

ASSESSING THE ROLE OF BENEFICIARY PROFILES IN SHAPING THE IMPACT OF PM-KISAN ON RURAL LIVELIHOODS

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ABSTRACT

This study was conducted in the Beed and Nanded districts of the Marathwada region in Maharashtra to examine the relationship between the profiles of PM-KISAN beneficiary farmers and the scheme's impact on their livelihoods. Data were collected from 300 beneficiary farmers during 2022-2023 using a structured questionnaire. Various analyses, including correlation, regression, and path analysis, were conducted to examine the relationship between independent variables and the impact of the PM-KISAN scheme. Correlation analysis revealed that social participation and risk orientation were positively and significantly associated with the impact of the PM-KISAN scheme. Additionally, education, extension contact, mass media exposure, economic motivation, and achievement motivation showed a strong positive correlation with the scheme's impact. However, variables such as age, family size, occupation, landholding, annual income, and farming experience did not exhibit a significant relationship with the impact of the scheme. Multiple regression analysis indicated a coefficient of determination (R^2) of 0.653 for the independent variables, meaning that 65.3% of the total variation in the impact of the PM-KISAN scheme could be explained by the 13 selected independent variables. The remaining unexplained variation may be attributed to factors not included in this study or factors beyond its scope. Path analysis further identified mass media exposure, extension contact, education, economic motivation, achievement motivation, age, social participation, and risk orientation as key variables. These factors are crucial for influencing the impact of the PM-KISAN scheme on beneficiaries, as other independent variables had little effect in their absence.

Keywords: PM-KISAN scheme, beneficiary farmers, correlation analysis, regression analysis, path analysis

INTRODUCTION

With a view to provide financial support to all landholding farmers' families in the country, having cultivable land, the Central Government has implemented a Central Sector Scheme, namely, Pradhan Mantri Kisan Samman Nidhi (PM-KISAN). The scheme aims to supplement the financial needs of all landholding farmers' families in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income as well as for domestic needs. The scheme had become operational from December, 2018. Initially, farmers with less than 2 hectares of land were eligible subsequently beginning in June 2019, the scheme was extended to all farmers total of 140 million across India. Under the Scheme an amount of Rs.6000/- per year is released by the Central Government online directly into the bank accounts of the eligible farmers under Direct Benefit Transfer mode, subject to certain exclusions. The financial benefit of Rs.6000/- per year is to be released to the eligible farmers in three instalments of Rs.2000/- each every 4-month / trimester, i.e. April-July, August-November and December-

March. Around 11 crore farmers are getting benefitted from the scheme. In the context of PM-KISAN, a beneficiary is a land holding farmer who meets the eligibility criteria set by the government and receives direct income support under the scheme. Rural livelihood encompasses the means and resources through which people in rural areas sustain their living. It includes agriculture, livestock rearing, wage labor, self-employment, and other rural-based economic activities. Sustainable rural livelihoods depend on access to land, credit, markets, infrastructure, and government support programs like PM-KISAN, which aim to enhance economic security and resilience among rural populations. <https://pmkisan.gov.in/>.

The impact of PM-KISAN on rural livelihoods is not uniform across all beneficiaries; rather, it is shaped by diverse socio-economic profiles of farmers. Understanding how beneficiary characteristics such as age, education, land holding, income levels, family size, access to resources, and financial literacy affect the scheme's outcomes is crucial for optimizing its effectiveness. By assessing the

role of beneficiary profiles, this study provides insights into how different groups of farmers utilize PM-KISAN funds, whether for agricultural investment, household consumption, debt repayment, or other purposes.

Varshney (2020), Kishore and Joshi (2021) found that small and marginal farmers primarily use PM-KISAN funds for consumption and debt repayment rather than long-term investment. While these studies offer broad insights into income support programs, there is a lack of research on how beneficiary characteristics influence the impact of PM-KISAN on rural livelihoods. Most existing studies focus on aggregate outcomes without analyzing how different beneficiary farmer profiles such as landholding size, education, financial literacy, and extension contact, mass media exposure, economic motivation and risk orientation affect the utilization and effectiveness of the scheme. This study addresses this gap by evaluating the role of beneficiary profiles in shaping PM-KISAN's impact on rural livelihoods.

OBJECTIVES

- (1) To analyse the nature and extent of relationship between the characteristics of beneficiaries and the Impact of PM-KISAN scheme on beneficiary farmers
- (2) To assess how and to what extent characteristics of beneficiaries affect a certain outcome
- (3) To know the influence of independent variables both directly as well as through other variables on dependent variables

METHODOLOGY

This study utilized an ex post facto research design with a multistage sampling technique. The sampling process involved four stages: selecting districts, talukas, villages, and respondents. Beed and Nanded districts were purposively selected from the eight districts in Marathwada, Maharashtra, due to their high number of PM-KISAN beneficiaries. In Beed district, three talukas namely- Beed, Georai, and Kaij were chosen out of eleven, while in Nanded district, three talukas such as Loha, Mukhed, and Hadgaon were selected from sixteen. A total of six talukas were thus included in the study. Five villages with the most PM-KISAN beneficiaries were then purposively selected from each taluka, totalling 30 villages. From each selected village, ten beneficiary farmers were purposively chosen, resulting in a sample size of 300 respondents.

The interview schedule was pre-tested with the respondents (60 beneficiaries) outside the study area, where

similar conditions prevailed. Based on the experience gained in the pre-testing, the interview schedule was suitably modified wherever necessary. Each selected respondent was personally contacted and interviewed with the help of interview schedule. It was made sure that the questions were correctly understood by the respondent by repeating the questions wherever necessary and by giving proper explanation during interview. For study, the base year was selected from 2018-19 and 2022-23. The information collected from the 300 respondents with the help of the personal interview schedule. The data of qualitative nature were converted into quantitative form and computation of score was done for each of the independent and dependent variables.

