

Factors Affecting Consumer Decision Making Behavior on Consumption of Beverage Products

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ABSTRACT

This study assesses factors affecting consumer decision making behavior on the consumption of a number of milk and milk products, including fresh milk, flavored milk and milk powder and other commonly used beverage products such as tea, coffee, fruit juice, and soft drinks. It uses the primary data collected through a questionnaire-based survey with a randomly selected sample of 200 consumers selected in the Kurunegala District from April to May 2005. It hypothesized that consumer decision making on consumption of these beverages were significantly correlated with a number of socio economic characteristics, including the sex, age, level of income etc. The results suggest a several these factors have an impact on this behavior.

KEYWORDS: Beverage industry in Sri Lanka, Consumer decision making behavior, Milk products

INTRODUCTION

Beverages are defined as materials used as drinks for the purpose of relieving thirst and introducing fluid in to the body, nourishing the body and stimulating or soothing the individual (Begum, 1995).

Beverage industry is one of the popular industries in the world. Beverages are ranged from drinking water to various types of drinks such as tea, coffee, milk, carbonated soft drinks, fruit juices, cola drinks, non-cola drinks, alcoholic beverages, sports and energy drinks etc.

The most important type of beverage is water and that is one of the man's most important needs. Packaged water offers the ultimate refreshing health drink. Tea has been the world's most popular beverage, next to water. It offers refreshment, warmth and potential health benefits. (Wickramanayake, 1996). Milk is almost a complete and ideal food and contains most of the proximate principles of a well balanced diet. In order to increase milk consumption and encourage young people to drink, it has been a common practice to offer flavored milks on the market. Their consumption is constantly increasing because many youngsters do not like the normal taste of milk, but easily accept, when it has another flavor (Gupta, 1987). About one third of the world's population drinks coffee which provides a stimulating effect (Wickramanayake, 1996). A large variety of alcoholic beverages such as beer, wine, distilled spirit coolers are consumed all over the world today. Soft drinks are also very popular among young people as a ready to drink beverage Sri Lankan beverage industry is a vast industry where private companies are dominating with the market share of 99 percent. It includes local companies as well as global companies. The value of industrial production of beverages has been increased in the country during the recent years. Table 1 shows the production statistics of tea, coffee and milk in Sri Lanka. Tea is the highest produced beverage following by milk and coffee. The milk production has been increased in the last few years.

Table 1- Production statistics of beverages:

Beverage	1999	2000	2001	2002	2003
Tea (Kg Million)	283	306	295	310	303
Coffee (MT)	3249	2545	2350	2360	3090
Milk (00000' Liters)	126	127	129	129	132

Source: Author

Only 5 percent of the production of tea is consumed locally while the rest is exported. The current supply of milk is adequate to meet only 15 percent of the country's requirement. The balance is imported mostly in the form of powdered milk and 63 percent of the people are consuming full cream milk powder (Central Bank Report, 2003).

An average person consumes 113.94 grams of tea, 6.17 grams of coffee, 88.72 ml of fresh milk, 289.28 grams of milk powder and 0.11 bottles of soft drinks per month according to the statistics of the current survey done by the census and statistics department.

Competitiveness of the beverage industry is very high since most of them are close substitutes and also threats of new entrance of global company products are comparatively high. Marketer's objective is to maximize the profit through the consumer satisfaction. For that needs and wants of the customer should be identified. At present it's very important to identify the customer since their needs and wants are continuously changing. Today consumers are more knowledgeable and some are very health conscious and also their perceptions towards nutritional quality and food safety are different and they expect different quality standards. Therefore consumer's decision making behavior on the consumption vary according to various attributes such as age, sex, household size, education, etc. A research has been conducted in Japan by Watanabe *et al.*, (1998) to examine the key socioeconomic and lifestyle variables affecting the consumption of beverages. The study found that many of the consumer attributes had a significant association with the decision to consume various beverages.

Therefore the objective of this study is to identify the socio economic factors affecting the consumer's decision making on milk, milk products and other beverage products and to estimate the impact of these factors on consumer decisions with respect to consumption of beverages and finally to discuss the implications of these factors to improve the market performance of the beverage industry. Therefore this study is important for the marketers to make better strategic marketing decisions.

