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Perceptional differences among small and marginal farmers on agricultural risks-a case study

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ABSTRACT

The study was carried out to find differences in the attitudes of the different categories of the farmers on different types of risks in order to assess their vulnerability to risks and their coping capacity to face risks. A survey was conducted in the Jabalpur district of the Indian state of Madhya Pradesh to ascertain the perceptions of the farmers to different types of risk involved in agriculture and an effort was made to determine whether these perceptions differ according to the land holding of the farmers. Results showed that there are differences in the coping capacity of the farmers based on their land holdings. This study will help the planners, government officials to have a relook at the management of risks for farmers by considering their land holding capacity as an important factor before implementation of any intervention. Of the many factors which affect the perceptions of farmers regarding risks in agriculture, the land holding of the farmer becomes a prominent one. New data has been generated and it modifies the existing theories regarding attitudes of farmers regarding risks.

KEYWORDS: Adaption, Agricultural risk, Farmer's category, Land holding, Risk perception

INTRODUCTION

Agriculture is largely a risky enterprise. In developing countries, it is the business in which the majority of the population is engaged. Climate variability is the cause of most of the stresses associated with agriculture. Risks are always associated with the practice of agriculture but due to climate change the increased frequency and intensity of adverse climatic events have increased the vulnerability to risk. But this vulnerability is not uniformly distributed among the farmers. Different categories of farmers cope up with these risks differently. In developing countries most of the farmers are small and marginal in terms of their land holdings. Farmers face a variety of risks under various categories like production, marketing, institutional, personal and financial risks and climate change has increased their vulnerability to all types of risks (Huirne, 2003). Holden and Shiferaw (2004), Harvey *et al.* (2014), Lazzaroni and Wagner (2016) discussed the simultaneous handling of these types of risks by the farmers. Different types of mechanistic and empirical studies have been carried out for specific kinds of risks (Just, 2003; Just & Pope, 2003; Marra *et al.*, 2003; Barrett *et al.*, 2010; Chavas *et al.*, 2010). A review of types of risks in agriculture has been provided by Komarek *et al.* (2020).

India's economy is predominantly based on agriculture. At the time of independence almost 75% of the GDP of India was attributed to agriculture and almost 80% of the workforce was involved in agriculture and agriculture-based industry. The scenario has changed now and the contribution of agriculture to GDP has reduced to almost 14% but almost 50% of the workforce is still dependent on agriculture and related activities. Agriculture in India is facing various challenges, but the most prominent of that is climate change. Recent studies on climate change, report of the IPCC (Eckstein *et al.*, 2021) also pointed out that India will be one of the major countries affected by climate change catastrophes like irregular rainfall, floods and droughts. India is ranked 7th in the top 10 most affected countries in 2019. Many studies have shown that for South Asia and especially for India things will get worse (Aryal *et al.*, 2020).

Indian farmers have been classified into small, marginal, medium, semi medium and large based on their land holdings, but the majority of Indian farmers are small and marginal. Among all the farmers this category of farmers is more prone to agricultural risks. The small and marginal are supposed to be more vulnerable to agricultural risks because of their less shock absorbing capacity (Bahinipatia & Venkatachalam, 2015). Big farmers usually have buffer stocks of agricultural products, so

one or two off years do not affect them adversely i.e., they can withstand the producer's risk. Big farmers have the option to sell their products to different markets, while the small and marginal farmers have to sell their products in local markets itself. They also have better negotiating capabilities with the government and other institutions and therefore can better adapt to sudden changes. Institutional interventions are more meaningful to small farmers in comparison to big farmers. Small and marginal farmers act as laborers in their own field and therefore personal risks are more prominent for them. Therefore, to prepare small marginal farmers to cope with climate related disasters it is very important to identify their attitude towards risks and to seek solutions specific to these categories of farmers. It will also be useful to study the extent and type of differences existing between the different categories of farmers with respect to risks and risk-mitigating behavior.

