

A Comparative Study on Consumer Perception towards Packaged Spices among Rural and Urban Women

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ABSTRACT

The comparative study related to packaged and unpackaged spices was carried to identify the commonly used spices at household level and to evaluate the knowledge and perception about packaged and unpackaged spices among rural and urban women. Viewpoints of urban and rural women over packaged spices were totally different. A proper questionnaire with the help of survey method was carried out to collect information from 100 household women, 50 rural and 50 urban respondents of different areas of Faridabad. The study found that 64 % rural and 14 % urban women preferred unpackaged spices. Whereas 36 % rural and 86 % urban women preferred packaged spices. Results showed that rural women mostly preferred unpackaged spices and urban women mostly preferred packaged spices. Adulteration test of turmeric, cumin, coriander, black pepper and red chili powder indicated that adulteration mostly occurred in unpackaged spices and adulteration was mainly in the form of dust, dirt and synthetic colors. Results indicated that rural women have limited knowledge about spice adulteration. As compared to rural, urban women held positive attitude towards spice adulteration. The finding indicated that only the educated women in rural areas of Faridabad showed interest regarding packaged spices, because they did not contain any insecticides, toxins, chemicals and pesticides. This research helped in creating an instinct among women population for the usage of safe and wholesome packaged spices.

Key Words: Spices, packaged spices/unpackaged spices, adulteration etc.

INTRODUCTION

Demand for spices has always been high for their good taste and flavor. They are mostly often found in ground or powdered form, making them a prime target for adulteration. Ground spices and unpackaged spices are adulterated by fillers, less expensive / low quality spices, flour, corn starch, sawdust etc. Sometimes to enhance the appearance and to hide the presence of fillers, toxic and potentially carcinogenic dyes are also added to older

stocks. For example, metanil yellow color and lead chromate used in turmeric; Sudan 1, a red dye, in chilli powder which are known to be category 3 carcinogens causing cancer are deliberately added. [5]

Qualification of consumer, marital status, value, quantity, cost of branded spice and previous experience about spices was some of the major factors that influenced the consumer perception towards packaged and unpackaged spices. Educated people and high income Group people gave

preference to quality and taste and they were mostly aware of the various brands of spices. Easy availability, attractive packaging and advertisements also affect the consumer perception towards spices. [11]

In developing countries like India where poverty and malnutrition is uncontrolled, most of the spices acts as antioxidants therefore the skill to derived antioxidants from spices could inhibit the chances of health related problems. Indian people mostly use herbs and spices for treating various diseases. [2] Spices are mostly used to enhance the flavor of food items and also used in the preparation of spicy foods. The parts of spices such as leaf, bark, berry, bud, seed and flower helps to develop flavor in the food during cooking. Spices play a main role in adding and enhancing the flavor of foods involving meats, sauces, vegetables and desserts. [12] Anti-inflammatory effects of turmeric help to maintain cholesterol level and may also help to fight against atherosclerosis. [6] The cost was considered the main aspect which influenced purchasing power of the product. It was noticed that the company repetition and brand repetition of food product were not majorly considered through the households. [9]

Coriander also plays an important role to treat respiratory, urinary and digestive problems due to their diuretic, carminative, diaphoretic, and stimulant activities. In Iranian folk medicine plant is used to treat anxiety and insomnia. [8]

Black pepper also helps in the dressing of food to increase its good aroma and flavor. It is also used in treatment of some diseases like digestive problems. This helps to improve appetite, digestive power and to cure cold, cough, diseases of the throat, intermittent fever, and colic. [4]

The major spices used in cooking such as chilli powder, turmeric powder and coriander powder were collected from vellore to detect adulterants. Branded and unbranded both the spices were selected to determine adulterant levels. Chemical analysis and visual inspection were carried

out to analyzed the presence of adulterants. The result showed adulterants in some spices and this study brings public awareness about spice adulteration. [10]

Adulteration is very common in India leading to food borne diseases and illness. [1]

Studies have depicted that, unpackaged spices are highly adulterated as compared to packaged spices. The main reason of adulteration pertains to unhygienic condition and lack of proper sanitation facility. [7]

Most of the studies reported that rural consumers mostly preferred unpackaged spices and they have limited knowledge of food adulteration. Consumer knowledge and awareness was important factor for creating market demand of packaged spices. In order to find out the consumer perception towards packaged and unpackaged spices, the present study was focused on the buying behavior of spices among rural and urban area of Faridabad

MATERIALS AND METHODS

This section attempts to describe in detail the methodology adopted for collection of data.

Phase 1 - Sampling

The methodology was divided into the following phases-

- Locale(study)
- Target Group
- Sample size and selection
- Inclusion
- Exclusion

A purposive study was conducted to assess the perception of packaged and unpackaged spices among the women in urban and rural area of Faridabad.

