Association of socio-economic profile of farmers with perception towards soil health card in SurajpurDistrict(C.G.)

Abstract:

Soil ~~test based~~test-based nutrient management has emerged as a key issue in efforts to increase agricultural productivity and production. The optimal use of nutrients, based on soil analysis, can improve crop productivity and minimize nutrient waste, thus minimizing the impact on the environment. The study was conducted in the Surajpur District of Chhattisgarh, with120respondents. The finding indicated that ~~majority of~~mostfarmers had a high perception level 40~~precent~~ percentfollowed by a medium35~~precent~~percentandonly 25~~precent~~percent~~farmer~~farmershada lowperception level. Education, Farming experience, land holding, Annual Income, Extension Contact, Mass Media Exposure, Scientific Orientation, and Innovativeness were significantly related, and age, Occupation,and social participation were found nonsignificantly relationship with perception level.

Keywords: *Soil ~~thealth~~healthcard,perception level.*

Introduction-

The greatest number of ~~the~~ rural people will remain engaged in agriculture as their primary occupation for a very long time. While we have implemented the Green Revolution, the nation's expanding population ~~need~~ needseven greater efforts in the areas of research, education, and extension. Because there are so many productive technologies accessible across the nation, it is crucial for extension agents to understand how farmers feel about the technologies before they are adopted.Nutrient imbalance in the soil, excessive fertilisation, soil pollution, and processes that lead to soil loss are all factors that have a negative impact on the health and quality of the soil. Although the producing function of soil has long been understood, it has only recently become important to preserve and improve the ecological services that soil provides.Soil health card is a printed report that will be given to a farmer for each of his holdingsıIt will show his soil's status according to 12 parameters: N, P, K (macronutrients), and S (secondary nutrients), Zn, Fe, Cu, Mn, and Bo are micronutrients and pH, EC andOC (Physical parameters). Based on this, the SHC will also recommend fertilizers and soil amendments that the farm needs.The Soil Health Card will provide a suggestion on the recommended dosage of various nutrients depending on the soil nutrient status of the farmer's holding. Soil health card is one of the most crucial approaches in agriculture because it is essential for sustainable production.

Comment [MS1]: What does it mean? Years? Confine the time

Comment [MS2]: Who?

Comment [MS3]: What extension?

Comment [MS4]: Need references. What type of productive technologies? Include name? Their advantages and disadvantages

Comment [MS5]: What does it mean? What kind of nutrients?

Comment [MS6]: How does nutrient pollute the soil?

Comment [MS7]: State clearly what it means. Add references for the statement.

Comment [MS8]: State what is soil health card.

Comment [MS9]: When an abbreviation is used 1st time it is essential to mention it in full name.

Methodology-

The study was carried out in Surajpur district (C.G.),2022-23.There are six total blocks in the Surajpur district. Out ofwhich, 2 blocks were purposely selected. From eachblock, 4 villages, a total of 8 villages were selected.From each village, 15 farmers total of 120 respondentspurposely selected. The researcher personally gathered the data using a

structured and personal interview schedule.Analyse and understand the data, percentages, frequency, and correlation coefficient were used.

Result and Discussion: -

Table no. 1 Distribution of respondents according to the ~~Level~~level ofperceptionoffarmersaboutsoilhealth~~card~~cards.(n=120)

S. No.	Parameters	A		UD		DA	
		F	%	F	%	F	%
1	Soiltestresultsgivethesoilhealthinformation.	59	49.17	39	32.50	22	18.33
2	SHCrecommendationhelpsin scientificfarming	45	37.50	48	40	27	22.50
3	Soilfertilityincreasesthe crop productionandproductivity.	68	56.67	34	28.33	18	15.00
4	Quantityoffertilizercanbeeasily calculatedbyusingSHC	41	34.16	47	39.17	32	26.67
5	SHC reduces the excess coston fertilizersandnutrients	47	39.17	41	34.16	32	26.67
6	Soil test result is not usefulforconvertingfallowlandtocultivableland	45	37.50	43	35.83	32	26.67
7	Therequiredquantityofmacroandmicronutrients canbeappliedbysoil testresults.	12	10.00	38	31.67	70	58.33
8	SecondarynutrientgivenintheSHCisnotmuchusefultofarmers.	59	73.75	16	20.00	5	6.25
9	Amendments are useforsoilreclamation.	41	34.17	39	32.50	40	33.33
10	SHChelpsustoestablishcoordinationamongfarmers,extensionworkersandscientists.	57	47.50	40	33.33	23	19.17
11	SHCgivescropwiserecommendationoffertilizers&nutrients	23	19.17	59	49.16	38	31.67
12	Soildegradationcannotbereduced fromsoil testresults	42	35.00	42	35.00	36	30.00
13	Soiltestingshould bedoneeveryyear	41	34.17	39	32.50	40	33.33
14	SHC information helps to adoptsuitablecropplan.	42	35.00	38	31.67	40	33.33
15	SoilpHgivesacidity&alkalinityofsoil.	36	45	27	33.75	17	21.25
16	Soiltestresultdoesnotgiveideatochoosetheincomegenerating crops.	69	57.50	34	28.33	17	14.17
17	Salinitythesoilisknownbyelectricalconductivity(EC)value.	22	18.33	51	42.50	47	39.17
18	Farmers cannot achieveeconomicstability by SHC	68	56.67	30	25.00	22	18.33
19	Basedonsoiltestresultsfarmerscanplanthefutureoftheircropsaswellasland.	58	48.33	44	36.67	18	15.00
20	SHCisnotnecessaryforpracticingAgriculture	39	32.50	43	35.83	38	31.67

