly Household Diaries	Single Equation	-0.83	1
Gould (1996)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Demand System--Indirect Translog	-0.593	0.983
Maynard (1999)	3/1996 To 6/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--LA/AIDS	-0.15 To -0.74	0.85 To 1.48

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.884 (Branded)	0.609--Branded
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-2.106 (Private Label)	1.596--Private Label
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-9.733 (Organic)	-8.678--Organic
Skim Milk--United States					
Boehm and Babb (1975)	1975	Weekly Household Diaries	Single Equation	-1.82	1
Cornick, Cox, and Gould (1994)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Multivariate Tobit Analysis	NA	0.103 To 0.209
Gould (1996)	3/1991 To 3/1992	Nielsen Marketing Research Consumer Panel	Demand System--Indirect Translog	-0.593	0.983
Maynard (1999)	3/1996 To 6/1998	Weekly Scanner Data--A.C. Nielsen	Demand System--LA/AIDS	-0.08 To -0.81	1.11 To 1.55
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.808 (Branded)	0.922--Branded
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-0.728 (Private Label)	1.173--Private Label
Glaser and Thompson (2000)	4/1988 To 12/1999	Weekly IRI And A.C. Nielsen Scanner Data	Demand System--LA/AIDS	-3.668 (Organic)	-2.807--Organic
Schmit et al (2001)	1/1996 To 12/1999	A.C. Nielsen Homescan Panel	Heckman Two-Step Procedure	-0.529	0.203
Capps, Pittman, and Nyman (2002)	1970 To 1999	Annual Time-Series	Ridge Regression	-0.105 To -0.202	0.5518
Butter Milk--United States					
Boehm (1975)	1972/1973	MRCA--Cross Section	Single Equation	-1.52	-0.17
Boehm (1975)	1972/1973	MRCA--Time Series	Multi-Equation SUR	-1.77	NA

Source	Time Period	Type Of Data	Methodology	Own-Price Elasticity	Income Elasticity
Fluid Milk Products (Unspecified)--United States Sixteen Refrigerated Milk Products					
Hall (1997)	8/1995 To 8/1997	Weekly Scanner Data--A.C. Nielsen	Not Reported	-0.32 To -0.76	Not Reported

APPENDIX B

POVERTY GUIDELINES

B-1. Poverty Thresholds in 1999, by Size of Family and Number of Related Children Under 18 Years

Size of family unit	Weighted Average Threshold	Related Children Under 18 Years								
		None	One	Two	Three	Four	Five	Six	Seven	Eight or more
One person (unrelated individual)	8,501									
Under 65 years	8,667	8,667								
65 years and over	7,990	7,990								
Two people	10,869									
Householder under 65 years	11,214	11,156	11,483							
Householder 65 years and older	10,075	10,070	11,440							
Three people	13,290	13,032	13,410	13,423						
Four people	17,029	17,184	17,465	16,895	16,954					
Five people	20,127	20,723	21,024	20,380	19,882	19,578				
Six people	22,727	23,835	23,930	23,436	22,964	22,261	21,845			
Seven people	25,912	27,425	27,596	27,006	26,595	25,828	24,934	23,953		
Eight people	28,967	30,673	30,944	30,387	29,899	29,206	28,327	27,412	27,180	
Nine people or more	34,417	36,897	37,076	36,583	36,169	35,489	34,554	33,708	33,499	32,208

Source: U.S. Bureau of the Census, Current Population Survey
http://www.census.gov/hhes/poverty/threshld/thresh99.html

APPENDIX C

CONVERSIONS FOR BEVERAGES NOT GIVEN IN LIQUID MEASURES

C-1. Conversions for Beverages Not Given in Liquid Ounces

FROZEN JUICES

LIQUID OUNCES --- concentrated frozen juices

These modules are concentrated 12 ounces and make 48 ounces of beverage
size divided by 128000 and then multiplied by 4 to make gallon units

(size/128000)*mult*quant*4 = gallons

used for	module	DESCRIPTION
	2663	FRUIT JUICE - GRAPEFRUIT - FROZEN
	2666	FRUIT JUICE - APPLE - FROZEN
	2667	FRUIT JUICE - ORANGE - FROZEN
	2668	FRUIT JUICE - GRAPE - FROZEN
	2669	FRUIT DRINKS - ORANGE - FROZEN
	2670	FRUIT DRINKS & MIXES - FROZEN
	2674	FRUIT JUICE - REMAINING - FROZEN

LIQUID OUNCES --- unconcentrated frozen juices

(size/12000)*mult*quant = gallons

used for	module	DESCRIPTION
	2662	FRUIT JUICE - UNCONCENTRATED - FROZEN

MLQU --- powdered soft drinks

MLQU size indicates the number of quarts the mix will make followed by 3 zeros
(size/ 4000)*mult*quant=gallons

used for	module	DESCRIPTION
	1050	soft drinks powdered

TEA

COUNT ---TEA BAGS

16 bags = 1gallon
(size/16000)*mult*quant = gallons

used for	module	DESCRIPTION
	1456	tea herbal bags
	1458	tea bags

DRY OUNCES --- PACKAGED

(size/16000)*(1200/128)*mult*quant= gallons

used for	module	DESCRIPTION
	1457	tea packaged

TEA MIXES

(size/1000)*(.1)*mult*quant=gallons

used for	module	DESCRIPTION
	1459	tea mixes

TEA INSTANT

(size/16000)*(1200/128)*mult*quant= gallons

used for	module	DESCRIPTION
	1460	tea instant

COFFEE

GROUND COFFEE

(size/16000)*(360/128)*mult*quant = gallons

used for	module	DESCRIPTION
	1463	coffee ground

SOLUBLE COFFEE

(size/16000)*(1125/128)*mult*quant = gallons

used for	module	DESCRIPTION
	1464	coffee soluble flavored instant
	1465	coffee soluble instant

*Conversion formulas obtained through Economic Research Service and ACNielsen

APPENDIX D

NUTRIENT CONVERSIONS

D-1. Nutrient Conversion Values

ID #	Beverage Category	Calories (Kcal) Per Gallon	Calcium (Mg) Per Gallon	Vitamin C (Mg) Per Gallon	Caffeine (Mg) Per Gallon
2	Rtd Fruit Juices Not Frozen	2083	416	723	0
3	Apple Juice Not Frozen	1872	272	32	0
4	Orange Juice Not Frozen	1744	384	1557	0
5	Other Fruit Juices Not Frozen	2304	128	1440	0
18	Rtd Fruit Drinks	1892	236	1316	0
21	Isotonics	800	0	0	0
24	Powdered Soft Drinks	1792	464	544	0
25	Vegetable Juices And Drinks	696	392	888	0
28	Tea	32	0	0	368
29	Tea--Regular	32	0	0	480
30	Tea--Decaffeinated	43	0	0	43
36	Coffee	85	85	0	1289
38	Coffee--Regular	85	85	0	1704
39	Coffee--Decaffeinated	85	85	0	43
45	Carbonated Soft Drinks	827	139	0	397
47	Carbonated Soft Drinks--Regular	1623	128	0	395
49	Carbonated Soft Drinks--Low Calorie	32	149	0	400
50	Bottled Water	0	0	0	0
51	Milk—Flavored + Unflavored	2382	4648	32	52
52	Flavored Milk	2928	4536	32	104
53	Unflavored Milk	1836	4760	32	0
54	Flavored Milk-Lowfat	2528	4592	32	104
56	Flavored Milk-Whole	3328	4480	32	104
61	Unflavored Milk--Whole	2400	4656	32	0
62	Unflavored Milk--2%	1936	4752	32	0
63	Unflavored Milk--1%	1632	4800	32	0
64	Unflavored Milk--Skim	1376	4832	32	0
67	Fruit Juices Frozen	2080	416	720	0
68	Frozen Fruit Drinks	1888	240	1312	16
69	Other Fruit Juices Frozen	1616	320	1328	0
72	Apple Juice Frozen	1872	272	32	0
73	Orange Juice Frozen	1792	352	1552	0

Source: Nutritive Value Of Foods, U.S. Department Of Agriculture, Agricultural Research Service, Nutrient Data Laboratory, Beltsville, MD.

APPENDIX E

PROBIT RESULTS – BEVERAGE BY BEVERAGE

Each page gives the probit output for a beverage. The parameters and marginal effects associated with the demographic categories are given. Lastly, Joint F-Tests are given on each grouping of demographics. The abbreviations are as follows for the F-Tests.

HH	Household Size
AG	Age of household head
PC	Presence of children
EM	Employment status of household head
ED	Education obtained by household head
RC	Race of household
HP	Hispanic origin
RG	Region
PV	130 % Poverty status

Beverage #1. Whole Fat - Flavored and Unflavored Milk

Number of observations = 5715
Number of positive obs. = 3157
Mean of dep. var. = .552406
Sum of squared residuals = 1323.09

R-squared = .063666
Kullback-Leibler R-sq = .048084
Log likelihood = -3740.92

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.359937	.263588	1.36553	[.172]
HS2	.101045	.048049	2.10295	[.035]
HS3	.222366	.064864	3.42816	[.001]
HS4	.214839	.075146	2.85896	[.004]
HSP5	.408834	.088557	4.61662	[.000]
AGE2539	.112469	.236373	.475810	[.634]
AGE4049	-.018134	.235799	-.076906	[.939]
AGE5065	-.051285	.235500	-.217772	[.828]
AGE65PLUS	-.132489	.239371	-.553490	[.580]
AGEPCCHILD	.131262	.060524	2.16874	[.030]
EMPPARTTIME	-.126810	.052047	-2.43647	[.015]
EMPFULLTIME	-.085150	.045081	-1.88884	[.059]
EDUHIGHSCHOOL	-.022739	.106759	-.212996	[.831]
EDUSOMECOLLEGE	-.221908	.105024	-2.11293	[.035]
EDUCOLLEGEPLUS	-.403762	.105281	-3.83509	[.000]
BLACK	.416195	.062850	6.62200	[.000]
ORIENTAL	.102525	.174506	.587515	[.557]
OTHER	.177360	.095807	1.85123	[.064]
HISPYES	.141619	.084143	1.68307	[.092]
CENTRAL	-.216041	.050168	-4.30637	[.000]
SOUTH	-.052497	.047319	-1.10942	[.267]
WEST	-.383704	.053933	-7.11452	[.000]
POV130	.175881	.084276	2.08696	[.037]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS	dP/dX 0	1
C	-0.13497	0.13497
HS2	-0.037891	0.037891
HS3	-0.083385	0.083385
HS4	-0.080562	0.080562
HSP5	-0.15331	0.15331
AGE2539	-0.042175	0.042175
AGE4049	0.0068002	-0.0068002
AGE5065	0.019231	-0.019231
AGE65PLUS	0.049682	-0.049682
AGEPCCHILD	-0.049222	0.049222
EMPPARTTIME	0.047552	-0.047552
EMPFULLTIME	0.031930	-0.031930
EDUHIGHSCHOOL	0.0085269	-0.0085269
EDUSOMECOLLEGE	0.083213	-0.083213
EDUCOLLEGEPLUS	0.15141	-0.15141
BLACK	-0.15607	0.15607
ORIENTAL	-0.038446	0.038446
OTHER	-0.066508	0.066508
HISPYES	-0.053105	0.053105
CENTRAL	0.081013	-0.081013
SOUTH	0.019686	-0.019686
WEST	0.14388	-0.14388
POV130	-0.065953	0.065953

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.947084	.225058	4.20817	[.000]
AG	-.089440	.936575	-.095497	[.924]
PC	.131262	.060524	2.16874	[.030]
EM	-.211961	.084783	-2.50003	[.012]
ED	-.648409	.307529	-2.10845	[.035]
RC	.696080	.215749	3.22634	[.001]
HP	.141619	.084143	1.68307	[.092]
RG	-.652242	.125953	-5.17846	[.000]
PV	.175881	.084276	2.08696	[.037]

Beverage #2. Reduced Fat - Flavored and Unflavored Milk

Number of observations = 5715 R-squared = .050304
Number of positive obs. = 5210 Kullback-Leibler R-sq = .075420
Mean of dep. var. = .911636 Log likelihood = -1578.51
Sum of squared residuals = 437.270

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.584821	.330565	1.76916	[.077]
HS2	.290180	.065815	4.40902	[.000]
HS3	.178592	.088974	2.00724	[.045]
HS4	.254653	.106728	2.38601	[.017]
HSP5	.130444	.121627	1.07249	[.284]
AGE2539	.231582	.298935	.774692	[.439]
AGE4049	.281044	.298621	.941140	[.347]
AGE5065	.412831	.298790	1.38167	[.167]
AGE65PLUS	.328803	.304416	1.08011	[.280]
AGEPCCHILD	.237697	.086694	2.74181	[.006]
EMPPARTTIME	.174506	.081389	2.14411	[.032]
EMPFULLTIME	-.075244	.065124	-1.15539	[.248]
EDUHIGHSCHOOL	.214888	.126157	1.70333	[.089]
EDUSOMECOLLEGE	.294659	.124553	2.36574	[.018]
EDUCOLLEGEPLUS	.449368	.126010	3.56613	[.000]
BLACK	-.623329	.070304	-8.86620	[.000]
ORIENTAL	-.099411	.241774	-.411174	[.681]
OTHER	-.290306	.118485	-2.45015	[.014]
HISPYES	-.256261	.107045	-2.39395	[.017]
CENTRAL	.291429	.078015	3.73558	[.000]
SOUTH	-.118372	.064905	-1.82378	[.068]
WEST	.100066	.078339	1.27735	[.201]
POV130	-.461485	.096598	-4.77739	[.000]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	-0.086764	0.086764
HS2	-0.043051	0.043051
HS3	-0.026496	0.026496
HS4	-0.037780	0.037780
HSP5	-0.019353	0.019353
AGE2539	-0.034358	0.034358
AGE4049	-0.041696	0.041696
AGE5065	-0.061248	0.061248
AGE65PLUS	-0.048781	0.048781
AGEPCCHILD	-0.035265	0.035265
EMPPARTTIME	-0.025890	0.025890
EMPFULLTIME	0.011163	-0.011163
EDUHIGHSCHOOL	-0.031881	0.031881
EDUSOMECOLLEGE	-0.043716	0.043716
EDUCOLLEGEPLUS	-0.066668	0.066668
BLACK	0.092477	-0.092477
ORIENTAL	0.014749	-0.014749
OTHER	0.043070	-0.043070
HISPYES	0.038019	-0.038019
CENTRAL	-0.043236	0.043236
SOUTH	0.017562	-0.017562
WEST	-0.014846	0.014846
POV130	0.068466	-0.068466

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.853869	.305259	2.79720	[.005]
AG	1.25426	1.18404	1.05931	[.289]
PC	.237697	.086694	2.74181	[.006]
EM	.099263	.126393	.785352	[.432]
ED	.958915	.360073	2.66311	[.008]
RC	-1.01305	.289800	-3.49567	[.000]
HP	-.256261	.107045	-2.39395	[.017]
RG	.273123	.180903	1.50978	[.131]
PV	-.461485	.096598	-4.77739	[.000]

Beverage #3. Carbonated Soft Drinks - Regular

Number of observations = 5715
Number of positive obs. = 5419
Mean of dep. var. = .948206
Sum of squared residuals = 263.749

R-squared = .060331
Kullback-Leibler R-sq = .124313
Log likelihood = -1019.74

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	1.02135	.444894	2.29571	[.022]
HS2	.564593	.068367	8.25822	[.000]
HS3	.965331	.128614	7.50563	[.000]
HS4	1.05603	.167984	6.28651	[.000]
HSP5	1.15138	.226163	5.09091	[.000]
AGE2539	.608724	.376537	1.61664	[.106]
AGE4049	.371942	.372205	.999293	[.318]
AGE5065	.254085	.369740	.687200	[.492]
AGE65PLUS	.256906	.376465	.682418	[.495]
AGEPCCHILD	.050142	.142018	.353070	[.724]
EMPPARTTIME	.103678	.098661	1.05085	[.293]
EMPFULLTIME	-.556992E-02	.082233	-.067733	[.946]
EDUHIGHSCHOOL	-.216362	.239245	-.904354	[.366]
EDUSOMECOLLEGE	-.346207	.235212	-1.47189	[.141]
EDUCOLLEGEPLUS	-.520054	.234792	-2.21495	[.027]
BLACK	.473962	.138836	3.41384	[.001]
ORIENTAL	-.118725	.298107	-.398262	[.690]
OTHER	.129693	.200986	.645284	[.519]
HISPYES	.314943	.208602	1.50978	[.131]
CENTRAL	.133117	.087126	1.52788	[.127]
SOUTH	.114797	.082408	1.39302	[.164]
WEST	.043549	.091749	.474653	[.635]
POV130	-.074348	.140057	-.530843	[.596]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	-0.096364	0.096364
HS2	-0.053269	0.053269
HS3	-0.091079	0.091079
HS4	-0.099636	0.099636
HSP5	-0.10863	0.10863
AGE2539	-0.057433	0.057433
AGE4049	-0.035093	0.035093
AGE5065	-0.023973	0.023973
AGE65PLUS	-0.024239	0.024239
AGEPCCHILD	-0.0047309	0.0047309
EMPPARTTIME	-0.0097820	0.0097820
EMPFULLTIME	0.00052552	-0.00052552
EDUHIGHSCHOOL	0.020414	-0.020414
EDUSOMECOLLEGE	0.032665	-0.032665
EDUCOLLEGEPLUS	0.049067	-0.049067
BLACK	-0.044718	0.044718
ORIENTAL	0.011202	-0.011202
OTHER	-0.012237	0.012237
HISPYES	-0.029715	0.029715
CENTRAL	-0.012560	0.012560
SOUTH	-0.010831	0.010831
WEST	-0.0041088	0.0041088
POV130	0.0070148	-0.0070148

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	3.73733	.434049	8.61039	[.000]
AG	1.49166	1.47302	1.01265	[.311]
PC	.050142	.142018	.353070	[.724]
EM	.098108	.156172	.628205	[.530]
ED	-1.08262	.694677	-1.55846	[.119]
RC	.484931	.399801	1.21293	[.225]
HP	.314943	.208602	1.50978	[.131]
RG	.291463	.214978	1.35578	[.175]
PV	-.074348	.140057	-.530843	[.596]

Beverage #4. Carbonated Soft Drinks – Low Calorie

Number of observations = 5715 R-squared = .049069
Number of positive obs. = 4166 Kullback-Leibler R-sq = .039909
Mean of dep. var. = .728959 Log likelihood = -3205.96
Sum of squared residuals = 1073.75

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.084183	.260825	-.322757	[.747]
HS2	.300799	.050002	6.01572	[.000]
HS3	.332114	.068602	4.84115	[.000]
HS4	.550717	.081188	6.78319	[.000]
HSP5	.418791	.092319	4.53636	[.000]
AGE2539	.280319	.231734	1.20966	[.226]
AGE4049	.449760	.231436	1.94334	[.052]
AGE5065	.579285	.231323	2.50423	[.012]
AGE65PLUS	.432849	.235483	1.83814	[.066]
AGEPCCHILD	-.041561	.064875	-.640632	[.522]
EMPPARTTIME	.063298	.055909	1.13215	[.258]
EMPFULLTIME	.130769E-02	.048050	.027215	[.978]
EDUHIGHSCHOOL	-.219548E-02	.108476	-.020239	[.984]
EDUSOMECOLLEGE	.039454	.106936	.368951	[.712]
EDUCOLLEGEPLUS	.068700	.107289	.640332	[.522]
BLACK	-.585064	.060315	-9.70016	[.000]
ORIENTAL	-.286791	.172258	-1.66489	[.096]
OTHER	-.288277	.095551	-3.01699	[.003]
HISPYES	-.040125	.086409	-.464357	[.642]
CENTRAL	.117130	.054140	2.16346	[.031]
SOUTH	-.010537	.049903	-.211158	[.833]
WEST	-.065507	.056898	-1.15131	[.250]
POV130	-.315995	.082005	-3.85337	[.000]

Standard Errors computed from analytic second derivatives(Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.026712	-0.026712
HS2	-0.095444	0.095444
HS3	-0.10538	0.10538
HS4	-0.17474	0.17474
HSP5	-0.13288	0.13288
AGE2539	-0.088946	0.088946
AGE4049	-0.14271	0.14271
AGE5065	-0.18381	0.18381
AGE65PLUS	-0.13734	0.13734
AGEPCCHILD	0.013187	-0.013187
EMPPARTTIME	-0.020085	0.020085
EMPFULLTIME	-0.00041493	0.00041493
EDUHIGHSCHOOL	0.00069663	-0.00069663
EDUSOMECOLLEGE	-0.012519	0.012519
EDUCOLLEGEPLUS	-0.021799	0.021799
BLACK	0.18564	-0.18564
ORIENTAL	0.091000	-0.091000
OTHER	0.091471	-0.091471
HISPYES	0.012732	-0.012732
CENTRAL	-0.037166	0.037166
SOUTH	0.0033436	-0.0033436
WEST	0.020786	-0.020786
POV130	0.10027	-0.10027

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.60242	.237074	6.75917	[.000]
AG	1.74221	.918107	1.89762	[.058]
PC	-.041561	.064875	-.640632	[.522]
EM	.064605	.090455	.714230	[.475]
ED	.105959	.312148	.339451	[.734]
RC	-1.16013	.214022	-5.42061	[.000]
HP	-.040125	.086409	-.464357	[.642]
RG	.041085	.133534	.307678	[.758]
PV	-.315995	.082005	-3.85337	[.000]

Beverage #5. Powdered Soft Drinks

Number of observations = 5715 R-squared = .151853
Number of positive obs. = 2863 Kullback-Leibler R-sq = .115556
Mean of dep. var. = .500962 Log likelihood = -3503.57
Sum of squared residuals = 1211.79

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.584859	.260360	-2.24634	[.025]
HS2	.342540	.050117	6.83476	[.000]
HS3	.632039	.066247	9.54061	[.000]
HS4	.924199	.077404	11.9400	[.000]
HSP5	1.05813	.091834	11.5222	[.000]
AGE2539	.251283	.232040	1.08293	[.279]
AGE4049	.191426	.231469	.827007	[.408]
AGE5065	-.026653	.231209	-.115277	[.908]
AGE65PLUS	-.154560	.235416	-.656540	[.511]
AGEPCCHILD	.184274	.060913	3.02517	[.002]
EMPPARTTIME	.082152	.053520	1.53499	[.125]
EMPFULLTIME	-.029847	.045961	-.649402	[.516]
EDUHIGHSCHOOL	.667072E-02	.107373	.062127	[.950]
EDUSOMECOLLEGE	-.069860	.105882	-.659792	[.509]
EDUCOLLEGEPLUS	-.248385	.106182	-2.33925	[.019]
BLACK	.341619	.062996	5.42288	[.000]
ORIENTAL	-.614805	.183761	-3.34567	[.001]
OTHER	-.026019	.096395	-.269921	[.787]
HISPYES	-.050297	.084981	-.591866	[.554]
CENTRAL	.174721	.051490	3.39330	[.001]
SOUTH	.171850	.048146	3.56934	[.000]
WEST	-.157029	.055588	-2.82486	[.005]
POV130	.125639	.085103	1.47631	[.140]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.20442	-0.20442
HS2	-0.11972	0.11972
HS3	-0.22091	0.22091
HS4	-0.32302	0.32302
HSP5	-0.36983	0.36983
AGE2539	-0.087827	0.087827
AGE4049	-0.066906	0.066906
AGE5065	0.0093156	-0.0093156
AGE65PLUS	0.054021	-0.054021
AGEPCCHILD	-0.064406	0.064406
EMPPARTTIME	-0.028713	0.028713
EMPFULLTIME	0.010432	-0.010432
EDUHIGHSCHOOL	-0.0023315	0.0023315
EDUSOMECOLLEGE	0.024417	-0.024417
EDUCOLLEGEPLUS	0.086814	-0.086814
BLACK	-0.11940	0.11940
ORIENTAL	0.21488	-0.21488
OTHER	0.0090940	-0.0090940
HISPYES	0.017580	-0.017580
CENTRAL	-0.061067	0.061067
SOUTH	-0.060064	0.060064
WEST	0.054884	-0.054884
POV130	-0.043912	0.043912

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.95691	.232668	12.7087	[.000]
AG	.261496	.918930	.284566	[.776]
PC	.184274	.060913	3.02517	[.002]
EM	.052305	.086617	.603872	[.546]
ED	-.311574	.309532	-1.00660	[.314]
RC	-.299205	.224334	-1.33375	[.182]
HP	-.050297	.084981	-.591866	[.554]
RG	.189542	.128649	1.47333	[.141]
PV	.125639	.085103	1.47631	[.140]

Beverage #6. Isotonics

Number of observations = 5715
Number of positive obs. = 1870
Mean of dep. var. = .327209
Sum of squared residuals = 1129.13

R-squared = .102529
Kullback-Leibler R-sq = .081702
Log likelihood = -3317.75

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.881849	.262151	-3.36390	[.001]
HS2	.276126	.054776	5.04102	[.000]
HS3	.411752	.070003	5.88191	[.000]
HS4	.592292	.078912	7.50577	[.000]
HSP5	.508150	.089972	5.64785	[.000]
AGE2539	.061265	.230682	.265582	[.791]
AGE4049	.013374	.230254	.058082	[.954]
AGE5065	-.240180	.230228	-1.04323	[.297]
AGE65PLUS	-.418004	.235683	-1.77358	[.076]
AGEPCCHILD	.287036	.060776	4.72282	[.000]
EMPPARTTIME	.091230	.054388	1.67740	[.093]
EMPFULLTIME	.085611	.046884	1.82601	[.068]
EDUHIGHSCHOOL	-.110718	.111173	-.995904	[.319]
EDUSOMECOLLEGE	-.077163	.109504	-.704657	[.481]
EDUCOLLEGEPLUS	-.128809	.109850	-1.17259	[.241]
BLACK	-.217354	.064589	-3.36517	[.001]
ORIENTAL	-.193866	.179465	-1.08025	[.280]
OTHER	.085291	.095560	.892543	[.372]
HISPYES	-.036425	.084543	-.430848	[.667]
CENTRAL	.110471	.054005	2.04559	[.041]
SOUTH	.322708	.050000	6.45416	[.000]
WEST	.271593	.057385	4.73285	[.000]
POV130	-.210288	.088468	-2.37700	[.017]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.29081	-0.29081
HS2	-0.091060	0.091060
HS3	-0.13579	0.13579
HS4	-0.19532	0.19532
HSP5	-0.16758	0.16758
AGE2539	-0.020204	0.020204
AGE4049	-0.0044103	0.0044103
AGE5065	0.079206	-0.079206
AGE65PLUS	0.13785	-0.13785
AGEPCCHILD	-0.094657	0.094657
EMPPARTTIME	-0.030085	0.030085
EMPFULLTIME	-0.028232	0.028232
EDUHIGHSCHOOL	0.036512	-0.036512
EDUSOMECOLLEGE	0.025446	-0.025446
EDUCOLLEGEPLUS	0.042478	-0.042478
BLACK	0.071678	-0.071678
ORIENTAL	0.063932	-0.063932
OTHER	-0.028127	0.028127
HISPYES	0.012012	-0.012012
CENTRAL	-0.036431	0.036431
SOUTH	-0.10642	0.10642
WEST	-0.089565	0.089565
POV130	0.069348	-0.069348

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.78832	.245822	7.27486	[.000]
AG	-.583546	.914521	-.638090	[.523]
PC	.287036	.060776	4.72282	[.000]
EM	.176841	.088647	1.99489	[.046]
ED	-.316689	.320521	-.988047	[.323]
RC	-.325929	.220874	-1.47564	[.140]
HP	-.036425	.084543	-.430848	[.667]
RG	.704772	.135073	5.21771	[.000]
PV	-.210288	.088468	-2.37700	[.017]

Beverage #7. Bottled Water

Number of observations = 5715   R-squared = .048091
Number of positive obs. = 3996   Kullback-Leibler R-sq = .039927
Mean of dep. var. = .699213   Log likelihood = -3355.35
Sum of squared residuals = 1144.14

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.122913	.267629	.459267	[.646]
HS2	.164267	.049159	3.34156	[.001]
HS3	.131343	.066853	1.96465	[.049]
HS4	.320466	.079536	4.02920	[.000]
HSP5	.327816	.092877	3.52956	[.000]
AGE2539	.250566	.239794	1.04492	[.296]
AGE4049	.169425	.239092	.708617	[.479]
AGE5065	.084646	.238730	.354567	[.723]
AGE65PLUS	-.160303	.242457	-.661160	[.509]
AGEPCCHILD	.076066	.064223	1.18439	[.236]
EMPPARTTIME	.082979	.054080	1.53437	[.125]
EMPFULLTIME	.105879	.046856	2.25967	[.024]
EDUHIGHSCHOOL	-.973343E-02	.108410	-.089784	[.928]
EDUSOMECOLLEGE	.015716	.106894	.147026	[.883]
EDUCOLLEGEPLUS	-.012503	.107347	-.116474	[.907]
BLACK	.369503	.067997	5.43414	[.000]
ORIENTAL	.620046	.225666	2.74762	[.006]
OTHER	.244393	.104952	2.32861	[.020]
HISPYES	.076881	.091226	.842749	[.399]
CENTRAL	-.082926	.051869	-1.59877	[.110]
SOUTH	.030018	.049187	.610292	[.542]
WEST	.164830	.057192	2.88205	[.004]
POV130	-.353120	.082610	-4.27457	[.000]

Standard Errors computed from analytic second derivatives(Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.040982	0.040982
HS2	-0.054770	0.054770
HS3	-0.043792	0.043792
HS4	-0.10685	0.10685
HSP5	-0.10930	0.10930
AGE2539	-0.083543	0.083543
AGE4049	-0.056489	0.056489
AGE5065	-0.028223	0.028223
AGE65PLUS	0.053448	-0.053448
AGEPCCHILD	-0.025362	0.025362
EMPPARTTIME	-0.027667	0.027667
EMPFULLTIME	-0.035302	0.035302
EDUHIGHSCHOOL	0.0032453	-0.0032453
EDUSOMECOLLEGE	-0.0052401	0.0052401
EDUCOLLEGEPLUS	0.0041688	-0.0041688
BLACK	-0.12320	0.12320
ORIENTAL	-0.20674	0.20674
OTHER	-0.081485	0.081485
HISPYES	-0.025633	0.025633
CENTRAL	0.027649	-0.027649
SOUTH	-0.010009	0.010009
WEST	-0.054958	0.054958
POV130	0.11774	-0.11774

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.943892	.232649	4.05715	[.000]
AG	.344334	.948927	.362867	[.717]
PC	.076066	.064223	1.18439	[.236]
EM	.188858	.087627	2.15524	[.031]
ED	-.652042E-02	.312520	-.020864	[.983]
RC	1.23394	.264266	4.66932	[.000]
HP	.076881	.091226	.842749	[.399]
RG	.111923	.131201	.853063	[.394]
PV	-.353120	.082610	-4.27457	[.000]

Beverage #8. Orange Juice

Number of observations = 5715 R-squared = .023870
Number of positive obs. = 4981 Kullback-Leibler R-sq = .031466
Mean of dep. var. = .871566 Log likelihood = -2122.18
Sum of squared residuals = 624.479

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.474774	.298856	1.58864	[.112]
HS2	.339487	.057263	5.92860	[.000]
HS3	.499428	.082852	6.02795	[.000]
HS4	.622032	.099218	6.26935	[.000]
HSP5	.549213	.112575	4.87863	[.000]
AGE2539	.275831	.262840	1.04943	[.294]
AGE4049	.243586	.261969	.929825	[.352]
AGE5065	.406552	.262061	1.55136	[.121]
AGE65PLUS	.503321	.267864	1.87902	[.060]
AGEPCCHILD	-.062454	.080390	-.776886	[.437]
EMPPARTTIME	.091799	.067230	1.36544	[.172]
EMPFULLTIME	-.880649E-02	.056840	-.154935	[.877]
EDUHIGHSCHOOL	-.033350	.129006	-.258517	[.796]
EDUSOMECOLLEGE	.065496	.127613	.513243	[.608]
EDUCOLLEGEPLUS	.209478	.128535	1.62973	[.103]
BLACK	.273654	.083640	3.27180	[.001]
ORIENTAL	.220012	.232238	.947358	[.343]
OTHER	.164195	.121492	1.35149	[.177]
HISPYES	.045457	.106257	.427805	[.669]
CENTRAL	-.089457	.066336	-1.34854	[.177]
SOUTH	-.146723	.062078	-2.36352	[.018]
WEST	-.352870	.068106	-5.18117	[.000]
POV130	-.096397	.097224	-.991490	[.321]

Standard Errors computed from analytic second derivatives(Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	-0.096474	0.096474
HS2	-0.068983	0.068983
HS3	-0.10148	0.10148
HS4	-0.12640	0.12640
HSP5	-0.11160	0.11160
AGE2539	-0.056049	0.056049
AGE4049	-0.049496	0.049496
AGE5065	-0.082611	0.082611
AGE65PLUS	-0.10227	0.10227
AGEPCCHILD	0.012691	-0.012691
EMPPARTTIME	-0.018653	0.018653
EMPFULLTIME	0.0017895	-0.0017895
EDUHIGHSCHOOL	0.0067767	-0.0067767
EDUSOMECOLLEGE	-0.013309	0.013309
EDUCOLLEGEPLUS	-0.042566	0.042566
BLACK	-0.055606	0.055606
ORIENTAL	-0.044706	0.044706
OTHER	-0.033364	0.033364
HISPYES	-0.0092368	0.0092368
CENTRAL	0.018178	-0.018178
SOUTH	0.029814	-0.029814
WEST	0.071703	-0.071703
POV130	0.019588	-0.019588

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.01016	.282755	7.10920	[.000]
AG	1.42929	1.03971	1.37470	[.169]
PC	-.062454	.080390	-.776886	[.437]
EM	.082992	.107581	.771444	[.440]
ED	.241625	.372891	.647977	[.517]
RC	.657861	.283386	2.32143	[.020]
HP	.045457	.106257	.427805	[.669]
RG	-.589050	.166797	-3.53153	[.000]
PV	-.096397	.097224	-.991490	[.321]

Beverage #9. Apple Juice

Number of observations = 5715   R-squared = .079329
Number of positive obs. = 3323   Kullback-Leibler R-sq = .060547
Mean of dep. var. = .581452   Log likelihood = -3649.93
Sum of squared residuals = 1280.50

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.343522	.266141	-1.29075	[.197]
HS2	.363467	.048053	7.56388	[.000]
HS3	.550859	.064987	8.47646	[.000]
HS4	.772734	.076760	10.0669	[.000]
HSP5	.847488	.090304	9.38483	[.000]
AGE2539	-.184027	.240232	-.766039	[.444]
AGE4049	-.251223	.239697	-1.04808	[.295]
AGE5065	-.192829	.239362	-.805595	[.420]
AGE65PLUS	-.182645	.243103	-.751306	[.452]
AGEPCCHILD	.229125	.061279	3.73906	[.000]
EMPPARTTIME	.034331	.053036	.647319	[.517]
EMPFULLTIME	-.133556	.045398	-2.94188	[.003]
EDUHIGHSCHOOL	.223562	.104207	2.14537	[.032]
EDUSOMECOLLEGE	.265528	.102748	2.58427	[.010]
EDUCOLLEGEPLUS	.360131	.103160	3.49098	[.000]
BLACK	.306482	.062577	4.89770	[.000]
ORIENTAL	-.073946	.174894	-.422804	[.672]
OTHER	.138555	.095531	1.45036	[.147]
HISPYES	-.114693	.084088	-1.36397	[.173]
CENTRAL	.711160E-02	.050832	.139905	[.889]
SOUTH	-.030474	.047481	-.641828	[.521]
WEST	.113017	.054674	2.06710	[.039]
POV130	-.048400	.082618	-.585829	[.558]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.12543	-0.12543
HS2	-0.13272	0.13272
HS3	-0.20114	0.20114
HS4	-0.28215	0.28215
HSP5	-0.30945	0.30945
AGE2539	0.067195	-0.067195
AGE4049	0.091731	-0.091731
AGE5065	0.070409	-0.070409
AGE65PLUS	0.066690	-0.066690
AGEPCCHILD	-0.083662	0.083662
EMPPARTTIME	-0.012536	0.012536
EMPFULLTIME	0.048766	-0.048766
EDUHIGHSCHOOL	-0.081631	0.081631
EDUSOMECOLLEGE	-0.096954	0.096954
EDUCOLLEGEPLUS	-0.13150	0.13150
BLACK	-0.11191	0.11191
ORIENTAL	0.027000	-0.027000
OTHER	-0.050592	0.050592
HISPYES	0.041879	-0.041879
CENTRAL	-0.0025967	0.0025967
SOUTH	0.011127	-0.011127
WEST	-0.041267	0.041267
POV130	0.017673	-0.017673

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.53455	.226551	11.1875	[.000]
AG	-.810723	.951950	-.851645	[.394]
PC	.229125	.061279	3.73906	[.000]
EM	-.099225	.085723	-1.15751	[.247]
ED	.849221	.300261	2.82828	[.005]
RC	.371091	.216104	1.71719	[.086]
HP	-.114693	.084088	-1.36397	[.173]
RG	.089655	.127024	.705808	[.480]
PV	-.048400	.082618	-.585829	[.558]

Beverage #10. Other Juice

Number of observations = 5715 R-squared = .035459
Number of positive obs. = 4800 Kullback-Leibler R-sq = .038476
Mean of dep. var. = .839895 Log likelihood = -2416.99
Sum of squared residuals = 741.262

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.763172	.346669	2.20144	[.028]
HS2	.361730	.053707	6.73523	[.000]
HS3	.516782	.076756	6.73281	[.000]
HS4	.621029	.091963	6.75306	[.000]
HSP5	.812018	.112620	7.21024	[.000]
AGE2539	-.272505	.320103	-.851306	[.395]
AGE4049	-.331240	.319163	-1.03784	[.299]
AGE5065	-.220496	.318815	-.691610	[.489]
AGE65PLUS	-.081822	.323187	-.253171	[.800]
AGEPCCHILD	.035513	.075219	.472132	[.637]
EMPPARTTIME	-.051540	.062837	-.820223	[.412]
EMPFULLTIME	-.014326	.054587	-.262451	[.793]
EDUHIGHSCHOOL	.076674	.120713	.635172	[.525]
EDUSOMECOLLEGE	.210224	.119394	1.76076	[.078]
EDUCOLLEGEPLUS	.317058	.120239	2.63689	[.008]
BLACK	.283386	.078502	3.60991	[.000]
ORIENTAL	-.024983	.213196	-.117184	[.907]
OTHER	.105267	.122482	.859447	[.390]
HISPYES	.187255	.110996	1.68704	[.092]
CENTRAL	-.225821	.061066	-3.69799	[.000]
SOUTH	-.186433	.058089	-3.20945	[.001]
WEST	-.102740	.067012	-1.53315	[.125]
POV130	-.061944	.094872	-.652927	[.514]

