

Is Fresh Milk a Viable Alternative to Powdered Milk? A Study of Consumer Responses to Recent Price Escalation of Powdered Milk

Introduction

The context of aggressive promotion of production and consumption of fresh milk by the government as an alternative to powdered milk and the recent drastic price escalation of powdered milk experienced by the Sri Lankan consumers brought about an ideal opportunity in the form of a quasi experimental setting for investigating the consumer behavior in relation to the milk and milk products. We feel that such a study is timely as it would shed light on perceptions and attitudes of consumers towards consumption of fresh milk vis-à-vis powdered milk, especially in the context of approaches adopted by the government to promote agriculture and livestock industries that are not predominantly market orientated.

The Context

Dairy sector is regarded as one of the most important livestock sub sectors that can greatly contribute to rural economy of the country. The contribution of the dairy sector to the agricultural GDP was 8 percent in 2005. In identifying its importance, the dairy sector has been regarded as a priority sector for public investment (Ministry of Livestock and Infrastructure Development, 2006) by the Sri Lankan government in its National Livestock Development Policy. Livestock development and promotion of fresh milk consumption are taken as measures for increasing the competitiveness of domestic milk sector. Such policies are primarily aiming at producing 50 percent of the country's dairy requirement locally by 2015, which will also have the added advantage of saving much needed foreign currency that the government spends on imported milk foods.

The significance of milk as a major commodity of the food basket of the Sri Lankan consumers has been increasing with powdered milk as the major milk food consumed. The expenditure on milk foods as a percentage of the total expenditure on food and beverages has increased steadily over the past few decades reaching 9.3 percent in 2006 from 2.4 percent in 1980. However, the consumption of fresh milk by Sri Lankan consumers shows a declining trend (Figure 1).

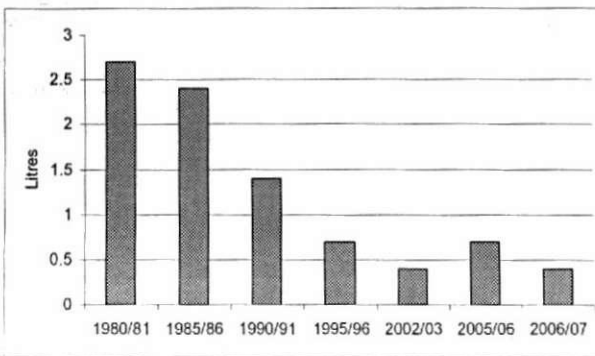
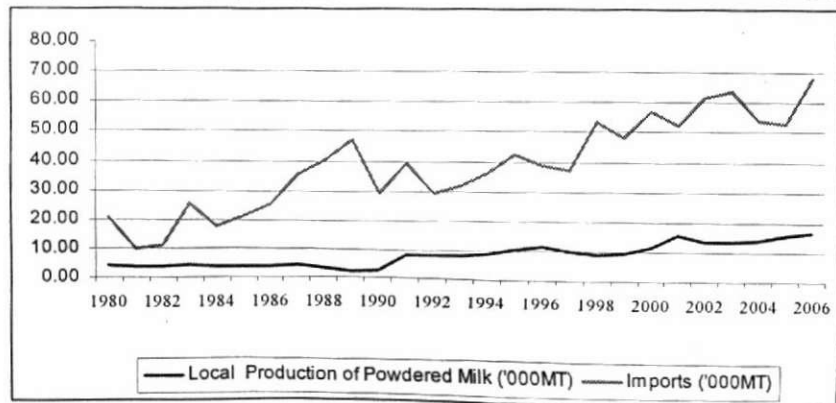


Figure 1: National average monthly household consumption of fresh milk

Source: Food Balance Sheet, 2006, Department of Census and Statistics.

On the other hand, per capita consumption of powdered milk has increased from 1.59 Kg/ Person /Year, in 1980 to 3.63 Kg/ Person/Year, in 2006. The rate of increase of the domestic production of powdered milk has not been sufficient to meet the increased demand of powdered milk (Figure 2). For instance, the contribution of the local powdered milk production to the national powdered milk consumption in 2006 was just 18.7 percent. The country hence is greatly dependant on imported milk powder for its consumption needs.



Source: Food Balance Sheet, 2006, Department of Census and Statistics

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The Study

Three case studies were carried out in three different socio-economic settings to get a comprehensive understanding of consumer behaviour. The case studies were designed to investigate the research propositions, "consumers belonging to different socio-economic profiles respond differently to the price increase of powdered milk" and "there is a greater tendency for consumers to switch from powdered milk to fresh milk consumption in contexts where fresh milk is readily available".

