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Perceived barriers to organic farming adoption among farmers: Empirical evidence from Rajasthan

¹Rinku Yadav, ²IM Khan, ³Ankita Khakhal, ⁴Jaipal and ⁵Mohit Kumar Khangar

^{1,5}Research Scholar, Department of Agricultural Extension and communication, Rani Lakshmi Bai Central Agricultural University, Jhansi, Uttar Pradesh, India

²Professor and Head, Department of Extension Education, Sri Karan Narendra Agriculture University, Jobner, Rajasthan, India

^{3,4}Research Scholar, Swami Keshwanand Rajasthan Agriculture University, Bikaner, Rajasthan, India

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Corresponding Author: Rinku Yadav

Abstract

Organic farming has emerged as a scientifically validated alternative to conventional agriculture, offering significant benefits in terms of soil health, biodiversity conservation and livelihood security of smallholder farmers. Despite substantial policy support through the Paramparagat Krishi Vikas Yojana (PKVY) and the National Mission for Sustainable Agriculture (NMSA), the adoption and expansion of organic farming in Rajasthan continue to be constrained by several perceived barriers. The present study was undertaken to systematically analyze the constraints perceived by certified organic farmers in the adoption of organic farming practices in Jaipur and Ajmer districts of Rajasthan. An ex-post facto research design was employed, and a total of 107 certified organic farmers, comprising 65 respondents from Jaipur and 42 from Ajmer district, were selected, representing 85 per cent of the RSOCA-identified population. Data were collected using a structured constraint schedule encompassing eight dimensions, namely technical, labour, credit and economic, service and supply, environmental, cropping, marketing, and certification constraints. Constraint intensity was measured using a three-point continuum scale and quantified through Mean Per cent Score (MPS), while Spearman's rank-order correlation was used to examine the association between districts. The results revealed that the majority of organic farmers (72.90%) belonged to the medium level of constraint perception category, followed by 19.62 per cent in the high-level category. Credit and economic constraints emerged as the most severe barrier in both Jaipur (74.62 MPS) and Ajmer (78.37 MPS) districts. Marketing constraints were ranked second in Jaipur district, whereas certification constraints were perceived as the second most severe barrier in Ajmer district. Cropping constraints were perceived as the least severe in both districts. Overall, organic farmers in Ajmer district (66.33 MPS) perceived constraints more severely than those in Jaipur district (62.01 MPS). A highly significant positive correlation was observed between the constraint rankings of the two districts ($r_s = 0.97$, $p < 0.01$). The findings highlight the need for targeted extension interventions, farmer-friendly credit mechanisms, simplified certification procedures, and strengthened organic marketing infrastructure to facilitate the wider adoption of organic farming in Rajasthan.

Keywords: Organic farmers, organic farming adoption, sustainable agriculture, perceived constraints, extension intervention

Introduction

Modern agriculture has mastered the art of production while quietly dismantling the foundations that make production possible. Soil degradation now affects over 33 per cent of the world's agricultural land, groundwater contamination from agrochemicals is accelerating and the economic burden of input dependency is pushing smallholder farmers deeper into debt (FAO, 2022; Tilman *et al.*, 2011) ^[7, 24]. The Green Revolution, which transformed food-deficit nations like India into surplus economies, simultaneously embedded a cycle of chemical dependency that now threatens the long-term viability of farming itself (Pingali, 2012) ^[18]. Despite remarkable improvements in productivity, the resulting ecological and economic consequences have become a growing concern.

Organic farming has emerged as the most scientifically validated response to this crisis. Defined as a holistic production system that sustains agro-ecosystem health through biodiversity conservation, biological cycles and

elimination of synthetic inputs (Codex Alimentarius Commission, 2007) ^[3], it offers measurable advantages over conventional agriculture in soil carbon sequestration, water retention, energy efficiency and biodiversity preservation (Mondelaers *et al.*, 2009; Seufert & Ramankutty, 2017) ^[12, 6]. Beyond ecology, organic produce commands premium market prices, offering resource-constrained smallholders a credible pathway to improved income (Willer *et al.*, 2023) ^[25]. The potential of organic farming to deliver both environmental sustainability and economic benefits has been widely recognized.

