

RESEARCH PAPER

Assessment of the prospects in value addition of selected spices: A study with special reference to Karnataka and Kerala

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ABSTRACT

Indian spices are known for their aroma and flavour widely rigorous in the international and domestic market. The Black pepper “King of Spices” and Cardamom (small) “Queen of Spices” are predominantly grown in the regions of Chikmangalore, Shimoga, Idukki and Ernakulam, the former two of state Karnataka and latter to Kerala. These selected spices supply chain differs from other agricultural commodities due to long gestation period and small, marginal growers. Thus, black pepper and Cardamom are considered to be the potential spices for value addition. It holds a huge export potential than the traditional raw spice export. A study was conducted to assess the consumer preference towards various attributes in quality of spices was studied by confronting attributes like prices, usage of branded spices, switching pattern from branded spices to other and willing to pay more to get the desired quality were analyses using SPSS software. Among the selected districts, 34.75 per cent of consumers are brand conscious, specifically Chikmangalore shows the highest preference for branded spices. Hence, this district was found suitable for marketing of value added spices.

KEY WORDS : Cardamom, Black pepper, Value addition, Branded spices

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India has been quoted as the “Land of Spices” and the eminence of Indian spices are well recognized around the globe. The aroma and flavour are prevalently stringent in the international and domestic market as well. Out of 109 spices jotted by ISO (International Standards Organization), the country produces around 75 spices in its magnificent diverse climatic patterns. Black pepper and Cardamom are recognised as King and Queen of spices. According to a report by Spices Board India, 2017 the production of spices in the country is about 8,413,980 tons/ha, in which

Karnataka and Kerala grasps a virtuous position for black pepper (35,000 tons/ha) and small Cardamom (18,340 tons/ha) respectively. India authorizes an arduous position in the world spice trade. Spices exports from India until recently were in raw form of bulk packing but are now shifting towards value added spices due to structural changes in global spice market and consumer preference for convenience products.

The supply of agricultural products fluctuate widely from year to year, one farm to another on account of variations in acreage under cultivation and variation in yields due to seasonal and weather conditions, more supply during certain months of the year, variations in the conditions of marketing, variations in imports or exports, so the value addition of spices with labelling, packaging while maintaining the expected quality attributes of consumers may improve the economic prosperity of with the support of government policies.

Pepper takes 6-8 months from flowering to harvest, depending upon the variety and on climatic conditions. The harvesting season varies from one country to another. In India it starts from November to January in the plains and January to March in the hills of Kerala, while in Karnataka it is from February to April and in Tamil Nadu from March to May.

Cardamom is a versatile spice as far as its uses are concerned. It is the only spice that can flavour fully blend with anything edible or potable. Cardamom goes extremely well with coffee, tea, milk, fruit juice, soft drinks and alcoholic beverages. It also enhances the taste and flavour of vegetable curries, meat preparations, bakery products and toffees.

The quality of spices majorly dependent on the following post-harvest practices which differ for various spices, these processes should ensure proper conservation of the basic qualities of spices for which they are valued, viz., aroma, flavour, pungency or bite, colour, appearance, etc. Among the flow drying is the most important operation where the moisture content of spice varies from 55-85 per cent at the time of harvest which need to be reduced to 8-12 per cent before packaging. In order to produce high quality Cardamom, harvesting should be done at right stage of maturity. The bush flowers once it is 2-3 years old. Grading is done both by growers and traders. As per the Cardamom grading and marketing rules, 1962, there are 34 different grades of Cardamom and the first five to six grades viz.,

AGEB, AGS, AGB, AGB-1, AGS-2, BL-2 are generally known as exportable grades, as these grades are having good overseas markets.

Major products of Cardamom are bleached Cardamom, Decorticated seeds and seed powder, Cardamom volatile oil and Cardamom oleoresin. In addition to this, CFTRI, Mysore has developed encapsulated Cardamom, Cardamom tea, Cardamom coffee and Cardamom soft drink mix (Thankanmani *et al.*, 2013).