The various strategies adopted for coping with risks include on-farm and off-farm interventions. The impacts of risk, like climate change can be checked by enhancing the adaptive capacity of the agricultural system (Vermeulen *et al.*, 2012). The on-farm interventions for farmers originate from the agricultural research sector of the government. A few of the interventions are to use varieties which are more resilient to risks, to change the pattern of sowing with respect to changing patterns of climate. The off-farm interventions are the mainly due to the government and other organizations, these may include subsidies, insurance, minimum support prices for crops etc. But the success of these interventions depends upon the abilities of the farmers to take benefit from these. Large farmers are more likely to be benefitted from these. There are many surveys on farmer perception of risk sources (Angelucci & Conforti, 2010; Wauters *et al.*, 2014; Chand *et al.*, 2018; Ndem & Osondu, 2018; Quandt, 2021) but there are very few studies which investigate the difference between the attitudes of these categories of farmers on different types of risk. This kind of empirical studies can help the planners and government officials to plan better and to identify the shortcomings and lacunae in the present policies and can help them to devise novel category specific interventions which can help the farmers to cope with agricultural risk and climate change. Problems of different categories of farmers may be different and the mitigation and adaptation strategies should be categories specific. As small and marginal farmers form a substantial number any specific intervention for them will check the widespread effects of risks in agriculture. This study was conducted to investigate these differences towards risk and to assess their capacity to cope with these challenges.

MATERIAL AND METHODS

About the study area: Jabalpur is a district of Madhya Pradesh, a state located in the central part of India and it comes under Kymore Plateau and Satpura Hills Agro Climatic Zone (Zone-VII). Jabalpur is situated at an elevation of 412 m above sea level, between the latitude 22.828 to 23.614 and the longitude 79.350 to 80.584. The district has 1393 (1508 as per census 2011) villages and is spread over a 5,19,757 ha geographical area with an annual precipitation of 1358 mm, the district's climate is ideal for the successful production of oilseed, pulses, cereals, and horticultural crops. The highest temperature (40-43 °C) is in May, and the lowest temperature is in January (8-10 °C). Crops like Paddy, Soybean, Pigeon pea, Maize, Sesame in kharif and Wheat, Gram, Pea and Mustard in rabi are grown predominantly in the district.

The Jabalpur district is divided in seven administrative blocks. Statistical profile of Jabalpur and number of villages and gram panchayats come under each block are presented below serially in Table 1 and 2 (as per 2011 Census).

Sampling Design

We collected data from 296 farmers through the physical survey in this study from Jabalpur district.

1. In first stage 2 blocks namely Patan and Majholi out of 7 blocks of Jabalpur was selected randomly.
2. In the second stage 15 villages from each selected block (Patan and Majholi) were randomly selected.
3. In the third stage an average of 10 farmers from each selected village were randomly selected.
4. So finally 149 farmers from Patan and 147 farmer from Majholi block i.e. total 296 sample size of farmer from Jabalpur district is selected.
5. A digital questionnaire was developed in google form format and use to record the responses from all selected farmers during this physical sample survey.
6. The farmers were classified based on their land holdings into 5 categories (Table 3)
7. Data Analysis - Statistical Package for Social Sciences (SPSS) was used to analyze the data generated through the surveys. Data was collected for different social characteristics of the farmers. Questions were asked to ascertain the view of the farmers under the categories of risk orientation, economic, production, technological and institutional risks. Chi-square test was used to check the independence of the attributes among the different categories of the farmers and descriptive statistics were used for questions in which it was not significant.

RESULTS AND DISCUSSION

Risk Orientation of the Farmers

The detail of the questions on risk orientation has been given in the Table 4.

Table 1: Statistical Profile of Jabalpur District

District	No. of Blocks	No. of Tehsils	No. of Gram Panchayats	No. of Villages		Population	% Literacy
				Inhabited	Un-inhabited		
Jabalpur	07	07	542	1444	64	24,60,714	82.5

One of the ways suggested by scientists (Lin, 2011) has been to diversify the crops not only over space but also over time. It has been found that diversification improves the resilience of the agricultural system (Chivenge *et al.*, 2015)

Statement C1 was asked to ascertain the knowledge of farmers regarding their coping capacity and about measures which are needed to escape risks related to climate and others. The Chi-square test indicated that there was a difference in the attitudes of different categories of farmers (Table 5).

