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## **Marketing strategies in the pandemic affected economy for the value-added spices**

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**Abstract**--When a pandemic outbreak, it affects the people, business and hence the economy. It is very important to understand how a pandemic affects different industry in various ways as the impact of Covid in different industry eventually reflects in the economy. This study is an attempt to investigate the impact of pandemic affected economy in the marketing of value-added products manufactured by the spice industry in Kerala, focusing the seasoning and oleoresin industry in Kerala. In India, value addition of different spices into oleoresins and seasonings majorly happens in Kerala which is known as the land of spices. The study is conducted by collecting the primary data from thirty sales and marketing professionals of eleven major companies among the forty companies that are into value addition of spices in Kerala, selected for the study using simple random sampling. This article explores the impact of pandemic in the value-added spice industry and provides strategies for effective marketing of the value-added spice products.

**Keywords**--food ingredient industry, spices, value addition, marketing strategies, pandemic affected economy.

### **Introduction**

A pandemic disease is a disease which spreads across various regions and countries and affects a large number of people living in that area. Both the production and consumption of the food products has got affected after the pandemic Covid 19 has started. Sales has increased only in a very few segments in the food industry. A majority of the segments in the food industry has faced a huge dip in the sales of their products. Oleoresins and seasonings are the value added products of spices and that is being use in the snack food industry, Quick

Service Restaurants (QSR), Convenient Foods (CF) , nutraceutical companies, etc...as an ingredient in manufacturing. Since the sales has gone down drastically in majority of the above segments, it became a challenge for the marketing department to create the demand and to increase the sales of their seasonings and oleoresin products both in the domestic and in the international markets.

### **Value addition in Spice Industry**

Value addition is the change in the physical state of form of the products that enhances the value of the products through certain processes. The major spices which are getting value added from Kerala are Pepper, Cardamom, Chilly, Turmeric and Ginger. The value added spice products are oleoresins, seasonings, essential oils, powders, etc. Oleoresins and Seasonings are the major research and development-oriented products obtained by the value addition of spices.

### **Advantages of value addition of spices**

Value addition of spices reduces the perishability, improves the consistency in colour, aroma, taste and other characteristics, improves the convenience for transportation and usage and increases the margin and profitability. The major value-added spice products are, seasonings, oleoresins, essential oils, nutraceuticals ingredients and spice blends. This study majorly focuses on the seasoning and oleoresins as they contribute a larger share in the value added spice products manufactured in Kerala.

### **Companies that produce seasonings and oleoresins in Kerala**

- Synthite Industries
- PlantLipids
- Kancor Mane
- AVT Spices
- VKL Seasoning Pvt Ltd
- Olam
- BOSNaturals
- Symega
- ArjunaExtracts
- Kitchen Treasures
- Keya Foods

All these companies put together contribute to 100 percentage of oleoresin manufacturing and more than 90 percentage of the seasoning manufacturing in Kerala.

### **Literature review**

AKM Mohsin et al (2021)<sup>1</sup>in their article have explored the impact of the pandemic Covid 19 on the macroeconomic environment resulted in the slower economic growth. The pandemic affects the consumer behaviours, consumption pattern, contraction of export and import and fluctuation of prices of various commodities.

Compensatory consumption through 'no man' delivery and indoors economy can partially reduce the major impact created by the pandemic. Vinoy Abraham *et al* (2020)<sup>2</sup> in their study shares a view on how Covid 19 has a huge impact in the plantation sector including cardamom. The study also describes about the demand decline, price fall of the commodities and the supply chain disruptions due to the pandemic.

Monica Chaudhary *et al*, (2020)<sup>3</sup>in their study assess that how Covid 19 impacts various sectors and have included Medium Small Micro Enterprises (MSMEs), retail tourism and capital markets. Mass exodus, unemployment, lack of transactions and money flow impacted severely on the economy of India. Dominic Loske (2020)<sup>4</sup>in his article emphasizes that transportation by various means i.e. air, sea, or by land plays a very major role in the business and economy. Due to the restrictions and lockdown that has happened due to pandemic, the transportation industry has got affected badly. Food industry is largely depends on the transportation sector as the raw materials are being sourced majorly from the rural areas for processing, and require a large network of logistics to supply the processed products to the consumers across the world.

