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# A Study on Socio-economic Characteristics of Crop Insured Farmers of Northern Karnataka

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***Authors' contributions***

*This work was carried out in collaboration among all authors. Author SKJ conducted the study, collected, analyzed and interpreted that data under the guidance of author KVN. Author SVH supervised the work and helps to author SKJ to interpret and analyzed the data. All authors read and approved the final manuscript.*

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## ABSTRACT

The study was conducted in Karnataka State during 2017-18 by using "Ex-post- facto" research design. Belgavi, Dharwad, Haveri and Vijayapura districts were selected purposely based on more number of insured farmers. Further, two taluks from each district and from each taluk three villages (i.e. total 24 villages) were selected randomly. Sample size for the study was 240. The findings of the study revealed that, majority of the farmers (53.33%) belonged to middle age, 35.42% of them had received middle school education, majority of the insured farmers (94.16%) were not participated in any training, 47.08% of the respondents belonged to medium annual income category and 39.58% of the insured farmers borrowed loan less than 49000 rupees. About 56.67% of the insured farmers belonged to medium land holding category, medium farming experience (37.50%), medium annual income category (47.08%), medium level of extension contact (43.75%), medium level of mass media exposure (44.16%), medium scientific orientation (42.08%), medium category of risk orientation (52.50%) and medium category of organizational participation (45.83%). More than fifty % (51.25%) of the insured farmers belonged to high perception level with respect to extent of climate variation followed by medium (29.58%) and low (19.17%).

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## 1. INTRODUCTION

Agricultural sector in India has been accorded top priority since independence. A cursory look at the growth of agriculture in the past five decades indicates that agricultural production has reached comfortable heights especially after the Green Revolution. India has reached a stage of self-sufficiency, but it is still dominated by nature, which means that the instability still haunts agricultural sector and seriously threatens the Indian farmers' ability to step up the agricultural output and their viability [1].

Different strategies have so far been evolved by the government to combat these risks and uncertainties. Some of them include providing tax remissions, waiving off loans and interest on loans, drought or flood relief measures, etc. However, a major hurdle in such types of reliefs is that such measures depend primarily on the policies as well as on the resources of the government. Thus, because of these drawbacks, the policymakers of the country have sought insurance of crops as a feasible measure to combat against the risks and hazards and provide protection to the farmers [2].

Crop insurance in India has been in existence since 1979 with the implementation pilot insurance scheme in some states and then, Comprehensive Crop Insurance Scheme (CCIS), which was implemented at a national level in 1985. The National Agricultural Insurance Scheme (NAIS) replaced it in 1999. The Agriculture Insurance Company of India Limited (AIC) was given the responsibility of implementing NAIS. Based on the national and international experience, lot of research has taken place across the world in developing sustainable insurance products. Over a period, many modifications were tried and a weather index based insurance scheme WBCIS was introduced in 2007, especially for the horticultural crops. In 2010- 11, a modified NAIS was implemented with an aim to replace NAIS. The latest version of the crop insurance scheme, the 'Pradhan Mantri Fasal Beema Yojana' (PMFBY) was launched in April 2016 replacing the NAIS and MNAIS. It claims to address various shortcomings of the earlier versions of crop insurance schemes and efforts are made to implement it successfully and bring 50 percent of the farmers under insurance cover. With this background the research study was conducted to study of profile of insured farmers availing Crop Insurance Schemes.

## 2. METHODOLOGY

The present study was conducted using "Ex-post- facto" research design in Karnataka State during 2017-18. Belgavi, Dharwad, Haveri and Vijayapura districts were selected purposefully based on more number of insured farmers. Further, two taluks (Taluk- an administrative district for taxation purposes, typically comprising a number of villages) from each district and from each taluk three villages (i.e. total 24 villages) were selected randomly. From each selected villages ten farmers who have at least three years of crop insurance experience were selected as respondents. Random sampling procedure was used for selection of the farmers. Sixty farmers were selected from each district making the sum of 240. The data collection tool was structured interview schedule and it was pre-tested in non-sample area for its practicability and relevancy. The required information was obtained from sample respondents by personal interview method with the help of structured interview schedule. The data tabulated and analyzed using appropriate descriptive statistical tools such as frequency, percentage, mean and standard deviation.