Yet global organic farmland covers merely 1.6 percent of total agricultural area (Willer *et al.*, 2023) ^[25]. In India, despite explicit policy commitment through the Paramparagat Krishi Vikas Yojana (PKVY) and the National Mission for Sustainable Agriculture (NMSA), organic adoption among smallholder farmers — who constitute over 86 percent of all agricultural holdings — remains strikingly marginal (MoAFW, 2021; Singh & Bhatt,

2021)^[21]. Policy infrastructure exists. Scientific evidence is robust. Yet farmers are not transitioning. This disconnect is the central problem this study addresses.

In the context of organic farming, perceived barriers operate across four interlocking dimensions. Economically, high conversion costs and yield uncertainty deter resource-constrained smallholders (Läpple & Van Rensburg, 2011; Alotaibi *et al.*, 2021)^[10, 1]. Informationally, knowledge deficits in organic techniques and certification procedures reveal systemic failures in agricultural extension (Panneerselvam *et al.*, 2012)^[17]. Institutionally, weak market linkages and complex certification bureaucracies create structural bottlenecks individual farmers cannot overcome alone (Rao *et al.*, 2019)^[20]. At the psychosocial level, risk aversion and habitual dependence on conventional inputs constitute cognitive barriers that policy instruments alone cannot dismantle (Wauters *et al.*, 2010; Borges *et al.*, 2021)^[1, 21].

While existing literature has broadly documented these categories of barriers, rigorous perception-based empirical evidence from smallholder-dominated agrarian contexts in India, characterized by fragmented landholdings, limited institutional support, and underdeveloped organic value chains, remains limited (Pandey *et al.*, 2012; Prokopy *et al.*, 2019)^[15, 19]. The present study directly addresses this gap. Grounded in the Diffusion of Innovations and Theory of Planned Behavior frameworks, it systematically analyzes barriers perceived by farmers towards adoption of organic farming across economic, informational, institutional, and psychosocial dimensions. The central research question guiding this inquiry is: *What barriers do farmers perceive as most significant in constraining their transition to organic farming, and how do these barriers vary across socio-economic profiles?* The findings are intended to equip extension agencies and policymakers with precise, context-specific evidence for designing interventions that can meaningfully accelerate India's transition to sustainable agriculture.

Materials and Methods

In Rajasthan state the RSOCA has certified organic grower groups and organic farmers in 19 districts of Rajasthan. Out of these, 2 districts namely Jaipur and Ajmer were selected

purposively, due to having lowest number of organic farmers as compared to other districts of Rajasthan. As per the Annual Report of Rajasthan State Organic Certification Agency, Jaipur, 2023, in Jaipur and Ajmer districts of Rajasthan, there were only 77 and 49 organic farmers certified by the RSOCA. Out of these, 85 per cent organic farmers were chosen for the study based on the advisory committee's recommendations, keeping in view the limited time and funds available due to being student project. In this way 65 organic farmers from Jaipur and 42 organic farmers from Ajmer district were selected. In this way a total of 107 organic farmers were selected for the study purpose. To measure the constraints faced by the organic farmers in the adoption of organic farming practices, based on experts' opinion and literature reviewed, a suitable schedule was developed by the investigator by way of enlisting all the possible problems which may come in the way of adoption of organic farming practices by the organic farmers. This instrument had eight major dimensions namely technical, labour, credit and economic, service and supply, environmental, cropping and marketing constraints. To measure the intensity of constraints intervening in the adoption of organic farming practices, three point continuum scale was used. These three points were most severe, severe and least severe with scores as, 3, 2 and 1, respectively. The recorded responses were counted and converted into mean per cent scores (MPS) for each constraint and Spearman's rank-order correlation was used to examine the association between districts. IBM SPSS Statistics (Version 25.0) was used for data analysis, enabling effective data processing, statistical computing, and interpretation.

Results and Discussion

Constraints perceived by framers towards organic farming practices

To get an overview of constraint perceived by the organic farmers, the respondents were divided into three categories viz., low level constraint perception, medium level constraint perception and high- level constraint perception. These categories were formulated on the basis of arbitrary method.

Table 1: Distribution of organic farmers according to their levels of perception of constraints in adoption of organic farming practices

n=107

S. No.	Constraints level (score)	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)		Total	
		F	%	F	%	F	%
1.	Low (below 115)	6	9.23	2	4.76	8	7.48
2.	Medium (from 115 to 161)	50	76.92	28	66.66	78	72.90
3.	High (above 161)	9	13.85	12	28.58	21	19.62
Total		65	100	42	100	107	100

The data in Table 1 reveal that out of 107 respondents, majority of respondents (72.90 per cent) fell in medium level of constraint perception group, whereas, 19.62 per cent organic farmers were observed in the high level of

constraint perception group and remaining 7.48 per cent respondents fell in the category of low level of constraint perception in adoption of organic farming practices.

