



RESEARCH PAPER

A study on various tomato based products preferred by horeca sector in South India

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Abstract : Urbanization, rising income levels, technology penetration, changing life styles are some of the driving forces for the growth of food service industry especially the HoReCa segment in India. Westernization of food consumption patterns has demanded for wide variety of processed foods. Among several food products, the usage of tomato in fresh form is very known by Indian households while an increased application of tomato based products in various culinary applications has become prominent. The present study focus on various tomato based products, brands preferred by HoReCa sector in their culinary applications. Purposive cum snowball sampling design is employed in the present study. The sample size of the study is 60. Among the tomato based products, the sector is majorly using chopped tomatoes followed by tomato paste. The monthly consumption requirement of tomato sauce exhibited wide variations *i.e.* from 20 kgs to more than 80 kgs per month and. The sector prefers plastic containers for tomato sauce packaging and tetra pack for tomato juice majorly due of their shelf-life and consumption safety. Tomato sauce and ketchup are majorly sourced from company distributors. The major tomato based brands preferred are Morton and Delmonte. Rich tomato sauce procured majorly from outside while others are prepared based on cuisine and customer requirement. The usage of tomato sauce is majorly used in snacks items followed by breakfast items in south and north Indian culinary applications while in Chinese and Italian culinary applications, the usage is prominent in noodles, manchuria, soup, rice, chicken, mutton and starters.

Key Words : Tomato based products, Consumption, Brand, Packaging, Distribution, Culinary usage

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INTRODUCTION

India is the second largest tomato producing country in the world after China. Tomato is an important vegetable crop grown in India after potato and onion, but tops in the list of canned vegetables. Due to increase in availability of better inputs and practicing better cultivation methods, per hectare productivity of crop has

increased from 15.90 tonnes (2001-02) to 25.47 tonnes (2016-17) (Indian Horticulture Database 2016-17). The crop is subjected to high fluctuations in market prices due to uncertainty in supply and demand and other market forces (Kumar *et al.*, 2005 and Prasad, 2016). Interventions such as marketing infrastructure, value addition activities not only increases shelf-life but also

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ensures better remunerative prices for tomato growing farmers by fortifying nutritive capacity of food products. Tomato is the base material for preparing majority of curries and gravies by households in India, the demand for tomato in preparing ready to eat foods, dry powders have been increasing (GIZ report, 2016). The changing life styles, food habits and consumer preferences for continental, Italian and chinese foods have increased the demand for tomato-based products. India's demand for value added tomato products has been growing at 30 per cent (NIIR project consultancy services report) annually due to increase in working women, lack of time and a growing market for ready to eat curries and gravies.

A large number of organized food processors having a strong focus on the HoReCa (Hotel, Restaurant, Catering) segment have emerged over last decade. (FICCI Report, 2018) The rise in the food service sector including restaurants and fast food chain has increased the potential demand for ketchup, sauce, puree, juice and other tomato-based products. (Maerschand and Willaert, 2018). The tomato sauce is consumed with snacks like rolls, cutlets, samosas, chops, soups, used for culinary applications of other continental and Chinese foods as a complementary dish or a side dish (Vijayabaskar and Sundaram, 2012). It increases the taste of the meal and increase the satisfaction in every continental and Chinese meal. At present the market for tomato-based products like sauce, ketch up, puree, juice, paste etc. are dominated by brands like kissan, Del monte, Dabur, Tasty treat, Weikfield, Maggi, Cremica etc. recognizing the need and demand for tomato value added products. In this context the present study is undertaken to identify the food service industry especially the hotel, restaurant and café segment (HoReCa) preferences towards various tomato based products in their culinary applications.

Objectives:

- To study consumption requirements and preferred packaging of various tomato based products
- To identify the sources of purchase of various tomato based products
- To identify the preferred brands for various tomato based products
- To identify the culinary applications of tomato sauce.

