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Study on socio profile of farmers in SAS Nagar district of North-Eastern Punjab, India

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Abstract
Agriculture is the primary source of generating economic stability, especially for developing countries like India. The global economy gained a slow growth rate since 2008-09, which has slowly evolved in all sectors of the Indian economy. Socio-economic status is evaluated as a combination of factors including income, level of education, income size of landholding, pattern of food consumption, caloric intake per head, occupational structure, and other basic amenities and infrastructure facilities. Farmers' education has an important role to play in receiving and using information on modern agricultural technologies while report concluded that 52% of farmers have done only primary schooling while 13% are illiterate.52% of the farmers belong to the age group of 35-55 years. 88% of the farmers do have mobile phones, out of that only 45% farmers have internet facility and only 7% farmers were socially active on internet and follows agricultural groups etc. from where they get agriculture related news and information.

Keywords: Agriculture, farmer, socio-economic, education, income

Introduction
Agriculture can help reduce poverty, raise incomes and improve food security for 80% of the world's poor, who live in rural areas and work mainly in farming. Agriculture is the primary source of generating economic stability, especially for developing countries like India. According to the reports of 2018, agriculture has employed more than 50% of the Indian work force and also contributed 17–18% to the country's GDP. India ranks first in the world, with the highest net cropped area, followed by the US and China. The economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth. The global economy gained a slow growth rate since 2008-09, which has slowly evolved in all sectors of the Indian economy. Some improvements have been invented due to some development activities, although agricultural productivity is lower compared to other developed countries.

Socio-economic status is evaluated as a combination of factors including income, level of education, income size of landholding, pattern of food consumption, caloric intake per head, occupational structure, and other basic amenities and infrastructure facilities. It is a way of looking at how individuals or families fit into society using economic and social measures that have been shown to impact individuals' health and well-being.

In the present scenario of Indian agriculture, the public extension cannot possibly provide additional qualified manpower to adequately address the complex demand of the farmers by reaching the millions of farmers. Farmer's needs are much more diversified and the knowledge required to address them is beyond the capacity of the grass root level extension functionaries. Chouhan (2017) [7] analyzed the socioeconomic status of farmers' by adopted agroforestry. The data were collected through interviews from respondent's members of agroforestry farming. Komatsu *et al*. (2019) [8] unveiled the impact of gender in agricultural cropping work and their nutritional status in rural areas. The study was confined to one cropping season. Farmers' education has an important role to play in receiving and using information on modern agricultural technologies to address local specific problems more efficiently. Therefore, ensuring access to quality education for all, particularly for the poor and rural population, is central to the economic and social development of India (Gille, 2010) [1]. The rapid pace of technological advancement in the area of information and communication is helping to bridge the distance between research and extension systems, and farmers in India.

The agriculture industry plays a significant part in the Indian economy, accounting for around 20% of the Gross Domestic product (GDP) (Ahmad L, 2017) [6].

Individual measures of Socio-economic status such as income, education, and occupation reflect the opportunities and resources people might have (Lynch & Kaplan), and are part of one's intrapersonal environment. For example, occupation might determine whether someone can afford the time and expense of participation in organized sports. Earlyin history, agriculture was done for domestic purposes only, as time passes new technologies in agronomic practices and developments were made to enhance crop production and people started earning from agriculture too. But several adversities emerged in the socio- economic areas along with the environmental hazards [Bhatt H, 2019] [9]. Area level measures are either aggregated individual indicators or can be used to represent contextual effects of Socio-economic status (Lynch & Kaplan). For example, the average income of a neighborhood might help to explain the resources that are available or not, to that specific community (Chen *et al*., 2002) [3]. There is general consensus that income, education, and occupation together represent Socio-economic status better than any of these alone (White 1982) [5]. Krieger, William and Moss (1997) [4] define socio-economic position as "an aggregate concept that includes both resource-based and prestige-based measures, as linked to both childhood and adult social class position" (p. 345). Although they suggest that the term Socio-economic status clouds the distinction between resource-based measures such as income and education, and prestige-based measures such as occupation (Krieger *et al*., 1997) [4].