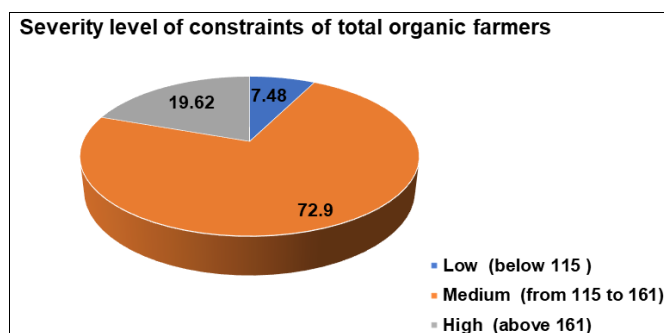


Fig 1: Distribution of organic farmers of Jaipur and Ajmer districts according to their severity of perception of constraints in adoption of organic farming practices

These findings are in the line of findings of Haneef *et al.* (2019) [8] and Murugan *et al.* (2024) [13].

1.1 Technical constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 2 reveal that among technical constraints, the most severely perceived constraint by the organic farmers of both Jaipur (76.41 MPS) and Ajmer districts (82.54 MPS) was “Lack of standard package of practices for utilizing organic inputs”. Similarly, the second most severely perceived constraint by organic farmers of both Jaipur (75.90 MPS) and Ajmer districts (77.78 MPS) was “Lack of knowledge about organic farming systems”. The least severe constraint perceived by the organic farmers of Jaipur district was “Lack of technical

assistance and guidance” (43.59 MPS), while, the organic farmers of Ajmer district least perceived the constraint of “Lack of skill for preparing organic manures” (55.56 MPS). The organic farmers of Ajmer district perceived more technical constraints (68.68 MPS) as compared to Jaipur district (65.52 MPS) in adoption of organic farming practices.

It may be concluded from the findings that among technical constraints, the most severely perceived constraint by the organic farmers of both Jaipur and Ajmer districts was “Lack of standard package of practices for utilizing organic inputs.” These results might be due to the absence of a universally accepted and systematically organized set of guidelines or methods for using organic materials in agriculture.

Table 2: Technical constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

S. No.	Constraints	n=107			
		Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Complicated methods for production of organic inputs	69.23	VIII	63.49	X
2.	Lack of technical assistance and guidance	43.59	XIII	61.90	XI
3.	Lack of standard package of practices for utilizing organic inputs	76.41	I	82.54	I
4.	Slower nutrient release in organic manures as compared to chemical fertilizers	57.95	X	73.81	IV
5.	Lack of research on organic farming technologies	74.87	IV	76.98	III
6.	Insufficient demonstration units for vermicompost/FYM/compost/liquid manure preparation	71.79	V	68.25	VIII
7.	Lack of knowledge about bio-pesticides & bio insecticides	70.26	VI	69.84	V
8.	Lack of timely research information about organic farming technologies	44.62	XII	56.35	XII
9.	Lack of knowledge about organic farming systems	75.90	II	77.78	II
10.	Less knowledge about insect & pest management in organic farming	67.18	IX	68.25	VIII
11.	Less knowledge about weed control in organic farming	75.38	III	69.05	VI
12.	Lack of skill for preparing organic manures	54.87	XI	55.56	XIII
13.	Lack of knowledge about the use of liquid organic inputs like vermiwash, jeevamrut and panchgavya etc.	69.74	VII	69.05	VI
	Overall	65.52		68.68	

r_s = Rank correlation $r_s = 0.80^{**}$

** = Significant at 1 per cent level of significance $t = 4.53$

The calculated value of rank order correlation (r_s) was 0.80, which indicates significant association between the technical constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer district organic farmers in different technical constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) [8] and Murugan *et al.* (2024) [13].