Study sites were chosen to investigate whether changes in consumer responses can be observed in different socio-economic settings. Here, the study sites were regarded as the physical and the social boundaries of the case studies conducted. The first case study was carried out among consumers belonging to three different socio-economic profiles, namely highly

educated high income earners¹, moderately educated middle income earners² and less educated low income earners³, in an urban location where fresh milk is moderately available. A specific site for this purpose was selected based on consumers' educational and income status (Malkanthi, 2008). The second case study was carried out in a mid-country milk village ("Kiri gammanaya")⁴. This setting was specifically selected to understand how consumers having easy access to fresh milk would respond to the price increase of powdered milk (Dambagolla, 2008). The third case study was carried out in a mid country non-milk village with a record of negligible fresh milk consumption as per a baseline survey carried out in 2005 (Sampath, 2008). Hence, this village setting provided an ideal opportunity for investigating the changes in milk consumption behavior by rural consumers in the context of drastic price hike of powdered milk.

The first case study would give us insights on how consumers belonging to different socio-economic profiles would respond to the price hike of powdered milk, whereas the second and third studies would enable us to investigate whether ready availability of fresh milk would encourage consumers to switch from powdered to fresh milk. Data were gathered using a questionnaire which was designed to capture the routine behaviour of consumers and the changes, if any, in buying and consumption behaviour due to price hikes of powdered milk. The sampling information is given in Table 1.

Table 1
Description of the Sample

Case Study No	Location	Sample Size
1	Mid country urban	80
2	Mid country milk village	60
3	Mid country non milk village	80

Key Findings

The findings revealed that a greater majority (76.3%) of the consumers has changed their consumption behavior in response to the recent price hike of powdered milk. The main responses were found to be reduction in consumption and brand switching. These behavioral changes were mainly visible among less educated low income earners (92%) and moderately educated middle income earners (81%). It is noteworthy that the least change in response was observed mainly among high income earners. The fact that 46% of highly educated high income earners

have changed their milk consumption behavior indicates that the price increase of powdered milk has mainly been felt by lower income categories of consumers (Figure 3). The forthcoming section elaborates on the detailed behavioral responses revealed by the study.

low income families have totally given up powdered milk consumption.

Brand Switching

Brand switching was found to be the most prominent response shown to price increase of

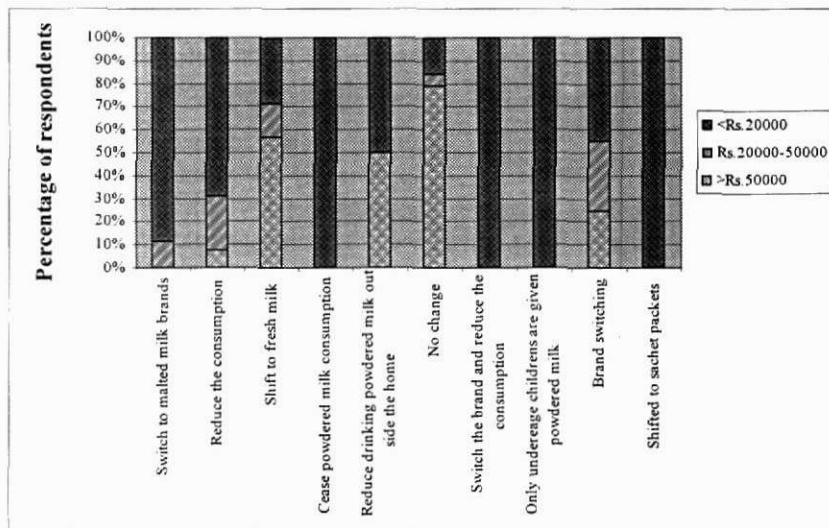


Figure 3: Consumer Responses to Price Increase of Powdered Milks

Reduction of Consumption

It was evident that 21.35 percent of consumers have reduced the consumption of powdered milk after the price increase. This reduction has taken place in terms of cutting down the frequency of consumption (Figure 4).

powdered milk by the consumers. This was clearly evident as 44.03% of consumers recorded to have switched the powdered milk brand that they used to consume prior to the price increase. A significant share of consumers (63.16%) have shifted from more expensive brands to relatively inexpensive brands of

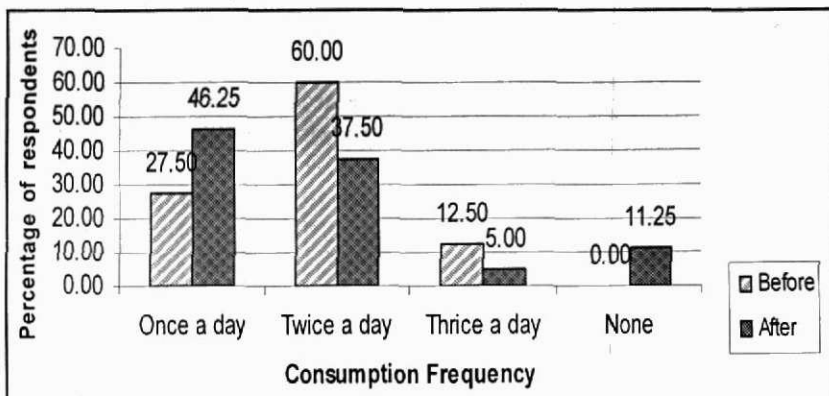


Figure 4: Frequency of powdered milk consumption before and after the price increase

The findings revealed that the majority used to consume powdered milk at least twice a day prior to the price escalation and a greater share of them has cut down the frequency of consumption to once a day.

