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Study of personnel traits of farmers towards weather forecasting advisory services in north eastern plain zone of Uttar Pradesh

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Abstract
The study was conducted in the purposively selected eastern region of Uttar Pradesh. The primary data was collected from 300 farmers following the personnel interview method. Three district namely Balrampur, Beharaich and Shravasti were selected for the study. From each district 2 block and 50 respondents were selected randomly from each of the block. The personnel traits of farmers were measured by developing standardized structure schedule on the basis of personnel information. The study indicated, that majority of farmers were middle aged and literate including formal and informal education. Maximum numbers of farmers were married. Other backward caste farmers were found dominantly. Majority of joint family system were found in existence having 5 to 8 members in their families. Maximum members were marginal farmers and most of the farmers have cultivated land. Members were found such who had medium annual income. They had annual income between Rs. 85000 to Rs. 250000. Maximum members have medium level of material possession. The majority of members were have no participation in any organization. The scientific orientation and were observed medium levels.

Keywords: Personnel traits, socio-economic condition, material possession, social participation

Introduction
Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity." (IPCC, 2014, Climate Change 2014: Synthesis Report. Climate change is one of the most important global environmental challenges with implications for food production. For India, the IPCC predicts 10-40 percent loss in crop production by the year 2080-2100. Increased heat stress associated with global climate change may, however, cause distress to dairy animals and possibly impact milk production. Dairy sector may lose 1.8 million tons of milk by 2020 due to climate stresses in different parts of the country. Climate change can have significant impacts on agriculture, which is a sector highly dependent on weather patterns, soil quality, and water availability.

Forecasting is the process of making statements about events whose actual outcomes (typically) have not yet been observed. A commonplace example might be estimation of some variable of interest at some specified future date. Prediction is a similar, but more general term. Both might refer to formal statistical methods employing time series, cross-sectional, or longitudinal data, or alternatively to less formal judgmental methods. Usage can differ between areas of application: for example, in hydrology, the terms 'forecast' and 'forecasting' are sometimes reserved for estimates of values at certain specific future times, while the term 'prediction' is used for more general estimates, such as the number of times floods will occur over a long period." (International Institute of Forecasters) or Forecasting is the process of making predictions or estimates about future events, conditions, or trends based on past and present data and analysis.

It is a critical tool for businesses, governments, and individuals to plan and make informed decisions about the future. There are many techniques and methods used in forecasting, including statistical models, machine learning algorithms, time series analysis, and expert judgment. The choice of method depends on the nature of the data, the time horizon of the forecast, and the level of accuracy required. Some common applications of forecasting include predicting future sales, demand for products or services, stock prices, economic trends, weather patterns, and population growth. Accurate forecasting can help businesses and organizations optimize operations, allocate resources more efficiently, and improve decision-making.

In the context of weather forecasting, advisory services provide information, guidance, and recommendations to individuals or organizations on weather-related issues. In the case of agriculture, weather forecasting advisory services provide farmers with information on weather patterns, potential weather-related risks, and recommendations on farming practices to minimize risks and maximize yields. These services may also provide recommendations on the optimal timing of planting, fertilizing, and harvesting crops, as well as guidance on water and resource management.

Research methodology

The study was conducted during the year 2022-2023 in North Eastern plain Zone of Uttar- Pradesh. The study was conducted in the purposively selected eastern region of uttar pradesh. The primary data was collected from 300 farmers following the personnel interview method. Three district namely Balrampur, Beharaich and Shravasti were selected for the study. From each district 2 block and 50 respondents were selected randomly from each of the block. The personnel traits of farmers were measured by developing standardized structure schedule on the basis of personnel information. Considering the mentioned objective of the study, behavioural dimensions of farmers were operationalized. The analysis was done using percentage, mean, and standard deviation for drawing the inferences.

Results and Discussion

The distribution of respondents is on the basis of differential information possessed by them and it was calculated by working out Arithmetic Mean, Standard Deviation, Percentage, Minimum and Maximum.

Table 1: Distribution of respondents according to their socio-economic condition

Variables	Respondents	
	f	%
1. Age		
Young Age	68	22.7
Middle Age	133	44.3
Old Age	99	33.0
2. Education		
Illiterate	51	17.00
Can Read and Write	46	15.30
Primary	43	14.30
Middle	25	8.30
High School	57	19.00
Intermediate	49	16.30
Graduate/Post Graduate	29	9.70
3. Caste		
General	101	33.70
OBC (Other Backward Caste)	159	53.0 0
SC (Schedule Caste)	40	13.30
4. Marital Status		
Married	253	84.3
Unmarried	41	13.7
Other specific (widow, Divorced)	6	2.0
5. Pattern of Land Utilization		
Cultivated Land	178	59.3
Uncultivated Land	46	15.3
Pond	19	6.3
Barren Land	17	5.7
Others	40	13.3
6. Land Holding		
Marginal Farmers (up to 1 ha.)	175	58.3
Small farmers (1.01 to 2.00 ha.)	61	20.3
Medium Farmers (2.01 to 3.00 ha.)	38	12.7
Large farmers (above to 4 ha.)	26	8.7
7. Family Type		
Nuclear Family	106	35.30
Joint Family	194	64.70
7. Size of Family		
Small family	73	24.3
Medium family	149	49.7
Large family	78	26.0
8. Occupation		
Labour	33	11.0