1.2 Labour constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 3 reveal that among labour constraints, the most severely perceived constraint by the organic farmers of Jaipur district was “Higher labour cost due to higher labour requirement” (62.56 MPS), whereas, most severely perceived constraint by the organic farmers of Ajmer district was “Time bound requirement of labour during application of inputs” (75.40 MPS). The second most severely constraint perceived by the organic farmers of Jaipur district was “Time bound requirement of

labour during application of inputs” (60.51 MPS), while, the second most severely constraint perceived by organic farmers of Ajmer district was “Higher labour cost due to higher labour requirement” (69.06.00 MPS). The least severe constraint perceived by the organic farmers of Jaipur district was “Bullock/tractor/power tiller charges are high” (42.05 MPS), while, organic farmers of Ajmer district perceived least severe constraint of “Non availability of skilled labour for input preparation” (43.65 MPS). The organic farmers of Ajmer district perceived more labour constraints (58.83 MPS) as compared to Jaipur district (54.10 MPS) related to “Labour constraints” in adoption of

organic farming practices.

It may be concluded from the findings that among labor constraints, the most severely perceived constraint by the organic farmers of Jaipur district was “Higher labour cost due to higher labour requirement,” whereas the most severely perceived constraint by the organic farmers of Ajmer district was “Time bound requirement of labour during application of inputs.” These results might be due to the fact that in organic farming, the overall expense of labor has increased because more workers are needed and there is a specific and often tight timeframe within which labor must be employed to apply inputs.

Table 3: Labour constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Labour scarcity due to MGNREGA	53.85	V	57.94	V
2.	Non availability of skilled labour for input preparation	47.69	VII	43.65	VIII
3.	Higher labour cost due to higher labour requirement	62.56	I	69.06	II
4.	Time bound requirement of labour during application of inputs	60.51	II	75.40	I
5.	Less availability of human labour	58.46	III	63.49	IV
6.	High wages of labour	56.92	IV	69.05	III
7.	Non- availability of bullock/tractor/power tiller at proper time	50.77	VI	46.83	VI
8.	Bullock/tractor/power tiller charges are high	42.05	VIII	45.24	VII
	Overall	54.10		58.83	

r_s = Rank correlation $r_s = 0.89^{**}$

** = Significant at 1 per cent level of significance $t = 5.05$

The calculated value of rank order correlation (r_s) was 0.89, which indicates significant correlation between the labour constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different labour constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) ^[8] and Dadheech & Kaur; (2025) ^[4].

1.3 Credit and economic constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 4 reveal that among credit and economic constraints, the most severely perceived constraint by the organic farmers of both Jaipur (81.54 MPS) and Ajmer districts (93.65 MPS) was “Initial low yield in organic farming”. The second most severely perceived constraint by the organic farmers of Jaipur district was “Initial low price for the organic produce” (78.97

MPS), while, second most severely perceived constraint by the organic farmers of Ajmer district was “Lack of government support in organic farming” (86.51 MPS). The least severe constraint perceived by organic farmers of Jaipur district was “Low yield of crops in organic farming” (62.05 MPS), while, organic farmers of Ajmer district perceived least severe constraint was “Less availability of organic inputs at lower price for organic farming” (61.90 MPS). The organic farmers of Ajmer district perceived more “Credit and economic constraints” (78.37 MPS) as compared to Jaipur district (74.62 MPS) in adoption of organic farming practices.

It may be concluded from the findings that among credit and economic constraints, the most severely perceived constraint by the organic farmers of both Jaipur and Ajmer districts was “Initial low yield in organic farming.” These findings might be due to the reason that at the beginning of organic farming, crop production is lower than expected or compared to conventional farming methods.

Table 4: Credit and economic constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Inadequate availability of credit for organic farming	75.90	V	79.37	IV
2.	Inadequate subsidies for organic farming	77.44	IV	76.98	V
3.	Initial low yield in organic farming	81.54	I	93.65	I
4.	Initial low price for the organic produce	78.97	II	84.13	III
5.	Lack of government support in organic farming	77.95	III	86.51	II
6.	Low yield of crops in organic farming	62.05	VIII	67.46	VII
7.	High cost of organic inputs in organic farming	72.31	VI	76.98	V
8.	Less availability of organic inputs at lower price for organic farming	70.77	VII	61.90	VIII
	Overall	74.62		78.37	

r_s = Rank correlation $r_s = 0.91^{**}$

** = Significant at 1 per cent level of significance $t = 5.60$

The calculated value of rank order correlation (r_s) was 0.91, which indicates significant correlation between the credit and economic constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different credit and economic constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019)^[8] and Dadheech & Kaur; (2025)^[4].