Sapna Sood (2020)<sup>5</sup>in her article throws light on how the communication plays an important role in understanding the consumer behaviour and formulating the strategies based on the shift in the consumer behaviour during the pandemic period for a successful marketing. Frequent communications with the customers or clients and working with them more closely during the pandemic time will help in developing a stronger relationships and there by getting added benefits. Seema Mehta *et al* (2020)<sup>6</sup>in their study throws light on how the consumer behaviour changes during a pandemic and how that impacts the stability, growth and integration of the economy. A shift in the consumer behavioural pattern recommend the need of a modified strategy by understanding various factors that influences the new buying behaviour.

### **Objectives of the study**

- To identify the challenges in the marketing of value-added spices encountered by the seasoning and oleoresin industries in Kerala in the pandemic affected economy.
- To devise strategies for the effective marketing of the value- added spice products focusing the seasonings and oleoresins industries in Kerala.

### **Scope of the study**

Scope of the study is limited to the value-added spice industry in the state of Kerala. The value-added spice ingredients are used for various applications in the food and nutraceutical segments. The study covers the seasonings and oleoresin industry in Kerala where the major global players in this industry are situated.

### **Materials and Methods**

The study is primarily based on the data collected from the sales and marketing professionals from various companies in the seasonings and oleoresins industries

based out of Kerala. Since there is well established connectivity by means of air, sea and land so most of the companies are located within a radius of 50 Km from Cochin. The data regarding both the domestic sales as well as the exports are collected separately. Descriptive research design is being used in this study and the objectives of the study are formulated based on the design. In connection to this, the study uses simple random sampling method to capture the response of the professionals in the marketing departments of value added spice industry. Out of forty companies in this segment, that includes large, medium and small sizes, a sample of eleven is selected for the study using simple random sampling method.

Garret Ranking method has been used to rank the responses of the respondents related to the preferences. The same is being used to understand the relative ranking on the impact of Covid 19 on each segment, i.e. Quick Service Restaurants (QSR), Convenient Foods (CF), Snacks and Nutraceuticals. A detailed data have been collected on various aspects like the changes in the capital costs, operational costs, frequency of the orders, change in the response time, cost of serving the studies, etc.. for this study. Data pertaining to the impact of Covid 19 on different segments i.e., Quick Service Restaurants (QSR), snacks, Convenient Foods (CF), and nutraceuticals are collected. Demographic profile of each respondent is also collected as a part of this study. The collected data has been examined and evaluated through Statistical Package for Social Sciences (SPSS). Secondary Data have been taken from the Industry Experts, Officials of Department of Agriculture Development and Farmer's Welfare, Spices Board of India and from the scientists and economists in Agriculture and Food processing, newspapers and from the industry related magazines.

## **Results and Discussions**

### **General profile of the sample units**

General profile of the sampling units is derived based on the primary survey. Among the companies selected for the survey, 55 percentage of the companies manufacture only seasonings, 18 percentage of the companies manufacture oleoresins and nutraceuticals, 27 percentage of the companies manufacture seasoning, oleoresins and nutraceuticals. The respondents include the professionals from various levels i.e. executives through directors of various companies. All the companies are having an annual turnover of more than 100 Crores INR. Of which two companies crossed an annual turnover of 1000 Crores INR. All the companies participated in this survey are doing both domestic and export marketing of their products.

### **Change in sales volume and sales value due to COVID19**

Majority of the companies responded that they have encountered a reduction in the sales volume and sales value. More than fifty percentage of the respondents marked that they had 25 to 50 percentage reduction in sales volume and sales value compared to the normal. Around 20 percentage of the respondents marked that they had a dip in sales volume from zero to twenty-five percentage mean time around 10 percentage of the respondents marked 0- 25 percentage dip in the

sales volume. Those fractions of respondents who marked an increase in the sales volume and sales value are majorly dealing with nutraceutical segments where they got good order of nutraceutical ingredients at a better price due to Covid 19 due to the health perception of the people. Even though there was an overall decrease in the sales volume and sales value, it was noted that in the convenient food (CF) segment there was an increase in the sales value and sales volume in the noodles and soup category. This is mainly because of the convenience in cooking, work from home format of the young and middle aged people etc..especially in the metros.

