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RESEARCH PAPER

Purchasing pattern of exotic vegetables by consumers

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Abstract: Exotic vegetables locally called as English vegetables are now becoming integral part of consumers' diet due to exposure of Indians to world cuisines and are in recent times also being cultivated in India under controlled conditions. The common exotic vegetables in India are lettuce, broccoli, cherry tomato, red cabbage, coloured capsicum etc. The present study was carried out to investigate the consumers purchasing pattern of exotic vegetables in Dharwad and Hyderabad cities of Karnataka and Telangana states respectively. The sample taken for the study was 120 consumers (Dharwad-60 and Hyderabad- 60) through purposive random sampling technique. The results revealed that majority of the consumers were of middle aged group (36-50 years) belonging to small families and were highly educated. Most of the consumers had high income which made them more innovative in trying these vegetables. For majority of the respondents the source of information and motivation to buy these vegetables were friends, family, and internet. The results with regards to purchasing, indicate that most of the respondents preferred to buy these vegetables occasionally and also preferred to purchase them from retail chain outlets like More, Reliance fresh, Spencer's, Big Bazaar *etc.,* because of its non availability in local markets. Being new and not part of the regular diet of most of the consumers, they purchase these vegetables in small quantities of up to 0.5 kg only. Freshness and price were the main attributes affecting the consumer's decision in purchase of these exotic vegetables.

Key words: Attributes, Buying, Exotic vegetables, Purchasing pattern

Introduction

The vegetables that are referred as exotics are those that have been introduced in the last few decades and locally called as English vegetables. These exotic vegetables are originally from colder countries and are either grown in cooler parts of the country in North India or the hill regions. These vegetables are primarily confined to elite restaurants and affluent Indian families. Since exotic vegetables are consumed by the upper classes of the society they have high market value, are one of the fastest growing industries with high profit margin when compared to traditional vegetables. The markets for these vegetables in India are still at a nascent stage when compared to international markets. The major market for these vegetables are high end retail chains like Spencer's, More, Reliance fresh, online segment like Big basket, star hotels, quick service restaurants like McDonalds, Subway, etc., offices, hospitals and social functions. The exotic vegetables market is still expected to grow at a higher rate largely due to the growth of the organized food service sector and the higher consumer demand. Increase in supply chain capabilities, especially in tier II cities, will help to convert non-consumers to consumers and enhance the reach and usage of these vegetables. With this background the present study was conducted on purchasing pattern of exotic vegetables by consumers.

Material and methods

The study was undertaken during the year 2019- 2020.The study was conducted in Dharwad and Hyderabad cities of Karnataka and Telangana states respectively. The total sample was 120 consumers. From each of the city's 30 university employees were selected purposively and 30 outliers *i.e.,* citizens other than university staff were selected randomly.

A well-structured and pre-tested schedule was used to collect the information from the exotic vegetable consumers. In this study, an interview schedule, having 12 vegetables namely bok choy, chinese cabbage, asparagus, red cabbage, broccoli, kale, leek, lettuce, celery, brussels sprouts, coloured capsicum and cherry tomatoes were taken. These vegetables had been categorized as asian greens, flower vegetables, leafy and solanaceous vegetables. The data collected was tabulated and analyzed using percentage, frequency, and Garrett ranking.

Results and discussion

The results of socio-personal characteristics are presented in Table 1

Age

It can be observed from the Table 1 that half (50.00 %) of the staff respondents belonged to middle age group (36-50 years), 31.67 per cent belonged to old age group and 18.33 per cent of respondents were young. In case of Outliers, 43.33 per cent of respondents were young in age group followed by middle age (40.00 %) and old age group (16.67 %).

Education

With regard to level of education [Table 1], it could be seen that a majority (60.00 %) of staff consumers were PhD degree holders, 28.33 per cent had education up to Master's level and only 11.67 per cent were educated up to degree level. Among

Table 1. Socio personal characteristics of exotic vegetable consumers n=120

Characteristics	Category	University staff (n=60)		Outliers (n=60)	
		F	%	F	%
Age	Young age (<35 years)	11	18.33	26	43.33
	Middle (36-50 years)	30	50.00	24	40.00
	Old age(Ã50 years)	19	31.67	10	16.67
Education	PUC	-	-	02	03.33
	Degree	07	11.67	44	73.33
	Masters	17	28.33	12	20.00
	Ph.D	36	60.00	02	03.33
Family size	Small (<5)	53	88.33	46	76.67
	Medium (5-8)	07	11.67	14	23.33
	Large (Above 8)	-	-	-	-
Annual Income	Low (< 6 lakhs)	05	08.33	16	26.67
	Medium (6.1 lakhs to 12 lakhs)	23	38.33	29	48.33
	High (above 12 lakhs)	32	53.33	15	25.00
Family Occupation	Agriculture and allied sectors	01	01.67	02	03.33
	Business	10	16.67	25	41.67
	Government employment	45	75.00	12	20.00
	Private employment	04	06.67	21	35.00

