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Perception of soil health card by the farmers of Bilaspur district

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Abstract

Soil is a critical part of successful agriculture. The soil health card scheme has led to a decline of 8-10% in the use of chemical fertilizers and also raised productivity by 5-6% (NPC). The study was conducted in four blocks of Bilaspur district of Chhattisgarh during the year 2019-20. SHC beneficiary farmer of these blocks was who are engaged with the SHCs activities. 30 SHCs holder farmers were randomly selected from each block to constitute a sample size of 120 SHC beneficiary farmers for the study. The data were collected through personal interview method with the help of pre-structured scheduled designed with the objective of finding out perception regarding utility of soil health card and to analyze the constraints expressed by farmers in utilization of soil health card. The study revealed that the majority of the SHC holders (95.83 per cent) had medium to high level of perception about Soil Health Card. The probable reason for this result might be the fact that farmer had education above secondary level of education, medium level of mass media exposure and medium scientific orientation i.e. SHC was not only affected by the basic characteristics of the farmers but also by the level of awareness.

Keywords: awareness, perception, soil health and soil health card (SHC)

Introduction

“On World Soil Day we reaffirm our commitment to making our soil healthier. When soil is in good health, our farmers get more wealth.” – Narendra Modi, Prime Minister of India (2015)

Agriculture is the primary source of livelihood for about 58% of India's population. Gross Value Added (GVA) by agriculture, forestry and fishing was estimated at Rs. 19.48 lakh crore (US\$ 276.37 billion) in FY20 (PE). Growth in GVA in agriculture and allied sectors stood at 4% in FY20. India's arable land area of 141.4 million hectares is the second largest in the world, after United States. With the steady rise in population, pressure on soil for enhancing the food production has been mounting geometrically. The demographic projections indicate that the per capita land availability from 0.15 ha at present will be reduced to 0.10 ha in the year 2025 according to World Watch Institute; India may have to import 45 Mt of food grain by 2025 if the present growth rates of agricultural production continue (India Brand Equity Foundation- 2020). Soil is a critical part of successful agriculture. Soil health plays a vital role to ensure sustainable agricultural production. To popularizing soil test based fertilizer usages, soil health card provides information to farmers on nutrient status of their soil along with recommendation on appropriate dosage of nutrients to be applied for improving soil health. The soil health card day was observed on February 19 to commemorate the day soil health card scheme was launched by Prime Minister Narendra Modi on February 19, 2015 at Suratgarh, Rajasthan. According to the National Productivity Council (NPC), the soil health card scheme has led to a decline of 8-10% in the use of chemical fertilizers and also raised productivity by 5-6%. A SHC is meant to give each farmer soil nutrient status of his holding and advise him on the dosage of fertilizers and micronutrient and also the needed soil amendments that he should apply to maintain soil health in the long run. Many efforts have been made by the central and state Governments to know the health status of soil of farmers by introducing Soil Health Card Scheme, but how far the farmers had perceived the Soil Health Card. Considering the above stated information, now it is necessary to know the perception of the farmers regarding soil health card Keeping these points in mind the present study was undertaken - To know the level of perception of farmers regarding utility of soil health card in the study area.

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Materials and Method

The study was conducted in Bilaspur district of Chhattisgarh. The implementing agency of the SHC scheme in the Bilaspur (Deputy Director of Agriculture, Bilaspur) distributed SHCs in 4 blocks namely Kota, Bilha, Masturi, Takhatpur in first and second phase. Hence, those blocks selected for the study purposively and villages were selected randomly. A list of SHC beneficiary farmers of these blocks was who are

engaged with the SHCs activities. 30 SHCs holder farmers were randomly selected from each block to constitute a sample size of 120 SHC beneficiary farmers for the study. The data were collected through personal interview method with the help of pre structured schedule designed with the objective finding out perception level of SHC holders. The under mentioned independent and dependent variables were finally selected for detailed investigation in the present study.