## 3. RESULTS AND DISCUSSION

### 3.1 Socio-economic Characteristics of Crop Insured Farmers of Northern Karnataka

#### Age

The results in Table 1 indicated that, more than half (53.33%) of the insured farmers belonged to middle age category followed by (26.67%) and old (20.00%) age category. It could be inferred from the above results that, insured farmers were in the middle aged category and at this age farmers are active in taking and managing agricultural activities of the family. At this age farmers are more experienced compared to younger and older age group. Middle aged farmers also possess the required skill, experience and energy in doing agricultural operations and also more knowledge about Crop Insurance Scheme. Moreover, these people have more family responsibility and sensibility. They also work with a sense of commitment and involvement. The results are in line with the

findings of Thirumoorthy and Geetha [3] and Nagarjunareddy [4].

**Education**

The data presented in Table 1 revealed that, a considerable percentage (34.42%) of the farmers had middle school education followed by high school primary (25.83%), primary school (24.17 %), PUC (8.75%), illiterate (3.33%) and few (2.50%) were graduate and above. The reason might be that, with the implementation of National Literacy Mission by the Government through the provision of providing free education and mid-day meal up to high school might be the reasons for increase in the education level. As they had education, they were able to gather knowledge on Crop Insurance Schemes. Generally, in the present scenario, almost everybody is found to be literate due to the awareness brought by the government on the importance of education and the efforts of the government and Non Governmental agencies. As they had education, they were able to gather knowledge on recent update on crop insurance schemes. The results are in conformity with the findings of Nayak [5] and Sindhu and Ariff [6].

**Land holding**

The results in Table 1 implied that, more than fifty percentage (56.67%) of farmers belonged to medium land holding category, followed by 21.67, 17.50, 2.50 and 1.66% were small, semi medium, big and marginal farmers, respectively. This might be due to fragmentation of land holdings as a result of increase in population. As a result, it is quite possible that, the farmers with

**Table 1. Socio-economic characteristics of crop insured farmers of Northern Karnataka n=240**

| Sl.No. | Variables | Frequency | Percentage |
|---|---|---|---|
| **I** | **Age** | | |
| | Young (<30 years) | 48 | 20.00 |
| | Middle (30.01-50 years) | 128 | 53.33 |
| | Old (>50.01 years) | 64 | 26.67 |
| **II** | **Education** | | |
| | Illiterate | 8 | 3.33 |
| | Primary School ($1^{st}$ – $4^{th}$ std.) | 58 | 24.17 |
| | Middle School ($5^{th}$- $7^{th}$std.) | 85 | 35.42 |
| | High School ($8^{th}$ – $10^{th}$std.) | 62 | 25.83 |
| | PUC | 21 | 8.75 |
| | Graduate and above | 6 | 2.50 |
| **III** | **Land holding** | | |
| | Marginal (<2.5 acres) | 4 | 1.66 |
| | Small (2.51-5.00 acres) | 52 | 21.67 |
| | Medium (5.01-10.00 acres) | 136 | 56.67 |
| | Semi medium (10.01 to 25.00) | 42 | 17.50 |
| | Big (>25.01 acres) | 6 | 2.50 |
| **IV** | **Farming experience** | | |
| | Low (<11.19) | 68 | 28.33 |
| | Medium (11.20-16.17) | 90 | 37.50 |
| | High (>16.18) | 82 | 34.17 |
| **V** | **Annual income** | | |
| | Lower income (<Rs.60000) | 41 | 17.08 |
| | Medium income (Rs. 60001-Rs. 120000) | 113 | 47.08 |
| | High income (> 120001) | 86 | 35.84 |
| **VI** | **Training received** | | |
| | Not received | 226 | 94.16 |
| | Participated once | 12 | 5.00 |
| | Participated twice | 2 | 0.83 |
| | Participated thrice and more | 0 | 0.00 |

small holdings show keen interest to know about the new ideas and technologies and hence the results. The results are in accordance with the findings of Shraddha [7] and Nayak [5].

**Farming experience**

The data in Table 1 showed that, 45.00% of the farmers had medium experience in availing crop insurance schemes followed by 34.17% and 28.33% of the farmers who had high and low experience, respectively. The probable reason might be that, more than half of the respondents belonged to middle age group (35-50 years) and educated up to middle school. After the formal schooling, they might have started practicing agriculture as their main occupation and also due to inherited culture of farmers from one generation to another generation to follow the tradition of agriculture. The results are in conformity with the results of Khan, et al. [8] and Nagarjunareddy [4].

**Annual income**

The data in Table 1 indicated that 47.08% of the respondents belong to medium annual income category followed by 35.84 and 17.08% belonged to high and low income category, respectively. The probable reasons for varied income categories of farmers might be due to the size of the land holding, adopting new technologies, asset possession and practicing of subsidiary occupations by the farmers. The above findings were in accordance with the findings of study conducted by Binkadakatti [9] and Nayak [5].

