

A STATISTICAL ANALYSIS ON CONSUMERS' USE OF FOOD LABEL INFORMATION: A CASE STUDY OF COLOMBO DISTRICT, SRI LANKA

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INTRODUCTION

The food industry is one of the fastest moving industrial sectors. The glamorous and glittering retail shops and supermarkets are expanding very fast all over the country. The majority of food items is pre-packed and presented to the consumer in a labeled container. Label refers to a simple tag attached to the product or an elaborately designed graphic that is part of the packaging. The label provides the method by which a manufacturer communicates directly to a consumer, initially at the point of sale but also later when the product is consumed in the home. In this situation, food labels play an important role by disseminating important health and nutritional information to consumers.

This study attempts to evaluate the consumers' level of knowledge and use of information provided on food labels in making purchasing decisions. By having a better understanding of consumers' awareness and concern about information on food labels, manufacturers can market their product to meet the needs of health conscious consumers.

METHODOLOGY

Survey: This is a cross sectional study done over a period of five months at supermarkets and retail shops of various sizes in five towns in Colombo District. The geographical locations of the supermarkets, retail shops were chosen with the aim of having the maximum geographical scattering possible and also the maximum socio-economic scattering of consumers' characteristics. Participants were selected based on systematic sampling.

Data was collected using a structured, interviewer administered questionnaire. Respondents were limited to individuals age 18 and over. A total of 600 individuals participated in the survey. With the deletion of respondents with incomplete information on the variables used in the study, the final sample used contains 586 respondents.

Questionnaire: The first part of the questionnaire was aimed at assessing demographic and socio-economic characteristics of the consumer. The questions included in the second section of the questionnaire were aimed at assessing how consumers use different types of information printed on food labels and identifying which information are viewed as more important. Respondents were asked to report how often they use 18 information cues that appear on the product label for food. These were: product name, brand name, manufacture date, date of packing, expiry date, price, net quantity, country of origin, ingredient list, food additives, name/address manufacturer, direction for use/ storage, quality certificate/quality seal/ SLS, warning statement, health/ nutrition claims, information about allergens, nutrition panel and trade mark. Use of these cues was measured on a 5-point Likert scale ranging from

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“never (1)” to “always (5)”. The response categories are, “Always (5)”, “Most of the time (4)”, “Sometimes (3)”, “Rarely (2)”, “Never (1)”.

In order to measure the consumers’ awareness, respondents were asked to assign the level of importance they attach to each of the eighteen categories of information generally displayed on the food labels. The response categories are; “very important (5)”, “important (4)”, “moderately important (3)”, “of little important (2)” and “unimportant (1)”.

Statistical Analysis: Two-Step Cluster Analysis using Schwartz’s Bayesian Criterion(BIC) and Akaike’s Information Criterion(AIC) in the Statistical Package for Social Sciences (SPSS 16.0) was used to identify clusters of respondents based on consumers’ use of and level of importance attached to different types of information displayed on food labels while purchasing packaged food items. Once the clusters were identified, Chi-squared test of association was used to determine whether cluster membership was associated with individual characteristics.

RESULTS AND DISCUSSION

With respect to the socio - demographic features the survey highlighted that the majority of the respondents were predominantly women with only 26 percent as males. Nearly 37% of the respondents had a degree or above while twenty-five percent of respondents had a diploma. Individuals who terminated their education at primary level appeared to be under represented in the sample when compared to the actual population. The sample was therefore somewhat biased in terms of generalizing the results to the Sri Lankan population. Respondents were generally middle aged. More than 30% of the respondents were employed full time. The modal income category was Rs. 35000 – Rs 49999. Nearly 70% of the respondents reported children in the household 18 years or less. Approximately 5% of the respondents reported that there were children in the household under the age of one year. 74% of the sample was married; whereas the remaining proportion was single, separated/ divorced or widowed. Just over one-fourth (26%) of the respondents reported having the primary responsibility for food preparation. Nearly 47% of respondents reported buying packaged food from retail shops, while just over a third (~35%) reported buying packaged food from super markets. 17% of the respondents stated buying packaged food from retail shops and super markets both equally.

Cluster Analysis: Two – step cluster analysis identified three clusters of respondents based on consumers’ use of and level of importance attached to different types of information displayed on food labels while purchasing packaged food items. The profile of each cluster in terms of median ratings of clusters on the classification is presented in figure 1, figure 2 and figure 3 respectively.

Cluster 1 is the biggest(40.1%) and the least differentiated in terms of use and level of importance attached to different information cues. Median rating for the use of ingredient list, food additives, quality certificate, health claims, allergens, nutritional panel and trade mark is higher than the other two clusters; cluster 02 and cluster 03. Individuals belonging to this group scored the highest on the use of all the information cues except date of packing and showed a high level of importance. Simply they were very involved in information search printed in food labels. Additionally, they assigned a high level of importance to almost all information cues. Therefore, they might be called as “High use and High importance” in short “High, High”.

