

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 4; April 2024; Page No. 04-08

Received: 08-01-2024
Accepted: 12-02-2024

Indexed Journal
Peer Reviewed Journal

Insight of farmers regarding COVID-19: Survey analysis in Haryana state

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DOI: <https://doi.org/10.33545/26180723.2024.v7.i4a.493>

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Abstract

The study was conducted in Gurgaon District of Haryana State. It is revealed that (39.16%) of farmers were having medium level of perception followed by (29.16%) farmers with low level perception and only (31.68%) farmers were having high level of perception. Data clearly revealed that 38.30% farmers did not perceive fluctuation in prices for agricultural output. Data also revealed that 58.30% farmers didn't perceive about the effect on wage labour. Banking services were affected was also not perceived by majority of the farmers. Age, education, landholding, annual income, subsidiary occupation, social participation, mass media exposure and extension contacts were found significantly associated with perception level of the respondents at $\chi^2=11.51^*$, $\chi^2=11.59^*$, $\chi^2=13.25^*$, $\chi^2=12.39^*$, $\chi^2=12.73^*$, $\chi^2=12.93^*$, $\chi^2=10.41^*$, $\chi^2=7.96^*$ respectively and caste, family type and family size were found non significantly associated with perception level of the respondents at $\chi^2=8.91$, $\chi^2=2.62$, $\chi^2=2.86$ respectively. Majority of the farmers (64.17%) who did not have any subsidiary occupation had high level of perception. In regard to extension contacts (48.33%) farmers who had low extension contacts also had low level of perception. Lastly in regard to mass media exposure (43.33%) that had low level of mass media exposure also had low level of perception.

Keywords: COVID-19, farmers, perception level, socio-economic factors

Introduction

The COVID-19 pandemic has significantly impacted the farming community and has also affected the perception of farmers in various ways. Several factors play a role in shaping the perception of farmers during this challenging time. One factor that influences the perception of farmers during the pandemic is the economic impact. Many farmers have faced financial struggles due to disruptions in the supply chain, fluctuating market demands, and limited access to resources. This has led to a perception of farmers as being under immense pressure and financial strain. Another factor that affects the perception of farmers is the essential nature of their work. The pandemic has highlighted the crucial role that farmers play in ensuring food security and supply. Additionally, the mental and physical toll of the pandemic on farmers has also shaped the perception of their resilience and strength. The lockdown in India had an impact on agriculture sector, resulting in unharvested crops, labour shortages, and delays in planting the crops (Habanyati *et al* 2022) [5]. Farmers have had to adapt to new safety protocols, navigate uncertainties, and manage increased workloads. Furthermore, the portrayal of farmers in the media and public discourse has also influenced the perception of farmers during the pandemic. Positive and supportive narratives about the challenges and contributions of farmers have helped in shaping a more empathetic and respectful perception of their role. The ongoing COVID-19 pandemic has had a significant impact on various sectors of the economy, including agriculture. The way farmers

perceive agriculture and their role in it has been influenced by a variety of factors related to the pandemic. Farmers have had to adapt to new ways of conducting their business, such as using digital platforms for marketing and sales, and utilizing technology for remote monitoring and management of their crops and livestock. In view of this, the present study was designed to know the perception of farmers regarding COVID-19 assess the level of perception of farmers and delineate the socioeconomic factors associated with perception level of the farmers.

Materials and Methods

The study was conducted in Gurgaon District of Haryana State. Three blocks were selected from Gurgaon district village Garhi Bazidpur, Hajipur, Baluda and Raiseena from block Sohna; village Sultanpur, Sampka, Daboda, Jatola, Jori, Patli, Hazipur and Khetawas from block Farrukhnagar; and village UnchaMajra, Khalilpur and InchhaPuri from block Pataudi were selected. On the whole, a total of 120 farmers were surveyed with the help of well structured interview schedule. The data was collected by interview method from the respondents to gather information on dependent and independent variables. The collected data were coded, tabulated, analyzed, and interpreted according to the objectives of the present study with the help of appropriate statistical techniques. The descriptive statistical tools such as frequency, %age, chi-square, weighted mean, and total weighted score were calculated to draw the inference.

Results and Discussion

Perception level of the farmers

In the Table 1 it is clearly revealed that (39.16%) of farmers were having medium level of perception followed by (29.16%) farmers with low level perception and only (31.68%) farmers were having high level of perception.