Comment [MS10]: What is UD, A, DA?

Table 1. indicated that the majority 49.17 ~~per cent~~percent(%)percent of the respondents had agreed with the statement that soil health ~~card~~ cardscan be obtained after the soil sample testing,followed by 32.50 per undecided and 18.33 ~~per cent~~percent(%)percent had disagreed with the statement.Most ~~of farmer~~farmers40 ~~percent~~percent(%)percent undecided with the statement that farming cannot be done inscientific ways by using soil health card information, followed by the 37.50 ~~per cent~~percent(%) agreed and 22.50 ~~per cent~~percent(%)~~had~~haddisagreed. More than half 56.67 ~~per cent~~percent(%)percent agreed with the statement that SHC help to maintain soil fertility andproductivity, followed by 28.33 ~~per cent~~percent(%)percent undecided and 15.00 ~~percent~~percent(%)percent had disagreed.~~Majority~~ The majorityof ~~farmer~~ farmers39.17 ~~per cent~~percent(%)percent had undecidedwith the statement that SHC provides information about the current fertility status of soil,followed by the majority 34.16 ~~per cent~~percent(%)percent agreed and 26.67 ~~percent~~percent(%)percenthaddisagreed. Most of the farmers 42.20 ~~per cent~~percent(%)percentundecided withthe statementthatSHCreduces the excess cost on fertilizers & nutrient,followedby 39.17~~percent~~percent(%)percentagreed and 18.33 ~~percent~~percent(%)~~had~~disagreed with thestatement.~~Majority~~ The majorityof farmer 37.50 ~~per cent~~percent(%)agreedwiththe statementthat soil test ~~result~~ resultsnot useful for converting fallow land,followedby 35.83~~percent~~percent(%)undecided and26.67~~percent~~percent(%)disagreed. Majority of farmer 58.33 ~~per cent~~percent(%)percentdisagreedwiththe statementthat quantity of macro and micronutrient applied soil test, followed by 31.67 ~~per cent~~percent(%)undecidedand 10~~per cent~~percent(%) agreed. Most of farmers 49.7 ~~per cent~~percent(%) agreedwithstatementthatsecondary nutrient not much useful to farmersfollowedby 35.33~~percent~~percent(%)undecidedand15~~percent~~percent(%)disagreed. Out of total farmers 34.17 ~~per cent~~percent(%) agreedwithstatementthat amendments are used for soil reclamation,followedby33.33~~percent~~percent(%)disagreedand 32.50 ~~percent~~percent(%)undecided. Majority of farmers 47.50 ~~per cent~~percent(%) agreedwithstatementthatSHChelptoestablish,coordinationamongfarmers,~~extensionworker~~extensionwkandexperts,followedby 33.33~~percent~~percent(%)had undecidedand19.17~~percent~~percent(%)disagree. Most of farmers 49.16 ~~per cent~~percent(%) had undecided withstatementthatSHCgives cropamountoffertilizertobeapplied,followed by 31.67 ~~per cent~~percent(%) disagreed, 19.17 ~~per cent~~percent(%) undecided and 5.83 ~~per cent~~percent(%)disagreewith the.35.00 ~~per cent~~percent(%) of the respondents hadagreed& undecided withstatementthatSHCgivesinformationaboutamountoffertilizertobeapplied,followed by 30.00 ~~per cent~~percent(%) disagreed. Majority of farmer 34.17~~percent~~percent(%)oftherespondentshadagreed with statement that soil testing should by every year, followed by 33.33 ~~per cent~~percent(%) disagreedand 32.50 ~~percent~~percent(%) undecided with thestatement. Most of farmer 35.00 ~~per cent~~percent(%)of therespondents hadagreedwithstatementthat information helps to adopt suitable crop plan giveninSHC,followedby33.33~~percent~~percent(%)ofthesoilhealthcardholdershad disagreedand31.67percentofthe soilhealth cardholdershad undecided with thestatement. Mostly farmer 45 ~~per cent~~percent(%)oftherespondents hadagreedwithstatementthatAcidity,alkalinity ofthesoilscanbeknownwiththehelpofSHCinformation,followedby 33.75 ~~percent~~percent(%)had

