A STUDY ON CONSUMER PREFERENCE OF MAJOR MILLET PRODUCTS IN TAMIL NADU

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ABSTRACT

Millets are the most important nutritious food to mankind and it is the primary cereal grain to be utilized for household purposes. Changing consumer preference towards healthy food products has created good opportunity for millet based food products. Hence the present study is proposed with the objective of studying the consumer preference of millet-based products and major factors influencing the buying behaviour of consumers. The study was conducted in selected districts of Tamil Nadu with the sample size of 120 millet consumers. Pre tested structured interview schedule was prepared to collect the primary data from the respondents. Collected data was analysed using descriptive statistics and Garrett ranking technique. Majority of the consumers were women, younger age group with medium family size. Ragi, cumbu and sorghum are the preferred millets. Millets are nutritious is the important factor influencing the consumption of millets followed by curiosity to try new products and alternate to wheat and rice. Friends and family are the major source influencing the awareness about health benefits of the millet products among the respondents followed by social media. Firms can try to make the availability of the small millets based product at convenience to the consumers to increase the usage.

KEYWORDS: Consumer preference, Buying behaviour, Major millets, Millet based products

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INTRODUCTION

Millets are the most seasoned nutritious food known to mankind, often termed Nutri-cereals and it was the primary cereal grain to be utilized for household purposes. In India, lack of dietary diversity is one of the key factors behind malnutrition and the prevalence of non-communicable diseases such as diabetics, heart disease, Obesity. Millet is packed complete of nutrients. It consists of 14.00 mg Calcium, 0.535 mg copper 3.94mg iron, 119.0mg magnesium, 1.002 mg manganese, 32.7mg selenium, and 224.00mg potassium and 285.00mg phosphorus consistent with a hundred-grams. It additionally carries many vitamins such as niacin, riboflavin, Pantothenic acid, Folate, Folic acid, Vitamin B6, Vitamin C, Vitamin E, and Vitamin K, hence millets are also named as storehouses of nutrients. It can be additionally handled towards different diets, for example, flakes, quick food cereals, prepared to eat snacks, strengthening nourishments, expulsion cooking, malt-based items, weaning nourishments, and all the more significant health foods.

Processing of millets using traditional as well as contemporary methods for the preparation of value-added and convenience products would certainly diversify their food uses. Their exploitation for preparation of ready-to-use or ready-to-cook products would help in expanding the utilization of millets among non-millet consumers and thereby nutritional security.

In India the millets were cultivated in the area of 546270 hectares, the production is 438990 Tonnes and the productivity is 0.804 Tonnes/hectare (2017- 18) (Ministry of Agriculture & Farmers welfare, Govt. of India. In Tamil Nadu the cumbu were cultivated in the area of 63029 hectares, the production is 143548 Tonnes and the productivity is 2.28 Tonnes /hectare, the sorghum were cultivated in the area of 385646 hectares, the production is 430661 Tonnes and the productivity is 1.12 Tonnes /hectare and the ragi were cultivated in the area of 86513 hectares, the production is 321332 Tonnes and the productivity is 3.71 Tonnes /hectare (2017-18) (Department of Agriculture and Cooperation (DACNET) 2018).

REVIEW OF THE STUDY

Subramaniya Barratry (2018) assessed the discernment level of millet items among family units having a place with various socioeconomic classes and recognized the factors affecting their perception for product augmentation is a critical commitment thus the assessment of the distinctions among families with various levels of experience.

Amadan et al (2013) reviewed the nourishment structure and medical advantages of millets. Millets are the staple nourishment for a large number of destitute individuals. Comparing with different oats, millets have high sugar energy content and a nutritious mix of millets with other wellsprings of protein would remunerate the insufficiency of certain amino acids.

Kalidas and Mahendran (2017) in their study they proposed that for expanding in sales of millet items additional amount should be offered with the typical pack or gifts like the things helpful for kitchen should be offered with the pack or diminishing the costs will make the customers to buy more quantities.

According to Samuel (2016), Minor millets such as foxtail millet, little millet, kodo millet, proso millet and barnyard millet, as well as the major millets such as sorghum, bajra and ragi are progressively being remembered for the food crate of rustic and metropolitan families. They cost not as much as rice or wheat, and keep you more advantageous.

Nath et al. (2015) revealed that in the manufacturing of the consumable final products such as sugar, gur and khandsari, the value is added to the great extent. The value added products of the jiggery should be developed to sustain the profitability in the future.

Harshitha, H, M. S. Jayaram (September 2019). The finger millet is usually used for preparation of flour, pudding, porridge and roti. With the adjustments in the scenario of utilization pattern of prepared items and consciousness of the purchasers about the health benefits, finger millet has picked up significance because of its useful segments.