MATERIAL AND METHODS

The capital cities of south Indian states namely

Bangalore, Chennai, Hyderabad, Trivandrum, Visakhapatnam have been selected for the study. The list of HoReCa group of each city is obtained from several online sources and one major HoReCa group in each city was contacted personally and the details of other chefs working in other HoReCa has also been obtained. Thus a purposive cum snowball sampling design is employed in the present study. The primary data for the study is obtained from the chefs working in the HoReCa sector through a well defined and pre-tested online questionnaire using google forms, telephonic and personal interview. The total sample size of the study was 60. The interview schedule covered aspects like chef's designation, type of restaurant/hotel/cafes, specialized in which type of cuisine, type of tomato products used, source of purchases, quantities consumed, preferred package material, culinary applications etc. are collected. The primary data pertain to the year 2018-19.

Percentage analysis and Cross tabulation was used to compare the relation between two variables i.e., profile of the chefs, consumption, sources of purchase, brands, culinary application of tomato value added products. Statistical Package for Social Science (SPSS.13) trial version was used to analyse the data.

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Profile of the sample chefs :

The profile of the sample respondents (chefs) provides a comprehensive understanding in terms of designation they are holding and to which type of hotel, restaurant and cafés (HoReCa) they belongs.

The top position is executive chef followed by sous chef and entry position is commi-2 cadre. Out of total 60 sample chefs, 8.3 per cent of them are executive chef, 48.3 per cent are sous chef, 21.7 per cent are commi-1, 8.3 per cent are commi-2 and D.C.D. P each and the rest 5 per cent are C.D. P

Information regarding the type of hotel, restaurant and cafés where the sample chefs are associated are collected and grouped into four categories. Of the 60 sample chefs, 41 are associated with family dining restaurant, while 10 chefs working in cafes, 6 sample chefs associated with fast food segment and 3 employed in quick service restaurant.

Designation	No. of respondents	Per cent	Particulars
Executive chef	5	8.3	The top position is executive chef followed by sous chef and entry position is commi-2 cadre.
Sous chef	29	48.3	
D.C.D. P	5	8.3	Out of total 60 sample chefs, 8.3 per cent of them are executive chef, 48.3 per cent are sous chef, 21.7 per cent are commi-1, 8.3 per cent are commi-2 and D.C.D. P each and the rest 5 per cent are C.D. P
C.D. P	3	5.0	
Commi-1	13	21.7	
Commi-2	5	8.3	
Total	60	100.0	

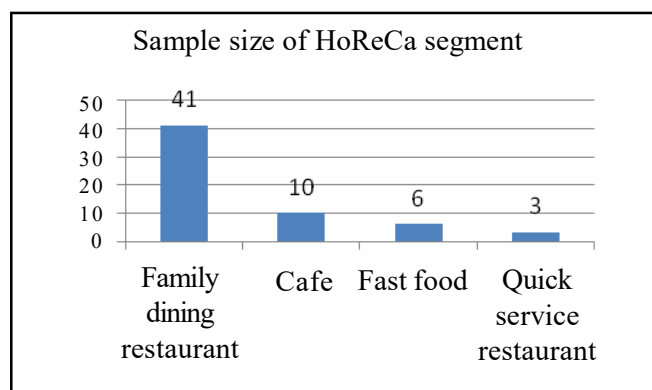


Fig. 1 : Profile of HoReCa segments

Table 2 indicates that 91.7 per cent of the sample chefs are using chopped tomatoes followed by tomato paste (83.3%), tomato sauce (81.7%), tomato ketchup (80%), tomato puree (80%), tomato dried tomatoes (71.7%), tomato juice (76.7%) and whole peeled tomatoes (68%).