Caste based Occupation	22	7.3
Business	34	11.3
Independent occupation	25	8.3
Services	28	9.3
Farming	139	46.3
Services + Farming	19	6.3
9. Annual Income		
Low (Up to Rs.1,20000)	89	29.7
Medium (Rs. 1,20000 to 2.63000)	145	48.3
High (Above Rs. 2.63001)	66	22.0
10. Social Participation		
No participation	107	35.7
Member in one organization	90	30.0
Member of two organization	59	19.7
Member of more than two organization	23	7.7
Office bearer	21	7.0
11. Farm Power Possession		
Tractor	36	12.00
Power tillers	14	4.66
Electric motor	46	15.34
Pumping set	168	56.00
Harrow	9	3.00
Rotavator	30	10.00
12. Farm Implements Materials		
Cultivator	36	12.00
Seed drill	14	4.67
Thresher	17	5.67
Winnower	12	4.00
Chaff cutter	271	90.34
Disc Plough	29	9.34
Pata	25	8.34
Sprayer	43	14.34
Spade	300	100
Sickle	300	100
Khurpi	300	100
13. Transportation Material Possession		
Car	11	3,67
Pick up	7	2.34
Trolley	35	11.67
Bike/scooter	205	68.34
Cycle	239	79.67
E - Rickshaw	24	7.67
Tempo	6	2.00
14. House Hold Material Possession		
Bed	53	17.67
Dining Table	14	4.67
Gas cylinder	208	69.34
Electric press	83	26.34
Pressure cooker	184	61.34
Wall watch	190	63.34
Fan	213	71.00
Solar light	8	2.67
Heater	55	18.34
Cooler	40	13.34
Chair	246	82.00
15. Communication Media Possession		
Radio	66	22.00
T.V.	97	32.34
D.T.H.	95	31.67
Mobile Phone	300	100
Newspaper	37	12.34
Computer	11	3.67
Internet	276	92.00
Panchang	41	13.67
News Bulletins	46	15.34
Farm Magazines / Journals	9	3.00
16. Overall Materials Possession		
Low (up to 16)	128	42.66
Medium (17 to 25)	109	36.34

High (26 and above)	63	21.00
17. Scientific orientation		
Low (less than 12)	48	16
Medium (12 - 14)	148	49.3
High (more than 14)	104	34.67

Age
Table 1 Reveals that out of total respondents 44.3 per cent were belonged to Middle age group followed by 33.0 per cent belonged to Old age and 22.7 per cent were found in Young age group. It is evident from the table that the majority of the respondents belonged to the middle age group (44.3per cent) whereas least number came under Young age group (22.7per cent). Usually, farmers of middle aged are enthusiastic having more responsibility and were found more efficient than the younger and older ones. The mean of the respondents age is 47.53, The Standard Deviation of the respondents age is 12.43, The Minimum age of the farmer is 25 and the maximum age is 78.

Education
Table 1 Reveals that It is clear from the data presented in table 1 that 19 per cent farmers had their education up to high school level fallowed by 17.00 per cent farmers were found illiterate, 16.30 per cent farmers had intermediate level, 15 percent farmers can read and write only, 9.70 percent farmers had passed graduation and above degree and 8.30 percent found middle level of education respectively.

Caste
The table 1 reveals that majority of Farmers i.e., 53 per cent belonged to OBC group among the total selected farmers followed by 33.7 per cent from UR group and 13.3 per cent from SC group but none of the respondents were from ST group.

Family Type
The data from the above table depicted that majority i.e., 64.70 per cent of the Farmers belonged to joint family followed by 35.30 per cent who were belonged to nuclear family.

Family Size
The above table 1 clearly reveals that majority of respondents i.e., 49.7 percent belonged to medium size among the total selected farmers followed by 24.3 per cent of the respondents belonged to small size and 26.0 per cent belong to large family respectively.

Marital Status
Table 1 Reveals that out of total farmers 84.3 per cent were Married fallowed by 13.7 percent are Unmarried and 2.0 percent are other specific (Widowed, Divorced).

Land holding
Table 1 It is observed that, among the farmers the majority of them belonged to marginal farmers i.e., 58.30 per cent followed by small farmers (20.3 per cent), and medium farmers were 12.7per cent and 8.7 percent are large farmer respectively. It is clear from the table that more than two-third of respondents were small and marginal farmers.

