Research Article

STUDY ON CONSUMER AWARENESS AND KNOWLEDGE ON TRADITIONAL RICE VARIETIES IN ERODE CITY OF TAMIL NADU

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Abstract: India is one of the major traditional rice varieties growing country. Consumer demand for traditional rice varieties is growing because of its health benefits. A study was carried out to find out the consumer awareness and knowledge about traditional rice varieties in Erode city, Tamil Nadu. From the four zones of the city 30 samples from each region were selected and total sample size was made up of 120. The sampling method of Convenience sampling was used for collecting information from the sample respondents. The results showed that majority of the sample respondents were female, young (20-40 years), graduates, earning Rs 21,000-40,000 and living in nuclear families of 3-5 members. They had more knowledge about Jeerga samba rice (91.66) followed by Mappillai samba rice (83.33) accompanied by choice of their purchase was for improving health conditions (66.66) which the consumers health based benefits they attain from the usage of traditional rice was also to improve overall health condition (33.33). Age and Income were highly influencing the consumers towards awareness of traditional rice varieties. Knowledge level was studied to identify their attitude and their interest on traditional rice varieties and problems also studied to know the difficulties in buying of traditional rice varieties.

Keywords: Traditional rice, Consumer knowledge, Purchasing, Quantity, Purpose, Problems

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Introduction

Rice plays a central role in the socio-cultural life of the people in India. People across different parts of the country prefer distinctive Rice varieties. Several varieties are unique to a state and also ethnic groups. The beneficiary characteristics of the traditional rice varieties are indomitable. Historical evolution says that traditional rice varieties were about 2,00,000 but in nineteenth century it was shirked to 6000(Hindu,2010). Farmers have deep knowledge of their own rice varieties, their environmental and nutritional requirements and their properties and peculiarities.

In Tamil Nadu, few districts of are considered as footage of the traditional rice. Numerous records describing the medicinal properties of rice varieties like Sivappukavuni rice, Black kavuni rice, Kitchadi samba rice, Garudan samba rice, Kattuyanam rice, Jeerga samba rice, Mappillai samba rice, Thooyamalli rice, Kuliyadichaan rice, Aruvathamkuruvai rice, Karunkuruvai rice, Poongaar rice, Vaalaan samba rice, Illupaipoosamba rice, Karuthakkar rice, Kullakaar rice, Sigappukudavaazhai rice and etc. Traditional rice varieties have maturity period of 60 to 200 days. Traditional rice varieties hence can be categorized based on duration as short, medium, and long duration varieties (Prakash et al ,2019).

Indigenous varieties are still conserved by farmers for various reasons. Some of them are Pest and disease resistant (SigappuKuruvikar). Some provide fodder and roofing material (Kullakar). Some are suited for specific food preparations (Kallimadiyan for manaparaimuruku). Few provide energy and stamina (Mappillai samba).Some are flood and drought resistant (Samba mosanam and Vadan Samba). Some have specific medicinal properties (pitchavari for curing diarrhea). Some varieties are useful for pregnant and lactating mothers (Navara and Neelan Samba). Some are suitable for saline soil (Kalarpalai). (Rathnapriya et al, Journal of Ethnic Foods 2019). Lands affected by Tsunami in December 2004 were suited to certain traditional rice varieties which came to the rescue of farmers.

Hybrid varieties need more water, fertilizers, and pesticides. They are not sustainable in coastal regions while traditional rice is adoptable to those conditions. They were rich in iron and protein content, vitamin B, and had medicinal value and are less input takers. An endeavor to promote cultivation of traditional paddy varieties which can withstand drought condition has yielded results in many districts such as Thiruvarur, Nagapattinam, Kanchipuram, Ramanathapuram, Sivaganga and part of coastal areas of Rameshwaram. Traditional rice combating the impacts of climate changes protects the farmers even during unfavorable conditions (Daily thanthi, Oct 1,2018).

Government support for reviving traditional grains and promoting organic farming is uneven. The Northeastern state of Sikkim became the organic state in January 2016.Nine other states including Tamil Nadu, Kerala, and Karnataka have an organic farming policy separately (Business line Feb 27,2020).

The major advantage of traditional rice cultivation is it can be cultivated through organic farming or with less input. Major varieties of traditional rice are resistant to pest and disease attacks. On comparing the cost of cultivation, traditional rice cultivation expenditure accounts on an average of Rs.10000/acre. Moreover, traditional rice has good market potential, as it attracts a premium price compared to fine varieties of rice. In Thiruvarur and Nagapattinam districts, traditional rice varieties are mostly cultivated under organic farming. (Daily thanthi,2018). Hence the study was undertaken to know about the consumer awareness and knowledge of traditional rice varieties in Erode city.