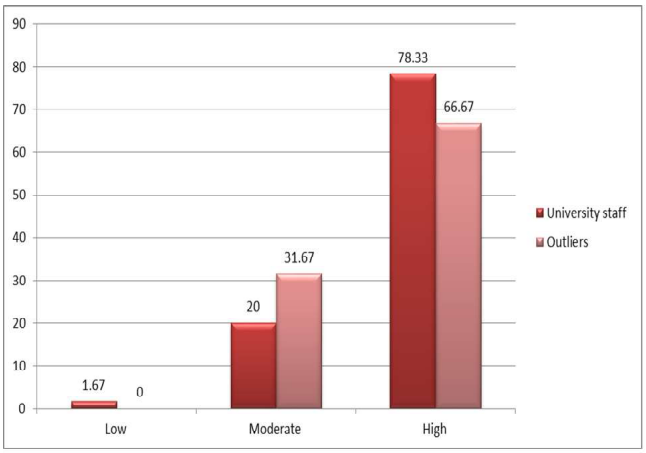

Fig 1. Overall innovativeness in usage of exotic vegetables

outliers, 03.33 per cent had education up to Ph. D and PUC level whereas, 20.00 per cent were educated up to Masters, and 73.33 per cent of respondents had education up to degree.

Family size

It could be noticed that, majority (88.33 %) of staff respondents belonged to small families and 11.67 per cent of respondents belonged to medium family group. In case of outliers, 76.67 per cent of consumers were having small families and 23.33 per cent belonged to medium family size. None of the staff and outliers was found in large family size (Table 1).

Annual income

The data from Table 1 indicates that as high as 53.33 per cent of staff respondents belonged to high annual income category whereas, 38.33 per cent are in the medium income category and 08.33 per cent had low levels of income. With respect to outliers, 48.33 per cent belonged to medium income category, 26.67 per cent were in low income group and one fourth (25.00 %) of respondents belonged to high income category.

Family occupation

The results from the Table 1 indicate that, among staff three fourth (75.00 %) of respondents were government employees, whereas, 16.67 per cent were from business families, 06.67 per cent were employed in private companies and only 01.67 per cent of respondents main occupation was agriculture. In outliers, 41.67 per cent respondents had business as family occupation followed by private employment (35.00), government employment (20.00 %) and agricultural & allied sectors (03.33 %).

Innovativeness in purchase of exotic vegetables

The innovativeness was studied taking 4 statements into consideration with a 5 point continuum scale *i.e.,* strongly agree, agree, undecided, disagree, strongly disagree with a score of 5,4,3,2,1 respectively. Based on the scores taken through class interval they were categorized into low, medium, and high level. The fig 1 shows the overall innovativeness of both Hyderabad and Dharwad consumers. It was shown that majority (73.33 %) were in high category, 25.83 per cent of respondents fall under medium and 01.67 per cent were in the low innovativeness category.

Social media participation of exotic vegetable consumers

The social media that considered for the study were face book, Insta gram, what's app, Youtube, Twitter, Television, and Agricultural websites. They were taken with a 3 point continuum scale *i.e.,* regularly, occasionally, and never. Based on the scores obtained they were classified into low, medium and high level (fig 2). The data shows that majority (61.66%) of consumers was having medium level of social media participation, 23.33 per cent had low and 15.00 per cent had high social media participation. It might be because there are many websites hosting food videos where new types of vegetables increased for cooking. This helps the individual to increase awareness and get more knowledge about these vegetables. The social media also helps them to gather information, cross check, verify and adopt strategies that suit their life styles.

Source of information in purchase of exotic vegetables

Table 2 reveals that majority (76.67 %) of the respondents get information about exotic vegetables from friends and family, 69.16 per cent get through internet whereas, 36.67 per cent have information from mass media, 20.83 per cent gather information by exposure to abroad, 15.00 per cent consumers heard from other exotic vegetable consumers, 08.33 per cent from exotic vegetable growers and only 07.50 per cent got to know from agricultural universities.