Information regarding variables under study and the empirical measuring devices

S no.	Variables	Measuring devices
A		
Independent variables		
1.	Age	Chronological age of respondents
2.	Education	Scale developed by Pandya (2010) was used
3.	Mass media exposure	Structural schedule was developed
4.	ICT initiatives	Structural schedule was developed
5.	Land holding	Scale developed by Pandya (2010) was used
6.	Occupation	Scale developed by Pareek and Trivedi (1963) was used
7.	Annual income	Scale developed by Pandya (2010) was used
8.	Farming experiences	Scale developed by Silvakumar (1988) was used
9.	Social participation	Scale developed by Pareek and Trivedi (1963) was used
10.	Risk orientation	Scale developed by Supe (1969) was used
11.	Scientific orientation	Scale developed by Supe (1969) was used
12.	Innovative promptness	Scale developed by Singh (1977) was used
B		
Dependent variables		
1.	Perception of SHC holders	Structured schedule was developed

Results and Discussion

An understanding of the behavioural process i.e. perception of farmers may serve as feedback to the planners, policy makers, extension personnel, scientist and development agencies to make suitable policy interventions in implementation of the schemes. The data regarding the perception of the farmers about SHCs are given in Table-1. It is apparent from the table 1 that majority (83.33 per cent) of the SHC holders had medium level of perception followed by 12.05 and 4.16 per

cent possessed low and high level of perception about Soil Health Card, respectively.

Level of perception

S. no.	Level of perception	Categories
1.	Low level of perception	$\leq \bar{X} - S.D.$
2.	Medium level of perception	In between $\bar{X} \pm S.D.$
3.	High level of perception	$\geq \bar{X} + S.D.$

Table 1: Distribution of the SHC holders according to their level of perception n=120

S. no.	Categories	Frequency	Percentage
1.	low level of perception	15	12.5
2.	Medium level of perception	100	83.33
3.	High level of perception	05	4.16
Total		120	100

(Mean= 95.65, S.D. = 9.11)

Table 2: Relationship between independent variables of SHC holders and their level of perception about Soil Health Card.

S no.	Variables	'r' value	P – value
1	Age	-.524**	0.000
2	Education	.347**	0.000
3	Mass media exposure	0.122	0.186
4	Land holding	-0.022	0.808
5	Occupation	0.086	0.351
6	Annual income	-.496**	0.000
7	Farm experience	.623**	0.000
8	Information source	.392**	0.000

9	Social participation	.360**	0.000
10	Scientific orientation	.611**	0.000
11	Risk orientation	.391**	0.000
12	Innovation promptness	.611**	0.000

**Correlation is significant at the 0.01 level (2- tailed)

*Correlation is significant at the 0.05 level (2- tailed)

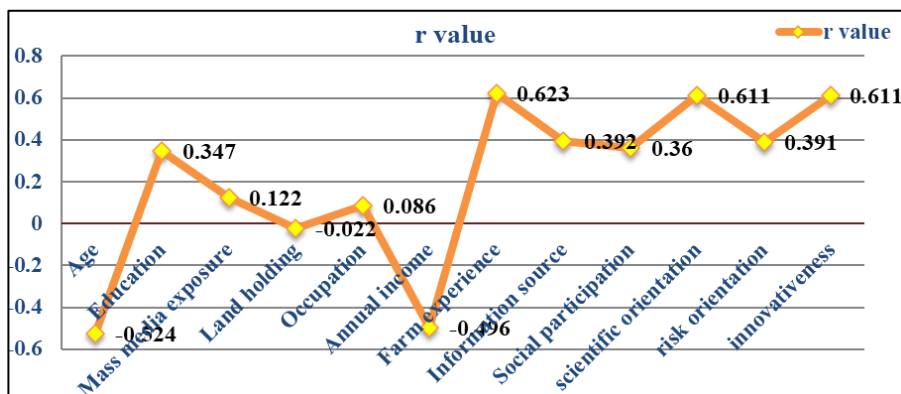


Fig 1: Association between independent variables of SHC holders and their level of perception about Soil Health