Cluster 2 accounts for 35% of the sample. Individuals belonging to this segment did not actively search for information food labels. They were rather “passive” in information search printed in food labels (low score on use of most of the information). However, they assigned a high level of importance in almost all information sources except trade mark. Therefore, individuals belonging to this consumer group might be called as “Low use and High importance” in short “Low, High”.

Cluster 3 is the smallest consumer segment accounting for 24.9% of the sample. Respondents from this segment displayed a low use of information and low level of importance. Their usage level and level of importance assigned was lowest among the three groups. They seemed to be very distrustful, insecure about information in food labels in general. Individuals belonging to this group did not assign a high importance to food labels and did not use any particular information in comparison with the other two clusters. Therefore, they might be called “Low use and Low importance” in short “Low, Low”.

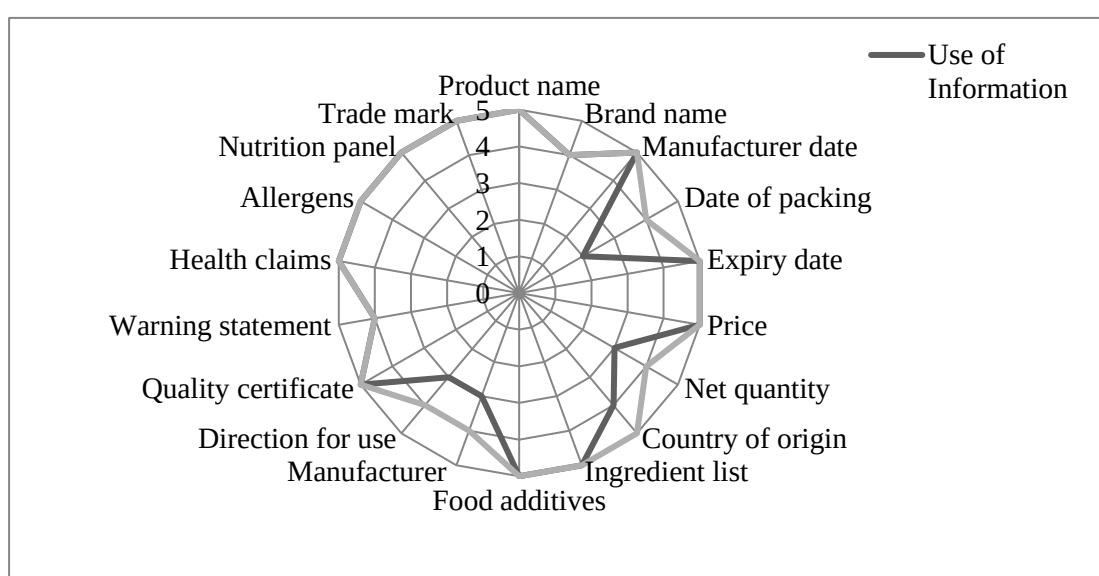


Figure 1: Cluster 01 - “high use and high importance” (median rating)

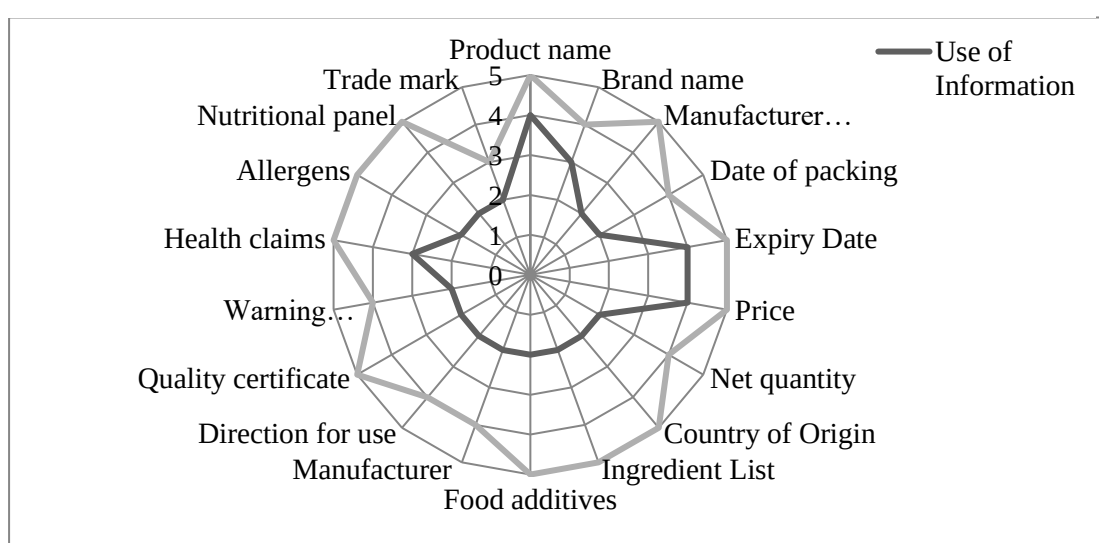


Figure 2: Cluster 02 – “low use and high importance” (median rating)

