

Liquid and powder milk consumption patterns and preference among undergraduates

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1. Introduction

Milk plays a crucial role in minimizing food insecurity. Although fresh milk is the most heavily consumed beverage in the world, the level of consumption in Sri Lanka is considerably low with a per capita consumption of about 4.14 kg per year. Only about one percent of the population on the island consumes fresh milk regularly as compared to 63 percent of other consumer varieties of full cream milk powder (Susudu et al., 2006). Studies on milk and milk products in Sri Lanka are concentrated only on a few regions and communities (Abeywickrama et al., 1965; Susudu et al., 2006). Milk consumption among Sri Lankan undergraduates is not well understood so far. So the empirical gap has been set on the preference and consumption pattern of milk among university students. Since they are considered as the cream of the young generation, their wellbeing is a consideration to the future economy of the country. To see whether becoming an undergraduate has affected their consumption pattern and preference of liquid and powder milk within five-year period was focused on this study. Understanding the consumption will identify the bottlenecks that hinder the growth of the liquid and powder milk production and target specific measures for developing market opportunities to meet the demand of young consumers (Njarui et al., 2011). Consumer buyer behavior is influenced mainly by social, cultural, personal, and psychological factors. These factors affect consumer preferences about developing products and brands (Rani, 2014). This paper investigated the buyer behavior, effect of demographical factors, and availability on consumer trends among undergraduates.

2. Materials and Methods

The study was carried out with 334 undergraduates residing in different provinces in Sri Lanka representing 44% Western, 10%, Central, 17% Southern, 2% North Central, 3% Northern, 2% Eastern, 6% North-Western, 3% Uva, and 13% in Sabaragamuwa provinces. An online questionnaire form was created to gather data; hence, the survey did not include direct questioning and informal discussion. All the respondents were randomly selected representing state universities in Sri Lanka. The study was carried out from April to September 2020. Information collected included household demographic characteristics, milk and milk products consumption pattern, consumption frequency and preferences. The living area at the time of data collection was taken as the residential area of the students. The frequencies of consumption were sourced on a daily, weekly and monthly bases.

Data were converted into a spreadsheet and checked for errors before analysis. Data Analysis was performed with descriptive statistics and Chi-square test using the Statistical Procedures for Social Sciences (SPSS) version 26 for Windows (SPSS 10). The results are presented using descriptive statistics, tables, and graphical illustrations. Chi-square formula was performed as:

$\chi^2_{\text{test}} = \sum \left[\frac{(Q_i - E_i)^2}{E_i} \right]$ where; χ^2 : Chi-square value, Q_i : observed frequency, E_i : expected frequency.

3. Results and Discussion

Based on the demographic characteristics, the survey involved 334 students, representing 227 females and 106 males. 214 of them were studying in Science faculties, 65 in Management and 52 in Arts faculties. The age levels of the students with their percentages were; 18-22 years old (17%), 23-26 (77%), and 27- 30 (6%) respectively. Household sizes of the respondents were as 1-4 family members (4.2%), 5- 8 (56.8%), and 9-12 (38.7%). Living areas of students were categorized into three groups such as urban (73%) semi-urban (22%) and rural (5%). According to the survey results, 92% of students preferred to consume any form of milk, whereas 8% of students did not prefer to consume milk. Under the hypothesis that there was no significant association between demographic characteristics to the preference towards milk, only 'gender' had a significant association with a 90% confidence interval ($X^2=0.285$; $P=0.10$) which implies more females prefer to consume milk than males.

From students who consume milk, 59% of students preferred to consume powder milk, 10% liquid milk, and 31% preferred both forms. The consumers' choices were examined further on the product's origin, and 73% of respondents preferred local powder milk whereas 27% of respondents preferred imported products. By the Chi-square test, it was found that there is a significant association between preference on product origin and form of milk they consume ($X^2=10.42$; $P=0.005$), which can be interpreted as consumers' tendency to be more towards local powder milk brands. In addition, residential areas also showed a significant association with the form of milk preferred ($X^2 =7.39$; $P=0.10$), which can be interpreted as urban consumers' tendency to be more towards powder milk.