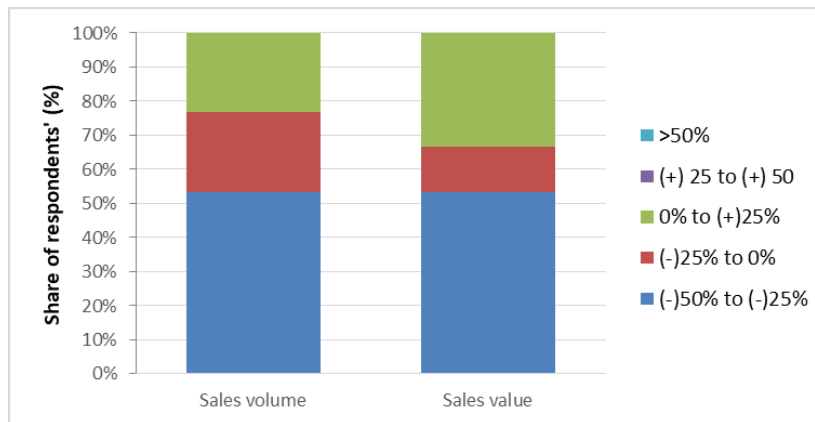


Fig 6.1. Percentage of respondents who reported change in sales due to Covid 19

### Capital cost and operational cost

84 percentage of the respondents reported that there is an increase of less than 10 percentage of the capital cost incurred due to Covid 19 for serving their customers. Capital costs increased during Covid 19 due to the purchase of sanitizing equipment, disinfecting equipment, purchase of new vehicles for the transportation of employees, etc. which was unprecedented. Only sixteen percentage of the respondents opined that there is an increase of 10-20 percentage increase in the capital cost for serving the customers.

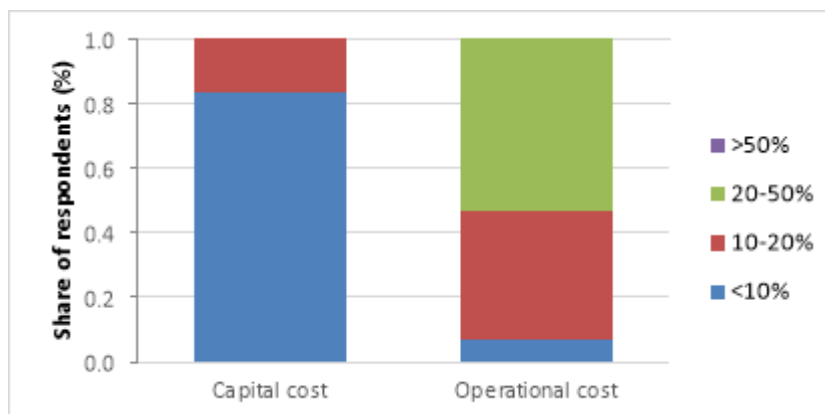


Fig 6.2. Percentage of respondents who reported additional cost incurred for adapting to Covid 19

Operational cost has increased heavily due to the increase in cost in the logistics part, transportation of the employees and the workers, delay in getting the raw materials etc. This made an impact in majority of the food ingredients manufacturing companies due to Covid 19. Only 5 percentage of the respondents marked that they have only less than 10 percentage increase in the operational cost where as 40 percentage of the respondents responded the increase of 10-20 percentage and 55 percentage of the respondents marked an increase of 10-20 percentage in the operational cost. Both these cost plays an important role in the business as it crunches the margins of the products while selling at the same price.