Punjab holds place of pride among the Indian States for its outstanding achievements in agricultural development. The state has witnessed tremendous increase in the agricultural production during the Green Revolution period, mainly due to healthy mix of institutional and technological factors. Punjab state comprising only 1.54 percent of the total geographical area of country now contributes 13-14 percent towards the total food grain production of the country. State has earned a name of granary of India through contributing 35-40 percent of rice and 40 to 75 percent of wheat to the central pool in the past two decades. The emerging scene of Punjab agriculture is not free from some serious concerns. The state cropping pattern dominated by wheat-rice rotation is causing a serious damage to the state's 2 natural resource base. Agriculture being the backbone of state economy, other major activities like agro-processing, transportation, trade, storage, etc. are directly or indirectly dependent on it. Thus, performance of agriculture sector 5 determines the scope and rate of development and employment in other sectors as well as overall state economy.

SAS Nagar is district located in north east part of Punjab. Because of its contiguous with the union territory of Chandigarh, the district to achieve faster growth of development and this area is emerging as major I.T. hub of northern India. Under this district we will study about three villages, namely Hasanpur, Kalewal and Singhpura, in this research paper.

Materials and Methods

The methods employed are elaborated under:

a. Research Design

Non-experimental descriptive research design was put forth for the study. In non experimental research, the independent variables are not manipulated by the researchers. Descriptive research design is a design in which the major emphasis is on studying the field study of a particular situation. A questionnaire was prepared to analyze the socio profile of respondents and based on those answers, research is conducted.

b. Locale of the study

The Punjab state comprises of 23 districts. The present study was conducted in three villages of one district namely SAS Nagar in north-east part of Punjab State.

c. Profile of the Study Area

Village Hasanpur

According to Census 2011 information the location code or village code of Hasanpur village is 039040. Hasanpur village is located in Kharar tehsil of Sahibzada Ajit Singh Nagar district in Punjab, India. It is situated 16km away from sub-district headquarter Kharar (tehsildar office) and 12km away from district headquarter Sahibzada Ajit Singh Nagar. As per 2009 stats, Hussaianpur is the gram panchayat of Hasanpur village. The total geographical area of village is 172 hectares. Hasanpur has a total population of 961 peoples, out of which male population is 518 while female population is 443. Literacy rate of Hasanpur village is 79.71% out of which 82.43% males and 76.52% females are literate. There are about 175 houses in Hasanpur village. Pincode of Hasanpur village locality is 140103. Kurali is nearest town to Hasanpur village for all major economic activities.

Fig 1: Map of Hasanpur

Village Kalewal: According to Census 2011 information the location code or village code of Kalewal village is 039037. Kalewal village is located in Kharar tehsil of Sahibzada Ajit Singh Nagar district in Punjab, India. It is situated 10km away from sub-district headquarter Kharar (tehsildar office) and 16km away from district headquarter Sahibzada Ajit Singh Nagar. As per 2009 stats, Kalewal village is also a gram panchayat. The total geographical area of village is 174 hectares. Kalewal has a total population of 1,116 peoples, out of which male population is 601 while female population is 515. Literacy rate of Kalewal village is 78.67% out of which 81.70% males and 75.15% females are literate. There are about 220 houses in Kalewal village. Pincode of kalewal village locality is 140103. Kurali is nearest town to Kalewal village for all major economic activities.

Fig 2: Map of Kalewal

Village Singhpura

According to Census 2011 information the location code or village code of Singhpura village is 039035. Singhpura village is located in Kharar tehsil of Sahibzada Ajit Singh Nagar district in Punjab, India. It is situated 16km away from sub-district headquarter Kharar (tehsildar office) and 23km away from district headquarter Sahibzada Ajit Singh Nagar. As per 2009 stats, Singhpura village is also a gram panchayat. The total geographical area of village is 135.84 hectares. Singhpura has a total population of 1,067 peoples, out of which male population is 571 while female population is 496. Literacy rate of Singhpura village is 71.51% out of which 77.58% males and 64.52% females are literate. There are about 233 houses in Singhpura village. Pincode of Singhpura village locality is 140103. Kurali is nearest town to Singhpura village for all major economic activities.

