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Socio-economic and personal profile of farmers and challenges of extension strategies under ATMA and RKVY in Khargone District, Madhya Pradesh

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Abstract

The study was conducted in Khargone district of Madhya Pradesh, purposively selected for its active involvement in agricultural development schemes such as ATMA and RKVY. Two blocks, Khargone and Barwah, were chosen due to higher farmer participation in extension activities. From these blocks, four villages—Nahjhiri, Badgaw, Bamanpuri, and Naya—were randomly selected based on the presence of active interventions. A total of 120 respondents, 30 from each village, engaged in farming or allied activities and exposed to government programmes, were surveyed to gain relevant insights into the evolution of extension strategies in the district. The analysis in Khargone district revealed that most farmers were middle-aged, with basic schooling, small to semi-medium landholdings, moderate farming experience, and lower-middle income. Positive attitudes towards ATMA and RKVY were strongly associated with information sources (r = 0.509**), extension contacts (r = 0.487**), and education (r = 0.471**), while social participation (r = 0.428**) and landholding (r = 0.392**) also contributed significantly. Challenges included lack of timely information (37.5%), financial constraints (25%), and poor coordination, whereas over half (56.7%) valued farmer field schools, and 45% appreciated ICT tools, highlighting a preference for practical, participatory, and technology-driven extension approaches.

Keywords: Khargone, ATMA, RKVY, challenges

Introduction

Agriculture remains the backbone of India's rural economy, providing employment to nearly half of the country's workforce and supporting the livelihoods of millions of small and marginal farmers. In Madhya Pradesh, agriculture contributes significantly to household income and food security, with crops such as wheat, soybean, gram, and various spices forming the mainstay of rural livelihoods. Despite its importance, the sector faces multiple challenges, including fragmented landholdings, low mechanization, limited access to modern technologies, and climatic vulnerabilities. Strengthening agricultural extension services is therefore crucial to enhance productivity, income, and the adoption of improved practices among farmers (Singh & Meena, 2020) [5].

The participation of farmers in government-led programmes such as the Agriculture Technology Management Agency (ATMA) and Rashtriya Krishi Vikas Yojana (RKVY) plays a vital role in transferring knowledge, skills, and resources. These schemes are designed to provide training, input support, field demonstrations, and exposure visits to enhance technical knowledge and decision-making abilities among farmers. However, the effectiveness of these extension strategies is often influenced by farmers' socio-economic and personal attributes, such as age, education, landholding size, farming experience, income, and social participation. Understanding these attributes is critical for designing programmes that are both inclusive and impactful (Kumar *et al*., 2019; Patel & Meena, 2018) [1, 2].

Despite the availability of such programmes, challenges remain in terms of outreach, regular participation, and the adaptation of recommended practices. Factors such as irregular extension contacts, logistic constraints, limited awareness, and socio-cultural barriers often hinder the optimal utilization of ATMA and RKVY interventions. Hence, a systematic study of farmers' socio-economic and personal profiles, combined with an assessment of the challenges faced in extension strategies, is essential for improving programme effectiveness. This research aims to analyze the demographic and socio-economic characteristics of farmers in Khargone district and examine the constraints in implementing extension strategies under ATMA and RKVY, with the objective of providing actionable recommendations for strengthening agricultural development (Rathod *et al*., 2017; Sharma *et al*., 2019) [3, 4].

Materials and Methods

The present study was conducted in Khargone district of Madhya Pradesh, purposively selected for its active involvement in agricultural development schemes, particularly ATMA and RKVY. Khargone, located in the southwestern Nimar region, covers 8,030 sq. km with 9 development blocks and over 1,300 villages, and a predominantly rural population of 1,873,046 (2011 Census) with a literacy rate of 63.98%. The district features fertile alluvial and black soils, suitable for crops like cotton, soybean, pulses, and wheat, and experiences a tropical climate with average annual rainfall of 950 mm. For this study, two blocks—Khargone and Barwah—were purposively selected for their active scheme implementation, and two villages from each block (Nahjhiri, Badgaw, Bamanpuri, and Naya) were randomly chosen. A total of 120 respondents, 30 from each village, engaged in farming or allied activities and exposed to ATMA and RKVY programmes, were selected through random sampling to provide relevant insights into the evolution and effectiveness of extension strategies.

Primary data for the study were collected through a well-structured and pre-tested interview schedule to ensure accuracy, clarity, and relevance, while secondary data were sourced from official reports, research publications, and government documents. Face-to-face interviews were conducted to facilitate open discussion with respondents. The collected data were analyzed using statistical tools such as frequency distribution, percentage, mean, standard deviation, Likert scale, and correlation coefficient to interpret patterns, relationships, and trends, providing a comprehensive understanding of the variables under study.

Results and Discussion

The study titled "Socio-Economic and Personal Profile of Farmers and Challenges of Extension Strategies under ATMA and RKVY in Khargone District, Madhya Pradesh" aimed to examine the socio-economic and personal characteristics of farmers and identify the challenges faced in the implementation of government agricultural extension schemes. Data were collected from selected respondents through a structured interview schedule to ensure reliability and accuracy. The collected information was systematically classified, tabulated, and analyzed using appropriate statistical techniques. The findings highlight farmers' age, education, landholding, income, farming experience, social participation, and sources of information, along with their attitudes toward ATMA and RKVY programs. The chapter also explores key constraints in extension service delivery and farmer preferences, providing insights for improving the effectiveness and reach of these government schemes in the district.