Material and Methods

The study was conducted in Erode city of Tamil Nadu during the period of June 2020 - October 2020. The city was subdivided into South, West, North and East regions. Convenience sampling method was used to collect the information from the people who purchased traditional rice varieties.

The data were collected through personal interview by using well-structured interview schedule. In order to draw meaningful conclusion percentage analysis was used to analyse the socio-economic characteristics of the respondents and Chi-square test was used to analyse the goodness of fit. Here the awareness based on age and income was analysed to find out their association on knowledge. Garrett ranking was used to identify the problems in buying traditional rice varieties.

Results and Discussion
Among sample respondent's 46.67 percent were male followed by 53.33 percent female. Most of them were between 31 to 40 (39.16percent) years of age followed by 21 to 30 years (33.33percent) and belonged to family size of 3-5 members (63.3percent). From the sample respondents, Graduates were 81.66 percentage, private employees occupied 40.00 percentage and with monthly family income between Rs 21,000 to 30,000.

Table-1 *Demographic profile of the respondents (n= 120)*

SN	Demographic details	No of Respondents	Percentage
Gender			
1	Male	56	46.67
2	Female	64	53.33
Age in years			
1	Less than 20	4	3.33
2	21-30	40	33.33
3	31-40	47	39.16
4	41-50	16	13.33
5	More than 50	13	10.83
Educational Status			
1	Illiterate	5	4.16
2	Primary	1	0.83
3	Secondary	6	5.00
4	Graduation	98	81.67
5	Post Graduation	10	8.33
Monthly income in Rupees			
1	Less than 20000	20	16.66
2	21000-30000	29	24.16
3	31000-40000	27	22.50
4	41000-50000	24	20.00
5	More than 50000	20	16.66
Family type			
1	Joint Family	28	23.33
2	Nuclear Family	92	76.66
Family size in number			
1	Less than 3	16	13.33
2	3-5	76	63.33
3	More than 5	28	23.33
Occupation			
1	Student	42	35.00
2	Private employee	48	40.00
3	Govt. employee	4	3.33
4	Business	10	8.34
5	Home Maker	16	13.33
	Total	120	100

Table-2 *Awareness on traditional rice varieties*

SN	Statements	No. of. Respondents	Percentage
1	Know about it very well	80	66.66
2	Heard about it but know a little	20	16.66
3	Heard about it but not sure	15	12.5
4	Never heard about it	5	4.16
	Total	120	100

About 66.66 percent of sample respondents were aware and know about the traditional rice varieties very well. From the respondents, 16.66 percent were heard about it but know a little and only 12.50 percent heard about it but not sure and 4.16 percent were never heard about it. It showed that most of the consumers were aware of traditional rice varieties. The consumer unaware about the traditional rice varieties was only 4.16 percent.
From the chart it was interpreted that sample respondents have more knowledge about Jeerga samba rice (91.66) followed by Mappillai samba rice (83.33), Red kavuni rice and Black kavuni rice (81.66) were the other known varieties. It could

be concluded that most of the people were consuming and buying Jeerga samba rice, Mappillai samba rice followed by Red kavuni rice and Black kavuni varieties more than compared to remaining varieties and this chart shows the overall knowledge level of varieties among consumers.
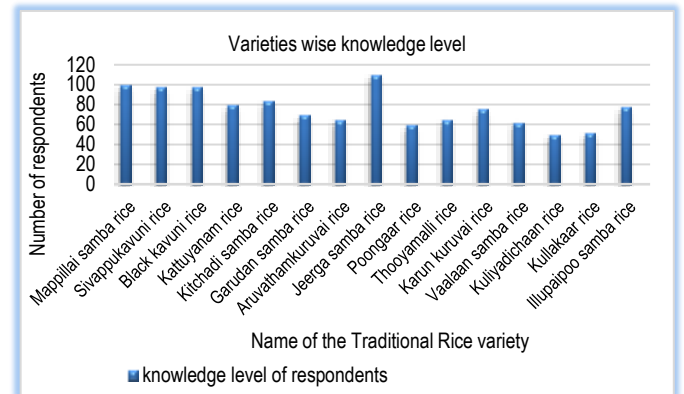