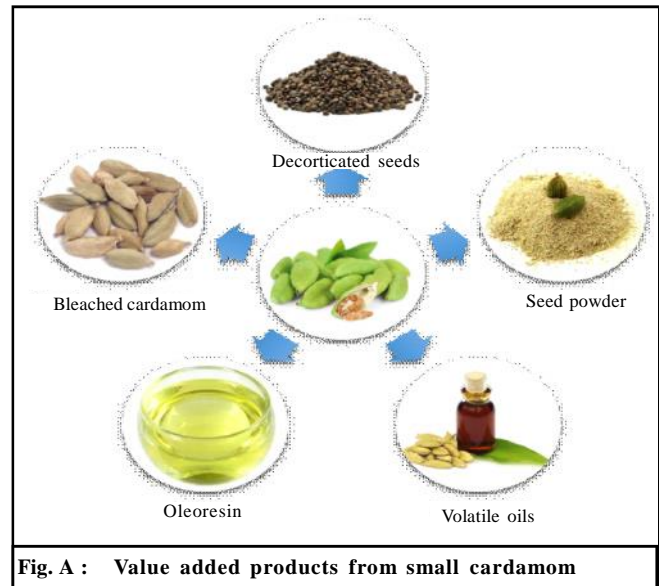


Fig. A : Value added products from small cardamom

Pepper takes 6-8 months from flowering to harvest, depending upon the variety and on climatic conditions. Based on the piperin content pepper is graded as special (4%) and standard (2%) trade variety.

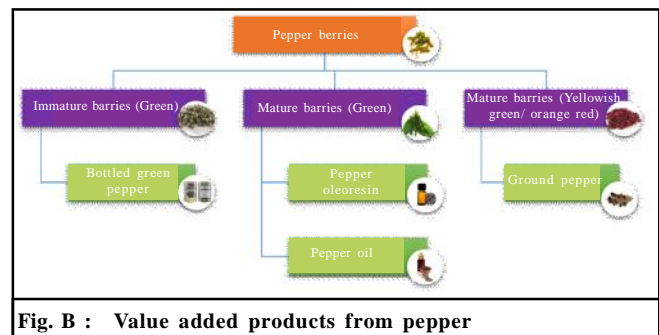


Fig. B : Value added products from pepper

Marketing system of selected spices :

An organized marketing system was started in Kerala only in 1959 at Vandanmettu (presently in Idukki

district), under the Cardamom marketing corporation, an organization of large growers of Cardamom was recently one of the leading auction centres of Cardamom in India. For promoting cultivation and marketing of Cardamom, the Government of India constituted a Cardamom Development and marketing advisory committee in 1963 and the Cardamom board in 1966 under the Cardamom Act, 1965. In 1977 the Cardamom (Licensing and Marketing) Act was passed which brought different functionaries like auctioneers, dealers and exporters under the control of the Board. The three market functionaries via, auctioneers, dealers and exporters have to take licenses from the Board to function. However, Cardamom Board was abolished and Government constituted a new Board for all spices including Cardamom in 1985 under Spices Board Act and all the activities performed by the Cardamom Board and Spices Export Promotion Council are brought under the purview of the Spices Board. Thus, Cardamom, at present, is having a regulated market by restricting the entry of different functionaries with a view to ensuring fair prices and timely payment of the sale proceeds to the growers. In India, marketing of spices compared to other agricultural commodities plays a tough role. There are several studies in Indian context that have been done in the area of marketing of spices but very few of them have covered the area of value addition and quality attributes of Spices. Whatever little has been attempted in this context is too scanty and wanting in many aspects. Gopinatha (1988) has made a detailed study of the various aspects of production, processing and marketing of pepper for improving the return of the producers and traders with special reference to co-operatives.

Radha(1997) in their book 'Marketing Management', describes the multiplicity of intermediaries, lack of organization, perishable nature of the produces, adulteration and market malpractices, inadequate storage, transportation and communication facilities etc. are noted as the other major problems in agricultural marketing and its impacts on economy (Ramesh, 1990 and Pruthi, 1993). Also, the value addition of spices in India specifically, oleoresins are threatened by export incentives, export volume of producing countries, transportation, storage and distribution problems (Meena, 1988 and Bhatt and Valasan, 2016). Spices are considered to be the prime products in trade magnitude. This study throws much light into the market

forces in the domestic spices trade and hints the areas where India can concentrate more for better marketing of value added pepper and Cardamom. The present objectives of the study were:

- To examine the perception prices felt for spices by consumers of Karnataka and Kerala.
- To explore the market for branded spices and identify the major constraints in marketing *viz.*, possibility of switching over to new brands of spices.
- To assess the consumer preference on paying premium prices for branded spices.

METHODOLOGY

The need for a comprehensive and systematic study of India's spices sector and value addition together with marketing operations is imperative. The major spices *viz.*, Cardamom and pepper are taken up for this study, selection is exclusively centered on its importance in total spices production and export. The present study will certainly go a long way to comprehend the varied consumer preference of value added spices sector in India and help in improving the efficiency and performance of this sector substantially.