### **Impact of COVID 19 on sales orders**

There is an overall cost increase in serving the customers due to the increase in the capital cost as well as the operational cost. This includes the additional expenses on the stringent Covid 19 control measures implemented within the factory and its premises, increased logistics costs due to the less availability of transportation facilities etc.. 85 percentage of the respondents marked an overall increase of 0-10 percentage in the cost whereas the balance 15 percentage of the respondents marked an increase of 10-25percentage. Customer order frequency reduced for both domestic and international customers (exports). This has happened mainly due to the reduced demand of the final products in the B2C segments and also due to the logistical difficulties. 85 percentage of the respondents who worked in different companies responded that there is a reduction in the frequency of 10-25 percentage in the customer orders. 15 percentage of the respondents responded that there is a reduction of only 0-10 percentage.

Over all the response time to the customer order has increased in the industry for serving the customers of various segments such as convenient foods, snacks, quick service restaurants and nutraceutical segment. 55 percentage of the respondents marked that they are facing an increase of 10-25 percentage in the response time to the customer orders where as 40 percentage of the respondents have an increase of 25 to 50 percentage. Only 5 percentage of the respondents marked that the response time for serving the customers has increased by 0-10 percentage. Various challenges in the marketing have been studied further based on the indication of the customer order frequency for various segments in the value-added spices industry and changes in the operation and capital costs due to the impact of Covid 19.

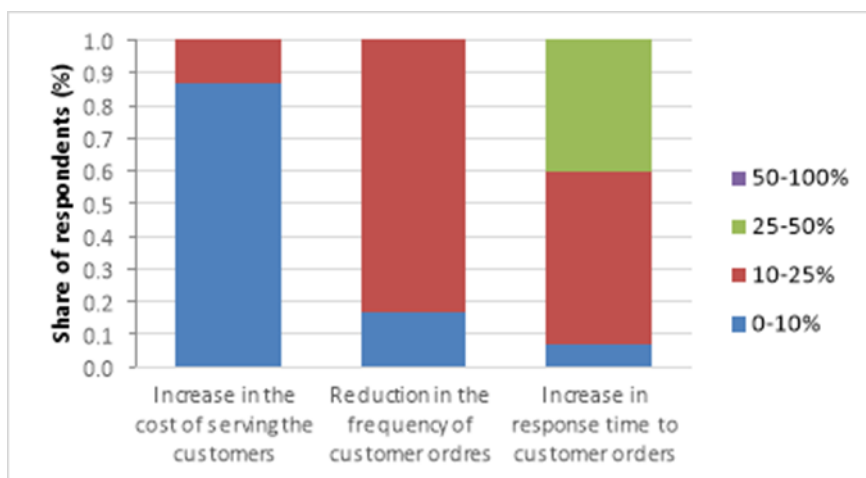


Fig 6.3. Percentage of respondents who reported impacts of COVID 19

### Customer preferences perceived by the companies in the industry

Customers preference for various attributes as perceived by different companies have been ranked using Garret's ranking method. Quality of the products (ingredients), price of the product, availability of the product and the convenient size of the packing were the four parameters taken into consideration based on the nature of the industry and customers in the B2B space of the seasoning and oleo resins industry. Quality of the products seemed to be the most important parameter among the customer preferences as perceived by the companies followed by price, availability and the convenient pack size in the order.

### COVID 19 impact on various segments in the industry

Covid 19 has impacted various industries in different ways with various intensities. Seasonings and oleoresins are mainly used as an important raw material in the food industry. Garret ranking shows that quick service restaurant (QSR) segment is the one which got badly affected by covid 19. Snacks industry is the second one after QSR followed by the convenient food (CF) segment. Nutraceutical segment is the least affected segment in the industry due to Covid 19.

Table 1

Ranking of customer's preference for various attributes as perceived by the companies

Company		Quality	Price	Availability	Convenient pack size
Company 1	Average score	61.7	65.3	46.0	27.0
	Rank	2.0	1.0	3.0	4.0
Company 2	Average score	73.0	50.00	50.00	27.0
	Rank	1.0	2.0	3.0	4.0