1.4 Service and supply constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 4.3.4 reveal that among service and supply constraints, the most severely perceived constraint by the organic farmers of both Jaipur (73.33 MPS) and Ajmer districts (84.13 MPS) was “Lack of supportive institutions for organic farming”. The second most severely perceived constraint by the organic farmers of Jaipur district was “Adulteration of organic inputs” (67.69

MPS), while, organic farmers of Ajmer district perceived second most severely constraint was “Transporting challenges of organic inputs for organic farming” (80.95 MPS). The least severe perceived constraint by the organic farmers of both Jaipur (47.18 MPS) and Ajmer (42.86 MPS) districts was “Non availability of organic inputs in commercial scale for organic farming”. The organic farmers of Ajmer district perceived more “Service and supply constraints” (66.40 MPS) as compared to Jaipur district (59.49 MPS) in adoption of organic farming practices.

It may be concluded from the findings that among service and supply constraints, the most severely perceived constraint by the organic farmers of both Jaipur and Ajmer districts was “Lack of supportive institutions for organic farming”. These findings might be due to the reason that in organic farming, there are not enough organizations, agencies or infrastructure in place to provide the necessary support, resources, training, research and advocacy for organic farming. This absence can make it challenging for farmers to adopt and sustain organic practices.

Table 5: Service and supply constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

S. No.	Constraints	n=107			
		Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Transporting challenges of organic inputs for organic farming	63.59	III	80.95	II
2.	Inadequate availability of quality seeds and planting materials for organic farming	53.33	VII	57.14	VIII
3.	Lack of supportive institutions for organic farming	73.33	I	84.13	I
4.	Non availability of organic inputs in commercial scale for organic farming	47.18	IX	42.86	IX
5.	Adulteration of organic inputs	67.69	II	80.16	III
6.	Non-availability of organic biomass for preparing compost	53.33	VII	57.94	VII
7.	Non-availability of urine/dung of local /indigenous cow for making organic manure	63.59	III	62.70	VI
8.	Bulky nature of organic inputs	57.95	V	63.49	V
9.	New young generation not interested in dung lifting	55.38	VI	68.25	IV
	Overall	59.49		66.40	

r_s = Rank correlation $r_s = 0.87^{**}$

** = Significant at 1 per cent level of significance $t = 4.62$

The calculated value of rank order correlation (r_s) was 0.87, which indicates significant correlation between the service and supply constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different service and supply constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019)^[8] and Naik, *et al.* (2025)^[14].

1.5 Environmental constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 6 reveal that among environmental constraints, the most severely perceived constraint by the organic farmers of both Jaipur (68.71 MPS) and Ajmer (81.74 MPS) districts was “Erratic onset of monsoon rain”. The second most severely perceived constraint by organic farmers of Jaipur district was “Organic farming requires clean/non-polluted water for irrigation”

(63.07 MPS), while, organic farmers of Ajmer district perceived second most severely constraint was “Requirement of long period to get positive responses from the ecosystem” (66.66 MPS). The least severe constraints perceived by the organic farmers of Jaipur district was “Foul odour during preparation of organic inputs” (50.25 MPS), while, organic farmers of Ajmer district perceived least severe constraint of “Runoff and leaching of nutrients due to erosion” (50.79 MPS). The organic farmers of Ajmer district perceived more “Environmental constraints” (62.96 MPS) as compared to Jaipur district (58.89 MPS) in adoption of organic farming practices.

It may be concluded from the findings that among environmental constraints, the most severely perceived constraint by the organic farmers of both Jaipur and Ajmer districts was “Erratic onset of monsoon rain”. These findings might be due to various natural and ecological challenges that can limit the effectiveness or efficiency of organic farming practices.

Table 6: Environmental constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Organic farming requires clean/non-polluted water for irrigation	63.07	II	60.31	III
2.	Foul odour during preparation of organic inputs	50.25	VI	58.73	V
3.	Erratic onset of monsoon rain	68.71	I	81.74	I
4.	Heavy incidence of pests and diseases	57.94	IV	59.52	IV
5.	Runoff and leaching of nutrients due to erosion	54.87	V	50.79	VI
6.	Requirement of long period to get positive responses from the ecosystem	60	III	66.66	II
	Overall	58.89		62.96	

 r_s = Rank correlation $r_s = 0.88^*$ * = Significant at 5 per cent level of significance $t = 3.81$

The calculated value of rank order correlation (r_s) was 0.88, which indicates significant correlation between the environmental constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different environmental constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) [8] and Naik, *et al.* (2025) [14].