Source of motivation for purchase of exotic vegetables

Table 3 expresses the source of motivation in purchase of exotic vegetables. The data shows that majority (77.50 %) of respondents got motivation from friends for purchasing, 59.16 per cent of respondents motivated from family about exotic vegetables purchase, 48.33 per cent from social media, 38.33 per cent from colleagues, followed by neighbors (27.50 %), advertisements (20.00 %), relatives (18.33 %) and successful farmers (15.00 %).

Purchasing pattern of exotic vegetables by consumers

The data of table 4 shows purchasing pattern of exotic vegetables by consumers of Dharwad and Hyderabad. It can be seen that among UAS (University of Agricultural Sciences) Dharwad staff, 56.67 per cent buy these vegetables from Hi-Tech Horticulture unit (University) and 53.33 per cent get these vegetables from retail outlets. None of the respondents buy from the local markets. It is also noticed that with regard to frequency of buying of these vegetables, 43.33 per cent buy occasionally, 26.67 per cent purchase once in a month followed by once in a fortnight (20.00 %), and once in a week (10.00 %). With respect to quantity of purchase at any point of time, majority (80.00 %) of the consumers brought up to half kg. Whereas, 16.67 per cent purchase 0.5 to 1 kg and only 03.33 per cent purchased above one kg.

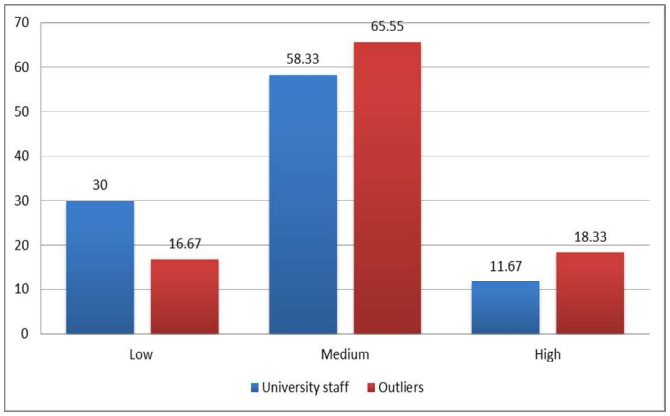

Fig 2. Overall participation by exotic vegetable consumers in social media

Table 2. Source of information in purchase of exotic vegetables

n=120

Source	Frequency	Percentage
Exotic vegetable growers	10	08.33
Friends and family	92	76.67
Mass media	44	36.67
Internet	83	69.16
Other exotic vegetable consumers	18	15.00
Exposure to abroad culture	25	20.83
Agricultural university	09	07.50

*Multiple responses

Among outliers of Dharwad it could be seen that majority (83.33 %) of respondents buy these vegetables from retail outlets and 46.67 per cent buy from university (Hi-tech horticulture unit) and none of them get these vegetables from local markets. With respect to frequency of buying, as high as 53.33 per cent of consumers get them occasionally, 30.00 per cent buy once in a fortnight, 10.00 per cent buy once in a month and only 06.67 per cent buy once in a week. When quantity of purchase at any point of time was studied, it could be seen that 53.33 per cent buy up to half kg for consumption, 40.00 per cent purchase 0.5 to l kg and only 06.67 per cent of consumers bought above one kg.

Table 4 also pertains to Hyderabad consumers where majority of PJTSAU (Professor Jayashaker Telangana State Agricultural University) staff (76.67 %) buy these vegetables from retail outlets, 26.67 per cent buy from University and none of the respondents buy from the local markets. With regards to frequency of buying, 43.33 per cent buy occasionally, 30.00 per cent bought once in fortnight, 16.67 per cent purchase once in a week and 10.00 per cent bought them once in a month. Regarding quantity of purchase of these vegetables at any point of time, majority (63.33 %) of respondents consumes these vegetables up to half kg, and 36.67 per cent bought 0.5 to 1 kg for consumption. None of them purchase these vegetables above one kg.

It can also be seen that Cent (100.00 %) per cent of Hyderabad outliers bought these vegetables from retail outlets like Reliance, More, Big Basket *etc.*, None of the respondents buy from university and local markets. With reference to frequency of buying, 46.67 per cent purchase these vegetables occasionally, 20.00 per cent each bought them once in a month and fortnight, and 13.33 per cent of the consumers purchase once in a week. In case of quantity of purchase of these vegetables at any point of time, it could be seen that majority (60.00 %) of consumers buy up to half kg, 33.33 per cent purchase 0.5 to 1 kg and only 06.67 per cent consume these vegetables above one kg.