Occupation
The above table 1 clearly reveals that majority of respondents were from Farming only i.e., 46.30 per cent followed by business (11.3 per cent), 11.00 percent are labour, 9.3 percent people are in service, 8.3 percent farmer have independent occupation 7.3% are doing his cost occupation and 6.3 per cent engaged in farming with business and services.

Social participation
The above table 1 clearly show that majority of respondents were have No participation in any organization or community i.e., 35.7 per cent followed by Member in one organization (30.00 per cent), 19.70 percent are have Member of two organization, 7.7 percent farmer are Member of more than two organization and 7.0 percent farmers are office bearer respectively.

Pattern of Land Utilization
The above table 1 Clearly reveals that majority of respondents were have Cultivated land only i.e., 59.30 per cent followed by uncultivated land (15.30 per cent), 13.30 percent are used for other purpose, 6.3percent land are pond and 5.7 percent land are Barren land in which is not able to cultivation of crops respectively.

Annual Family Income
Table 1 Reveal that majority of the respondents (48.30%) belonged to medium annual income group i.e., they had annual income between Rs. 85000 to Rs. 250000 fallowed by 29.7 per cent of the respondents belonged to low annual income (up to Rs 85000) group 22.00 per cent of the respondents belonged to high income group respectively. Mean of the family income of the respondents is 1.9200, and the Standard Deviation of the respondents is .71786, The Minimum family income is 23,000 and the Maximum family income is 3,47000.

Farm Power
From the table 1 it was calculated that fifty six percent farmers have pumping set fallowed by fifteen-point three four percent farmers have electric motor, twelve percent farmers have Tractor, and ten percent farmers have rotavator respectively. Only four-point six percent farmers have power tillers and three percent farmers have harrow respectively.

Farm Implements Materials
It was revealed that from the table 1 hundred percent farmers have Khurpi, spade and sickle fallowed by ninety-point three four percent farmers have Chaff cutter, fourteen-point three four percent farmers have Sprayer and twelve percent farmer have cultivator respectively.
It is also revealed that from the table nine-point three four percent farmer have disc plough fallowed by eight-point three four percent farmer have pata, five-point six seven percent farmer have thresher, four-point six seven percent farmer have seed drill and only four percent farmers have Winnower respectively.

Transportation Material Possession
It was revealed that from the table 1 most of the farmers have cycle that is sixty-eight point three four fallowed by bike/ scooter that is seventy-nine point six seven and tractor trolley that is eleven-point six seven percent respectively. It was also revealed that six-point six seven percent farmers have e-

rickshaw fallowed by three-point six seven percent farmer have a car, two point three four farmers have pick up and only two percent farmers have tempo respectively.

House Hold Materials Possession

It was revealed that from the table 1 most of the respondent have chair that is eighty two percent fallowed by seventy one percent respondent have fan, sixty-nine point three four farmers have gas cylinder, sixty-three-point three four percent farmer have wall watch and sixty-one-point three four percent farmer have pressure cooker respectively. It was also revealed that eighteen-point three four percent respondent have heater fallowed by seventeen-point six seven percent respondent have bed, thirteen-point three four percent farmer have cooler, four point six seven respondent have a dining table only two-point six seven percent respondent have a solar light respectively.

Communication Media Possession

It was revealed from the table 1 most of the farmer have internet that is ninety two percent fallowed by thirty-two-point three four percent farmer have T.V., thirty-one-point six seven percent farmer have D.T.H (Direct to home), twenty two percent respondent have radio, fifteen-point three four percent respondent have news bulletins and thirteen-point six seven percent farmer have Panchang respectively. It was also revealed that only twelve-point three four percent respondents have newspaper fallowed by three-point six seven percent farmer have computer and three percent farmer have Farm Magazines / Journals respectively.

Overall Materials Possession

From the table 1 was revealed that most of the respondent have low level of material possession that is 42.66 percent fallowed by middle level material possession that is thirty-six point three four and only twenty one percent farmers have high level of material possession.

Scientific orientation

With respect to scientific orientation of the respondents, it was observed from the Table 1 that 49.3per cent of the beneficiary farmers had medium level of scientific orientation, while 34.67per cent of the respondents had high level of scientific orientation followed by low scientific orientation (16%).

Conclusion

Study focuses on socio-economic status of farmers. The study indicated, that majority of farmers were middle aged and literate including formal and informal education. Maximum numbers of farmers were married. Other backward caste farmers were found dominantly. Majority of joint family system were found in existence having 5 to 8 members in their families. Maximum members were marginal farmers and most of the farmers have cultivated land. Members were found such who had medium annual income. They had annual income between Rs. 85000 to Rs. 250000. Maximum members have medium level of material possession. The majority of members were have no participation in any organization. The scientific orientation and were observed medium levels.

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