Kalaiselvi, D., & Fatima, L. R. (2016) states that millets are storehouse of dozens of nutrition in large quantity and long-term consumption of millets may bring several health benefits to the people. People must have aware about usage of millets through attending nutrition/awareness programs and media campaign and must know the reasons for the usage of millets among the women households.

Alekhyia, P. and Raj Shravanthi, A. (2019) insisted that it is necessary to understand the consumer acceptance of millet based products and identify the attributes influencing buying behaviour of consumer towards millet products to achieve nutritional consumption of food and to fight several health complications of this generation.

Ushakumari, S. R., Latha, S., & Malleshi, N. G. (2004) their study says that the exploitation for preparation of ready-to-use or ready-to-cook products would help in expanding the utilization of millets among non-millet consumers and thereby nutritional security.

PROBLEM FOCUS

High consumption of polished rice and refined wheat flour turns out to be the main ingredients of foods consumed by the urban populace. This trend, coupled with sedentary lifestyles, has led to a rise in obesity and other lifestyle diseases like diabetes, hypertension and coronary illness, across age gatherings. In such a scenario, gluten-free millets could prove to be an effective weapon.

Changing consumer preference towards healthy food products has created good opportunity for millet based food products. Under this scenario the present study is proposed with the objective of studying the consumer preference of millet-based products and major factors that influences the buying behaviour of consumers

MATERIALS AND METHODS

The study was conducted in the selected districts (Namakkal, Dindugal, Dharmapuri, and Krishnagiri) of Tamil Nadu with a sample size of 120 millet consumers. For collection of primary data, a separate well-structured interview schedule was prepared for consumers based on the objectives of the study. The data required for the study were gathered by personal interview from the selected respondents. The collected data were tabulated, analysed and the results are presented. The analytical tools used for evaluating the objective of the study, based on the nature and extent of data are given below.

- Descriptive Statistics
- Garrett's Ranking Technique

RESULTS AND DISCUSSIONS

The objectives of the study i.e. to know the consumer preference of millet based products and analysing the factors influencing the buying behaviour of millet products among sample consumers and constraints faced by the consumers were analysed using different techniques such as descriptive statistics and Garrett ranking. The results of the analysis are discussed in detail.

Most of the respondents were consuming millets in the form of cooked rice, converting the raw millet rice into flour and rawa. With the flour idly and dosa mixes, roti and jawa (thick consistency soup) were prepared and with rawa upma, kichadis were prepared. Biscuits, cakes, mixtures, muruku (snacks), Laddoos (sweet), Namkeen mix, millets bite papads, millet pizza base and millets bars were consumed.

Demographic Factor of the Sample Respondents

The general characteristics of the sample respondents included the age, educational status, marital status, family type, family size, educational level, occupation, monthly income. The data on the general characteristics of the respondents were analysed to understand their buying behaviour.

Table 1: Demographic factor of the sample respondents

(n=120)

Factors	Frequency	Percentage
Gender		
Male	40	34
Female	80	66
Age		
25 and Below	46	38.3
26-35	64	54
36-45	8	6.6
46-55	2	1.66
Above 55	0	0
Total	120	100
Marital Status		
Married	70	58
Unmarried	50	42
Total	120	100
Family Type		
Joint Family	58	48
Nuclear Status	62	52
Total	120	100
Family Size		
Small (Below 3)	0	0
Medium (3-5)	108	90
Large (Above 5)	12	10
Total	120	100
Educational Level		
Illiterate	0	0
Elementary (Up to V)	0	0
High School (Up to X)	10	8.33
Higher Secondary (Up to +2)	6	5
Undergraduate	82	68.33
Post Graduate	22	18.33
Others	0	
Total	120	100
Occupation		
Government Employee	24	20
Entrepreneur	2	1.66
Agriculture	7	5.83
Professional	10	8.33
Self – Employed	33	27.5
Private Employee	44	36.66
Total	120	100
Monthly Income		
Rs 20000 and Below	33	27.5
Rs 20001 – Rs 30000	58	48.33

Rs 30001–Rs 40000	11	9.2
Rs 40000-50000	12	10
Above Rs50000	6	5
Total	120	100

The above table 1 shows the demographic profile of the respondents who have purchased the millets and millet-based products. The Descriptive statistics reveals that majority of the respondents are women (66 per cent) and most of them are between the age group of 25 – 30 (54 per cent). While 58 per cent are married, 52 per cent are Nuclear family status and 90 per cent of them are medium-sized family. In addition, 68 per cent of them are studied Under Graduate, while 44 per cent of the respondents are Private Employee. Annual incomes of the respondents purchasing the millet and millet-based products are range between Rs 20001 – Rs 30000/- (58 per cent).