**Training received**

The results presented in Table 1 and Table 2 revealed that, majority (94.16%) of the insured farmers were not received the training, 5.00% were received one training and only 0.83% were received more than one training. The probable reasons might be, as the line departments are not providing adequate number of training programmes on Crop Insurance Schemes. Other reasons were, low education status, low extension, mass media exposure and lack of interest to attend such trainings. The similar results reported by Tamagond [10], Navadeep [11] and Sushma [12].

**Extension contact**

The results in Table 1 depicted that, 43.75% of the insured farmers belonged to medium level of extension contact while 33.75 and 22.50% of them belonged to low and high level of extension contact respectively. As they are in the habit of contacting Bank Officers, Assistant Agriculture Officer, Agriculture Officer, Assistant Director of Agriculture. In order to avail the benefits of crop insurance scheme the farmers visit the banks whenever required. The farmers also in the habit of contacting Assistant Agricultural Officer and Agricultural Officer as they are regularly available in the village. Before the onset of monsoon, these officers will also conduct number of programmes on creating awareness about fertilizer usage, cultivation practices, marketing facility for different crops grown in that region. Similarly paper advertisement was given in the region about the schedule of payment of premiums of crop insurance scheme. The results are in line with the findings of Jyothi [13], Ranjan [14] and Chikaire, et al. [15].

**Mass media exposure**

It can be observed from the Table 3 that, 44.16% of the insured farmers belonged to medium category of mass media exposure, while 35.84 and 20.00% of them belonged to low and high category of mass media exposure respectively. The possible reasons might be that, majority of the farmers nowadays possess TV, mobile phones, newspaper, radio and agricultural magazines. It is due to the fact that, television and mobile were highly utilized for entertainment. Majority of farmers utilized television for agriculture programmes and entertainment. Very few viewed Crop Insurance programmes in Television. This might be due to lack of time, interest and inconvenient timings of the telecast.

In case of mobile phones, majority of farmers regularly used it for communication and entertainment purpose followed by agriculture programmes. So, it is clear that, farmers are giving more importance to entertainment and agriculture related programmes. The other reasons might be that, after tedious work in the field farmers might be inclined to view/listen entertainment programmes. Next to TV and mobile phones, newspaper is the most preferred mass media type. Newspaper is one of the cheapest communication media, but low literacy level among the farmers might be the reason for poor subscription. In addition to the low literacy among the farmers, lack of awareness and non-availability of agricultural magazines in villages might be the reason for poor subscription and utilization by the farmers. Hence, majority of farmers had medium level of mass media

exposure. Very few of the respondents listen to agricultural programmes in radio. The probable reason might be that, now-a-days mobile and TV have revolutionized and attracted the farmers. The results are in conformity with the findings of Jyothi [13], Vinayak [16], Chandrashekar [17] and Nagarjunareddy [4].

**Scientific orientation**

Data presented in Table 2 revealed that, 42.08% of the insured farmers belonged to medium scientific orientation, followed by low (33.75%) and high (24.17%). Scientific orientation helps the individual to understand the 'pros' and 'cons' of a Crop Insurance Schemes. It is the foresight, logical thinking and rationality which helps farmers to judge, study and influence the decision making whether to avail the crop insurance or not. Inadequate detailed knowledge about Crop Insurance Schemes led to medium scientific orientation. The results are in line with the findings of Sahana [18], Chaithra [19], Chandrashekar [17] and Patil, et al. [20].

**Risk orientation**

The data presented in Table 2 indicated that, majority of insured farmers (52.50%) belonged to medium risk orientation category followed by low (29.58%) and high (17.92%) risk orientation category. The probable reasons might be that, agriculture is considered as gambling with nature. Risk bearing capacity of an individual

**Table 2. Distribution of crop insured farmers according to their scientific orientation, Risk orientation, Organizational participation, Extension contact and Mass media exposure n=240**

| Sl.No. | Variables | Frequency | Percentage |
|---|---|---|---|
| I | **Scientific orientation** | | |
| | Low (<9.36) | 81 | 33.75 |
| | Medium (9.37 to 14.94) | 101 | 42.08 |
| | High (>14.94) | 58 | 24.17 |
| | Mean=12.15 SD=6.56 | | |
| II | **Risk orientation** | | |
| | Low (<13.06) | 71 | 29.58 |
| | Medium (13.07 to 15.30) | 126 | 52.50 |
| | High (>15.30) | 43 | 17.92 |
| | Mean= 14.81 SD= 5.56 | | |
| III | **Organizational participation** | | |
| | Low (>1.99) | 92 | 38.33 |
| | Medium (2.00 to 4.23) | 110 | 45.83 |
| | High (>4.23) | 38 | 15.84 |
| | Mean= 3.11 SD= 2.64 | | |
| IV | **Extension contact** | | |
| | Low (< 9.37) | 81 | 33.75 |
| | Medium (9.38 to 18.71) | 105 | 43.75 |
| | High (> 18.71) | 54 | 22.50 |
| | Mean=12.15 SD=6.56 | | |
| V | **Mass media exposure** | | |
| | Low (< 10.31) | 86 | 35.84 |
| | Medium (10.32 to 13.33) | 106 | 44.16 |
| | High ( >13.33) | 48 | 20.00 |
| | Mean: 11.82 SD: 3.56 | | |