Company 3	Average score	56.0	73.0	35.5	35.5
	Rank	2.0	1.0	3.0	4.0
Company 4	Average score	59.4	67.2	46.4	27.0
	Rank	2.0	1.0	3.0	4.0
Company 5	Average score	56.0	73.0	27.0	44.0
	Rank	2.0	1.0	4.0	3.0
Company 6	Average score	73.0	56.0	27.0	44.0
	Rank	1.0	2.0	4.0	3.0
Company 7	Average score	73.0	44.0	41.5	41.5
	Rank	1.0	2.0	3.0	4.0
Company 8	Average score	56.0	73.0	27.0	44.0
	Rank	2.0	1.0	4.0	3.0
Company 9	Average score	59.4	44.0	69.6	32.8
	Rank	2.0	3.0	1.0	4.0
Company 10	Average score	73.0	52.0	48.0	27.0
	Rank	1.0	2.0	3.0	4.0
Company 11	Average score	56.0	73.0	44.0	27.0
	Rank	2.0	1.0	3.0	4.0
All	Average score	62.8	59.5	46.9	31.8
	Rank	1	2	3	4

### **Effectiveness of adaptation strategies**

Various adaptation strategies have been implemented by different companies in the industry. E commerce channels, social media marketing, virtual exhibitions and outsourcing of new channels were the mostly used adaptation strategies in the industry. Analysis has been done for understanding the effectiveness of those adaptation strategies that they have implemented. E commerce channels were effective for most of the companies with a maximum share of 70 percentage of the respondents. For five percentage of the respondents it was highly effective and around 25 percentage of the respondents stayed neutral to the effectiveness of e-commerce as an adaptation strategy during Covid 19 in the seasoning and oleoresin industry. Social Media marketing seemed to be one of the best adaptation strategies and around 90 percentage of the respondents marked it as either highly effective or merely effective. Around 60 percentage of the respondents informed virtual exhibitions have a strong hold in marketing and around 35 percentage of the respondents marked a neutral opinion about the effectiveness of virtual exhibitions. Outsourcing new channel partners were hardly done by any of these companies in the seasoning and oleoresin Industry.

(Aditya Jhunjunwala,2021) has analyzed many industries in India and concluded whether the innovative businesses in India have really added value to the economy.

Table 2  
Impact of Covid-19 on different segment of value-added spice industry

Company		Snacks	Convenient Foods	Quick Service Restaurants	Nutraceuticals
Company 1	Average score	52.0	48.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 2	Average score	56.0	44.00	73.00	27.0
	Rank	2.0	3.0	1.0	4.0
Company 3	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 4	Average score	53.6	52.2	67.2	27.0
	Rank	2.0	3.0	1.0	4.0
Company 5	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 6	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 7	Average score	64.5	44.0	64.5	27.0
	Rank	2.0	3.0	1.0	4.0
Company 8	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 9	Average score	53.6	46.4	63.8	36.2
	Rank	2.0	3.0	1.0	4.0
Company 10	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
Company 11	Average score	56.0	44.0	73.0	27.0
	Rank	2.0	3.0	1.0	4.0
All	Average score	55.0	46.6	69.9	28.5
	Rank	2	3	1	4

### Performance of the industry due to COVID 19 impact

Communication with the customers has been done satisfactorily in all the companies in different means. 45 percentage of the respondents were highly satisfied and 55 percentage of the respondents were satisfied by the customer communication that they have done during the Covid 19 period. Even though there was a reduction in the frequency of orders by the customers, the order taking from the sales department has done effectively. 90 percentage of the respondents are either highly satisfied or satisfied on the order taking. 10 percentage of the respondents marked neutral. However, only 5 percentage of the respondents were satisfied by the prompt delivery of the products against the order they have taken from the customers. 35 percentage of the respondents stayed neutral to this response and 60 percentage of the respondents marked dissatisfaction about the prompt delivery of their products to the customers. 50 percentage of the respondents are satisfied by the customer service that they are giving to the customers and the remaining 50 percentage stayed neutral.