Standard Errors computed from analytic second derivatives(Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.17870	0.17870
HS2	-0.084699	0.084699
HS3	-0.12100	0.12100
HS4	-0.14541	0.14541
HSP5	-0.19013	0.19013
AGE2539	0.063807	-0.063807
AGE4049	0.077559	-0.077559
AGE5065	0.051629	-0.051629
AGE65PLUS	0.019158	-0.019158
AGEPCCHILD	-0.0083154	0.0083154
EMPPARTTIME	0.012068	-0.012068
EMPFULLTIME	0.0033545	-0.0033545
EDUHIGHSCHOOL	-0.017953	0.017953
EDUSOMECOLLEGE	-0.049224	0.049224
EDUCOLLEGEPLUS	-0.074239	0.074239
BLACK	-0.066354	0.066354
ORIENTAL	0.0058498	-0.0058498
OTHER	-0.024648	0.024648
HISPYES	-0.043845	0.043845
CENTRAL	0.052876	-0.052876
SOUTH	0.043653	-0.043653
WEST	0.024056	-0.024056
POV130	0.014504	-0.014504

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.31156	.265486	8.70691	[.000]
AG	-.906063	1.27020	-.713321	[.476]
PC	.035513	.075219	.472132	[.637]
EM	-.065866	.102561	-.642215	[.521]
ED	.603956	.348529	1.73287	[.083]
RC	.363670	.266211	1.36609	[.172]
HP	.187255	.110996	1.68704	[.092]
RG	-.514994	.156887	-3.28257	[.001]
PV	-.061944	.094872	-.652927	[.514]

Beverage #11. Fruit Drinks

Number of observations = 5715	R-squared = .109501
Number of positive obs. = 4661	Kullback-Leibler R-sq = .129630
Mean of dep. var. = .815573	Log likelihood = -2377.85
Sum of squared residuals = 765.489	

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.877914	.389557	2.25362	[.024]
HS2	.345590	.051181	6.75230	[.000]
HS3	.563817	.076086	7.41021	[.000]
HS4	.939042	.105676	8.88603	[.000]
HSP5	.967934	.140528	6.88786	[.000]
AGE2539	-.301690	.364580	-.827501	[.408]
AGE4049	-.413547	.363263	-1.13843	[.255]
AGE5065	-.566846	.362327	-1.56446	[.118]
AGE65PLUS	-.659911	.365681	-1.80460	[.071]
AGEPCCHILD	.487146	.086331	5.64280	[.000]
EMPPARTTIME	.076500	.065581	1.16650	[.243]
EMPFULLTIME	.037313	.056078	.665368	[.506]
EDUHIGHSCHOOL	-.022274	.130448	-.170753	[.864]
EDUSOMECOLLEGE	-.052329	.128417	-.407496	[.684]
EDUCOLLEGEPLUS	-.198901	.128505	-1.54781	[.122]
BLACK	.730432	.096618	7.55996	[.000]
ORIENTAL	.704659	.316322	2.22766	[.026]
OTHER	.139198	.124529	1.11780	[.264]
HISPYES	-.372228E-02	.110887	-.033568	[.973]
CENTRAL	.111090	.061478	1.80700	[.071]
SOUTH	-.015709	.056935	-.275903	[.783]
WEST	.081598	.065454	1.24665	[.213]
POV130	.201380	.109833	1.83352	[.067]

Standard Errors computed from analytic second derivatives(Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.20404	0.20404
HS2	-0.080319	0.080319
HS3	-0.13104	0.13104
HS4	-0.21824	0.21824
HSP5	-0.22496	0.22496
AGE2539	0.070116	-0.070116
AGE4049	0.096113	-0.096113
AGE5065	0.13174	-0.13174
AGE65PLUS	0.15337	-0.15337
AGEPCCHILD	-0.11322	0.11322
EMPPARTTIME	-0.017780	0.017780
EMPFULLTIME	-0.0086719	0.0086719
EDUHIGHSCHOOL	0.0051768	-0.0051768
EDUSOMECOLLEGE	0.012162	-0.012162
EDUCOLLEGEPLUS	0.046227	-0.046227
BLACK	-0.16976	0.16976
ORIENTAL	-0.16377	0.16377
OTHER	-0.032351	0.032351
HISPYES	0.00086510	-0.00086510
CENTRAL	-0.025819	0.025819
SOUTH	0.0036509	-0.0036509
WEST	-0.018964	0.018964
POV130	-0.046803	0.046803

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.81638	.276531	10.1847	[.000]
AG	-1.94199	1.44562	-1.34337	[.179]
PC	.487146	.086331	5.64280	[.000]
EM	.113813	.105264	1.08122	[.280]
ED	-.273505	.375549	-.728281	[.466]
RC	1.57429	.360030	4.37265	[.000]
HP	-.372228E-02	.110887	-.033568	[.973]
RG	.176980	.152299	1.16206	[.245]
PV	.201380	.109833	1.83352	[.067]

Beverage #12. Vegetable Juice

Number of observations = 5715 R-squared = .023181
Number of positive obs. = 2798 Kullback-Leibler R-sq = .016883
Mean of dep. var. = .489589 Log likelihood = -3893.24
Sum of squared residuals = 1395.02

PROBIT PARAMETERS Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.518867	.256570	-2.02232	[.043]
HS2	.291937	.047923	6.09184	[.000]
HS3	.282180	.064111	4.40143	[.000]
HS4	.351875	.074068	4.75071	[.000]
HSP5	.418220	.085526	4.89000	[.000]
AGE2539	-.041490	.230188	-.180242	[.857]
AGE4049	.080212	.229709	.349192	[.727]
AGE5065	.258436	.229521	1.12598	[.260]
AGE65PLUS	.139656	.233339	.598512	[.549]
AGEPCCHILD	.026148	.059314	.440842	[.659]
EMPPARTTIME	-.037844	.050975	-.742391	[.458]
EMPFULLTIME	-.069365	.044079	-1.57367	[.116]
EDUHIGHSCHOOL	-.024232	.102850	-.235608	[.814]
EDUSOMECOLLEGE	.046069	.101381	.454414	[.650]
EDUCOLLEGEPLUS	.094477	.101725	.928751	[.353]
BLACK	-.105644	.059734	-1.76857	[.077]
ORIENTAL	-.226326	.171177	-1.32218	[.186]
OTHER	-.200610	.092836	-2.16091	[.031]
HISPYES	.013497	.081553	.165496	[.869]
CENTRAL	.216408	.049476	4.37401	[.000]
SOUTH	.146937	.046345	3.17053	[.002]
WEST	.082325	.053101	1.55035	[.121]
POV130	-.051714	.080340	-.643687	[.520]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS	dP/dX 0	1
C	0.20314	-0.20314
HS2	-0.11430	0.11430
HS3	-0.11048	0.11048
HS4	-0.13776	0.13776
HSP5	-0.16374	0.16374
AGE2539	0.016243	-0.016243
AGE4049	-0.031404	0.031404
AGE5065	-0.10118	0.10118
AGE65PLUS	-0.054676	0.054676
AGEPCCHILD	-0.010237	0.010237
EMPPARTTIME	0.014816	-0.014816
EMPFULLTIME	0.027157	-0.027157
EDUHIGHSCHOOL	0.0094871	-0.0094871
EDUSOMECOLLEGE	-0.018036	0.018036
EDUCOLLEGEPLUS	-0.036988	0.036988
BLACK	0.041360	-0.041360
ORIENTAL	0.088608	-0.088608
OTHER	0.078540	-0.078540
HISPYES	-0.0052841	0.0052841
CENTRAL	-0.084725	0.084725
SOUTH	-0.057527	0.057527
WEST	-0.032231	0.032231
POV130	0.020246	-0.020246

JOINT F-TESTS Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.34421	.222482	6.04188	[.000]
AG	.436815	.912348	.478781	[.632]
PC	.026148	.059314	.440842	[.659]
EM	-.107209	.082858	-1.29389	[.196]
ED	.116314	.296465	.392335	[.695]
RC	-.532579	.210757	-2.52698	[.012]
HP	.013497	.081553	.165496	[.869]
RG	.445670	.123682	3.60335	[.000]
PV	-.051714	.080340	-.643687	[.520]

Beverage #13. Coffee – Regular

Number of observations = 5715
Number of positive obs. = 4131
Mean of dep. var. = .722835
Sum of squared residuals = 1085.47
R-squared = .051965
Kullback-Leibler R-sq = .043447
Log likelihood = -3226.75

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.198360	.263584	.752549	[.452]
HS2	.405814	.049992	8.11760	[.000]
HS3	.435439	.068835	6.32584	[.000]
HS4	.573657	.080071	7.16437	[.000]
HSP5	.573106	.091958	6.23226	[.000]
AGE2539	.317374	.229950	1.38019	[.168]
AGE4049	.541479	.229724	2.35709	[.018]
AGE5065	.697361	.229669	3.03638	[.002]
AGE65PLUS	.718034	.234450	3.06263	[.002]
AGEPCCHILD	-.142529	.064519	-2.20910	[.027]
EMPPARTTIME	-.108727	.055398	-1.96268	[.050]
EMPFULLTIME	-.099482	.048341	-2.05793	[.040]
EDUHIGHSCHOOL	-.155951	.119099	-1.30942	[.190]
EDUSOMECOLLEGE	-.139319	.117484	-1.18586	[.236]
EDUCOLLEGEPLUS	-.288933	.117494	-2.45913	[.014]
BLACK	-.281705	.061124	-4.60877	[.000]
ORIENTAL	-.179661	.174221	-1.03122	[.302]
OTHER	.024532	.101402	.241931	[.809]
HISPYES	.169731	.091282	1.85942	[.063]
CENTRAL	-.258643	.054255	-4.76721	[.000]
SOUTH	-.228134	.051142	-4.46078	[.000]
WEST	-.233628	.058480	-3.99504	[.000]
POV130	-.206936	.083670	-2.47324	[.013]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.063397	0.063397
HS2	-0.12970	0.12970
HS3	-0.13917	0.13917
HS4	-0.18334	0.18334
HSP5	-0.18317	0.18317
AGE2539	-0.10143	0.10143
AGE4049	-0.17306	0.17306
AGE5065	-0.22288	0.22288
AGE65PLUS	-0.22949	0.22949
AGEPCCHILD	0.045553	-0.045553
EMPPARTTIME	0.034750	-0.034750
EMPFULLTIME	0.031795	-0.031795
EDUHIGHSCHOOL	0.049842	-0.049842
EDUSOMECOLLEGE	0.044527	-0.044527
EDUCOLLEGEPLUS	0.092344	-0.092344
BLACK	0.090034	-0.090034
ORIENTAL	0.057420	-0.057420
OTHER	-0.0078406	0.0078406
HISPYES	-0.054247	0.054247
CENTRAL	0.082663	-0.082663
SOUTH	0.072912	-0.072912
WEST	0.074668	-0.074668
POV130	0.066137	-0.066137

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.98802	.236471	8.40702	[.000]
AG	2.27425	.911581	2.49484	[.013]
PC	-.142529	.064519	-2.20910	[.027]
EM	-.208210	.090869	-2.29131	[.022]
ED	-.584203	.344420	-1.69619	[.090]
RC	-.436834	.218793	-1.99657	[.046]
HP	.169731	.091282	1.85942	[.063]
RG	-.720405	.137767	-5.22915	[.000]
PV	-.206936	.083670	-2.47324	[.013]

Beverage #14. Coffee – Decaffeinated

Number of observations = 5715
Number of positive obs. = 1675
Mean of dep. var. = .293088
Sum of squared residuals = 1114.95

R-squared = .058388
Kullback-Leibler R-sq = .049646
Log likelihood = -3285.34

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-1.19124	.304199	-3.91599	[.000]
HS2	.323727	.052056	6.21885	[.000]
HS3	.278955	.069048	4.04002	[.000]
HS4	.263824	.080310	3.28506	[.001]
HSP5	.239881	.093686	2.56048	[.010]
AGE2539	.142069	.279866	.507630	[.612]
AGE4049	.408480	.279010	1.46403	[.143]
AGE5065	.616490	.278695	2.21206	[.027]
AGE65PLUS	.906959	.281814	3.21829	[.001]
AGEPCCHILD	.260472E-02	.063982	.040710	[.968]
EMPPARTTIME	-.016341	.053633	-.304675	[.761]
EMPFULLTIME	-.188299	.046910	-4.01404	[.000]
EDUHIGHSCHOOL	.074988	.110651	.677692	[.498]
EDUSOMECOLLEGE	.138095	.109088	1.26590	[.206]
EDUCOLLEGEPLUS	.212839	.109419	1.94517	[.052]
BLACK	-.235393	.067504	-3.48712	[.000]
ORIENTAL	-.226731	.203942	-1.11174	[.266]
OTHER	-.049356	.102250	-.482701	[.629]
HISPYES	-.069383	.090155	-.769598	[.442]
CENTRAL	-.198764	.052575	-3.78061	[.000]
SOUTH	-.081603	.048819	-1.67156	[.095]
WEST	-.255312	.056840	-4.49175	[.000]
POV130	-.295166	.092010	-3.20797	[.001]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	0.38820	-0.38820
HS2	-0.10550	0.10550
HS3	-0.090906	0.090906
HS4	-0.085975	0.085975
HSP5	-0.078173	0.078173
AGE2539	-0.046298	0.046298
AGE4049	-0.13312	0.13312
AGE5065	-0.20090	0.20090
AGE65PLUS	-0.29556	0.29556
AGEPCCHILD	-0.00084883	0.00084883
EMPPARTTIME	0.0053251	-0.0053251
EMPFULLTIME	0.061363	-0.061363
EDUHIGHSCHOOL	-0.024437	0.024437
EDUSOMECOLLEGE	-0.045003	0.045003
EDUCOLLEGEPLUS	-0.069360	0.069360
BLACK	0.076710	-0.076710
ORIENTAL	0.073888	-0.073888
OTHER	0.016084	-0.016084
HISPYES	0.022611	-0.022611
CENTRAL	0.064774	-0.064774
SOUTH	0.026593	-0.026593
WEST	0.083201	-0.083201
POV130	0.096189	-0.096189

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.10639	.241997	4.57190	[.000]
AG	2.07400	1.10949	1.86932	[.062]
PC	.260472E-02	.063982	.040710	[.968]
EM	-.204639	.087236	-2.34582	[.019]
ED	.425921	.319004	1.33516	[.182]
RC	-.511480	.244521	-2.09176	[.036]
HP	-.069383	.090155	-.769598	[.442]
RG	-.535680	.130287	-4.11152	[.000]
PV	-.295166	.092010	-3.20797	[.001]

Beverage #15. Tea – Regular

Number of observations = 5715
Number of positive obs. = 3860
Mean of dep. var. = .675416
Sum of squared residuals = 1207.24
R-squared = .036440
Kullback-Leibler R-sq = .028852
Log likelihood = -3498.11

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.424588	.271100	1.56617	[.117]
HS2	.345530	.048627	7.10574	[.000]
HS3	.485915	.067303	7.21986	[.000]
HS4	.537110	.078319	6.85795	[.000]
HSP5	.537345	.089611	5.99643	[.000]
AGE2539	-.218137	.244697	-.891454	[.373]
AGE4049	-.091883	.244367	-.376003	[.707]
AGE5065	-.082467	.244176	-.337736	[.736]
AGE65PLUS	-.111337	.247961	-.449009	[.653]
AGEPCCHILD	-.146589	.063330	-2.31469	[.021]
EMPPARTTIME	-.011296	.053176	-.212424	[.832]
EMPFULLTIME	.058143	.046326	1.25510	[.209]
EDUHIGHSCHOOL	.103497	.106454	.972220	[.331]
EDUSOMECOLLEGE	.145326	.104912	1.38521	[.166]
EDUCOLLEGEPLUS	.061628	.105173	.585971	[.558]
BLACK	.149669	.063460	2.35848	[.018]
ORIENTAL	.343651	.186515	1.84248	[.065]
OTHER	-.011183	.096488	-.115896	[.908]
HISPYES	.028244	.086079	.328114	[.743]
CENTRAL	-.478149	.052569	-9.09566	[.000]
SOUTH	-.240540	.050194	-4.79216	[.000]
WEST	-.422308	.056324	-7.49784	[.000]
POV130	-.418541E-02	.082990	-.050433	[.960]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.14806	0.14806
HS2	-0.12049	0.12049
HS3	-0.16945	0.16945
HS4	-0.18730	0.18730
HSP5	-0.18738	0.18738
AGE2539	0.076069	-0.076069
AGE4049	0.032042	-0.032042
AGE5065	0.028758	-0.028758
AGE65PLUS	0.038826	-0.038826
AGEPCCHILD	0.051119	-0.051119
EMPPARTTIME	0.0039391	-0.0039391
EMPFULLTIME	-0.020276	0.020276
EDUHIGHSCHOOL	-0.036092	0.036092
EDUSOMECOLLEGE	-0.050678	0.050678
EDUCOLLEGEPLUS	-0.021491	0.021491
BLACK	-0.052193	0.052193
ORIENTAL	-0.11984	0.11984
OTHER	0.0038996	-0.0038996
HISPYES	-0.0098492	0.0098492
CENTRAL	0.16674	-0.16674
SOUTH	0.083882	-0.083882
WEST	0.14727	-0.14727
POV130	0.0014595	-0.0014595

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.90590	.230910	8.25387	[.000]
AG	-.503823	.970613	-.519077	[.604]
PC	-.146589	.063330	-2.31469	[.021]
EM	.046848	.086721	.540212	[.589]
ED	.310451	.306478	1.01297	[.311]
RC	.482137	.226922	2.12468	[.034]
HP	.028244	.086079	.328114	[.743]
RG	-1.14100	.134391	-8.49015	[.000]
PV	-.418541E-02	.082990	-.050433	[.960]

Beverage #16. Tea – Decaffeinated

Number of observations = 5715
Number of positive obs. = 2072
Mean of dep. var. = .362555
Sum of squared residuals = 1298.06

R-squared = .017208
Kullback-Leibler R-sq = .013491
Log likelihood = -3692.11

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-1.10211	.281404	-3.91648	[.000]
HS2	.229620	.049596	4.62982	[.000]
HS3	.283890	.065659	4.32369	[.000]
HS4	.345482	.075656	4.56649	[.000]
HSP5	.318312	.087616	3.63303	[.000]
AGE2539	.358102	.255264	1.40287	[.161]
AGE4049	.477527	.254715	1.87475	[.061]
AGE5065	.475932	.254513	1.86997	[.061]
AGE65PLUS	.467450	.258184	1.81053	[.070]
AGEPCCHILD	-.076007	.060299	-1.26050	[.207]
EMPPARTTIME	.048945	.051753	.945743	[.344]
EMPFULLTIME	-.081741	.044956	-1.81824	[.069]
EDUHIGHSCHOOL	.089804	.107655	.834180	[.404]
EDUSOMECOLLEGE	.225589	.106007	2.12806	[.033]
EDUCOLLEGEPLUS	.314762	.106293	2.96127	[.003]
BLACK	.487273E-02	.060713	.080259	[.936]
ORIENTAL	-.050873	.173578	-.293084	[.769]
OTHER	-.012343	.094220	-.131003	[.896]
HISPYES	.062681	.082939	.755743	[.450]
CENTRAL	-.199556	.050454	-3.95520	[.000]
SOUTH	-.022275	.046740	-.476574	[.634]
WEST	-.197978	.054248	-3.64949	[.000]
POV130	-.014966	.082756	-.180848	[.856]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.40731	-0.40731
HS2	-0.084861	0.084861
HS3	-0.10492	0.10492
HS4	-0.12768	0.12768
HSP5	-0.11764	0.11764
AGE2539	-0.13234	0.13234
AGE4049	-0.17648	0.17648
AGE5065	-0.17589	0.17589
AGE65PLUS	-0.17276	0.17276
AGEPCCHILD	0.028090	-0.028090
EMPPARTTIME	-0.018089	0.018089
EMPFULLTIME	0.030209	-0.030209
EDUHIGHSCHOOL	-0.033189	0.033189
EDUSOMECOLLEGE	-0.083372	0.083372
EDUCOLLEGEPLUS	-0.11633	0.11633
BLACK	-0.0018008	0.0018008
ORIENTAL	0.018801	-0.018801
OTHER	0.0045617	-0.0045617
HISPYES	-0.023165	0.023165
CENTRAL	0.073750	-0.073750
SOUTH	0.0082323	-0.0082323
WEST	0.073167	-0.073167
POV130	0.0055311	-0.0055311

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.17730	.228912	5.14304	[.000]
AG	1.77901	1.01287	1.75640	[.079]
PC	-.076007	.060299	-1.26050	[.207]
EM	-.032796	.084303	-.389025	[.697]
ED	.630155	.310415	2.03004	[.042]
RC	-.058343	.213867	-.272802	[.785]
HP	.062681	.082939	.755743	[.450]
RG	-.419809	.125094	-3.35594	[.001]
PV	-.014966	.082756	-.180848	[.856]

Beverage #17. Flavored Milk

Number of observations = 5715
Number of positive obs. = 1701
Mean of dep. var. = .297638
Sum of squared residuals = 1091.81
R-squared = .086143
Kullback-Leibler R-sq = .070661
Log likelihood = -3233.71

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.725331	.273662	-2.65047	[.008]
HS2	.085711	.054392	1.57579	[.115]
HS3	.379741	.069532	5.46134	[.000]
HS4	.428638	.078787	5.44050	[.000]
HSP5	.451364	.089844	5.02386	[.000]
AGE2539	.119481	.244592	.488491	[.625]
AGE4049	.123573	.244176	.506079	[.613]
AGE5065	-.155657	.244318	-.637109	[.524]
AGE65PLUS	-.381500	.249485	-1.52915	[.126]
AGEPCCHILD	.118638	.061547	1.92761	[.054]
EMPPARTTIME	-.036382	.055081	-.660508	[.509]
EMPFULLTIME	.885394E-02	.047270	.187304	[.851]
EDUHIGHSCHOOL	-.050733	.110101	-.460783	[.645]
EDUSOMECOLLEGE	-.182144	.108794	-1.67421	[.094]
EDUCOLLEGEPLUS	-.265298	.109256	-2.42822	[.015]
BLACK	-.314916	.067002	-4.70010	[.000]
ORIENTAL	-.188385	.185956	-1.01306	[.311]
OTHER	-.092893	.099163	-.936770	[.349]
HISPYES	.025832	.086575	.298376	[.765]
CENTRAL	.464374	.053284	8.71503	[.000]
SOUTH	.177164	.050797	3.48767	[.000]
WEST	.576706E-02	.059346	.097177	[.923]
POV130	-.089853	.087959	-1.02153	[.307]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.23265	-0.23265
HS2	-0.027492	0.027492
HS3	-0.12180	0.12180
HS4	-0.13749	0.13749
HSP5	-0.14478	0.14478
AGE2539	-0.038324	0.038324
AGE4049	-0.039636	0.039636
AGE5065	0.049927	-0.049927
AGE65PLUS	0.12237	-0.12237
AGEPCCHILD	-0.038053	0.038053
EMPPARTTIME	0.011669	-0.011669
EMPFULLTIME	-0.0028399	0.0028399
EDUHIGHSCHOOL	0.016273	-0.016273
EDUSOMECOLLEGE	0.058423	-0.058423
EDUCOLLEGEPLUS	0.085095	-0.085095
BLACK	0.10101	-0.10101
ORIENTAL	0.060425	-0.060425
OTHER	0.029795	-0.029795
HISPYES	-0.0082857	0.0082857
CENTRAL	-0.14895	0.14895
SOUTH	-0.056826	0.056826
WEST	-0.0018498	0.0018498
POV130	0.028820	-0.028820

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.34545	.243522	5.52498	[.000]
AG	-.294104	.970675	-.302989	[.762]
PC	.118638	.061547	1.92761	[.054]
EM	-.027528	.089422	-.307842	[.758]
ED	-.498174	.317970	-1.56673	[.117]
RC	-.596194	.229005	-2.60341	[.009]
HP	.025832	.086575	.298376	[.765]
RG	.647305	.136611	4.73830	[.000]
PV	-.089853	.087959	-1.02153	[.307]

Beverage #18. Unflavored Milk

Number of observations = 5715	R-squared = .016571
Number of positive obs. = 5642	Kullback-Leibler R-sq = .080088
Mean of dep. var. = .987227	Log likelihood = -359.539
Sum of squared residuals = 70.8775	

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	5.76551	3061.81	.188304E-02	[.998]
HS2	.494926	.116784	4.23796	[.000]
HS3	.489479	.178542	2.74154	[.006]
HS4	.225915	.197487	1.14395	[.253]
HSP5	.437498	.274756	1.59231	[.111]
AGE2539	-3.94633	3061.81	-.128889E-02	[.999]
AGE4049	-3.97760	3061.81	-.129910E-02	[.999]
AGE5065	-4.13597	3061.81	-.135082E-02	[.999]
AGE65PLUS	-4.12504	3061.81	-.134725E-02	[.999]
AGEPCCHILD	.309740	.191501	1.61743	[.106]
EMPPARTTIME	.122584	.164327	.745980	[.456]
EMPFULLTIME	-.052937	.129152	-.409884	[.682]
EDUHIGHSCHOOL	.273982	.255055	1.07421	[.283]
EDUSOMECOLLEGE	.122855	.242978	.505623	[.613]
EDUCOLLEGEPLUS	.101434	.244040	.415644	[.678]
BLACK	-.292673	.140423	-2.08422	[.037]
ORIENTAL	-.278424	.419988	-.662932	[.507]
OTHER	-.537676	.209373	-2.56803	[.010]
HISPYES	.058479	.231315	.252811	[.800]
CENTRAL	.225720	.141736	1.59255	[.111]
SOUTH	.102781	.123561	.831822	[.406]
WEST	.184998	.148680	1.24427	[.213]
POV130	-.301570	.183329	-1.64497	[.100]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.17775	0.17775
HS2	-0.015259	0.015259
HS3	-0.015091	0.015091
HS4	-0.0069650	0.0069650
HSP5	-0.013488	0.013488
AGE2539	0.12167	-0.12167
AGE4049	0.12263	-0.12263
AGE5065	0.12751	-0.12751
AGE65PLUS	0.12718	-0.12718
AGEPCCHILD	-0.0095493	0.0095493
EMPPARTTIME	-0.0037793	0.0037793
EMPFULLTIME	0.0016321	-0.0016321
EDUHIGHSCHOOL	-0.0084469	0.0084469
EDUSOMECOLLEGE	-0.0037877	0.0037877
EDUCOLLEGEPLUS	-0.0031272	0.0031272
BLACK	0.0090232	-0.0090232
ORIENTAL	0.0085839	-0.0085839
OTHER	0.016577	-0.016577
HISPYES	-0.0018029	0.0018029
CENTRAL	-0.0069590	0.0069590
SOUTH	-0.0031688	0.0031688
WEST	-0.0057035	0.0057035
POV130	0.0092975	-0.0092975

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.64782	.557892	2.95365	[.003]
AG	-16.1849	12247.2	-.132152E-02	[.999]
PC	.309740	.191501	1.61743	[.106]
EM	.069647	.252819	.275483	[.783]
ED	.498271	.705100	.706666	[.480]
RC	-1.10877	.514562	-2.15479	[.031]
HP	.058479	.231315	.252811	[.800]
RG	.513498	.330930	1.55168	[.121]
PV	-.301570	.183329	-1.64497	[.100]

Beverage #19. Flavored Milk – Whole

Number of observations = 5715
Number of positive obs. = 1186
Mean of dep. var. = .207524
Sum of squared residuals = 889.094

R-squared = .054043
Kullback-Leibler R-sq = .050785
Log likelihood = -2770.20

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-1.09307	.298802	-3.65818	[.000]
HS2	.147494	.058993	2.50020	[.012]
HS3	.355233	.075062	4.73255	[.000]
HS4	.454301	.084078	5.40330	[.000]
HSP5	.451976	.095908	4.71262	[.000]
AGE2539	.186506	.267367	.697566	[.485]
AGE4049	.147769	.266966	.553512	[.580]
AGE5065	-.094843	.267215	-.354931	[.723]
AGE65PLUS	-.222957	.272513	-.818151	[.413]
AGEPCCHILD	.030429	.065458	.464859	[.642]
EMPPARTTIME	-.023988	.058493	-.410109	[.682]
EMPFULLTIME	-.586154E-02	.050405	-.116288	[.907]
EDUHIGHSCHOOL	-.011467	.119448	-.096003	[.924]
EDUSOMECOLLEGE	-.124659	.118178	-1.05484	[.292]
EDUCOLLEGEPLUS	-.106586	.118468	-.899706	[.368]
BLACK	-.330381	.074251	-4.44950	[.000]
ORIENTAL	-.289958	.205480	-1.41113	[.158]
OTHER	-.113284	.109730	-1.03239	[.302]
HISPYES	-.237710	.097836	-2.42968	[.015]
CENTRAL	.390680	.056261	6.94409	[.000]
SOUTH	.077779	.054690	1.42217	[.155]
WEST	.034260	.063313	.541127	[.588]
POV130	-.113910	.096252	-1.18346	[.237]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.29668	-0.29668
HS2	-0.040032	0.040032
HS3	-0.096416	0.096416
HS4	-0.12330	0.12330
HSP5	-0.12267	0.12267
AGE2539	-0.050621	0.050621
AGE4049	-0.040107	0.040107
AGE5065	0.025742	-0.025742
AGE65PLUS	0.060514	-0.060514
AGEPCCHILD	-0.0082589	0.0082589
EMPPARTTIME	0.0065108	-0.0065108
EMPFULLTIME	0.0015909	-0.0015909
EDUHIGHSCHOOL	0.0031124	-0.0031124
EDUSOMECOLLEGE	0.033834	-0.033834
EDUCOLLEGEPLUS	0.028929	-0.028929
BLACK	0.089671	-0.089671
ORIENTAL	0.078699	-0.078699
OTHER	0.030747	-0.030747
HISPYES	0.064518	-0.064518
CENTRAL	-0.10604	0.10604
SOUTH	-0.021110	0.021110
WEST	-0.0092988	0.0092988
POV130	0.030917	-0.030917

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.40900	.262903	5.35941	[.000]
AG	.016475	1.06169	.015518	[.988]
PC	.030429	.065458	.464859	[.642]
EM	-.029850	.095174	-.313637	[.754]
ED	-.242712	.345455	-.702588	[.482]
RC	-.733624	.252325	-2.90746	[.004]
HP	-.237710	.097836	-2.42968	[.015]
RG	.502719	.145906	3.44551	[.001]
PV	-.113910	.096252	-1.18346	[.237]

Beverage #20. Flavored Milk – Reduced Fat

Number of observations = 5715
Number of positive obs. = 1011
Mean of dep. var. = .176903
Sum of squared residuals = 774.872
R-squared = .068834
Kullback-Leibler R-sq = .072269
Log likelihood = -2474.25

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.762317	.284935	-2.67540	[.007]
HS2	.254064E-02	.063421	.040060	[.968]
HS3	.321847	.078365	4.10702	[.000]
HS4	.354260	.087688	4.03998	[.000]
HSP5	.382608	.098856	3.87037	[.000]
AGE2539	-.225407	.249481	-.903503	[.366]
AGE4049	-.205528	.248988	-.825455	[.409]
AGE5065	-.443618	.249373	-1.77893	[.075]
AGE65PLUS	-.691535	.256656	-2.69440	[.007]
AGEPCCHILD	.125929	.067505	1.86547	[.062]
EMPPARTTIME	-.055944	.061555	-.908854	[.363]
EMPFULLTIME	.914181E-02	.052526	.174044	[.862]
EDUHIGHSCHOOL	-.114502E-02	.122216	-.936877E-02	[.993]
EDUSOMECOLLEGE	-.124994	.120897	-1.03389	[.301]
EDUCOLLEGEPLUS	-.304119	.121708	-2.49876	[.012]
BLACK	-.218402	.074850	-2.91788	[.004]
ORIENTAL	-.192304	.219383	-.876567	[.381]
OTHER	-.013175	.108736	-.121160	[.904]
HISPYES	.155698	.093498	1.66526	[.096]
CENTRAL	.373735	.059322	6.30012	[.000]
SOUTH	.181887	.056947	3.19396	[.001]
WEST	-.153053	.069755	-2.19415	[.028]
POV130	-.072132	.098014	-.735929	[.462]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	0.18350	-0.18350
HS2	-0.00061156	0.00061156
HS3	-0.077472	0.077472
HS4	-0.085274	0.085274
HSP5	-0.092097	0.092097
AGE2539	0.054258	-0.054258
AGE4049	0.049473	-0.049473
AGE5065	0.10678	-0.10678
AGE65PLUS	0.16646	-0.16646
AGEPCCHILD	-0.030312	0.030312
EMPPARTTIME	0.013466	-0.013466
EMPFULLTIME	-0.0022005	0.0022005
EDUHIGHSCHOOL	0.00027562	-0.00027562
EDUSOMECOLLEGE	0.030087	-0.030087
EDUCOLLEGEPLUS	0.073204	-0.073204
BLACK	0.052571	-0.052571
ORIENTAL	0.046289	-0.046289
OTHER	0.0031712	-0.0031712
HISPYES	-0.037478	0.037478
CENTRAL	-0.089962	0.089962
SOUTH	-0.043782	0.043782
WEST	0.036841	-0.036841
POV130	0.017363	-0.017363

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.06125	.276477	3.83849	[.000]
AG	-1.56609	.989149	-1.58327	[.113]
PC	.125929	.067505	1.86547	[.062]
EM	-.046802	.099691	-.469476	[.639]
ED	-.430258	.353500	-1.21714	[.224]
RC	-.423880	.264667	-1.60156	[.109]
HP	.155698	.093498	1.66526	[.096]
RG	.402568	.155278	2.59257	[.010]
PV	-.072132	.098014	-.735929	[.462]

Beverage #21. Whole Milk – Unflavored

Number of observations = 5715
Number of positive obs. = 2700
Mean of dep. var. = .472441
Sum of squared residuals = 1329.85

R-squared = .066384
Kullback-Leibler R-sq = .049274
Log likelihood = -3757.89

PROBIT PARAMETERS Parameter	Estimate	Standard Error	t-statistic	P-value
C	.205989	.262299	.785320	[.432]
HS2	.075273	.048463	1.55319	[.120]
HS3	.056224	.065100	.863657	[.388]
HS4	.019102	.075193	.254034	[.799]
HSP5	.253794	.087450	2.90216	[.004]
AGE2539	.191430	.235514	.812820	[.416]
AGE4049	.067144	.235029	.285684	[.775]
AGE5065	.112383	.234783	.478666	[.632]
AGE65PLUS	.062099	.238628	.260234	[.795]
AGEPCCHILD	.128902	.060247	2.13955	[.032]
EMPPARTTIME	-.116464	.051775	-2.24943	[.024]
EMPFULLTIME	-.099424	.044685	-2.22499	[.026]
EDUHIGHSCHOOL	-.096222	.105123	-.915323	[.360]
EDUSOMECOLLEGE	-.261271	.103590	-2.52216	[.012]
EDUCOLLEGEPLUS	-.420264	.103886	-4.04541	[.000]
BLACK	.579904	.061950	9.36076	[.000]
ORIENTAL	.255860	.171999	1.48757	[.137]
OTHER	.265593	.094155	2.82079	[.005]
HISPYES	.109232	.082994	1.31614	[.188]
CENTRAL	-.441122	.050159	-8.79451	[.000]
SOUTH	-.099205	.046739	-2.12252	[.034]
WEST	-.408195	.053851	-7.58006	[.000]
POV130	.193572	.082445	2.34789	[.019]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS	0	dP/dX 1
C	-0.077620	0.077620
HS2	-0.028364	0.028364
HS3	-0.021186	0.021186
HS4	-0.0071978	0.0071978
HSP5	-0.095633	0.095633
AGE2539	-0.072134	0.072134
AGE4049	-0.025301	0.025301
AGE5065	-0.042347	0.042347
AGE65PLUS	-0.023400	0.023400
AGEPCCHILD	-0.048572	0.048572
EMPPARTTIME	0.043885	-0.043885
EMPFULLTIME	0.037464	-0.037464
EDUHIGHSCHOOL	0.036258	-0.036258
EDUSOMECOLLEGE	0.098451	-0.098451
EDUCOLLEGEPLUS	0.15836	-0.15836
BLACK	-0.21852	0.21852
ORIENTAL	-0.096412	0.096412
OTHER	-0.10008	0.10008
HISPYES	-0.041160	0.041160
CENTRAL	0.16622	-0.16622
SOUTH	0.037382	-0.037382
WEST	0.15381	-0.15381
POV130	-0.072941	0.072941

JOINT F-TESTS Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.404393	.225932	1.78989	[.073]
AG	.433056	.933491	.463910	[.643]
PC	.128902	.060247	2.13955	[.032]
EM	-.215888	.084047	-2.56867	[.010]
ED	-.777757	.303074	-2.56623	[.010]
RC	1.10136	.212687	5.17829	[.000]
HP	.109232	.082994	1.31614	[.188]
RG	-.948522	.124939	-7.59188	[.000]
PV	.193572	.082445	2.34789	[.019]

Beverage #22. 2% Milk – Unflavored

Number of observations = 5715
Number of positive obs. = 3821
Mean of dep. var. = .668591
Sum of squared residuals = 1233.23
R-squared = .026123
Kullback-Leibler R-sq = .020478
Log likelihood = -3555.67

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	.153025	.274094	.558295	[.577]
HS2	.214824	.048359	4.44228	[.000]
HS3	.331710	.066270	5.00542	[.000]
HS4	.302806	.076643	3.95088	[.000]
HSP5	.317572	.089224	3.55927	[.000]
AGE2539	-.207051	.248843	-.832055	[.405]
AGE4049	-.187493	.248476	-.754573	[.451]
AGE5065	-.094964	.248313	-.382437	[.702]
AGE65PLUS	-.112006	.251896	-.444650	[.657]
AGEPCCHILD	.113500	.062078	1.82834	[.067]
EMPPARTTIME	-.036007	.053427	-.673944	[.500]
EMPFULLTIME	-.073511	.046109	-1.59427	[.111]
EDUHIGHSCHOOL	.131850	.105670	1.24775	[.212]
EDUSOMECOLLEGE	.129734	.104159	1.24554	[.213]
EDUCOLLEGEPLUS	.061137	.104398	.585617	[.558]
BLACK	-.218661	.060263	-3.62847	[.000]
ORIENTAL	-.199047	.171616	-1.15984	[.246]
OTHER	-.121059	.095224	-1.27132	[.204]
HISPYES	.039120	.085245	.458913	[.646]
CENTRAL	.284023	.051111	5.55704	[.000]
SOUTH	.117449	.047178	2.48951	[.013]
WEST	.260829	.055005	4.74190	[.000]
POV130	-.110913	.082070	-1.35145	[.177]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	-0.054292	0.054292
HS2	-0.076218	0.076218
HS3	-0.11769	0.11769
HS4	-0.10743	0.10743
HSP5	-0.11267	0.11267
AGE2539	0.073460	-0.073460
AGE4049	0.066521	-0.066521
AGE5065	0.033693	-0.033693
AGE65PLUS	0.039739	-0.039739
AGEPCCHILD	-0.040269	0.040269
EMPPARTTIME	0.012775	-0.012775
EMPFULLTIME	0.026081	-0.026081
EDUHIGHSCHOOL	-0.046779	0.046779
EDUSOMECOLLEGE	-0.046028	0.046028
EDUCOLLEGEPLUS	-0.021691	0.021691
BLACK	0.077579	-0.077579
ORIENTAL	0.070620	-0.070620
OTHER	0.042951	-0.042951
HISPYES	-0.013879	0.013879
CENTRAL	-0.10077	0.10077
SOUTH	-0.041670	0.041670
WEST	-0.092540	0.092540
POV130	0.039351	-0.039351