METHODS

In this section the paper presents the methods used to examine the economic problem of the study.

Theoretical Framework

The study hypothesized that the consumer's decision making behavior on the consumption of beverages was associated with the socio-economic factors such as gender, age, household size etc. The beverage types were classified as milk, milk products, and other beverage products. Milk and milk products include fresh milk, flavored milk and milk powder while other beverage products include tea, coffee, fruit juice and soft drinks. An empirical model was constructed to find out the correlation between the consumer's decision making on beverage consumption and their socio-economic factors.

The model can be expressed as,

$$Z_i^j = \log [p_i^j / (1-p_i^j)] = \beta_0 + \beta_1^j \text{GEN}_i + \beta_2^j \text{AGE}_i + \beta_3^j \text{HH}_i + \beta_4^j \text{MR}_i + \beta_5^j \text{EDU}_i + \beta_6^j \text{INC}_i$$

Where *j* represents each of the milk, milk products and other beverage products. (Fresh milk, flavored milk, milk powder, tea, coffee, fruit juice and soft drinks), and *i* represents each of the respondent. Dependent variable, *Z* = 1 if respondent *i* consumed beverage *j* within the previous week, and 0 if otherwise. And the explanatory variables are gender (GEN), age (AGE ; <35, >35), household size (HH ; ≤ 4 and >4), marital status (MS), education level (EDU ; primary and secondary) and household income (INC ; <20,000 and >20,000)

Data Collection

A personal interview survey was conducted in Kurunegala district to collect the primary data from the consumers by a pre tested questionnaire. The survey covered the areas of Makandura, Pannala, Giriulla, Kuliypitiya, Kurunegala and Wariyapola. 200 consumers of age 15 and above were selected randomly and the sample included the consumers from fairs, grocery shops, and supermarkets. The survey was conducted from April to May 2005. The respondents were questioned whether they consumed each type of beverage product during the previous week, and also their perceptions towards the nutritional quality and safety of the particular beverages.

Data Analysis

Due to the dichotomous nature of the dependent variable Logistic regression model was used to find the socio-economic factors affect for the consumption of milk, milk products and other beverage products and further because of the model's mathematical simplicity and asymptotic characteristics which constrained the predicted probabilities to a range of zero to one. The logit model relates the probability of respondent's consumption practices for each beverage to a set of consumer characteristics based on a cumulative logistic probability function.

