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RV Chavan
Department of Agricultural Economics, College of Agriculture, Parbhani, Maharashtra, India

KV Deshmukh
Department of Agricultural Economics, College of Agriculture, Parbhani, Maharashtra, India

SS More
Department of Agricultural Economics, College of Agriculture, Parbhani, Maharashtra, India

Corresponding Author:
RV Chavan
Department of Agricultural Economics, College of Agriculture, Parbhani, Maharashtra, India

Socio-economic characteristics of chickpea growers in Marathwada region of Maharashtra

RV Chavan, KV Deshmukh and SS More

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Abstract
Pulses are the important sources of proteins, vitamins and minerals and are popularly known as "Poor man's meat" and "rich man's vegetable", contribute significantly to the nutritional security of the country. Chickpea is the second most important grain legume in the world after dry bean. Chickpea is most important pulse crop of India in terms of area and production, widely grown for centuries and accounts for nearly 40 percent of the total pulse production in the country. Socio economic characters were calculated by using descriptive statistics mean, SD and CV, it was observed that the middle age farmers (>40 to ≤55) was 40.00 per cent, the young (>25 to ≤40) which was 12.50 per cent and old group farmers (>55 to ≤70) was 47 per cent. With respect to educational level secondary level was dominating with 39.17 per cent. About 52.50 per cent of growers belonged to medium family size. In respect of occupational level of chickpea growers, most of farmers belonged to agriculture that was 97.50 per cent followed by services 1.67 and business very negligible having 0.83 per cent.

Keywords: Socio-economic, chickpea growers

Introduction
Pulses are the important sources of proteins, vitamins and minerals and are popularly known as "Poor man's meat" and "rich man's vegetable", contribute significantly to the nutritional security of the country. As pulse is an integral part of Indian cuisine, there is always a huge demand supply mismatch of pulses in India. The major pulses chickpea, pigeon pea, lentil, green gram and black gram account for nearly 80 per cent of total pulse production in India.
Chickpea is most important pulse crop of India in terms of area and production, widely grown for centuries and accounts for nearly 40 percent of the total pulse production in the country. India grows chickpea on about 8.35 million hectares area with 7.17 million tons of grains which represents more than 40 per cent of the national pulse acreage and production respectively.
The total area under pulses in Maharashtra was 4.35 million hectares with production 4.58 million tones and productivity 1048 kg/ha respectively. Area under chickpea in Maharashtra during 2016-17 was 1.92 million hectares with an annual production of 1.9 million tones and average productivity of 1006 kg/ha. During 2016-17, area, Production and Productivity of total pulses in Marathwada was 1.67 million ha, 1.99 million tonnes and 1078 kg/ha respectively. The Area, Production and Productivity of major pulse of rabi season i.e. chickpea in Marathwada was 715.2 thousand ha, 749.6 thousand tones and 1037 kg/ha respectively.

Objective
The main objective of the study to estimate socio-economic characteristics of chickpea growers

Methodology
The socio-economic characteristics of chickpea growers were estimated by using the statistical tools like tabular analysis, frequency, percentage analysis, mean, standard deviation and coefficient of variance were employed to analyze the data.

Standard deviation:
Standard deviation is the measure of dispersion.

This measure of dispersion was calculated by squaring the deviation of each observation from the mean, adding the squares and dividing by number of observation (n) and extracting the square root.

$$SD = \sqrt{\frac{\sum_{i=1}^{n}(Xi-\bar{X})^2}{n}}$$

Xi = arrivals /prices
X = Mean of arrivals/ prices
n = number of years /months

Coefficient of variation: Coefficient of variation is the "percentage variation in the mean as the standard deviation being stated as the total variation in the mean". The coefficient of variation of each market arrivals and prices were worked out by comparing the variability present in parameters applied.

$$CV = \frac{SD}{Mean} \times 100$$

Where,
SD = Standard deviation
Mean = Arithmetic mean

Results and Discussion

Socio-economic characteristics of chickpea growers

The socio-economic characteristics of chickpea growers include age, educational level, family size, occupational level, operational land holding, bullock pair and livestock

Socio-economic characteristics of chickpea growers

Socio-economic characteristics of chickpea growers were estimated and are presented in Table 1. It was observed from the table that the middle age farmers (>40 to ≤55) was 40.00 per cent, the young (>25 to ≤40) which was 12.50 per cent and old group farmers (>55 to ≤70) was 47 per cent. With respect to educational level secondary level was dominating with 39.17 per cent followed by primary level education with 32.50 per cent. Higher secondary and college level education contributing same i.e.10.83 per cent while illiteracy per cent was negligible accounting 6.67 per cent. The family size of the farmers was divided into three categories on the basis of members in family as small, medium and large. About 52.50 per cent of growers belonged to medium family size which was ranging from 5 to 7 members in a family followed by 33.33 per cent growers belonged to small family ranging from 2 to 4 members. About 14.17 per cent growers belonged to large family ranging from 8 to 10 members in a family. In respect of occupational level of chickpea growers, most of farmers belonged to agriculture that was 97.50 per cent followed by services 1.67 and business very negligible having 0.83 per cent. In case of operational land holding medium group ranging from more than two hectares to four hectares (>2 to ≤4 ha) was found to be maximum having 47.50 per cent,35.83 per cent farmers have less than less than two hectares of land and 16.67 per cent farmers comes under large holding category having more than 4 hectares' land. Fragmentation of land was dominating with one fragment in which 65.83 per cent were distributed for chickpea farm. In case of distance of farm from village, it was observed that 59.17 per cent farms 2 to 4 kilometers away from the village, 24.17 per cent are more than (> 4 to ≤ 6) away and only 16.67 per cent are near the villege. With respect of bullock pair 51.67 per cent farmers have one bullock pair, 18.33 per cent farmers having two bullock pairs while 30 per cent farmers having no bullock pair. Regarding the livestock 45.83 per cent farmers rearing one livestock, 29.17 per cent farmers rearing two livestock and 25 per cent farmers having one livestock