Pilot survey :

It is to ensure the work ability of the design and it sub-divided into

- To determine the sample size
- To test the questionnaire
- To improve the fieldwork organization

A small sample of fifty respondents was drawn from the district "Chikmangalur" on convenience basis. It comprised of all the types of consumers *i.e.* urban, semi-urban and rural. The researcher accompanied with the associated visited many places in the selected district to administer the first draft of the questionnaire. The problems arising in the field situations were carefully noted and recorded.

Sample size determination :

The logic of sampling distribution gives a relationship in eq. (3):

$$\text{Number of standard errors} = \text{Allowable error} \quad \dots(1)$$

Implied by confidence co-efficient standard error.

where, standard error (defined as standard deviation of the sampling distribution) of the 'proportion' is given by eq. (2):

$$\sigma_p = \sqrt{\frac{\pi(1-\pi)}{n}} \quad \dots(2)$$

The area under the sampling distribution between any two points can be calculated in terms of z – values. The z – value for a point is the number of standard errors a point is away from the mean.

$$\sigma_p = \sqrt{\frac{p-\pi}{z}} = \frac{D}{Z} = \sqrt{\frac{\pi(1-\pi)}{n}}$$

$$n = \frac{\pi(1-\pi)z^2}{D^2} \quad \dots(3)$$

The z-value may be computed using eq., where, D = Population proportion
Sample proportion = p

Using the above formula, we take confidence level (CL) of 95 per cent. The corresponding z – value associated with CL is 1.96 and take allowable error to be only 5 per cent and sample size is estimated to be less than 385. This implies that a sample size of 400 will be more than sufficient to estimate the population proportions with 95 per cent confidence.

Sample size :

A stratified random sampling was adopted for the collection of data from the sample respondents. Sample data were collected from spices producers, traders and spice consumers using the schedule of interviews.

In case of consumers, 400 respondents each from Ernakulam, Idukki, Chikmangalur and Shimoga Districts were chosen for obtaining primary data and for farmers the respondents were *i.e.* 100 traders in Kumuly spice market, Idukki district and 100 traders in Mattancherry spice market Ernakulam and similarly in 200 traders of 100 each from Chikmangalur and Shimoga, the respondents were interviewed with a well-structured questionnaire focusing on different attributes such as consumer opinion towards both branded and unbranded spices and overall perception towards value addition in spices.

Questionnaire design :

The lists of information necessary for the study are prepared based on the stated objectives and hypothesis

- What is the important reason for the popularity of value added spices in Indian market among whole spice?
- What is their perception and characteristics necessary for value addition of spices?

- What is consumer preference towards use of branded spices?
- Is there a possibility of switching over to new branded spices even at a premium price?
- What is the influence of family size and income level in switching over to new brand?
- Are consumers willing to pay extra money, to get premium quality spices?

Hypothesis :

H₀ = Consumers are prepared to pay extra price for certain value additions in spices

H₁ = Consumers are not prepared to pay extra price for certain value additions in spices

Analysis and testing :

In order to surge precision of research work, qualitative data scaling practices such as nominal and ordinal scales are utilized. The data was collected through a questionnaire and tabulated.

Statistical package for social science (SPSS.10) was used to analyses the data. SPSS is the one of the most widely used of statistical software packages ANOVA was applied for testing the hypothesis at 5 per cent level of significance. Data was analysed with the help of tables, charts and diagram. Statistical technique like percentile was used to analyse the data. Descriptive analysis has been used. Spearman rank correlation technique was conducted to determine the relation between two similar data. Likert's scale technique was also used for analysis.

Likert's scale technique :

Most frequently used summated scales in the study of social attitudes follow the pattern devised by Likert. For this purpose, it is been named as Likert-type scale. In a Likert scale, the respondent is asked to respond to each of the statements in terms of several degrees, usually five degrees (but at times 3 or 7 may also be used) of agreement or disagreement.

ANALYSIS AND DISCUSSION

The findings of the present study as well as relevant discussion have been summarized under the following heads :

Consumer preference for value added of spices :

Table 1, indicates the perception of consumers about

prices of spices. 35.25 per cent respondents hold a similar opinion that prices of spices are premium. In absolute terms the prices of spices are considered to be on the higher side.

ANOVA analysis and whether there is a statistically significant difference between group means of significance value is 0.002 (*i.e.*, $p = .002$), which is below 0.05 and, therefore, there is a statistically significant difference exists between the prices felt by consumers of different districts.