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.16691	.227629	5.12637	[.000]
AG	-.601514	.987224	-.609298	[.542]
PC	.113500	.062078	1.82834	[.067]
EM	-.109518	.086904	-1.26022	[.208]
ED	.322720	.304202	1.06087	[.289]
RC	-.538767	.212895	-2.53067	[.011]
HP	.039120	.085245	.458913	[.646]
RG	.662301	.126186	5.24861	[.000]
PV	-.110913	.082070	-1.35145	[.177]

Beverage #23. 1% Milk – Unflavored

Number of observations = 5715
Number of positive obs. = 2360
Mean of dep. var. = .412948
Sum of squared residuals = 1332.84
R-squared = .037970
Kullback-Leibler R-sq = .028633
Log likelihood = -3763.35

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.779523	.272542	-2.86019	[.004]
HS2	.205259	.048831	4.20348	[.000]
HS3	.179052	.065191	2.74657	[.006]
HS4	.232538	.075256	3.08995	[.002]
HSP5	.237814	.086879	2.73729	[.006]
AGE2539	.416632	.246274	1.69174	[.091]
AGE4049	.481931	.245851	1.96026	[.050]
AGE5065	.504398	.245615	2.05361	[.040]
AGE65PLUS	.641399	.249282	2.57299	[.010]
AGEPCCHILD	.048493	.060129	.806472	[.420]
EMPPARTTIME	.020604	.051557	.399643	[.689]
EMPFULLTIME	-.033053	.044650	-.740269	[.459]
EDUHIGHSCHOOL	.099737	.105861	.942150	[.346]
EDUSOMECOLLEGE	.189587	.104384	1.81624	[.069]
EDUCOLLEGEPLUS	.272198	.104700	2.59979	[.009]
BLACK	-.406165	.063228	-6.42377	[.000]
ORIENTAL	.061215	.169152	.361896	[.717]
OTHER	-.191916	.093643	-2.04944	[.040]
HISPYES	-.353570E-02	.082404	-.042907	[.966]
CENTRAL	-.516894	.050263	-10.2839	[.000]
SOUTH	-.296101	.046510	-6.36646	[.000]
WEST	-.174616	.053067	-3.29049	[.001]
POV130	-.053510	.081731	-.654716	[.513]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	dP/dX 1
C	0.29418	-0.29418
HS2	-0.077461	0.077461
HS3	-0.067571	0.067571
HS4	-0.087755	0.087755
HSP5	-0.089747	0.089747
AGE2539	-0.15723	0.15723
AGE4049	-0.18187	0.18187
AGE5065	-0.19035	0.19035
AGE65PLUS	-0.24205	0.24205
AGEPCCHILD	-0.018300	0.018300
EMPPARTTIME	-0.0077757	0.0077757
EMPFULLTIME	0.012474	-0.012474
EDUHIGHSCHOOL	-0.037639	0.037639
EDUSOMECOLLEGE	-0.071547	0.071547
EDUCOLLEGEPLUS	-0.10272	0.10272
BLACK	0.15328	-0.15328
ORIENTAL	-0.023102	0.023102
OTHER	0.072426	-0.072426
HISPYES	0.0013343	-0.0013343
CENTRAL	0.19507	-0.19507
SOUTH	0.11174	-0.11174
WEST	0.065897	-0.065897
POV130	0.020194	-0.020194

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.854663	.226545	3.77260	[.000]
AG	2.04436	.977032	2.09242	[.036]
PC	.048493	.060129	.806472	[.420]
EM	-.012449	.083809	-.148540	[.882]
ED	.561521	.305451	1.83833	[.066]
RC	-.536866	.210644	-2.54869	[.011]
HP	-.353570E-02	.082404	-.042907	[.966]
RG	-.987612	.123918	-7.96988	[.000]
PV	-.053510	.081731	-.654716	[.513]

Beverage #24. Skim Milk – Unflavored

Number of observations = 5715
Number of positive obs. = 3017
Mean of dep. var. = .527909
Sum of squared residuals = 1377.62

R-squared = .032774
Kullback-Leibler R-sq = .023972
Log likelihood = -3857.68

PROBIT PARAMETERS

Parameter	Estimate	Standard Error	t-statistic	P-value
C	-.126687	.257438	-.492108	[.623]
HS2	.067642	.047899	1.41217	[.158]
HS3	-.036743	.064158	-.572693	[.567]
HS4	.075303	.074245	1.01425	[.310]
HSP5	.060919	.085933	.708908	[.478]
AGE2539	-.123558	.230332	-.536433	[.592]
AGE4049	-.057385	.229924	-.249584	[.803]
AGE5065	.840310E-02	.229745	.036576	[.971]
AGE65PLUS	.057899	.233590	.247868	[.804]
AGEPCCHILD	-.056071	.059543	-.941693	[.346]
EMPPARTTIME	.094456	.051197	1.84496	[.065]
EMPFULLTIME	.025531	.044211	.577481	[.564]
EDUHIGHSCHOOL	.160055	.104871	1.52622	[.127]
EDUSOMECOLLEGE	.332369	.103409	3.21411	[.001]
EDUCOLLEGEPLUS	.486990	.103734	4.69458	[.000]
BLACK	-.398929	.060327	-6.61277	[.000]
ORIENTAL	.244900	.171065	1.43162	[.152]
OTHER	-.050333	.092738	-.542741	[.587]
HISPYES	-.035307	.081871	-.431252	[.666]
CENTRAL	-.068244	.049651	-1.37447	[.169]
SOUTH	-.136067	.046499	-2.92623	[.003]
WEST	-.274414	.053318	-5.14678	[.000]
POV130	-.255353	.081327	-3.13985	[.002]

Standard Errors computed from analytic second derivatives (Newton)

MARGINAL EFFECTS

	dP/dX 0	1
C	0.049107	-0.049107
HS2	-0.026220	0.026220
HS3	0.014243	-0.014243
HS4	-0.029189	0.029189
HSP5	-0.023614	0.023614
AGE2539	0.047894	-0.047894
AGE4049	0.022244	-0.022244
AGE5065	-0.0032573	0.0032573
AGE65PLUS	-0.022443	0.022443
AGEPCCHILD	0.021735	-0.021735
EMPPARTTIME	-0.036613	0.036613
EMPFULLTIME	-0.0098966	0.0098966
EDUHIGHSCHOOL	-0.062042	0.062042
EDUSOMECOLLEGE	-0.12883	0.12883
EDUCOLLEGEPLUS	-0.18877	0.18877
BLACK	0.15463	-0.15463
ORIENTAL	-0.094930	0.094930
OTHER	0.019510	-0.019510
HISPYES	0.013686	-0.013686
CENTRAL	0.026453	-0.026453
SOUTH	0.052743	-0.052743
WEST	0.10637	-0.10637
POV130	0.098981	-0.098981

JOINT F-TESTS

Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.167121	.222665	.750546	[.453]
AG	-.114641	.913130	-.125547	[.900]
PC	-.056071	.059543	-.941693	[.346]
EM	.119987	.083129	1.44339	[.149]
ED	.979415	.302667	3.23595	[.001]
RC	-.204361	.210641	-.970186	[.332]
HP	-.035307	.081871	-.431252	[.666]
RG	-.478725	.124175	-3.85525	[.000]
PV	-.255353	.081327	-3.13985	[.002]

APPENDIX F

CROSS TABULATIONS – ALL DEMOGRAPHICS

F-1. Income and Poverty

ID #	Beverage Category	Below Poverty		Above Poverty		Below 130% Poverty		Above 130% Poverty		Below 185% Poverty		Above 185% Poverty	
		Number of Observations											
		159		5556		277		5438		625		5090	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	111	19.21	3046	11.91	183	20.09	2974	11.68	417	19.04	2740	11.13
2	reduced fat flavored and unflavored milk	119	27.86	5091	33.37	223	28.13	4987	33.47	524	32.82	4686	33.29
3	carbonated soft drinks - regular	151	44.52	5268	36.46	261	48.76	5158	36.07	597	49.66	4822	35.08
4	carbonated soft drinks - low calorie	93	23.91	4073	29.05	163	22.82	4003	29.18	388	21.43	3778	29.71
5	powdered soft drinks	94	24.96	2769	18.31	156	23.75	2707	18.23	369	24.79	2494	17.60
6	isotonics	43	1.66	1827	3.84	71	1.67	1799	3.87	177	2.36	1693	3.94
7	bottled water	97	11.84	3899	15.29	162	10.37	3834	15.41	376	13.86	3620	15.34
8	orange juice	137	7.35	4844	10.51	231	8.44	4750	10.52	523	8.85	4458	10.60
9	apple juice	96	5.12	3227	4.14	159	5.21	3164	4.11	379	4.69	2944	4.10
10	other juices	133	6.55	4667	6.38	226	5.95	4574	6.41	511	6.24	4289	6.40
11	fruit drinks	142	9.49	4519	9.54	239	9.51	4422	9.54	535	11.74	4126	9.25
12	vegetable juice	68	4.06	2730	2.33	125	3.56	2673	2.31	280	2.77	2518	2.32
13	coffee regular	100	49.79	4031	41.18	183	44.56	3948	41.24	442	42.62	3689	41.24
14	coffee decaffeinated	30	14.44	1645	18.70	54	17.07	1621	18.67	141	18.27	1534	18.65
15	tea regular	108	15.80	3752	13.69	182	16.10	3678	13.63	423	17.41	3437	13.29
16	tea decaffeinated	54	8.58	2018	7.74	92	8.47	1980	7.73	180	9.09	1892	7.64
17	flavored milk	43	1.31	1658	2.49	75	1.99	1626	2.48	202	2.30	1499	2.48
18	unflavored milk	153	35.24	5489	36.81	269	36.43	5373	36.78	613	40.25	5029	36.34
19	flavored milk -- whole	25	1.43	1161	2.31	48	1.71	1138	2.31	131	2.21	1055	2.30
20	Reduced fat, flavored	27	0.77	984	1.47	46	1.46	965	1.45	131	1.33	880	1.47
21	whole milk, unflavored	104	20.31	2596	13.42	167	21.61	2533	13.17	377	20.60	2323	12.57
22	2% milk, unflavored	97	22.06	3724	19.67	174	18.79	3647	19.78	413	22.34	3408	19.41
23	1 % milk, unflavored	52	7.39	2308	14.99	104	9.53	2256	15.07	237	15.54	2123	14.75
24	skim milk, unflavored	54	13.98	2963	19.98	108	17.84	2909	19.95	240	16.60	2777	20.16

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-1. cont'd

ID #	Beverage Category	Income Level											
		$5000 and below		$5000 to $7999		$8000 to $9999		$10,000 to $11,999		$12,000 to $14,999		$15,000 to $19,999	
		Number of Observations											
		33		46		35		49		110		248	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	21	21.91	33	8.50	18	18.25	23	17.30	67	16.21	150	11.42
2	reduced fat flavored and unflavored milk	21	21.57	31	16.46	28	20.73	43	24.87	92	25.33	225	26.22
3	carbonated soft drinks - regular	31	34.05	41	32.40	33	31.60	45	33.23	102	43.33	232	31.01
4	carbonated soft drinks - low calorie	20	17.71	21	20.41	21	25.06	28	23.61	69	20.22	151	22.37
5	powdered soft drinks	18	26.86	20	14.86	11	7.80	24	16.28	58	18.06	111	21.99
6	isotonics	5	0.77	12	1.88	9	1.26	12	1.16	20	2.22	59	2.62
7	bottled water	15	11.56	26	17.19	17	10.42	26	3.50	57	14.00	156	9.73
8	orange juice	28	6.20	36	5.11	28	6.47	41	6.98	87	8.08	207	8.41
9	apple juice	20	3.20	22	2.91	17	2.79	24	2.76	54	3.91	134	3.08
10	other juices	25	7.90	40	4.59	24	5.80	41	4.66	81	4.44	193	5.44
11	fruit drinks	26	10.31	41	6.26	27	5.16	38	7.27	85	8.33	184	8.32
12	vegetable juice	14	5.98	14	2.65	13	2.20	28	3.84	50	3.01	106	1.69
13	coffee regular	23	56.01	26	35.52	23	34.62	34	56.79	73	38.29	182	36.46
14	coffee decaffeinated	7	13.75	10	14.93	5	17.91	14	14.56	27	17.27	63	23.23
15	tea regular	24	14.54	28	24.82	20	17.13	30	8.83	72	15.20	162	13.93
16	tea decaffeinated	8	11.24	20	10.57	14	5.55	13	7.78	27	10.10	73	6.73
17	flavored milk	5	0.33	11	1.07	5	0.65	8	1.92	32	1.41	69	2.47
18	unflavored milk	31	29.40	42	18.55	35	25.88	48	30.25	107	31.51	245	30.39
19	flavored milk -- whole	4	0.38	6	1.13	5	0.63	6	1.63	20	1.01	50	1.76
20	Reduced fat, flavored	1	0.13	9	0.56	1	0.13	4	1.41	21	1.19	42	1.96
21	whole milk, unflavored	21	21.90	30	9.19	18	18.24	22	17.84	60	17.69	134	12.17
22	2% milk, unflavored	19	9.89	22	10.46	24	12.68	33	16.73	67	15.27	178	18.94
23	1 % milk, unflavored	8	2.53	16	6.14	12	7.54	18	10.54	41	13.55	96	11.52
24	skim milk, unflavored	12	20.27	16	10.95	13	14.04	21	15.08	49	14.84	103	12.81

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-1. cont'd

ID #	Beverage Category	Income Level											
		$20,000 to $24,999		$25,000 to $29,999		$30,000 to $34,999		$35,000 to $39,999		$40,000 to $44,999		$45,000 to $49,999	
		Number of Observations											
		381		364		417		398		445		428	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	233	12.00	210	11.94	233	12.20	223	14.84	254	12.64	228	13.15
2	reduced fat flavored and unflavored milk	340	27.98	320	32.58	379	30.43	357	30.41	399	33.37	389	32.48
3	carbonated soft drinks - regular	359	33.61	341	37.82	398	38.22	380	40.58	426	35.51	401	37.69
4	carbonated soft drinks - low calorie	266	22.67	244	23.57	283	26.19	292	27.55	310	32.50	312	26.71
5	powdered soft drinks	180	19.44	166	21.22	208	18.37	209	16.35	230	20.29	207	19.12
6	isotonics	95	2.87	96	1.97	131	3.17	128	3.29	133	3.31	136	3.58
7	bottled water	239	16.49	237	16.68	268	16.13	262	13.44	310	14.42	306	15.78
8	orange juice	318	8.55	298	9.22	351	10.05	333	8.96	389	10.37	373	9.70
9	apple juice	194	4.18	203	3.79	237	3.85	216	4.10	253	3.87	240	5.01
10	other juices	300	5.26	279	5.97	344	5.43	328	5.44	379	6.10	355	6.66
11	fruit drinks	295	7.14	296	8.68	350	8.58	318	9.66	361	9.20	360	9.24
12	vegetable juice	170	2.41	149	2.42	191	2.17	200	2.07	222	2.25	231	2.14
13	coffee regular	282	44.63	253	38.69	300	40.72	285	45.74	339	39.82	303	42.99
14	coffee decaffeinated	104	15.36	88	20.80	114	18.71	118	17.98	153	20.89	125	18.73
15	tea regular	239	15.54	230	15.72	285	11.84	260	12.99	290	14.19	303	14.07
16	tea decaffeinated	107	9.26	114	7.49	166	8.78	132	8.51	159	6.75	170	6.37
17	flavored milk	108	2.02	103	3.15	122	2.21	120	1.88	131	2.07	130	3.21
18	unflavored milk	374	32.33	355	35.52	413	34.16	395	35.29	437	37.19	422	36.06
19	flavored milk -- whole	74	2.25	68	3.74	80	2.09	78	1.79	89	1.90	91	3.37
20	Reduced fat, flavored	64	0.81	67	1.04	72	1.43	77	1.12	82	1.24	71	1.56
21	whole milk, unflavored	208	13.19	176	13.85	210	13.04	200	16.12	221	14.06	194	14.88
22	2% milk, unflavored	275	18.08	237	20.72	285	17.00	275	19.74	296	20.54	279	19.08
23	1 % milk, unflavored	144	13.29	137	15.23	179	12.20	168	12.73	174	15.34	162	17.24
24	skim milk, unflavored	173	14.19	169	18.76	207	20.94	200	15.67	224	19.60	212	19.84

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-1. cont'd

ID #	Beverage Category	Income Level							
		$50,000 to $59,999		$60,000 to $69,999		$70,000 to $99,999		$100,000 and over	
		Number of Observations							
		728		619		911		503	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	393	12.63	334	13.98	473	9.74	264	8.54
2	reduced fat flavored and unflavored milk	676	38.22	575	35.08	855	36.18	480	35.68
3	carbonated soft drinks - regular	693	38.57	587	36.83	869	38.24	481	30.84
4	carbonated soft drinks - low calorie	541	28.62	478	29.09	711	34.00	419	34.83
5	powdered soft drinks	379	17.75	338	19.87	470	18.82	234	13.38
6	isotonics	257	3.96	233	4.16	337	4.73	207	4.94
7	bottled water	532	13.89	463	17.47	683	14.69	399	17.53
8	orange juice	647	10.65	552	11.04	819	12.12	474	12.83
9	apple juice	428	4.25	383	4.79	576	4.38	322	3.84
10	other juices	617	6.39	543	6.58	807	7.52	444	7.62
11	fruit drinks	593	10.87	530	10.14	743	10.98	414	9.38
12	vegetable juice	388	2.67	316	2.27	436	2.53	270	2.17
13	coffee regular	518	39.62	451	40.22	661	44.65	378	37.80
14	coffee decaffeinated	210	16.54	176	18.62	283	20.95	178	15.87
15	tea regular	507	13.04	409	14.75	632	14.08	369	10.96
16	tea decaffeinated	279	7.76	233	7.18	343	7.65	214	8.43
17	flavored milk	249	2.63	197	2.14	265	2.20	146	3.76
18	unflavored milk	724	41.64	616	39.64	900	38.84	498	37.82
19	flavored milk -- whole	176	2.22	138	2.16	189	1.85	112	3.07
20	Reduced fat, flavored	139	1.90	118	1.05	154	1.51	89	2.30
21	whole milk, unflavored	329	14.29	278	16.35	385	11.36	214	9.58
22	2% milk, unflavored	490	22.63	404	19.50	605	21.37	332	18.87
23	1 % milk, unflavored	312	17.77	274	15.36	398	15.82	221	14.02
24	skim milk, unflavored	397	22.17	370	21.02	532	21.31	319	23.18

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-2. Household Size

ID #	Beverage Category	Size of Household																	
		1		2		3		4		5		6		7		8		9 +	
		Number of Observations																	
		1091		2233		975		877		369		119		34		8		9	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat milk, flavored & unflavored	502	5.77	1150	8.73	584	13.66	542	16.00	254	20.55	84	20.98	28	38.09	7	66.43	6	55.31
2	reduced fat milk, flavored & unflavored	948	16.56	2064	28.83	892	36.11	819	47.20	334	54.97	107	57.14	32	54.22	5	86.35	9	53.20
3	carbonated soft drinks - regular	936	18.18	2122	28.12	959	44.22	867	53.70	367	60.23	118	61.02	34	66.30	8	118.54	8	77.80
4	carbonated soft drinks - low calorie	691	21.61	1672	30.14	718	31.89	693	31.33	274	28.58	86	24.68	21	22.48	7	9.59	4	29.59
5	powdered soft drinks	312	10.90	918	14.24	572	17.14	641	21.47	287	27.63	97	33.11	23	57.44	8	42.63	5	41.00
6	isotonics	194	2.49	581	2.92	380	4.20	451	4.69	192	4.77	51	4.50	14	2.10	5	2.19	2	1.63
7	bottled water	674	13.15	1509	15.81	693	15.80	691	14.29	291	16.75	92	17.46	29	18.29	8	18.39	9	5.92
8	orange juice	876	7.33	1954	10.40	873	10.78	797	11.52	332	13.40	105	13.06	31	15.58	6	28.43	7	13.09
9	apple juice	429	2.44	1193	3.11	630	4.38	652	5.51	290	5.59	92	7.94	27	9.97	5	12.15	5	10.32
10	other juices	809	4.41	1867	6.19	849	6.93	779	7.21	338	8.03	110	7.70	32	10.51	8	9.20	8	8.26
11	fruit drinks	718	4.95	1714	6.31	863	9.86	842	13.90	358	17.58	117	18.67	33	22.46	8	28.84	8	49.96
12	vegetable juice	432	2.03	1151	2.53	484	2.17	445	2.44	203	2.58	56	2.31	20	1.78	5	1.78	2	0.16
13	coffee regular	662	28.63	1714	45.26	710	41.63	649	44.42	276	42.12	85	32.68	21	51.60	6	60.42	8	28.06
14	coffee decaffeinated	258	15.88	785	19.38	282	21.97	224	15.28	89	19.58	25	11.32	5	17.13	4	34.93	3	3.53
15	tea regular	616	9.38	1543	13.04	698	16.68	625	15.02	259	15.75	80	18.29	27	16.85	5	16.42	7	7.14
16	tea decaffeinated	323	5.86	832	7.99	371	8.01	346	8.53	130	8.08	48	8.21	17	6.45	2	21.87	3	11.42
17	flavored milk	215	1.71	510	2.42	362	2.50	377	2.54	168	3.29	49	2.13	16	2.35	1	8.50	3	4.79
18	unflavored milk	1055	17.28	2213	30.87	969	40.54	869	53.36	367	62.75	118	65.86	34	81.29	8	111.03	9	88.48
19	flavored milk -- whole	146	1.44	376	2.32	240	2.28	266	2.21	117	3.39	26	1.99	11	2.55	1	8.50	3	4.67
20	reduced fat milk, flavored	122	1.29	270	1.34	227	1.58	238	1.56	108	1.44	34	1.55	11	0.88	0	0.00	1	0.38
21	whole milk, unflavored	456	6.00	1026	9.43	473	16.11	425	19.53	211	24.00	70	24.42	26	40.65	7	66.43	6	55.25
22	2% milk, unflavored	625	8.54	1495	15.42	695	23.32	619	27.23	265	33.80	85	38.63	26	52.23	4	24.44	7	35.40
23	1 % milk, unflavored	384	7.94	959	12.84	405	15.62	385	19.14	162	24.77	47	30.39	13	7.48	1	301.5	4	24.38
24	skim milk	581	12.16	1231	18.86	479	19.03	462	29.94	193	25.86	53	25.44	12	20.96	1	24.00	5	23.70

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-3. Presence of Children

ID#	Beverage Category	Presence of Children			
		child present		no child present	
		Number of Observations			
		1772		3943	
		HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	1161	17.66	1996	8.98
2	reduced fat flavored and unflavored milk	1637	45.79	3573	27.49
3	carbonated soft drinks - regular	1752	51.65	3667	29.53
4	carbonated soft drinks - low calorie	1308	27.80	2858	29.46
5	powdered soft drinks	1283	23.06	1580	14.85
6	isotonics	898	4.40	972	3.22
7	bottled water	1382	14.02	2614	15.83
8	orange juice	1584	11.38	3397	9.97
9	apple juice	1311	5.81	2012	3.09
10	other juices	1577	7.29	3223	5.94
11	fruit drinks	1706	14.76	2955	6.52
12	vegetable juice	886	2.25	1912	2.42
13	coffee regular	1249	38.33	2882	42.71
14	coffee decaffeinated	425	16.13	1250	19.47
15	tea regular	1226	14.38	2634	13.45
16	tea decaffeinated	659	7.76	1413	7.77
17	flavored milk	767	2.66	934	2.29
18	unflavored milk	1763	52.99	3879	29.39
19	flavored milk -- whole	516	2.47	670	2.15
20	Reduced fat, flavored	492	1.55	519	1.35
21	whole milk, unflavored	946	20.86	1754	9.82
22	2% milk, unflavored	1263	28.96	2558	15.17
23	1 % milk, unflavored	751	20.39	1609	12.23
24	skim milk, unflavored	878	24.80	2139	17.85

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-4. Age of Female Head

ID#	Beverage Category	Age of Female Head																			
		0 = not given or no female		1 = under 25		2 = 25-29		3 = 30-34		4 = 35-39		5 = 40-44		6 = 45-49		7 = 50-54		8 = 55-64		9 = 65+	
		Number of Observations																			
		474		30		177		400		558		708		786		762		1026		794	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat milk, flavored & unflavored	235	8.52	18	14.65	109	16.42	262	16.35	352	15.30	423	15.37	431	10.34	401	9.84	537	10.47	389	10.74
2	reduced fat milk, flavored & unflavored	383	20.93	26	38.13	165	28.27	361	35.52	509	39.79	654	40.89	718	37.51	707	32.38	959	29.94	728	29.06
3	carbonated soft drinks - regular	407	30.31	28	44.67	176	38.28	392	38.50	548	43.13	681	51.00	759	43.80	727	38.54	964	31.04	737	18.74
4	carbonated soft drinks - low calorie	261	28.04	18	8.92	112	14.82	281	26.49	400	27.69	545	32.29	586	31.78	586	31.39	812	32.28	565	21.35
5	powdered soft drinks	126	13.64	14	33.76	111	20.56	269	21.49	362	21.74	470	23.60	454	18.71	376	15.19	412	14.30	269	13.89
6	isotonics	105	3.64	12	1.96	77	2.78	178	4.32	262	4.08	331	4.42	299	4.25	216	3.76	252	3.19	138	1.99
7	bottled water	269	16.13	21	12.15	133	11.47	326	17.16	439	14.41	534	14.10	588	17.32	547	16.10	695	14.19	444	14.25
8	orange juice	369	10.07	25	7.34	160	7.21	360	8.61	485	10.02	611	10.15	693	11.33	677	10.98	907	10.57	694	11.26
9	apple juice	180	3.34	21	4.87	109	4.82	291	5.63	365	5.24	444	4.37	480	4.62	438	4.16	572	3.21	423	2.94
10	other juices	339	5.24	28	7.41	146	6.99	347	6.85	496	6.27	605	6.27	663	6.22	642	6.39	867	6.70	667	6.51
11	fruit drinks	310	8.15	28	10.50	161	9.66	366	11.30	518	12.82	635	13.35	683	10.52	613	8.63	784	7.09	563	4.93
12	vegetable juice	175	2.80	14	2.56	63	1.99	171	1.88	271	2.22	345	2.30	384	2.18	407	2.33	581	2.83	387	2.14
13	coffee regular	263	32.41	17	13.24	99	20.35	256	26.45	387	32.77	521	42.04	574	41.24	580	48.99	804	46.25	630	46.96
14	coffee decaffeinated	71	16.12	5	6.48	23	6.27	77	7.46	118	12.90	176	13.72	224	19.49	239	19.26	375	24.89	367	19.22
15	tea regular	245	10.12	22	14.11	115	9.37	254	11.03	381	12.53	510	14.91	555	16.17	534	14.07	723	14.32	521	13.76
16	tea decaffeinated	98	4.33	7	3.55	55	4.95	134	7.23	206	7.17	261	6.80	336	8.07	294	8.09	391	9.89	290	7.56
17	flavored milk	96	2.05	9	1.31	69	2.46	153	2.81	230	2.33	298	2.80	278	3.10	200	2.12	238	2.04	130	1.80
18	unflavored milk	452	21.74	30	41.44	177	35.50	399	41.79	553	45.40	706	45.90	780	39.14	748	35.32	1015	33.35	782	32.10
19	flavored milk -- whole	61	1.65	5	1.70	43	2.47	112	2.75	163	1.97	201	2.76	201	2.84	133	1.73	165	2.07	102	1.71
20	reduced fat milk, flavored	56	1.71	9	0.36	46	1.38	95	1.29	135	1.59	197	1.41	154	1.88	118	1.65	136	1.07	65	0.91
21	whole milk, unflavored	212	8.99	14	18.61	92	18.76	217	19.17	289	17.90	328	18.97	367	11.35	340	11.04	483	11.34	358	11.50
22	2% milk, unflavored	248	12.22	22	31.53	123	15.80	265	21.21	376	26.43	470	26.82	532	19.42	519	20.05	720	17.52	546	15.04
23	1 % milk, unflavored	148	11.68	8	8.13	73	14.08	171	16.63	214	17.51	306	18.37	326	18.24	310	13.65	436	12.25	368	12.06
24	skim milk	216	14.54	16	14.00	101	15.69	204	19.82	273	22.83	375	21.20	417	24.17	427	18.76	551	18.85	437	19.01

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-5. Female Head Employment

ID#	Beverage Category	Female Head Employment									
		0=not given or no female		1=under 30 hrs		2=30-34 hrs		3=35+ hrs		4=not employed for pay	
		Number of Observations									
		474		724		290		2433		1794	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	235	8.52	396	14.15	157	10.57	1338	11.19	1031	13.77
2	reduced fat flavored and unflavored milk	383	20.93	686	37.61	275	32.55	2223	31.63	1643	36.58
3	carbonated soft drinks - regular	407	30.31	706	41.14	277	42.76	2317	37.18	1712	34.71
4	carbonated soft drinks - low calorie	261	28.04	562	29.74	216	33.56	1810	29.14	1317	27.73
5	powdered soft drinks	126	13.64	416	19.80	179	16.15	1277	19.23	865	18.08
6	isotonics	105	3.64	281	3.51	108	4.24	864	4.07	512	3.40
7	bottled water	269	16.13	527	11.63	202	16.44	1823	15.14	1175	16.48
8	orange juice	369	10.07	649	11.56	260	10.98	2129	9.48	1574	11.20
9	apple juice	180	3.34	493	4.60	178	4.90	1399	3.85	1073	4.39
10	other juices	339	5.24	625	6.92	237	6.16	2070	5.96	1529	7.04
11	fruit drinks	310	8.15	636	11.27	241	10.26	2041	9.78	1433	8.59
12	vegetable juice	175	2.80	364	2.05	143	2.40	1186	2.15	930	2.69
13	coffee regular	263	32.41	521	40.18	208	38.62	1738	38.38	1401	47.66
14	coffee decaffeinated	71	16.12	235	15.86	84	21.54	626	18.21	659	19.89
15	tea regular	245	10.12	490	13.96	194	14.80	1705	13.24	1226	14.92
16	tea decaffeinated	98	4.33	286	8.61	121	8.58	887	7.47	680	8.14
17	flavored milk	96	2.05	229	2.45	99	2.05	791	2.40	486	2.72
18	unflavored milk	452	21.74	719	42.90	288	36.13	2410	34.60	1773	41.16
19	flavored milk -- whole	61	1.65	164	2.40	71	2.30	550	2.13	340	2.60
20	Reduced fat, flavored	56	1.71	133	1.26	59	0.68	471	1.54	292	1.50
21	whole milk, unflavored	212	8.99	336	16.17	126	12.85	1120	12.72	906	15.18
22	2% milk, unflavored	248	12.22	504	22.89	201	17.23	1612	18.97	1256	21.32
23	1 % milk, unflavored	148	11.68	334	15.79	119	16.46	976	14.70	783	14.92
24	skim milk, unflavored	216	14.54	400	21.45	167	20.14	1305	18.53	929	22.28

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-6. Female Head Education

ID#	Beverage Categories	Female Head Education													
		0=not given or no female		1=grade school		2=some high school		3=graduated high school		4=some college		5=graduated college		6=post college grad	
		Number of Observations													
		474		27		136		1248		1781		1464		585	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	235	8.52	23	26.62	84	15.15	805	15.15	990	11.97	750	10.68	270	9.21
2	reduced fat flavored and unflavored milk	383	20.93	20	39.62	115	29.36	1130	33.91	1639	34.16	1371	35.33	552	33.06
3	carbonated soft drinks - regular	407	30.31	27	53.13	134	48.26	1208	45.54	1706	37.63	1399	31.34	538	28.81
4	carbonated soft drinks - low calorie	261	28.04	12	8.07	100	28.56	914	31.73	1349	26.99	1074	29.67	456	28.48
5	powdered soft drinks	126	13.64	15	40.29	74	20.37	708	19.84	949	19.54	743	17.05	248	15.96
6	isotonics	105	3.64	8	1.64	43	2.72	412	3.96	604	3.65	524	3.59	174	4.88
7	bottled water	269	16.13	16	9.31	92	19.50	868	14.79	1259	15.70	1058	13.96	434	16.34
8	orange juice	369	10.07	25	16.46	117	7.38	1069	10.05	1563	9.96	1297	10.81	541	12.16
9	apple juice	180	3.34	18	4.23	64	6.42	732	4.06	1048	3.84	925	4.65	356	4.08
10	other juices	339	5.24	25	5.79	108	5.91	1027	5.93	1510	6.12	1285	7.05	506	7.33
11	fruit drinks	310	8.15	21	8.52	115	9.46	1055	10.53	1488	9.30	1227	9.72	445	8.48
12	vegetable juice	175	2.80	12	2.32	66	3.02	604	2.32	900	2.30	740	2.44	301	2.08
13	coffee regular	263	32.41	22	30.87	112	46.26	953	49.90	1356	42.65	1022	36.04	403	35.64
14	coffee decaffeinated	71	16.12	5	37.54	39	23.37	373	22.29	555	18.27	433	16.04	199	17.84
15	tea regular	245	10.12	17	11.23	90	19.98	865	16.63	1247	13.94	983	13.03	413	9.70
16	tea decaffeinated	98	4.33	9	6.33	39	10.14	414	9.26	670	8.10	567	7.38	275	6.44
17	flavored milk	96	2.05	4	0.84	48	1.45	425	2.44	533	2.77	452	2.21	143	2.78
18	unflavored milk	452	21.74	27	51.90	132	34.69	1239	39.93	1762	37.67	1449	38.26	581	35.01
19	flavored milk -- whole	61	1.65	3	0.96	28	1.47	286	2.51	362	2.55	341	1.97	105	2.45
20	Reduced fat, flavored	56	1.71	1	0.50	32	0.88	274	1.17	330	1.68	233	1.39	85	1.66
21	whole milk, unflavored	212	8.99	23	26.60	76	16.37	688	17.26	838	13.48	638	12.04	225	10.42
22	2% milk, unflavored	248	12.22	17	17.47	87	22.01	869	21.48	1243	20.24	976	20.87	381	15.63
23	1 % milk, unflavored	148	11.68	12	28.73	48	12.82	493	14.61	741	13.87	642	16.48	276	15.34
24	skim milk, unflavored	216	14.54	8	18.47	55	14.57	575	20.34	949	20.66	835	20.10	379	20.55

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-7. Race

ID#	Beverage Category	Race							
		1=White		2=Black		3=Oriental		4=Other	
		Number of Observations							
		4863		516		58		278	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	2580	11.94	363	10.95	33	17.67	181	16.90
2	reduced fat flavored and unflavored milk	4519	35.45	404	14.10	53	28.86	234	24.62
3	carbonated soft drinks - regular	4588	36.41	505	34.76	55	30.28	271	46.21
4	carbonated soft drinks - low calorie	3680	30.70	275	13.32	36	8.46	175	20.59
5	powdered soft drinks	2369	16.91	328	30.13	18	17.09	148	18.84
6	isotonics	1586	3.98	147	2.39	19	3.16	118	3.08
7	bottled water	3303	14.24	415	19.39	52	23.59	226	19.68
8	orange juice	4210	10.49	470	9.87	52	13.27	249	9.73
9	apple juice	2764	3.87	345	5.56	35	5.91	179	5.70
10	other juices	4043	6.25	458	7.54	50	7.44	249	6.31
11	fruit drinks	3878	8.30	483	17.33	55	9.24	245	13.75
12	vegetable juice	2431	2.39	231	2.00	22	1.85	114	2.73
13	coffee regular	3572	43.44	315	26.71	36	23.50	208	31.52
14	coffee decaffeinated	1496	18.70	106	16.14	10	17.03	63	21.10
15	tea regular	3254	14.43	374	9.00	45	15.10	187	10.91
16	tea decaffeinated	1764	8.09	187	5.51	19	7.98	102	6.32
17	flavored milk	1484	2.61	116	1.25	15	1.12	86	1.69
18	unflavored milk	4811	38.90	504	18.90	57	36.77	270	32.13
19	flavored milk -- whole	1058	2.42	72	1.16	9	1.10	47	1.28
20	Reduced fat, flavored	869	1.51	74	0.83	8	0.86	60	1.42
21	whole milk, unflavored	2153	13.70	351	11.15	31	18.59	165	18.02
22	2% milk, unflavored	3307	20.57	300	12.07	35	16.24	179	17.72
23	1 % milk, unflavored	2088	15.88	141	4.38	28	8.62	103	9.52
24	skim milk, unflavored	2649	21.27	197	6.91	36	19.72	135	11.40

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-8. Region

ID#	Beverage Category	Region							
		1=East		2=Central		3=South		4=West	
		Number of Observations							
		1218		1446		1957		1094	
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	739	12.49	744	9.48	1170	13.73	504	12.05
2	reduced fat flavored and unflavored milk	1107	29.72	1372	37.94	1722	30.51	1009	35.37
3	carbonated soft drinks - regular	1147	32.44	1372	40.55	1869	37.96	1031	33.95
4	carbonated soft drinks - low calorie	885	25.83	1113	32.59	1393	27.98	775	28.96
5	powdered soft drinks	583	16.62	767	19.70	1070	19.13	443	17.57
6	isotonics	329	3.56	434	3.81	731	3.96	376	3.62
7	bottled water	843	16.99	952	12.96	1394	14.32	807	17.50
8	orange juice	1096	11.99	1272	9.88	1706	10.57	907	8.99
9	apple juice	708	4.55	827	3.81	1116	4.26	672	4.04
10	other juices	1062	6.95	1178	5.47	1628	6.43	932	6.84
11	fruit drinks	988	9.51	1189	9.08	1590	9.76	894	9.76
12	vegetable juice	538	2.19	765	2.36	971	2.42	524	2.47
13	coffee regular	949	46.63	1014	39.30	1374	39.42	794	41.19
14	coffee decaffeinated	408	17.08	396	18.15	581	19.17	290	20.35
15	tea regular	938	18.16	874	11.21	1359	13.78	689	10.88
16	tea decaffeinated	487	9.34	468	6.38	756	8.55	361	5.80
17	flavored milk	295	2.15	568	2.94	581	2.57	257	1.51
18	unflavored milk	1198	34.64	1432	40.11	1930	34.78	1082	38.25
19	flavored milk -- whole	212	2.11	413	2.81	374	2.22	187	1.48
20	Reduced fat, flavored	176	1.07	343	1.48	370	1.78	122	0.91
21	whole milk, unflavored	676	13.38	545	12.01	1038	14.84	441	13.52
22	2% milk, unflavored	744	15.00	1032	23.43	1272	17.48	773	23.05
23	1 % milk, unflavored	631	15.53	468	14.30	764	13.25	497	16.86
24	skim milk, unflavored	700	16.31	801	24.97	996	19.43	520	17.68

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-9. Hispanic Origin

ID#	Beverage Category	Hispanic			
		Yes		No	
		Number of Observations			
		365		5350	
		HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	239	18.20	2918	11.68
2	reduced fat flavored and unflavored milk	311	30.00	4899	33.45
3	carbonated soft drinks - regular	360	47.69	5059	35.90
4	carbonated soft drinks - low calorie	248	20.93	3918	29.44
5	powdered soft drinks	201	20.52	2662	18.38
6	isotonics	151	3.54	1719	3.81
7	bottled water	291	17.36	3705	15.03
8	orange juice	324	10.29	4657	10.43
9	apple juice	227	4.94	3096	4.11
10	other juices	330	6.60	4470	6.37
11	fruit drinks	323	12.63	4338	9.30
12	vegetable juice	167	2.78	2631	2.34
13	coffee regular	283	37.10	3848	41.70
14	coffee decaffeinated	84	19.84	1591	18.56
15	tea regular	252	11.35	3608	13.91
16	tea decaffeinated	137	5.51	1935	7.93
17	flavored milk	123	1.55	1578	2.53
18	unflavored milk	360	37.48	5282	36.72
19	flavored milk -- whole	61	1.68	1125	2.32
20	Reduced fat, flavored	88	1.00	923	1.49
21	whole milk, unflavored	208	20.49	2492	13.12
22	2% milk, unflavored	250	20.65	3571	19.67
23	1 % milk, unflavored	146	9.68	2214	15.17
24	skim milk, unflavored	175	15.13	2842	20.17

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

F-10. Seasonality

ID #	Beverage Category	QUARTER 1		QUARTER 2		QUARTER 3		QUARTER 4	
		5715 Observations in each Quarter							
		HLDS	AQC	HLDS	AQC	HLDS	AQC	HLDS	AQC
1	whole fat flavored and unflavored milk	2018	4.90	2029	4.76	2042	4.70	2058	4.50
2	reduced fat flavored and unflavored milk	4792	9.33	4801	9.04	4802	8.88	4756	8.92
3	carbonated soft drinks - regular	4525	10.48	4721	11.16	4684	10.69	4664	10.43
4	carbonated soft drinks - regular	3056	9.67	3196	10.09	3112	9.55	3053	9.50
5	powdered soft drinks	1172	8.81	2015	9.23	1788	8.93	983	8.30
6	isotonics	672	1.71	1066	2.16	1110	2.33	606	1.73
7	bottled water	2015	6.40	2321	6.38	2582	6.52	2486	6.52
8	orange juice	3909	3.51	3746	3.37	3697	3.31	3940	3.39
9	apple juice	1840	1.98	1618	1.90	1684	1.81	2113	1.92
10	other juices	3356	2.38	3280	2.26	3178	2.32	3353	2.36
11	fruit drinks	3163	3.32	3513	3.59	3496	3.45	2924	3.16
12	vegetable juice	1573	1.12	1352	1.24	1313	1.22	1360	1.16
13	coffee regular	2997	14.71	2811	14.13	2789	13.89	3156	15.36
14	coffee decaffeinated	970	9.00	876	8.49	780	8.62	952	8.72
15	tea regular	2180	6.05	2316	5.99	2322	5.86	2139	5.79
16	tea decaffeinated	1109	3.99	921	4.10	838	4.24	1088	3.99
17	flavored milk	806	1.23	859	1.28	890	1.24	811	1.22
18	unflavored milk	5484	9.78	5476	9.49	5473	9.35	5458	9.29
19	flavored milk – whole	421	0.80	454	0.82	458	0.86	396	0.92
20	flavored milk that is	522	1.25	547	1.32	577	1.24	527	1.19
21	whole milk , unflavored	1767	5.40	1750	5.31	1752	5.26	1819	4.90
22	2% milk, unflavored	2810	6.94	2815	6.76	2869	6.43	2868	6.42
23	1 % milk, unflavored	1534	5.97	1503	5.74	1513	5.71	1479	5.79
24	skim milk, unflavored	2313	6.64	2348	6.38	2298	6.46	2256	6.55

AQC = average quantity consumed (in gallons) **HLDS = number of households that consume**

APPENDIX G

HECKMAN RESULTS – BEVERAGE BY BEVERAGE

Heckman results are given. Each page gives the Heckman output for a beverage. The parameters associated with the demographic categories are given. Lastly, Joint F-Tests are given on each grouping of demographics. The abbreviations are as follows for the F-Tests.