Table 1: Socio economic characteristics of chickpea growers

Sr. No.	Particulars	Chickpea farm	
		Frequency (n=120)	Per cent
1	**Age (years)**		
	i) Young (> 25 to ≤ 40)	15.00	12.50
	ii) Middle (> 40 to ≤ 55)	48.00	40.00
	iii) 0ld (> 55 to ≤ 70)	57.00	47.50
2	**Educational level (score)**		
	i) Illiterate level	8.00	6.67
	ii) Primary	39.00	32.50
	iii) Secondary	47.00	39.17
	iv) Higher secondary	13.00	10.83
	v) College level	13.00	10.83
3	**Family size (no)**		
	i) Small (2 to 4)	40.00	33.33
	ii) Medium (5 to 7)	63.00	52.50
	iii) Large (8 & above)	17.00	14.17
4	**Occupational level (score)**		
	i) Agriculture	117.00	97.50
	ii) Business	1.00	0.83
	iii) Services	2.00	1.67
5	**Land holding (ha)**		
	i) Small (≤ 2ha)	43.00	35.83
	ii) Medium (> 2 to ≤ 4 ha)	57.00	47.50
	iii) Large (> 4 ha)	20.00	16.67
6	**Fragmentation of land (no)**		
	i) One	79	65.83
	ii Two	24	20.00
	iii) Three	17	14.17
7	**Distance of farm from village (km)**		
	i) Near (> 0 to ≤ 2)	20	16.67
	ii) More (> 2 to ≤ 4)	71	59.17
	iii) Long (> 4 to ≤ 6)	29	24.16
8	**Bullock pair (no)**		
	i) Zero	36.00	30.00
	ii) One	62.00	51.67
	iii) Two	22.00	18.33
9	**Livestock (no)**		
	i) One	55.00	45.83
	ii) Two	35.00	29.17
	iii) Three	30.00	25.00

Mean, SD and CV of Socio-economic characteristics of chickpea growers

Mean, standard deviation and coefficient of variation of socio-economic characteristics of chickpea growers were calculated and are presented in Table 4.14. It was observed from the table that the average age of chickpea growers was 49.56 years. The coefficient of variation with respect to age was found to be 21.65 per cent. Educational level of farmers indicated 2.87 scores with 36.93 per cent coefficient of variation. With regards to family size the average size of family of chickpea growers was 5.48 or more than five and the coefficient of variation was 37.59 per cent. Occupational level was indicating 1.04 score with 25.96 per cent coefficient of variation. The average land holding of chickpea growers was 2.92 hectares which came under medium size of holding. The coefficient of variation of land holding was found to be 53.77 per cent. Fragmentation of land was 1.66 numbers on

chickpea farm. It was clear that approximately fragmentation was at two locations. Distance of farm from village was 1.92 kilometers with respect to chickpea farm. In case of bullock pair it was 0.88 numbers. The average number of livestock rearing of chickpea growers was 1.05 with 58.10 per cent coefficient of variation.

Table 4.14: Mean, SD and CV of socio economic characteristics of chickpea growers

Sr. No.	Particulars	Chick pea farm		
		Mean	SD (±)	CV %
1.	Age of farmer (years)	49.56	10.73	21.65
2.	Educational level (three quantum score)	2.87	1.06	36.93
3.	Family size (no)	5.48	2.06	37.59
4.	Occupational level (three quantum score)	1.04	0.27	25.96
5	Land holding (ha)	2.92	1.57	53.77
6.	Fragmentation of land (no)	1.66	1.05	59.32
7.	Distance of farm from village (km)	1.92	1.36	79.53
8.	Bullock pair (no)	0.88	0.69	78.41
9.	Livestock (no)	1.05	1.66	58.10

Conclusions

It is concluded from the above discussion old age group farmers (>55 to ≤70) were dominating, with respect to educational level the percentage secondary level education was found more. In case of family size about 52.50 per cent of growers belonged to medium family size which was ranging from 5 to 7 members in a family. In case of occupational level of chickpea growers, most of farmers belonged to agriculture as main occupation. Operational land holding medium size group ranging from more than two hectares to four hectares (>2 to ≤4 ha) was found to be maximum. Regarding the livestock status it was seen 45.83 per cent farmers rearing only one livestock.

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