

Consumer Preferences for Different Attributes of Powdered milk: A Conjoint Analysis

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Introduction

Consumption of dairy products in Sri Lanka, particularly powdered milk, has experienced a substantial growth over the last few decades. Average monthly household expenditure share on milk and milk products in 2010 was 7.8%, ranking third in food expenditure (Economic & social statistics of Sri Lanka, 2012). As such, it is evident that milk powder has become an essential item the food basket of Sri Lankan consumers. Despite the attempts made by the Sri Lankan government to fulfill the on-going demand for this commodity, milk powder imports account for more than 80% of the domestic requirement. Meantime due to urbanisation and increased income, the preference and expectations of consumers for milk food have been altered.

In Sri Lanka, milk powder market is led by a few reputed imported brands and one local brand. In this context, a study was organised to understand which attributes of powdered milk consumers prefer the most and their willingness to pay for these attributes, based on conjoint analytical framework.

Conjoint Analysis is a powerful technique to measure and understand buyers' preference for consumer products (Green and Rao 1971; Johnson 1974; Srinivasan and Shocker 1973b; Wittink and Cattin 1989). A highly marketable product can have multiple attributes and it could be difficult to state consumer preference, trade off and their relative importance, with regard to an isolated attribute. The advantage of using conjoint analysis method over other methods is that the products are decomposed into different attributes with different levels and consumer preferences for the products are measured by partial contribution ("part worth") of product features. The approach is generally believed to better reflect the real decision-making situation of consumers.

Objectives

The main objective of this study is to assess consumer preference for various milk powder attributes, to identify the most important product attributes and levels, and to estimate the *part worth* utilities of attributes that consumers place for powdered milk.

Methodology

At the outset, a several focus group meetings were held with technical experts to select appropriate product attributes and levels. The identified attributes together with their levels are price (High, Medium, Low), Brand (Anchor, Maliban, Highland), Packaging (Aluminum foil only, Aluminum foil with cardboard) and fat content (Full cream, Nonfat).

The second step was to employ an experimental design to reduce the combinations to a manageable number and construct a survey instrument to collect data. A full factorial design yielded 36 profiles and it is almost impossible for a respondent to rate all of them. The number of profiles was reduced to 8 by adopting incomplete fractional factorial design. Pair-wise comparison method was used in conjoint selection. Once the set of product profiles was constructed, a survey was executed to collect the data.

The questionnaire was administered with a random sample of 112 urban middle class consumers in supermarkets of Kandy area. A binomial logit model with dummy coding was used to analyse the data for a pair-wise conjoint experiment and to estimate relative of importance and willingness-to-pay for the different attributes.

Results

Table 2. Part worth values for attributes and levels, conjoint Analysis results

Attribute/ Level	Part worth utilities
Price - High	-2.34
Medium	-2.77
Low	5.11
Brand - Anchor	2.72
Maliban	2.10
Highland	-4.82
Fat content- Full cream	1.23
Non fat	-1.23
Packaging- Cardboard	2.66
Aluminum	-2.66

Anchor and Maliban brands have a higher preference and Highland has a negative preference. Full cream and cardboard packaging are also preferred by consumers. Price is the most important attribute (33.96%), whereas the least important attribute is the fat content (10.6%). Brand is also a relatively important attribute (32.5%).

Conclusion and policy recommendations

Of the four attributes selected, consumers pay a high value on price and brand than other attributes. Price was found to be a significant factor when making purchasing decisions. The market segment has a high preference for Anchor brand compared to other brands. Even though there were some consumers who prefer non-fat powdered milk due to health reasons, most preferred fat content was full cream.

In urban middle class society, preference for powdered milk can be influenced by income growth, technological advancement, changes in lifestyle and urbanisation. The findings of this study can be useful in developing appropriate production plans for local producers.

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