

# **The Impact of the Behavioural Patterns of Vegetable Consumers on Marketing Activities**

**Rohana P Mahaliyanaarachchi**

**Department of AgriBusiness Management, Sabaragamuwa University of Sri Lanka, PO Box 02, Belihuloya, Sri Lanka.**

## **Abstract**

In the process of developing the vegetable sector in Sri Lanka, it is essential to consider the needs, preferences and behaviour of consumers. The main objective of this study is to find the consumer behavioural pattern and its impact on the vegetable marketing process. Due to explanatory nature of the study both cross sectional survey method and case studies were used. To statistically analyse the data, frequency distributions and Chi-square tests were used. The majority (98%) of the consumers consider the good quality of the products, while preferring the main marketplace. The main marketplaces used by consumers are city/main markets (21%), *polas* / weekly fairs (24%), village retailers (20.1%), and supermarkets (27%). The most important characteristics of vegetables for consumers are appearance (80%), freshness (72%), and the price (68%). A large majority (79%) of the consumers are also willing to pay higher prices for high quality products.

## **Background and Justification**

Vegetable production plays a major role in domestic food production. Therefore, considerable emphasis should be placed on this sector. An estimated one million metric tons of vegetables are produced annually in Sri Lanka. The level of vegetable production, expected by the horticultural task force of the Ministry of Agriculture is to rise to two million tons per annum by 2005. Vegetables will become increasingly important in supplementing the food and nutritional needs of the people. According to the Medical Research Institute, the per capita requirement of vegetables is 156.69 g/day. However it was identified that per capita availability of vegetables was 90.10g /day in 1991, which is similar to the level of 90.23g /day estimated for 1975 (Rupasena, 1999). Rupasena (1999) suggests that actual vegetable consumption has declined since that time but there are no accurate data. Increasing the productivity of the land and minimising the post-harvest losses are vital in overcoming shortages of vegetables and satisfying domestic requirements. However, that is not sufficient to develop the vegetable sector in Sri Lanka. It is also essential to consider the needs, preferences and behaviour of vegetable consumers and to adjust production and marketing activities accordingly.

One of the major problems confronting the vegetable sector in Sri Lanka is that planners, producers and those involved in marketing do not give adequate consideration to the needs, preferences and behaviour of consumers. Therefore, consumers have to rely on the decisions of others and, automatically, this undermines the production and marketing functions of the vegetable sector.

The main objective of this study is to identify consumer behaviour patterns and their impact on the vegetable marketing process. Due to explanatory nature of the study, both cross sectional surveys and case studies were used. A total of two hundred and forty consumers were interviewed in Colombo, Ratnapura and Kandy markets with 80 consumers selected randomly from each market. During the initial stages of the fieldwork, the questionnaire was pre-tested to ascertain

whether the intended information could be obtained without problems. Based on the results of this pre-testing, some changes were made to the questionnaires. Six enumerators were used to collect primary data. Collection of primary data was carried out in January 2000. On most of the occasions, the author accompanied the enumerators to guide them in data collection.

Data was tabulated and entered into the Excel spreadsheet package. Both SAS and SPSS computer packages were used to analyse the data and the following statistical techniques were used:

- Frequency distribution
- Chi-square test

A level of significance of 0.1 was used to determine whether the relationships among variables were significant.

## **Results and Discussion**

The consumer is the most important person in any marketing chain. Consumer satisfaction is the ultimate objective of the marketing process. Farmers and those involved in marketing must be aware of consumer needs in order to produce and supply products that fulfil consumers' requirements.

According to FAO (1999), marketing involves finding out what the consumers want and supplying it to them at a profit. Therefore the whole marketing process has to be consumer oriented. Production must supply consumers with what they want or need. This is the reason why people spend their money to purchase different goods.

The behaviour of the consumers is influenced by endogenous factors (those internal to the consumers) and exogenous factors (those external to the consumer). Exogenous factors include culture, reference group, family and socio-economic situation. Endogenous factors include needs and motives, learning, self-concept, personalities and attitudes (Crawford, 1997).