Tukey B test shows 2 groups for prices felt by consumers of different regions (Table 2). Idukki and Chikmangalur districts for appropriate and Premium prices felt for Ernakulam and Shimoga (Fig. 2).

It is evident from Table 3 that 34.75 per cent respondents are usually brand conscious and 27 per cent respondents adhere strictly to their brand of choice. Only

8.5 per cent respondents don't care about the brand they go for. District wise there is significant different towards use of branded spices.

ANOVA analysis and whether there is a statistically significant difference between group means of significance value is 0.006 (*i.e.*, $p = .006$), which is below 0.05 and, therefore, there is a statistically significant difference exists between the preference for branded spices by consumers of different districts.

Table 5 and Fig. 5 shows the possibility of consumers switching to value added and improved spices even at a premium price. 30.25 per cent respondents say that they will possibly switch over. Very few respondents from the sampled population report that they will never try new products (6.5%). Here also the consumers vary in their responses in trying new products. Marketers will have to design different strategies for different consumer

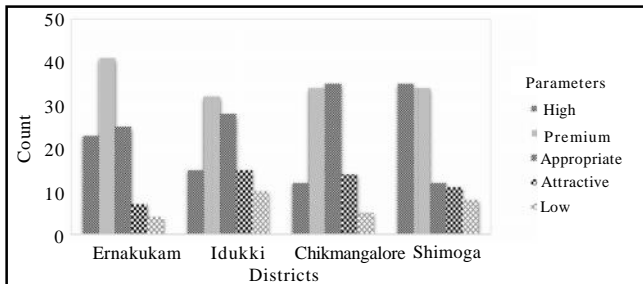


Fig. 1 : Prices of spices felt by consumers of different regions in different districts

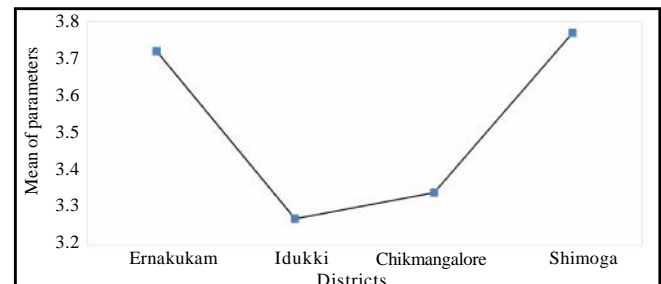


Fig. 2 : Mean plot for prices of spices felt by consumers of different regions

Variable	Ernakulam	Idukki	Chikmangalur	Shimoga	Total
High	23	15	12	35	85 (21.25 %)
Premium	41	32	34	34	141 (35.25 %)
Appropriate	25	28	35	12	100 (25 %)
Attractive	7	15	14	11	47 (11.75 %)
Low	4	10	5	8	27 (6.75 %)
Total	100	100	100	100	400
Score	72	27	34	77	210
Rating	0.72	0.27	0.34	0.77	0.525

Districts	N	Subsets for alpha = 0.05	
		1	2
Idukki	100	3.2700	-
Chikmangalore	100	3.3400	-
Ernakulam	100	-	3.7200
Shimoga	100	-	3.7700

segments depending on their requirements. In this case also, we find significant difference among the consumers.

ANOVA analysis and whether there is a statistically significant difference between group means of significance value is 0.001 (i.e., $p = .001$) which is below

0.05 and, therefore, there is a statistically significant difference exists between the preference for new branded spices at premium prices by consumers exists in different districts.

The reason for Chikmangalur reporting high

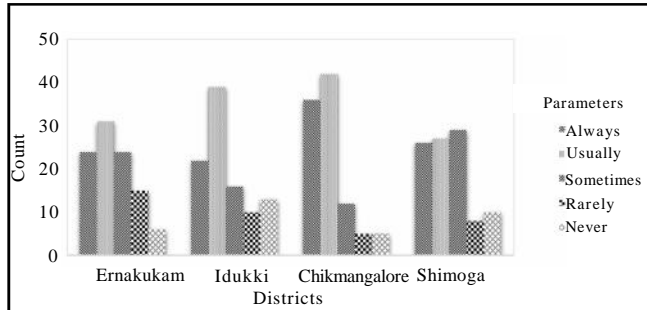


Fig. 3 : Consumer preferences towards use of branded spices in different districts