1.6 Cropping constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 7 reveal that among cropping constraints, the most severely perceived constraint by the organic farmers of Jaipur district was “Drought at critical stages of plant growth” (62.56 MPS), while, most severely perceived constraint by the organic farmers of Ajmer district was “Lack of inputs specifically for weed management” (65.87 MPS). The second most severely perceived constraint by organic farmers of Jaipur district

was “Lack of inputs specifically for weed management” (53.84 MPS), while, the second most severely perceived constraint by organic farmers of Ajmer district was “Drought at critical stages of plant growth” (61.11 MPS). The least severe constraint perceived by the organic farmers of both Jaipur (35.89 MPS) and Ajmer (42.85 MPS) districts was “Drifting of chemicals”. The organic farmers of Ajmer district perceived more “Cropping constraints” (52.70 MPS) as compared to Jaipur district (48.51 MPS) in adoption of organic farming practices.

It may be concluded from the findings that among cropping constraints, the most severely perceived constraint by the organic farmers of Jaipur district was “Drought at critical stages of plant growth,” while the most severely perceived constraint by the organic farmers of Ajmer district was “Lack of inputs specifically for weed management.” These findings might be due to the reason that in organic farming, periods of insufficient rainfall or water availability during essential phases of a plant's development such as germination, flowering and fruiting can significantly impact crop yield.

Table 7: Cropping constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Side effects from surrounding fields	40.51	IV	44.44	IV
2.	Drifting of chemicals	35.89	V	42.85	V
3.	Lack of inputs specifically for weed management	53.84	II	65.87	I
4.	Lack of cooperation among neighbouring fields	50.76	III	49.20	III
5.	Drought at critical stages of plant growth	62.56	I	61.11	II
	Overall	48.51		52.70	

 r_s = Rank correlation $r_s = 0.90^*$ * = Significant at 5 per cent level of significance $t = 3.57$

The calculated value of rank order correlation (r_s) was 0.90, which indicates significant correlation between the cropping constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different cropping constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef (2019) [8].

1.7 Marketing constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 8 reveals that among marketing constraints, the most severely perceived

constraint by the organic farmers of Jaipur district was “Lack of reliable market information, regulation and distribution channels” (88.21 MPS), whereas, most severely perceived constraint by the organic farmers of Ajmer district was “High transportation charges of organic inputs” (92.06 MPS). The second most severely perceived constraint by organic farmers of Jaipur district was “High transportation charges of organic inputs” (81.54 MPS), while, second most severely perceived constraint by organic farmers of Ajmer district was “Lack of reliable market information, regulation and distribution channels” (86.51 MPS). The least severe constraint perceived by the organic farmers of Jaipur district was “Low demand of organic products” (58.97 MPS), whereas, organic farmers of Ajmer district perceived least

severe constraint was “Lack of storage facilities for organic inputs” (58.73 MPS). The organic farmers of Ajmer district perceived more “Marketing constraints” (70.74 MPS) as compared to Jaipur district (68.41 MPS) in adoption of organic farming practices.

The findings are so might be due to reason that in organic farming, there are significant gaps or deficiencies in the infrastructure and support systems necessary for organic farmers to effectively market their produce.

Table 8: Marketing constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Lack of reliable market information, regulation and distribution channels	88.21	I	86.51	II
2.	Adulteration in organic produce	73.33	IV	78.57	IV
3.	Lack of organic market outlets	61.03	XII	64.29	XI
4.	No premium price for non-certified organic products	76.41	III	84.13	III
5.	No organic market for organic products	71.79	V	76.98	V
6.	Number of buyers of organic produce are less in market	67.69	VI	66.67	X
7.	Low demand of organic products	58.97	XIV	62.70	XII
8.	Inadequate transport facilities for organic inputs	67.69	VI	73.02	VI
9.	Lack of farming cooperatives for marketing	60.00	XIII	69.05	IX
10.	Interference of middlemen in the market	63.08	XI	70.63	VIII
11.	Lack of awareness about grading and different grades	57.44	XV	44.44	XV
12.	Purchase agencies available at longer distances	65.64	X	73.02	VI
13.	High transportation charges of organic inputs	81.54	II	92.06	I
14.	Non-availability of ready made organic inputs formulation	66.15	IX	60.32	XIII
15.	Lack of storage facilities for organic inputs	67.18	VIII	58.73	XIV
	Overall	68.41		70.74	

r_s = Rank correlation $r_s = 0.79^{**}$

$**$ = Significant at 1 per cent level of significance $t = 4.72$

The calculated value of rank order correlation (r_s) was 0.79, which indicates significant correlation between the marketing constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different marketing constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) [8] and Harish, N. (2020) [9].