HH	Household Size
AG	Age of household head
PC	Presence of children
EM	Employment status of household head
ED	Education obtained by household head
RC	Race of household
HP	Hispanic origin
RG	Region
PV	130 % Poverty status

Beverage #1. Whole Fat - Flavored and Unflavored Milk

Dependent variable: LQ1
Number of observations: 3157

Mean of dep. var. = 1.12125	LM het. test = 108.588 [.000]
Std. dev. of dep. var. = 1.79819	Durbin-Watson = 1.95249 [<.260]
Sum of squared residuals = 6679.42	Jarque-Bera test = 65.1106 [.000]
Variance of residuals = 2.13264	Ramsey's RESET2 = 2.78281 [.095]
Std. error of regression = 1.46035	F (zero slopes) = 68.8788 [.000]
R-squared = .345467	Schwarz B.I.C. = .813214
Adjusted R-squared = .340451	Log likelihood = -5662.53

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	4.50675	.936167	4.81404	[.000]
LP1	-2.94106	.086098	-34.1594	[.000]
HS2	-.034326	.118644	-.289318	[.772]
HS3	.359218	.214565	1.67417	[.094]
HS4	.311339	.219542	1.41813	[.156]
HSP5	.459380	.348841	1.31688	[.188]
AGE2539	.327272	.334068	.979655	[.327]
AGE4049	.132472	.320846	.412884	[.680]
AGE5065	.283791E-02	.322550	.879838E-02	[.993]
AGE65PLUS	.062623	.346248	.180863	[.856]
AGEPCCHILD	.200071	.132836	1.50615	[.132]
EMPPARTTIME	-.041161	.128861	-.319424	[.749]
EMPFULLTIME	.054548	.097088	.561837	[.574]
EDUHIGHSCHOOL	-.194360	.150795	-1.28890	[.198]
EDUSOMECOLLEGE	-.369629	.225439	-1.63960	[.101]
EDUCOLLEGEPLUS	-.526015	.353420	-1.48836	[.137]
BLACK	.156703	.326502	.479947	[.631]
ORIENTAL	.071490	.244974	.291827	[.770]
OTHER	.077053	.193819	.397553	[.691]
HISPYES	.244354	.159127	1.53559	[.125]
CENTRAL	-.080754	.193366	-.417623	[.676]
SOUTH	.243462	.082716	2.94336	[.003]
WEST	.177160	.337475	.524957	[.600]
POV130	.261204	.176164	1.48273	[.138]
INVM1	.225367	1.40816	.160043	[.873]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.09561	.864903	1.26674	[.205]
AG	.525206	1.27346	.412422	[.680]
PC	.200071	.132836	1.50615	[.132]
EM	.013386	.214234	.062485	[.950]
ED	-1.09000	.662210	-1.64601	[.100]
RC	.305247	.625733	.487823	[.626]
HP	.244354	.159127	1.53559	[.125]
RG	.339868	.580358	.585617	[.558]
PV	.261204	.176164	1.48273	[.138]

Beverage #2. Reduced Fat - Flavored and Unflavored Milk

Dependent variable: LQ2
Number of observations: 5210

Mean of dep. var.	= 2.87569	LM het. test	= 74.3414 [.000]
Std. dev. of dep. var.	= 1.35623	Durbin-Watson	= 1.97450 [<.361]
Sum of squared residuals	= 6371.87	Jarque-Bera test	= 1459.19 [.000]
Variance of residuals	= 1.22890	Ramsey's RESET2	= .308613 [.579]
Std. error of regression	= 1.10856	F (zero slopes)	= 108.815 [.000]
R-squared	= .334962	Schwarz B.I.C.	= .242380
Adjusted R-squared	= .331884	Log likelihood	= -7917.09

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	5.31346	.385259	13.7919	[.000]
LP2	-2.37735	.084236	-28.2226	[.000]
HS2	.333922	.078397	4.25939	[.000]
HS3	.478338	.073052	6.54793	[.000]
HS4	.616478	.087411	7.05266	[.000]
HSP5	.661411	.090120	7.33921	[.000]
AGE2539	-.310535	.148292	-2.09407	[.036]
AGE4049	-.229379	.152650	-1.50265	[.133]
AGE5065	-.230919	.163098	-1.41583	[.157]
AGE65PLUS	-.124507	.160606	-.775229	[.438]
AGEPCCHILD	.077197	.075055	1.02854	[.304]
EMPPARTTIME	-.139198	.055907	-2.48982	[.013]
EMPFULLTIME	-.091893	.044667	-2.05731	[.040]
EDUHIGHSCHOOL	.066706	.124712	.534876	[.593]
EDUSOMECOLLEGE	.143395	.131246	1.09256	[.275]
EDUCOLLEGEPLUS	.204846	.150226	1.36358	[.173]
BLACK	-.747902	.186675	-4.00644	[.000]
ORIENTAL	-.180990	.183932	-.984006	[.325]
OTHER	-.196394	.115836	-1.69545	[.090]
HISPYES	-.311336E-02	.099982	-.031139	[.975]
CENTRAL	.040868	.069649	.586770	[.557]
SOUTH	.048638	.050801	.957417	[.338]
WEST	.217002	.054353	3.99248	[.000]
POV130	-.261613	.154474	-1.69357	[.090]
INVM2	-.580345	.855254	-.678565	[.497]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.09015	.283788	7.36518	[.000]
AG	-.895339	.609036	-1.47009	[.142]
PC	.077197	.075055	1.02854	[.304]
EM	-.231091	.079713	-2.89905	[.004]
ED	.414946	.397412	1.04412	[.296]
RC	-1.12529	.341646	-3.29372	[.001]
HP	-.311336E-02	.099982	-.031139	[.975]
RG	.306508	.127128	2.41102	[.016]
PV	-.261613	.154474	-1.69357	[.090]

Beverage #3. Carbonated Soft Drinks - Regular

Dependent variable: LQ3
Number of observations: 5419

Mean of dep. var. = 2.82606	LM het. test = 66.8121 [.000]
Std. dev. of dep. var. = 1.42823	Durbin-Watson = 1.98013 [<.431]
Sum of squared residuals = 8709.41	Jarque-Bera test = 291.713 [.000]
Variance of residuals = 1.61465	Ramsey's RESET2 = .688686 [.407]
Std. error of regression = 1.27069	F (zero slopes) = 60.4483 [.000]
R-squared = .211952	Schwarz B.I.C. = .514157
Adjusted R-squared = .208446	Log likelihood = -8974.87

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	3.92902	.342564	11.4695	[.000]
LP3	-.607084	.084874	-7.15277	[.000]
HS2	.068427	.121844	.561598	[.574]
HS3	.544348	.163192	3.33563	[.001]
HS4	.713938	.170538	4.18640	[.000]
HSP5	.783917	.176401	4.44394	[.000]
AGE2539	-.412493	.241441	-1.70846	[.088]
AGE4049	-.285924	.237843	-1.20216	[.229]
AGE5065	-.400703	.235331	-1.70272	[.089]
AGE65PLUS	-.825166	.238704	-3.45685	[.001]
AGEPCCHILD	-.088641	.056424	-1.57097	[.116]
EMPPARTTIME	.033106	.052610	.629262	[.529]
EMPFULLTIME	.075325	.045864	1.64235	[.101]
EDUHIGHSCHOOL	-.115538	.108527	-1.06460	[.287]
EDUSOMECOLLEGE	-.292239	.110173	-2.65255	[.008]
EDUCOLLEGEPLUS	-.474473	.116174	-4.08415	[.000]
BLACK	.011813	.069930	.168924	[.866]
ORIENTAL	-.217604E-02	.146505	-.014853	[.988]
OTHER	.173225	.094564	1.83184	[.067]
HISPYES	-.091470	.084562	-1.08169	[.279]
CENTRAL	.217136	.053344	4.07051	[.000]
SOUTH	.147074	.049729	2.95751	[.003]
WEST	.035313	.056181	.628570	[.530]
POV130	.156543	.090438	1.73095	[.084]
INVM3	-2.90625	.755080	-3.84893	[.000]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.11063	.614530	3.43454	[.001]
AG	-1.92429	.940527	-2.04597	[.041]
PC	-.088641	.056424	-1.57097	[.116]
EM	.108430	.086197	1.25793	[.208]
ED	-.882250	.323877	-2.72403	[.006]
RC	.182862	.194451	.940402	[.347]
HP	-.091470	.084562	-1.08169	[.279]
RG	.399524	.133098	3.00173	[.003]
PV	.156543	.090438	1.73095	[.083]

Beverage #4. Carbonated Soft Drinks – Low Calorie

Dependent variable: LQ4
Number of observations: 4166

Mean of dep. var.	= 2.25477	LM het. test	= 17.5783 [.000]
Std. dev. of dep. var.	= 1.68865	Durbin-Watson	= 1.99694 [<.698]
Sum of squared residuals	= 11051.7	Jarque-Bera test	= 138.645 [.000]
Variance of residuals	= 2.66885	Ramsey's RESET2	= 79.9026 [.000]
Std. error of regression	= 1.63366	F (zero slopes)	= 12.8791 [.000]
R-squared	= .069459	Schwarz B.I.C.	= 1.02565
Adjusted R-squared	= .064066	Log likelihood	= -7943.54

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	1.46119	1.89273	.772003	[.440]
LP4	-.925011	.108871	-8.49636	[.000]
HS2	.352930	.348887	1.01159	[.312]
HS3	.499669	.380729	1.31240	[.189]
HS4	.503480	.595596	.845338	[.398]
HSP5	.355947	.476347	.747243	[.455]
AGE2539	.890207	.486718	1.82900	[.067]
AGE4049	1.21705	.631422	1.92747	[.054]
AGE5065	1.11593	.751366	1.48520	[.138]
AGE65PLUS	.872039	.623254	1.39917	[.162]
AGEPCCHILD	-.273043	.099221	-2.75186	[.006]
EMPPARTTIME	.028884	.101819	.283675	[.777]
EMPFULLTIME	.095413	.067523	1.41306	[.158]
EDUHIGHSCHOOL	.130271	.174284	.747466	[.455]
EDUSOMECOLLEGE	.031899	.176881	.180344	[.857]
EDUCOLLEGEPLUS	.160592	.187677	.855680	[.392]
BLACK	-.846361	.716695	-1.18092	[.238]
ORIENTAL	-.849726	.395572	-2.14809	[.032]
OTHER	-.432328	.367555	-1.17623	[.240]
HISPYES	-.122863	.129773	-.946753	[.344]
CENTRAL	.324194	.144696	2.24051	[.025]
SOUTH	.133274	.072274	1.84401	[.065]
WEST	.256137	.105805	2.42085	[.016]
POV130	-.181466	.409172	-.443496	[.657]
INVM4	.072127	2.26541	.031838	[.975]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.71203	1.78392	.959697	[.337]
AG	4.09522	2.46920	1.65852	[.097]
PC	-.273043	.099221	-2.75186	[.006]
EM	.124297	.143191	.868049	[.385]
ED	.322762	.518846	.622077	[.534]
RC	-2.12841	1.40759	-1.51210	[.131]
HP	-.122863	.129773	-.946753	[.344]
RG	.713605	.195748	3.64553	[.000]
PV	-.181466	.409172	-.443496	[.657]

Beverage #5. Powdered Soft Drinks

Dependent variable: LQ5
Number of observations: 2863

Mean of dep. var.	= 2.17926	LM het. test	= 2.08658 [.149]
Std. dev. of dep. var.	= 1.25276	Durbin-Watson	= 2.01457 [<.866]
Sum of squared residuals	= 3805.44	Jarque-Bera test	= 5.71662 [.057]
Variance of residuals	= 1.34089	Ramsey's RESET2	= 17.9886 [.000]
Std. error of regression	= 1.15797	F (zero slopes)	= 21.3238 [.000]
R-squared	= .152778	Schwarz B.I.C.	= .354066
Adjusted R-squared	= .145614	Log likelihood	= -4469.77

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	.368956	1.02644	.359454	[.719]
LP5	-.525961	.042631	-12.3374	[.000]
HS2	.449415	.205582	2.18606	[.029]
HS3	.778505	.352541	2.20826	[.027]
HS4	1.23242	.470426	2.61980	[.009]
HSP5	1.60360	.514064	3.11945	[.002]
AGE2539	.085583	.379407	.225570	[.822]
AGE4049	.028477	.373700	.076203	[.939]
AGE5065	-.173209	.362372	-.477987	[.633]
AGE65PLUS	-.258482	.379212	-.681629	[.496]
AGEPCCHILD	.073858	.105903	.697413	[.486]
EMPPARTTIME	-.031624	.074391	-.425098	[.671]
EMPFULLTIME	.040344	.057176	.705611	[.480]
EDUHIGHSCHOOL	.138767	.147552	.940457	[.347]
EDUSOMECOLLEGE	.157282	.150797	1.04301	[.297]
EDUCOLLEGEPLUS	-.119421	.190532	-.626776	[.531]
BLACK	.552799	.167507	3.30015	[.001]
ORIENTAL	-.349319	.429460	-.813392	[.416]
OTHER	-.074072	.119684	-.618897	[.536]
HISPYES	-.013172	.110704	-.118986	[.905]
CENTRAL	.057541	.103070	.558270	[.577]
SOUTH	.076344	.099075	.770567	[.441]
WEST	-.258113	.105798	-2.43967	[.015]
POV130	.173173	.104948	1.65009	[.099]
INVM5	1.12347	.798483	1.40701	[.160]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	4.06394	1.52910	2.65773	[.008]
AG	-.317631	1.44597	-.219667	[.826]
PC	.073858	.105903	.697413	[.486]
EM	.872030E-02	.108762	.080178	[.936]
ED	.176628	.459546	.384353	[.701]
RC	.129408	.374803	.345271	[.730]
HP	-.013172	.110704	-.118986	[.905]
RG	-.124228	.185939	-.668113	[.504]
PV	.173173	.104948	1.65009	[.099]

Beverage #6. Isotonics

Dependent variable: LQ6
Number of observations: 1870

Mean of dep. var. = .502428		LM het. test = 9.69427 [.002]
Std. dev. of dep. var. = 1.29025		Durbin-Watson = 1.93083 [<.260]
Sum of squared residuals = 2796.34		Jarque-Bera test = 34.8443 [.000]
Variance of residuals = 1.51563		Ramsey's RESET2 = 14.7635 [.000]
Std. error of regression = 1.23111		F (zero slopes) = 8.66213 [.000]
R-squared = .101267		Schwarz B.I.C. = .503091
Adjusted R-squared = .089577		Log likelihood = -3029.63

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	1.65215	3.06951	.538244	[.590]
LP6	-1.20905	.133264	-9.07259	[.000]
HS2	.153354	.465100	.329722	[.742]
HS3	.397079	.678927	.584863	[.559]
HS4	.450419	.914276	.492650	[.622]
HSP5	.553421	.817060	.677333	[.498]
AGE2539	.125275	.338949	.369598	[.712]
AGE4049	.240809	.328590	.732854	[.464]
AGE5065	.109439	.499466	.219113	[.827]
AGE65PLUS	-.215740	.758035	-.284604	[.776]
AGEPCCHILD	.546550E-02	.417021	.013106	[.990]
EMPPARTTIME	-.066428	.158450	-.419235	[.675]
EMPFULLTIME	-.296356E-03	.148974	-.198931E-02	[.998]
EDUHIGHSCHOOL	.276377	.239264	1.15511	[.248]
EDUSOMECOLLEGE	.188322	.206786	.910710	[.363]
EDUCOLLEGEPLUS	.257602	.255822	1.00696	[.314]
BLACK	-.397747	.341097	-1.16608	[.244]
ORIENTAL	.107941	.366197	.294763	[.768]
OTHER	-.124322	.180987	-.686913	[.492]
HISPYES	-.062806	.141648	-.443394	[.658]
CENTRAL	.016943	.195279	.086762	[.931]
SOUTH	.073067	.491400	.148693	[.882]
WEST	.041716	.420095	.099303	[.921]
POV130	-.482332	.348549	-1.38383	[.167]
INVM6	-.768273E-02	2.12387	-.361733E-02	[.997]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.55427	2.86356	.542777	[.587]
AG	.259783	1.61306	.161050	[.872]
PC	.546550E-02	.417021	.013106	[.990]
EM	-.066724	.297765	-.224083	[.823]
ED	.722300	.686516	1.05212	[.293]
RC	-.414128	.578703	-.715614	[.474]
HP	-.062806	.141648	-.443394	[.657]
RG	.131727	1.09039	.120807	[.904]
PV	-.482332	.348549	-1.38383	[.166]

Beverage #7. Bottled Water

Dependent variable: LQ7
Number of observations: 3996

Mean of dep. var. = 1.46707	LM het. test = 31.9044 [.000]
Std. dev. of dep. var. = 1.61394	Durbin-Watson = 1.92278 [<.035]
Sum of squared residuals = 7699.12	Jarque-Bera test = 59.6202 [.000]
Variance of residuals = 1.93884	Ramsey's RESET2 = 73.6926 [.000]
Std. error of regression = 1.39242	F (zero slopes) = 58.1757 [.000]
R-squared = .260138	Schwarz B.I.C. = .707696
Adjusted R-squared = .255666	Log likelihood = -6980.39

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	3.12137	1.17648	2.65315	[.008]
LP7	-1.19570	.035231	-33.9392	[.000]
HS2	-.164869	.157839	-1.04454	[.296]
HS3	.089199	.148918	.598983	[.549]
HS4	-.079926	.273950	-.291753	[.770]
HSP5	.758205E-02	.288166	.026311	[.979]
AGE2539	.039097	.373695	.104622	[.917]
AGE4049	.107965	.346950	.311183	[.756]
AGE5065	.085381	.325657	.262179	[.793]
AGE65PLUS	.103411	.366940	.281820	[.778]
AGEPCCHILD	-.133714	.094375	-1.41684	[.157]
EMPPARTTIME	-.077795	.093262	-.834157	[.404]
EMPFULLTIME	-.020124	.100216	-.200803	[.841]
EDUHIGHSCHOOL	-.142545	.140048	-1.01782	[.309]
EDUSOMECOLLEGE	-.094566	.137826	-.686129	[.493]
EDUCOLLEGEPLUS	-.117406	.139092	-.844084	[.399]
BLACK	.098411	.279910	.351580	[.725]
ORIENTAL	-.021223	.426321	-.049781	[.960]
OTHER	.061034	.209272	.291650	[.771]
HISPYES	-.154210	.117125	-1.31663	[.188]
CENTRAL	-.149784	.094757	-1.58073	[.114]
SOUTH	-.131107	.066311	-1.97715	[.048]
WEST	-.067550	.143112	-.472013	[.637]
POV130	-.138398	.306165	-.452036	[.651]
INVM7	-1.78674	1.61151	-1.10873	[.268]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	-.148014	.841488	-.175895	[.860]
AG	.335853	1.29059	.260233	[.795]
PC	-.133714	.094375	-1.41684	[.157]
EM	-.097919	.183388	-.533945	[.593]
ED	-.354517	.403811	-.877928	[.380]
RC	.138222	.861308	.160479	[.873]
HP	-.154210	.117125	-1.31663	[.188]
RG	-.348442	.184587	-1.88768	[.059]
PV	-.138398	.306165	-.452036	[.651]

Beverage #8. Orange Juice

Dependent variable: LQ8
Number of observations: 4981

Mean of dep. var. = 1.65925	LM het. test = 7.08034 [.008]
Std. dev. of dep. var. = 1.30906	Durbin-Watson = 2.01319 [<.851]
Sum of squared residuals = 7893.41	Jarque-Bera test = 160.788 [.000]
Variance of residuals = 1.59270	Ramsey's RESET2 = 28.0008 [.000]
Std. error of regression = 1.26202	F (zero slopes) = 16.7560 [.000]
R-squared = .075053	Schwarz B.I.C. = .503127
Adjusted R-squared = .070574	Log likelihood = -8214.35

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	.904367	.827796	1.09250	[.275]
LP8	-.475524	.068258	-6.96658	[.000]
HS2	.591656	.206390	2.86668	[.004]
HS3	.834013	.285912	2.91703	[.004]
HS4	.943488	.347575	2.71449	[.007]
HSP5	1.12130	.318753	3.51777	[.000]
AGE2539	-.054952	.251849	-.218194	[.827]
AGE4049	.104615	.240494	.435003	[.664]
AGE5065	.328823	.300178	1.09543	[.273]
AGE65PLUS	.630382	.345729	1.82334	[.068]
AGEPCCHILD	-.021521	.068923	-.312250	[.755]
EMPPARTTIME	.068674	.072080	.952758	[.341]
EMPFULLTIME	-.108185	.047508	-2.27717	[.023]
EDUHIGHSCHOOL	.260055	.114224	2.27671	[.023]
EDUSOMECOLLEGE	.388955	.118076	3.29411	[.001]
EDUCOLLEGEPLUS	.663280	.157948	4.19937	[.000]
BLACK	.145032	.146091	.992754	[.321]
ORIENTAL	.596641	.218529	2.73026	[.006]
OTHER	.037384	.133607	.279809	[.780]
HISPYES	.069997	.088746	.788730	[.430]
CENTRAL	-.273781	.068117	-4.01926	[.000]
SOUTH	-.279205	.087153	-3.20362	[.001]
WEST	-.579689	.200535	-2.89072	[.004]
POV130	-.417889	.111553	-3.74609	[.000]
INVM8	1.70164	1.65358	1.02906	[.304]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	3.49046	1.14647	3.04453	[.002]
AG	1.00887	1.11894	.901626	[.367]
PC	-.021521	.068923	-.312250	[.755]
EM	-.039510	.098672	-.400418	[.689]
ED	1.31229	.353561	3.71163	[.000]
RC	.779057	.406335	1.91728	[.055]
HP	.069997	.088746	.788730	[.430]
RG	-1.13268	.334812	-3.38302	[.001]
PV	-.417889	.111553	-3.74609	[.000]

Beverage #9. Apple Juice

Dependent variable: LQ9
Number of observations: 3323

Mean of dep. var. = .667900	LM het. test = 33.2020 [.000]
Std. dev. of dep. var. = 1.21498	Durbin-Watson = 2.00991 [<.832]
Sum of squared residuals = 4150.24	Jarque-Bera test = 57.1930 [.000]
Variance of residuals = 1.25841	Ramsey's RESET2 = 34.1405 [.000]
Std. error of regression = 1.12179	F (zero slopes) = 24.9529 [.000]
R-squared = .153680	Schwarz B.I.C. = .283301
Adjusted R-squared = .147521	Log likelihood = -5084.48

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	.612358	1.65809	.369316	[.712]
LP9	-.916113	.059609	-15.3687	[.000]
HS2	.425039	.380991	1.11561	[.265]
HS3	.692157	.559770	1.23650	[.216]
HS4	.916761	.738606	1.24120	[.215]
HSP5	1.12320	.790877	1.42019	[.156]
AGE2539	-.332180	.302672	-1.09749	[.273]
AGE4049	-.440826	.335173	-1.31522	[.189]
AGE5065	-.374294	.304141	-1.23066	[.219]
AGE65PLUS	-.458664	.299796	-1.52992	[.126]
AGEPCCHILD	.383956	.202066	1.90015	[.058]
EMPPARTTIME	.058490	.064429	.907818	[.364]
EMPFULLTIME	-.183084	.131209	-1.39536	[.163]
EDUHIGHSCHOOL	.029176	.266043	.109665	[.913]
EDUSOMECOLLEGE	.109556	.296125	.369966	[.711]
EDUCOLLEGEPLUS	.283309	.370713	.764226	[.445]
BLACK	.418950	.278438	1.50464	[.133]
ORIENTAL	.239159	.225248	1.06176	[.288]
OTHER	.346741	.160562	2.15955	[.031]
HISPYES	-.156605	.137601	-1.13811	[.255]
CENTRAL	-.055471	.056563	-.980696	[.327]
SOUTH	-.029680	.062527	-.474664	[.635]
WEST	.176241	.115529	1.52551	[.127]
POV130	-.041634	.106618	-.390496	[.696]
INVM9	1.02163	1.58743	.643577	[.520]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	3.15716	2.46389	1.28137	[.200]
AG	-1.60596	1.22840	-1.30736	[.191]
PC	.383956	.202066	1.90015	[.057]
EM	-.124594	.133958	-.930098	[.352]
ED	.422040	.925789	.455871	[.648]
RC	1.00485	.414108	2.42654	[.015]
HP	-.156605	.137601	-1.13811	[.255]
RG	.091090	.161691	.563359	[.573]
PV	-.041634	.106618	-.390496	[.696]

Beverage #10. Other Juice

Dependent variable: LQ10
Number of observations: 4800

Mean of dep. var.	= 1.14787	LM het. test	= .030965 [.860]
Std. dev. of dep. var.	= 1.26889	Durbin-Watson	= 1.94983 [<.124]
Sum of squared residuals	= 7184.76	Jarque-Bera test	= 56.8300 [.000]
Variance of residuals	= 1.50466	Ramsey's RESET2	= 51.7018 [.000]
Std. error of regression	= 1.22665	F (zero slopes)	= 15.0105 [.000]
R-squared	= .070153	Schwarz B.I.C.	= .447494
Adjusted R-squared	= .065479	Log likelihood	= -7778.94

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	2.07524	.695495	2.98383	[.003]
LP10	-.789870	.079815	-9.89629	[.000]
HS2	.315852	.235757	1.33973	[.180]
HS3	.475669	.322110	1.47673	[.140]
HS4	.530696	.376205	1.41066	[.158]
HSP5	.645196	.455449	1.41662	[.157]
AGE2539	-.234534	.280354	-.836563	[.403]
AGE4049	-.265708	.296455	-.896282	[.370]
AGE5065	-.097877	.267780	-.365514	[.715]
AGE65PLUS	-.051953	.251690	-.206415	[.836]
AGEPCCHILD	.047375	.064685	.732397	[.464]
EMPPARTTIME	-.037929	.059460	-.637881	[.524]
EMPFULLTIME	-.099395	.047526	-2.09139	[.037]
EDUHIGHSCHOOL	.109141	.120341	.906929	[.364]
EDUSOMECOLLEGE	.213440	.162279	1.31527	[.188]
EDUCOLLEGEPLUS	.397340	.207126	1.91835	[.055]
BLACK	.255663	.159594	1.60196	[.109]
ORIENTAL	.428099	.157245	2.72250	[.007]
OTHER	.023832	.113990	.209066	[.834]
HISPYES	-.064783	.125228	-.517324	[.605]
CENTRAL	-.180383	.132437	-1.36203	[.173]
SOUTH	-.107219	.109613	-.978157	[.328]
WEST	.040725	.076584	.531770	[.595]
POV130	-.176551	.098905	-1.78507	[.074]
INVM10	-.983795E-02	1.52157	-.646565E-02	[.995]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.96741	1.37991	1.42576	[.154]
AG	-.650072	1.06816	-.608590	[.543]
PC	.047375	.064685	.732397	[.464]
EM	-.137324	.094093	-1.45945	[.144]
ED	.719921	.467588	1.53965	[.124]
RC	.707593	.277120	2.55338	[.011]
HP	-.064783	.125228	-.517324	[.605]
RG	-.246877	.301174	-.819715	[.412]
PV	-.176551	.098905	-1.78507	[.074]

Beverage #11. Fruit Drinks

Dependent variable: LQ11
Number of observations: 4661

Mean of dep. var.	= 1.44751	LM het. test	= 7.83619 [.005]
Std. dev. of dep. var.	= 1.37715	Durbin-Watson	= 1.94941 [<.128]
Sum of squared residuals	= 6676.00	Jarque-Bera test	= 61.3967 [.000]
Variance of residuals	= 1.44003	Ramsey's RESET2	= 5.37438 [.020]
Std. error of regression	= 1.20001	F (zero slopes)	= 62.5546 [.000]
R-squared	= .244620	Schwarz B.I.C.	= .404595
Adjusted R-squared	= .240710	Log likelihood	= -7450.99

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	2.08377	.317368	6.56581	[.000]
LP11	-.753103	.052391	-14.3746	[.000]
HS2	.250135	.087395	2.86213	[.004]
HS3	.497774	.130150	3.82461	[.000]
HS4	.749404	.161553	4.63875	[.000]
HSP5	.967767	.162861	5.94227	[.000]
AGE2539	-.160706	.230455	-.697341	[.486]
AGE4049	-.120651	.232188	-.519626	[.603]
AGE5065	-.275595	.239938	-1.14861	[.251]
AGE65PLUS	-.532224	.253183	-2.10213	[.036]
AGEPCCHILD	.347489	.076856	4.52128	[.000]
EMPPARTTIME	.087630	.054350	1.61233	[.107]
EMPFULLTIME	.026678	.045825	.582173	[.560]
EDUHIGHSCHOOL	.021477	.105718	.203149	[.839]
EDUSOMECOLLEGE	-.081730	.104952	-.778740	[.436]
EDUCOLLEGEPLUS	-.074420	.108746	-.684350	[.494]
BLACK	.661726	.101722	6.50526	[.000]
ORIENTAL	.105214	.166455	.632089	[.527]
OTHER	.293913	.099214	2.96243	[.003]
HISPYES	-.041189	.083296	-.494486	[.621]
CENTRAL	-.057567	.054432	-1.05758	[.290]
SOUTH	-.080808	.049492	-1.63275	[.103]
WEST	.071639	.057838	1.23861	[.216]
POV130	-.164456	.083622	-1.96667	[.049]
INVM11	-.225515	.428286	-.526552	[.599]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.46508	.518251	4.75654	[.000]
AG	-1.08918	.939737	-1.15902	[.246]
PC	.347489	.076856	4.52128	[.000]
EM	.114308	.087115	1.31215	[.189]
ED	-.134674	.308077	-.437144	[.662]
RC	1.06085	.260263	4.07608	[.000]
HP	-.041189	.083296	-.494486	[.621]
RG	-.066736	.134039	-.497888	[.619]
PV	-.164456	.083622	-1.96667	[.049]

Beverage #12. Vegetable Juice

Dependent variable: LQ12
Number of observations: 2798

Mean of dep. var. = .126094	LM het. test = 3.70888 [.054]
Std. dev. of dep. var. = 1.20456	Durbin-Watson = 2.03709 [<.956]
Sum of squared residuals = 3904.77	Jarque-Bera test = 10.9306 [.004]
Variance of residuals = 1.40814	Ramsey's RESET2 = 89.6530 [.000]
Std. error of regression = 1.18665	F (zero slopes) = 4.54342 [.000]
R-squared = .037835	Schwarz B.I.C. = .404208
Adjusted R-squared = .029508	Log likelihood = -4436.47

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	1.41271	5.83744	.242008	[.809]
LP12	-.465453	.061656	-7.54925	[.000]
HS2	-.457692E-02	.981583	-.466280E-02	[.996]
HS3	.089514	.951417	.094085	[.925]
HS4	.187676	1.18100	.158913	[.874]
HSP5	.156851	1.39287	.112610	[.910]
AGE2539	-.164401	.399739	-.411270	[.681]
AGE4049	-.095861	.450681	-.212703	[.832]
AGE5065	-.098627	.916184	-.107650	[.914]
AGE65PLUS	-.163268	.594040	-.274844	[.783]
AGEPCCHILD	-.086385	.122752	-.703737	[.482]
EMPPARTTIME	-.075485	.139881	-.539640	[.589]
EMPFULLTIME	-.056323	.232462	-.242289	[.809]
EDUHIGHSCHOOL	.068213	.181090	.376679	[.706]
EDUSOMECOLLEGE	.041414	.217174	.190695	[.849]
EDUCOLLEGEPLUS	.108349	.342199	.316624	[.752]
BLACK	-.463929E-02	.361237	-.012843	[.990]
ORIENTAL	.011551	.802247	.014399	[.989]
OTHER	.128065	.696071	.183982	[.854]
HISPYES	.026480	.124342	.212966	[.831]
CENTRAL	.045652	.710122	.064288	[.949]
SOUTH	.075204	.489435	.153655	[.878]
WEST	.138550	.284332	.487281	[.626]
POV130	.196579	.212905	.923317	[.356]
INVM12	-.652389	5.12715	-.127242	[.899]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	.429463	4.50210	.095392	[.924]
AG	-.522157	2.03637	-.256415	[.798]
PC	-.086385	.122752	-.703737	[.482]
EM	-.131808	.364907	-.361210	[.718]
ED	.217975	.595145	.366256	[.714]
RC	.134976	1.82336	.074026	[.941]
HP	.026480	.124342	.212966	[.831]
RG	.259406	1.47666	.175671	[.861]
PV	.196579	.212905	.923317	[.356]

Beverage #13. Coffee – Regular

Dependent variable: LQ13
Number of observations: 4131

Mean of dep. var.	= 3.03340	LM het. test	= .074731 [.785]
Std. dev. of dep. var.	= 1.31374	Durbin-Watson	= 1.97950 [<.485]
Sum of squared residuals	= 5600.37	Jarque-Bera test	= 125.992 [.000]
Variance of residuals	= 1.36395	Ramsey's RESET2	= 38.8041 [.000]
Std. error of regression	= 1.16788	F (zero slopes)	= 46.6673 [.000]
R-squared	= .214315	Schwarz B.I.C.	= .354701
Adjusted R-squared	= .209723	Log likelihood	= -6490.19

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	1.58708	.938890	1.69038	[.091]
LP13	-1.27763	.052368	-24.3972	[.000]
HS2	.385302	.261475	1.47357	[.141]
HS3	.404011	.279125	1.44742	[.148]
HS4	.628775	.362025	1.73683	[.082]
HSP5	.544122	.364493	1.49282	[.136]
AGE2539	.792082	.314319	2.52000	[.012]
AGE4049	1.08180	.430168	2.51484	[.012]
AGE5065	1.27572	.512311	2.49012	[.013]
AGE65PLUS	1.27992	.525944	2.43356	[.015]
AGEPCCHILD	-.124821	.100151	-1.24632	[.213]
EMPPARTTIME	-.101772	.083984	-1.21181	[.226]
EMPFULLTIME	-.058728	.075088	-.782121	[.434]
EDUHIGHSCHOOL	.160543	.130792	1.22746	[.220]
EDUSOMECOLLEGE	.091963	.122345	.751672	[.452]
EDUCOLLEGEPLUS	-.045522	.191646	-.237530	[.812]
BLACK	-.486038	.200553	-2.42349	[.015]
ORIENTAL	-.062825	.209379	-.300055	[.764]
OTHER	-.152266	.100242	-1.51898	[.129]
HISPYES	.133384	.126791	1.05200	[.293]
CENTRAL	-.201285	.158901	-1.26673	[.205]
SOUTH	-.205328	.141605	-1.45001	[.147]
WEST	.020526	.146044	.140548	[.888]
POV130	-.047237	.160102	-.295043	[.768]
INVM13	.362300	1.26136	.287230	[.774]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.96221	1.25514	1.56333	[.118]
AG	4.42952	1.76287	2.51267	[.012]
PC	-.124821	.100151	-1.24632	[.213]
EM	-.160500	.150876	-1.06379	[.287]
ED	.206984	.429603	.481804	[.630]
RC	-.701130	.361736	-1.93823	[.053]
HP	.133384	.126791	1.05200	[.293]
RG	-.386087	.437208	-.883075	[.377]
PV	-.047237	.160102	-.295043	[.768]