This question was asked to assess the coping capacity of farmers to risk by adopting diversification. Overall majority of farmers strongly agreed to the diversification (SA and A 83%) but the percentages of agreement differed across the category being highest for Large farmers (75) and lowest for marginal farmers that is 45%. The agreement percentage was lower in small and semi medium farmers also. There could be variety of reasons for this maybe a lack of awareness and knowledge, operational hindrances because of less land holding but this makes the small and marginal farmers more prone to disaster risks.

In statement C2 also the Chi-square test indicated that there was a difference in the attitudes of different categories of farmers (Table 6).

This question was asked to assess the risk-taking capacity of farmers i.e. their attitude towards risk whether they want to go for big profits or aim for low risk and low profit. Overall majority of farmers opted for low-risk low-profit regime (SA 34.8% and A 45.3%) but the percentages of agreement differed across the category highest for marginal farmers (52.3) and the lowest for medium farmers that is 22.4%. The agreement percentage was also higher as compared to large and medium farmers i.e. in small (42.9), semi medium (36.1) farmers. The expected answer to this statement was that more risk-tolerant farmers will choose the SDA option and will go for higher profits because of their capacity to withstand losses. The percentage of responses in SDA category was large (6.3%), Medium (11.8%), semi medium (5.6%), small (1.6%) and marginal (0%). This indicates that land holding capacity affects the risk-taking abilities of the farmer.

In statement C3 the Chi-square test was not significant, out of 296 farmers 39 SA, 100 A, 57 DA, 19 SDA and 81 were undecided, indicating that there was no difference in the attitudes of different categories of farmers (Table 7). The expected answer to this question was SA and A, but only 39 SA to the statement and even more surprising was the fact that 81 were undecided. There is almost 50-50 division of the farmers on this statement which indicates that farmers in general are not prepared to take risks.

In statement C4 also the Chi-square test indicated that there was a difference in the attitudes of different categories of farmers (Table 8). The answer to this question points out the risk adverse behavior of the farmers. Majority of the farmers (86.5%) SA to the statement with the maximum percentage (93.7) for small farmers.

In statement C5 the Chi-square test was not significant at 5% and 1% level of significance but at 11% level of significance there was difference in the attitudes of different categories of farmers. Out 296 farmers 64 SA, 89 A, 64 DA, 13 SDA and 14 were undecided (Table 9).

The expected answer to this question was option SDA because it indicates the capacity of the farmers to adopt innovations and novel ideas. The highest percentage of SDA was with Large farmers (25%) followed by medium (24.7), then semi medium (22.2), small (20.6) and minimum for marginal farmers (15.9). This makes the small marginal farmers more susceptible to different types of risk because of their inability to adapt to innovations and novel ideas.

Table 2: Statistical profile of each block of Jabalpur

Block	Area (Sq. km.)	Villages	Gram Panchayat
Sihora	492.68	151	60
Majholi	604.84	210	84
Patan	607.33	220	78
Shahpura	815.49	224	84
Panagar	464.58	210	80
Jabalpur	1170.22	240	88
Kundam	1042.43	189	68

Table 3: Classification of the farmers on the basis of land holding

S. No.	Category	Size-Class
	Marginal	Below 1.00 hectare
2	Small	1.00-2.00 hectare
3	Semi Medium	2.00-4.00 hectare
4	Medium	4.00-10.00 hectare
5	Large	10.00 hectare and above

Table 4: Results related to risk orientation of farmers

Q. No.	Detail	Chi-square Value	Asymptotic Significance (2-sided)	Contingency Coefficient
C1	To escape risks more types of crops should be grown	31.97	0.01	0.312
C2	Instead of going for big profits the farmer should aim for low risk and low profit	29.51	0.02	0.301
C3	An economically prosper farmer is the one who takes more risks in comparison to an average farmer.	16.34	0.43	0.23
C4	It is better to take risk if the probability of success is better.	33.78	0.006	0.32
C5	A farmer should not try some new technique until that has been proved successful on large scale.	23.06	0.11	0.27

Table 5: Responses to the question C1 (To escape risks more types of crops should be grown)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
C1						
A						
Count	6	13	23	14	16	72
% within LH	18.8%	29.5%	27.1%	19.4%	25.4%	24.3%
DA						
Count	2	10	4	16	6	38
% within LH	6.3%	22.7%	4.7%	22.2%	9.5%	12.8%
SA						
Count	24	20	56	37	37	174
% within LH	75.0%	45.5%	65.9%	51.4%	58.7%	58.8%
SDA						
Count	0	1	2	5	2	10
% within LH	0.0%	2.3%	2.4%	6.9%	3.2%	3.4%
UD						
Count	0	0	0	0	2	2
% within LH	0.0%	0.0%	0.0%	0.0%	3.2%	0.7%