## **Socio-economic Situation of the Consumers**

The socio-economic situation of consumers is a powerful tool for organising markets. People from the same social group tend to have similar behaviour, styles of living, and buying similar products from the same types of outlets. The variables used to stratify a population by social class or group normally include age, income, occupation, education, and family size. Therefore it is useful to examine these characteristics of consumers.

### **Age**

Consumers of different age groups obviously have very different needs and wants. Although people who belong to the same age group differ in many ways, they do tend to share a set of values and common cultural experiences that they carry throughout the life (Solomon, 1999).

**Table 4.57: Age Categories of the Consumers**

Age category	Percentage	Cumulative Percentage
≤30 years	24.7	24.7
31 - 50 years	72.4	97.1
≥51 years	2.9	100.0

N = 240

Around three-quarters of the consumers were in the middle age category; 31 - 50 years. It is interesting to note that only a small percentage of consumers were over 51 years of age. It was discovered that the majority of the middle age group were more rational in their thinking, less aggressive, and broader minded.

### Family Size

The size of the family is an important factor because the buyer is just a person, but everyone in the family is a consumer. It is difficult to identify the tastes and needs of the individual members. However, the total requirement of vegetables per family can be estimated.

**Table 01: Family Size of the Consumers**

Family size	Percentage	Cumulative Percentage
≤ 2 members	1.3	1.3
3- 5 members	88.3	89.5
6 ≤ - members	10.5	100.0

N = 240

About eighty eight percent of those interviewed have 3 - 5 members in the family. Therefore, we can calculate that the family requirement of vegetables amount to 470.07 - 783.45g /day (Rupasena, 1999). When scaled up to the national population this represents a big market for the vegetables. Moreover, the family is the main group that influences the behaviour of individual buyers. Most Sri Lankan families are nuclear and those families with young children would tend to buy vegetables that are preferred by children.

### The Level of Formal Education

The level of education of a person has a significant influence on his/ her behaviour. Hence, it is an important factor to consider when examining behavioural patterns.

**Table 02: Level of Formal Education of the Consumers.**

<b>Education Level</b>	<b>Percentage</b>
≤ Year 05	13.0
Year 6 – 11	31.8
Year 12 –13	39.7
High education	15.5

N = 240

Huffman (1974) suggests that education levels are an important variable governing the decision-making of an individual. Niranjana (1992) found that the formal education might have a positive influence on social participation of an individual. The majority of the consumers have had a level of education of higher than year 6 education level and more than fifty percent of the consumers greater above G.C.E ordinary level education. The higher the educational level of an individual, the higher the decision making power, because of the increased ability to think logically. Table 02 indicates that the majority of consumers have higher education levels and therefore, their decision-making patterns may be more rational.

### **Types of Occupation of the Consumers**

The information in table 03 indicate that the selected sample of consumers include all the main categories of occupations. The distribution is dominated by the Teacher/Clerk category and this type of occupation will tend to be associated with higher levels of income. So a consumer's occupation may influence their purchasing power, tastes and buying patterns.

**Table 03: Type of Occupation of the Consumers.**

<b>Type of Occupation</b>	<b>Percentage</b>
Farmer	12.6
Labour	10.0
Teacher / Clerk	23.8
Businessman	18.0
Professional	16.7
Other	18.8

N = 240

### **Income Level of the Consumers**

The income levels of consumers will reflect their purchasing ability. Additionally, their tastes and preferences may change according to the level of income.

**Table 04: Income Level of the Consumers**

Income Levels (Rs)	Percentage
≤ 6000	17.2
6001 - 12000	56.9
≥ 12001	25.9

N = 240

The results show that the majority of consumers (56.9 percent) belong to the middle class with a monthly income level of 6001 to 12000 Rs/month. Considerable proportions of consumers (25.9 percent) earn an income of more than 12001 Rs/month. If the sample is representative, it would suggest that the majority of consumers at these three markets possess a greater purchasing ability.