Table 2 : Type of tomato-based products used by the sample chefs of HoReCa segments

Tomato products	No. of chefs	Per cent
Tomato paste	50	83.3
Tomato sauce	49	81.7
Dried tomatoes	43	71.7
Tomato juice	46	76.7
Whole peeled tomatoes	41	68.3
Tomato ketchup	48	80.0
Chopped tomatoes	55	91.7
Tomato puree	48	80.0

Out of total 60 sample chefs, 26.7 per cent of the sample chefs are consuming more than 80 kg of tomato sauce per month followed by 20-40 kg, 60-80 kg (20%), 40-60 kg (18.3%) and 0-20 kg (15%) of tomato sauce per month. 38.3 per cent of the sample chefs are consuming 20-40 kg of tomato paste followed by 40-60 kg (36.7%). 38.3 per cent of the sample chefs were

Monthly consumption (kg)	Tomato sauce	Tomato paste	Whole peeled tomatoes	Tomato ketchup	Tomato puree
0-20	9 (15.0%)	7 (11.7%)	4 (6.7%)	11 (18.3%)	21 (35.0%)
20-40	12 (20.0%)	23 (38.3%)	16 (26.7)	26 (43.3%)	23 (38.3%)
40-60	11 (18.3%)	22 (36.7%)	23 (38.3%)	16 (26.7%)	8 (13.3%)
60-80	12 (20.0%)	5 (8.3%)	6 (10.0%)	4 (6.7%)	5 (8.3%)
>80	16 (26.7%)	3 (5.0%)	11 (18.3%)	3 (5.0%)	3 (5.0%)
Total	60 (100%)	60 (100%)	60 (100%)	60 (100%)	60 (100%)

Consumption of tomato juice (litres) per month	No. of respondents	Per cent
0-20	27	45.0
21-40	17	28.3
41-60	7	11.7
61-80	4	6.7
>80	5	8.3
Total	60	100.0

consuming 40-60 kg of whole peeled tomatoes followed by 20-40 kg (26.7%). 43.3 per cent of the sample chefs are consuming 20-40 kg of tomato ketchup followed by 40-60 kg (26.7%). 38.3 per cent of the sample chefs are consuming 20-40 kg of tomato paste followed by 0-20 kg (35%).

Table 4 indicates that, out of total 60 chefs, 45 per cent of the sample chefs are using 0-20 liters of tomato juice per month, 28.3 per cent are using 21-40 liters 11.7 per cent are using 41-60 liters 6.7 per cent are using 61-80 liters and 8.3 per cent of the sample chefs are using more than 80 liters of tomato juice per month.

Table 5 indicates that 61.7 per cent of the sample chefs preferred plastic pouch, 48.3 per cent are preferring bottle, 66.7 per cent preferred plastic container and only 10 per cent of them preferred others like sachets.

Table 6 indicates that 31.7 per cent of the sample chefs preferred tin can, 81.7 per cent preferred tetra pack, 16.7 per cent preferred bottle, 26.7 per cent preferred plastic container and remaining 3.3 per cent

of them preferred others like sachets.

Table 7 indicates that around 98.3 per cent, 23.3 per cent, 3.33 per cent, 6.7 per cent, 1.7 per cent and 55 per cent of the sample chefs purchasing tomato sauce from company distributors, wholesalers, retailers, super market, directly from farmer and prepare on their own, respectively. Around 60-80 per cent of tomato sauce requirement was purchased from company distributors by 46.7 per cent of the sample chefs followed by 21.7 per cent of the sample chefs purchased more than 80 per cent of the tomato sauce. Around 0-20 per cent of tomato sauce requirement was purchase from wholesalers by 16.7 per cent of the sample chefs followed by 11.7 per cent of the sample chefs purchased 20-40 per cent of the tomato sauce. Around 23 per cent of sample chefs had prepared 40-60 per cent of their tomato sauce requirement on their own followed by 13.3 per cent of sample chefs who had prepared 20-40 per cent of tomato sauce on their own.