Beverage #14. Coffee – Decaffeinated

Dependent variable: LQ14
Number of observations: 1675

Mean of dep. var. = 2.16036	LM het. test = 19.4211 [.000]
Std. dev. of dep. var. = 1.25353	Durbin-Watson = 2.00595 [<.844]
Sum of squared residuals = 1932.01	Jarque-Bera test = 29.6568 [.000]
Variance of residuals = 1.17091	Ramsey's RESET2 = 33.0300 [.000]
Std. error of regression = 1.08209	F (zero slopes) = 24.8534 [.000]
R-squared = .265518	Schwarz B.I.C. = .253546
Adjusted R-squared = .254835	Log likelihood = -2496.27

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	.323571	5.23023	.061866	[.951]
LP14	-1.38784	.074983	-18.5089	[.000]
HS2	.490888	.732557	.670103	[.503]
HS3	.490029	.643042	.762047	[.446]
HS4	.496398	.615541	.806442	[.420]
HSP5	.390568	.555433	.703177	[.482]
AGE2539	.276501	.406036	.680978	[.496]
AGE4049	.855476	.989697	.864382	[.388]
AGE5065	1.29995	1.46220	.889041	[.374]
AGE65PLUS	1.53205	2.08007	.736539	[.462]
AGEPCCHILD	-.024613	.103742	-.237248	[.812]
EMPPARTTIME	-.085996	.084657	-1.01582	[.310]
EMPFULLTIME	-.203889	.436433	-.467172	[.640]
EDUHIGHSCHOOL	-.296183	.245102	-1.20841	[.227]
EDUSOMECOLLEGE	-.257910	.359677	-.717060	[.473]
EDUCOLLEGEPLUS	-.176586	.518798	-.340375	[.734]
BLACK	-.408725	.564461	-.724098	[.469]
ORIENTAL	-.279354	.681833	-.409710	[.682]
OTHER	-.283350	.210708	-1.34475	[.179]
HISPYES	.012832	.219786	.058385	[.953]
CENTRAL	-.264940	.452993	-.584867	[.559]
SOUTH	-.137857	.194350	-.709320	[.478]
WEST	-.123016	.579427	-.212306	[.832]
POV130	-.125455	.706048	-.177687	[.859]
INVM14	1.12105	3.15114	.355759	[.722]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.86788	2.52802	.738871	[.460]
AG	3.96398	4.88650	.811210	[.417]
PC	-.024613	.103742	-.237248	[.812]
EM	-.289885	.479457	-.604612	[.545]
ED	-.730679	1.10181	-.663163	[.507]
RC	-.971430	1.32077	-.735505	[.462]
HP	.012832	.219786	.058385	[.953]
RG	-.525813	1.21526	-.432673	[.665]
PV	-.125455	.706048	-.177687	[.859]

Beverage #15. Tea – Regular

Dependent variable: LQ15
Number of observations: 3860

Mean of dep. var.	= 1.72734	LM het. test	= 91.0375 [.000]
Std. dev. of dep. var.	= 1.47589	Durbin-Watson	= 1.96534 [<.330]
Sum of squared residuals	= 5267.93	Jarque-Bera test	= 11.9647 [.003]
Variance of residuals	= 1.37365	Ramsey's RESET2	= 81.4092 [.000]
Std. error of regression	= 1.17203	F (zero slopes)	= 95.1812 [.000]
R-squared	= .373299	Schwarz B.I.C.	= .364458
Adjusted R-squared	= .369377	Log likelihood	= -6077.28

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	.317851	1.29391	.245651	[.806]
LP15	-.946087	.023304	-40.5978	[.000]
HS2	.816953	.424315	1.92535	[.054]
HS3	1.21001	.577381	2.09569	[.036]
HS4	1.35642	.631695	2.14727	[.032]
HSP5	1.40655	.637723	2.20558	[.027]
AGE2539	-.379585	.326856	-1.16132	[.246]
AGE4049	-.042625	.240412	-.177301	[.859]
AGE5065	-.082484	.235851	-.349729	[.727]
AGE65PLUS	-.180222	.255166	-.706293	[.480]
AGEPCCHILD	-.383704	.173403	-2.21279	[.027]
EMPPARTTIME	.957137E-02	.058745	.162931	[.871]
EMPFULLTIME	.075728	.080474	.941031	[.347]
EDUHIGHSCHOOL	.231385	.163642	1.41397	[.157]
EDUSOMECOLLEGE	.237437	.197227	1.20388	[.229]
EDUCOLLEGEPLUS	.071085	.133387	.532919	[.594]
BLACK	-.119076	.179681	-.662706	[.508]
ORIENTAL	.369818	.428167	.863723	[.388]
OTHER	-.034034	.104846	-.324612	[.745]
HISPYES	-.134230	.101024	-1.32869	[.184]
CENTRAL	-1.12304	.542470	-2.07022	[.038]
SOUTH	-.632431	.261108	-2.42210	[.015]
WEST	-.966034	.474747	-2.03484	[.042]
POV130	-.115163	.089840	-1.28187	[.200]
INVM15	3.00847	2.23138	1.34826	[.178]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	4.78993	2.26404	2.11566	[.034]
AG	-.684916	1.02822	-.666116	[.505]
PC	-.383704	.173403	-2.21279	[.027]
EM	.085300	.105182	.810970	[.417]
ED	.539906	.479108	1.12690	[.260]
RC	.216708	.586452	.369523	[.712]
HP	-.134230	.101024	-1.32869	[.184]
RG	-2.72150	1.27407	-2.13607	[.033]
PV	-.115163	.089840	-1.28187	[.200]

Beverage #16. Tea – Decaffeinated

Dependent variable: LQ16
Number of observations: 2072

Mean of dep. var.	= 1.41488	LM het. test	= 10.6194 [.001]
Std. dev. of dep. var.	= 1.08319	Durbin-Watson	= 2.01431 [<.874]
Sum of squared residuals	= 2017.98	Jarque-Bera test	= 48.3718 [.000]
Variance of residuals	= .985821	Ramsey's RESET2	= .753892 [.385]
Std. error of regression	= .992885	F (zero slopes)	= 17.4100 [.000]
R-squared	= .169520	Schwarz B.I.C.	= .065717
Adjusted R-squared	= .159783	Log likelihood	= -2912.67

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	-5.66322	11.5501	-.490319	[.624]
LP16	-.911914	.055499	-16.4311	[.000]
HS2	.903779	1.20643	.749137	[.454]
HS3	1.12062	1.47887	.757756	[.449]
HS4	1.41172	1.79264	.787510	[.431]
HSP5	1.31612	1.65318	.796113	[.426]
AGE2539	1.70824	1.92772	.886148	[.376]
AGE4049	2.19984	2.53131	.869053	[.385]
AGE5065	2.24068	2.52266	.888221	[.375]
AGE65PLUS	2.10634	2.47801	.850011	[.395]
AGEPCCHILD	-.292215	.393276	-.743028	[.458]
EMPPARTTIME	.212471	.255917	.830235	[.407]
EMPFULLTIME	-.241359	.425905	-.566697	[.571]
EDUHIGHSCHOOL	.243758	.511458	.476595	[.634]
EDUSOMECOLLEGE	.667588	1.20115	.555792	[.578]
EDUCOLLEGEPLUS	.902099	1.65397	.545413	[.586]
BLACK	-.086123	.078907	-1.09146	[.275]
ORIENTAL	.030475	.393704	.077407	[.938]
OTHER	.137086	.130931	1.04701	[.295]
HISPYES	-.018356	.330775	-.055495	[.956]
CENTRAL	-.769959	1.02717	-.749595	[.454]
SOUTH	-.068416	.122419	-.558868	[.576]
WEST	-.811941	1.01346	-.801156	[.423]
POV130	.064629	.141083	.458091	[.647]
INVM16	4.27214	7.32742	.583035	[.560]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	4.75224	6.12765	.775541	[.438]
AG	8.25510	9.45599	.873002	[.383]
PC	-.292215	.393276	-.743028	[.457]
EM	-.028888	.206219	-.140083	[.889]
ED	1.81344	3.35419	.540651	[.589]
RC	.081438	.447339	.182051	[.856]
HP	-.018356	.330775	-.055495	[.956]
RG	-1.65032	2.14878	-.768024	[.442]
PV	.064629	.141083	.458091	[.647]

Beverage #17. Flavored Milk

Dependent variable: LQ17
Number of observations: 1701

Mean of dep. var. = -.040875	LM het. test = 1.66025 [.198]
Std. dev. of dep. var. = 1.30570	Durbin-Watson = 1.96501 [<.565]
Sum of squared residuals = 2280.51	Jarque-Bera test = 70.5512 [.000]
Variance of residuals = 1.36069	Ramsey's RESET2 = 4.85917 [.028]
Std. error of regression = 1.16648	F (zero slopes) = 18.9170 [.000]
R-squared = .213148	Schwarz B.I.C. = .402515
Adjusted R-squared = .201881	Log likelihood = -2662.97

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	-1.55084	2.61548	-.592947	[.553]
LP17	-1.36909	.075868	-18.0456	[.000]
HS2	.294058	.168214	1.74813	[.081]
HS3	.759383	.570130	1.33195	[.183]
HS4	.884543	.633637	1.39598	[.163]
HSP5	1.06639	.660810	1.61377	[.107]
AGE2539	.510553	.450116	1.13427	[.257]
AGE4049	.536319	.453010	1.18390	[.237]
AGE5065	.024535	.493199	.049746	[.960]
AGE65PLUS	-.385724	.733447	-.525905	[.599]
AGEPCCHILD	.107697	.180002	.598310	[.550]
EMPPARTTIME	-.086903	.099029	-.877558	[.380]
EMPFULLTIME	.061272	.079217	.773469	[.439]
EDUHIGHSCHOOL	.295561	.183497	1.61071	[.107]
EDUSOMECOLLEGE	.104450	.309536	.337439	[.736]
EDUCOLLEGEPLUS	-.017749	.411852	-.043095	[.966]
BLACK	-.841650	.460571	-1.82741	[.068]
ORIENTAL	-.578944	.446893	-1.29548	[.195]
OTHER	.018209	.198317	.091817	[.927]
HISPYES	-.272045	.132147	-2.05865	[.040]
CENTRAL	.983687	.653792	1.50459	[.133]
SOUTH	.496708	.271507	1.82945	[.068]
WEST	-.014635	.102247	-.143132	[.886]
POV130	-.188900	.179721	-1.05107	[.293]
INVM17	2.00140	1.96826	1.01683	[.309]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	3.00438	2.00689	1.49703	[.134]
AG	.685684	1.78846	.383392	[.701]
PC	.107697	.180002	.598310	[.550]
EM	-.025631	.149186	-.171805	[.864]
ED	.382262	.864697	.442076	[.658]
RC	-1.40238	.937818	-1.49537	[.135]
HP	-.272045	.132147	-2.05865	[.040]
RG	1.46576	.949407	1.54387	[.123]
PV	-.188900	.179721	-1.05107	[.293]

Beverage #18. Unflavored Milk

Dependent variable: LQ18
Number of observations: 5642

Mean of dep. var.	= 3.13472	LM het. test	= 90.7616 [.000]
Std. dev. of dep. var.	= 1.10363	Durbin-Watson	= 2.00212 [<.735]
Sum of squared residuals	= 4188.97	Jarque-Bera test	= 2362.97 [.000]
Variance of residuals	= .745766	Ramsey's RESET2	= .573743 [.449]
Std. error of regression	= .863578	F (zero slopes)	= 149.831 [.000]
R-squared	= .390315	Schwarz B.I.C.	= -.259509
Adjusted R-squared	= .387710	Log likelihood	= -7165.60

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	4.96077	.181879	27.2751	[.000]
LP18	-2.02796	.067443	-30.0691	[.000]
HS2	.361540	.074151	4.87575	[.000]
HS3	.560033	.076741	7.29773	[.000]
HS4	.772757	.069180	11.1702	[.000]
HSP5	.877161	.084332	10.4012	[.000]
AGE2539	-.049817	.117012	-.425743	[.670]
AGE4049	-.033340	.116983	-.284999	[.776]
AGE5065	.024349	.119656	.203492	[.839]
AGE65PLUS	.127787	.122619	1.04214	[.297]
AGEPCCHILD	.161749	.045254	3.57424	[.000]
EMPPARTTIME	-.130486	.037235	-3.50437	[.000]
EMPFULLTIME	-.113634	.031009	-3.66456	[.000]
EDUHIGHSCHOOL	.012915	.076288	.169298	[.866]
EDUSOMECOLLEGE	-.769515E-02	.071748	-.107252	[.915]
EDUCOLLEGEPLUS	-.016864	.071647	-.235380	[.814]
BLACK	-.573533	.056039	-10.2345	[.000]
ORIENTAL	-.055880	.113521	-.492246	[.623]
OTHER	-.196642	.089977	-2.18547	[.029]
HISPYES	.570970E-02	.058488	.097622	[.922]
CENTRAL	-.029902	.039401	-.758909	[.448]
SOUTH	.048726	.032968	1.47796	[.139]
WEST	.131135	.042508	3.08498	[.002]
POV130	-.081622	.071085	-1.14823	[.251]
INVM18	-.902984	1.43799	-.627951	[.530]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.57149	.282121	9.11484	[.000]
AG	.068978	.465593	.148152	[.882]
PC	.161749	.045254	3.57424	[.000]
EM	-.244120	.058417	-4.17891	[.000]
ED	-.011644	.213091	-.054644	[.956]
RC	-.826055	.179835	-4.59341	[.000]
HP	.570970E-02	.058488	.097622	[.922]
RG	.149958	.098363	1.52455	[.127]
PV	-.081622	.071085	-1.14823	[.251]

Beverage #19. Flavored Milk – Whole

Dependent variable: LQ19
Number of observations: 1186

Mean of dep. var.	= -.099829	LM het. test	= 1.46110 [.227]
Std. dev. of dep. var.	= 1.27680	Durbin-Watson	= 2.01540 [<.901]
Sum of squared residuals	= 1464.88	Jarque-Bera test	= 66.4048 [.000]
Variance of residuals	= 1.26174	Ramsey's RESET2	= 2.76431 [.097]
Std. error of regression	= 1.12327	F (zero slopes)	= 15.4193 [.000]
R-squared	= .241704	Schwarz B.I.C.	= .360396
Adjusted R-squared	= .226028	Log likelihood	= -1808.10

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	-.998425	6.23339	-.160174	[.873]
LP19	-1.35659	.083278	-16.2899	[.000]
HS2	.276752	.480318	.576185	[.565]
HS3	.558709	1.10061	.507637	[.612]
HS4	.713465	1.37770	.517866	[.605]
HSP5	.895389	1.36786	.654591	[.513]
AGE2539	.013748	.697682	.019705	[.984]
AGE4049	.056188	.618943	.090781	[.928]
AGE5065	-.297354	.541596	-.549033	[.583]
AGE65PLUS	-.482725	.834211	-.578661	[.563]
AGEPCCHILD	-.085334	.132918	-.642004	[.521]
EMPPARTTIME	.040260	.123275	.326590	[.744]
EMPFULLTIME	-.015677	.089261	-.175626	[.861]
EDUHIGHSCHOOL	.326942	.201352	1.62373	[.105]
EDUSOMECOLLEGE	.217427	.434360	.500570	[.617]
EDUCOLLEGEPLUS	.264396	.382598	.691054	[.490]
BLACK	-.849484	.999897	-.849571	[.396]
ORIENTAL	-.468293	1.01553	-.461132	[.645]
OTHER	-.159650	.375631	-.425019	[.671]
HISPYES	-.301271	.734027	-.410436	[.682]
CENTRAL	.803951	1.15725	.694709	[.487]
SOUTH	.301311	.263019	1.14559	[.252]
WEST	.109025	.164050	.664586	[.506]
POV130	-.214934	.368266	-.583638	[.560]
INVM19	1.50598	3.88685	.387456	[.698]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	2.44432	4.31474	.566504	[.571]
AG	-.710144	1.79373	-.395903	[.692]
PC	-.085334	.132918	-.642004	[.521]
EM	.024584	.185268	.132694	[.894]
ED	.808765	.953832	.847911	[.396]
RC	-1.47743	2.29328	-.644242	[.519]
HP	-.301271	.734027	-.410436	[.681]
RG	1.21429	1.53600	.790551	[.429]
PV	-.214934	.368266	-.583638	[.559]

Beverage #20. Flavored Milk – Reduced Fat

Dependent variable: LQ20
Number of observations: 1011

Mean of dep. var. = -.504156	LM het. test = 7.94823 [.005]
Std. dev. of dep. var. = 1.18247	Durbin-Watson = 2.01067 [<.896]
Sum of squared residuals = 1161.36	Jarque-Bera test = 105.744 [.000]
Variance of residuals = 1.17785	Ramsey's RESET2 = 2.07972 [.150]
Std. error of regression = 1.08529	F (zero slopes) = 8.87452 [.000]
R-squared = .177640	Schwarz B.I.C. = .309733
Adjusted R-squared = .157623	Log likelihood = -1504.63

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	2.52641	4.20123	.601349	[.548]
LP20	-1.43600	.107109	-13.4069	[.000]
HS2	.123188	.122226	1.00787	[.314]
HS3	-.203308	.801344	-.253709	[.800]
HS4	-.340895	.874603	-.389771	[.697]
HSP5	-.177278	.937377	-.189121	[.850]
AGE2539	1.16059	.580886	1.99797	[.046]
AGE4049	1.08568	.534605	2.03081	[.043]
AGE5065	1.25377	1.05082	1.19314	[.233]
AGE65PLUS	1.43093	1.67232	.855654	[.392]
AGEPCCHILD	-.055745	.304333	-.183169	[.855]
EMPPARTTIME	-.074363	.164815	-.451192	[.652]
EMPFULLTIME	.093228	.097845	.952820	[.341]
EDUHIGHSCHOOL	.172789	.191684	.901427	[.368]
EDUSOMECOLLEGE	.396138	.344295	1.15058	[.250]
EDUCOLLEGEPLUS	.596123	.739750	.805844	[.421]
BLACK	-.087594	.535366	-.163616	[.870]
ORIENTAL	.352629	.629610	.560076	[.576]
OTHER	.155431	.191040	.813604	[.416]
HISPYES	-.409390	.381727	-1.07247	[.284]
CENTRAL	-.225443	.886327	-.254356	[.799]
SOUTH	.047380	.446537	.106105	[.916]
WEST	.216210	.392665	.550621	[.582]
POV130	.160929	.239705	.671364	[.502]
INVM20	-1.45652	3.05474	-.476807	[.634]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	-.598293	2.63952	-.226667	[.821]
AG	4.93098	3.77438	1.30644	[.191]
PC	-.055745	.304333	-.183169	[.855]
EM	.018865	.206160	.091508	[.927]
ED	1.16505	1.14220	1.02000	[.308]
RC	.420466	1.10645	.380013	[.704]
HP	-.409390	.381727	-1.07247	[.284]
RG	.038147	.978146	.038999	[.969]
PV	.160929	.239705	.671364	[.502]

Beverage #21. Whole Milk – Unflavored

Dependent variable: LQ21
Number of observations: 2700

Mean of dep. var. = 1.32522	LM het. test = 99.6139 [.000]
Std. dev. of dep. var. = 1.77466	Durbin-Watson = 1.95115 [<.297]
Sum of squared residuals = 6160.87	Jarque-Bera test = 81.8635 [.000]
Variance of residuals = 2.30313	Ramsey's RESET2 = 36.2383 [.000]
Std. error of regression = 1.51761	F (zero slopes) = 42.3238 [.000]
R-squared = .275219	Schwarz B.I.C. = .898124
Adjusted R-squared = .268716	Log likelihood = -4944.84

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	4.29253	1.15429	3.71877	[.000]
LP21	-2.87333	.135575	-21.1936	[.000]
HS2	.011769	.110253	.106747	[.915]
HS3	.445528	.125085	3.56181	[.000]
HS4	.492421	.135049	3.64624	[.000]
HSP5	.564477	.265010	2.13002	[.033]
AGE2539	.270166	.449435	.601124	[.548]
AGE4049	.296080E-02	.413876	.715383E-02	[.994]
AGE5065	-.067170	.422097	-.159134	[.874]
AGE65PLUS	.037872	.418600	.090472	[.928]
AGEPCCHILD	.174524	.156630	1.11425	[.265]
EMPPARTTIME	-.039623	.142724	-.277620	[.781]
EMPFULLTIME	-.018637	.122533	-.152099	[.879]
EDUHIGHSCHOOL	-.160328	.176245	-.909685	[.363]
EDUSOMECOLLEGE	-.393642	.277609	-1.41797	[.156]
EDUCOLLEGEPLUS	-.592156	.412783	-1.43455	[.152]
BLACK	.299227	.520058	.575372	[.565]
ORIENTAL	.065008	.351204	.185100	[.853]
OTHER	.063979	.284951	.224525	[.822]
HISPYES	.269798	.168666	1.59960	[.110]
CENTRAL	-.218536	.438044	-.498890	[.618]
SOUTH	.183690	.120007	1.53067	[.126]
WEST	.154192	.404841	.380870	[.703]
POV130	.294418	.208305	1.41340	[.158]
INVM21	.408810	1.52684	.267749	[.789]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.51419	.539983	2.80415	[.005]
AG	.243829	1.67586	.145495	[.884]
PC	.174524	.156630	1.11425	[.265]
EM	-.058260	.252428	-.230800	[.817]
ED	-1.14613	.822058	-1.39422	[.163]
RC	.428214	1.05821	.404660	[.686]
HP	.269798	.168666	1.59960	[.110]
RG	.119346	.938557	.127159	[.899]
PV	.294418	.208305	1.41340	[.158]

Beverage #22. 2% Milk – Unflavored

Dependent variable: LQ22
Number of observations: 3821

Mean of dep. var. = 1.93311	LM het. test = 98.2659 [.000]
Std. dev. of dep. var. = 1.67526	Durbin-Watson = 1.99050 [<.635]
Sum of squared residuals = 8168.80	Jarque-Bera test = 171.541 [.000]
Variance of residuals = 2.15195	Ramsey's RESET2 = 71.8567 [.000]
Std. error of regression = 1.46695	F (zero slopes) = 49.4131 [.000]
R-squared = .238044	Schwarz B.I.C. = .813777
Adjusted R-squared = .233226	Log likelihood = -6873.38

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	2.31494	2.71411	.852931	[.394]
LP22	-2.37755	.121250	-19.6086	[.000]
HS2	.668429	.459988	1.45314	[.146]
HS3	1.13258	.689775	1.64195	[.101]
HS4	1.02672	.641632	1.60017	[.110]
HSP5	1.14004	.668024	1.70658	[.088]
AGE2539	-.658713	.496009	-1.32803	[.184]
AGE4049	-.644079	.463329	-1.39011	[.165]
AGE5065	-.415430	.339533	-1.22353	[.221]
AGE65PLUS	-.436869	.360373	-1.21227	[.225]
AGEPCCHILD	.521778	.240164	2.17259	[.030]
EMPPARTTIME	-.174267	.099713	-1.74769	[.081]
EMPFULLTIME	-.191733	.157633	-1.21632	[.224]
EDUHIGHSCHOOL	.022272	.300242	.074180	[.941]
EDUSOMECOLLEGE	.604934E-03	.298219	.202849E-02	[.998]
EDUCOLLEGEPLUS	-.176629	.187338	-.942839	[.346]
BLACK	-.680114	.466343	-1.45840	[.145]
ORIENTAL	-.363893	.479566	-.758797	[.448]
OTHER	-.303429	.267320	-1.13507	[.256]
HISPYES	.083667	.134615	.621528	[.534]
CENTRAL	.870222	.576435	1.50966	[.131]
SOUTH	.499497	.254880	1.95973	[.050]
WEST	.987116	.531179	1.85835	[.063]
POV130	-.291831	.247182	-1.18063	[.238]
INVM22	2.71487	3.78979	.716363	[.474]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	3.96776	2.44875	1.62032	[.105]
AG	-2.15509	1.61931	-1.33087	[.183]
PC	.521778	.240164	2.17259	[.030]
EM	-.366000	.243734	-1.50164	[.133]
ED	-.153753	.769577	-.199788	[.842]
RC	-1.34744	1.14714	-1.17460	[.240]
HP	.083667	.134615	.621528	[.534]
RG	2.35683	1.35540	1.73884	[.082]
PV	-.291831	.247182	-1.18063	[.238]

Beverage #23. 1% Milk – Unflavored

Dependent variable: LQ23
Number of observations: 2360

Mean of dep. var. = 1.48452	LM het. test = 94.6205 [.000]
Std. dev. of dep. var. = 1.66412	Durbin-Watson = 2.02589 [<.920]
Sum of squared residuals = 5615.60	Jarque-Bera test = 115.033 [.000]
Variance of residuals = 2.40497	Ramsey's RESET2 = .276090 [.599]
Std. error of regression = 1.55080	F (zero slopes) = 15.8896 [.000]
R-squared = .140391	Schwarz B.I.C. = .949159
Adjusted R-squared = .131555	Log likelihood = -4371.62

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	3.37351	6.94850	.485502	[.627]
LP23	-1.73834	.135265	-12.8514	[.000]
HS2	.296005	.717699	.412437	[.680]
HS3	.249933	.635486	.393294	[.694]
HS4	.238465	.813103	.293278	[.769]
HSP5	.431737	.839488	.514286	[.607]
AGE2539	.536007	1.65788	.323309	[.746]
AGE4049	.520109	1.87432	.277491	[.781]
AGE5065	.351696	1.94400	.180914	[.856]
AGE65PLUS	.350627	2.39708	.146272	[.884]
AGEPCCHILD	.241213	.199368	1.20989	[.226]
EMPPARTTIME	-.120985	.118634	-1.01982	[.308]
EMPFULLTIME	-.058569	.141366	-.414310	[.679]
EDUHIGHSCHOOL	.781780E-02	.407149	.019201	[.985]
EDUSOMECOLLEGE	-.054634	.692374	-.078908	[.937]
EDUCOLLEGEPLUS	-.019823	.963316	-.020578	[.984]
BLACK	-.484831	1.45461	-.333307	[.739]
ORIENTAL	-.354649	.333978	-1.06189	[.288]
OTHER	-.159124	.687824	-.231344	[.817]
HISPYES	-.388490	.144081	-2.69633	[.007]
CENTRAL	-.014534	1.76793	-.822100E-02	[.993]
SOUTH	-.855728E-03	.986113	-.867779E-03	[.999]
WEST	.280508	.571742	.490619	[.624]
POV130	-.540756	.236813	-2.28347	[.022]
INVM23	-.720575	5.08150	-.141803	[.887]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.21614	2.98947	.406808	[.684]
AG	1.75844	7.86320	.223629	[.823]
PC	.241213	.199368	1.20989	[.226]
EM	-.179555	.162830	-1.10271	[.270]
ED	-.066639	2.04466	-.032592	[.974]
RC	-.998604	1.95876	-.509815	[.610]
HP	-.388490	.144081	-2.69633	[.007]
RG	.265118	3.31892	.079881	[.936]
PV	-.540756	.236813	-2.28347	[.022]

Beverage #24. Skim Milk – Unflavored

Dependent variable: LQ24
Number of observations: 3017

Mean of dep. var.	= 1.97519	LM het. test	= 13.9201 [.000]
Std. dev. of dep. var.	= 1.65135	Durbin-Watson	= 1.95734 [<.320]
Sum of squared residuals	= 6787.61	Jarque-Bera test	= 163.525 [.000]
Variance of residuals	= 2.26859	Ramsey's RESET2	= .457736 [.499]
Std. error of regression	= 1.50618	F (zero slopes)	= 26.3919 [.000]
R-squared	= .174713	Schwarz B.I.C.	= .877226
Adjusted R-squared	= .168093	Log likelihood	= -5504.08

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	4.81004	4.04760	1.18837	[.235]
LP24	-1.84873	.107693	-17.1667	[.000]
HS2	.130992	.196594	.666304	[.505]
HS3	.276281	.150928	1.83055	[.067]
HS4	.517676	.237976	2.17533	[.030]
HSP5	.291204	.218108	1.33514	[.182]
AGE2539	.499863	.542764	.920958	[.357]
AGE4049	.460184	.450425	1.02167	[.307]
AGE5065	.356397	.423455	.841642	[.400]
AGE65PLUS	.375220	.458735	.817944	[.413]
AGEPCCHILD	-.076797	.186311	-.412196	[.680]
EMPPARTTIME	-.199221	.268820	-.741095	[.459]
EMPFULLTIME	-.189910	.102560	-1.85170	[.064]
EDUHIGHSCHOOL	.107971	.541363	.199444	[.842]
EDUSOMECOLLEGE	.031108	1.00951	.030815	[.975]
EDUCOLLEGEPLUS	-.031628	1.41830	-.022300	[.982]
BLACK	-.162476	1.18145	-.137523	[.891]
ORIENTAL	.016559	.701799	.023595	[.981]
OTHER	-.134179	.194779	-.688875	[.491]
HISPYES	-.011305	.173151	-.065291	[.948]
CENTRAL	.293265	.198114	1.48028	[.139]
SOUTH	.299313	.373293	.801817	[.423]
WEST	.271387	.758992	.357562	[.721]
POV130	.270557	.779746	.346981	[.729]
INVM24	-2.02795	4.50169	-.450487	[.652]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
HH	1.21615	.571186	2.12917	[.033]
AG	1.69166	1.71212	.988055	[.323]
PC	-.076797	.186311	-.412196	[.680]
EM	-.389132	.353987	-1.09928	[.272]
ED	.107452	2.95270	.036391	[.971]
RC	-.280096	.720941	-.388514	[.698]
HP	-.011305	.173151	-.065291	[.948]
RG	.863965	1.31603	.656491	[.512]
PV	.270557	.779746	.346981	[.729]

APPENDIX H

SUMMARY STATISTICS, CROSS TABULATIONS, AND REGRESSIONS FOR NUTRIENT ANALYSIS

SUMMARY STATISTICS

H-1. Summary Statistics for Nutrients Per Person/Per Day for Nonalcoholic Beverages in 1999

Units: Calories (kcal)
Calcium (mg)
Vitamin C (mg)
Caffeine (mg)

		# OF OBS.	Avg Intake	StDev
Total	Calories	5715	211.29	141.79
Total	Calcium	5715	216.85	174.14
Total	VitC	5715	44.61	39.09
Total	Caffeine	5715	94.96	114.13
1	CALcsdfdpsd	5715	93.46	110.11
2	CALfjuices	5715	38.69	42.26
3	CALmilk	5715	72.82	64.50
4	CAFFcsd	5715	25.50	32.65
5	CAFFcoff	5715	63.87	107.65
6	CAFFtea	5715	5.49	11.08
7	VITCfjuices	5715	26.63	30.72
8	VITCcsdfdpsd	5715	15.38	22.09
9	CALCmilk	5715	191.80	170.59

1=Calories from carbonated soft drinks, fruit drinks, and powdered soft drinks
2=Calories from fruit juices
3=Calories from milk
4=Caffeine from carbonated soft drinks
5=Caffeine from coffee
6=Caffeine from tea
7=Vitamin C from fruit juices
8=Vitamin C from carbonated soft drinks, fruit drinks, and powdered soft drinks
9=Calcium from milk

CROSS TABULATIONS

H-2. Income and Poverty

Nutrient Category	Below Poverty	Above Poverty	Below 130% Poverty	Above 130% Poverty	Below 185% Poverty	Above 185% Poverty	Under Or = $5000	$5000 To $7999	$8000 To $9999	$10,000 To $11,999	$12,000 To $14,999
	Number of Observations										
	159	5556	277	5438	625	5090	33	46	35	49	110
	Average Quantity of Nutrient Consumed Per Person Per Day										
Calories (kcal)	214.15	211.21	229.73	210.35	229.51	209.06	258.47	209.56	220.05	271.97	254.75
Calcium (mg)	188.92	217.65	204.08	217.50	214.48	217.14	242.83	148.32	210.53	263.34	249.98
Vitamin C (mg)	42.30	44.68	41.14	44.79	42.57	44.86	53.18	46.20	33.89	49.01	46.74
Caffeine (mg)	94.52	94.98	98.81	94.77	91.49	95.39	134.16	99.61	111.45	143.31	105.70
CALcsdfdpsd (kcal)	107.09	93.07	119.23	92.14	114.99	90.81	122.83	114.86	103.30	135.34	124.03
CALfjuices (kcal)	32.69	38.86	31.56	39.05	31.81	39.53	42.65	36.67	32.83	35.27	36.68
CALmilk (kcal)	68.25	72.96	72.83	72.82	77.12	72.30	84.17	51.32	77.81	92.50	87.16
CAFFcsd (mg)	23.37	25.56	26.59	25.44	24.58	25.61	26.21	25.52	32.06	29.44	29.57
CAFFcoff (mg)	64.25	63.86	65.39	63.79	60.07	64.33	98.55	62.46	71.26	108.27	67.53
CAFFtea (mg)	6.85	5.45	6.75	5.43	6.74	5.34	9.39	11.53	8.10	5.48	8.52
VITCfjuices (mg)	20.64	26.80	20.41	26.94	20.97	27.32	26.99	23.40	22.26	24.47	25.58
VITCcsdfdpsd (mg)	18.62	15.29	17.75	15.26	19.04	14.94	21.50	20.50	9.05	20.70	17.83
CALCmilk (mg)	164.30	192.60	178.70	192.50	189.50	192.10	211.45	123.73	187.57	231.48	222.04

H-2. cont'd

Nutrient Category	$15,000 to $19,999	$20,000 to $24,999	$25,000 to $29,999	$30,000 to $34,999	$35,000 to $39,999	$40,000 to $44,999	$45,000 to $49,999	$50,000 to $59,999	$60,000 to $69,999	$70,000 to $99,999	$100,000 and over
	Number of Observations										
	248	381	364	417	398	445	428	728	619	911	503
	Average Quantity of Nutrient Consumed Per Person Per Day										
Calories (kcal)	239.23	237.63	219.41	223.43	217.29	211.41	217.74	206.47	196.93	200.28	176.95
Calcium (mg)	244.85	241.87	226.57	231.21	216.32	222.40	220.40	218.15	205.00	200.25	193.62
Vitamin C (mg)	50.02	45.17	43.83	44.64	41.75	44.93	45.42	43.08	42.98	46.08	44.09
Caffeine (mg)	107.73	122.95	95.89	96.07	101.62	99.69	97.82	85.34	85.06	90.58	76.84
CALcsdfdpsd (kcal)	105.00	107.16	99.25	101.62	101.70	91.48	97.96	90.27	86.09	87.85	66.32
CALfjuices (kcal)	41.08	38.93	36.57	38.85	34.13	38.60	39.20	36.92	37.08	41.42	42.66
CALmilk (kcal)	85.98	84.10	77.53	76.80	75.09	74.78	74.08	73.32	67.89	64.70	62.41
CAFFcsd (mg)	24.84	26.97	24.81	27.00	27.89	26.12	26.05	24.39	23.54	26.31	21.82
CAFFcoff (mg)	75.87	89.42	64.24	64.05	68.73	67.76	65.67	55.66	56.24	59.41	50.91
CAFFtea (mg)	6.87	6.45	6.70	4.92	4.91	5.73	5.99	5.15	5.20	4.77	4.00
VITCfjuices (mg)	28.56	26.60	25.16	26.97	23.44	26.94	26.35	25.49	24.88	28.63	30.15
VITCcsdfdpsd (mg)	18.98	15.74	15.90	15.01	15.81	15.32	16.44	14.67	15.78	15.02	11.82
CALCmilk (mg)	216.60	213.92	201.69	205.76	191.00	196.55	194.42	194.64	181.39	175.05	172.02

H-3. Household Size

Nutrient Category	Household Size								
	1	2	3	4	5	6	7	8	9 +
	Number of Observations								
	1091	2233	975	877	369	119	34	8	9
	Average Quantity of Nutrient Consumed Per Person Per Day								
Calories (kcal)	245.3	211.6	204.5	194.4	186.6	164.1	177.7	217.7	136.6
Calcium (mg)	250.4	226.8	200.1	192.9	184.2	159.9	170.4	201.8	124.0
Vitamin C (mg)	57.8	45.6	39.2	37.3	36.6	32.0	35.1	38.5	30.3
Caffeine (mg)	120.7	114.5	77.2	63.3	50.2	35.2	36.4	45.7	23.8
CALcsdfdpsd (kcal)	102.8	87.3	96.7	96.1	92.4	83.0	85.7	110.8	72.3
CALfjuices (kcal)	53.3	42.1	32.6	27.6	25.1	21.6	23.6	24.9	13.2
CALmilk (kcal)	81.2	74.8	70.0	66.3	65.5	57.2	66.5	79.3	50.2
CAFFcsd (mg)	31.9	26.8	24.3	21.1	17.6	14.2	12.4	17.2	9.9
CAFFcoff (mg)	81.5	81.5	47.4	38.5	29.5	18.2	21.3	26.7	13.0
CAFFtea (mg)	7.2	6.1	5.4	3.6	3.0	2.8	2.6	1.8	0.9
VITCfjuices (mg)	38.0	29.6	21.7	17.5	16.1	12.9	14.2	16.0	8.0
VITCcsdfdpsd (mg)	16.4	13.1	15.5	17.9	18.7	17.7	19.5	20.9	21.6
CALCmilk (mg)	219.4	200.3	177.6	172.0	164.8	142.9	152.3	181.2	111.6

H-4. Presence of Children

Nutrient Category	Presence of Children	
	1=with	2=without
	Number of Observations	
	1772	3943
	Average Quantity of Nutrient Consumed Per Person Per Day	
Calories (kcal)	198.63	216.99
Calcium (mg)	195.03	226.65
Vitamin C (mg)	38.75	47.25
Caffeine (mg)	56.60	112.20
CALcsdfdpsd (kcal)	97.34	91.71
CALfjuices (kcal)	28.46	43.28
CALmilk (kcal)	68.80	74.63
CAFFcsd (mg)	20.05	27.95
CAFFcoff (mg)	32.96	77.76
CAFFtea (mg)	3.49	6.39
VITCfjuices (mg)	17.82	30.59
VITCcsdfdpsd (mg)	19.03	13.74
CALCmilk (mg)	174.32	199.65