Table 1: Perception level of the farmers

Perception level	Frequency	Percentage
Low (17-22)	35	29.16
Medium (23-28)	47	39.16
High (29-34)	38	31.68

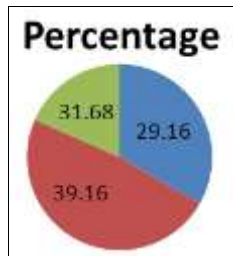


Fig 1: Perception of the farmer families regarding COVID-19

In the Table 2 Perception of farming families regarding COVID-19, it is clearly shown that 25.83% of the farmers highly perceived to the statement that there was disruption in sources for household followed by other statements such as practicing agricultural activities were affected was also highly perceived by 45.00% of the respondents. Data clearly revealed that 38.30% farmers did not perceive fluctuation in prices for agricultural output. Regarding the statement that main selling channel for production were disrupted was not perceived by 40.83% farmers. In regards to the statement of shortage of labour (45.00%) farmers highly perceived this fact. Data also revealed that 58.30% farmers didn't perceive about the effect on wage labour. The findings revealed that 34.20% farmers highly perceived the impact on availability of agricultural inputs. Regarding the statement fluctuation in prices of agri- inputs 37.50% of the farmers highly perceived of this situation. The statement that there was low access to credit facilities was also highly perceived by majority of farmers. The same way regarding the statement that there was effect on procurement of food grains 45.00% farmers did not perceive it at all. Banking services were affected was also not perceived by majority of the farmers.

Table 2: Perception statements regarding COVID-19

Statements	(n=120)		
	Highly perceived (3)	Perceived (2)	Not perceived (1)
Disruption in sources for household income	31(25.83)	41(34.17)	48(40.00)
Practicing agricultural activities were affected	54(45.00)	40(33.30)	26(21.70)
Fluctuation in prices for agricultural output	32(26.70)	42(35.00)	46(38.30)
Main selling channel for production were disrupted	30(25.00)	41(34.17)	49(40.83)
Shortage of labour	54(45.00)	39(32.50)	27(22.50)
Effect on wage labour	21(17.50)	29(24.20)	70(58.30)
Impact on availability of agricultural inputs	41(34.20)	39(32.50)	40(33.33)
Fluctuation in prices of agri- inputs	45(37.50)	40(33.33)	35(29.20)
Low access to credit facilities	30(25.00)	42(35.00)	48(40.00)
Effect on procurement of food grains	26(21.70)	40(33.33)	54(45.00)
Banking services were affected	28(23.40)	34(28.30)	58(48.30)
MSP Prices were affected	25(20.90)	34(28.30)	61(50.80)
Deterioration in mental health of the farmers	60(50.00)	29(24.20)	31(25.80)
Reduced income	70(58.30)	29(24.20)	21(17.50)
Reduction in employment activities	62(51.60)	33(27.50)	25(20.90)

Figures in parentheses denote percentage Responses were multiple

Association of perception level of the farmers with socio-economic variables

Table 3 reveals association between socio - economic variables and perception level of the respondents. Age, education, landholding, annual income, subsidiary occupation, social participation, mass media exposure and extension contacts were found significantly associated with perception level of the respondents at $\chi^2=11.51^*$, $\chi^2=11.59^*$, $\chi^2=13.25^*$, $\chi^2=12.39^*$, $\chi^2=12.73^*$, $\chi^2=12.93^*$, $\chi^2=10.41^*$, $\chi^2=7.96^*$ respectively and caste, family type and family size were found non significantly associated with perception level of the respondents at $\chi^2=8.91$, $\chi^2=2.62$, $\chi^2=2.86$ respectively. Regarding the age of the farmers (45.00%) who belonged to age category of 36- 50 years had medium level of perception and in the same context

regarding education (41.67%) farmers who were illiterate had high level of perception and found significantly associated at $\chi^2=11.59^*$. Likewise (56.67%) farmers who belonged to general caste category also had high level of perception. Majority of the farmers (64.17%) who did not have any subsidiary occupation had high level of perception. In regard to extension contacts (48.33%) farmers who had low extension contacts also had low level of perception. Lastly in regard to mass media exposure (43.33%) that had low level of mass media exposure also had low level of perception. Likewise, Roy D. *et al.* (2020) [9] in their study also found age, gender and service experience significantly associated with good knowledge, and age and service experience were significantly associated with good practice.