Fig-1 Variety wise knowledge

Table-3 *Reasons for preferring traditional rice varieties*

SN	Reason for preference	No of Respondents	Percentage
1	Remedy for health issues	80	66.66
2	Organically produced	13	10.8
3	More nutritional value	12	10
4	Advertisements	10	8.33
5	Good taste	5	4.16
	Total	120	100

Consumers were asked to mention the reason for purchasing traditional rice. The main reason for choice of purchase of traditional rice varieties was these are the remedy for health problems (66.66) like Diabetic, Arthritis, etc. They were purchasing the rice with awareness and conscious about cost and varieties. The other important reasons were these varieties were cultivated without using synthetic fertilizers and having high nutrients, minerals and anti-oxidants.

Table-4 *Health based benefits of traditional rice varieties*

SN	Health based benefits	No of Respondents	Percentage
1	Improves overall health	40	33.33
2	Control diabetes	30	25
3	Good for bones	25	20.8
4	Fight against cancer	15	12.5
5	Improves immunity	10	8.33
	Total	120	100

Consumers were asked to mention the health based benefits of traditional rice varieties, about 33.33 percent were consuming it for the improvement of overall health and 25 percent expressed that it can control diabetes and only 8 percent were consuming for improvement of immunity.
Demographic characters like age, income and education plays an important role in consuming traditional rice varieties as it influences consumers more and have significant relationship. Knowledge about traditional rice is an important factor which will ultimately help us to understand about their awareness and attitude towards traditional rice. The knowledge may be influenced through many sources as consumer came across many situations. Awareness is a condition of having knowledge of consciousness. In order to find out relationship between consumer awareness towards traditional rice and their socio-demographic characteristics (Age and Income) n=120 are analysed.
According to Ibitoye and Nawi (2014) analysed the relationship between Consumers' awareness towards organic rice and their socio-demographic characteristics (Age and Income). Among the sample respondents an equal proportion of 32.50 percent of sample respondents heard about it but not sure and mostly never heard about it. About 62.50 percent of sample respondents who got aware falls under the age group of 21-30 years, among them 20.83 percent were heard about it but not sure. The sample respondents in the age category of less than 20 years comes under in which they know about it very well was 0.83 percent and sample respondent of 0.83 percent in which they heard about it but know a little was 31-40 years and above 50 years of age.

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Table-5 *Association between Age and Consumers awareness towards traditional*

Age (in years)	Consumers awareness				Total
	Know about it very well	Heard about it but know a little	Heard about it but not sure	Never heard about it	
Less than 20	1(0.83)	6(5.00)	2(1.67)	0(0)	9(7.50)
21-30	3(2.50)	17(14.17)	25(20.83)	30(25.00)	75(62.50)
31-40	4(3.33)	1(0.83)	6(5.00)	2(1.67)	13(10.83)
41-50	1(0.83)	1(0.83)	1(0.83)	1(0.83)	4(3.33)
More than 50	7(5.83)	1(0.83)	5(4.17)	6(5.00)	19(15.84)
Total	16(13.33)	26(21.67)	39(32.50)	39(32.50)	120(100.00)
χ^2 value= 34.99 ; df=12 ; Sig=0.000					

(Figures in parenthesis indicate percentage total)

Table-6 *Association between income and consumers awareness towards traditional rice by the sample respondents*

Income (Rs /Month)	Consumers awareness				Total
	Know about it very well	Heard about it but know a little	Heard about it but not sure	Never heard about it	
<20,000	6(5.00)	3(2.50)	9(7.50)	3(2.50)	21(17.50)
21,000- 30,000	1(0.83)	6(5.00)	17(14.17)	8(6.67)	32(26.67)
31,000-40,000	2(1.67)	4(3.33)	13(10.83)	7(5.83)	26(21.67)
41,000-50000	1(0.83)	2(1.67)	16(13.33)	3(2.50)	22(18.33)
>50,000	1(0.83)	0(0)	14(11.67)	4(3.33)	19(15.83)
Total	11(9.17)	15(12.50)	69(57.50)	25(20.83)	120(100.00)
χ^2 value= 19.20 ; df=12 ; Sig=0.084					

(Figures in parenthesis indicate percentage total)

Hence, chi-square value for awareness of traditional rice with age factor was 34.99. It could be concluded that there is a significant association between age and awareness of traditional rice. Both factors are highly associated with each other. As age increases, awareness of traditional rice was increased.