1.8 Certification constraints perceived by organic farmers in adoption of organic farming practices

The analysis of data given in Table 9 reveal that among certification constraints, the most severely perceived constraint by the organic farmers of both Jaipur (78.97 MPS) and Ajmer (76.19 MPS) districts was “Certification fee is high for organic certification”. The second most severely perceived constraint by organic farmers of Jaipur district was “Certification process for organic products is

difficult and time-consuming” (69.23 MPS), while, second most severely perceived constraint by the organic farmers of Ajmer district perceived second most constraint was “Certification agencies are less and located at distant places” (75.40 MPS). The least severe constraint perceived by the organic farmers of both Jaipur (57.44 MPS) and Ajmer (61.11 MPS) districts was “No labeling / Standards for organic inputs”. The organic farmers of Ajmer district perceived more “Certification constraints” (72.06 MPS) as compared to Jaipur district (65.33 MPS) in adoption of organic farming practices.

It can be concluded from the findings that among certification constraints, the most severely perceived constraint by the organic farmers of both Jaipur and Ajmer districts was “Certification fee is high for organic certification.” These findings might be due to the reason that in organic farming, the cost required to obtain official certification stating that a farm or product meets organic standards is expensive. High certification fees can be a barrier for small-scale farmers or producers.

Table 9: Certification constraints perceived by organic farmers of Jaipur and Ajmer districts in adoption of organic farming practices

n=107

S. No.	Constraints	Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Certification process for organic products is difficult and time-consuming	69.23	II	74.60	III
2.	Certification fee is high for organic certification	78.97	I	76.19	I
3.	Difficulty in fulfilling certification norms/rules	60.00	IV	73.02	IV
4.	Certification agencies are less and located at distant places	61.03	III	75.40	II
5.	No labeling / Standards for organic inputs	57.44	V	61.11	V
	Overall	65.33		72.06	

r_s = Rank correlation $r_s = 0.90^*$

$*$ = Significant at 5 per cent level of significance $t = 3.57$

The calculated value of rank order correlation (r_s) was 0.90, which indicates positive correlation between the certification constraints faced by organic farmers of the Jaipur and Ajmer districts in adoption of organic farming practices. This leads to conclusion that, there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different certification constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) [8] and Harish, N. (2020) [9].

1.9 Overall constraints faced by organic farmers in adoption of organic farming practices

A perusal of data in Table 10 reveals that the organic farmers of both Jaipur (74.62 MPS) and Ajmer (78.37 MPS) districts most severely perceived the “Credit and economic constraints”. The organic farmers of Jaipur district perceived second most severe constraints to “Marketing

constraints” (68.51 MPS), whereas, organic farmers of Ajmer district perceived second most severe constraints to “Certification constraints” (72.06 MPS). The organic farmers of both Jaipur (48.72 MPS) and Ajmer (52.70 MPS) districts had least severe perception about “Cropping constraints”. The organic farmers of Ajmer district (66.33 MPS) most severely perceived the constraints as compared to Jaipur district (62.01 MPS) in adoption of organic farming practices.

Hence it can be concluded that among the eight categories of constraints, credit and economic constraint were the most severe constraints faced by both Jaipur and Ajmer districts organic farmers. It was followed by marketing constraints, certification constraints, technical constraints, service and supply constraints, environmental constraints, labour constraints. The Cropping constraints were perceived least severely by Jaipur and Ajmer districts organic farmers.