### Marketing of the consumers

The survey indicated that the majority of the consumers purchase vegetables regularly. Around seventy seven percent of the responses confirmed that consumers buy and consume vegetables on a regular basis. This is a satisfactory trend.

### Information about the Main Purchaser

Thirty seven percent of the interviewees have considered themselves as the main purchaser of vegetables. Thirty two percent indicated that their spouse was the main purchaser. According to the information, forty nine percent of the interviewees were males.

**Table 05: Information About the Main Purchaser of Vegetables**

Main Purchaser	Percentage
Him / Herself	37.2
Spouse	32.6
Children	4.6
Other	25.5

N = 240

### Preference of the Market by the Consumers

It is important to identify the factors that the consumers consider as important when purchasing their vegetable requirements. Almost all the consumers confirmed that the quality of the product as the most important factor influencing their decision to purchase. About sixty two percent considered low price and sixty three percent were concerned about the freshness of the vegetables as the

most important facts. The latter has a direct influence on the quality of the product.

**Table 06: Preference of the Market By the Consumers**

Factor	Percentage Response*
Good quality	98
Low price	62
High selectivity	53
Freshness	63
Low chemical exposure	38
Regular availability	43

N = 240

\*Due to multiple responses the total is not equal to 100.

About thirty eight percent of consumers considered health and safety factors in the production of vegetables such as appropriate use of agro-chemicals. This is an unsatisfactory trend which may require campaigning to improve the consumers' awareness about the importance of the safe and healthy foods. A considerable proportion of consumers were interested in the selectivity of the vegetables (fifty three percent).

#### **Main Market Places Visited by Consumers**

It is useful to have an idea about the main types of marketplaces visited by the consumers to purchase vegetables. Each respondent was required to indicate from which market the majority of their vegetables were purchased. The responses were evenly distributed among the different types of market places. The highest preference was super markets (twenty seven percent) while the lowest was the village retailer (twenty percent). These results suggest that in planning the marketing of the vegetables, equal consideration should be given to these four marketplaces (Table 7).

**Table 07: Main market places visited by the consumers**

Market Place	Percentage
City / Main market	21.3
<i>Pola</i> / Weekly fair	24.3
Village retailer	20.1
Super markets	27.2
Others	7.1

N = 240

## Preferred Features (Characteristics) of Vegetables

These are some differences as well as similarities between the factors affecting consumer preferences in the place of purchase and the vegetables selected. In most occasions there is a relationship between the preferred market place and the characteristics of the vegetables. This kind of a relationship is difficult to prove using statistical tests. However, over a period of time the researcher has observed such a relationship. One example would be that the consumers preferred to go to markets with the intention of purchasing high quality and fresh vegetables.

**Table 08: Preferred Features (Characteristics) of Vegetables**

Features of the Vegetables	Percentage*
Appearance	80
Freshness	92
Price	68
Nutritive value	54
Organic vegetables	28
Other	34

N=240

\*Due to multiple responses total is not equal to 100

Ninety two percent and eighty percent of consumers were concerned about the freshness and appearance of vegetables respectively. A much smaller proportion of consumers were concerned about the nutritional and hygienic (free of chemicals) value of vegetables. In this respect, consumers perhaps need to be educated about these factors using mass media and other modes of communication, since these two factors are important in the maintenance of satisfactory health in human beings. Children could be educated about these in school and then transfer these ideas to adults.

## Willingness to Pay Higher Prices for Quality Products

**Table 09: Consumers' Willingness to Pay Higher Prices for Quality Vegetables**

Willingness to Pay a Higher Price	Percentage
Yes	79.5
No	20.5

N = 240

The majority of the consumers (79%) have confirmed that they are willing to pay higher prices for quality products. Three characteristics of vegetables were used as a measure of quality:

- Freshness
- Nutritive value
- Hygienic factors

## Buying Pattern of Vegetables by Consumers

An understanding of the buying patterns is important in planning and organising other marketing activities of the marketing chain. This should lead to an improved marketing process.