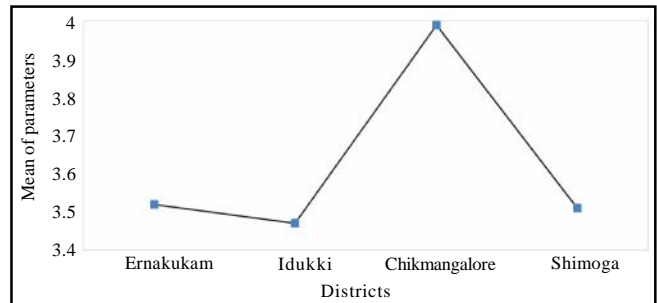


Fig. 4 : Mean plot for preference towards use of branded spices by consumers of different districts

Table 3 : Consumer preference towards use of branded spices in different districts

Variable	Ernakulam	Idukki	Chikmangalur	Shimoga	Total
Always	24	22	36	26	108 (27 %)
Usually	31	39	42	27	139 (34.75 %)
Sometimes	24	16	12	29	81 (20.25 %)
Rarely	15	10	5	8	38 (9.5 %)
Never	6	13	5	10	34 (8.5 %)
Total	100	100	100	100	400
Score	52	47	99	51	-
Rating	0.52	0.47	0.99	0.51	-

Table 4 : Means for groups in homogeneous subsets in different districts for preference towards use of branded spices by consumers (TUKEY B)

Districts	N	Subsets for alpha = 0.05	
		1	2
Idukki	100	3.47	-
Shimoga	100	3.51	-
Ernakulam	100	3.52	-
Chikmangalore	100	-	3.99

Table 5 : Possibility of switching over to new branded spices even at a premium price in different districts

Possibility	Ernakulam	Idukki	Chikmangalur	Shimoga	Total
Certainly	14	20	26	15	75 (18.75 %)
Very likely	21	35	41	24	121 (30.25 %)
Possibly	45	25	25	41	136 (34 %)
Unlikely	9	15	6	12	42 (10.5 %)
Never	11	5	2	8	26 (6.5 %)
Total	100	100	100	100	400
Score	18	50	83	26	-
Rating	0.18	0.5	0.83	0.26	-

preference towards use of branded spices is influenced by many factors and is beyond the scope of this study. It is apparent from the data that brand plays a crucial role in repeated purchases in spices and it is a must for companies to promote their brand strongly to capture suitable chunks of the market. Thus, marketers need to come up with different strategies for different districts to utilize consumers' preferences in their favour and thus retain their loyalties.

Table 7 and Fig. 7, indicates clearly the family size-wise consumers' responses towards new products of spices. 33.50 per cent respondents report that they would try these products possibly and 32.5 per cent to try very likely. Only 6.25 per cent respondents say that they would never try these products.

ANOVA analysis and whether there is a statistically significant difference between group means of significance value is 0.015 (*i.e.*, $p = .015$), which is below 0.05 and, therefore, there is a

statistically significant difference exists between the preference for branded spices in relation to the family size of consumers.

Here, the nuclear families are positively responsive towards new branded spices products as compared to other family size groups.

Hypotheses testing :

H_0 : Consumers are prepared to pay extra price for certain value additions in spices.

The Fig. in Table 5,7 and 8 clearly indicate the possibility of consumers switching to value added and improved spices even at a premium price. 34 per cent respondents say that they will possibly switch over. 30.25 per cent say that they will very likely switch over and 18.75 per cent say that they will certainly do so. Very few respondents from the sampled population report that they will never try new products (6.5 %). The hypothesis is, therefore, accepted.

Table 6 : Means for groups in homogeneous subsets in different districts for possibility of switching over to new branded spices even at a premium price by consumer (TUKEY B)

Districts	N	Subsets for alpha = 0.05	
		1	2
Ernakulam	100	3.50	-
Idukki	100	3.18	-
Chikmangalore	100	-	3.83
Shimoga	100	3.26	-

Table 7 : Possibility for switching over to branded spices by family size of the respondents in different districts

Possibility for switching over to branded products	Family size				Total
	< 4	5 -- 8	9 -- 12	>12	
Certainly	35	24	11	8	78 (19.5%)
Very likely	55	36	23	16	130 (32.5 %)
Possibly	39	31	35	29	134 (33.5 %)
Unlikely	12	8	5	8	33 (8.25 %)
Never	5	11	4	5	25 (6.25 %)
Total	146	110	78	66	400
Score	103	54	32	14	203
Rating	0.705	0.490	0.410	0.212	0.507