**Table 3. Distribution of crop insured farmers according to credit availed n=240**

| Sl. No | Loan availed | Frequency | Percentage |
|---|---|---|---|
| 1 | < 49000 | 95 | 39.58 |
| 2 | 49001-150000 | 64 | 26.67 |
| 3 | 150001-390000 | 28 | 11.66 |
| 4 | >390001 | 16 | 6.67 |
| **5** | **Loan not availed** | **37** | **15.42** |

which depends upon the personal, psychological, socio-economic characteristics and the resources possessed by him. Majority of respondents were middle aged, less education, medium land holdings, medium mass media exposure, medium extension contact and hence these factors might have contributed for medium risk orientation. The results are in conformity with the findings of Dange [21], Jyothi [13], Ranjan [14] and Chandrashekar [17].

**Organizational participation**

The data pertaining to organizational participation in Table 2 indicated that, nearly half percentage of the insured farmers (45.83%) belonged to medium category of organizational participation followed by low (38.33%) and high (15.84) category. The reason might be that, majority of the farmers were members of Raitha sangha, Youth club, village cooperative society, Gram panchayath and Taluk panchayath. The above trend was due to the fact that, the government encouragement for establishment of Raitha sangha and Youth clubs as the population of such people is huge in rural areas. The results are in line with the findings of Shraddha [7] Chikaire, et al. [15] and Sindhu [22].

**Credit availed**

The results in Table 3 depicted that, 39.58% of the insured farmers borrowed loan of less than Rs.49000 and few farmers (15.42%) have not availed loan from any financial institutions. This trend probably due to the fact that, majority of the insured farmers availed crop loan from Co-operative banks and Regional Rural Banks. Few farmers not availed loan from any financial institutes because they might have borrowed loan from their relatives, friends, neighbors and money lenders. The results are in accordance with the findings of Kharumnuid [23] Kumar, et al. [24] and Krantikumari [25].

**Cropping pattern**

The results in the Table 4 revealed that, in kharif season, majority of the insured farmers were growing cotton (67.50%), followed by green gram (59.58%), onion (48.33%), vegetables (47.92%), chilli (40.41%), soybean (38.33%), maize (25.42%), pigeon pea (20.00%), groundnut (17.08%) and other crops (9.16%). In rabi season, majority of the insured farmers (88.75%) were growing jowar, followed by chickpea (74.17%), wheat (27.92%) and other crops (7.92%). In summer season, about 10.00% of the insured farmers were growing soybean, 7.08% of them were growing maize, 4.58% of them were growing vegetables and only 3.33% of them were growing groundnut.

The possible reason might be that, the above mentioned crops are suitable to northern Karnataka agro climatic zones, high risk, capital intensive crops and at the same time the Government of Karnataka will notify the crops under Crop Insurance Scheme in the particular region, as a result majority of farmers have preferred insurance for these crops. Further, Cotton is a commercial crop and has assured marketing price. Hence, farmers might have switched over to this crop. Further, farmers cultivate Green gram, Jowar and chickpea as these crops are better suited under drought condition and also fetch good market price. Cropping pattern is largely determined by the soil, topography, rainfall, irrigation facilities and the infrastructure apart from demand and price factors relating to agriculture produce. The results are in conformity with the findings of Sabi [26] Shridevi [27], Veena [28] and Sushma [12].

**Extent of perception on climate variation**

The data presented in Table 5 indicated that, 51.25 % of the insured farmers belonged to high level of extent of perception on climate variation followed by medium (29.58%) and low (19.17) level. the Table 6 indicates that, majority of the insured farmers strongly agree to the statement of late onset of monsoon (65.00%) followed by occurrence of drought (59.17%), changes in time of sowing (56.67%), decrease in average rainfall (52.50%), uneven distribution of rainfall (46.67%), increased pest and diseases (48.75%) and decreased yield (35.83%). More than seventy % of the insured farmers disagree to the statement of reduced soil fertility (77.08%) and increased crop weed competition (70.83%).