The figures show that about half of the consumers buy Potatoes and Beans on a weekly basis while Cabbages and Carrots are purchased twice a week. This would be because cabbages and carrots are more perishable than Potato and Beans. Consequently, buyers prefer to purchase these vegetables in smaller quantities but more frequently (Table 11). A very small number of consumers bought these commodities on a daily basis.

**Table 10: Buying Patterns of Vegetables by Consumers**

Buying Pattern	Potato	Beans	Cabbage	Carrot	Tomato
Daily	7.5	9.4	7.9	6.4	15.6
Twice a week	38.1	39.2	52.1	50.9	40.6
Weekly	54.4	51.4	40.0	42.7	43.8

N = 240

## Quantities Purchased by the Consumers

In the preparation of an action plan for the marketing of vegetables it is essential to know about the quantities of the different vegetables purchased by consumers during the week.

Table 11 indicates that the majority of the consumers bought 1-2 kg of Potatoes and Beans per week. The consumption of these two vegetables is greater than that of all the other categories. The consumption of Cabbages, Carrots and Tomatoes is around 1 kg per week. Therefore, farmers, wholesalers and retailers should consider these levels of demand when planning the amounts to be offered for sale in the market.

**Table 11: Quantity of Vegetables Purchased by Consumers over the Period of a Week.**

Quantity Purchased (per week)	Potato (%)	Beans (%)	Cabbage (%)	Carrot (%)	Tomato (%)
0.50 kg	0.0	0.0	22.4	24.0	29.0
1.00 kg	43.9	45.8	67.2	68.4	63.4
1-2 kg	48.1	46.2	10.3	7.6	7.6
2-3 kg	6.2	6.2	0.0	0.0	0.0
>3	1.7	1.9	0.0	0.0	0.0
Mean	1.62	1.57	0.98	0.95	0.93
Minimum	1.00	1.00	0.50	0.50	0.50
Maximum	4.00	4.00	2.00	2.00	2.00



## The Relationship between the Income Level and the Main Marketplace

**Table 12: The Relationship between Income Levels and the Main Market Place of Consumers**

Income Level (Rs)	Main market place (%)				
	City	<i>Pola</i>	Village Retailer	Supermarket	Other
≤ 6000	0.0	87.8	12.2	0.0	0.0
6001 - 12000	36.8	15.4	28.7	8.1	11.0
≥ 12001	1.6	1.6	6.5	87.1	3.2

$$X^2 = 251.281$$

$$P = 0.000$$

There is a significant positive relationship between the income level of consumers and their preferred main marketplace. Eighty seven percent of those in the higher income category fulfil their needs from supermarkets. Eighty seven percent of the lower income category people visit a *pola* or weekly fair to purchase their vegetables. This may be because in general, the prices of vegetables are low in *polas* compared to other outlets. The lowest income group indicated that they never use city markets or supermarkets. The majority of middle-income people used city markets as their marketplace.

## Relationship between the Occupations of Consumers and the Main Market Place

The results of the survey suggest that the relationship between the occupation of consumer and main marketplace is significant. The majority of farmers/labourers buy the vegetables from a *pola* / weekly fair or village retailer. The middle class groups like teachers/clerks/similar professions tend to use a city market as their main marketplace, whereas nearly three quarter of the businessmen/professionals used supermarkets. The purchasing power and willingness to pay for quality vegetables (of the different socio-economic groups) are important reasons for this type of relationship.

**Table 13: Relationship between Occupation of the Consumers and Main Marketplace**

Occupation	Main market place (%)				
	City	<i>Pola</i>	Village Retailer	Super Market	Other
Farmer / Labourer	1.85	55.50	40.70	1.85	0.0
Teacher / Clerk / Similar	40.40	24.60	0.0	7.00	28.10
Businessman /Professionals	14.45	4.80	7.22	72.28	1.20
Other	33.3	22.2	44.4	0.0	0.0

$$X^2 = 303.145$$

$$P = 0.000$$

**Relationship Between Willingness to Pay Higher Prices for Quality Products and the Level of Education of the Consumers:**

There is a positive relationship between the education level of consumers and their willingness to pay higher prices for quality products. About 97 percent of those with higher education and 83 percent of those with secondary education were willing to pay a higher price for a high quality product. It would appear that the percentage of the positive responses increase directly with the level of education of consumers.