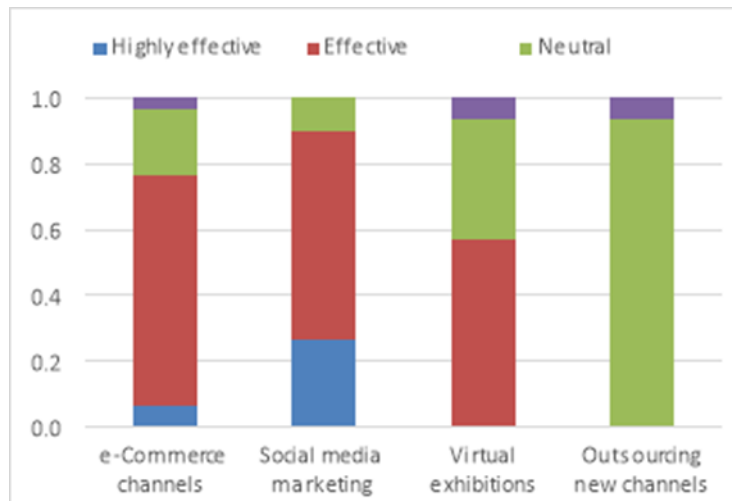


Fig 6.4. Effectiveness of adaptation strategies

Adaptation of e-marketing, including social media seemed to be satisfied by the respondents and around 80 percentage of the respondents marked as satisfied.

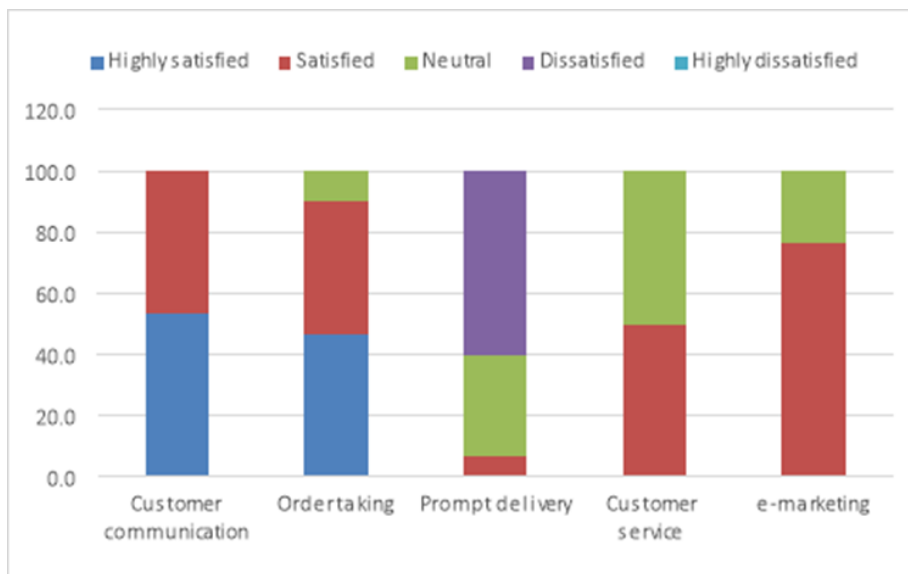


Fig 6.5. Performance of the companies during pandemic crisis

### Chi square analysis in the reduction of frequency of customers orders with the increase in the cost of serving of the customers

Table 3

Chi Square analysis in the reduction in the frequency of customer orders with the increase in the cost of serving the customers

Chi-square test  
Observed

	Percentage	Reduction in the frequency of customer orders				Total
		0-10	10 to 25	25-50	50-100	
Increase in the cost of serving the customers	0-10	4	18	0	0	22
	10 to 25	1	1	1	1	4
	25-50	0	1	1	0	2
	50-100	0	1	1	0	2
		5	21	3	1	30

Expected

	Percentage	Reduction in the frequency of customer orders				Total
		0-10	10 to 25	25-50	50-100	
Increase in the cost of serving the customers	0-10	3.7	15.4	2.2	0.7	22.0
	10 to 25	0.7	2.8	0.4	0.1	4.0
	25-50	0.3	1.4	0.2	0.1	2.0
	50-100	0.3	1.4	0.2	0.1	2.0
		4.3	18.2	2.6	0.9	30.0

## Chi-square points

	Percentage	Reduction in the frequency of customer orders				Total
		0-10	10 to 25	25-50	50-100	
Increase in the cost of serving the customers	0-10	0.03	0.44	2.20	0.73	3.4
	10 to 25	0.17	1.16	0.90	5.63	7.9
	25-50	0.33	0.11	3.20	0.07	3.7
	50-100	0.33	0.11	3.20	0.07	3.7
		0.2	1.6	3.1	6.4	18.7