H-5. Age of Female Head of Household

Nutrient Category	Age of Female Head of Household									
	not given or no female	under 25	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
	Number of Observations									
	474	30	177	400	558	708	786	762	1026	794
	Average Quantity of Nutrient Consumed Per Person Per Day									
Calories (kcal)	269.48	216.56	199.60	194.77	198.40	214.19	206.87	206.42	212.17	201.69
Calcium (mg)	252.57	208.71	185.22	189.10	195.34	205.28	203.98	206.03	228.54	250.30
Vitamin C (mg)	63.02	43.36	38.82	39.02	39.75	41.17	41.35	42.29	45.61	48.43
Caffeine (mg)	108.12	36.99	43.35	49.48	62.34	79.44	90.09	109.90	116.37	123.31
CALcsdfdpsd (kcal)	122.48	106.55	101.77	93.36	96.79	109.61	100.12	93.92	85.35	60.52
CALfjuices (kcal)	56.14	32.16	30.34	31.74	29.86	29.34	33.54	37.75	42.59	49.37
CALmilk (kcal)	83.57	74.74	64.51	65.97	67.54	70.08	67.41	67.81	76.19	83.64
CAFFcsd (mg)	35.18	18.40	19.75	21.35	22.21	26.20	26.42	27.69	28.37	18.33
CAFFcoff (mg)	67.12	12.21	20.27	24.67	36.06	48.29	57.85	76.17	81.36	98.34
CAFFtea (mg)	5.69	6.30	3.22	3.34	3.98	4.82	5.69	5.94	6.55	6.58
VITCfjuices (mg)	40.18	20.65	19.23	19.56	19.48	19.57	22.72	26.11	29.82	35.53
VITCcsdfdpsd (mg)	19.19	20.15	17.83	17.64	18.26	19.48	16.40	13.62	12.51	9.99
CALCmilk (mg)	220.70	188.91	165.18	168.32	173.65	180.79	179.47	180.22	201.67	225.52

H-6. Employment of Female Head of Household

Nutrient Category	Employment of Female Head of Household				
	0=not given or no female	1=under 30 hrs	2=30-34 hrs	3=35+ hrs	4=not employed for pay
	Number of Observations				
	474	724	290	2433	1794
	Average Quantity of Nutrient Consumed Per Person Per Day				
Calories (kcal)	269.48	211.08	194.64	200.60	213.20
Calcium (mg)	252.57	211.69	184.07	199.32	238.56
Vitamin C (mg)	63.02	44.46	39.53	41.38	45.01
Caffeine (mg)	108.12	87.08	79.79	86.35	108.80
CALcsdfdpsd (kcal)	122.48	96.73	95.64	94.13	83.20
CALfjuices (kcal)	56.14	37.60	33.13	34.09	41.64
CALmilk (kcal)	83.57	71.26	60.27	66.61	81.08
CAFFcsd (mg)	35.18	25.07	25.98	25.46	23.09
CAFFcoff (mg)	67.12	57.14	48.23	55.51	79.59
CAFFtea (mg)	5.69	4.77	5.49	5.27	6.02
VITCfjuices (mg)	40.18	25.50	22.42	23.24	28.77
VITCcsdfdpsd (mg)	19.19	16.79	14.91	15.81	13.31
CALCmilk (mg)	220.69	187.13	160.71	175.31	213.43

H-7. Education of Female Head of Household

Nutrient Category	Education of Female Head of Household						
	0=not given or no female	1=grade school	2=some high school	3=graduated high school	4=some college	5=graduated college	6=post college grad
	Number of Observations						
	474	27	136	1248	1781	1464	585
	Average Quantity of Nutrient Consumed Per Person Per Day						
Calories (kcal)	269.48	245.68	221.19	224.96	205.79	194.05	191.01
Calcium (mg)	252.57	220.43	198.35	225.79	214.98	205.49	207.08
Vitamin C (mg)	63.02	47.75	38.56	41.70	41.92	43.84	47.30
Caffeine (mg)	108.12	75.15	108.75	111.00	96.66	78.17	84.66
CALcsdfdpsd (kcal)	122.48	115.58	114.25	106.60	91.64	80.94	72.90
CALfjuices (kcal)	56.14	41.98	29.95	33.15	35.28	39.78	45.86
CALmilk (kcal)	83.57	83.74	69.86	78.24	72.52	67.85	66.12
CAFFcsd (mg)	35.18	20.91	29.11	28.07	23.97	22.71	23.19
CAFFcoff (mg)	67.12	49.66	72.33	76.65	66.94	50.38	57.05
CAFFtea (mg)	5.69	4.56	7.21	6.17	5.64	4.99	4.32
VITCfjuices (mg)	40.18	31.36	18.34	22.81	24.37	26.75	32.04
VITCcsdfdpsd (mg)	19.19	14.24	17.16	16.45	15.05	14.55	12.76
CALCmilk (mg)	220.70	195.14	171.92	199.32	190.59	182.73	183.12

H-8. Race

Nutrient Category	Race			
	White	Black	Oriental	Other
	Number of Observations			
	4863	516	58	278
	Average Quantity of Nutrient Consumed Per Person Per Day			
Calories (kcal)	211.40	218.44	169.07	205.03
Calcium (mg)	230.63	123.72	165.80	159.21
Vitamin C (mg)	42.65	63.12	44.66	44.55
Caffeine (mg)	101.11	58.13	39.68	67.26
CALcsdfdpsd (kcal)	89.24	128.19	65.27	108.65
CALfjuices (kcal)	38.04	45.61	44.06	36.02
CALmilk (kcal)	77.39	40.75	56.80	55.80
CAFFcsd (mg)	26.49	18.94	12.64	23.02
CAFFcoff (mg)	68.75	35.37	22.16	40.15
CAFFtea (mg)	5.77	3.75	4.84	4.02
VITCfjuices (mg)	26.51	29.47	29.99	22.70
VITCcsdfdpsd (mg)	13.39	32.01	13.08	19.87
CALCmilk (mg)	205.60	96.06	149.36	136.82

H-9. Region

Nutrient Category	Region			
	1=East	2=Central	3=South	4=West
	Number of Observations			
	1218	1446	1957	1094
	Average Quantity of Nutrient Consumed Per Person Per Day			
Calories (kcal)	200.91	225.95	213.81	198.96
Calcium (mg)	200.87	241.44	205.39	222.63
Vitamin C (mg)	47.63	42.89	46.18	40.73
Caffeine (mg)	103.82	97.08	90.41	90.44
CALcsdfdpsd (kcal)	83.14	105.09	98.29	80.91
CALfjuices (kcal)	44.15	34.72	39.56	36.30
CALmilk (kcal)	66.98	80.08	69.50	75.69
CAFFcsd (mg)	22.48	29.87	25.36	23.34
CAFFcoff (mg)	73.14	62.68	59.49	62.95
CAFFtea (mg)	8.14	4.38	5.45	4.08
VITCfjuices (mg)	30.69	24.36	27.18	24.12
VITCcsdfdpsd (mg)	14.68	15.69	16.39	13.96
CALCmilk (mg)	176.18	214.61	179.98	200.16

H-10. Hispanic Origin

Nutrient Category	Hispanic	
	1=Yes	2=No
	Number of Observations	
	365	5350
	Average Quantity of Nutrient Consumed Per Person Per Day	
Calories (kcal)	205.16	211.71
Calcium (mg)	178.04	219.50
Vitamin C (mg)	41.81	44.80
Caffeine (mg)	76.02	96.25
CALcsdfdpsd (kcal)	103.11	92.80
CALfjuices (kcal)	33.80	39.02
CALmilk (kcal)	63.21	73.48
CAFFcsd (mg)	22.21	25.72
CAFFcoff (mg)	49.78	64.83
CAFFtea (mg)	3.96	5.59
VITCfjuices (mg)	22.25	26.93
VITCcsdfdpsd (mg)	17.41	15.25
CALCmilk (mg)	155.97	194.24

NUTRIENT REGRESSION RESULTS

Each page gives the regression output for a nutrient. The parameters associated with the demographic categories are given. Joint F-Tests are given on each grouping of demographics. The abbreviations are as follows for the F-Tests.

HH	Household Size
AG	Age of household head
PC	Presence of children
EM	Employment status of household head
ED	Education obtained by household head
RC	Race of household
HP	Hispanic origin
RG	Region
PV	130 % Poverty status

Nutrient Regression: Calories from all nonalcoholic beverages

Dependent variable: CALORIES
Current sample: 1 to 5715
Number of observations: 5715

Mean of dep. var.	= 211.293	LM het. test	= 9.11202 [.003]
Std. dev. of dep. var.	= 141.788	Durbin-Watson	= 1.95637 [<.107]
Sum of squared residuals	= .112588E+09	Jarque-Bera test	= 950772. [.000]
Variance of residuals	= 19766.1	Ramsey's RESET2	= 9.84269 [.002]
Std. error of regression	= 140.592	F (zero slopes)	= 6.42415 [.000]
R-squared	= .019897	Schwarz B.I.C.	= 9.91715
Adjusted R-squared	= .016800	Log likelihood	= -36365.3

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	236.881	21.9051	10.8139	[.000]
AGE2539	-.381536	19.0395	-.020039	[.984]
AGE4049	6.82893	19.0454	.358562	[.720]
AGE5065	-10.0229	19.0340	-.526580	[.599]
AGE65PLUS	-26.7536	19.4717	-1.37397	[.170]
AGEPCCHILD	-27.8673	4.60791	-6.04771	[.000]
EMPPARTTIME	-8.30678	5.89187	-1.40987	[.159]
EMPFULLTIME	-12.2039	4.87608	-2.50282	[.012]
EDUHIGHSCHOOL	-.107248	10.6565	-.010064	[.992]
EDUSOMECOLLEGE	-14.2862	10.6363	-1.34315	[.179]
EDUCOLLEGEPLUS	-26.1675	10.5219	-2.48695	[.013]
BLACK	8.70985	6.15465	1.41517	[.157]
ORIENTAL	-28.5828	12.3704	-2.31058	[.021]
OTHER	-.426119	10.2915	-.041405	[.967]
HISPYES	-1.07268	9.02887	-.118805	[.905]
CENTRAL	25.7047	5.76062	4.46214	[.000]
SOUTH	11.9146	4.74994	2.50836	[.012]
WEST	-1.33363	5.29988	-.251633	[.801]
POV130	15.1879	10.3464	1.46794	[.142]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Joint F-Tests

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
AG	-30.3291	75.0140	-.404312	[.686]
PC	-27.8673	4.60791	-6.04771	[.000]
EM	-20.5107	9.19684	-2.23019	[.026]
ED	-40.5609	30.6692	-1.32253	[.186]
RC	-20.2990	18.1948	-1.11565	[.265]
HP	-1.07268	9.02887	-.118805	[.905]
RG	36.2856	12.8055	2.83359	[.005]
PV	15.1879	10.3464	1.46794	[.142]

Nutrient Regression: Calcium from all nonalcoholic beverages

Dependent variable: CALCIUM
Current sample: 1 to 5715
Number of observations: 5715

Mean of dep. var.	= 216.849	LM het. test	= 58.0696 [.000]
Std. dev. of dep. var.	= 174.139	Durbin-Watson	= 1.99974 [<.654]
Sum of squared residuals	= .163489E+09	Jarque-Bera test	= 19368.5 [.000]
Variance of residuals	= 28702.3	Ramsey's RESET2	= 5.93387 [.015]
Std. error of regression	= 169.418	F (zero slopes)	= 18.9389 [.000]
R-squared	= .056469	Schwarz B.I.C.	= 10.2902
Adjusted R-squared	= .053488	Log likelihood	= -37431.2

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	208.107	24.6925	8.42796	[.000]
AGE2539	3.29995	21.5830	.152896	[.878]
AGE4049	12.8886	21.6138	.596315	[.551]
AGE5065	8.95848	21.5689	.415343	[.678]
AGE65PLUS	23.3716	22.5728	1.03539	[.301]
AGEPCCHILD	-18.9815	5.48225	-3.46236	[.001]
EMPPARTTIME	-27.7716	6.83905	-4.06074	[.000]
EMPFULLTIME	-25.3223	6.27561	-4.03504	[.000]
EDUHIGHSCHOOL	22.8130	11.5063	1.98266	[.047]
EDUSOMECOLLEGE	17.2041	11.3383	1.51734	[.129]
EDUCOLLEGEPLUS	16.1029	11.3262	1.42174	[.155]
BLACK	-98.1344	5.43335	-18.0615	[.000]
ORIENTAL	-52.0951	19.8556	-2.62370	[.009]
OTHER	-50.4350	9.79446	-5.14933	[.000]
HISPYES	-13.8043	9.31716	-1.48159	[.139]
CENTRAL	37.5248	6.69637	5.60375	[.000]
SOUTH	9.75983	5.83139	1.67367	[.094]
WEST	19.8106	7.28729	2.71851	[.007]
POV130	-8.94491	10.5071	-.851321	[.395]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Joint F-Tests

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
AG	48.5187	85.1215	.569993	[.569]
PC	-18.9815	5.48225	-3.46236	[.001]
EM	-53.0939	11.7490	-4.51900	[.000]
ED	56.1200	32.6021	1.72136	[.085]
RC	-200.664	23.6345	-8.49032	[.000]
HP	-13.8043	9.31716	-1.48159	[.138]
RG	67.0952	16.0986	4.16777	[.000]
PV	-8.94491	10.5071	-.851321	[.395]

Nutrient Regression: Vitamin C from all nonalcoholic beverages

Dependent variable: VITC
Current sample: 1 to 5715
Number of observations: 5715

Mean of dep. var.	= 44.6138	LM het. test	= 43.4319 [.000]
Std. dev. of dep. var.	= 39.0901	Durbin-Watson	= 1.96049 [<.139]
Sum of squared residuals	= .833607E+07	Jarque-Bera test	= 49206.5 [.000]
Variance of residuals	= 1463.49	Ramsey's RESET2	= 5.57498 [.018]
Std. error of regression	= 38.2557	F (zero slopes)	= 14.9988 [.000]
R-squared	= .045253	Schwarz B.I.C.	= 7.31401
Adjusted R-squared	= .042236	Log likelihood	= -28926.8

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	42.8098	5.78069	7.40566	[.000]
AGE2539	-1.61819	4.72540	-.342444	[.732]
AGE4049	-1.37203	4.69310	-.292350	[.770]
AGE5065	-.888748	4.70068	-.189068	[.850]
AGE65PLUS	4.18525	4.87811	.857965	[.391]
AGEPCCHILD	-8.15956	1.23179	-6.62416	[.000]
EMPPARTTIME	-.061022	1.43702	-.042464	[.966]
EMPFULLTIME	-2.39163	1.29879	-1.84143	[.066]
EDUHIGHSCHOOL	4.40030	3.30784	1.33026	[.183]
EDUSOMECOLLEGE	6.01896	3.29688	1.82565	[.068]
EDUCOLLEGEPLUS	9.92201	3.29693	3.00946	[.003]
BLACK	21.5153	2.17017	9.91407	[.000]
ORIENTAL	4.29005	4.04069	1.06171	[.288]
OTHER	5.35990	2.88343	1.85886	[.063]
HISPYES	-.952618	2.29924	-.414319	[.679]
CENTRAL	-4.37559	1.47821	-2.96006	[.003]
SOUTH	-2.21341	1.49858	-1.47700	[.140]
WEST	-6.83760	1.62892	-4.19762	[.000]
POV130	-3.10099	2.46079	-1.26016	[.208]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Joint F-Tests

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
AG	.306285	18.5023	.016554	[.987]
PC	-8.15956	1.23179	-6.62416	[.000]
EM	-2.45265	2.40111	-1.02147	[.307]
ED	20.3413	9.65081	2.10773	[.035]
RC	31.1652	5.67054	5.49598	[.000]
HP	-.952618	2.29924	-.414319	[.679]
RG	-13.4266	3.93307	-3.41377	[.001]
PV	-3.10099	2.46079	-1.26016	[.208]

Nutrient Regression: Caffeine from all nonalcoholic beverages

Dependent variable: CAFFEINE
Current sample: 1 to 5715
Number of observations: 5715

Mean of dep. var.	= 94.9626	LM het. test	= 26.2330 [.000]
Std. dev. of dep. var.	= 114.129	Durbin-Watson	= 1.98694 [<.465]
Sum of squared residuals	= .679253E+08	Jarque-Bera test	= 926197. [.000]
Variance of residuals	= 11925.1	Ramsey's RESET2	= 7.62999 [.006]
Std. error of regression	= 109.202	F (zero slopes)	= 30.2915 [.000]
R-squared	= .087362	Schwarz B.I.C.	= 9.41183
Adjusted R-squared	= .084478	Log likelihood	= -34921.4

Variable	Estimated Coefficient	Standard Error	t-statistic	P-value
C	76.9629	10.7687	7.14692	[.000]
AGE2539	32.3018	6.04545	5.34316	[.000]
AGE4049	55.0695	6.28439	8.76290	[.000]
AGE5065	66.5168	6.41017	10.3768	[.000]
AGE65PLUS	60.4380	7.72334	7.82537	[.000]
AGEPCCHILD	-41.2607	2.82171	-14.6226	[.000]
EMPPARTTIME	-10.9383	4.44111	-2.46295	[.014]
EMPFULLTIME	-9.42563	3.85586	-2.44450	[.015]
EDUHIGHSCHOOL	10.2201	8.13699	1.25601	[.209]
EDUSOMECOLLEGE	-2.37711	7.93855	-.299439	[.765]
EDUCOLLEGEPLUS	-12.1057	8.20233	-1.47589	[.140]
BLACK	-35.7907	3.57633	-10.0077	[.000]
ORIENTAL	-36.3930	5.63729	-6.45576	[.000]
OTHER	-17.8826	5.65477	-3.16239	[.002]
HISPYES	2.05109	6.61247	.310186	[.756]
CENTRAL	-9.02140	4.57291	-1.97279	[.049]
SOUTH	-11.8529	3.88547	-3.05057	[.002]
WEST	-17.3276	4.29020	-4.03888	[.000]
POV130	5.01544	6.82078	.735318	[.462]

Standard Errors are heteroskedastic-consistent (HCTYPE=2).

Joint F-Tests

Results of Parameter Analysis
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Parameter	Estimate	Standard Error	t-statistic	P-value
AG	214.326	23.6774	9.05191	[.000]
PC	-41.2607	2.82171	-14.6226	[.000]
EM	-20.3639	7.40958	-2.74832	[.006]
ED	-4.26270	23.3390	-.182643	[.855]
RC	-90.0663	9.62867	-9.35397	[.000]
HP	2.05109	6.61247	.310186	[.756]
RG	-38.2019	10.5091	-3.63513	[.000]
PV	5.01544	6.82078	.735318	[.462]

APPENDIX I

ELASTICITIES – MODEL COMPARISONS

I-1. 8 Good – Annual – No Censoring Correction, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.436	0.260	0.008	0.027	0.055	0.095	0.109	-0.017	0.899
	[.000]	[.000]	[.297]	[.001]	[.000]	[.000]	[.000]	[.066]	[.000]
2	0.132	-1.075	-0.009	0.000	0.000	-0.251	-0.030	-0.033	1.266
	[.000]	[.000]	[.193]	[.981]	[.960]	[.000]	[.063]	[.000]	[.000]
3	0.019	-0.142	-0.662	0.016	0.060	-0.690	0.183	-0.055	1.271
	[.859]	[.197]	[.000]	[.759]	[.191]	[.000]	[.016]	[.168]	[.000]
4	0.500	0.003	0.026	-2.082	-0.074	0.173	0.005	0.206	1.243
	[.005]	[.986]	[.755]	[.000]	[.304]	[.273]	[.966]	[.001]	[.000]
5	0.404	0.064	0.038	-0.024	-1.493	-0.051	-0.094	0.122	1.033
	[.000]	[.464]	[.141]	[.351]	[.000]	[.521]	[.096]	[.000]	[.000]
6	0.127	-0.143	-0.040	0.013	0.002	-0.856	0.086	0.039	0.770
	[.000]	[.000]	[.000]	[.063]	[.830]	[.000]	[.000]	[.000]	[.000]
7	0.240	-0.046	0.038	0.002	-0.034	0.147	-1.376	-0.079	1.108
	[.000]	[.364]	[.009]	[.881]	[.073]	[.001]	[.000]	[.000]	[.000]
8	-0.053	-0.071	-0.014	0.064	0.106	0.265	-0.143	-0.848	0.693
	[.351]	[.273]	[.431]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-2. 8 Good – Annual – No Censoring Correction, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.208	0.523	0.024	0.037	0.084	0.325	0.194	0.020
	[.000]	[.000]	[.002]	[.000]	[.000]	[.000]	[.000]	[.032]
2	0.454	-0.704	0.014	0.014	0.040	0.072	0.090	0.018
	[.000]	[.000]	[.032]	[.029]	[.000]	[.002]	[.000]	[.036]
3	0.342	0.230	-0.639	0.031	0.101	-0.365	0.303	-0.003
	[.002]	[.032]	[.000]	[.562]	[.028]	[.000]	[.000]	[.940]
4	0.816	0.367	0.049	-2.068	-0.034	0.491	0.123	0.257
	[.000]	[.029]	[.562]	[.000]	[.636]	[.002]	[.302]	[.000]
5	0.667	0.366	0.057	-0.012	-1.459	0.214	0.004	0.164
	[.000]	[.000]	[.028]	[.636]	[.000]	[.006]	[.948]	[.000]
6	0.323	0.083	-0.026	0.022	0.027	-0.659	0.159	0.071
	[.000]	[.002]	[.000]	[.002]	[.006]	[.000]	[.000]	[.000]
7	0.522	0.278	0.058	0.015	0.001	0.431	-1.271	-0.033
	[.000]	[.000]	[.000]	[.302]	[.948]	[.000]	[.000]	[.057]
8	0.123	0.132	-0.001	0.072	0.129	0.442	-0.077	-0.820
	[.032]	[.036]	[.940]	[.000]	[.000]	[.000]	[.057]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-3. 8 Good – Annual – Censored Corrected, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.642	0.178	0.036	0.118	0.106	0.057	0.156	-0.027	1.019
	[.000]	[.000]	[.011]	[.000]	[.000]	[.116]	[.000]	[.031]	[.000]
2	0.092	-1.160	0.000	0.011	0.035	-0.191	-0.002	-0.049	1.264
	[.000]	[.000]	[.987]	[.026]	[.000]	[.000]	[.922]	[.000]	[.000]
3	0.400	-0.049	-0.384	0.163	-0.070	-1.320	-0.057	-0.107	1.425
	[.045]	[.638]	[.000]	[.036]	[.408]	[.000]	[.671]	[.010]	[.000]
4	2.556	0.302	0.260	-2.555	-0.902	-0.116	-0.948	0.194	1.209
	[.000]	[.032]	[.033]	[.000]	[.000]	[.781]	[.001]	[.000]	[.000]
5	0.833	0.385	-0.032	-0.322	-1.760	-0.142	-0.128	0.128	1.039
	[.000]	[.000]	[.497]	[.000]	[.000]	[.198]	[.090]	[.001]	[.000]
6	0.134	-0.058	-0.081	0.000	-0.007	-0.796	0.050	0.043	0.715
	[.000]	[.039]	[.000]	[.979]	[.585]	[.000]	[.025]	[.000]	[.000]
7	0.421	0.070	-0.003	-0.113	-0.043	0.059	-1.355	-0.044	1.008
	[.000]	[.175]	[.898]	[.001]	[.099]	[.332]	[.000]	[.047]	[.000]
8	-0.029	-0.120	-0.030	0.063	0.119	0.329	-0.053	-0.760	0.480
	[.707]	[.152]	[.098]	[.000]	[.000]	[.000]	[.307]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-4. 8 Good – Annual – Censored Corrected, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.383	0.476	0.054	0.130	0.139	0.318	0.252	0.015
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.222]
2	0.413	-0.791	0.023	0.026	0.076	0.132	0.118	0.003
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.799]
3	0.762	0.368	-0.359	0.179	-0.024	-0.955	0.078	-0.049
	[.000]	[.000]	[.000]	[.021]	[.776]	[.000]	[.566]	[.237]
4	2.863	0.656	0.282	-2.541	-0.864	0.194	-0.833	0.243
	[.000]	[.000]	[.021]	[.000]	[.000]	[.639]	[.004]	[.000]
5	1.097	0.689	-0.014	-0.310	-1.727	0.124	-0.030	0.171
	[.000]	[.000]	[.776]	[.000]	[.000]	[.253]	[.693]	[.000]
6	0.316	0.151	-0.068	0.009	0.016	-0.613	0.117	0.072
	[.000]	[.000]	[.000]	[.639]	[.253]	[.000]	[.000]	[.000]
7	0.678	0.365	0.015	-0.102	-0.010	0.317	-1.260	-0.003
	[.000]	[.000]	[.566]	[.004]	[.693]	[.000]	[.000]	[.887]
8	0.093	0.021	-0.022	0.069	0.134	0.452	-0.007	-0.740
	[.222]	[.799]	[.237]	[.000]	[.000]	[.000]	[.887]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-5. 8 Good – Quarterly – No Censoring Correction, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.258	0.174	-0.011	0.026	0.061	0.035	0.130	-0.006	0.848
	[.000]	[.000]	[.037]	[.000]	[.000]	[.011]	[.000]	[.353]	[.000]
2	0.057	-0.975	-0.008	0.004	-0.015	-0.227	-0.058	-0.023	1.244
	[.000]	[.000]	[.070]	[.385]	[.017]	[.000]	[.000]	[.000]	[.000]
3	-0.315	-0.178	-0.203	-0.158	0.024	-0.756	0.205	-0.026	1.408
	[.000]	[.016]	[.000]	[.002]	[.562]	[.000]	[.001]	[.445]	[.000]
4	0.485	0.089	-0.228	-1.920	-0.077	0.178	0.033	0.183	1.257
	[.000]	[.407]	[.002]	[.000]	[.220]	[.074]	[.721]	[.000]	[.000]
5	0.438	-0.105	0.017	-0.027	-1.456	0.076	-0.170	0.082	1.145
	[.000]	[.063]	[.435]	[.241]	[.000]	[.144]	[.000]	[.001]	[.000]
6	0.053	-0.121	-0.039	0.013	0.021	-0.775	0.037	0.027	0.783
	[.000]	[.000]	[.000]	[.003]	[.001]	[.000]	[.000]	[.000]	[.000]
7	0.266	-0.158	0.039	0.005	-0.057	-0.005	-1.174	-0.108	1.193
	[.000]	[.000]	[.000]	[.673]	[.000]	[.850]	[.000]	[.000]	[.000]
8	-0.032	-0.041	-0.001	0.057	0.073	0.160	-0.221	-0.823	0.829
	[.420]	[.328]	[.935]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-6. 8 Good – Quarterly – No Censoring Correction, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.034	0.416	0.004	0.035	0.087	0.252	0.211	0.029
	[.000]	[.000]	[.480]	[.000]	[.000]	[.000]	[.000]	[.000]
2	0.385	-0.621	0.013	0.018	0.024	0.092	0.061	0.028
	[.000]	[.000]	[.002]	[.000]	[.000]	[.000]	[.000]	[.000]
3	0.057	0.223	-0.180	-0.142	0.068	-0.396	0.340	0.031
	[.480]	[.002]	[.002]	[.005]	[.099]	[.000]	[.000]	[.370]
4	0.816	0.447	-0.207	-1.905	-0.038	0.499	0.154	0.234
	[.000]	[.000]	[.005]	[.000]	[.547]	[.000]	[.099]	[.000]
5	0.740	0.221	0.036	-0.014	-1.421	0.369	-0.060	0.128
	[.000]	[.000]	[.099]	[.547]	[.000]	[.000]	[.167]	[.000]
6	0.260	0.102	-0.026	0.022	0.045	-0.575	0.112	0.059
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
7	0.581	0.181	0.059	0.018	-0.020	0.300	-1.060	-0.060
	[.000]	[.000]	[.000]	[.099]	[.167]	[.000]	[.000]	[.000]
8	0.187	0.195	0.013	0.066	0.099	0.372	-0.142	-0.789
	[.000]	[.000]	[.370]	[.000]	[.000]	[.000]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-7. 8 Good – Quarterly – Censored Corrected, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.776	0.174	0.043	0.223	0.199	0.161	0.186	0.014	0.775
	[.000]	[.000]	[.008]	[.000]	[.000]	[.000]	[.000]	[.266]	[.000]
2	0.027	-0.996	0.003	-0.003	0.030	-0.228	-0.042	-0.073	1.282
	[.103]	[.000]	[.202]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
3	0.251	-0.255	1.197	-0.016	-0.215	-2.915	-0.315	-0.106	2.374
	[.325]	[.000]	[.000]	[.000]	[.100]	[.000]	[.100]	[.005]	[.000]
4	5.129	0.039	0.002	-1.327	-2.005	-0.986	-1.720	0.006	0.863
	[.000]	[.505]	[.505]	[.071]	[.000]	[.024]	[.000]	[.505]	[.000]
5	1.566	0.294	-0.096	-0.740	-2.140	-0.110	-0.148	0.158	1.215
	[.000]	[.000]	[.170]	[.000]	[.000]	[.359]	[.121]	[.001]	[.000]
6	0.177	-0.098	-0.163	-0.043	0.002	-0.720	0.052	0.057	0.735
	[.000]	[.000]	[.000]	[.028]	[.913]	[.000]	[.000]	[.000]	[.000]
7	0.396	-0.109	-0.036	-0.210	-0.048	0.016	-1.075	-0.155	1.221
	[.000]	[.001]	[.290]	[.000]	[.120]	[.564]	[.000]	[.000]	[.000]
8	0.049	-0.416	-0.020	0.001	0.130	0.309	-0.340	-0.652	0.939
	[.557]	[.000]	[.201]	[.054]	[.000]	[.000]	[.000]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-8. 8 Good – Quarterly – Censored Corrected, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.571	0.395	0.056	0.232	0.223	0.359	0.261	0.046
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]
2	0.366	-0.631	0.025	0.011	0.070	0.100	0.080	-0.021
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.065]
3	0.878	0.421	1.236	0.011	-0.141	-2.308	-0.088	-0.010
	[.000]	[.000]	[.000]	[.000]	[.280]	[.000]	[.649]	[.796]
4	5.357	0.285	0.017	-1.318	-1.978	-0.765	-1.638	0.040
	[.000]	[.000]	[.000]	[.073]	[.000]	[.077]	[.000]	[.000]
5	1.887	0.640	-0.076	-0.726	-2.102	0.201	-0.031	0.207
	[.000]	[.000]	[.280]	[.000]	[.000]	[.087]	[.742]	[.000]
6	0.371	0.112	-0.151	-0.034	0.024	-0.532	0.123	0.087
	[.000]	[.000]	[.000]	[.077]	[.087]	[.000]	[.000]	[.000]
7	0.718	0.239	-0.015	-0.196	-0.010	0.328	-0.958	-0.106
	[.000]	[.000]	[.649]	[.000]	[.742]	[.000]	[.000]	[.000]
8	0.297	-0.149	-0.004	0.011	0.160	0.549	-0.250	-0.614
	[.000]	[.065]	[.796]	[.000]	[.000]	[.000]	[.000]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