Table 3: Association of perception level of the farmers with socio-economic variable

(n=120)

Socio -economic Variables	Level of Perception			
	Low	Medium	High	Total
Age				
Up to 35 years	14 (48.28)	9 (31.03)	6 (20.69)	29 (24.17)
36-50 years	12 (22.22)	27 (50.00)	15 (27.78)	54 (45.00)
Above 50 years	9 (24.32)	11 (29.73)	17 (45.95)	37 (30.83)
$\chi^2=11.51^*$				
Education				
Illiterate	11 (22.00)	17 (34.00)	22 (44.00)	50 (41.67)
Upto middle school	11 (25.00)	20 (45.45)	13 (29.55)	44 (36.67)
Secondary school and above	13 (50.00)	10 (38.46)	3 (11.54)	26 (21.66)
$\chi^2=11.59^*$				
Caste				
General	20 (29.41)	21 (30.88)	27 (39.71)	68 (56.67)
Backward	10 (31.25)	18 (56.25)	4 (12.50)	32 (26.67)
Schedule	5 (25.00)	8 (40.00)	7 (35.00)	20 (16.66)
$\chi^2=8.91$				
Family type				
Nuclear	13 (22.41)	24 (41.38)	21 (36.21)	58 (48.33)
Joint	22 (35.48)	23 (37.10)	17 (27.42)	62 (51.67)
$\chi^2=2.62$				
Family size				
Up to 4 members	5 (17.24)	14 (48.28)	10 (34.48)	29 (24.17)
Between 5-8 members	14 (34.14)	15 (36.59)	12 (29.27)	41 (34.17)
Above 8 members	16 (32.00)	18 (36.00)	16 (32.00)	50 (41.66)
$\chi^2=2.86$				
Size of Land holding				
Marginal Farmer (Up to 1 ha)	19 (38.00)	16 (32.00)	15 (30.00)	50 (41.67)
Small Farmer (>1-2 ha)	10 (29.41)	15 (44.12)	9 (26.47)	34 (28.33)
Semi Medium Farmer (>2-4 ha)	4 (16.67)	14 (58.33)	6 (25.00)	24 (20.00)
Medium Farmer (>4-10 ha)	2 (16.67)	2 (16.67)	8 (66.66)	12 (10.00)
$\chi^2=13.25^*$				
Annual income (in Rs.)				
Up to 3 lakh	19 (27.94)	23 (33.82)	26 (38.24)	68 (56.67)
Between 3,00,000 - 6,00,000	11 (36.67)	17 (56.67)	2 (6.66)	30 (25.00)
Above 6,00,000	5 (22.73)	7 (31.82)	10 (45.45)	22 (18.33)
$\chi^2=12.39^*$				
Subsidiary occupation				
Nil	24 (31.17)	25 (32.47)	28 (36.36)	77 (64.17)
Service	7 (30.43)	15 (65.22)	1 (4.35)	23 (19.17)
Small scale enterprises	4 (20.00)	7 (35.00)	9 (45.00)	20 (16.66)
$\chi^2=12.73^*$				
Social Participation				
Not member of any organization	28 (35.90)	26 (33.33)	24 (30.77)	78 (65.00)
Member of one organization	5 (20.83)	15 (62.50)	4 (16.67)	24 (20.00)
Member of more than 1 organization	2 (11.11)	6 (33.33)	10 (55.56)	18 (15.00)
$\chi^2=12.93^*$				
Mass media				
Low (7-10)	21 (40.38)	16 (30.77)	15 (28.85)	52 (43.33)
Medium (11-13)	6 (19.35)	18 (58.07)	7 (22.58)	31 (25.83)
High (14-16)	8 (21.62)	13 (35.14)	16 (43.24)	37 (30.84)
$\chi^2=10.41^*$				
Extension contacts				
Low (5-7)	23 (39.66)	18 (31.03)	17 (29.31)	58 (48.33)
Medium (8-10)	7 (18.42)	20 (52.63)	11 (28.95)	38 (31.67)
High (11-13)	5 (20.83)	9 (37.50)	10 (41.67)	24 (20.00)
$\chi^2=7.96^*$				

Figures in parentheses denote percentage

**Significant at 1% level of significance

*Significant at 5% level of significance

Impact/Challenges of pandemic on farming families

With regard to the impact / challenges of pandemic on farmer families the analysis Table 4 clearly revealed that I rank was given to the statement decreased income by 60.00 percent of farmers followed by difficulty in accessing financial resources/loans for agricultural investments by 57.50 percent farmers was given II rank. Increase in risk of food insecurity was given III rank followed by difficulty in accessing medical facilities which was given IV rank. Poudel, P.B. *et al.* (2020) [8] also reported that planting of spring crops like maize, sunflower, spring wheat, barley, canola and open field vegetable could not be operated amidst pandemic.

Likewise transportation facilities were disrupted was given

V rank. COVID-19 has affected all the process which connects farm production to final consumer mostly due to lockdown restriction (Behura, S, 2020) [1]. In their study it was mentioned that there were minor disruptions reported by wheat farmers, in the form of a slight increase in labor and machinery costs around harvest, and transportation of their grains to the market. (Ceballos, F, 2021) [3] and lastly mental health challenges due to uncertainties and stress caused by the pandemic was given VI rank. Their study clearly shows that the farmers have faced many problems on their field as well as in marketing and have incurred loss along with other problems due to COVID 19 lockdown. (Nithya Shree, 2022) [7].