undecided and21.25~~percent~~percent(%)disagreed. Majority of farmer 57.50~~percent~~percent(%)agreedwithstatementthatSoil test result doesn't choose the income generating crop,followedby 28.33 ~~per cent~~percent(%) had undecided and 14.17 ~~per cent~~percent(%) disagreed.Most of farmer42.50~~percent~~percent(%)oftherespondentshad undecidedwithstatementthatSoil is known by EC value,followedby 39.17 ~~per cent~~percent(%) of the soil health card holders had disagreed and 18.33 ~~per cent~~percent(%) of the soil health cardholdershad agreed with the statement. Most of farmer 56.67~~percent~~percent(%)agreedwithstatementthatcannot achieve economic stability by SHC,followedby 25.00 ~~per cent~~percent(%) had undecided and 18.33 ~~per cent~~percent(%) disagreed.Majority of farmers 48.33percent had agreedwithstatementthat farmers canplan future their crops as well as land,followedby 36.67 ~~per cent~~percent(%) undecided and 15.00 ~~per cent~~percent(%)disagreed. in this table shows majority of farmer 40.00~~percent~~percent(%)oftherespondentshad agreedwithstatementthatgive a clear idea nutrient the soil is lacking,followedby 37.50 ~~per cent~~percent(%) undecided and 22.50 ~~per cent~~percent(%) of ~~the~~ soil health cardholdershad disagreed with the statement.

Table no. 2. Respondents were divided into groups based on their perception level. (n=120)

S. No.	Category	Frequency	Percentage
1	Low perception level (Up to 20~~score~~scores)	30	25.00
2	Medium perception level (21 to 40 scores)	42	35.00
3	High perception level (Above 40 scores)	48	40.00
	Total	120	100.00

Comment [MS11]: What is this frequency? Any unit?

To measure the perceived perception level of ~~farmer~~farmerswere asked to rate the agreement on a three-point continuum i.e., low perception level,medium perception leveland high perception level.Table no.2 ~~evince~~ revealsthat the maximum number of ~~respondent~~ respondents'40 percent were having high perception level followed by a medium perception levelof 35percent and only 25percentof respondents had a lowperception level.

Table no. 3. Association between the socio-economic profile of ~~farmer~~farmersand their perception level.

S.No.	Characteristics	Correlation coefficient
1	Age	0.108^{NS}
2	Education	0.216*
3	Farming Experience	0.229*
4	Land Holding	0.300^{**}
5	Occupation	0.095^{NS}
6	Annual income	0.434**
7	Social Participation	0.084^{NS}
8	Extension Contact	0.261**
9	Mass Media Exposure	0.232*

Comment [MS12]: Show how to get this coefficient.

10	Scientific Orientation	0.655**
11	Innovativeness	0.229*

*~~Indicate~~ indicatesthat .05% level of significance
**~~Indicate~~ indicatesthat .01% level of significance
NS~~Indicate~~ indicatesthat non-significant

Table No.3.concluded that the correlation of all the selected independent variables with perception of SHC showed non-significant with age (0.108^{NS}), Occupation (0.095^{NS}), social participation (0.084^{NS}) However, Education (0.216*), Farming experience (0.229*) , land holding (0.300**), Annual Income (0.434**), Extension Contact (0.261**), Mass Media Exposure (0.232*), Scientific Orientation (0.65**) and Innovativeness (0.229*) depicts positive significant correlation.

Conclusions: -

It wasconcluded that~~,~~Education, Farming experience, land holding, Annual Income, Extension Contact, Mass Media Exposure, Scientific Orientation, and Innovativeness were significantly related and age, Occupation,and social participation were found nona significantly relationship with perception level. Among perception level, most of ~~respondent~~ respondentshad high perception ~~level~~ levelstowards soil health ~~card~~cards.

Comment [MS13]: Need to rewrite the conclusion. This is not an adequate conclusion.

References:

1.Kaur S., Kaur P. and Kumar P. (2020) Farmers Knowledge of Soil Health Card and Constraints in its use. *Indian Journal of Extension education.*vol.56(1), 28-32.

2.Mukati, A., Bisht K., Singh S.P., &Raghuwanshi S. (2018). Farmer's perception regarding soil health card. *International Journal of Chemical Studies*, 2018; 6(6): 307-310.

3. PatidarS and Patidar H. 2015. A study on perception of farmers towards organic farming. International journal of application or innovation in engineering & management (IJAIEM). 4(3): 269-277.

4.Padmaja, B.; and Angadi, J. G.; (2018) Utilization of Soil Health Card by Farmers in Nutrient Management. *International Journal of Current Microbiology and Applied Sciences*,**7**(12): 2319-7706.

5. Patel P.;GuptaS. and ShindeR.,(2022). Study on profile and constraints faced by beneficiaries farmers in utilization of soil health card. *International Journal of Chemical Studies*, 2018; 6(6): 307-310.