Table 6: Responses to the question C2 (Instead of going for big profits the farmer should aim for low risk and low profit)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
C2						
A						
Count	18	18	39	32	27	134
% within LH	56.3%	40.9%	45.9%	44.4%	42.9%	45.3%
DA						
Count	4	2	8	6	6	26
% within LH	12.5%	4.5%	9.4%	8.3%	9.5%	8.8%
SA						
Count	8	23	19	26	27	103
% within LH	25.0%	52.3%	22.4%	36.1%	42.9%	34.8%
SDA						
Count	2	0	10	4	1	17
% within LH	6.3%	0.0%	11.8%	5.6%	1.6%	5.7%
UD						
Count	0	1	9	4	2	16
% within LH	0.0%	2.3%	10.6%	5.6%	3.2%	5.4%

Table 7: Responses to the question C3 (It is better to take risk if the probability of success is better)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
C3						
A						
Count	11	13	33	22	21	100
% within LH	34.4%	29.5%	38.8%	30.6%	33.3%	33.8%
DA						
Count	5	9	18	16	9	57
% within LH	15.6%	20.5%	21.2%	22.2%	14.3%	19.3%
SA						
Count	5	2	12	11	9	39
% within LH	15.6%	4.5%	14.1%	15.3%	14.3%	13.2%
SDA						
Count	4	7	6	3	5	19
% within LH	12.5%	21.9%	7.1%	4.2%	7.9%	6.4%
UD						
Count	7	19	16	20	19	81
% within LH	21.9%	43.2%	18.8%	27.8%	30.2%	27.4%

Table 8: Responses to the question C4 (It is better to take risk if the probability of success is better)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
C4						
A						
Count	4	7	6	6	2	25
% within LH	12.5%	15.9%	7.1%	8.3%	3.2%	8.4%
DA						
Count	0	1	1	2	2	6
% within LH	0.0%	2.3%	1.2%	2.8%	3.2%	2.0%
SA						
Count	23	35	76	63	59	256
% within LH	71.9%	79.5%	89.4%	87.5%	93.7%	86.5%
SDA						
Count	2	0	0	0	0	2
% within LH	6.3%	0.0%	0.0%	0.0%	0.0%	0.7%
UD						
Count	3	1	2	1	0	7
% within LH	9.4%	2.3%	2.4%	1.4%	0.0%	2.4%

Table 9: Responses to the question C5 (A farmer should not try some new technique until that has been proved successful on large scale)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
C5						
A						
Count	7	13	18	25	26	89
% within LH	21.9%	29.5%	21.2%	34.7%	41.3%	30.1%
DA						
Count	9	6	20	16	13	64
% within LH	28.1%	13.6%	23.5%	22.2%	20.6%	21.6%
SA						
Count	4	16	21	13	10	64
% within LH	12.5%	36.4%	24.7%	18.1%	15.9%	21.6%
SDA						
Count	8	7	21	16	13	65
% within LH	25.0%	15.9%	24.7%	22.2%	20.6%	22.0%
UD						
Count	4	2	5	2	1	14
% within LH	12.5%	4.5%	5.9%	2.8%	1.6%	4.7%

Perceptions with Respect to Economic Risks

The detail of the questions on economic risks has been given in the Table 10 and Figure 1.

In statement M1 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 142 SA, 118 A, 30 DA, 4 SDA and 2 were undecided.

In statement M2 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 197 SA, 90 A, 4 DA, 1 SDA and 4 were undecided.

In statement M3 the Chi-square test was not significant indicating that there was no difference in the attitudes of

Table 10: Results related to Economic Risks.