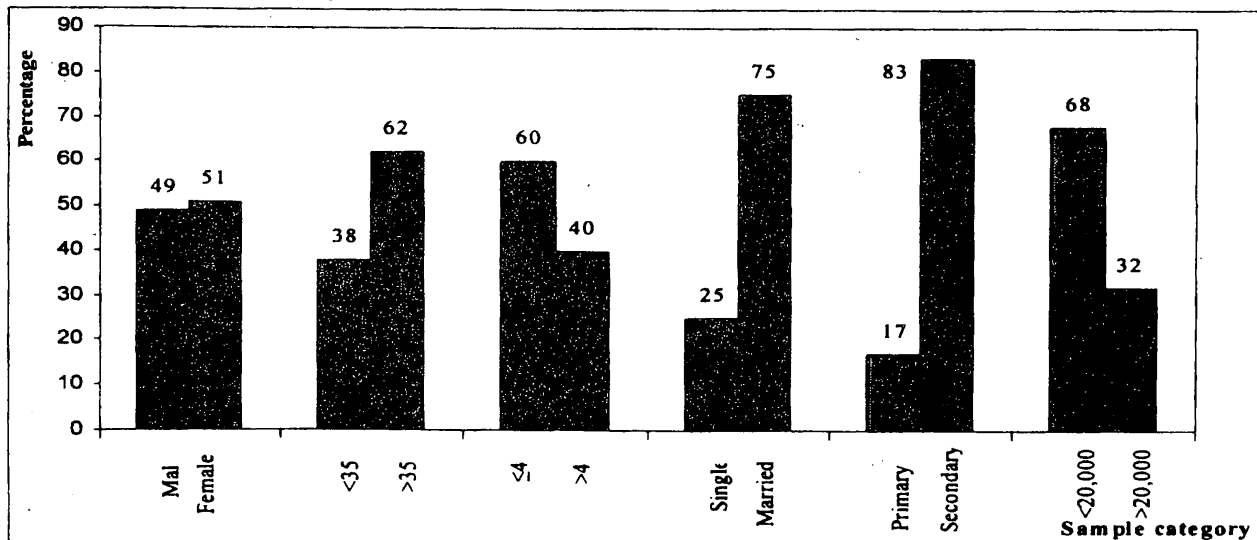
RESULTS AND DISCUSSION

This section summarizes the descriptive statistics of the sample and out come of the study.

Descriptive Statistics of the Sample

The descriptive statistics of the sample is illustrated in the Figure 1. 49 percent of the sample was consisted of males and out of which 35 percent was young people less than 35 years of age. 42 percent of the female respondents were young and 32 percent of the respondents were high income people whose household income was more than 20,000 rupees.

Figure 1- Distribution of the sample:



Sample consisted of 14 percent of high income-secondary educated-young people whereas low income-primary educated-elderly people were also 14 percent.

Descriptive Statistics of the Dependent Variable

Table 2 represents the results obtained from the consumption of each beverage by respondents. Milk powder and tea were the mostly consumed beverages. Over 65 percent of all the respondents consumed milk powder and tea within the prior week. On the other hand fresh milk and flavored milk were the least popular beverages although milk powder consumption was very high. Less than 20 percent of the respondents consumed those two beverages within the prior week.

Table 2 - Descriptive statistics of the dependent variable:

	Percentage Consumption	
	Yes	No
Milk and milk products		
Fresh milk	13	87
Flavored milk	16	84
Milk powder	66	34
Other beverage products		
Tea	79	21
Coffee	40	60
Fruit juice	28	72
Soft drinks	31	69

Results of the maximum likelihood estimates of the logit model for each of the beverages are shown in Table 3. The study revealed that the age and marital status are the statistically significant determinants of fresh milk consumption. Married persons had a higher probability to consume fresh milk than single persons and elderly people above 35 had a lower probability to consume fresh milk than young people. Although more than 60 percent of the elderly people accepted that

fresh milk is very nutritious and safe (Table 4, Table 5) most of them were reluctant to consume, with the perception that fresh milk contains more fat and that might cause phlegm and obesity.

Age was the only significant factor associated with flavored milk consumption. Above 35 age group had a lower probability to consume flavored milk. Although young people had higher preference for flavored milk and believed that it was nutritious (50%) over 25 percent of the elderly people had no idea about the nutritional content or the safety of flavored milk (Table 4, Table 5) while most of them were health conscious and believed that most flavored milk contains artificial flavors and preservatives posing a threat to their health.

The significant consumer characteristics impacting milk powder consumption was household size and income levels of respondents. Members of larger families were less prone to consume milk powder and high income (>20,000) households were more prone to consume milk powder. Many respondents (over 90%) believed milk powder is nutritious and safe to consume. (Table 4, Table 5) When other beverage products are considered, tea consumption was significantly associated with age of the respondents. Persons above 35 ages were more likely to consume tea than their counterparts. Over 75 percent of the elderly people believed that tea was safe to consume regardless of its nutritional value. (Table 4, Table 5)

Any of the socioeconomic factors was not significantly affected with coffee consumption

When considering fruit juices, the consumption was significantly affected by only the age of the respondents like flavored milk consumers. Above 35 people had a lower probability to consume fruit juices.