DF 9.0

CHI-SQUARE	18.69
Critical Value of Chi-square =	16.92

Chi-Test (P)Value = 0.0279775

*Ho: There will not be any reduction in the frequency of customer orders with the increase in cost of serving the customers.*

*H1: There will be a reduction in the frequency of customer orders with the increase in cost of serving the customers.*

Chi square analysis is done to understand the reduction in the frequency of customer orders with the increase in cost of serving the customers. Among twenty-two the respondents who has increased the cost of serving to 0-10 percentage, eighteen respondents marked a reduction of 10-25 percentage of reduction in the frequency of customer orders and the balance four respondents marked a reduction of 0-10 percentage decrease in the frequency of customer orders. Similarly, 25 out of 30 customers marked a clear reduction in the frequency of customer orders with the increase in the cost of serving the customers due to Covid 19. A chi square value of 18.69 is observed over the critical value of chi square 16.92 at 9 degrees of freedom which is statistically significant. This shows that there will be a reduction in the frequency of customer orders with the increase in cost of serving the customers and the alternate hypothesis can be accepted and the null hypothesis can be rejected.

### Findings and Conclusion

This study seeks to investigate the challenges in the marketing of value added spices faced by the seasoning and oleoresin industry in Kerala in the pandemic affected economy. Due to the better connectivity by sea, land and by air with various destinations, most of these companies are situated within 50 Km from the city of Cochin in Kerala. These findings are based on the specific case of the impact of covid in the marketing of seasoning and oleoresin industry. Around 70 percentage of the respondents observe a dip in both the sales value and the sales volume. This has majorly happened due to the reduction in the sales of the final products in the markets produced by their B2B customers. Since majority of the Quick Service Restaurants (QSR) closed for months, that contributed a lot to this loss. Apart from this the unprecedented unemployment and reduced salaries of the general public, changed the purchase behaviour. People reduced buying

potato chips, extruded snacks, namkeens, sausages, canned foods, etc. This affected the snacks and convenient foods market. Nutraceuticals have the growth in sales volume and value due to the perceived health benefits by the consumers. That perception increased the demand of the products in the market and those companies could earn more volume and margins by manufacturing nutraceuticals.

Both the capital cost and the operational costs were increased due to the impact of Covid 19. The main reasons for the increase in the capital costs were the purchase of disinfecting and sanitizing equipment, purchase of additional vehicles for the transportation of employees. The increase in operational costs happened due to the increase in the logistics costs, shift in work with less employees, PPE kits, masks and gloves, etc. Both the increase in the capital cost and the operational costs increased the cost of serving the customers. The order pattern has changed very much after Covid 19 in both domestic and export markets. This is mainly due to the irregular pattern of purchase by the consumers in the B2C segment and the derived demand impacted the B2B sales as well. It is observed a reduction in the frequency of customer orders however there was an increase in the response time to the customer orders.

Social media marketing and e-commerce marketing worked found effective during the Covid19 time, even though it is very difficult to replace the role of salesman in the B2B market. It is observed that a few of the companies have participated in the virtual exhibitions as well. Communication with the customers and order taking from them has been done by each of the companies satisfactorily but there were challenges in the part of order processing as well as in the dispatch of the finished goods(FG). Quality of the product found to be the most important customer preference followed by the other parameters like price, availability and convenient pack size as perceived by different companies in the seasoning and oleoresins industry.

### **Recommendations**

- Lease financing or rent financing may help the companies in the value-added spice industry to reduce the capital costs and hence to increase profit margin in the pandemic affected economy.
- Strategic changes in the production of value-added spice products, choosing selectively those seasonings that can go for noodles and soups will help the companies to build up the volume and value of the business due to the perceived increase in the customer demand.
- Quality of the products seemed to be the most important in customer preference during the pandemic time, as perceived by the companies. The focus of the companies should be more on manufacturing the quality value added spice products.
- Response time of the order delivery should be reduced that has happened due to the pandemic impact.
- Supply chain and logistics functions should be revisited as many of the companies are finding difficulty on the prompt delivery of their products.