It can be inferred from the above findings that majority of the SHC holders (95.83 per cent) had medium to high level of perception about Soil Health Card. The probable reason for this result might be the fact that farmer had education above secondary level of education, medium level of mass media exposure and medium scientific orientation. So the level of perception of Soil Health Card holders was medium. Similar findings were obtained by Kadam *et al.* (2012) [7]. This finding is contradictory to the finding of Chauhan (2015) [6] and Sonawane *et al.* (2015).

Relationship between independent variables of SHC holders and their level of perception about Soil Health Card.

The analysis carried (Pearson’s correlation) out to test the correlation between the perception of farmers towards SHC with some variables for the SHC beneficiary farmers is given in Table 17. Out of all the twelve independent variables only nine variables are tested significant at the 0.01 and 0.05 level

of significance respectively. The correlation between perception of SHC beneficiary farmers with their age ($r = -.490$), education ($r = .373$), annual income ($r = -.447$), farm experience ($r = .542$), information source ($r = .397$), social participation ($r = .436$), scientific orientation ($r = .568$), risk orientation ($r = .352$) and innovation promptness ($r = .518$). The information about association between independent variables and level of perception is depicted in table 2 and fig.1

A constraint refers as situation or circumstances which impede or restrict the activity or performance of an individual. In the present study, it operationalized as the items of difficulties faced by the farmers in perception and use of SHC. The information regarding constraints experienced by farmers were collected by using open ended questionnaire. The frequency and percentage was worked out for each constraint. Then, rank was assigned. The results are presented in table 3 and fig. 2

Table 3: Distribution of the SHC holders according to the constraints faced by them by using Soil Health Card

S no.	Constraints	Mean	Rank
1.	Difficulty in calculating fertilizer dose on the basis of nutrients status of soil	2.85	1
2.	The soil health card is received quite late after giving the sample	2.84	2
3.	Collection of soil sample was not done in presence of farmers	2.80	3
4.	Subsidy is not given to the farmers for improving their own land	2.60	4
5.	Received soil health card after harvest of crop	2.57	5

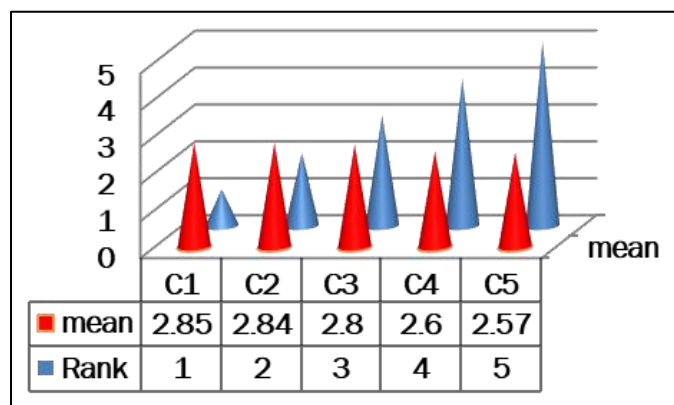


Fig 2: Distribution of the SHC holders according to the constraints faced by them in using Soil Health Card

Thus, it can be concluded that major constraints faced by the SHC holders about Soil Health Card were difficult to calculate fertilizer dose on the basis of nutrient status of soil followed by time gap between soil samples taken and issuing cards is too high and unavailability of micronutrient status of soil in the SHC.

Conclusion

It was observed that the perception of farmers of the relevance of technologies i.e. SHC was not only affected by the basic characteristics of the farmers but also by the level of awareness. The study has revealed that education, land holding, extension contact, mass media exposure, innovativeness, scientific orientation, achievement motivation and awareness level of respondents regarding utility of SHC,

whereas variable age, gender, annual income, farming experience and social participation were not found to have any relationship with the perception regarding SHC.

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