I-9. 16 Good - Annual - No Censoring Correction, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TE
1	-3.279	1.784	-0.154	0.603	-0.183	0.149	0.051	0.098	0.000	0.099	-0.085	-0.041	-0.091	0.097	-0.169	0.038	1.084
	[.000]	[.000]	[.087]	[.000]	[.000]	[.000]	[.190]	[.181]	[.998]	[.161]	[.128]	[.338]	[.148]	[.054]	[.000]	[.281]	[.000]
2	0.430	-1.865	0.098	0.096	0.019	0.005	0.064	-0.012	0.025	0.078	0.058	-0.024	0.091	0.063	-0.001	0.018	0.857
	[.000]	[.000]	[.002]	[.001]	[.057]	[.589]	[.000]	[.609]	[.012]	[.000]	[.001]	[.032]	[.000]	[.000]	[.911]	[.045]	[.000]
3	-0.049	0.030	-0.938	-0.014	-0.062	-0.001	0.030	-0.054	-0.028	-0.009	-0.123	-0.019	-0.014	0.026	-0.041	0.017	1.249
	[.040]	[.388]	[.000]	[.698]	[.000]	[.908]	[.036]	[.036]	[.007]	[.701]	[.000]	[.124]	[.540]	[.077]	[.000]	[.082]	[.000]
4	0.254	0.087	-0.034	-1.316	0.081	-0.013	-0.033	-0.092	-0.039	-0.120	0.019	-0.024	-0.051	0.018	-0.009	-0.035	1.307
	[.000]	[.115]	[.571]	[.000]	[.000]	[.450]	[.156]	[.029]	[.031]	[.001]	[.552]	[.250]	[.171]	[.463]	[.622]	[.033]	[.000]
5	-0.499	0.124	-0.631	0.494	-0.653	-0.002	0.062	0.009	-0.088	0.118	-0.529	-0.019	0.083	0.229	-0.010	0.021	1.292
	[.000]	[.265]	[.000]	[.000]	[.000]	[.964]	[.198]	[.921]	[.094]	[.201]	[.000]	[.751]	[.294]	[.001]	[.784]	[.672]	[.000]
6	0.621	0.018	-0.011	-0.111	-0.002	-2.321	-0.055	0.067	0.059	-0.314	0.448	0.099	-0.040	0.134	0.188	0.013	1.208
	[.000]	[.912]	[.947]	[.491]	[.979]	[.000]	[.431]	[.642]	[.649]	[.050]	[.000]	[.442]	[.734]	[.373]	[.000]	[.912]	[.000]
7	0.079	0.375	0.210	-0.084	0.039	-0.018	-1.451	-0.120	-0.029	-0.186	0.145	-0.015	0.049	-0.153	0.126	0.000	1.034
	[.177]	[.000]	[.010]	[.297]	[.144]	[.480]	[.000]	[.051]	[.278]	[.001]	[.001]	[.627]	[.373]	[.000]	[.000]	[.988]	[.000]
8	0.072	0.017	0.005	-0.036	0.013	0.015	-0.029	-0.616	-0.092	0.017	-0.091	-0.022	0.101	0.028	-0.002	-0.030	0.651
	[.058]	[.732]	[.924]	[.469]	[.456]	[.408]	[.170]	[.000]	[.000]	[.643]	[.002]	[.306]	[.003]	[.258]	[.883]	[.077]	[.000]
9	0.006	0.251	-0.224	-0.188	-0.079	0.039	-0.047	-0.488	-1.004	0.030	-0.125	0.219	0.143	0.241	0.032	0.242	0.952
	[.951]	[.018]	[.031]	[.074]	[.120]	[.623]	[.304]	[.000]	[.000]	[.765]	[.086]	[.003]	[.061]	[.005]	[.368]	[.000]	[.000]
10	0.092	0.282	0.086	-0.123	0.043	-0.047	-0.076	0.024	0.014	-1.052	0.054	-0.005	0.057	-0.055	0.057	0.002	0.648
	[.068]	[.000]	[.157]	[.044]	[.079]	[.084]	[.004]	[.639]	[.612]	[.000]	[.159]	[.880]	[.182]	[.128]	[.006]	[.944]	[.000]
11	-0.071	0.154	-0.356	0.058	-0.159	0.089	0.077	-0.187	-0.042	0.032	-1.049	0.126	0.070	-0.014	0.140	0.034	1.098
	[.124]	[.008]	[.000]	[.323]	[.000]	[.000]	[.002]	[.000]	[.067]	[.470]	[.000]	[.000]	[.085]	[.645]	[.000]	[.106]	[.000]
12	-0.088	-0.219	-0.065	-0.063	-0.005	0.074	-0.011	-0.104	0.248	-0.009	0.466	-0.287	-0.153	-0.233	-0.030	-0.025	0.505
	[.468]	[.103]	[.621]	[.632]	[.930]	[.388]	[.850]	[.366]	[.002]	[.944]	[.000]	[.017]	[.110]	[.019]	[.505]	[.731]	[.000]
13	-0.060	0.188	-0.011	-0.054	0.023	-0.005	0.017	0.078	0.032	0.018	0.052	-0.045	-1.361	0.059	-0.070	0.011	1.128
	[.134]	[.000]	[.836]	[.318]	[.227]	[.774]	[.447]	[.061]	[.090]	[.633]	[.097]	[.036]	[.000]	[.021]	[.000]	[.538]	[.000]
14	0.262	0.684	0.299	0.139	0.233	0.087	-0.270	0.109	0.247	-0.229	-0.042	-0.229	0.256	-2.109	-0.076	-0.386	1.025
	[.051]	[.000]	[.041]	[.345]	[.001]	[.362]	[.000]	[.392]	[.005]	[.087]	[.676]	[.015]	[.017]	[.000]	[.127]	[.000]	[.000]
15	-0.270	0.015	-0.167	0.026	0.003	0.081	0.150	-0.017	0.025	0.127	0.309	-0.022	-0.157	-0.043	-0.820	0.015	0.744
	[.000]	[.834]	[.025]	[.722]	[.886]	[.000]	[.000]	[.761]	[.285]	[.009]	[.000]	[.413]	[.001]	[.172]	[.000]	[.488]	[.000]
16	0.173	0.362	0.376	-0.228	0.044	0.020	0.014	-0.219	0.375	0.016	0.196	-0.036	0.109	-0.561	0.039	-1.239	0.557
	[.206]	[.015]	[.009]	[.119]	[.542]	[.860]	[.821]	[.089]	[.000]	[.909]	[.054]	[.724]	[.305]	[.000]	[.422]	[.000]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-10. 16 Good - Annual - No Censoring Correction, Compensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-3.226	2.007	0.044	0.722	-0.163	0.162	0.085	0.199	0.020	0.172	-0.021	-0.022	-0.008	0.117	-0.138	0.051
	[.000]	[.000]	[.625]	[.000]	[.000]	[.000]	[.027]	[.006]	[.593]	[.014]	[.703]	[.600]	[.896]	[.021]	[.000]	[.144]
2	0.471	-1.688	0.254	0.190	0.034	0.015	0.092	0.069	0.041	0.136	0.108	-0.010	0.156	0.079	0.023	0.028
	[.000]	[.000]	[.000]	[.000]	[.001]	[.110]	[.000]	[.002]	[.000]	[.000]	[.000]	[.395]	[.000]	[.000]	[.021]	[.001]
3	0.012	0.287	-0.710	0.124	-0.039	0.013	0.070	0.063	-0.005	0.076	-0.050	0.003	0.081	0.048	-0.005	0.032
	[.625]	[.000]	[.000]	[.000]	[.000]	[.181]	[.000]	[.013]	[.627]	[.001]	[.008]	[.833]	[.000]	[.001]	[.671]	[.001]
4	0.317	0.356	0.205	-1.173	0.105	0.002	0.009	0.031	-0.014	-0.032	0.095	-0.001	0.048	0.042	0.028	-0.019
	[.000]	[.000]	[.000]	[.000]	[.000]	[.894]	[.711]	[.466]	[.427]	[.396]	[.002]	[.953]	[.197]	[.087]	[.139]	[.253]
5	-0.436	0.390	-0.395	0.636	-0.629	0.013	0.103	0.130	-0.064	0.205	-0.453	0.003	0.181	0.252	0.027	0.037
	[.000]	[.001]	[.000]	[.000]	[.000]	[.813]	[.031]	[.161]	[.224]	[.026]	[.000]	[.953]	[.021]	[.000]	[.477]	[.453]
6	0.679	0.267	0.210	0.022	0.020	-2.307	-0.016	0.180	0.081	-0.232	0.519	0.119	0.052	0.156	0.222	0.028
	[.000]	[.110]	[.181]	[.894]	[.813]	[.000]	[.817]	[.211]	[.528]	[.146]	[.000]	[.352]	[.659]	[.300]	[.000]	[.815]
7	0.129	0.588	0.399	0.030	0.058	-0.006	-1.418	-0.023	-0.009	-0.116	0.206	0.003	0.128	-0.134	0.155	0.012
	[.027]	[.000]	[.000]	[.711]	[.031]	[.817]	[.000]	[.705]	[.723]	[.034]	[.000]	[.926]	[.019]	[.000]	[.000]	[.611]
8	0.103	0.151	0.124	0.036	0.025	0.022	-0.008	-0.555	-0.080	0.061	-0.053	-0.010	0.150	0.040	0.016	-0.022
	[.006]	[.002]	[.013]	[.466]	[.161]	[.211]	[.705]	[.000]	[.000]	[.094]	[.072]	[.620]	[.000]	[.108]	[.334]	[.195]
9	0.052	0.447	-0.050	-0.083	-0.062	0.050	-0.016	-0.399	-0.986	0.094	-0.069	0.236	0.216	0.258	0.059	0.254
	[.593]	[.000]	[.627]	[.427]	[.224]	[.528]	[.723]	[.000]	[.000]	[.342]	[.343]	[.001]	[.005]	[.002]	[.094]	[.000]
10	0.123	0.415	0.205	-0.052	0.055	-0.040	-0.055	0.084	0.026	-1.009	0.092	0.006	0.107	-0.043	0.075	0.010
	[.014]	[.000]	[.001]	[.396]	[.026]	[.146]	[.034]	[.094]	[.342]	[.000]	[.016]	[.833]	[.013]	[.232]	[.000]	[.698]
11	-0.017	0.380	-0.155	0.179	-0.140	0.102	0.113	-0.085	-0.022	0.106	-0.984	0.144	0.154	0.006	0.172	0.048
	[.703]	[.000]	[.008]	[.002]	[.000]	[.000]	[.000]	[.072]	[.343]	[.016]	[.000]	[.000]	[.000]	[.856]	[.000]	[.024]
12	-0.063	-0.116	0.028	-0.008	0.004	0.080	0.005	-0.057	0.257	0.026	0.496	-0.279	-0.115	-0.224	-0.015	-0.019
	[.600]	[.395]	[.833]	[.953]	[.953]	[.352]	[.926]	[.620]	[.001]	[.833]	[.000]	[.021]	[.232]	[.025]	[.733]	[.795]
13	-0.005	0.421	0.195	0.070	0.043	0.008	0.054	0.184	0.053	0.095	0.118	-0.026	-1.275	0.079	-0.037	0.024
	[.896]	[.000]	[.000]	[.197]	[.021]	[.659]	[.019]	[.000]	[.005]	[.013]	[.000]	[.232]	[.000]	[.002]	[.042]	[.154]
14	0.312	0.895	0.486	0.252	0.252	0.099	-0.238	0.205	0.266	-0.160	0.018	-0.212	0.335	-2.090	-0.046	-0.374
	[.021]	[.000]	[.001]	[.087]	[.000]	[.300]	[.000]	[.108]	[.002]	[.232]	[.856]	[.025]	[.002]	[.000]	[.349]	[.000]
15	-0.234	0.168	-0.031	0.108	0.017	0.090	0.174	0.053	0.038	0.178	0.353	-0.009	-0.100	-0.029	-0.799	0.024
	[.000]	[.021]	[.671]	[.139]	[.477]	[.000]	[.000]	[.334]	[.094]	[.000]	[.000]	[.733]	[.042]	[.349]	[.000]	[.260]
16	0.200	0.477	0.478	-0.167	0.054	0.026	0.032	-0.167	0.385	0.054	0.229	-0.027	0.152	-0.551	0.055	-1.232
	[.144]	[.001]	[.001]	[.253]	[.453]	[.815]	[.611]	[.195]	[.000]	[.698]	[.024]	[.795]	[.154]	[.000]	[.260]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-11. 16 Good - Annual - Censored Corrected, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TE
1	-4.867	2.343	-0.422	0.771	-0.258	0.409	0.068	0.105	0.035	0.094	-0.090	-0.080	-0.210	0.416	-0.263	0.741	1.207
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.251]	[.282]	[.535]	[.294]	[.200]	[.294]	[.027]	[.001]	[.000]	[.000]	[.000]
2	0.569	-1.912	0.064	0.095	0.025	0.028	0.086	0.006	0.034	0.078	0.048	-0.008	0.076	0.085	-0.009	-0.084	0.820
	[.000]	[.000]	[.005]	[.001]	[.023]	[.069]	[.000]	[.734]	[.000]	[.000]	[.000]	[.544]	[.000]	[.000]	[.382]	[.002]	[.000]
3	-0.116	-0.025	-0.980	-0.018	-0.077	0.015	0.052	-0.046	-0.018	0.008	-0.077	-0.007	-0.005	0.000	-0.032	0.035	1.291
	[.000]	[.311]	[.000]	[.549]	[.000]	[.353]	[.000]	[.011]	[.074]	[.594]	[.000]	[.635]	[.782]	[.988]	[.002]	[.248]	[.000]
4	0.330	0.062	-0.045	-1.331	0.112	-0.037	-0.008	-0.099	-0.077	-0.101	-0.022	-0.065	-0.015	0.058	-0.008	-0.132	1.379
	[.000]	[.233]	[.356]	[.000]	[.000]	[.295]	[.778]	[.020]	[.001]	[.007]	[.470]	[.045]	[.732]	[.272]	[.749]	[.030]	[.000]
5	-0.699	0.157	-0.803	0.676	-0.510	0.035	0.056	0.247	-0.138	0.208	-0.443	-0.142	0.058	0.042	-0.093	-0.060	1.410
	[.000]	[.204]	[.000]	[.000]	[.000]	[.746]	[.462]	[.052]	[.061]	[.071]	[.000]	[.162]	[.640]	[.794]	[.126]	[.702]	[.000]
6	1.711	0.404	0.234	-0.344	0.057	-3.864	-0.426	0.265	0.265	-0.634	0.861	0.233	-0.826	0.579	0.499	-0.299	1.285
	[.000]	[.143]	[.356]	[.307]	[.734]	[.000]	[.016]	[.430]	[.295]	[.068]	[.001]	[.437]	[.004]	[.135]	[.000]	[.409]	[.000]
7	0.111	0.509	0.343	0.011	0.038	-0.150	-1.637	-0.205	-0.089	-0.227	0.066	-0.038	0.072	-0.277	0.140	0.302	1.032
	[.215]	[.000]	[.000]	[.911]	[.371]	[.019]	[.000]	[.002]	[.016]	[.000]	[.172]	[.445]	[.283]	[.001]	[.000]	[.001]	[.000]
8	0.085	0.062	0.039	-0.030	0.063	0.041	-0.056	-0.612	-0.091	0.015	-0.076	-0.014	0.093	0.075	0.000	-0.178	0.586
	[.093]	[.110]	[.274]	[.554]	[.010]	[.325]	[.013]	[.000]	[.000]	[.634]	[.002]	[.606]	[.006]	[.071]	[.989]	[.000]	[.000]
9	0.105	0.352	-0.115	-0.408	-0.126	0.168	-0.150	-0.490	-1.023	0.165	-0.256	0.368	0.041	0.313	-0.005	0.118	0.943
	[.480]	[.001]	[.254]	[.003]	[.078]	[.284]	[.018]	[.000]	[.000]	[.250]	[.020]	[.003]	[.730]	[.044]	[.929]	[.408]	[.000]
10	0.097	0.283	0.150	-0.078	0.071	-0.100	-0.094	0.019	0.052	-1.054	-0.029	0.053	0.032	-0.065	0.053	0.016	0.594
	[.128]	[.000]	[.000]	[.198]	[.022]	[.090]	[.001]	[.646]	[.187]	[.000]	[.425]	[.174]	[.482]	[.250]	[.020]	[.792]	[.000]
11	-0.057	0.160	-0.159	0.016	-0.127	0.174	0.042	-0.146	-0.080	-0.051	-1.034	0.167	0.037	-0.080	0.141	0.144	0.853
	[.325]	[.000]	[.000]	[.780]	[.000]	[.001]	[.111]	[.000]	[.023]	[.227]	[.000]	[.000]	[.382]	[.130]	[.000]	[.012]	[.000]
12	-0.188	-0.015	0.091	-0.311	-0.132	0.167	-0.052	-0.058	0.411	0.224	0.599	0.428	-0.683	-0.580	-0.116	-0.197	0.410
	[.383]	[.928]	[.543]	[.136]	[.216]	[.408]	[.580]	[.690]	[.002]	[.153]	[.000]	[.064]	[.000]	[.008]	[.176]	[.359]	[.000]
13	-0.126	0.155	0.030	0.014	0.020	-0.122	0.029	0.069	0.008	-0.003	0.016	-0.164	-1.394	0.176	-0.059	0.294	1.056
	[.038]	[.001]	[.516]	[.825]	[.495]	[.006]	[.297]	[.095]	[.787]	[.946]	[.619]	[.000]	[.000]	[.001]	[.012]	[.000]	[.000]
14	1.104	0.860	-0.004	0.356	0.044	0.368	-0.500	0.316	0.315	-0.294	-0.286	-0.563	0.719	-3.731	0.032	-0.066	1.329
	[.001]	[.000]	[.987]	[.266]	[.787]	[.137]	[.001]	[.142]	[.050]	[.171]	[.095]	[.007]	[.002]	[.000]	[.792]	[.844]	[.000]
15	-0.415	-0.014	-0.076	0.058	-0.044	0.209	0.171	0.000	0.003	0.127	0.305	-0.072	-0.124	0.034	-0.718	-0.035	0.592
	[.000]	[.836]	[.260]	[.526]	[.253]	[.000]	[.000]	[.997]	[.930]	[.021]	[.000]	[.158]	[.050]	[.663]	[.000]	[.685]	[.000]
16	2.889	-1.581	0.450	-1.207	-0.093	-0.284	0.768	-1.455	0.167	0.016	0.641	-0.294	1.779	-0.103	-0.112	-3.221	1.639
	[.000]	[.000]	[.317]	[.027]	[.688]	[.403]	[.001]	[.000]	[.444]	[.961]	[.019]	[.324]	[.000]	[.836]	[.579]	[.000]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-12. 16 Good - Annual - Censored Corrected, Compensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-4.808	2.592	-0.201	0.904	-0.236	0.423	0.107	0.218	0.058	0.175	-0.019	-0.060	-0.118	0.438	-0.228	0.755
	[.000]	[.000]	[.090]	[.000]	[.000]	[.000]	[.071]	[.025]	[.309]	[.048]	[.788]	[.435]	[.218]	[.000]	[.000]	[.000]
2	0.609	-1.743	0.214	0.185	0.039	0.037	0.113	0.083	0.050	0.133	0.096	0.006	0.138	0.100	0.015	-0.074
	[.000]	[.000]	[.000]	[.000]	[.000]	[.015]	[.000]	[.000]	[.000]	[.000]	[.000]	[.668]	[.000]	[.000]	[.127]	[.005]
3	-0.053	0.241	-0.744	0.124	-0.054	0.030	0.093	0.075	0.006	0.096	-0.001	0.016	0.093	0.024	0.005	0.051
	[.090]	[.000]	[.000]	[.000]	[.000]	[.062]	[.000]	[.000]	[.567]	[.000]	[.932]	[.263]	[.000]	[.296]	[.631]	[.092]
4	0.397	0.346	0.207	-1.179	0.137	-0.021	0.036	0.030	-0.052	-0.008	0.059	-0.041	0.090	0.083	0.032	-0.115
	[.000]	[.000]	[.000]	[.000]	[.000]	[.549]	[.200]	[.486]	[.027]	[.832]	[.056]	[.202]	[.039]	[.116]	[.175]	[.059]
5	-0.630	0.448	-0.546	0.831	-0.484	0.051	0.101	0.378	-0.112	0.304	-0.360	-0.118	0.165	0.068	-0.053	-0.043
	[.000]	[.000]	[.000]	[.000]	[.000]	[.633]	[.184]	[.003]	[.129]	[.008]	[.000]	[.244]	[.183]	[.675]	[.387]	[.785]
6	1.773	0.669	0.469	-0.203	0.080	-3.849	-0.385	0.385	0.289	-0.547	0.937	0.255	-0.727	0.602	0.536	-0.283
	[.000]	[.015]	[.062]	[.549]	[.633]	[.000]	[.031]	[.250]	[.254]	[.114]	[.000]	[.395]	[.012]	[.121]	[.000]	[.435]
7	0.160	0.722	0.532	0.124	0.057	-0.138	-1.604	-0.108	-0.069	-0.158	0.127	-0.021	0.151	-0.258	0.169	0.315
	[.071]	[.000]	[.000]	[.200]	[.184]	[.031]	[.000]	[.098]	[.059]	[.007]	[.009]	[.680]	[.025]	[.002]	[.000]	[.001]
8	0.113	0.182	0.146	0.035	0.073	0.047	-0.037	-0.557	-0.080	0.054	-0.041	-0.004	0.137	0.085	0.017	-0.171
	[.025]	[.000]	[.000]	[.486]	[.003]	[.250]	[.098]	[.000]	[.000]	[.075]	[.096]	[.893]	[.000]	[.039]	[.336]	[.000]
9	0.150	0.547	0.057	-0.304	-0.109	0.178	-0.119	-0.402	-1.005	0.229	-0.201	0.384	0.113	0.330	0.022	0.130
	[.309]	[.000]	[.567]	[.027]	[.129]	[.254]	[.059]	[.000]	[.000]	[.110]	[.068]	[.002]	[.347]	[.034]	[.699]	[.364]
10	0.125	0.405	0.258	-0.013	0.081	-0.093	-0.075	0.075	0.063	-1.013	0.005	0.064	0.078	-0.055	0.070	0.023
	[.048]	[.000]	[.000]	[.832]	[.008]	[.114]	[.007]	[.075]	[.110]	[.000]	[.883]	[.105]	[.091]	[.337]	[.002]	[.701]
11	-0.015	0.336	-0.004	0.110	-0.111	0.184	0.069	-0.066	-0.064	0.006	-0.984	0.182	0.102	-0.064	0.165	0.154
	[.788]	[.000]	[.932]	[.056]	[.000]	[.000]	[.009]	[.096]	[.068]	[.883]	[.000]	[.000]	[.015]	[.222]	[.000]	[.007]
12	-0.168	0.070	0.166	-0.266	-0.125	0.171	-0.039	-0.019	0.419	0.252	0.623	0.435	-0.652	-0.572	-0.104	-0.192
	[.435]	[.668]	[.263]	[.202]	[.244]	[.395]	[.680]	[.893]	[.002]	[.105]	[.000]	[.060]	[.000]	[.009]	[.225]	[.372]
13	-0.075	0.373	0.223	0.130	0.039	-0.110	0.063	0.168	0.028	0.069	0.078	-0.146	-1.313	0.195	-0.029	0.307
	[.218]	[.000]	[.000]	[.039]	[.183]	[.012]	[.025]	[.000]	[.347]	[.091]	[.015]	[.000]	[.000]	[.000]	[.216]	[.000]
14	1.168	1.133	0.239	0.502	0.068	0.383	-0.457	0.440	0.340	-0.204	-0.208	-0.540	0.821	-3.706	0.070	-0.050
	[.000]	[.000]	[.296]	[.116]	[.675]	[.121]	[.002]	[.039]	[.034]	[.337]	[.222]	[.009]	[.000]	[.000]	[.566]	[.883]
15	-0.387	0.107	0.032	0.123	-0.033	0.216	0.190	0.056	0.014	0.167	0.340	-0.062	-0.078	0.045	-0.701	-0.028
	[.000]	[.127]	[.631]	[.175]	[.387]	[.000]	[.000]	[.336]	[.699]	[.002]	[.000]	[.225]	[.216]	[.566]	[.000]	[.747]
16	2.968	-1.244	0.750	-1.027	-0.063	-0.265	0.821	-1.301	0.197	0.127	0.737	-0.266	1.904	-0.073	-0.065	-3.201
	[.000]	[.005]	[.092]	[.059]	[.785]	[.435]	[.001]	[.000]	[.364]	[.701]	[.007]	[.372]	[.000]	[.883]	[.747]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-13. 16 Good - Quarterly - No Censoring Correction, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TE
1	-3.402	1.545	-0.059	0.692	-0.241	0.228	0.081	0.061	0.012	0.114	-0.015	-0.020	-0.050	0.225	-0.144	0.009	0.964
	[.000]	[.000]	[.303]	[.000]	[.000]	[.000]	[.011]	[.260]	[.736]	[.041]	[.731]	[.602]	[.301]	[.000]	[.000]	[.795]	[.000]
2	0.328	-1.633	0.046	0.088	-0.005	0.003	0.070	-0.021	0.018	0.085	0.019	-0.020	0.098	0.069	0.000	0.035	0.820
	[.000]	[.000]	[.009]	[.000]	[.433]	[.593]	[.000]	[.151]	[.011]	[.000]	[.090]	[.008]	[.000]	[.000]	[.978]	[.000]	[.000]
3	-0.028	-0.032	-0.838	0.005	-0.056	0.006	-0.001	-0.086	-0.040	-0.040	-0.104	-0.005	-0.007	0.009	-0.025	0.008	1.232
	[.066]	[.144]	[.000]	[.821]	[.000]	[.360]	[.930]	[.000]	[.000]	[.007]	[.000]	[.499]	[.666]	[.356]	[.002]	[.230]	[.000]
4	0.266	0.070	0.000	-1.116	0.092	-0.030	-0.036	-0.118	-0.037	-0.155	-0.004	-0.056	-0.130	0.018	-0.005	-0.038	1.280
	[.000]	[.051]	[.989]	[.000]	[.000]	[.019]	[.031]	[.000]	[.007]	[.000]	[.844]	[.000]	[.000]	[.301]	[.737]	[.003]	[.000]
5	-0.676	-0.202	-0.607	0.599	-0.129	-0.160	0.066	-0.037	-0.264	0.032	-0.748	-0.063	0.191	0.455	0.005	0.109	1.430
	[.000]	[.020]	[.000]	[.000]	[.031]	[.001]	[.124]	[.618]	[.000]	[.675]	[.000]	[.237]	[.004]	[.000]	[.880]	[.022]	[.000]
6	0.894	-0.025	0.093	-0.289	-0.231	-2.584	-0.071	0.072	0.078	0.057	0.360	0.125	-0.067	0.168	0.192	-0.006	1.235
	[.000]	[.836]	[.363]	[.021]	[.002]	[.000]	[.246]	[.499]	[.497]	[.636]	[.000]	[.286]	[.475]	[.243]	[.000]	[.954]	[.000]
7	0.110	0.418	0.009	-0.116	0.040	-0.025	-1.400	-0.029	-0.019	-0.158	0.178	-0.043	0.067	-0.259	0.108	-0.032	1.150
	[.019]	[.000]	[.866]	[.056]	[.081]	[.264]	[.000]	[.547]	[.438]	[.000]	[.000]	[.097]	[.124]	[.000]	[.000]	[.161]	[.000]
8	0.042	-0.013	-0.056	-0.068	0.006	0.015	0.006	-0.452	-0.072	0.003	-0.048	-0.019	0.021	0.000	-0.005	-0.027	0.665
	[.097]	[.687]	[.058]	[.036]	[.611]	[.231]	[.698]	[.000]	[.000]	[.898]	[.016]	[.202]	[.359]	[.990]	[.706]	[.031]	[.000]
9	0.031	0.179	-0.315	-0.184	-0.228	0.051	-0.024	-0.399	-0.556	0.068	-0.243	0.218	0.114	0.218	0.003	0.132	0.937
	[.725]	[.024]	[.000]	[.025]	[.000]	[.466]	[.542]	[.000]	[.000]	[.368]	[.000]	[.001]	[.064]	[.005]	[.929]	[.027]	[.000]
10	0.089	0.306	-0.009	-0.191	0.020	0.016	-0.059	0.002	0.024	-0.831	0.037	-0.064	0.007	-0.064	0.037	-0.007	0.686
	[.017]	[.000]	[.817]	[.000]	[.279]	[.434]	[.005]	[.944]	[.261]	[.000]	[.188]	[.005]	[.828]	[.019]	[.023]	[.716]	[.000]
11	-0.017	0.017	-0.290	0.015	-0.216	0.075	0.101	-0.122	-0.083	0.018	-0.942	0.097	0.076	0.000	0.141	0.060	1.070
	[.630]	[.682]	[.000]	[.725]	[.000]	[.000]	[.000]	[.000]	[.000]	[.589]	[.000]	[.000]	[.014]	[.999]	[.000]	[.001]	[.000]
12	-0.038	-0.213	0.053	-0.303	-0.050	0.094	-0.065	-0.102	0.254	-0.255	0.358	0.341	-0.215	-0.244	-0.124	-0.084	0.594
	[.717]	[.030]	[.531]	[.003]	[.354]	[.247]	[.190]	[.232]	[.001]	[.006]	[.000]	[.002]	[.005]	[.008]	[.001]	[.232]	[.000]
13	-0.042	0.192	-0.014	-0.185	0.045	-0.010	0.025	-0.027	0.022	-0.030	0.047	-0.057	-1.156	0.066	-0.089	-0.014	1.225
	[.150]	[.000]	[.691]	[.000]	[.002]	[.481]	[.161]	[.360]	[.136]	[.280]	[.039]	[.001]	[.000]	[.001]	[.000]	[.318]	[.000]
14	0.522	0.721	0.102	0.127	0.399	0.101	-0.416	-0.043	0.208	-0.250	-0.002	-0.217	0.272	-1.986	-0.148	-0.494	1.103
	[.000]	[.000]	[.239]	[.221]	[.000]	[.236]	[.000]	[.618]	[.006]	[.008]	[.979]	[.006]	[.000]	[.000]	[.000]	[.000]	[.000]
15	-0.231	-0.014	-0.093	0.025	0.012	0.083	0.129	-0.038	0.003	0.076	0.296	-0.078	-0.218	-0.098	-0.738	-0.005	0.890
	[.000]	[.800]	[.064]	[.644]	[.549]	[.000]	[.000]	[.374]	[.895]	[.055]	[.000]	[.001]	[.000]	[.000]	[.000]	[.804]	[.000]
16	0.044	0.628	0.204	-0.271	0.157	0.000	-0.065	-0.213	0.200	-0.040	0.289	-0.112	-0.047	-0.749	-0.006	-0.730	0.711
	[.724]	[.000]	[.032]	[.018]	[.013]	[.999]	[.247]	[.028]	[.024]	[.705]	[.000]	[.224]	[.587]	[.000]	[.895]	[.000]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-14. 16 Good - Quarterly - No Censoring Correction, Compensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-3.358	1.756	0.107	0.800	-0.225	0.239	0.111	0.155	0.030	0.179	0.039	-0.004	0.023	0.243	-0.117	0.021
	[.000]	[.000]	[.061]	[.000]	[.000]	[.000]	[.001]	[.004]	[.401]	[.001]	[.368]	[.914]	[.635]	[.000]	[.000]	[.539]
2	0.365	-1.454	0.187	0.180	0.008	0.013	0.096	0.059	0.033	0.141	0.065	-0.006	0.161	0.085	0.023	0.045
	[.000]	[.000]	[.000]	[.000]	[.206]	[.046]	[.000]	[.000]	[.000]	[.000]	[.000]	[.401]	[.000]	[.000]	[.001]	[.000]
3	0.028	0.237	-0.625	0.143	-0.035	0.020	0.038	0.033	-0.017	0.043	-0.035	0.015	0.088	0.033	0.010	0.024
	[.061]	[.000]	[.000]	[.000]	[.000]	[.003]	[.000]	[.043]	[.024]	[.004]	[.005]	[.065]	[.000]	[.001]	[.227]	[.001]
4	0.324	0.350	0.220	-0.973	0.113	-0.015	0.004	0.006	-0.013	-0.069	0.068	-0.035	-0.033	0.043	0.031	-0.021
	[.000]	[.000]	[.000]	[.000]	[.000]	[.228]	[.829]	[.842]	[.335]	[.009]	[.002]	[.019]	[.207]	[.015]	[.022]	[.095]
5	-0.611	0.111	-0.360	0.759	-0.105	-0.144	0.111	0.102	-0.237	0.128	-0.668	-0.040	0.300	0.483	0.045	0.127
	[.000]	[.206]	[.000]	[.000]	[.078]	[.004]	[.010]	[.166]	[.000]	[.090]	[.000]	[.457]	[.000]	[.000]	[.182]	[.008]
6	0.950	0.245	0.307	-0.151	-0.211	-2.570	-0.032	0.191	0.101	0.140	0.430	0.145	0.027	0.192	0.227	0.009
	[.000]	[.046]	[.003]	[.228]	[.004]	[.000]	[.595]	[.071]	[.378]	[.242]	[.000]	[.215]	[.773]	[.183]	[.000]	[.935]
7	0.162	0.670	0.208	0.013	0.059	-0.012	-1.364	0.083	0.003	-0.080	0.243	-0.024	0.155	-0.236	0.140	-0.017
	[.001]	[.000]	[.000]	[.829]	[.010]	[.595]	[.000]	[.081]	[.904]	[.073]	[.000]	[.349]	[.000]	[.000]	[.000]	[.447]
8	0.073	0.132	0.059	0.006	0.018	0.023	0.027	-0.388	-0.060	0.048	-0.011	-0.008	0.072	0.013	0.014	-0.019
	[.004]	[.000]	[.043]	[.842]	[.166]	[.071]	[.081]	[.000]	[.000]	[.050]	[.597]	[.601]	[.002]	[.467]	[.253]	[.135]
9	0.073	0.384	-0.154	-0.079	-0.212	0.062	0.005	-0.308	-0.539	0.131	-0.190	0.234	0.185	0.236	0.029	0.144
	[.401]	[.000]	[.024]	[.335]	[.000]	[.378]	[.904]	[.000]	[.000]	[.083]	[.001]	[.000]	[.003]	[.002]	[.351]	[.016]
10	0.120	0.456	0.110	-0.114	0.032	0.024	-0.037	0.069	0.036	-0.785	0.076	-0.052	0.059	-0.050	0.056	0.001
	[.001]	[.000]	[.004]	[.009]	[.090]	[.242]	[.073]	[.050]	[.083]	[.000]	[.007]	[.020]	[.061]	[.063]	[.001]	[.942]
11	0.032	0.251	-0.106	0.135	-0.198	0.087	0.134	-0.018	-0.063	0.090	-0.881	0.114	0.158	0.021	0.171	0.073
	[.368]	[.000]	[.005]	[.002]	[.000]	[.000]	[.000]	[.597]	[.001]	[.007]	[.000]	[.000]	[.000]	[.404]	[.000]	[.000]
12	-0.011	-0.084	0.156	-0.237	-0.040	0.101	-0.046	-0.045	0.265	-0.215	0.392	0.351	-0.169	-0.233	-0.107	-0.077
	[.914]	[.401]	[.065]	[.019]	[.457]	[.215]	[.349]	[.601]	[.000]	[.020]	[.000]	[.001]	[.025]	[.012]	[.005]	[.276]
13	0.014	0.460	0.198	-0.048	0.066	0.004	0.063	0.091	0.045	0.052	0.117	-0.036	-1.062	0.090	-0.055	0.001
	[.635]	[.000]	[.000]	[.207]	[.000]	[.773]	[.000]	[.002]	[.003]	[.061]	[.000]	[.025]	[.000]	[.000]	[.000]	[.930]
14	0.572	0.962	0.293	0.251	0.418	0.114	-0.381	0.063	0.228	-0.176	0.060	-0.199	0.356	-1.964	-0.117	-0.480
	[.000]	[.000]	[.001]	[.015]	[.000]	[.183]	[.000]	[.467]	[.002]	[.063]	[.404]	[.012]	[.000]	[.000]	[.003]	[.000]
15	-0.191	0.181	0.060	0.125	0.027	0.093	0.156	0.048	0.019	0.136	0.346	-0.064	-0.150	-0.081	-0.713	0.006
	[.000]	[.001]	[.227]	[.022]	[.182]	[.000]	[.000]	[.253]	[.351]	[.001]	[.000]	[.005]	[.000]	[.003]	[.000]	[.745]
16	0.076	0.783	0.327	-0.191	0.169	0.008	-0.043	-0.144	0.214	0.008	0.329	-0.100	0.008	-0.735	0.014	-0.721
	[.539]	[.000]	[.001]	[.095]	[.008]	[.935]	[.447]	[.135]	[.016]	[.942]	[.000]	[.276]	[.930]	[.000]	[.745]	[.000]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-15. 16 Good - Quarterly - Censored Corrected, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TE
1	-7.078	2.605	-0.500	1.070	-0.657	1.230	0.213	0.143	0.092	0.204	0.088	0.096	-0.452	1.069	-0.376	1.220	1.031
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.006]	[.177]	[.297]	[.060]	[.278]	[.416]	[.000]	[.000]	[.000]	[.000]	[.000]
2	0.553	-1.652	0.050	0.135	-0.004	-0.021	0.081	-0.014	0.056	0.118	0.050	-0.036	0.111	0.071	-0.015	-0.261	0.777
	[.000]	[.000]	[.001]	[.000]	[.732]	[.311]	[.000]	[.324]	[.000]	[.000]	[.000]	[.027]	[.000]	[.002]	[.095]	[.000]	[.000]
3	-0.143	-0.045	-0.806	0.019	-0.161	0.033	0.029	-0.093	-0.071	-0.040	-0.086	0.004	0.003	-0.020	-0.043	0.143	1.277
	[.000]	[.022]	[.000]	[.463]	[.000]	[.145]	[.043]	[.000]	[.000]	[.021]	[.000]	[.855]	[.872]	[.465]	[.000]	[.000]	[.000]
4	0.417	0.132	0.013	-1.012	0.298	-0.360	-0.021	-0.196	-0.160	-0.279	-0.099	-0.322	-0.098	0.151	0.022	0.138	1.375
	[.000]	[.001]	[.755]	[.000]	[.000]	[.000]	[.525]	[.000]	[.000]	[.000]	[.003]	[.000]	[.024]	[.021]	[.404]	[.047]	[.000]
5	-1.845	-0.417	-1.860	1.878	0.672	-0.133	0.207	0.672	-0.518	0.197	-0.954	-0.253	0.607	0.329	-0.198	-0.830	2.445
	[.000]	[.007]	[.000]	[.000]	[.000]	[.386]	[.048]	[.000]	[.000]	[.130]	[.000]	[.107]	[.000]	[.187]	[.026]	[.001]	[.000]
6	4.875	-0.488	0.520	-3.507	-0.173	-6.146	-0.799	0.427	1.132	0.556	1.724	-0.294	-1.709	1.659	1.146	-0.099	1.176
	[.000]	[.214]	[.134]	[.000]	[.439]	[.000]	[.003]	[.278]	[.001]	[.163]	[.000]	[.542]	[.000]	[.008]	[.000]	[.872]	[.000]
7	0.300	0.464	0.162	-0.062	0.131	-0.294	-1.937	-0.172	-0.112	-0.356	0.031	-0.086	0.169	-0.736	0.254	0.981	1.264
	[.009]	[.000]	[.042]	[.598]	[.019]	[.003]	[.000]	[.025]	[.077]	[.000]	[.608]	[.330]	[.049]	[.000]	[.000]	[.000]	[.000]
8	0.090	0.025	-0.035	-0.131	0.149	0.058	-0.032	-0.292	-0.156	-0.007	-0.033	-0.020	0.009	-0.002	-0.003	-0.139	0.518
	[.068]	[.426]	[.254]	[.006]	[.000]	[.212]	[.191]	[.000]	[.000]	[.847]	[.239]	[.609]	[.788]	[.970]	[.881]	[.007]	[.000]
9	0.235	0.657	-0.575	-0.895	-0.436	0.696	-0.172	-0.832	-0.029	0.636	-0.563	0.537	0.163	0.104	-0.047	-0.273	0.791
	[.274]	[.000]	[.000]	[.000]	[.000]	[.001]	[.103]	[.000]	[.902]	[.000]	[.000]	[.005]	[.296]	[.670]	[.588]	[.217]	[.000]
10	0.159	0.435	0.025	-0.370	0.081	0.102	-0.142	-0.012	0.181	-0.690	0.046	-0.082	-0.042	-0.381	0.077	0.074	0.539
	[.028]	[.000]	[.577]	[.000]	[.012]	[.132]	[.000]	[.815]	[.000]	[.000]	[.291]	[.181]	[.419]	[.000]	[.009]	[.321]	[.000]
11	0.075	0.160	-0.203	-0.147	-0.257	0.352	0.028	-0.097	-0.189	0.028	-0.903	0.303	-0.037	-0.378	0.149	0.181	0.936
	[.250]	[.000]	[.000]	[.025]	[.000]	[.000]	[.414]	[.044]	[.000]	[.588]	[.000]	[.000]	[.450]	[.000]	[.000]	[.012]	[.000]
12	0.341	-0.164	0.374	-1.960	-0.205	-0.183	-0.102	-0.001	0.637	-0.255	1.130	3.660	-0.707	-0.513	0.017	-1.397	-0.671
	[.292]	[.444]	[.073]	[.000]	[.197]	[.584]	[.539]	[.998]	[.003]	[.312]	[.000]	[.000]	[.001]	[.135]	[.900]	[.000]	[.000]
13	-0.286	0.176	-0.019	-0.150	0.150	-0.259	0.064	-0.076	0.028	-0.097	-0.055	-0.187	-1.202	0.393	-0.156	0.248	1.427
	[.000]	[.000]	[.658]	[.020]	[.000]	[.000]	[.069]	[.082]	[.466]	[.037]	[.129]	[.000]	[.000]	[.000]	[.000]	[.001]	[.000]
14	2.482	0.612	-0.243	0.849	0.298	0.977	-1.199	-0.118	0.085	-1.405	-1.146	-0.476	1.538	-3.562	-0.092	-0.239	1.640
	[.000]	[.016]	[.330]	[.027]	[.167]	[.009]	[.000]	[.650]	[.720]	[.000]	[.000]	[.105]	[.000]	[.000]	[.552]	[.608]	[.000]
15	-0.605	-0.144	-0.200	0.143	-0.093	0.474	0.296	-0.047	-0.033	0.162	0.304	-0.016	-0.388	-0.050	-0.313	-0.382	0.893
	[.000]	[.043]	[.006]	[.181]	[.082]	[.000]	[.000]	[.501]	[.567]	[.024]	[.000]	[.840]	[.000]	[.645]	[.000]	[.003]	[.000]
16	4.416	-4.456	2.092	1.328	-1.069	-0.082	2.448	-1.061	-0.399	0.401	0.833	-1.845	1.575	-0.344	-0.834	-3.509	0.504
	[.000]	[.000]	[.000]	[.032]	[.001]	[.883]	[.000]	[.007]	[.224]	[.321]	[.010]	[.000]	[.000]	[.630]	[.003]	[.001]	[.178]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

I-16. 16 Good - Quarterly - Censored Corrected, Compensated Elasticities

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	-7.031	2.831	-0.322	1.185	-0.639	1.242	0.245	0.243	0.112	0.273	0.147	0.113	-0.373	1.089	-0.347	1.233
	[.000]	[.000]	[.003]	[.000]	[.000]	[.000]	[.002]	[.021]	[.207]	[.011]	[.071]	[.337]	[.001]	[.000]	[.000]	[.000]
2	0.588	-1.483	0.185	0.222	0.009	-0.012	0.106	0.061	0.071	0.171	0.094	-0.023	0.171	0.086	0.006	-0.251
	[.000]	[.000]	[.000]	[.000]	[.443]	[.559]	[.000]	[.000]	[.000]	[.000]	[.000]	[.151]	[.000]	[.000]	[.477]	[.000]
3	-0.085	0.234	-0.586	0.163	-0.139	0.048	0.069	0.031	-0.048	0.046	-0.014	0.025	0.101	0.004	-0.007	0.159
	[.003]	[.000]	[.000]	[.000]	[.000]	[.036]	[.000]	[.072]	[.001]	[.008]	[.333]	[.213]	[.000]	[.871]	[.526]	[.000]
4	0.479	0.432	0.250	-0.858	0.321	-0.344	0.022	-0.063	-0.134	-0.186	-0.021	-0.299	0.007	0.178	0.060	0.156
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.496]	[.122]	[.000]	[.000]	[.521]	[.000]	[.870]	[.007]	[.023]	[.025]
5	-1.734	0.117	-1.438	2.152	0.713	-0.105	0.283	0.909	-0.472	0.362	-0.816	-0.213	0.794	0.376	-0.130	-0.800
	[.000]	[.443]	[.000]	[.000]	[.000]	[.493]	[.007]	[.000]	[.000]	[.005]	[.000]	[.174]	[.000]	[.132]	[.145]	[.001]
6	4.928	-0.231	0.723	-3.375	-0.153	-6.133	-0.762	0.541	1.154	0.636	1.790	-0.275	-1.619	1.682	1.179	-0.084
	[.000]	[.559]	[.036]	[.000]	[.493]	[.000]	[.004]	[.168]	[.001]	[.110]	[.000]	[.568]	[.000]	[.007]	[.000]	[.891]
7	0.357	0.740	0.380	0.080	0.152	-0.280	-1.898	-0.050	-0.088	-0.271	0.103	-0.065	0.266	-0.712	0.289	0.997
	[.002]	[.000]	[.000]	[.496]	[.007]	[.004]	[.000]	[.515]	[.163]	[.000]	[.093]	[.460]	[.002]	[.000]	[.000]	[.000]
8	0.114	0.138	0.055	-0.073	0.157	0.064	-0.016	-0.242	-0.146	0.028	-0.004	-0.011	0.049	0.008	0.011	-0.132
	[.021]	[.000]	[.072]	[.122]	[.000]	[.168]	[.515]	[.000]	[.000]	[.418]	[.898]	[.772]	[.157]	[.877]	[.562]	[.010]
9	0.271	0.830	-0.439	-0.806	-0.422	0.705	-0.147	-0.755	-0.014	0.690	-0.518	0.550	0.224	0.119	-0.025	-0.263
	[.207]	[.000]	[.001]	[.000]	[.000]	[.001]	[.163]	[.000]	[.953]	[.000]	[.000]	[.004]	[.155]	[.625]	[.775]	[.235]
10	0.184	0.553	0.118	-0.310	0.090	0.108	-0.125	0.040	0.191	-0.653	0.077	-0.073	-0.001	-0.371	0.092	0.081
	[.011]	[.000]	[.008]	[.000]	[.005]	[.110]	[.000]	[.418]	[.000]	[.000]	[.080]	[.233]	[.988]	[.000]	[.002]	[.279]
11	0.118	0.364	-0.041	-0.042	-0.242	0.362	0.057	-0.006	-0.172	0.092	-0.850	0.319	0.035	-0.360	0.175	0.192
	[.071]	[.000]	[.333]	[.521]	[.000]	[.000]	[.093]	[.898]	[.000]	[.080]	[.000]	[.000]	[.472]	[.000]	[.000]	[.007]
12	0.310	-0.311	0.258	-2.035	-0.216	-0.191	-0.123	-0.066	0.625	-0.300	1.092	3.649	-0.759	-0.526	-0.002	-1.406
	[.337]	[.151]	[.213]	[.000]	[.174]	[.568]	[.460]	[.772]	[.004]	[.233]	[.000]	[.000]	[.001]	[.126]	[.988]	[.000]
13	-0.222	0.488	0.227	0.010	0.174	-0.242	0.108	0.062	0.055	-0.001	0.026	-0.164	-1.093	0.421	-0.117	0.266
	[.001]	[.000]	[.000]	[.870]	[.000]	[.000]	[.002]	[.157]	[.155]	[.988]	[.472]	[.001]	[.000]	[.000]	[.000]	[.000]
14	2.557	0.970	0.040	1.033	0.326	0.995	-1.148	0.040	0.115	-1.294	-1.053	-0.449	1.663	-3.530	-0.047	-0.218
	[.000]	[.000]	[.871]	[.007]	[.132]	[.007]	[.000]	[.877]	[.625]	[.000]	[.000]	[.126]	[.000]	[.000]	[.764]	[.640]
15	-0.565	0.051	-0.046	0.243	-0.078	0.484	0.323	0.040	-0.017	0.222	0.354	-0.001	-0.320	-0.032	-0.288	-0.371
	[.000]	[.477]	[.526]	[.023]	[.145]	[.000]	[.000]	[.562]	[.775]	[.002]	[.000]	[.988]	[.000]	[.764]	[.000]	[.004]
16	4.439	-4.346	2.179	1.385	-1.061	-0.076	2.464	-1.012	-0.390	0.435	0.862	-1.837	1.614	-0.334	-0.820	-3.502
	[.000]	[.000]	[.000]	[.025]	[.001]	[.891]	[.000]	[.010]	[.235]	[.279]	[.007]	[.000]	[.000]	[.640]	[.004]	[.001]