Category of Millets consumed

It is important to know the variety of millets preferred by consumers. Consumers were asked about their consumption across millet category. The results are presented in Table 2.

Table 2: Category of millets consumed by the sample respondents

Sl.No	Particulars	Number of respondents	Percentage to N
1	Ragi	120	100.0
2	Cumbu	95	79.17
3	Sorghum	45	37.50
4	Thinai	25	20.83
5	Samai	20	16.67
6	Varagu	10	8.33
7	Kuthiraivali	9	7.50
8	Panivaragu	8	6.67

From the Table 1 it could be inferred that all the respondents consumed Ragi based food products followed by 79 per cent consumed Cumbu based food products. Only 37 per cent of the respondents consumed sorghum followed by Thinai (20 per cent), Samai (16 per cent), Varagu (8 per cent), Kuthiraivali (7.5 per cent) and panivaragu (6 per cent). Ragi and cumbu are the major millets consumed by majority of the sample respondents.

Source of awareness on health benefits of the millet products

The Awareness on millet products are influenced through the mediums like Family and Friends, Magazine, Banner/ Cut-outs and Social media (Instagram, YouTube, WhatsApp).

Table 2: Source of awareness on health benefits of the millet products by the sample respondents (n=120)

Sl.No	Particulars	Number	Ranks
1	Family and Friends	112	I
2	Social media (Instagram, YouTube, WhatsApp)	76	II
3	Magazine	59	III
4	Banner/Cut-outs	42	IV
5	Newspaper	33	V

From the Table 3 it could be inferred that, Friends and family are the major source influencing the awareness about health benefits of the millet products among the respondents followed by social media. (Instagram, YouTube, and WhatsApp) and Magazine, the Banner/Cut-outs and Newspaper. The results proved that the Family and Friends played a major role in influencing the awareness on health benefits of the millet products to the consumers. Hence the firms can use that channel to make aware about their product.

Frequency of Consumption of Millets

It is important to know the frequency of consumption among the variety of millets. Consumers were asked about their frequency of consumption. The results are presented in Table 4.

Table 4: Frequency of consumption of millets by the sample respondents

Sl.No	Frequency	Ragi	Cumbu	Sorghum	Thinai
1	Daily	-	-	-	-
2	2-3 times a week	5 (4)	-	-	-
3	Once a week	20 (17)	30 (32)	-	-
4	Once a fortnight	60 (50)	40 (42)	15 (33)	-
5	Once a month	35 (29)	25 (26)	20 (45)	20 (80)
6	Less often	-	-	10 (22)	5 (20)
	Total	120	95	45	25

(Figures in the parenthesis indicate percentage to the N number)

From the Table 3 it could be inferred that the Sample respondents mostly preferred to consume ragi and cumbu in once in a fortnight, sorghum and thinai once in a month. The other small millets like varagu, kuthiraivali, panivaragu were consumed less often by the sample millet consumers.

Form of Consumption

An attempt was made to elicit the form of consumption of raw millets and value added products of millets – Pongal, Instant millet mix for Idly, Dosa, Upma, vermicelli etc., Millet breads, Pasta, Biscuits, Cakes, Pizza base, Ragi Ball/ Kali, Laddoos. The results are presented in Table 4.

Table 5 (a): Form of consumption of various major millets by sample respondents

Sl.No	Form	Ragi	Cumbu	Sorghum
1	Instant millet mix for Idly, Dosa, Upma, vermicelli etc.	50(42)	60 (63)	45 (100)
2	Ball/ Kali	30(25)	25 (26)	-
3	Millet breads	20(17)	0	-
4	Biscuits	10 (8)	5 (5)	-
5	Laddoos	5 (4)	5 (5)	-
6	Pizza base	5 (4)	0	-
7	Pasta	0	0	-
8	Cakes	0	0	-
	Total	120	95	45

(Figures in the parenthesis indicate percentage to the N number)

Table 5 (b): Form of consumption of various minor millets by sample respondents

Sl.No	Form	Thinai	Samai	Varagu	Kuthiraivali	Panivaragu
1	Rice (Raw)	5 (20)	5 (25)	0	5 (56)	2 (25)

2	Pongal	5 (20)	5 (25)	5 (50)	2 (22)	2 (25)
3	Instant millet mix for Idly, Dosa, Upma, vermicelli etc.	15 (60)	10 (50)	5 (50)	2 (22)	4 (50)
Total		25	20	10	9	8

(Figures in the parenthesis indicate percentage to the N number)

The Table 5 (a & b) shows that, Instant millet mix for Idly, Dosa, Upma, and vermicelli are the highly preferred form of consumption across all type of millet products by the sample respondents. Whereas in case of other small millets like Thinai, samai, varagu, kuthiraivali and panivaragu are consumed in the form of raw rice and pongal. The rest of the value added products like millet breads, biscuits, pizza base, kali and Laddoos made by ragi and cumbu are the most preferable form of consumption by the entire millet consumers respectively.