Table 8 indicates that around 10 per cent of the

Table 5: Preferred package for tomato sauce by the sample chefs of HoReCa segments

Preferred package	No. of respondents	Per cent
Tin can	26	43.3
Plastic pouch	37	61.7
Bottle	29	48.3
Plastic container	40	66.7
Other	6	10.0

Table 6: Preferred package for tomato juice by the sample chefs of HoReCa Segments

Preferred package	No. of respondents	Per cent
Tin can	19	31.7
Tetra pack	49	81.7
Bottle	10	16.7
Plastic container	16	26.7
Other	2	3.3

Table 7: Sources of purchase of tomato sauce by sample chefs of HoReCa segments

Source	Per cent of tomato sauce purchased from various sources					Total 60 (100%)
	0-20	20-40	40-60	60-80	>80	
Company distributors	2 (3.3%)	4 (6.7%)	12 (20%)	28 (46.7%)	13(21.7%)	59 (98.3%)
Wholesalers	10 (16.7%)	7 (11.7%)	3 (5%)	2 (3.3%)	0 (0%)	22(23.3%)
Retailers	1 (1.7%)	0 (0%)	1(1.7%)	0 (0.0%)	0 (0 %)	2 (3.33%)
Super market	4 (6.7%)	0 (0.0%)	0 (0%)	0 (0.0%)	0 (0%)	4 (6.7%)
Directly from farmer	1 (1.7%)	0 (0.0%)	0 (0%)	0 (0.0%)	0 (0%)	1 (1.7%)
Prepare on their own	4 (6.7%)	8(13.3%)	14 (23%)	7 (12%)	0 (0%)	33 (55%)

sample chefs had prepared tomato paste requirement on their own, while 40 per cent of them had purchased from outside and around 50 per cent of sample chefs were purchasing from both outside and preparing on their own depending on the requirement and availability. Around 76.7 per cent of the sample chefs had purchased dried tomatoes from outside. Around 66.7 per cent of the sample chefs are using the tomato juice from both the sources. Around 76.7 per cent of the sample chefs are preparing whole peeled tomatoes on their own and 100 per cent of the sample chef's requirement of tomato ketchup is from outside purchases. Around 46.7 per cent of the sample chefs had purchased tomato puree from outside, while 40 per cent of them from both the sources and 13.3 per cent had preparing on their own.

Table 9 infers that, out of total 60 chefs, 100 per cent of chefs are using rich tomato sauce for their culinary applications while 46.7 per cent, 33.3 per cent, 46.7 per cent, 63.3 per cent, 25 per cent, 61.7 per cent and 23.3 per cent of the sample chefs are not using tomato chilli sauce, manchurian sauce, mushroom tomato sauce, roasted garlic tomato sauce, basil tomato sauce, no onion no garlic tomato sauce and salsa sauce, respectively. With regard to rich tomato sauce, 81.7 per cent of the sample chefs are using from both the sources *i.e.*, own

preparation and outside.

Among the sample chefs using different types of tomato sauces, 30 per cent (tomato chilli sauce), 63.3 per cent (manchurian sauce), 53.3 per cent (mushroom tomato sauce), 30 per cent (roasted garlic tomato sauce), 73.3 per cent (basil tomato sauce), 36.7 per cent (no onion no onion tomato sauce) and 76.7 per cent (salsa sauce) of the users were preparing on their own.

Table 8 indicates that, out of 60 chefs, 56.7 per cent of the chefs are using 'Del monte' brand, 28.3 per cent preferring using 'Heinz' brand, 10 per cent of the chefs using 'Kissan' brand and only 5 per cent of the chefs were using other brands like cremica etc.

A perusal of Table 11 indicates that out of 60 chefs, 50 per cent are preferring 'Real' brand, 1.7 per cent using 'Nutralife' brand, 11.7 per cent of them using 'Del monte' brand, 1.7 per cent of the chefs using 'Golden crown' brand and 35 per cent of the chefs preferred to prepare tomato juice on their own.