There were some changes in consumption that are unique to low-income families such as total cessation of powdered milk consumption (recorded by the elderly members in 6 percent of low-income families), though they continued to provide their children with powdered milk and 11.25 percent

powdered milk, which has also created a sudden increase in demand for the locally-produced powdered milk brand. This was evident as 36.84% of those consumers who switched brands have chosen Highland milk powder as their preferred choice. However, some consumers (36.87%) have shifted from Highland to fairly expensive brands as there was a shortage in supply of the locally-produced brand. Certain other consumers (10.53%) have been forced to switch the brand that they used

to consume due to withdrawal of those preferred brands by the respective companies. Switching from powdered milk to malted-milk brands was also found to be a prominent response shown by consumers to price increase of powdered milk, of which 90 percent of consumers' belonged to less educated and low income earning group. Another significant finding among low-income group families was that a considerable proportion of them (11.4%) have switched to a brand which comes in sachet packets.

From Powdered Milk to Fresh Milk Consumption

It is important to note that only a small percentage (11.47%) of the consumers in the urban setting has switched to fresh milk in response to price hike of powdered milk and the majority of them (60%) belonged to the highly educated high income earning category of consumers. The belief that continuous consumption of fresh milk can create health problems (47%) and low preference shown by children (24%) were found to be the prominent factors that restrained consumers from switching to consumption of fresh milk. Perceived poor-quality standards of fresh milk mainly owing to adulteration with water, high cost associated with consumption compared to that of powdered milk and high perishability coupled with poor storage life were among the other factors mentioned.

Easy access to fresh milk in the rural setting was found to be playing an important role on the consumers' decision to switch from powdered to fresh milk. It was clearly evident from the findings that a very insignificant number of consumers in the *non-milk village* have substituted powdered milk with fresh milk compared to that of the consumers in the *milk-village*, although there were 10% of consumers in the *non-milk village* who drink fresh milk not on a routine basis or as an alternative to powdered milk but as a refreshment. At the same time, 58.3% of the consumers in the *non-milk village* have shown preference for switching to fresh milk, provided that fresh milk is readily available. The fact that 34% of the consumers in the *milk village* switching to fresh milk consumption further indicates that ready availability of fresh milk in a given rural location would encourage consumers to take up fresh milk as an alternative for powdered milk.

The reasons that were highlighted by the rural consumers as to why they did not switch to

fresh milk were common to *both milk and non-milk villages*, though the importance attached to each factor was different in the two settings. The main reasons, according to the order of importance were the poor storage life of fresh milk, higher price, high cost of storage, less availability followed by less appealing taste, belief that consuming fresh milk causes health problems, easiness of preparation of powdered milk.

Overall findings indicate that fresh milk consumption on a routine basis cannot be observed among the majority of consumers and 78.8% of the consumers were found to be taking fresh milk occasionally (i.e. once per week, once a month, once in a while) as refreshment, usually in the form of flavored milk, either sterilised or pasteurised. This highlights the fact that consumers prefer to take fresh milk not only as an alternative to powdered milk but also as a refreshing drink.

Conclusions

Consumers have responded differently to the price escalation of powdered milk depending on their socio-economic profiles, both in terms of the type of response and the magnitude of the response. Change in consumption behavior could greatly be observed among the low-income group compared to that of high-income groups. Most of the responses of the low-income groups can be identified as coping strategies which have eventually led to reduction in the consumption of powdered milk in terms of cutting down the consumption frequency and the amounts and, switching to malted-milk and to a brand that comes in sachets of small quantities of milk powder. Although brand switching was found to be a common response in all income categories, switching to fresh milk is not a popular or common response. The minority of those who switched to fresh milk largely consists of high-income groups. Relatively high cost associated with fresh milk consumption seems to discourage the lower income categories of consumers from switching to fresh milk even at high prices of powdered milk. A considerable percentage of consumers switching to fresh milk in the *milk village* in comparison to the *non-milk village* indicate that the *milk village* concept is gaining momentum in promoting fresh milk consumption and the fact that a greater share of consumers taking fresh milk occasionally as refreshment indicates that there is an untapped market potential for promoting fresh milk not only as an alternative to powdered milk but also as various value-added liquid milk products as substitutes for soft drinks, which could be achieved through facilitation of private sector participation in production and marketing.

Limitations of the Study

Given the scope of the study, the findings could be used in identifying patterns of consumer responses and behaviour. However, the insights provided by this study could be effectively used in designing and conducting a large-scale study for generalisation purpose.

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Footnotes

- ¹ Consumers who have a degree or above and having a total monthly household income of Rs. 50,000 and above.
- ² Consumers who have completed their secondary education and having a total monthly household income between Rs. 20,000- 50,000.
- ³ Consumers who have completed primary education and having a total household income of less than Rs. 20,000.
- ⁴ Funded by Sri Lanka Udarata Development Authority.