- Communications with the customers through social media and virtual exhibitions could manage the interactions with the customers very well, both in the domestic and in the export businesses.

## References

- Aditya Jhunjhunwala & Tamal Datta Chaudhuri, 2021. "Innovation, growth and value creation: a study of Indian companies," *International Journal of Business Innovation and Research*, Inderscience Enterprises Ltd, vol. 25(3), pages 328-352.
- AKM Mohsin, Lei Hongzhen and Syed Abid Hosain Sage Open April- June 2021 Impact of Covid-19 pandemic on Consumer Economy- Counter Measures Analysis.
- Amit Baran Sharangi, M. K. Pandit, Department of Plantation, Spices, Medicinal and Aromatic Crops, Bidhan Chandra Krishi Viswavidyalaya (Agricultural University), Mohanpur, , Nadia, India. Department of Vegetable Science, Mohanpur, Bidhan Chandra Krishi Viswavidyalaya (Agricultural University), Nadia, India Chapter First Springer Link. Supply Chain and Marketing of Spices.
- Ankan Das, Amit Baran, India Chapter First Online: 22 March 2018, Springer Link, Post Harvest Technology and Value Addition of Spices -Indian Spices.
- Arghya Mani and Arpan Kabira, *AGRICULTURE & FOOD*: ISSN: 2581-8317 Volume 1 –Issue 8 –August 2019, 338 Export potential of spices and its value added products.
- Deloitte. 2020.' Maintaining Customer Loyalty and trust during times of uncertainty'. <https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/covid19/gx-coronavirus-customer-loyalty.pdf>
- Deloitte. 2020.' Maintaining Customer Loyalty and trust during times of uncertainty'. <https://www2.deloitte.com/content/dam/Deloitte/ie/Documents/covid19/gx-coronavirus-customer-loyalty.pdf>
- H.B. Sowbhagya, Department of Spice and Flavour Science, CSIR – Central Food Technological Research Institute, Mysore 570 020, Food Quality and Safety, 2019, 3, 73–80 doi:10.1093/fqsafe/fyy029, Oxford Press, Value-added processing of by-products from spice industry.
- Monica Chaudhary, P.R Sodani, Shankar Das Sage Journals, August 11, 2020 Effect of Covid 19 on economy in India: Some reflections for policy and programme.
- Rohatash.K.Bhardwaj B.K. Sikka Ashutosh Singh M.L. Sharma N.K. International Conference on Technology and Business Management, March 28-30, 2011739, Challenges and Constraints of Marketing and Export of Indian Spices in India
- Santosh Gupta, Ashwini Chandak Ecociate Consultants. Impact of Covid 19 on Spice sector in India – a situational Analysis.
- Sapna Sood, Research Gate June 2020, Impact of Covid 19 on consumer behaviour in India, Dominic Loske, Elsevier. *Transportation Research Interdisciplinary Perspectives* 6 (2020) 100165, The impact of Covid 19 on transport volume and freight capacity dynamics- An empirical analysis in German food retail logistics.

- Seema Mehta , Tanjul Saxena , Neetu Purohit , Journal of Health Management, Sage Journals, July 30, 2020, The new consumer behaviour paradigm amid Covid 19: Permanent of Transient.
- Vinoj Abraham, Mitesh Madhavan, The Indian Economic Journal 68 (3) 438-456,2020 In.sagepub.com/ journals- permissions- India. Performance of Plantation Sector during the Covid 19 Pandemic.
- WBOC.COM Spices Market 2020 with COVID-19 impact on Industry: Growth Global Industry Size, Top manufacturers Entry, Analysis, Share, Trends, Market Demand, Growth, Opportunities and Forecast 2025 Published: July 26, 2020
- Yonggui Wang,a, Aoran Hong,b, Xia Li.b, and Jia Gaob, Marketing innovations during a global crisis: A study of China firms' response to COVID-19J Bus Res. 2020 Aug; 116: 214–220. Published online 2020 May 25. doi: 10.1016/j.jbusres.2020.05.029PMCID: PMC7247497PMID: 32501308.