Among the sample respondent's 57.50 percent of sample respondents were heard about traditional rice but not sure. In that the sample respondent's 14.17 percent were under the income of Rs. 21,000 - 30,000 per month. The consumers having less than Rs.20,000 income per month were showing less awareness.

Hence, the chi-square value for consumers awareness with income factor was 19.20 and it could be concluded that there is significant association between income and Consumers awareness. Both factors are having an association with each other. As income increased, consumer's awareness also increased.

The awareness influenced both on income and age factor. As income increased consumers awareness also increased whereas increased in age also increased the consumers awareness. Here, old aged people consuming traditional rice more than others mainly for health consciousness.

Table-7 *Problems faced by consumers in purchasing traditional rice*

SN	Problems	Garrett's score	Rank
1	Lack of information regarding varieties and brands	77.11	I
2	Not popular	69.24	II
3	Higher cost	63.77	III
4	Less availability	56.3	IV
5	Physical Impurities	54.96	V
6	Low quality	39.35	VI
7	More taste difference between varieties	37.33	VII

The major problems faced by the consumers was lack of information regarding varieties and brands (Garrett's score 77.11) followed by these varieties were not so popular among consumers. More taste difference between varieties (Garrett's score 37.33) was the least important constraint for them. Lack of information regarding varieties and brands was thus considered as the main constraint by the respondents while purchasing the traditional rice varieties.

Conclusion

The study on consumer awareness and knowledge about traditional rice varieties was carried out in Erode city, Tamil Nadu. The total sample size was 120. Most of sample consumers were between 31 to 40 years of age followed by 21 to 30 years. From the sample respondents, Graduates were 81.66 percentage, private employees occupied 40.00 percentage and with monthly family income between Rs 21,000 to 30,000. The main reason for choice of purchase of traditional rice varieties was these are the remedy for most of the health problems.

Application of research: In health-based benefits of traditional rice varieties, about 33.33 percent were consuming it for the improvement of overall health and 25 percent expressed that it can control diabetes. The chi-square value for awareness of traditional rice with age factor was 34.99. It could be concluded that there is a significant association between age and awareness of traditional rice. The chi-square value for consumer's awareness with income factor was 19.20 and it could be concluded that there is significant association between income and consumers awareness. Lack of information regarding varieties and brands was thus observed as the main constraint.

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Study area / Sample Collection: Erode City of Tamil Nadu

Cultivar / Variety / Breed name: Rice

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References

[1] Olusola Olugbengalbitoye,Nolila MohdNawi, Norsida Man and NittyHirawaty, Kamarulzaman (2014) *World Applied Sciences Journal*, 32 (4), 611-617.
[2] Ibitoye O. O., Nawi N. M., Kamarulzaman N. H. and Man N. (2014) *International Food Research Journal*, 21(5), 1711-1718.
[3] Diako C., Sakyi-Dawson E., Bediako-Amoa B., Saalia F.K. and Manful J.T. (2010) *Nature and Science*, 8(12), 12-19.

[4]   Ginigaddara G.A.S., Madushika J.P.S.N., Bandara A.M.K.R. and Dissanayaka S.P. (2017) International *Journal of Advanced Scientific Research and Management*, 2 (4), 22-27.
[5]   Hamid N. and Saini K. (2017) *International Journal of Interdisciplinary and Multidisciplinary Studies,* 4(3),14-24.
[6]   Benjamin Tetteh Anang, Sidney Nii Adjei Adjetey and Stanislaus Addy Abiriwe (2011) *International Journal of AgriScience*, 1(2), 67-74.
[7]   Rajakumari D. (2011) *Cauvery Research Journal*, 4(1 & 2), 44-46.
[8]   Zaini Amin, Andry, Edy Humaidi, Nenny Wahyuni, Verry Yarda Ningsih (2019) *Journal of Critical Reviews*, 7(1), 48-51.
[9]   Lakkana Ruekkasaem and Montalee Sasananan (2017) 6th International Conference on Biological, Chemical & Environmental Sciences (BCES-2017) Jan. 18-19, 2017 Phuket, Thailand.
[10] Kyi Moe, Seinn Moh Moh, Aung Zaw Htwe, Yoshinori Kajihara, Takeo Yamakawa (2019) *Rice Science,* 26(5), 309-318.
[11] Asiah N., Aqil M., Dwiranti N.S., David W., Ardiansyah A. (2019) *Asia Pacific Journal of Sustainable Agriculture, Food and Energy*, 2 (2), 32-35.