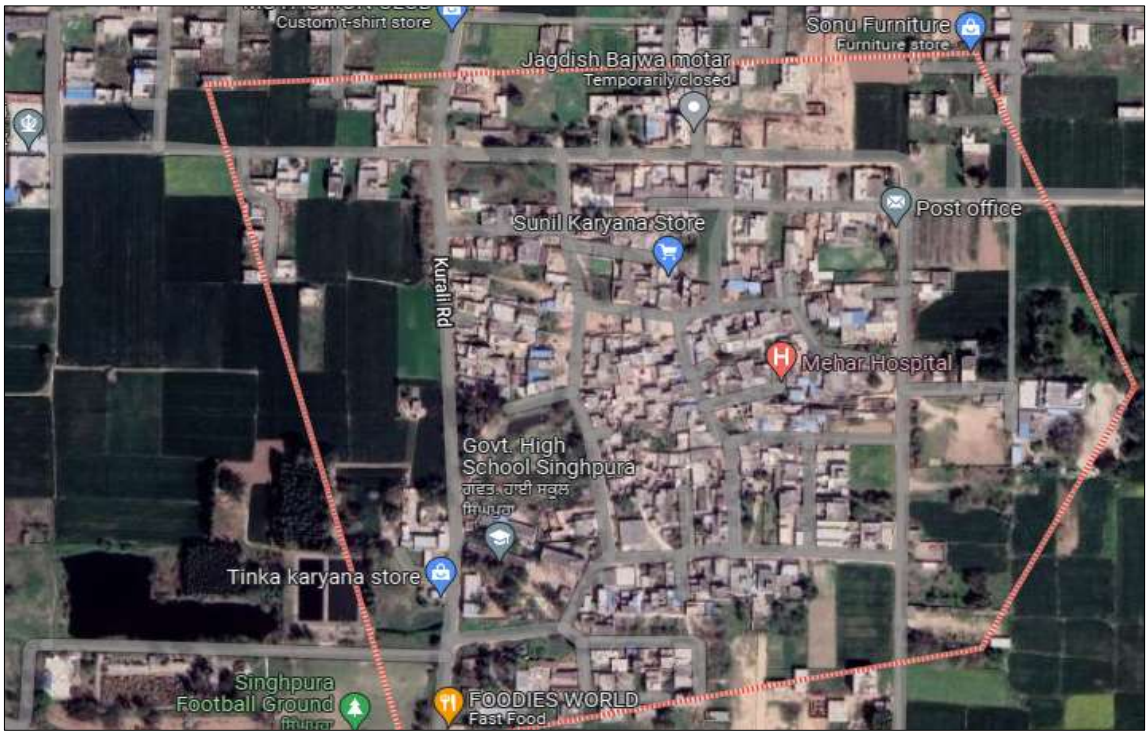

Fig 3: Map of Singhpura

d. Sampling technique
Multistage random sampling technique was employed in the present study. Personal interview technique was used for data collection.

e. Selection of Villages
The study was carried out in North-East area of Punjab to study the socio-economic status of farmers in SAS Nagar district in three villages namely Hasanpur, Kalewal, Singhpura.

f. Selection of Respondents
140 random farmers were selected from 3 Villages of SAS Nagar district of Punjab for the survey under RAWE Programme.

Age
Age was operationalized as the chronological age of respondents expressed in completed years at the time of investigation. Categorization of respondents on the basis of their age as per average mean and standard deviation.

Category Age group
Young15 to 35 years
Middle35 to 55 years
Old55 to75 years

Education
It was measured in terms of the number of formal education completed by the mash growers and non-growers at the time of interview and categorized into illiterate, below primary, primary, middle, matriculate, 10+2, graduate and above.

Nuclear family and joint family
Nuclear family was considered as the type consisting members in a family from one generation sharing resources of home and land separately and joint family consists of one or more than one generation of a family sharing resources together.

Operational land holding
It refers to the number of hectares of land owned by the mash growers including leased in and excluding leased out. Operational land holding= Area owned + Area leased in- Area leased out. The operational land holding of farmers was categorized into:

Marginal	:<1ha	
Small	:	1-2 ha
Semi-medium	:	2-4 ha
Medium	:	4-10 ha
Large	:	>10 ha

The categorization of land holding is based on the categorization of the Government ofIndia(MOA, 2011).

Distance from the market
It was total distance from home to market measured in kilometers

Distance from Agriculture office
It was total distance from home to agriculture office measured in kilometers

Distance from input dealer shop
It was total distance from home to input dealer shop measured in kilometers

Data collection
Data were collected from the selected respondents with the help of semi- structured interview schedule by using the personal interview method. The respondents were interviewed at their home or in their fields and their responses were recorded on the spot.

Statistical Analysis of data

After the collection of data from the respondents, the data were classified, quantified and tabulated. In order to yield the relevant information in consistent with the objectives of the study, the data were analyzed with the help of suitable statistical measures such as frequencies, percentages, mean and standard deviation.