The reasons might be that, farmers got sensitization on these climate variability conditions as they have direct bearing on the farming. The climatic parameters are in accordance with the general observations of meteorologists of the study area. The extent of climate variation is experienced everywhere and so the results. The results are in line with the findings of Krantikumari [25] and Chikaire, et al. [15].

**Table 4. Cropping pattern of crop insured farmers n=240**

| Sl. No. | Crops | Frequency | Percentage |
|---|---|---|---|
| | **Kharif** | | |
| 1 | Maize | 61 | 25.42 |
| 2 | Soyabean | 92 | 38.33 |
| 3 | Groundnut | 41 | 17.08 |
| 4 | Cotton | 162 | 67.50 |
| 5 | Green gram | 143 | 59.58 |
| 6 | Pegion pea | 48 | 20.00 |
| 7 | Onion | 116 | 48.33 |
| 8 | Chilli | 97 | 40.41 |
| 9 | Vegetables | 115 | 47.92 |
| 10 | Pearl millet | 36 | 15.00 |
| 11 | Other crops (Bajra, Cowpea, Sunflower) | 22 | 9.16 |
| | **Rabi Crops** | | |
| 12 | Chickpea | 178 | 74.17 |
| 13 | Jowar | 213 | 88.75 |
| 14 | Wheat | 67 | 27.92 |
| 15 | Other crops (Safflower, Sunflower) | 19 | 7.92 |
| | **Summer crops** | | |
| 16 | Maize | 17 | 7.08 |
| 17 | Groundnut | 8 | 3.33 |
| 18 | Soyabean | 23 | 9.58 |
| 19 | Vegetables | 11 | 4.58 |

**Multiple responses are obtained*

**Table 5. Distribution of crop insured farmers according to perception on extent of climate variation n=240**

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<15.71) | 46 | 19.17 |
| 2 | Medium (15.72 to 22.99) | 71 | 29.58 |
| 3 | High (> 22.99) | 123 | 51.25 |
| | Mean: 19.35 | SD: 8.56 | |

**Table 6. Extent of perception on climate variation n=240**

| S.I. No. | Item | Strongly agree | | Agree | | Disagree | |
|---|---|---|---|---|---|---|---|
| | | F | % | F | % | F | % |
| 1 | Decrease in average rainfall | 126 | 52.50 | 81 | 33.75 | 33 | 13.75 |
| 2 | Late onset of monsoon | 156 | 65.00 | 46 | 19.17 | 38 | 15.83 |
| 3 | Occurrence of drought | 142 | 59.17 | 81 | 33.75 | 17 | 7.08 |
| 4 | Uneven distribution of rainfall | 112 | 46.67 | 84 | 35.00 | 44 | 18.33 |
| 5 | Increased pest and diseases | 117 | 48.75 | 54 | 22.50 | 69 | 28.75 |
| 6 | Decrease in quality of products | 53 | 22.08 | 78 | 32.50 | 109 | 45.42 |
| 7 | Decreased yield | 86 | 35.83 | 85 | 35.42 | 69 | 28.75 |
| 8 | Increased crop weed competition | 24 | 10.00 | 46 | 19.17 | 170 | 70.83 |
| 9 | Changes in time of sowing | 136 | 56.67 | 92 | 38.33 | 12 | 5.00 |
| 10 | Reduced soil fertility | 38 | 15.83 | 17 | 7.09 | 185 | 77.08 |

## 4. CONCLUSION AND RECOMMENDATION

Majority of the farmers belonged to middle age, middle school education, not participated in training programms, medium annual income category, loan less than 49000 rupees, medium land holding category, medium farming experience, medium annual income category, medium level of extension contact, medium level of mass media exposure, medium scientific orientation, medium category of risk orientation,

medium category of organizational participation and had high perception on extent of climate variation.

Thus, concerned officers, policy makers, administrators and the agencies involved in crop insurance scheme should take into consideration above factors for improving the implementation of crop insurance scheme and devote their attention with regard to the recommendations from the present study as listed below: Encourage farmers to participate in training programmes, Awareness programmes should be conducted from time to time on crop insurance schemes by using different extension teaching methods like trainings, workshops, distribution of pamphlets, road shows, advertisement through television, newspaper, radio, mobile SMS. Emphasis should be given to the middle age group as they are likely to play a dominant role in decision making regarding Crop Insurance. Effort should be made to make more participate of these respondents in extension activities, organizational participation, avail institutional loan, take moderate risk in improved agricultural technologies, contact concern agricultural offices and use mass medias for latest agricultural information.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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