Legend:

1 Whole fat flavored and unflavored milk
2 Reduced fat flavored and unflavored milk
3 Carbonated soft drinks – regular
4 Carbonated soft drinks – low calorie
5 Powdered soft drinks
6 Isotonics
7 Bottled water
8 Orange juice
9 Apple juice
10 Other juices
11 Fruit drinks
12 Vegetable juice
13 Coffee regular
14 Coffee decaffeinated
15 Tea regular
16 Tea decaffeinated

APPENDIX J

ELASTICITIES – DEMOGRAPHIC COMPARISONS

J-1. Above 130% Poverty Status Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.656	0.188	0.028	0.119	0.107	0.062	0.148	-0.026	1.031
	[.000]	[.000]	[.058]	[.000]	[.000]	[.091]	[.000]	[.037]	[.000]
2	0.103	-1.177	0.000	0.011	0.037	-0.185	-0.005	-0.054	1.271
	[.000]	[.000]	[.974]	[.050]	[.000]	[.000]	[.742]	[.000]	[.000]
3	0.291	-0.044	-0.385	0.154	-0.039	-1.274	-0.016	-0.119	1.432
	[.161]	[.686]	[.000]	[.066]	[.659]	[.000]	[.905]	[.006]	[.000]
4	2.511	0.286	0.238	-2.539	-0.890	-0.014	-0.964	0.189	1.182
	[.000]	[.049]	[.060]	[.000]	[.000]	[.973]	[.001]	[.001]	[.000]
5	0.826	0.398	-0.014	-0.320	-1.750	-0.161	-0.122	0.117	1.026
	[.000]	[.000]	[.772]	[.000]	[.000]	[.147]	[.107]	[.003]	[.000]
6	0.148	-0.041	-0.076	0.005	-0.010	-0.823	0.058	0.046	0.692
	[.000]	[.151]	[.000]	[.788]	[.489]	[.000]	[.009]	[.000]	[.000]
7	0.402	0.056	0.004	-0.119	-0.042	0.075	-1.354	-0.041	1.019
	[.000]	[.281]	[.872]	[.001]	[.110]	[.227]	[.000]	[.071]	[.000]
8	-0.030	-0.160	-0.036	0.063	0.112	0.340	-0.047	-0.745	0.503
	[.701]	[.063]	[.059]	[.000]	[.001]	[.000]	[.376]	[.000]	[.000]

J-2. Above 130% poverty status compensated elasticities

	1	2	3	4	5	6	7	8
1	-1.395	0.488	0.046	0.131	0.140	0.327	0.246	0.016
	[.000]	[.000]	[.002]	[.000]	[.000]	[.000]	[.000]	[.213]
2	0.425	-0.806	0.023	0.026	0.078	0.141	0.115	-0.002
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.875]
3	0.655	0.374	-0.360	0.171	0.008	-0.906	0.119	-0.061
	[.002]	[.000]	[.001]	[.041]	[.929]	[.000]	[.397]	[.158]
4	2.812	0.630	0.259	-2.525	-0.851	0.290	-0.852	0.237
	[.000]	[.000]	[.041]	[.000]	[.000]	[.486]	[.003]	[.000]
5	1.087	0.697	0.004	-0.308	-1.716	0.102	-0.025	0.159
	[.000]	[.000]	[.929]	[.000]	[.000]	[.350]	[.739]	[.000]
6	0.323	0.160	-0.063	0.013	0.013	-0.645	0.124	0.074
	[.000]	[.000]	[.000]	[.486]	[.350]	[.000]	[.000]	[.000]
7	0.660	0.353	0.023	-0.107	-0.009	0.336	-1.257	0.000
	[.000]	[.000]	[.397]	[.003]	[.739]	[.000]	[.000]	[.987]
8	0.098	-0.013	-0.027	0.069	0.128	0.469	0.001	-0.725
	[.213]	[.875]	[.158]	[.000]	[.000]	[.000]	[.987]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-3. Below 130% Poverty Status, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.324	-0.031	0.135	0.070	0.071	-0.116	0.295	-0.078	0.978
	[.000]	[.838]	[.019]	[.415]	[.197]	[.518]	[.019]	[.194]	[.000]
2	-0.099	-0.962	-0.010	0.005	-0.004	-0.235	-0.004	0.048	1.261
	[.409]	[.000]	[.673]	[.629]	[.870]	[.014]	[.958]	[.337]	[.000]
3	1.588	-0.144	-0.330	-0.078	-0.322	-1.660	-0.460	0.180	1.226
	[.025]	[.706]	[.325]	[.602]	[.176]	[.010]	[.370]	[.294]	[.000]
4	3.602	0.446	-0.316	-1.556	-0.855	-3.050	0.818	0.055	0.855
	[.404]	[.583]	[.610]	[.710]	[.545]	[.382]	[.745]	[.859]	[.406]
5	1.001	0.022	-0.364	-0.236	-1.946	0.189	-0.053	0.426	0.963
	[.197]	[.962]	[.182]	[.545]	[.000]	[.779]	[.925]	[.046]	[.000]
6	-0.086	-0.174	-0.140	-0.065	0.017	-0.371	-0.016	0.015	0.820
	[.657]	[.180]	[.012]	[.376]	[.736]	[.104]	[.901]	[.786]	[.000]
7	0.830	0.080	-0.100	0.044	-0.011	-0.076	-1.595	-0.140	0.968
	[.019]	[.763]	[.401]	[.752]	[.924]	[.820]	[.000]	[.217]	[.000]
8	-0.266	0.697	0.111	0.010	0.197	0.231	-0.230	-0.942	0.192
	[.459]	[.066]	[.193]	[.790]	[.032]	[.455]	[.350]	[.000]	[.342]

J-4. Below 130% Poverty Status, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.069	0.281	0.156	0.075	0.089	0.117	0.386	-0.036
	[.000]	[.054]	[.007]	[.382]	[.105]	[.511]	[.002]	[.551]
2	0.230	-0.559	0.017	0.012	0.019	0.066	0.113	0.103
	[.054]	[.000]	[.500]	[.273]	[.460]	[.485]	[.134]	[.041]
3	1.908	0.247	-0.303	-0.072	-0.300	-1.367	-0.346	0.233
	[.007]	[.500]	[.367]	[.632]	[.209]	[.029]	[.506]	[.176]
4	3.826	0.719	-0.298	-1.552	-0.839	-2.846	0.898	0.092
	[.382]	[.273]	[.632]	[.711]	[.553]	[.408]	[.725]	[.769]
5	1.252	0.329	-0.344	-0.231	-1.928	0.418	0.037	0.467
	[.105]	[.460]	[.209]	[.553]	[.000]	[.527]	[.948]	[.029]
6	0.128	0.088	-0.122	-0.061	0.033	-0.175	0.060	0.050
	[.511]	[.485]	[.029]	[.408]	[.527]	[.434]	[.642]	[.358]
7	1.083	0.389	-0.079	0.049	0.007	0.154	-1.505	-0.099
	[.002]	[.134]	[.506]	[.725]	[.948]	[.642]	[.000]	[.386]
8	-0.216	0.758	0.115	0.011	0.201	0.277	-0.212	-0.934
	[.551]	[.041]	[.176]	[.769]	[.029]	[.358]	[.386]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-5. Region – East, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.608	0.109	0.067	0.204	0.080	0.063	0.124	-0.076	1.037
	[.000]	[.087]	[.069]	[.002]	[.021]	[.491]	[.022]	[.005]	[.000]
2	0.064	-1.171	0.012	0.007	0.038	-0.182	0.059	-0.025	1.199
	[.282]	[.000]	[.387]	[.523]	[.083]	[.002]	[.130]	[.335]	[.000]
3	0.789	0.103	-0.510	0.606	-0.038	-2.385	0.165	-0.196	1.465
	[.110]	[.614]	[.058]	[.003]	[.845]	[.000]	[.613]	[.014]	[.000]
4	5.296	0.225	1.194	-3.851	-1.109	-0.729	-2.232	0.176	1.031
	[.002]	[.472]	[.003]	[.029]	[.042]	[.582]	[.014]	[.141]	[.013]
5	0.562	0.310	-0.014	-0.310	-1.907	0.046	0.000	0.196	1.117
	[.026]	[.066]	[.892]	[.042]	[.000]	[.847]	[.999]	[.009]	[.000]
6	0.126	-0.049	-0.141	-0.021	0.018	-0.777	0.072	0.032	0.741
	[.104]	[.355]	[.000]	[.623]	[.517]	[.000]	[.135]	[.163]	[.000]
7	0.247	0.147	0.033	-0.195	-0.002	0.068	-1.421	-0.053	1.176
	[.043]	[.115]	[.554]	[.014]	[.971]	[.597]	[.000]	[.206]	[.000]
8	-0.230	0.022	-0.047	0.032	0.128	0.175	-0.044	-0.707	0.672
	[.042]	[.849]	[.059]	[.090]	[.003]	[.125]	[.567]	[.000]	[.000]

J-6. Region – East, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.358	0.373	0.086	0.213	0.115	0.353	0.234	-0.016
	[.000]	[.000]	[.020]	[.002]	[.001]	[.000]	[.000]	[.543]
2	0.352	-0.865	0.034	0.018	0.078	0.153	0.186	0.044
	[.000]	[.000]	[.016]	[.087]	[.000]	[.008]	[.000]	[.093]
3	1.142	0.476	-0.483	0.619	0.011	-1.975	0.321	-0.112
	[.020]	[.016]	[.073]	[.002]	[.955]	[.000]	[.332]	[.160]
4	5.544	0.488	1.213	-3.842	-1.075	-0.441	-2.122	0.235
	[.002]	[.087]	[.002]	[.029]	[.050]	[.738]	[.021]	[.042]
5	0.831	0.595	0.006	-0.300	-1.870	0.359	0.119	0.260
	[.001]	[.000]	[.955]	[.050]	[.000]	[.125]	[.469]	[.000]
6	0.304	0.140	-0.128	-0.015	0.043	-0.570	0.151	0.075
	[.000]	[.008]	[.000]	[.738]	[.125]	[.000]	[.002]	[.001]
7	0.530	0.446	0.055	-0.185	0.037	0.397	-1.296	0.015
	[.000]	[.000]	[.332]	[.021]	[.469]	[.002]	[.000]	[.724]
8	-0.068	0.194	-0.035	0.038	0.151	0.363	0.027	-0.669
	[.543]	[.093]	[.160]	[.042]	[.000]	[.001]	[.724]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-7. Region – Central, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.561	0.253	0.050	0.132	0.058	-0.081	0.146	-0.004	1.007
	[.000]	[.000]	[.049]	[.002]	[.030]	[.245]	[.002]	[.872]	[.000]
2	0.142	-1.133	0.003	-0.006	-0.005	-0.208	0.029	-0.061	1.239
	[.007]	[.000]	[.840]	[.552]	[.759]	[.000]	[.379]	[.009]	[.000]
3	0.622	0.007	-0.451	-0.079	0.060	-1.349	0.001	-0.173	1.362
	[.087]	[.977]	[.010]	[.506]	[.680]	[.000]	[.997]	[.062]	[.000]
4	3.341	-0.213	-0.142	-2.927	0.121	0.052	-1.644	0.081	1.330
	[.003]	[.537]	[.506]	[.007]	[.749]	[.954]	[.005]	[.505]	[.000]
5	0.616	0.007	0.051	0.053	-1.757	0.013	-0.192	0.207	1.004
	[.029]	[.977]	[.636]	[.734]	[.000]	[.960]	[.297]	[.031]	[.000]
6	-0.012	-0.118	-0.094	0.009	0.009	-0.579	0.026	0.053	0.706
	[.877]	[.076]	[.000]	[.825]	[.745]	[.000]	[.599]	[.035]	[.000]
7	0.450	0.201	0.008	-0.185	-0.053	0.009	-1.336	-0.048	0.956
	[.001]	[.110]	[.878]	[.007]	[.311]	[.944]	[.000]	[.345]	[.000]
8	0.116	-0.353	-0.081	0.035	0.174	0.446	-0.086	-0.690	0.439
	[.584]	[.145]	[.123]	[.364]	[.019]	[.016]	[.536]	[.000]	[.000]

J-8. Region – Central, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.295	0.584	0.068	0.142	0.083	0.154	0.235	0.028
	[.000]	[.000]	[.007]	[.001]	[.002]	[.024]	[.000]	[.275]
2	0.469	-0.726	0.025	0.007	0.026	0.081	0.138	-0.021
	[.000]	[.000]	[.052]	[.465]	[.143]	[.077]	[.000]	[.376]
3	0.982	0.454	-0.426	-0.065	0.094	-1.031	0.121	-0.129
	[.007]	[.052]	[.016]	[.583]	[.519]	[.002]	[.614]	[.164]
4	3.692	0.224	-0.118	-2.914	0.155	0.363	-1.526	0.124
	[.001]	[.465]	[.583]	[.007]	[.684]	[.685]	[.010]	[.305]
5	0.881	0.337	0.069	0.063	-1.732	0.247	-0.104	0.240
	[.002]	[.143]	[.519]	[.684]	[.000]	[.328]	[.576]	[.013]
6	0.175	0.114	-0.081	0.016	0.026	-0.414	0.088	0.076
	[.024]	[.077]	[.002]	[.685]	[.328]	[.000]	[.072]	[.003]
7	0.702	0.515	0.025	-0.175	-0.029	0.232	-1.252	-0.017
	[.000]	[.000]	[.614]	[.010]	[.576]	[.072]	[.000]	[.733]
8	0.232	-0.209	-0.073	0.039	0.185	0.549	-0.048	-0.675
	[.275]	[.376]	[.164]	[.305]	[.013]	[.003]	[.733]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-9. Region – South, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.701	0.155	0.013	0.145	0.110	0.084	0.172	-0.031	1.054
	[.000]	[.002]	[.599]	[.001]	[.000]	[.173]	[.000]	[.118]	[.000]
2	0.070	-1.177	0.007	0.023	0.036	-0.129	-0.075	-0.041	1.287
	[.086]	[.000]	[.556]	[.027]	[.026]	[.002]	[.004]	[.024]	[.000]
3	0.100	0.100	-0.457	0.100	-0.123	-0.952	0.030	-0.074	1.275
	[.734]	[.558]	[.003]	[.427]	[.336]	[.001]	[.881]	[.275]	[.000]
4	2.514	0.539	0.151	-3.241	-1.013	0.232	-0.554	0.260	1.112
	[.001]	[.022]	[.414]	[.000]	[.000]	[.699]	[.194]	[.004]	[.000]
5	0.837	0.415	-0.072	-0.434	-1.459	-0.419	0.011	0.127	0.993
	[.000]	[.006]	[.375]	[.000]	[.000]	[.024]	[.925]	[.042]	[.000]
6	0.176	0.035	-0.065	0.019	-0.043	-0.887	0.066	0.030	0.667
	[.002]	[.465]	[.006]	[.560]	[.066]	[.000]	[.062]	[.104]	[.000]
7	0.512	-0.154	0.014	-0.087	0.006	0.125	-1.342	-0.016	0.942
	[.000]	[.089]	[.773]	[.214]	[.897]	[.242]	[.000]	[.669]	[.000]
8	-0.080	-0.095	-0.024	0.097	0.115	0.206	-0.005	-0.824	0.610
	[.509]	[.482]	[.491]	[.002]	[.023]	[.086]	[.947]	[.000]	[.000]

J-10. Region – South, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.441	0.471	0.035	0.160	0.144	0.355	0.264	0.012
	[.000]	[.000]	[.159]	[.000]	[.000]	[.000]	[.000]	[.563]
2	0.387	-0.791	0.034	0.041	0.078	0.202	0.038	0.012
	[.000]	[.000]	[.003]	[.000]	[.000]	[.000]	[.145]	[.506]
3	0.415	0.483	-0.430	0.118	-0.081	-0.625	0.142	-0.022
	[.159]	[.003]	[.005]	[.348]	[.527]	[.029]	[.491]	[.746]
4	2.788	0.874	0.174	-3.225	-0.976	0.518	-0.457	0.306
	[.000]	[.000]	[.348]	[.000]	[.000]	[.384]	[.292]	[.001]
5	1.082	0.714	-0.051	-0.420	-1.426	-0.163	0.098	0.168
	[.000]	[.000]	[.527]	[.000]	[.000]	[.369]	[.418]	[.007]
6	0.341	0.236	-0.051	0.028	-0.021	-0.716	0.125	0.058
	[.000]	[.000]	[.029]	[.384]	[.369]	[.000]	[.000]	[.002]
7	0.745	0.129	0.034	-0.074	0.037	0.367	-1.260	0.022
	[.000]	[.145]	[.491]	[.292]	[.418]	[.000]	[.000]	[.552]
8	0.070	0.088	-0.011	0.106	0.135	0.363	0.048	-0.799
	[.563]	[.506]	[.746]	[.001]	[.007]	[.002]	[.552]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-11. Region – West, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.666	0.348	-0.018	0.036	0.159	0.084	0.136	-0.004	0.925
	[.000]	[.000]	[.528]	[.364]	[.000]	[.240]	[.004]	[.860]	[.000]
2	0.232	-1.374	-0.032	0.010	0.056	-0.225	0.047	-0.053	1.340
	[.000]	[.000]	[.009]	[.432]	[.035]	[.000]	[.232]	[.046]	[.000]
3	-0.599	-0.782	0.149	0.799	-0.222	-1.044	-0.110	0.085	1.724
	[.325]	[.005]	[.646]	[.008]	[.434]	[.088]	[.792]	[.463]	[.000]
4	0.708	0.204	0.929	-0.662	-1.263	-1.273	-0.320	0.200	1.475
	[.446]	[.538]	[.007]	[.519]	[.001]	[.133]	[.581]	[.152]	[.000]
5	1.046	0.450	-0.066	-0.359	-1.943	0.017	-0.315	0.036	1.134
	[.000]	[.018]	[.484]	[.002]	[.000]	[.935]	[.036]	[.665]	[.000]
6	0.145	-0.070	-0.040	-0.047	0.019	-0.865	0.072	0.068	0.718
	[.048]	[.269]	[.191]	[.201]	[.556]	[.000]	[.131]	[.009]	[.000]
7	0.342	0.223	-0.004	-0.030	-0.114	0.112	-1.430	-0.085	0.986
	[.006]	[.038]	[.935]	[.647]	[.048]	[.359]	[.000]	[.069]	[.000]
8	0.098	-0.183	0.049	0.078	0.068	0.587	-0.201	-0.929	0.433
	[.629]	[.409]	[.267]	[.092]	[.472]	[.003]	[.155]	[.000]	[.000]

J-12. Region – West, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.416	0.602	-0.006	0.046	0.195	0.322	0.231	0.027
	[.000]	[.000]	[.826]	[.241]	[.000]	[.000]	[.000]	[.290]
2	0.594	-1.007	-0.015	0.025	0.108	0.119	0.184	-0.008
	[.000]	[.000]	[.230]	[.047]	[.000]	[.040]	[.000]	[.766]
3	-0.133	-0.310	0.172	0.819	-0.155	-0.602	0.066	0.143
	[.826]	[.230]	[.598]	[.006]	[.586]	[.317]	[.876]	[.217]
4	1.107	0.608	0.948	-0.645	-1.205	-0.894	-0.169	0.250
	[.241]	[.047]	[.006]	[.529]	[.002]	[.289]	[.774]	[.073]
5	1.353	0.760	-0.052	-0.346	-1.898	0.309	-0.199	0.074
	[.000]	[.000]	[.586]	[.002]	[.000]	[.143]	[.188]	[.369]
6	0.339	0.127	-0.030	-0.039	0.047	-0.680	0.145	0.092
	[.000]	[.040]	[.317]	[.289]	[.143]	[.000]	[.002]	[.000]
7	0.609	0.493	0.008	-0.019	-0.076	0.365	-1.329	-0.052
	[.000]	[.000]	[.876]	[.774]	[.188]	[.002]	[.000]	[.268]
8	0.214	-0.064	0.055	0.083	0.085	0.698	-0.157	-0.914
	[.290]	[.766]	[.217]	[.073]	[.369]	[.000]	[.268]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-13. Race – White, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.500	0.224	-0.017	0.152	0.079	-0.055	0.168	-0.028	0.978
	[.000]	[.000]	[.253]	[.000]	[.000]	[.159]	[.000]	[.034]	[.000]
2	0.123	-1.203	-0.001	0.009	0.032	-0.186	-0.005	-0.039	1.269
	[.000]	[.000]	[.909]	[.093]	[.002]	[.000]	[.792]	[.002]	[.000]
3	-0.403	-0.069	-0.160	0.139	0.044	-0.950	0.023	-0.083	1.458
	[.096]	[.561]	[.187]	[.169]	[.650]	[.000]	[.881]	[.079]	[.000]
4	3.337	0.245	0.198	-2.863	-0.967	-0.364	-1.033	0.211	1.237
	[.000]	[.112]	[.159]	[.000]	[.000]	[.425]	[.001]	[.000]	[.000]
5	0.682	0.358	0.030	-0.396	-1.695	-0.141	-0.123	0.130	1.154
	[.000]	[.001]	[.588]	[.000]	[.000]	[.289]	[.191]	[.006]	[.000]
6	0.007	-0.066	-0.053	-0.012	-0.004	-0.675	0.039	0.042	0.723
	[.861]	[.041]	[.000]	[.597]	[.778]	[.000]	[.145]	[.002]	[.000]
7	0.438	0.064	0.011	-0.120	-0.031	0.025	-1.342	-0.051	1.005
	[.000]	[.244]	[.666]	[.001]	[.253]	[.702]	[.000]	[.032]	[.000]
8	-0.043	-0.044	-0.017	0.069	0.111	0.307	-0.069	-0.780	0.466
	[.609]	[.631]	[.374]	[.000]	[.001]	[.000]	[.229]	[.000]	[.000]

J-14. Race – White, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.241	0.513	-0.001	0.163	0.107	0.181	0.265	0.013
	[.000]	[.000]	[.946]	[.000]	[.000]	[.000]	[.000]	[.339]
2	0.460	-0.827	0.020	0.024	0.068	0.120	0.122	0.013
	[.000]	[.000]	[.001]	[.000]	[.000]	[.000]	[.000]	[.296]
3	-0.016	0.362	-0.136	0.156	0.086	-0.599	0.169	-0.023
	[.946]	[.001]	[.264]	[.122]	[.377]	[.007]	[.287]	[.630]
4	3.665	0.611	0.218	-2.848	-0.932	-0.066	-0.910	0.262
	[.000]	[.000]	[.122]	[.000]	[.000]	[.884]	[.004]	[.000]
5	0.988	0.699	0.049	-0.382	-1.662	0.137	-0.007	0.177
	[.000]	[.000]	[.377]	[.000]	[.000]	[.294]	[.938]	[.000]
6	0.199	0.147	-0.041	-0.003	0.016	-0.501	0.111	0.072
	[.000]	[.000]	[.007]	[.884]	[.294]	[.000]	[.000]	[.000]
7	0.705	0.361	0.028	-0.108	-0.002	0.267	-1.242	-0.009
	[.000]	[.000]	[.287]	[.004]	[.938]	[.000]	[.000]	[.693]
8	0.080	0.094	-0.009	0.075	0.124	0.419	-0.023	-0.760
	[.339]	[.296]	[.630]	[.000]	[.000]	[.000]	[.693]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-15. Race – Black, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.659	-0.045	-0.011	0.146	0.193	0.255	0.214	-0.035	0.943
	[.000]	[.699]	[.871]	[.165]	[.003]	[.105]	[.022]	[.461]	[.000]
2	-0.059	-0.776	-0.019	0.015	0.049	-0.301	0.052	-0.091	1.130
	[.396]	[.000]	[.535]	[.262]	[.158]	[.001]	[.247]	[.006]	[.000]
3	-0.122	-0.209	-0.099	-0.204	0.006	-0.073	-0.361	-0.271	1.332
	[.728]	[.412]	[.638]	[.014]	[.974]	[.859]	[.114]	[.009]	[.000]
4	3.132	0.587	-0.875	-1.401	-1.465	-0.554	-0.736	0.381	0.932
	[.161]	[.269]	[.014]	[.550]	[.068]	[.770]	[.567]	[.048]	[.107]
5	0.568	0.244	0.010	-0.216	-1.614	-0.108	-0.134	0.096	1.155
	[.005]	[.183]	[.930]	[.067]	[.000]	[.636]	[.271]	[.219]	[.000]
6	0.116	-0.172	0.007	-0.012	-0.004	-0.914	0.012	0.025	0.942
	[.096]	[.009]	[.858]	[.768]	[.895]	[.000]	[.764]	[.332]	[.000]
7	0.589	0.271	-0.194	-0.097	-0.112	0.053	-1.525	0.015	0.999
	[.024]	[.191]	[.136]	[.568]	[.304]	[.834]	[.000]	[.863]	[.000]
8	-0.063	-0.456	-0.216	0.085	0.181	0.462	0.062	-0.423	0.368
	[.769]	[.066]	[.023]	[.037]	[.109]	[.079]	[.660]	[.001]	[.014]

J-16. Race – Black, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.501	0.211	0.021	0.154	0.244	0.601	0.270	0.000
	[.000]	[.063]	[.769]	[.144]	[.000]	[.000]	[.004]	[.994]
2	0.130	-0.469	0.019	0.024	0.110	0.114	0.120	-0.049
	[.063]	[.000]	[.533]	[.077]	[.002]	[.188]	[.007]	[.140]
3	0.102	0.154	-0.054	-0.194	0.077	0.417	-0.281	-0.221
	[.769]	[.533]	[.800]	[.019]	[.652]	[.293]	[.221]	[.032]
4	3.288	0.840	-0.843	-1.394	-1.415	-0.212	-0.680	0.416
	[.144]	[.077]	[.019]	[.552]	[.079]	[.911]	[.599]	[.031]
5	0.761	0.558	0.049	-0.207	-1.552	0.316	-0.065	0.139
	[.000]	[.002]	[.652]	[.079]	[.000]	[.160]	[.594]	[.075]
6	0.274	0.084	0.039	-0.005	0.046	-0.568	0.069	0.060
	[.000]	[.188]	[.293]	[.911]	[.160]	[.000]	[.090]	[.021]
7	0.756	0.543	-0.160	-0.089	-0.058	0.420	-1.465	0.052
	[.004]	[.007]	[.221]	[.599]	[.594]	[.090]	[.000]	[.549]
8	-0.002	-0.356	-0.203	0.088	0.201	0.598	0.084	-0.410
	[.994]	[.140]	[.032]	[.031]	[.075]	[.021]	[.549]	[.001]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-17. Race – Oriental + Other, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.421	0.225	0.023	-0.094	0.047	0.060	0.174	0.001	0.985
	[.000]	[.064]	[.665]	[.225]	[.415]	[.652]	[.042]	[.980]	[.000]
2	0.116	-1.065	-0.008	0.058	0.045	-0.316	-0.019	-0.089	1.277
	[.228]	[.000]	[.679]	[.015]	[.288]	[.002]	[.749]	[.053]	[.000]
3	0.197	-0.189	-0.084	0.714	-0.045	-1.563	-0.419	-0.093	1.483
	[.785]	[.571]	[.812]	[.042]	[.892]	[.032]	[.387]	[.537]	[.000]
4	-1.612	1.399	0.929	0.081	-0.140	0.480	-1.854	-0.064	0.781
	[.235]	[.011]	[.038]	[.956]	[.810]	[.695]	[.026]	[.780]	[.023]
5	0.195	0.311	-0.011	-0.044	-2.163	0.575	-0.049	0.038	1.149
	[.494]	[.240]	[.929]	[.789]	[.000]	[.047]	[.781]	[.752]	[.000]
6	0.098	-0.148	-0.074	0.021	0.106	-0.947	0.090	0.097	0.758
	[.326]	[.123]	[.059]	[.688]	[.015]	[.000]	[.127]	[.018]	[.000]
7	0.536	-0.015	-0.091	-0.340	-0.028	0.286	-1.338	-0.078	1.067
	[.050]	[.951]	[.428]	[.027]	[.807]	[.261]	[.000]	[.462]	[.000]
8	0.108	-0.412	-0.023	-0.018	0.072	0.789	-0.102	-0.959	0.545
	[.722]	[.207]	[.714]	[.813]	[.603]	[.012]	[.590]	[.000]	[.002]

J-18. Race – Oriental + Other, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.196	0.502	0.039	-0.081	0.093	0.358	0.244	0.041
	[.000]	[.000]	[.455]	[.294]	[.108]	[.006]	[.004]	[.442]
2	0.408	-0.706	0.013	0.075	0.104	0.070	0.073	-0.037
	[.000]	[.000]	[.472]	[.002]	[.014]	[.488]	[.216]	[.419]
3	0.536	0.228	-0.059	0.733	0.023	-1.115	-0.313	-0.034
	[.455]	[.472]	[.867]	[.036]	[.944]	[.117]	[.524]	[.825]
4	-1.433	1.619	0.942	0.091	-0.104	0.716	-1.798	-0.033
	[.294]	[.002]	[.036]	[.951]	[.859]	[.554]	[.034]	[.887]
5	0.457	0.634	0.008	-0.029	-2.110	0.922	0.033	0.084
	[.108]	[.014]	[.944]	[.859]	[.000]	[.001]	[.853]	[.482]
6	0.271	0.065	-0.062	0.031	0.141	-0.718	0.144	0.127
	[.006]	[.488]	[.117]	[.554]	[.001]	[.000]	[.015]	[.002]
7	0.780	0.286	-0.073	-0.326	0.021	0.608	-1.261	-0.035
	[.004]	[.216]	[.524]	[.034]	[.853]	[.015]	[.000]	[.740]
8	0.233	-0.259	-0.014	-0.010	0.097	0.954	-0.063	-0.937
	[.442]	[.419]	[.825]	[.887]	[.482]	[.002]	[.740]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-19. Presence of Children – None, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.603	0.201	0.043	0.140	0.110	0.071	0.174	-0.050	0.915
	[.000]	[.000]	[.036]	[.000]	[.000]	[.128]	[.000]	[.002]	[.000]
2	0.073	-1.210	-0.002	0.006	0.043	-0.156	-0.015	-0.044	1.304
	[.012]	[.000]	[.821]	[.288]	[.000]	[.000]	[.481]	[.003]	[.000]
3	0.541	-0.105	0.129	0.302	-0.097	-1.884	-0.296	-0.145	1.555
	[.108]	[.483]	[.515]	[.050]	[.530]	[.000]	[.221]	[.027]	[.000]
4	3.933	0.289	0.530	-2.346	-1.605	-1.136	-0.818	0.142	1.011
	[.000]	[.184]	[.046]	[.021]	[.000]	[.136]	[.135]	[.116]	[.001]
5	0.728	0.407	-0.037	-0.410	-1.750	-0.149	-0.094	0.143	1.163
	[.000]	[.000]	[.589]	[.000]	[.000]	[.281]	[.335]	[.004]	[.000]
6	0.127	0.000	-0.100	-0.037	-0.004	-0.747	0.030	0.050	0.680
	[.005]	[.991]	[.000]	[.165]	[.833]	[.000]	[.315]	[.001]	[.000]
7	0.322	0.002	-0.034	-0.065	-0.029	-0.054	-1.270	-0.038	1.168
	[.000]	[.978]	[.303]	[.131]	[.335]	[.432]	[.000]	[.137]	[.000]
8	-0.184	-0.064	-0.034	0.032	0.132	0.322	-0.025	-0.709	0.530
	[.036]	[.516]	[.128]	[.072]	[.001]	[.000]	[.702]	[.000]	[.000]

J-20. Presence of Children – None, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.378	0.468	0.056	0.148	0.141	0.300	0.275	-0.010
	[.000]	[.000]	[.006]	[.000]	[.000]	[.000]	[.000]	[.539]
2	0.393	-0.829	0.018	0.017	0.087	0.170	0.130	0.014
	[.000]	[.000]	[.013]	[.002]	[.000]	[.000]	[.000]	[.349]
3	0.923	0.349	0.153	0.316	-0.044	-1.495	-0.124	-0.077
	[.006]	[.013]	[.444]	[.041]	[.777]	[.000]	[.614]	[.243]
4	4.181	0.584	0.545	-2.337	-1.571	-0.884	-0.705	0.187
	[.000]	[.002]	[.041]	[.021]	[.000]	[.244]	[.201]	[.039]
5	1.013	0.746	-0.019	-0.400	-1.710	0.141	0.035	0.194
	[.000]	[.000]	[.777]	[.000]	[.000]	[.297]	[.724]	[.000]
6	0.294	0.198	-0.090	-0.031	0.019	-0.577	0.105	0.080
	[.000]	[.000]	[.000]	[.244]	[.297]	[.000]	[.000]	[.000]
7	0.608	0.343	-0.017	-0.055	0.011	0.238	-1.141	0.014
	[.000]	[.000]	[.614]	[.201]	[.724]	[.000]	[.000]	[.593]
8	-0.054	0.090	-0.026	0.037	0.151	0.454	0.034	-0.686
	[.539]	[.349]	[.243]	[.039]	[.000]	[.000]	[.593]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

J-21. Presence of Children – Yes, Uncompensated Elasticities

	1	2	3	4	5	6	7	8	TE
1	-1.602	0.214	-0.009	0.084	0.041	0.143	0.051	0.002	1.076
	[.000]	[.000]	[.632]	[.012]	[.035]	[.009]	[.107]	[.924]	[.000]
2	0.150	-1.051	-0.017	0.021	0.015	-0.334	0.009	-0.051	1.258
	[.002]	[.000]	[.218]	[.167]	[.290]	[.000]	[.704]	[.003]	[.000]
3	-0.042	-0.082	-0.503	0.066	0.122	-0.395	0.053	-0.085	0.867
	[.838]	[.614]	[.000]	[.455]	[.094]	[.040]	[.658]	[.158]	[.000]
4	1.273	0.372	0.085	-2.607	-0.303	0.519	-0.728	0.225	1.163
	[.013]	[.149]	[.490]	[.000]	[.081]	[.220]	[.008]	[.014]	[.000]
5	0.455	0.273	0.110	-0.190	-1.632	-0.172	0.120	0.154	0.882
	[.017]	[.081]	[.096]	[.090]	[.000]	[.311]	[.239]	[.008]	[.000]
6	0.268	-0.180	-0.031	0.044	-0.011	-0.830	0.089	0.020	0.631
	[.000]	[.000]	[.080]	[.114]	[.533]	[.000]	[.001]	[.218]	[.000]
7	0.168	0.021	0.011	-0.226	0.044	0.219	-1.526	-0.051	1.340
	[.260]	[.864]	[.833]	[.008]	[.360]	[.091]	[.000]	[.257]	[.000]
8	0.141	-0.253	-0.057	0.128	0.133	0.167	-0.044	-0.827	0.611
	[.337]	[.098]	[.206]	[.008]	[.005]	[.211]	[.562]	[.000]	[.000]

J-22. Presence of Children – Yes, Compensated Elasticities

	1	2	3	4	5	6	7	8
1	-1.307	0.531	0.018	0.104	0.070	0.433	0.114	0.038
	[.000]	[.000]	[.344]	[.002]	[.000]	[.000]	[.000]	[.035]
2	0.495	-0.681	0.015	0.043	0.050	0.005	0.082	-0.008
	[.000]	[.000]	[.276]	[.004]	[.001]	[.912]	[.000]	[.625]
3	0.195	0.173	-0.481	0.082	0.146	-0.162	0.103	-0.056
	[.344]	[.276]	[.000]	[.356]	[.045]	[.391]	[.388]	[.354]
4	1.592	0.714	0.114	-2.586	-0.270	0.832	-0.661	0.265
	[.002]	[.004]	[.356]	[.000]	[.120]	[.047]	[.018]	[.004]
5	0.697	0.533	0.132	-0.174	-1.608	0.065	0.171	0.184
	[.000]	[.001]	[.045]	[.120]	[.000]	[.695]	[.092]	[.002]
6	0.441	0.005	-0.015	0.055	0.007	-0.660	0.125	0.042
	[.000]	[.912]	[.391]	[.047]	[.695]	[.000]	[.000]	[.011]
7	0.536	0.415	0.044	-0.202	0.081	0.580	-1.448	-0.005
	[.000]	[.000]	[.388]	[.018]	[.092]	[.000]	[.000]	[.909]
8	0.309	-0.073	-0.041	0.139	0.150	0.331	-0.009	-0.806
	[.035]	[.625]	[.354]	[.004]	[.002]	[.011]	[.909]	[.000]

Legend:

1 Milk
2 Carbonated soft drinks
3 Powdered soft drinks
4 Isotonics
5 Bottled water
6 Juices and fruit drinks
7 Coffee
8 Tea

VITA

Name: Grant Falwell Pittman

Permanent Address: 2060 New Providence Rd.
Murray, KY 42071

Personal: Born: April 15, 1977, Murray, KY

Education: Ph.D., Agricultural Economics
Texas A&M University, 2004

M.B.A., Murray State University, 2001

B.S., Agribusiness Economics
Murray State University, 1999

Work Experience: Graduate Research Assistant, Agricultural Economics,
Texas A&M University, College Station, TX (2001-2004)

Intern, Economic Research Service,
USDA, Washington, DC (Summer 2003)

Graduate Assistant, College of Business and Public Affairs,
Murray State University, Murray, KY (2000-2001)

Falwell & Pittman Farms
Murray, KY (1990-2001)

Selected Publications:

Capps, Jr., O., A. Clauson, J. Guthrie, G. Pittman, and M. Stockton. "Economic and Nutritional Dimensions of Nonalcoholic Beverages: Analyses Based on the 1999 AC Nielsen Homescan Data", Technical Bulletin. Food Assistance and Nutrition Research Program, Economic Research Service, U.S. Department of Agriculture, Forthcoming 2004.