Result and Discussion

This chapter pertains to the results which were obtained and interpreted after the collection, analysis, and tabulation of data in the wake of the research objectives of the study. The data were collected from 140 respondents and the results were given under the following headings:

Socio-profile of the farmer

Age

The survey revealed that 20, 10, 15, 20, 25, 30, and 35 percent of the respondents of G1, G2, G3, G4, G5, G6, and G7, respectively were in the age group of 15--35 years; 40, 70, 55, 75, 35, 45, and 50 percent of respondents of G1, G2, G3, G4, G5, G6, and G7 respectively were in the age group of 35- 55 years and 40, 20, 30, 15, 40, 25 and 15 percent of respondents of G1, G2, G3, G4, G5, G6, and G7 respectively were in the age group of 55-75 years (Fig 4)

Age categories (in yrs)	G1 (%) (n=20)	G2 (%) (n=20)	G3 (%) (n=20)	G4 (%) (n=20)	G5 (%) (n=20)	G6(%) (n=20)	G7 (%) (n=20)
15-35	20	10	15	20	25	30	35
35-55	40	70	55	75	35	45	50
55-75	40	20	30	15	40	25	15

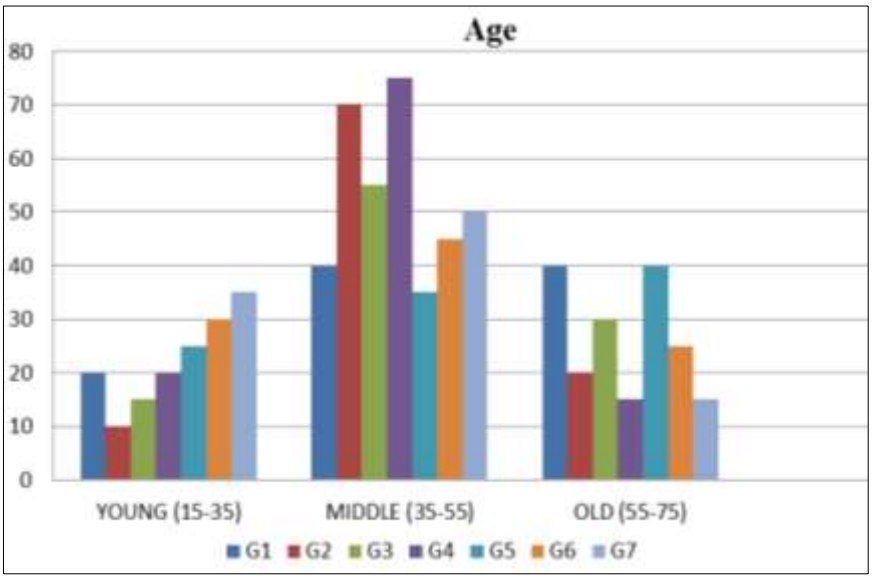

Fig 4: Categories of age

Marital status

The study found that 100 percent of the respondents of G2, G3, G4, and G7 were married and 85 percent, 70 percent, and 80 percent of the respondents of G1, G5, and G6 were married.

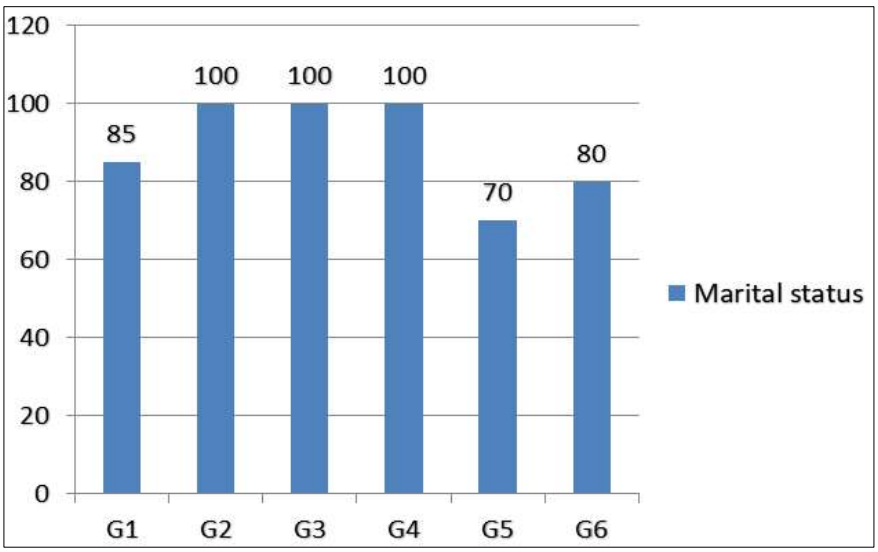

Fig 5: Marital status

Education

The data depicted that 15, 0, 25, 15, 15, 5, and 20 percent of the respondents of G1, G2, G3, G4, G5, G6, and G7, respectively were illiterate; 60, 40, 35, 55, 70, 55, and 55percent of the respondents of G1, G2, G3, G4, G5, G6, and G7, respectively were educated up to primary school; 20, 50, 20, 25, 15,30 and 20 percent of respondents of G1, G2, G3, G4, G5, G6, and G7, respectively were educated up to secondary; 05, 10, 20, 05, 0 10 and 05percent of respondents of G1, G2, G3, G4, G5, G6, and G7, respectively were graduated.