1.1 Locale (study):

The study of Rural and Urban areas was conducted in Faridabad.

1.2 Target Group:

Women were taken as targeted Group who were generally involved in buying of spices.

1.3 Sample size and selection:

The sample size of 100 samples (50 Urban and 50 Rural) was done through purposive sampling. A pre-tested questionnaire helped to collect data related to consumer preference for packaged and unpackaged spices. The sampling was done in Faridabad city. Data was collected from housewives and women who buy spices for their household.

1.4 Inclusion –

The inclusion criteria of the study was:-

- Women who were generally involved in buying spices for their household
- Housewife/working woman
- Women who were willing to participate

1.5 Exclusion –

The exclusion criteria of the study was :-

- Males
- Women who were not involved in buying spices for their households
- Children (Below 18 years)

Phase - II Development of Study Tool (Questionnaire)

The tools adopted for collection of data. A questionnaire was used to capture perception of rural and urban women about packaged spices. The subjects were asked to fill the questionnaire and following methods were used to gather information.

Phase -III Conducting adulteration test of spice samples

The spice samples were randomly collected from the respondents, each from rural and urban set ups. Most commonly used spices were shortlisted for checking adulteration i.e. turmeric powder, red chilli powder, coriander powder, cumin and black pepper powder. 5 samples in total were randomly collected each from rural and urban households each.

The following adulteration tests were performed on the collected spice samples:

1. Turmeric powder

a) Detection of artificial color

A teaspoon of turmeric powder was added in a glass of water. Natural turmeric powder leaves light yellow color while settling down. Adulterated turmeric powder will leave a strong yellow color in water while settling down.

b)Detection of yellow lead salts

2 g of turmeric powder was taken in a test tube. Concentrated hydrochloric acid was added to it. Magenta colouration indicates presence of yellow oxides of lead.

2. Red chilli

a) Detection of synthetic color

Some chilli powder was sprinkled on the water surface in a glass. After than the color streaks would appeared of the artificial colorants.

b) To detect the presence of brick powder

Chilli powder was added in a beaker containing water. Brick powder would settle down while pure chilli powder would floated. [1]

3. Coriander powder

a) Detection of powdered sawdust

Some coriander powder was sprinkled on the surface of water. Pure spice would not leave any saw dust/ powdered bran when floated on the water surface. Whereas, adulterated spice shown, saw dust/powdered bran on the surface of water.

b) Detect the presence of dung powder

Coriander powder sample was soaked by water. Dung and sawdust would float and can easily detect by its bad smell.

4. Black Pepper

a)Detection of papaya seeds in black pepper

Black pepper was added in a glass of water. Pure black peppers would settle. In adulteration of black pepper, papaya seeds were floated on the water.

b)Detection of light black berries

The berries were pressed through fingers. So Light berries was breaked easily while black berries were not breaked.

5. Cumin Seeds

Small amount of cumin was rubbed. Adulteration detected, if palms turn black. [3]

Phase-IV Analysis of data

In the last phase, all collected data was analyzed using statistical measures. All the data was summarized in the form of Mean±SD. Data was analyzed by using T- test. All the collected data was statistically analyzed through SPSS (version 25).

RESULTS AND DISCUSSION

The present study was conducted to capture the perception, awareness and

knowledge about packaged and unpackaged spices among rural and urban women.

The sample of present study comprised of housewives, working and non- working women and women who are involved in buying spices for their household. A total of 100 women were interviewed in urban and rural area of Faridabad (50 respondents from each area).

The outcome of the study was categorized under the following heads.

- Adulteration test for spices
- Consumer preference towards packaged/unpackaged spices.

Some adulteration test for packaged and unpackaged spices is given below;

Table 3.1 Adulteration tests for spices

S. No	Spices	Sample A	Sample B
1.	Turmeric powder		
a)	Artificial color	Negative	Positive
b)	Impurities i.e., dust and dirt	Negative	Positive
2.	Red chilli		
a)	Synthetic colour	Negative	Negative
b)	Impurities i.e., dust and dirt	Negative	Positive
c)	Brick powder	Negative	Negative
3.	Coriander powder		
a)	Detection of powdered sawdust	Negative	Positive
4.	Cumin seed		
a)	Detection of charcoal dust	Negative	Negative
5.	Black Pepper		
a)	Detection of papaya seeds	Negative	Positive
b)	Detection of light black berries	Negative	Negative

*Sample A signify packaged spices and Sample B for unpackaged spices

The data showed that unpackaged turmeric powder was adulterated with artificial color and impurities (dust and dirt). Packaged turmeric powder showed negative results for adulteration test. During conduction of adulteration test of unpackaged turmeric powder, dark yellow coloration was reported as compared to packaged turmeric powder and impurities such as dirt and dust floated on the surface of water.