Table 3. Source of motivation for purchase of exotic vegetables

n=120

Source	Frequency	Percentage
Family	71	59.16
Friends	93	77.50
Neighbours	33	27.50
Colleagues	46	38.33
Relatives	22	18.33
Successful farmers	18	15.00
Social media	58	48.33
Advertisements	24	20.00

*Multiple responses

The results are in line with the study conducted by Muthu (2007), Ali and Kapoor (2010), Kuhar and Juvancic (2010), Acheampong *et al.* (2012), Shafiwu *et al.* (2018) and Silva *et al.* (2020).

Attributes that influence consumers in purchasing exotic vegetables

Table 5 shows the attributes of vegetables considered by consumers while purchasing exotic vegetables. The data reveals that UAS staff of Dharwad consider freshness as the major attribute in purchasing, so it ranked first with a mean score 72.90. The next attribute that they look for is nutritive value ranking second in the order, followed by shelf life, price, hygiene, taste, visual attractiveness, colour, quality certification, and packaging with ranking in that order.

It is also clear that in Dharwad outliers, majority of the respondents ranked freshness as first attribute while buying exotic vegetables, price was next major attribute with a mean score of 66.36, whereas, nutritive value, hygiene, shelf life, taste, colour, quality certification, visual attractiveness, and packaging took the ranks in that order.

The table also expresses Hyderabad consumer's attribute preference in purchasing exotic vegetables. Among PJTSAU staff of Hyderabad, freshness was the first preferred attribute in purchasing these vegetables with mean score of 67.93, nutritive value ranked second having 66.26 mean, followed by shelf life (3rd), price (4th), hygiene (5th), taste (6th), visual attractiveness (7th), colour (8th), quality certification (9th), packaging (10th) in the order of their mean score.

With regards to Hyderabad outliers, the respondents said price was the first thing that they look before purchasing exotic vegetables, freshness of vegetables was the second attribute in buying followed by hygiene, nutritive value, shelf life, taste, colour, visual attractiveness, quality certification and packaging with ranking in order of their mean score.

The reported results of this study are in line with the findings of Banwat *et al.* (2012) and Thomas *et al*. (2015).

Table 4. Purchasing pattern of exotic vegetables n=120

Attributes	Dharwad (n=60)				Hyderabad (n=60)			
	UAS staff (n=30)		Outliers (n=30)		PJTSAU staff (n=30)		Outliers(n=30)	
	F	%	F	%	F	%	F	%
Buying of exotic vegetables								
a. Local markets	--	--	--	--	--	--	--	--
b. Retail outlets (more, reliance etc)	16	53.33	25	83.33	23	76.67	30	100.00
c. University (Hi- tech horticulture unit)	17	56.67	14	46.67	08	26.67	--	--
Frequency of buying								
a. Once in week	03	10.00	02	06.67	05	16.67	04	13.33
b. Once in month	08	26.67	03		03	10.00	06	20.00
c. Once in fortnightly	06	20.00	09	10.00	09	30.00	06	20.00
				30.00				
d. Occasionally	13	43.33	16	53.33	13	43.33	14	46.67
Quantity of purchase of exotic vegetables								
a. Up to 0.5 kg	24	80.00	16	53.33	19	63.33	18	60.00
b. 0.5-1 kg	05	16.67	12		11	36.67	10	33.33
c. Above 1 kg	01	3.33	02	40.00	—	—	02	06.67
				6.67				

Table 5. Attributes that influence consumers in purchasing exotic vegetables n=120

Attributes	Dharwad (n=60)				Hyderabad (n=60)			
	UAS staff (n=30)		Outliers (n=30)		PJTSAUstaff (n=30)		Outliers(n=30)	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Price	55.86	4	66.36	2	58.5	4	74.63	1
Freshness	72.9	1	70.4	1	67.93	1	65.33	2
Shelf life	56.1	3	58.16	5	61.96	3	56.1	5
Nutritive value	66.73	2	63.86	3	66.26	2	57.93	4
Hygiene	52.63	5	58.2	4	53.96	5	62.13	3
Taste	50.73	6	49.76	6	51.23	6	50.23	6
Visual attractiveness	44.43	7	32.8	9	43.6	7	36.93	8
Colour	38.7	8	38.26	7	37.9	8	38.06	7
Quality certification	34.4	9	33.83	8	32.03	9	31.56	9
Packaging	25.73	10	27.66	10	24.36	10	25.06	10

Conclusion

The findings revealed that most of the exotic vegetable consumers were highly innovative so they were trying these vegetables and got information and motivation through friends and family. It could also be noticed from the study that majority of the consumers bought these vegetables occasionally up to 0.5 kg from retail outlets. The price and freshness were the two major attributes that influence consumers in buying these exotic vegetables.

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