Place of Purchase

Millet products are available at almost all the retail shops across the sample area. The availability is a major factor, which influences the purchase of the products. Some of the manufacturers of millet products even have their own retail outlets. The sample respondents purchased millet products from several places like hypermarkets, supermarkets, departmental stores, Producers' own retail outlets, Mom and Pop stores, and Others (Farmers). The data is presented in table 5.

Table 6. Place of purchase of various millets by sample respondents

(n=120)

Sl.No	Place of purchase	No of respondents	Percentage to N
1	Hypermarkets	5	4.2
2	Supermarkets	16	13.3
3	Departmental stores	65	54.1
4	Producers' own retail outlets	26	21.7
5	Others (Farmers)	8	6.7

It is observed from the above table 6, that majority of the sample respondents (54.1 per cent) purchased products from departmental stores, because the consumers feel it is easy to purchase all the groceries and food items at a single place. In addition, most of the people find these kind of shops in their neighbourhood and they need not travel long to purchase products. The second major source of purchase has been identified as producers' own retail outlets, where 21.7 per cent of the total sample respondents purchased millet products followed by supermarkets (13.3 per cent).

Factors Influencing the Purchase of Millet-based Products

The consumers were asked to rank about the factors influencing the purchase of millet products. The major reasons for consuming millet products were highly nutritious, curiosity to try new products, alternate for rice and wheat, price of the products, best for diabetics, availability of organic labels, availability of the products at all seasons, friends/neighbours, social media influences to buy, cheaper than rice and wheat. Garrett's ranking techniques is used to analyse the factors influencing the purchase of millet based food products among the sample respondents. The results are presented in Table 6.

Table 7: Factors influencing the purchase of millet-based products by the consumers

(n=120)

Sl.No	Statements	Average Garrett's Score	Rank
1	Highly nutritious	124.51	I
2	Curiosity to try new products	106.95	II
3	Alternate for Rice and wheat	111.33	III
4	Price of the products	99.68	IV
5	Best for diabetics	99.37	V
6	Availability of Organic labels	94.66	VI
7	Availability of the products at all seasons	88.99	VII
8	Friends/neighbours	86.31	VIII
9	Social media influences to buy	85.61	IX
10	Cheaper than rice and wheat	84.36	X

The Garrett scores reveals that highly nutritious ranked first among the other ten features followed by curiosity to try new products, alternate for rice and wheat, price of the products, best for diabetics, availability of organic labels, availability of the products at all seasons ranks, friends/neighbours, the ninth factor is social media influences to buy and the last rank tenth is given for cheaper than rice and wheat. Results proved that consumers are shifting towards millet food products as they felt it is healthier. According to nutritionists, millets are packed with nutrients.

Problems faced by the millet consumers

The consumers were asked about the problems faced in consumption of millet based products and the results are presented in Table 8.

Table 8: Problems faced by the millet consumers

(n=120)

Sl.No	Statements	Number of consumers	Percentage to the N
1.	Value added products of small millets are not available in all the stores	60	50
2.	High price for the value added products	20	17
3.	Lack of knowledge on ways of using small millets	40	33

Majority of the consumers felt that Value added products of small millets are not available in all the stores and price of the products also high. Lack of knowledge on ways of using small millets is also major problem faced by the respondents.

CONCLUSIONS

The Instant millet mix for Idly, Dosa, Upma, and vermicelli are the highly preferred form of consumption across all type of millet products by the sample respondents. Majority of the sample respondents (54.1 per cent) purchased millet products from departmental stores. Friends and family followed by social media played a major role in influencing the respondent's

awareness about health benefits of millet products. Ragi, cumbu, kuthiraivali, thinai, sorghum are available in the market and other small millets are less available. Majority of the consumers felt that Value added products of small millets are not available in all the stores and price of the products also high. Lack of knowledge on ways of using small millets is also major problem faced by the respondents. They can also use the social media to reach out more consumers with less cost. Firms can try to make available the product at convenience to the consumers to increase the usage also the processes can be simplified to be used by the potential consumers.

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