**Table 14: The Relationship between the Level of Education of the Consumers and Their Willingness to Pay High Prices for Quality Products.**

Level of Education	Willingness to Pay a Higher Price	
	Yes	No
≤ 5 Years	64.5	35.5
4 - 11	72.4	27.6
11 - 13	83.2	16.8
Higher education	97.3	2.7

$X^2 = 14.612$

$P = 0.002$

**The Relationship between the Level of Income and the Willingness to Pay Higher Prices for Quality**

Consumers with high levels of income confirmed that they are willing to pay higher prices for better quality products. Ninety two percent of the higher income group and about eighty percent of middle level income group indicated that they are willing to pay higher prices for better quality products. It would appear that the willingness to pay for quality is positively correlated with the level of income.

**Table 15: The Relationship Between the Level of Income and the Willingness to Pay Higher Prices for Quality**

level of Income (Rs)	Willingness to Pay for Higher Quality	
	Yes	No
≤6000	58.5	41.5
6001 – 12000	80.1	19.9
≥12001	91.9	8.1

$X^2 = 16.972$

$P = 0.000$

Marketing planners, farmers and other relevant people involved in the production and marketing of vegetables should pay considerable attention to the factors that were discussed above. Farmers could obtain higher farm-gate prices by improving the quality of their produce. The awareness about the quality and quantity required in the different market outlets are also important. Wholesalers,

retailers and farmers should attempt to adjust their marketing plans according to the type of consumer and the type of market outlet.

## **Conclusions**

The purchasing of vegetables was undertaken mainly by the consumer or his / her spouse.

High quality (98%), freshness (63%) and low prices (62%) were the main factors considered by consumers.

Four different types of marketplaces were used by consumers to purchase vegetables: namely; city/main market (21.3%), *pola*/weekly fair (24.3%), village retailer (20.1%) and supermarkets (27.2%).

The preferred characteristics of vegetables are mainly freshness (92%), appearance (80%) and price (68%).

A large proportion (79.5%) of consumers was willing to pay higher prices for better quality products.

The majority of consumers bought Potatoes and Beans on a weekly basis while Cabbages and Carrots are bought twice a week.

Majority of consumers bought 1 - 2 kg of Potatoes and Beans per week while Cabbages, Carrots and Tomatoes were purchased in quantities less than 1 kg per week.

There is a positive relationship between the level of income of consumers and the preferred marketplace. About eighty one percent of the higher income group, meet their needs from the supermarkets while 87.8 percent of the lower income group visited a *pola*/weekly fair.

The relationship between the type of occupation and main marketplace appeared to be strong. About 55 percent of farmers/labourers bought their vegetable requirements from a weekly fair and 72.28 percent of businessmen/professional people used supermarkets as their preferred marketplace for vegetables.

There is a strong positive relationship between the level of education of consumers and their willingness to pay higher prices for better quality products.

People with higher income levels were also willing to pay higher prices for better quality products.

The production of vegetables in the upcountry ocean of Sri Lanka is a major political issue due to the following factors.

- It has a direct influence on the cost of living of the people.
- It is responsible for providing employment to several sectors such as farmers, wholesalers, collectors, hauliers, retailers and input suppliers.
- It has a direct impact on the national economy.
- It has a significant export potential.
- The consumption of vegetables is important for the normal functioning of the human body and consequently for improved health of the nation.

Therefore, it is essential to consider the behavioural patterns of consumers to improve the attempts of those involved in the production and distribution of vegetables to meet the needs of consumers. Only in this way the vegetable producing and marketing enterprises will be able to satisfy the needs and wants of consumers.

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