Table 12 shows that with regard to tomato paste, 23.3 per cent of sample chefs are preferring 'Del monte' brand, 36.7 per cent using 'Morton' brand, 10 per cent using 'Dabur' brand, 5 per cent using 'Heinz' brand, 11.7 per cent of them preferring 'golden crown' brand, 5 per cent using 'my favourite brand' and 8.3 per cent are

Table 8 : Sources of purchase of tomato processed products other than tomato sauce

Tomato processed products	Source			Total
	Own preparation	Purchase from outside	Both	
Tomato paste	6 (10.0%)	24 (40.0%)	30 (50.0%)	60 (100%)
Dried tomatoes	5 (8.3%)	46 (76.7%)	9 (15%)	60(100%)
Tomato juice	8 (13.3%)	12 (20.0%)	40 (66.7%)	60(100%)
Whole peeled tomatoes	46 (76.7%)	4 (6.7%)	10 (16.7%)	60 (100%)
Tomato ketchup	0 (0.0%)	60 (100%)	0 (0.0%)	60 (100%)
Tomato puree	8 (13.3%)	28 (46.7%)	24 (40.0%)	60 (100%)

Table 9: Sources of purchase of various types of tomato sauces by sample chefs of HoReCa segments

Types of tomato sauce	No. of respondents				Total
	Own preparation	Using Outside	Both	Not using	
Rich tomato sauce	4 (6.7%)	7 (11.7%)	49 (81.7%)	0 (0.0%)	60 (100%)
Tomato chilli sauce	18 (30.0%)	4 (6.7%)	10 (16.7%)	28 (46.7%)	60 (100%)
Manchurian sauce	38 (63.3%)	0 (0.0%)	2 (3.3%)	20 (33.3%)	60 (10%)
Mushroom tomato sauce	32 (53.3%)	0 (0.0%)	0 (0.0%)	28 (46.7%)	60 (100%)
Roasted garlic tomato sauce	18 (30.0%)	0 (0.0%)	4 (6.7%)	38 (63.3%)	60 (100%)
Basil tomato sauce	44 (73.3%)	1 (1.7%)	0 (0.0%)	15 (25.0%)	60 (100%)
No onion no garlic tomato sauce	22 (36.7%)	1 (1.7%)	0 (0.0%)	37 (61.7%)	60 (100%)
Salsa sauce	46 (76.7%)	0 (0.0%)	0 (0%)	14 (23.3%)	60 (100%)

using other brands like cremica etc.

Table 13 indicates the sample chefs of HoReCa segment preference for tomato ketchup brands. 51.7 per cent preferring 'Del monte' brand, 20 per cent using 'Kissan' brand, 5 per cent using 'Maggi' brand, 13.3 per cent using 'Heinz' brand and 10 per cent are preferring other brands.

Table 14 indicates from 60 sample chefs, 36.7 per cent are preferring 'Morton' brand for tomato puree,

23.3 per cent using 'Del monte' brand, 13.3 per cent using 'Kissan' brand, 18.3 per cent using 'Heinz' brand and 8.3 per cent of them preferring 'Hunts' brands for tomato puree.

Table 15 indicates that with regard to south Indian dishes, tomato sauce is used by only 20 per cent of the sample chefs in rice items while 31.7 per cent are using in chicken recipes, 25 per cent using in mutton recipes, 16.7 per cent using in fish recipes, 33.3 per cent using in

Table 10 : Tomato sauce brands preferred by sample chefs of HoReCa segments

Tomato sauce brands	No. of respondents	Per cent
Delmonte	34	56.7
Heinz	17	28.3
Kissan	6	10.0
Others	3	5.0
Total	60	100.0

Table 11 : Tomato juice brands preferred by sample chefs of HoReCa segments

Tomato juice brands	No. of respondents	Per cent
Real	30	50.0
Nutrilife	1	1.7
Delmonte	7	11.7
Golden crown	1	1.7
Others	21	35.0
Total	60	100.0

Table 12: Tomato paste brands preferred by sample chefs of HoReCa segments

Tomato paste brands	No. of respondents	Per cent
Delmonte	14	23.3
Morton	22	36.7
Dabur	6	10.0
Heinz	3	5.0
Golden crown	7	11.7
My favourite	3	5.0
Others	5	8.3
Total	60	100.0

Table 13: Tomato ketchup brands preferred by sample chefs of HoReCa segments

Tomato ketchup brands	No. of respondents	Per cent
Delmonte	31	51.7
Kissan	12	20.0
Maggi	3	5.0
Heinz	8	13.3
Others	6	10.0
Total	60	100.0

vegetable curries, 16.7 per cent using in egg curries, 16.7 per cent of them using in paneer, 60 per cent using in breakfast items and 86.7 per cent of the sample chefs

are using tomato sauce in snacks. Thus, in South Indian culinary applications the tomato sauce is majorly used in snacks items followed by breakfast items.