Q. No.	Detail	Chi-square Value	Asymptotic Significance (2-sided)	Contingency Coefficient
M1	Low prices of the agricultural produce	16.77	0.401	0.232
M2	High prices of the input (fertilizers, pesticides, etc.,)	12.18	0.73	0.199
M3	High prices of animals (Cow, Goat, etc.,)	13.43	0.86	0.208
M4	Low prices of animal Produce	22.836	0.118	0.268
M5	Unavailability of proper markets	11.852	0.754	0.196

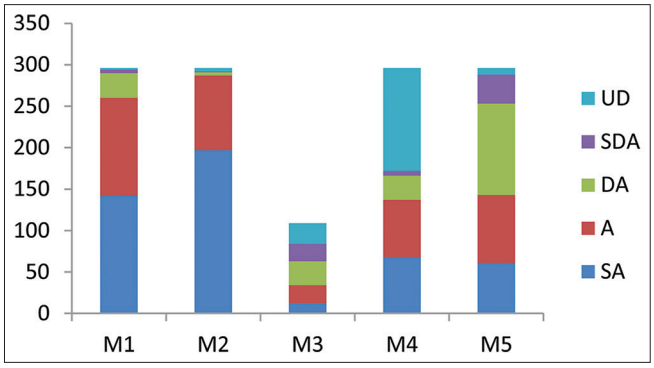

Figure 1: Response related to economic risks

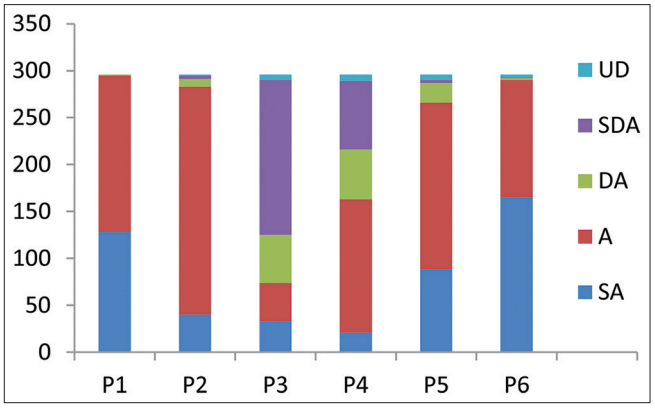

Figure 2: Responses related to production risks

different categories of farmers. Out 296 farmers 12 SA, 22 A, 29 DA, 21 SDA and 25 were undecided. The rest didn't participate in this statement.

In statement M4 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 68 SA, 69 A, 29 DA, 6 SDA and 124 were undecided.

In statement M5 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 61 SA, 82 A, 110 DA, 35 SDA and 8 were undecided.

In all these statements the responses of the farmers varied uniformly along the different categories indicating that the problems and risk related to marketing affected all the farmers uniformly. For statement M3 most of the farmers didn't replied which points out that they do not practice animal husbandry. For statement M4 p value was 0.12 signifying that there was some difference in the opinion of farmers for this particular aspect.

Perceptions with Respect to Production Risks

The details of the questions on production risk have been given in the Table 11 and Figure 2.

It is well known that variability in the climate causes maximum variation in production and incomes of the farmers (Osborne & Wheeler 2013; Ray *et al.*, 2015; Matiu *et al.*, 2017). There have been studies (Gupta *et al.*, 2017) which have shown that wheat yield has been substantially reduced in India. Apart from weather variables crop pest and disease also effects the production considerably (Deutsch *et al.*, 2018).

In statement P1 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 128 SA, 167 A, 1 DA which indicates the fact that almost all the farmers are affected by variability in the production despite of their land holding sizes.

In statement P2 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 40 SA, 243 A, 8 DA, 4 SDA and 1 UD pointing to the reason that irregular rainfall affects all the farmers.

In statement P3 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 33 SA, 41 A, 51 DA, 165 SDA and 6 UD. For this statement majority of the farmers disagree (51 DA and 165 SDA) indicating that excessive rainfall in not a major reason for production related risks.

In statement P4 the Chi-square test was not significant, out 296 farmers 21 SA, 142 A, 53 DA, 73 SDA and 7 UD indicating that there was no difference in the attitudes of different categories of farmers regarding less rainfall as a source of production risk.

In statement P5 the Chi-square test was not significant, out 296 farmers 165 SA, 125 A, 2 DA, 1 SDA and 3UD, indicating that there was no difference in the attitudes of different categories of farmers regarding fog as a source of production risk.