Table 01. Factors affecting preferences of milk consumption

		Liquid		Powder		Both		DF	(X ²)	P
		n	%	n	%	n	%			
Choice of milk	<i>Imported</i>	6	2.1	68	23.5	18	6.2	2	10.421	0.005
	<i>Local</i>	17	5.9	107	37.0	73	25.3			
	<i>Total</i>	23	8.0	175	60.6	91	31.5			
Residential area	<i>Urban</i>	18	5.9	133	43.3	77	25.1	4	7.399	0.100
	<i>Semi urban</i>	11	3.6	38	12.4	13	4.2			
	<i>Rural</i>	2	0.7	10	3.3	5	1.6			
	<i>Total</i>		10.1	181	59.0	95	30.9			

Respondents were questioned on their preferences on the form of milk at present and at five years ago. The results were at present; 76% powder, 6% liquid, and 17.4% both in which, at five years ago; 59% powder, 10% liquid, and 31% preferred both liquid and powder form. Results revealed that within five years, consumption pattern has changed from liquid and both towards powder-milk.

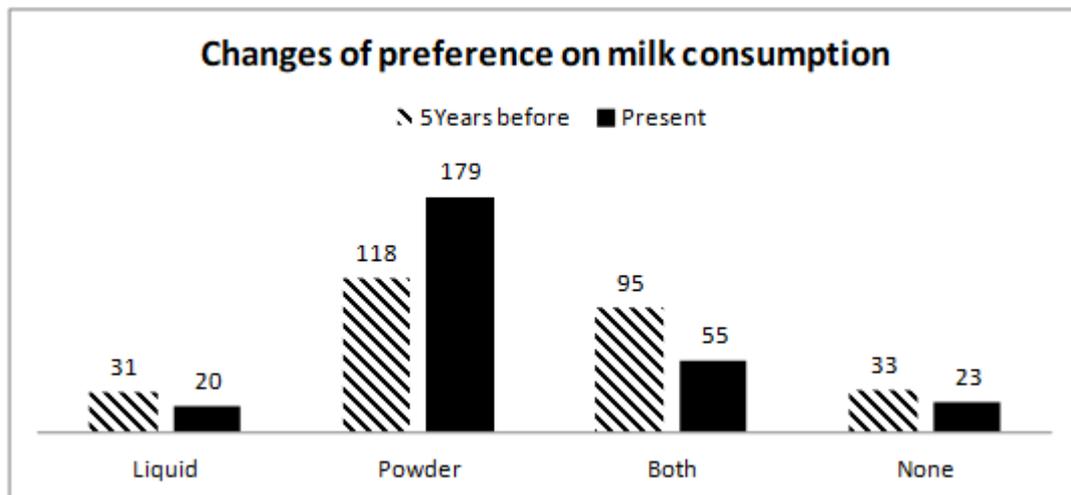


Figure 1. Change of preference on the form of milk within five years

According to the survey; it was found out that 62.2% were not in the habit of drinking liquid milk. From them, 50% rely on powder milk due to the minimum availability of liquid milk. 20% of students thought powder milk is easier to use and store than liquid milk. 13.45% of them disliked the taste and smell of liquid milk, 6.72% believed powder milk is more nutritious than liquid milk, and 10.31% had other causes.

4. Conclusions

According to the results, it was found that 92% of the students questioned in this study were consuming milk as a habit. This is a significant proportion. The major reasons for the behavior were the nutritional value, taste and availability of milk. The consumption pattern has been directed towards the usage of liquid milk and local brands. Further, a significant association was found between gender and milk consumption and between product origin, residential area, and form of milk. When all the results were concluded, activities should be continued to promote the consumption of this essential food in a healthy and balanced diet.

5. References

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