Qualification Categories	G1 (%) (N=20)	G2 (%) (N=20)	G3 (%) (N=20)	G4 (%) (N=20)	G5 (%) (N=20)	G6 (%) (N=20)	G7 (%) (N=20)
Illiterate	15	0	25	15	15	5	20
Primary	60	40	35	55	70	55	55
Secondary	20	50	20	25	15	30	20
Graduated	5	10	20	5	0	10	5

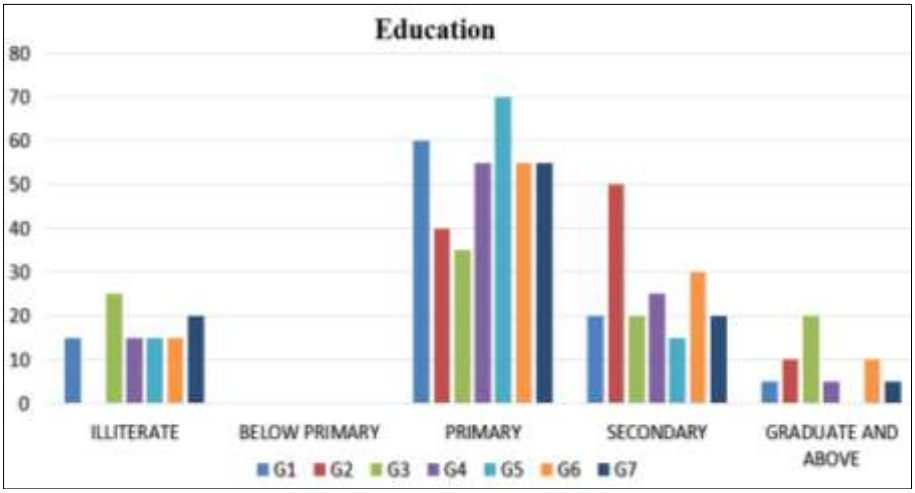

Fig 6: Qualification of farmers

Telephone Connectivity

The respondents having a telephone connection were found to be highest in G5 (95%) followed by G2, G4, G7 (90%), G1, G3, and G6 (85%). The highest internet facility available was found in G5 and G6 (55%) followed by G4 (50%), then G7 (45%), G1 and G3 (40%), and the least in G2 (30%). Very few farmers were socially active on phone and have any kind of social app or application regarding agriculture. This study shows in G1 (5%), G2 (5%), G3 (10%), G4 (10%), G5 (15%), G6 (10%) and highest in G7 (20%) as shown in Fig 7.

Parameters	G1 (%)(n=20)	G2 (%)(n=20)	G3 (%)(n=20)	G4 (%)(n=20)	G5 (%)(n=20)	G6 (%)(n=20)	G7 (%)(n=20)
Telephone Connection							
	85	90	85	90	95	85	90
Internet facility							
	40	30	40	50	55	55	45
Socially active on internet							
	5	5	10	10	15	10	20