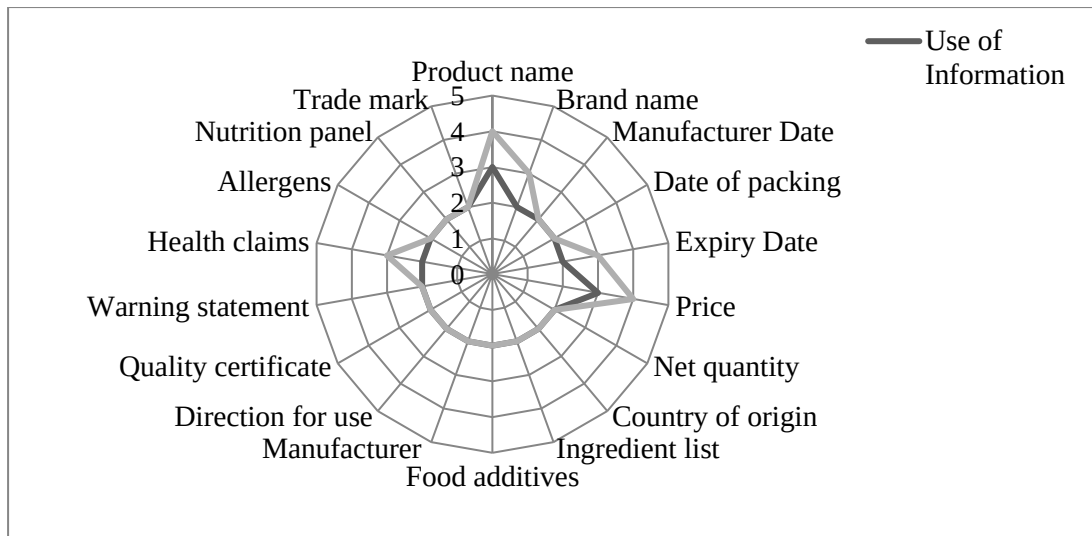


Figure 3: Cluster 03 – “low use and low importance” (median rating)

Socio-demographic differences between segments: As compared to the distribution in the total sample, there were relatively more women than men in cluster 1(High, High) and cluster 3(Low, Low) and more men than women in cluster 2 (High, Low).Education levels differed significantly between the clusters ($p=0.000$), with a tendency that respondents with below O/L belonged more to the Cluster 3 (Low, Low). Significant differences between clusters were also found for the variable age. Cluster 1 showed a great concentration of individuals within the age group of 45 to 64 years. The “High, Low” consumer segment was the youngest consumer group with relatively less of the old-aged respondents and more of the younger ones. The age profile of cluster 3 was biased towards 35 – 44 year age group. An analysis of the employment status of the respondents in the sample showed that (43%) were employed full time (~21%) were housewives, (~14%) were Students and(14 %) were retired. Approximately 41% of the consumers in the cluster 02 were employed full time. The next highest proportion (~21%) was students. There was a relatively low percentage (~6%) of students in cluster 3. No significant differences were found in the household income and distribution of clusters. Significant differences between clusters were also found for the variable related to the presence of children. Cluster 1 and cluster 2 showed a greater concentration of individuals with children between ages 1 to 10 years old, while cluster 3 mainly includes respondents with children between ages 11 to 18 years old. An extremely significant ($p<0.001$) relationship was also found between marital status and cluster membership. Cluster 1 and cluster 3 contained an extremely high percentage (>70%) of married respondents. Over one-third (~37%) of the respondents in cluster 3 were unmarried. Just under two thirds (~65%) of the respondents in cluster 01 were the main household members responsible for food shopping while a significant majority (>72%) in cluster 2 and cluster 3 were the main household members responsible for food purchases. A significant relationship ($p<0.05$) was found between being the major food shopper of the household and cluster membership. A significant majority of respondents in cluster 1 and cluster 3 were the main household members responsible for meal planning. The corresponding proportion for cluster 2 was nearly sixty four percent. Significant differences between clusters ($p<0.05$) were also found for the variable related to the place of buying packaged food and clusters. Majority (~42%) of the respondents in cluster 1 reported they buy packaged food from supermarkets while just over half in cluster 2 and cluster 3 reported buying packaged food from retail shops.

CONCLUSIONS/ RECOMMENDATIONS

The results indicated satisfactory level of awareness (level of importance assigned) about labels displayed on packaged food products, however, use of such information as one of the criteria while purchasing packaged food product is relatively low. The results of the study reveals gender, highest level of education, marital status, and major food shopper of the household have significant effect on consumers' awareness and use of food labels.

It is important to draw attention to some limitations associated with the study. Due to the nature of the survey we conducted (i.e. representativeness of our sample), these results can be generalized to the population of urban areas. Ideally however future research should test the robustness of these results on semi-urban and rural population and see if there are urbanization effects. There is much larger scope to which this study could be extended and it would be very useful to determine the use of the food label information, specifically nutrition information on a much broader scale among a greater, more representative sample of Sri Lanka.

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