Table 3 - Results of Maximum Likelihood estimates of the logit model:

Variable	Milk and Milk Products			Other Beverage Products			
	Fresh Milk	Flavored Milk	Milk Powder	Tea	coffee	Fruit Juice	Soft Drink
Intercept	-2.8022 (0.9058)	-0.1354 (0.7583)	0.6721 (0.5873)	0.8006 (0.7121)	-0.0738 (0.5424)	-0.6974 (0.6917)	0.5015 (0.6391)
GEN	0.0734 (0.4411)	0.1177 (0.4157)	-0.6340 (0.3254)	-0.1486 (0.3706)	-0.4422 (0.2989)	-0.4267 (0.3449)	1.0640 ** (0.3679)
AGE	-1.1297 ** (0.4994)	-1.2016 ** (0.5218)	0.1495 (0.4345)	0.9189 ** (0.4630)	0.4731 (0.3985)	-1.4314 ** (0.4229)	-1.0259 ** (0.4466)
HH	-0.0917 (0.4462)	-0.8555 (0.4490)	-0.8655 ** (0.3352)	0.5022 (0.3852)	-0.1466 (0.3035)	-0.0790 (0.3478)	-0.4235 ** (0.3703)
MR	1.4420 ** (0.6536)	-0.8974 (0.5154)	-0.5803 (0.4974)	0.5479 (0.4785)	-0.00919 (0.4509)	0.0726 (0.4502)	-1.5301 (0.4733)
EDU	0.2974 (0.6846)	-0.0671 (0.6415)	0.8187 (0.4233)	-0.3110 (0.6070)	-0.3336 (0.4035)	0.6523 (0.5938)	-0.1009 (0.5095)
INC	0.4240 (0.4508)	0.00133 (0.4415)	1.2979 ** (0.3978)	-0.5456 (0.3806)	-0.2361 (0.3247)	0.3819 (0.3540)	0.1331 (0.3826)

Figures in parentheses are standard errors
 ** Significant at 0.05 probability level

Table 4 - perceptions of the respondents towards nutritional quality of the beverages:

	No Idea		Not Nutritious		Somewhat Nutritious		Nutritious		Very Nutritious	
	<35	>35	<35	>35	<35	>35	<35	>35	<35	>35
Milk and milk products										
Fresh milk	2	7	-	-	-	2	20	22	78	69
Flavored milk	10	26	5	9	30	30	50	28	5	7
Milk powder	-	5	-	-	2	1	90	90	8	4
Other beverage products										
Tea	14	12	38	35	43	42	4	10	1	1
Coffee	4	15	45	30	50	52	1	3	-	-
Fruit Juice	7	12	6	11	36	29	33	40	18	8
Soft drinks	14	15	71	70	15	10	-	5	-	-

Note-figures are in percentage values

Table 5- perceptions of the respondents towards safety of the beverages:

	No Idea		Highly Unsafe		Unsafe		Somewhat Safe		Very Safe	
	<35	>35	<35	>35	<35	>35	<35	>35	<35	>35
Milk and milk products										
Fresh milk	5	12	-	-	5	7	20	17	69	64
Flavored milk	13	25	3	2	13	27	43	28	18	18
Milk powder	3	5	-	-	-	-	23	40	74	55
Other beverage products										
Tea	21	17	-	-	4	3	33	33	42	47
Coffee	10	14	-	-	3	3	30	40	57	43
Fruit Juice	12	18	4	3	29	37	41	33	14	9
Soft drinks	10	18	9	10	39	40	30	19	12	13

Note-figures are in percentage values

Gender, age, and household size were significantly affected for soft drink consumption. Males were more prone to consume soft drinks while elderly people above 35 and respondents from larger families more than 4 members had a lower probability to consume soft drinks. Many people (70%) believed that soft drinks are not nutritional and not safe. (Table 4 , Table 5)

Watanabe *et al.*'s (1998) findings also suggested that many of the socioeconomic factors had a significant association with the consumption of beverages among Japanese consumers.

CONCLUSIONS

The study revealed that age of a consumer has a significant impact on consumers' decision making on consumption of a number of beverages considered in this analysis. Further it shows elderly people are less prone to consume fresh milk, flavored milk, fruit juices and soft drinks than young people. It also reveals that the level of education of consumers has no significant relationship with the consumption of selected milk and milk products and other beverages.

The implications of the results of analysis for policy are such that any promotional and marketing strategies used with milk beverages, juice and soft drinks should be targeted on the young generation,

whereas tea can be targeted on elderly people and other beverages can be promoted with any age level.

It can also be suggested that fresh milk and flavored milks should be promoted among Sri Lankan people in order to increase the consumption as well as knowledge of nutritional quality and food safety should be further improved specially among elderly people.

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