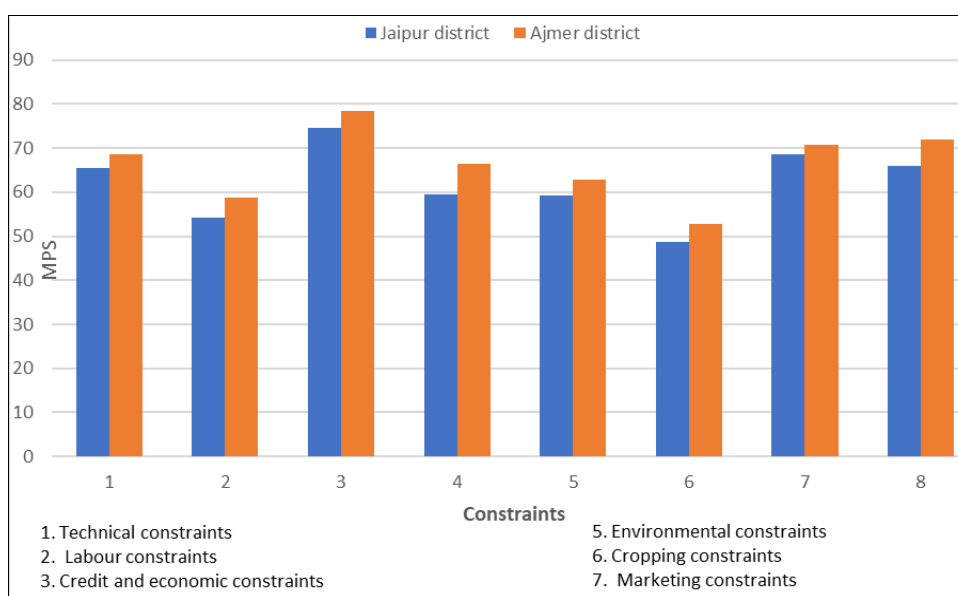


Fig 2: Overall constraints perceived by Jaipur and Ajmer districts organic farmers in the adoption of organic farming practices

Table 10: Overall constraints perceived by Jaipur and Ajmer districts organic farmers in the adoption of organic farming practices

S. No.	Constraints	n=107			
		Jaipur district (n ₁ =65)		Ajmer district (n ₂ =42)	
		MPS	Rank	MPS	Rank
1.	Technical constraints	65.52	IV	68.68	IV
2.	Labour constraints	54.10	VII	58.73	VII
3.	Credit and economic constraints	74.62	I	78.37	I
4.	Service and supply constraints	59.49	V	66.40	V
5.	Environmental constraints	59.15	VI	62.96	VI
6.	Cropping constraints	48.72	VIII	52.70	VIII
7.	Marketing constraints	68.51	II	70.74	III
8.	Certification constraints	65.95	III	72.06	II
	Overall	62.01		66.33	

r_s = Rank correlation $r_s = 0.97^{**}$

** = Significant at 1 per cent level of significance $t = 6.57$

An effort was also made to find out the rank order correlation between overall constraints faced by Jaipur and Ajmer districts organic farmers. The calculated value of rank order correlation (r_s) was 0.97, which indicate significant correlation. The calculated value of 't' (6.57) was higher than its table value at 5 per cent level of significance. Therefore, the null hypothesis: “There is no significant association between the overall constraints faced by organic

farmers of the Jaipur and Ajmer districts in adoption of organic farming practices” was rejected and alternative hypothesis was accepted. This leads to conclusion that, there is an association between the ranks assigned by Jaipur and Ajmer districts organic farmers in different types constraints in spite of difference in magnitude of Mean per cent Score. These findings are in the line of findings of Haneef *et al.* (2019) [8] Naik, *et al.* (2025) [14].

Conclusion

The present study provides empirical evidence that certified organic farmers in Rajasthan face substantial multi-dimensional barriers in the adoption of organic farming practices, with the majority (72.90%) operating under medium to high levels of constraint perception. Among the eight constraint categories examined, credit and economic barriers emerged as the most severely perceived impediments in both Jaipur and Ajmer districts, driven primarily by initial yield reduction during the transition period and inadequate government financial support, which is consistent with the broader literature affirming that economic uncertainty constitutes the most powerful deterrent to organic farming transition among resource-constrained smallholders. The significant inter-district rank correlation ($r_s = 0.97$, $p < 0.01$) reveals that despite differences in constraint intensity, the hierarchical structure of perceived barriers is remarkably consistent across both districts, suggesting that the constraints are systemic in nature rather than locally specific and point to structural deficiencies in the organic farming support ecosystem that transcend individual district boundaries. Establishing organic producer-consumer clubs at State Agricultural Universities (SAUs) and their Krishi Vigyan Kendras (KVKs) can serve as an effective mechanism for strengthening market linkages. These clubs may operate through both physical and digital platforms, facilitating direct interaction between producers and consumers. Additionally, maintaining and regularly updating information on organic farmers and their produce on university and KVK websites can enhance market transparency, improve consumer awareness, and promote direct marketing opportunities. Such initiatives would help organic farmers obtain fair prices for their produce, reduce marketing inefficiencies, and encourage wider adoption of organic farming practices.

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Conflict of Interest

All authors confirm that there is no conflict of interest.

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