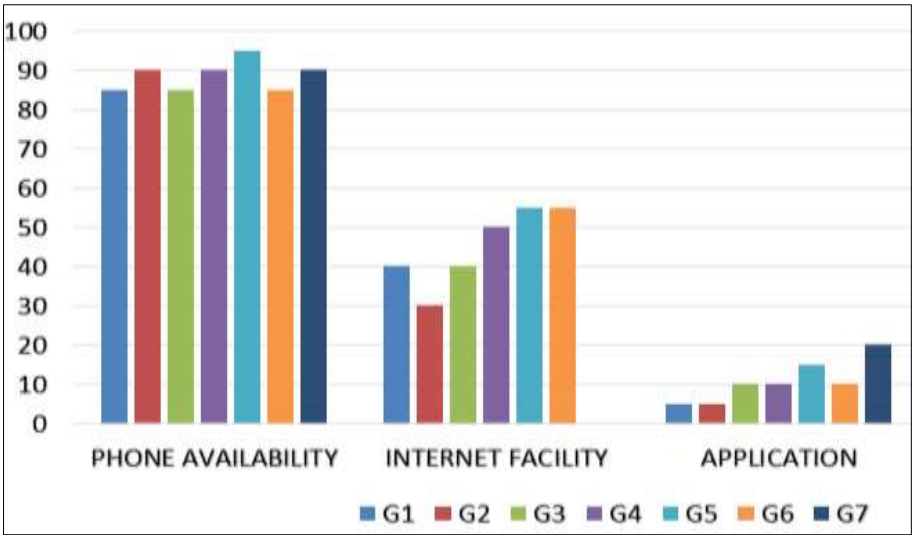

Fig 7: Telephone connectivity

Experience of farming

The farming experience of farmers was categorized into categories as shown in table below:

Categories	G1 (%)	G2 (%)	G3 (%)	G4 (%)	G5 (%)	G6 (%)	G7 (%)
0-10	2	6	4	5	1	1	4
10-20	2	5	5	3	8	2	3
20-30	8	2	1	6	2	8	4
30-40	5	4	1	2	1	2	5
40-50	2	1	6	1	1	6	2
50- above	1	1	3	3	3	1	2

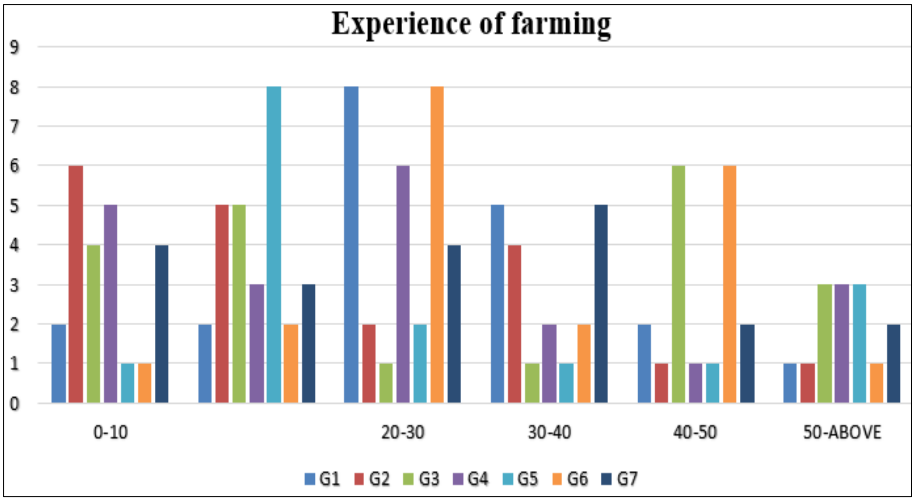

Fig 8: Experience of farming

Land Holding: The data depicted that 10, 10, 10, 15, 10, 20 & 10 percent of the respondents of G1, G2, G3, G4, G5, G6 & G7 were in the category of marginal land holders. 30, 20, 40, 30, 50, 30 & 30 percent of the respondents of G1, G2, G3, G4, G5, G6 & G7 were in the category of Small land holders. 45, 60, 30, 45, 30, 30 & 40 percent of the respondents of G1, G2, G3, G4, G5, G6 & G7 were in the category of semi medium land holders. 15, 10, 20, 10, 10, 20 & 20 percent of the respondents of G1, G2, G3, G4, G5, G6 & G7 were in the category of medium land holders.

Land (in ha)	G1 (%)	G2 (%)	G3 (%)	G4 (%)	G5 (%)	G6 (%)	G7 (%)
Marginal (<1 ha)	10	10	10	15	10	20	10
Small (1-2)	30	20	40	30	50	30	30
Semi medium (2-4)	45	60	30	45	30	30	40
Medium (4-10)	15	10	20	10	10	20	20