The collected data showed that Sample A and Sample B of red chilli powder did not contain any kind of synthetic color and brick powder. This showed that packaged and unpackaged red chilli powder did not contain any synthetic color or brick powder. But, sample B was

found to be adulterated with impurities (dirt).

Results showed that sample A of coriander powder was pure but sample B was adulterated through sawdust. This showed that packaged coriander powder was unadulterated as compared to unpackaged coriander powder which gave a positive test for adulteration.

According to the observations, cumin seed sample A and sample B which were collected from rural and urban area of Faridabad did not contain any adulteration. When cumin was rubbed between the hands, it did not leave any color. This showed that there is no charcoal dust in the cumin seed sample.

The adulteration test for Black pepper also showed negative result for

detection of light berries, it meant that they were not adulterated. When black pepper was pulled out of water and pressed by hand it was hard. This showed that sample A & B were unadulterated. When sample B was put into water, it floated on water; it showed that sample B contained papaya seeds.

Table 3. 2 Buying behavior of spices between Group A and Group B

S.No	Parameter	Group A	Group B	p-value
1.	Buying behavior of spices	2± 0.88	1.76± 0.59	0.056

*The values are depicted as Mean ± SD of the responses. The values depicted are significant at p< 0.05. Group A and Group B signify rural and urban population respectively.

After analyzing the trend of behavior for packaged and unpackaged spices among two Groups, it was found that Group-A (i.e., rural population) chose to buy spices mostly from street hawkers and local shops in an unpackaged form. Whereas Group-B (i.e., urban population) mostly preferred packaged spices and this might be because of their better carrying capacity. Also Group-B women were more interested to know about different brands of spices that are available in market. On the other hand, Group-A women were more thoughtful for the price as compared to its brand.

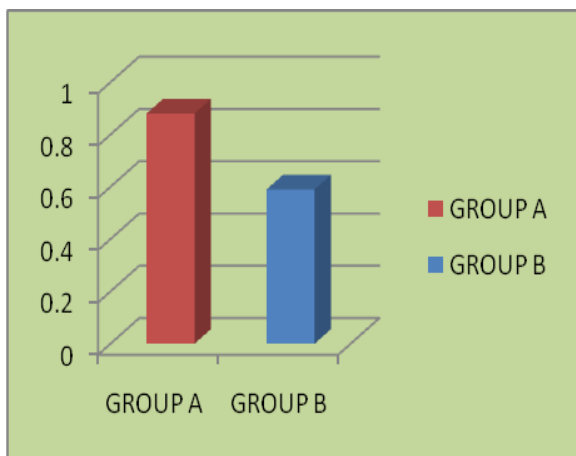


Figure- 1: Representation of buying behavior of spices between Group A&B

Table 3.3 Pattern of usage of spices between Group A & Group B

S.No	Parameter	Group A	Group B	p-value
1.	Pattern of usage of spices	1.48± 0.50	1.14± 0.35	0.007

*The values are depicted as Mean ± SD of the responses. The values depicted are significant at p< 0.05. Group A and Group B signify rural and urban population respectively.

Table 3.3 shows that urban women mostly used packaged spices whereas rural women used unpackaged spices. Urban women were more conscious to know about the brands of spices and ill effects of using unpackaged spices while rural people mostly ignore the brands and gave priority to taste and price of the spices. Urban women think that unpackaged spices are harmful to health, they were mostly adulterated inside them. Due to the time savings and easy access, urban women used packaged spices.

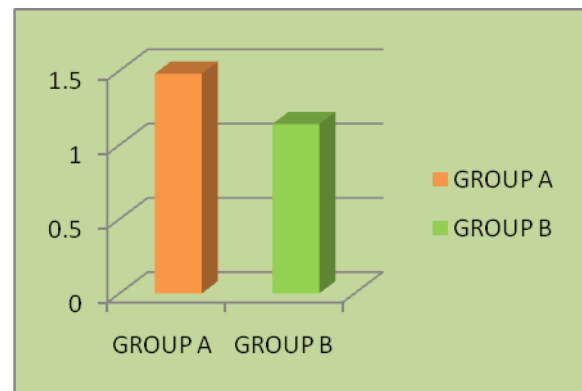


Figure -2: Representation of usages of spices between Group A and Group B

Table 3.4 Observance pattern of adulterants in spices

S.No	Parameter	Group A	Group B	p-value
1.	Observance of adulteration in spices	1.62± 0.49	1.58± 0.49	0.687

* The values are depicted as Mean ± SD of the responses. The values depicted are significant at p<0.05. Group A and Group B signify rural and urban population respectively.