Table 14: Tomato puree brands preferred by sample chefs of HoReCa segments

Tomato puree brands	No. of respondents	Per cent
Morton	22	36.7
Delmonte	14	23.3
Kissan	8	13.3
Heinz	11	18.3
Hunts	5	8.3
Total	60	100.0

Table 15 : South Indian and north Indian culinary applications of tomato sauce by sample chefs of HoReCa segments

Culinary applications of tomato sauce	South Indian		Total	North Indian		Total
	Using	Not using		Using	Not using	
Rice items	12 (20.0%)	48 (80.0%)	60 (100.0%)	20 (33.3%)	40 (66.7%)	60 (100.0%)
Chicken recipes	19 (31.7%)	41 (68.3%)	60 (100.0%)	25 (41.7%)	35 (58.3%)	60 (100.0%)
Mutton recipes	15 (25.0%)	45 (75.0%)	60 (100.0%)	31 (51.7%)	60 (48.3%)	60 (100.0%)
Fish recipes	10 (16.7%)	50 (83.3%)	60 (100.0%)	25 (41.7%)	35 (58.3%)	60 (100.0%)
Vegetables curries	20 (33.3%)	40 (66.7%)	60 (100.0%)	37 (61.7%)	23 (38.3%)	60 (100.0%)
Egg recipes	10 (16.7%)	50 (83.3%)	60 (100.0%)	14 (23.3%)	46 (76.7%)	60 (100.0%)
Paneer	10 (16.7%)	50 (83.3%)	60 (100.0%)	9 (15.0%)	51 (85.0%)	60 (100.0%)
Breakfast items	36 (60 %)	24 (40%)	60 (100.0%)	43 (71.7%)	17 (28.3%)	60 (100.0%)
Snacks	52 (86.7%)	8 (13.3%)	60 (100.0%)	49 (81.7%)	11 (18.3%)	60 (100.0%)

Table 16: Chinese culinary applications of tomato sauce by sample chefs of HoReCa segments

Chinese culinary applications of tomato sauce	No. of respondents		Total
	Using	Not using	
Noodles	51 (85.0%)	9 (15.0%)	60 (100%)
Manchuria	53 (88.3%)	7 (11.7%)	60 (100%)
Soup	48 (80.0%)	12 (20.0%)	60(100%)
Rice items	46 (76.7%)	14 (23.3%)	60 (100%)
Chicken recipes	51 (85.0%)	9 (15.0%)	60 (100%)
Mutton recipes	33 (55.0%)	27 (45.0%)	60 (100%)
Starter	52 (86.7%)	8 (13.3%)	60 (100%)

Table 17: Italian culinary applications of tomato sauce by sample chefs of HoReCa segments

Italian culinary applications of tomato sauce	No. of respondents		Total
	Using	Not using	
Pastas	53 (88.3%)	7 (11.7%)	60 (100%)
Salads	48 (80.0%)	12 (20.0%)	60 (100%)
Soups	48 (80.0%)	12 (20.0%)	60 (100%)
Chicken recipes	41 (68.3%)	19 (31.7%)	60 (100%)
Mutton recipes	32 (53.3%)	28 (46.7%)	60 (100%)
Burgers	50 (83.3%)	10 (16.7%)	60 (100%)
Starters	51 (85.0%)	9 (15.0%)	60 (100%)

With regard to North Indian culinary applications of tomato sauce by the sample chefs. 33.3 per cent are using in rice items, 16.7 per cent are using in wheat items, 41.7 per cent using tomato sauce in mutton recipes, 41.7 per cent using tomato sauce in fish recipes, 61.7 per cent using tomato sauce in vegetable curries, 23.3 per cent using tomato sauce for egg curries, 15 per cent using in paneer, 71.7 per cent using in breakfast items and 81.7 per cent of sample chefs are using tomato sauce in snacks. Thus, in north Indian culinary applications the tomato sauce is majorly used in snacks items followed by breakfast items.