Table 8 : Means for groups in homogeneous subsets in possibility of switching over to branded spices by family size of consumer (TUKEY B)

Districts	N	Subsets for alpha = 0.05	
		1	2
< 4	100	-	3.71
5 – 8	100	3.49	3.49
9 – 12	100	3.41	3.41
> 12	100	3.21	-

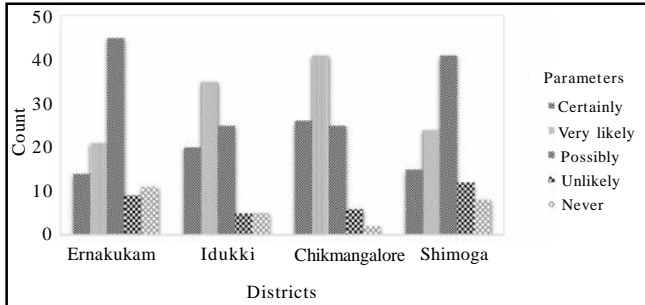


Fig. 5 : Possibility of switching over to new branded spices even at a premium price by consumer in different districts

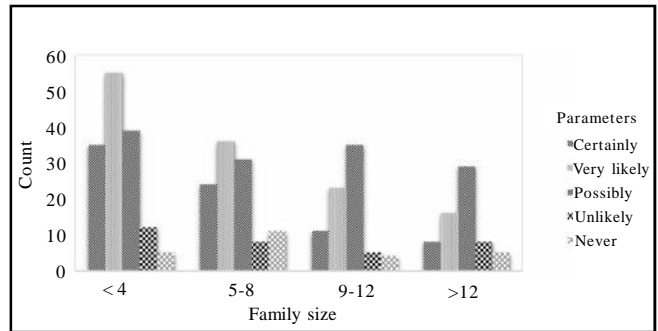


Fig. 7 : Possibility of switching over to branded spices by family size of consumer in different districts

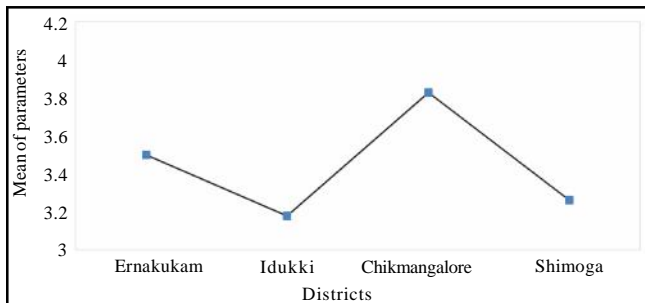


Fig. 6 : Mean plot for possibility of switching over to new branded spices even at a premium price by consumer in different districts

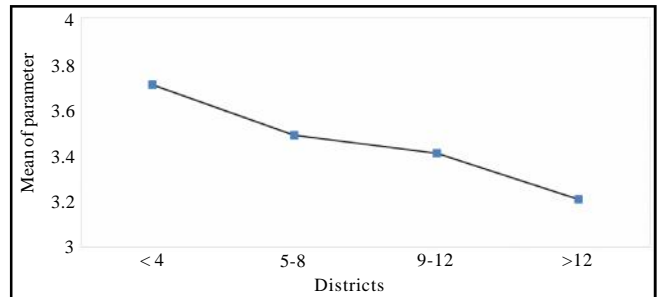


Fig. 8 : Mean plot for possibility of switching over to branded spices by family size of consumer in different districts

Conclusion:

In India, marketing of spices compared to other agricultural commodities plays a tough role. Generally, production of spices affianced by small and marginal farmers. Due to weak financial position, they prefer to dispose of their small marketable surplus immediately after harvest to village merchants and itinerant merchants or in nearby rural markets. Because of a long gestation period, farmers find it difficult to invest money for the development of plantations. There is a need to organize growers’ co-operatives for integrating farmer’s production and marketing activities for providing them the maximum benefit from cultivation to value addition. It also involves:

- Many of the spice growing areas are located in interior pockets where market accessibility is very poor. There is a need to organize and develop transport and communication facilities in such remote areas.
- The processing facilities, market intelligence and research should be undertaken to stabilize processing to ensure competitive prices in market.
- Value addition in spices is limited to oils and

oleoresins, ground spices, curry powder and dehydrated and frozen dried spices. Efforts are to be made to develop and commercialize new end producers like micro-encapsulated spices, sterilized spices and the like for export.

– Chikmangalore district has highest probability for marketing of value added spices compared to Shimoga, Idukki and Ernakulam.

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