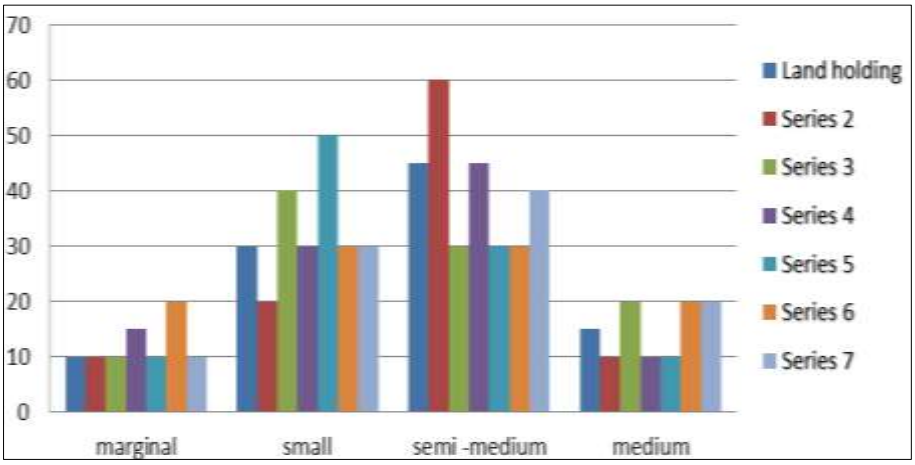

Fig 9: Land holding

Irrigation availability

The Data shows that most of the farmers have irrigation facilities, rivers, canals or tube-wells, etc. In G1 (95%), G 2(90%), G3 (95%, G4 (100%, G5 (85%, G6 (95%), and G7 (100%) farmers have irrigation facilities while in G1(5%), G2 (10%), G3 (5%), G5 (15%), G6 (5%) of the farmers doesn't have irrigation facilities that means they have to depend upon rain for irrigation or the rent tube-wells from other farmers.

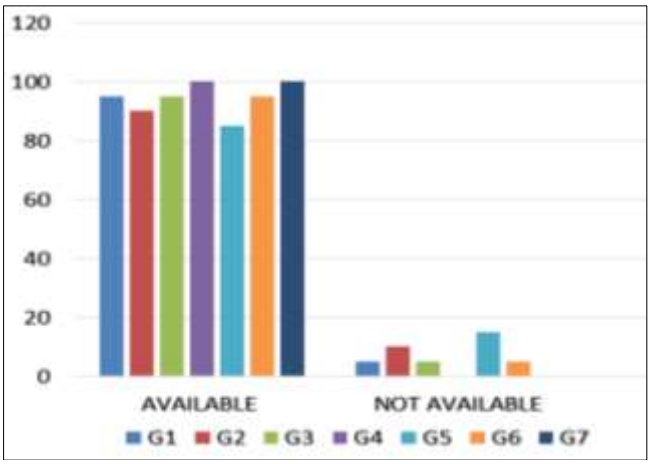

Fig 10: Irrigation facility

Fragmented land

The data collected tells about the state of the land available to the farmers. According to study, G1 (15%), G2 (25%), G3 (20%), G4 (40%), G5 (30%), G6 (45%), and G7 (35%) farmers have fragmented land as shown in the fig 11.

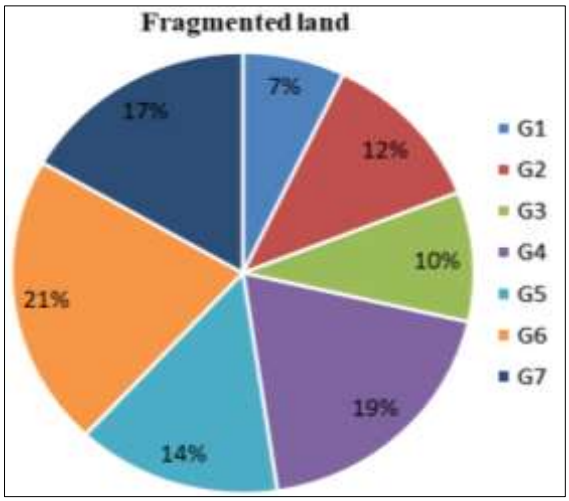

Fig 11: Fragmented land

Fig 12 shows the data of the number of the fragmented land. The data shows 2, 2, 1, 2, 1, 3, 2 of the G1, G2, G3, G4, G5, G6, and G7 respectively have 1-2 number of fragmented l and. 1, 1, 0, 3, 3, 1, 3 of G1, G2, G3, G4, G5, G6 and G7 respectively have 2-3 number of fragmented land. 0, 2, 2, 2, 1, 3, 2 of G1, G2, G3, G4, G5, G6, and G7 respectively have 3-4 number of fragmented land while 0, 0, 1, 1, 1, 2, 0 G1, G2, G3, G4, G5, G6, and G7 respectively have 4-ABOVE number of fragmented land. Most of the farmers have un-fragmented land, and the farmers with fragmented land have majority of 2-4 pieces of land.