In statement P6 the Chi-square test was not significant at 5% level of significance but at 10 % the test was significant, out 296 farmers 169 SA, 116 A, 9 DA,1 SDA and 1UD indicating that there was difference in the attitudes of different categories

Table 11: Results related to production risks of farmers.

Q. No.	Detail	Chi-square Value	Asymptotic Significance (2-sided)	Contingency Coefficient
P 1	High variability in production	10.235	0.249	0.183
P2	Irregular rainfall	30.752	0.06	0.288
P3	Excessive Rainfall	26.85	0.526	0.288
P4	Less rainfall	17.665	0.344	0.344
P5	Fog etc	22.10	0.34	0.263
P6	Insects Pests infestation	39.741	0.07	0.344

Table 12: Results related to Technological Risks of farmers

Q. No.	Detail	Chi-square Value	Asymptotic Significance (2-sided)	Contingency Coefficient
T1	Scarcity of HYV and Good quality seeds	17.38	0.361	0.235
T2	Bad Quality of Pesticides, Insecticides and Weedicides	23.035	0.113	0.269
T3	Unavailability of Harvester and other machinery	27.005	0.041	0.289
T4	Non availability of irrigation technology and instruments	21.017	0.178	0.257

of farmers regarding insect pest infestation as a source of production risk

Similar to the marketing risk the responses of the farmers for production risks also varied uniformly along the different categories indicating that the problems and risk related to marketing affected all the farmers uniformly. For statement P2 p value was 0.06 and P7 it was 0.07, signifying that there was some difference in the opinion of farmers for this particular aspect i.e. effect of irregular rainfall and insect pest infestation.

Perceptions with Respect to Technological Risks

The detail of the questions on technological risks has been given in the Table 12 and Figure 3.

In statement T1 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 95 SA,73 A, 74 DA,48 SDA and 6 UD indicating that all farmers have equal access to HYV and good quality seeds.

In statement T2 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 98 SA, 74 A, 82 DA,32 SDA and 10 UD. Almost 172 farmers out of 296 agreed to the fact that bad quality of pesticides, insecticides and weedicides increases their technological risks.

In statement T3 the Chi-square test indicated that there was a difference in the attitudes of different categories of farmers (Table 13).

Agreement with statement T3 indicates that there is unavailability of farm machinery and category wise the problem is more prominent for marginal farmers (11.4%) then for semi medium (4.2), small (3.2), large (3.1) and medium (1.2). The survey clearly indicates that for farm machinery there exists a divide among the different categories.

Table 13: Responses to the question T3 (Unavailability of Harvester and other machinery)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
T3						
A						
Count	1	5	1	3	2	12
% within LH	3.1%	11.4%	1.2%	4.2%	3.2%	4.1%
DA						
Count	2	1	7	2	3	15
% within LH	6.3%	2.3%	8.2%	2.8%	4.8%	5.1%
SA						
Count	2	0	1	1	2	6
% within LH	6.3%	0.0%	1.2%	1.4%	3.2%	2.0%
SDA						
Count	23	36	72	66	55	252
% within LH	71.9%	81.8%	84.7%	91.7%	87.3%	85.1%
UD						
Count	4	2	4	0	1	11
% within LH	12.5%	4.5%	4.7%	0.0%	1.6%	3.7%

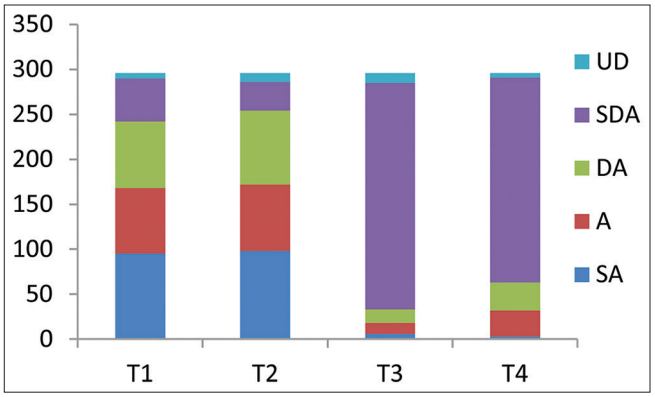

Figure 3: Responses related to technological risks

In statement T4 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 3 SA, 29 A, 31 DA, 228 SDA and 5 UD. Almost all the farmers disagree with