The Table 16 shows chinese culinary applications of tomato sauce by the sample chefs. 85 per cent are using tomato sauce in noodles, 88.3 per cent using in manchuria, 80 per cent using in soups, 76.7 per cent using in rice items, 85 per cent of using in chicken and 55 per cent using in mutton recipes. Thus, the usage of tomato sauce in most of the chinese items noodles, manchuria, soup, rice, chicken, mutton and starters is prominent as it enhances the flavour, colour and acts as a tenderizer.

The Table 17 indicates Italian culinary applications of tomato sauce by the sample chefs. 88.3 per cent of the sample chefs are using tomato sauce in pastas, 80 per cent using in salads and soups, 68.3 per cent using in chicken recipes, 53.3 per cent using in mutton recipes, 83.3 per cent using in burgers and 51 per cent of the sample chefs are using in starters. Thus, the usage of tomato sauce in most of the italian items like pasta, salads, soups, chicken, mutton, burgers and starters is also prominent.

Conclusion:

Increase in disposable income, rising urbanization leading to changing life styles, growth in organized retail sector are the driving forces for the growth of HoReCa segment. Adding to these driving forces, due to westernization of food consumption patterns, an increased application of tomato processed products in various culinary applications has become prominent. In this context, the study has been undertaken to identify the preferred brands, culinary applications, different variants of tomato based products used by HoReCa segments. Purposive cum snowball sampling design is employed in the present study. The sample size of the study is 60. The results of the primary data collected from sample chefs of HoReCa segment indicated that, in the hierarchy of positions in chef

category in HoReCa sector, a majority are sous chef (48.3%) followed by Commi-1 while 41 per cent of them are associated with family dining restaurants followed by cafes. Among the tomato based products, the sample chefs are majorly using chopped tomatoes followed by tomato paste. For the tomato processed products namely tomato paste, whole peeled tomatoes, tomato ketchup and tomato puree the monthly consumption of each product has been varying between 20-60 kg, while in case of tomato sauce the consumption requirements exhibited wide variations *i.e.* from 20 kg to more than 80 kg per month. Around 73.3 per cent of sample chefs have been using tomato juice of quantity less than 40 litres per month. The HoReCa segments under study have been majorly preferring plastic containers as preferred packaging material for tomato sauce followed by plastic pouch and tetra pack preferred for tomato juice due of their shelf-life and consumption safety.

The major sources of purchase of tomato sauce is from company distributors and preferred brands are Del monte followed by Heinz. However, preparing tomato sauce on their own is also preferred by 55 per cent of sample chefs. The HoReCa segments in the study are completely dependent on outside purchases for tomato ketchup. But for other tomato processed products like tomato paste, dried tomatoes, tomato juice, whole peeled tomatoes, tomato ketchup, tomato puree, three sources such as own preparation, outside purchases and both are majorly preferred. The major tomato paste brands preferred by sample HoReCa segments are Morton followed by Delmonte. In case of tomato ketchup and tomato puree, Delmonte and Morton are the preferred brands, respectively. Of different types of tomato sauce used by HoReCa segments in their culinary applications all of them have been using rich tomato sauce procured majorly from outside. But coming to other types of sauces like tomato chilli, manchurian, mushroom tomato, roasted garlic tomato, basil, no onion no garlic tomato and salsa sauce, the HoReCa segments are preparing on their own as per the type of cuisine and customer requirement. Both in south and north Indian culinary applications, the tomato sauce is majorly used in snacks items followed by breakfast items. While in Chinese and Italian culinary applications, the usage of tomato sauce is prominent in noodles, manchuria, soup, rice, chicken, mutton and starters as it enhances the flavour, colour and acts as a tenderizer.

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