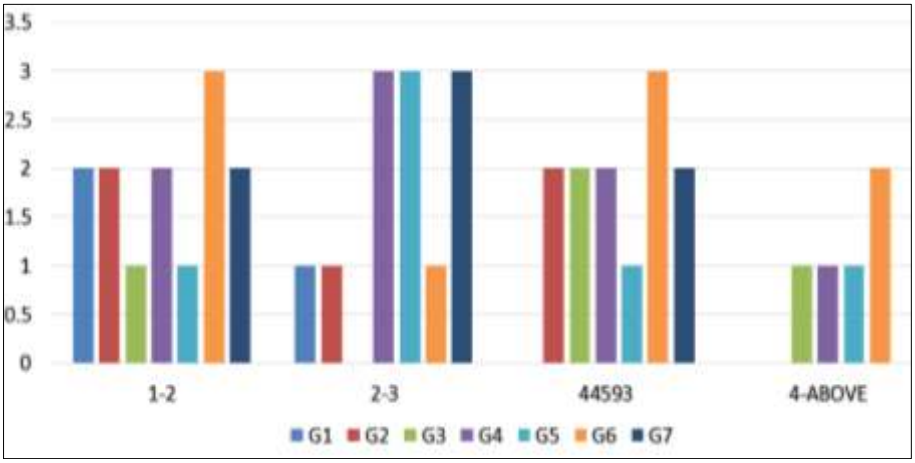

Fig 12: Shows the data of the number of the fragmented land

Source of Information

Source	G1	G2	G3	G4	G5	G6	G7
TV	65%	55%	70%	75%	60%	60%	75%
Newspaper	45%	40%	35%	50%	40%	55%	45%
Radio	30%	35%	30%	25%	30%	15%	35%
Friends/Relatives	80%	75%	60%	65%	75%	80%	70%
Input Dealers	85%	85%	80%	90%	75%	60%	65%

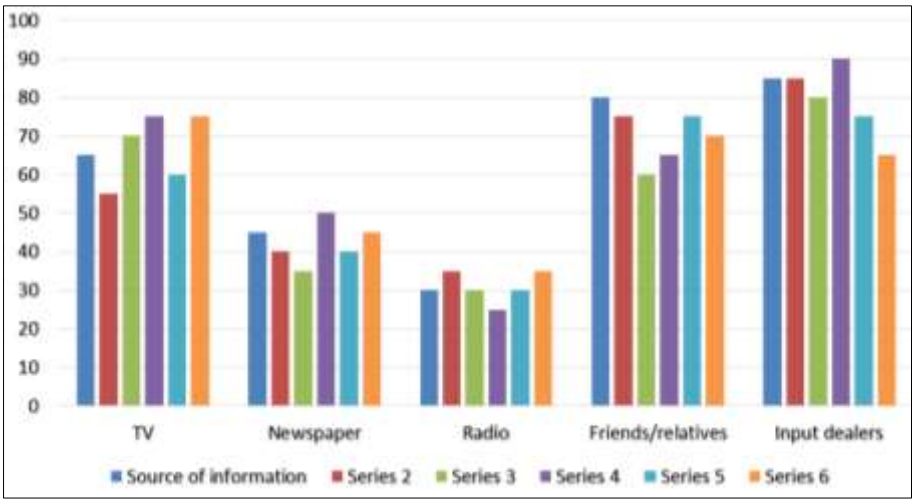

Fig 13: Source of information

Conclusion

The above analysis vividly indicates that the socio-economic wellbeing of farmers is not up to the mark. It may be noted here that low economic level is the main cause of discontentment among the farmers resulting social tension and other problems. The research paper shows that majority of the farmers belong to the age group of 35-55 years (52%) followed by age group of 55-75 (26%) and 15-35(22%) age group. Nearly 80% of the farmers were married. Research shows that 13% of the farmers were illiterate, majority of the farmers have done primary schooling (52%). 25% have done secondary schooling while the rest 7% were graduated. 88% of the farmers do have mobile phones, out of that only 45% farmers have internet facility and only 7% farmers were socially active on internet and follows agricultural groups etc. Majority of the farmers (22%) have 20-30 years of experience in farming, 20% of the farmers have 10-20 years of farming experience, 16% have 0-10 years of experience, 14% have 30-40 years of farming experience, 13% have 40-50 years of farming experience and very few (10%) have more than 50 years of farming experience. 40% of farmers have semi medium (2-4 ha) type of land holding, 32% have small type (1-2 ha) of land holding, 16% have medium type (4-10 ha) of land holding while 12% of farmers have marginal land holding (<1 ha). 94% of farmers have irrigation facilities available and 6% of the farmers depend on rainfall or rent tube wells from others. Study showed that 30% of farmers have fragmented land.

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