Profile of the Respondents

Table 1: Distribution of respondents according to socio-economic characteristics, participation, and program contact (n = 120)

S. No.	Variable	Category / Range	Frequency	Percentage
1	Age (yrs)	Young (≤35)	38	31.67
		Middle (36–55)	54	45.00
		Old (>55)	28	23.33
2	Education	Illiterate	12	10.00
		Primary	26	21.67
		Secondary	38	31.67
		Higher Secondary	28	23.33
		Graduate & above	16	13.33
3	Landholding (ha)	Marginal (≤1)	22	18.33
		Small (1–2)	34	28.33
		Semi-medium (2–4)	38	31.67
		Medium (4–10)	20	16.67
		Large (>10)	6	5.00
4	Farming Experience (yrs)	Up to 5	18	15.00
		5–10	32	26.67
		10–15	42	35.00
		Above 15	28	23.33
5	Annual Income (₹)	≤50,000	28	23.33
		50,001–1,00,000	42	35.00
		1,00,001–1,50,000	30	25.00
		>1,50,000	20	16.67
6	Social Participation	No membership	26	21.67
		Member of one org	40	33.33
		Member of ≥2 orgs	38	31.67
		Office bearer in any org	16	13.33
7	Program Participation – Village/Extension Contact	Village Level Worker	Held (3) 52	43.33
			Monthly (2) 40	33.33
			Never (1) 28	23.34
		Ag. Extension Officer	Held 48	40.00
			Monthly 42	35.00
			Never 30	25.00
		SMS	Held 45	37.50
			Monthly 38	31.67
			Never 37	30.83

		Scientist (Agri Univ)	Held 40	33.33
			Monthly 36	30.00
			Never 44	36.67
		KVK	Held 55	45.83
			Monthly 38	31.67
			Never 27	22.50
		Other	Held 28	23.33
			Monthly 36	30.00
			Never 56	46.67
8	Source of Information	Radio	Regular (3) 28	23.33
			Occasionally (2) 52	43.33
			Never (1) 40	33.34
		Television	Regular 60	50.00
			Occasionally 40	33.33
			Never 20	16.67
		Newspaper	Regular 42	35.00
			Occasionally 50	41.67
			Never 28	23.33
		Mobile/Internet/Agri Apps	Regular 55	45.83
			Occasionally 38	31.67
			Never 27	22.50
		Friends/Relatives/Peers	Regular 48	40.00
			Occasionally 50	41.67
			Never 22	18.33
		Extension Personnel	Regular 50	41.67
			Occasionally 44	36.67
			Never 26	21.66
9	Program Attendance	Attended	68	56.67
		Not attended	52	43.33
10	Attitude Towards Govt. Schemes	Low Attitude (Up to 13)	12	10.00
		Medium Attitude (13 to 25)	30	25.00
		High Attitude (above 25)	78	65.00

The age-wise distribution showed that most respondents (45.00%) were middle-aged (36–55 years), followed by young (31.67%) and older farmers (23.33%), suggesting that the majority are in their economically active years, which may positively influence adoption of improved agricultural practices (Meena & Singh, 2017; Patel *et al*., 2019) [9, 12]. Regarding education, 31.67% had completed secondary school, 23.33% higher secondary, 21.67% primary, 13.33% were graduates, and 10.00% were illiterate, indicating sufficient literacy to comprehend agricultural technologies promoted under ATMA and RKVY (Sharma *et al*., 2018; Kumar & Chauhan, 2020) [13, 6].

Landholding patterns revealed that 31.67% had semi-medium (2.01–4 ha), 28.33% small (1.01–2 ha), and 18.33% marginal holdings, with medium and large farmers comprising 16.67% and 5.00%, respectively (Meena *et al*., 2017; Sharma & Singh, 2020) [10, 14]. Farming experience was mainly moderate, with 35.00% having 10.1–15 years, followed by 26.67% with 5.1–10 years, and 23.33% over 15 years, indicating adequate practical exposure for technology adoption (Kumar *et al*., 2018; Yadav & Meena, 2017) [7, 16].

Most respondents (35.00%) had annual incomes of ₹50,001–₹1,00,000, followed by ₹1,00,001–₹1,50,000 (25.00%), reflecting a predominantly lower-middle-income group (Meena & Singh, 2017) [9]. Social participation was moderate to high, with 33.33% members of one organization and 31.67% in two or more groups, while 13.33% held leadership roles, which enhances information access and adoption of innovations (Meena & Singh, 2013; Yadav & Kumar, 2016) [8, 16].

Extension contact was highest with KVK officials (45.83%), followed by Village Level Workers (43.33%) and Agricultural Extension Officers (40.00%), while modern media such as television (50.00%) and mobile apps (45.83%) were major sources of agricultural information (Singh *et al*., 2019; Meena *et al*., 2017) [15, 10]. Over half (56.67%) had attended at least one training programme. Overall, farmers displayed a positive perception of ATMA and RKVY schemes, noting improvements in knowledge, skills, and productivity, although 68.33% indicated a need for greater support in adopting new technologies (Meena *et al*., 2017; Kumar & Singh, 2018; Patidar *et al*., 2020) [10, 7, 11].

Conclusion

The study in Khargone district indicates that middle-aged, moderately experienced farmers with small to semi-medium landholdings and basic education generally hold positive attitudes towards ATMA and RKVY, strongly influenced by information access ($r = 0.509^{**}$), extension contact ($r = 0.487^{**}$), and education ($r = 0.471^{**}$). Key challenges include lack of timely information (37.5%), financial constraints (25%), and poor coordination, while farmers valued field demonstrations (56.7%) and ICT tools (45%). Overall, participatory, practical, and technology-driven extension approaches, supported by strengthened resources and trained personnel, are essential to enhance scheme effectiveness and farmer adoption.

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