Table 4: Impact/Challenges of pandemic on farming families

(n=120)

Statements	Agree (3)	Somewhat Agree (2)	Disagree (1)	WMS	MS	Rank
Decreased income	72(60.00)	38(31.70)	10(8.30)	302	2.51	I
Difficulty in accessing financial resources/loans for agricultural investments	69(57.50)	30(25.00)	21(17.50)	288	2.40	II
Increase in risk of food insecurity	60(50.00)	35(29.20)	25(20.80)	275	2.29	III
Difficulty in accessing medical facilities	54(45.00)	40(33.33)	26(21.70)	268	2.23	IV
Transportation facilities were disrupted	47(39.17)	42(35.00)	31(25.83)	256	2.13	V
Mental health challenges due to uncertainties and stress caused by the pandemic	42(35.00)	38(31.67)	40(33.33)	242	2.01	VI

Figures in parentheses denote percentage
Responses were multiple

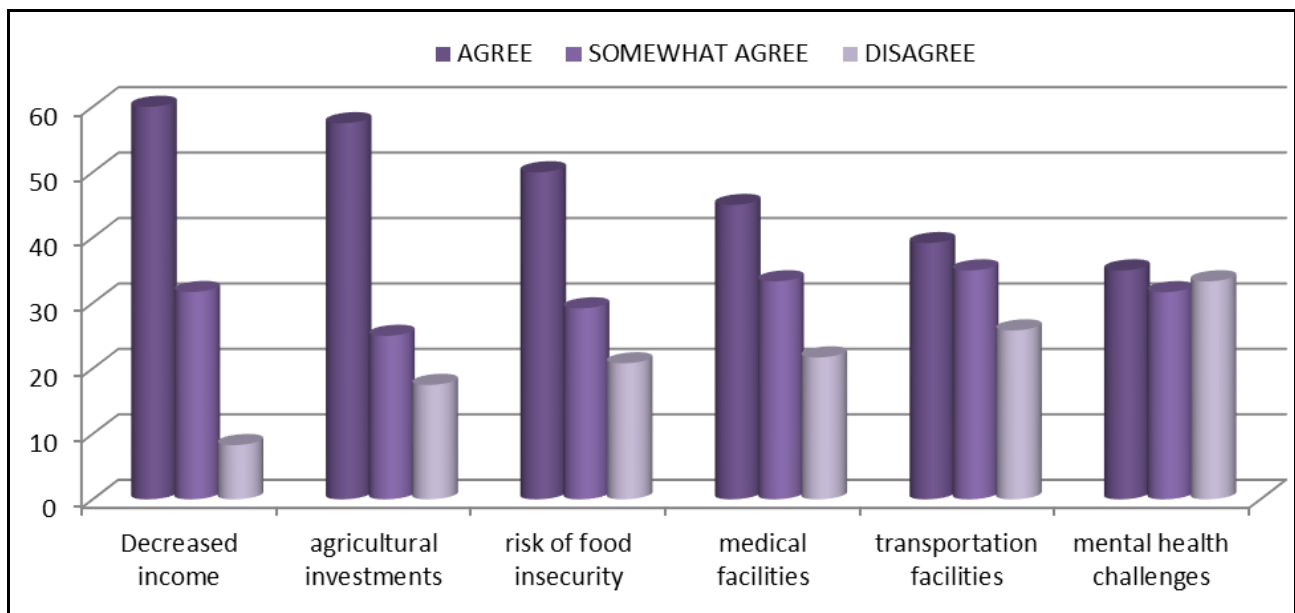


Fig 2: Impact/challenges of pandemic on farming families

Conclusion

Overall, the COVID-19 pandemic has brought about a shift in the perception of farmers regarding agriculture. It has highlighted the vulnerabilities and challenges faced by the agricultural sector, while also emphasizing the need for resilience and adaptation in the face of adversity. One of the key factors affecting the perception of farmers regarding agriculture is the disruption in the supply chain. The lockdowns and restrictions imposed to curb the spread of the virus have led to disruptions in the transportation of agricultural inputs and products. This has made it difficult for farmers to access essential resources and markets,

leading to a sense of uncertainty and frustration. Moreover, the economic impact of the pandemic has also affected the financial well-being of farmers. In conclusion, the COVID-19 pandemic has impacted the perception of farmers in various ways, with factors such as economic challenges, essential nature of their work, resilience, and media portrayal all playing a significant role. Cariappa *et al.* 2021 results also indicated that agriculture was the only sector to register a positive growth of 3.4% in 2020-21. It is important to recognize the contributions and struggles of farmers during this time and to support and appreciate their vital role in society.

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