Table 14: Results related to Institutional Risks of farmers

Q. No.	Detail	Chi-square Value	Asymptotic Significance (2-sided)	Contingency Coefficient
I1	Unavailability of Right amount of Fertilizers at right time	22.162	0.138	0.264
I2	Nonpayment of bonus and late payment of MSP	26.575	0.046	0.287
I3	Confiscation of Credit cards or bank accounts	24.228	0.085	0.275
I4	Un expected changes in policy matters	13.615	0.627	0.210
I5	Nonpayment of insurance dues	39.897	0.001	0.345

Table 15: Responses to the question I2 (Nonpayment of bonus and late payment of MSP)

	LH					Total
	Large	Marginal	Medium	Semi medium	Small	
I2						
A						
Count	20	28	60	41	38	187
% within LH	62.5%	63.6%	70.6%	56.9%	60.3%	63.2%
DA						
Count	7	3	6	6	6	28
% within LH	21.9%	6.8%	7.1%	8.3%	9.5%	9.5%
SA						
Count	3	5	15	15	15	53
% within LH	9.4%	11.4%	17.6%	20.8%	23.8%	17.9%
SDA						
Count	1	0	2	3	0	6
% within LH	3.1%	0.0%	2.4%	4.2%	0.0%	2.0%
UD						
Count	1	8	2	7	4	22
% within LH	3.1%	18.2%	2.4%	9.7%	6.3%	7.4%

this statement pointing that there are no measure issues as far as irrigation is considered.

Perceptions with Respect to Institutional Risks

The detail of the questions on Institutional Risks has been given in the Table 14 and Figure 4.

In statement I1 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 120 SA, 114 A, 41 DA, 10 SDA and 11 UD.

In statement I2 the Chi-square test indicated that there was a difference in the attitudes of different categories of farmers Out 296 farmers 53 SA,187 A, 28 DA, 6 SDA and 22 UD (Table 15). Among the farmers having strong agreement with the statement, most were belonging to the categories of medium, semi medium, small and marginal farmers.

In statement I3 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 8 SA, 14 A, 18 DA, 232 SDA and 24 UD. In statement I4 the Chi-square test was not significant indicating that there was no difference in the attitudes of different categories of farmers. Out 296 farmers 48 SA, 87 A, 73 DA, 71 SDA and 17 UD. In statement I5 the Chi-square test was significant indicating that there were differences in the attitudes of different categories of farmers. Out 296 farmers 255 SA, 16 A, 4 DA, 10 SDA and 11 UD.

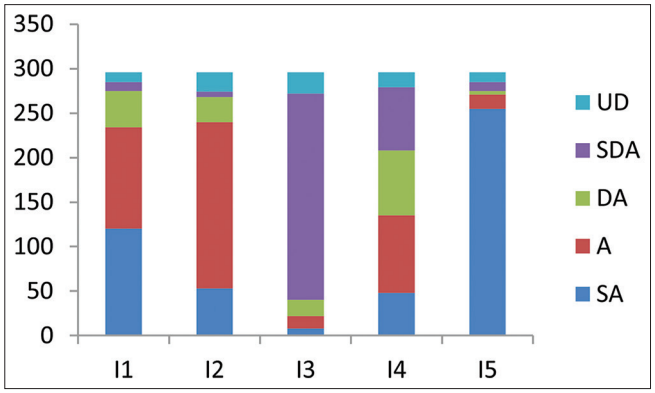

Figure 4: Responses related to Institutional Risks

Under the category of institutional risks there were two statements I2 (Nonpayment of bonus and late payment of MSP and I5 (nonpayment of insurance dues) on which the farmers had difference of opinion based on their land holdings

CONCLUSION

The study was carried out to find differences in the attitudes of the different categories of farmers on different types of risks in order to assess their vulnerability to risks and their coping capacity to face risks. It was found that indeed there were differences in the attitudes of the different categories of the farmers especially for statement regarding their risk coping capacity (statements C1 to C5). For economic, production, technological and institutional risks there were less differences among the different categories of the farmers but on few aspects, they differed like for some institutional risks. This study will help the planners, government officials to have a relook at the management of risks for farmers by considering their land holding capacity as an important factor before implementation of any intervention.

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