Of the entire respondents, there was not much difference in observation of adulteration of spice among rural and urban women. Very few women in the rural area seen adulterant in spices and rural women did not know about the adulteration test of spices. Even in urban area, Very few women know about the adulteration of spices and they have very little knowledge about the adulteration test of spices.

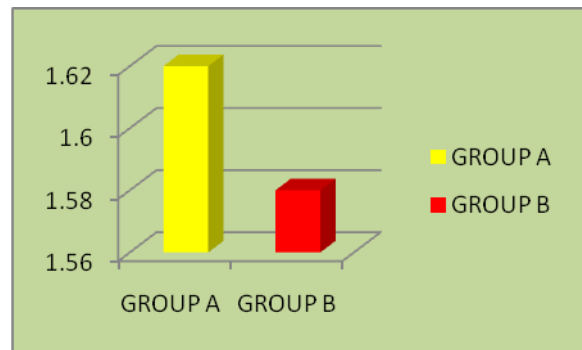


Figure -3: Representation of adulterants in spices

Table 3.5 Frequency of occurrence of adulteration in unpackaged spices

S.no	Parameter	Group A	Group B	p-value
1.	Frequency of occurrence of adulteration in unpackaged spices	1.48±0.50	1.22±0.41	0.00*

* The values are depicted as Mean ± SD of the responses. The values depicted are significant at p< 0.05. Group A and Group B signify rural population urban population respectively

*The values depicted are significant at p< 0.05. Group A and Group B signify rural population urban population respectively

Rural women did not believe that adulteration was found in unpackaged spices and therefore they were mostly used unpackaged spices and they given priority to taste rather than quality. Whereas urban women were very conscious to know about the health, they believed that adulteration was mostly founded in unpackaged spices. Therefore, urban women used unpackaged spices in very small quantities. They were mostly used packaged spices and also preferred good brands of spices.

Price, quality, quantity and taste of the spices affects the buying behavior of the respondents.

Table 3.6, showed that rural women mostly gave priority to taste and price and urban women gave priority to quality than taste and price while buying. In rural area women gave priority to price therefore they purchased low price unpackaged spices. Urban women gave priority to quality and taste and they were mostly preferred packaged spices.

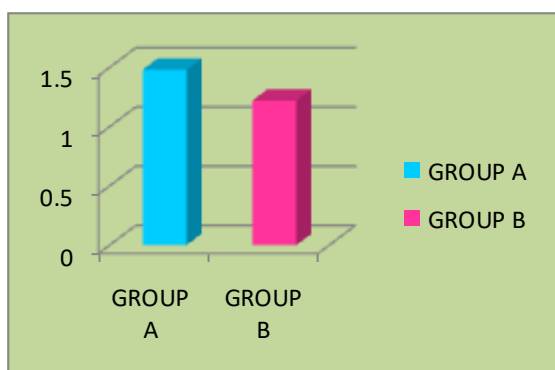


Figure-4: Representation of occurrence of adulteration in unpackaged spices

Table 3.6 Priority of spices while buying

S.no	Parameter	Group A	Group B	p-value
1.	Priority of spices while buying	3.54±1.37	3.86±1.42	0.25

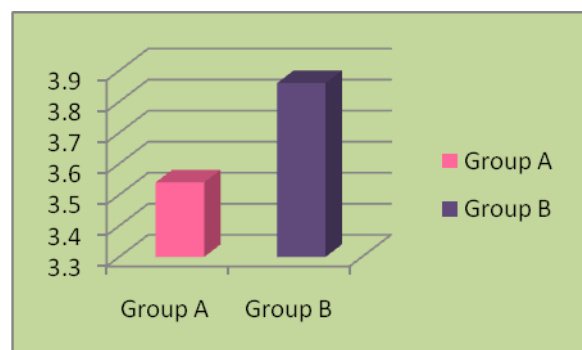


Figure -5: Representation of priority of spices while buying

CONCLUSION

The preference for packaged and unpackaged spices was affected through different aspects such as cost, value, easy accessibility, monthly earning of the family, qualification level, etc. These aspects played a crucial role in the decision making activity and in the preference of spices.

The study showed that out of 100 respondents interviewed, 64% rural and 14% urban women preferred unpackaged spices. Whereas 36% rural and 86% urban women preferred packaged spices. Results showed that rural women mostly preferred unpackaged spices and urban women mostly preferred packaged spices.

After analyzing the trend of purchasing behavior for packaged and unpackaged spices among two Groups, it was found that Group A (i.e., rural population) chose to buy spices mostly from street hawkers and local shops in an unpackaged form. Whereas Group B (i.e., urban population) mostly preferred packaged spices and this might be because of their better carrying capacity and easy availability. Urban women mostly preferred packaged spices and rural women mostly preferred unpackaged spices and urban women were more conscious to know about the health as compared to rural women.

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