Independent variables selected for the study were Age, Education, Family size, Occupation, Land holding, Farming experience, Annual income, Extension contact, Mass media exposure, Social Participation, Risk Orientation, Economic motivation, and Achievement motivation whereas dependant variable is Impact of PM-KISAN scheme. The statistical methods used to analyse the relationship between dependent and independent variables are Correlation analysis, Regression analysis and Path analysis.

Pearson's coefficient of correlation

Pearson's correlation coefficient (r) was used to find out zero order correlation between dependent and independent variables to see the nature of relationship existed.

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}}$$

Where,

N = Number of respondents

$\sum XY$ = Sum of products of dependent and independent variables

$\sum X$ = Sum of independent variables

$\sum X^2$ = Sum of square of independent variables

$\sum Y$ = Sum of dependent variable

$\sum Y^2$ = Sum of square of dependent variable

$(\sum X)^2$ = Square of sum of independent variables

$(\sum Y)^2$ = Square of sum of dependent variable

r = Correlation coefficient

Multiple regression analysis

Multiple regression is a statistical tool used to derive the value of a dependent variable from several other independent, or predictor, variables. It is the simultaneous combination of multiple factors to assess how and to what extent they affect a certain outcome.

The formula used for this purpose is as follows:

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n + e$$

Where, Y = Dependent variable

a = Constant

X₁..... X_n = values of independent variables

n = Total number of independent variables

b₁ b_n = partial regression coefficients which represent the variation in Y can be associated with given variation in any of the X with remaining independent variables held constant.

e = error term assumed to be normally distributed with mean 0 and variance

The calculated value of 't' was tested against the table value of 't' at n-2 degree of freedom. It was considered to be significant, if the calculated 't' value was greater than table 't' value at either 0.01 or 0.05 level of probability.

Path analysis

This was used to identify the direct, total indirect, total effect and substantial indirect effect of independent variables on dependent variable.

Path analysis adopting multivariate path model suggested by Land (1969) was used to isolate direct, total indirect, total effect and substantial indirect effect of independent variables on dependent variable of the respondents.

The formula used was as follows,

$$Z_{12} = P_{12.1} Z_1 + P_{12.2} Z_2 + \dots + P_{12.n} Z_n + P_{12.} Z_a$$

Where,

Z₁₂ = Dependent variable

Z₁ to Z_n = Independent variables

Z_a = Residual factor

RESULTS AND DISCUSSION

Relationship between profile of beneficiary farmers and impact of PM KISAN scheme

The relationship of profile of beneficiary farmers with impact of PM-KISAN scheme was established by correlation analysis, multiple regression analysis and path analysis. The results of the analysis carried out are presented below.

Table 1 : Relationship between profile characteristics of beneficiary farmers and impact of PM -KISAN scheme (n=300)

Sr. No.	Independent Variable	Coefficient of correlation (r)
X ₁	Age	-0.151**
X ₂	Education	0.263**
X ₃	Family size	-0.031 ^{NS}
X ₄	Occupation	0.017 ^{NS}
X ₅	Land holding	-0.053 ^{NS}
X ₆	Farming experience	-0.175**
X ₇	Annual income	-0.079 ^{NS}
X ₈	Extension contact	0.178**
X ₉	Mass media exposure	0.353**
X ₁₀	Social Participation	0.142*
X ₁₁	Risk Orientation	0.144*
X ₁₂	Economic motivation	0.326**
X ₁₃	Achievement motivation	0.239**

Significant at 0.05 level ** Significant at 0.01 level

Correlation analysis between profile of beneficiary farmers and impact of PM KISAN scheme

In correlation analysis, it was revealed that, independent variables namely education, extension contact, mass media exposure, economic motivation and achievement motivation were positively and highly significantly related with the impact of PM-KISAN scheme at 0.01 level of probability. While social participation, risk orientation had positive and significant relation with the impact of PM-KISAN scheme at 0.05 level of probability. Variables like age and farming experience were negatively associated with the impact of PM-KISAN, significant at 0.01 level of probability. Whereas, variables such as family size, occupation, land holding and annual income had no significant relationship with the impact of PM-KISAN scheme.

Age with Impact of PM-KISAN scheme on beneficiary farmers

The results of analysis indicated that, there was a negative and highly significant (-0.151**) relationship between age and impact of PM-KISAN on beneficiary farmers

at 0.01 per cent level of probability. The possible reason might be that, younger farmers tend to be more adaptable and willing to experiment with different cropping patterns or new agricultural methods. This adaptability can result in better utilization of the financial assistance provided by the PM-KISAN scheme. The results are in line with the findings of Vinaya et al. (2019), Chaitra et. al (2020), Varshney et. al (2020), Adhikari (2022).

Education with Impact of PM-KISAN scheme on beneficiary farmers

The results of analysis revealed that, there was a positive and highly significant (0.263**) relationship between education and impact of PM-KISAN on beneficiary farmers at 0.01 per cent level of probability. It could be due to the farmers with better education often have improved financial literacy, enabling them to manage the funds received from the PM-KISAN scheme more effectively. They can budget, invest in quality inputs, and plan their expenditures to maximize returns and also educated farmers may have more robust connections with agricultural extension services, farmer groups, and cooperatives, providing them with additional support and resources to leverage the benefits of the PM-KISAN scheme. The results are agreed with the findings of Hirwe et. al (2016), Varshney et. al (2020), Reddy et. al (2021), Nigade (2022).

Family size with Impact of PM-KISAN scheme on beneficiary farmers

Family size had a negative and non-significant (-0.031) relationship with impact of PM-KISAN on beneficiary farmers. It was found that having less number of members in family were better able to perceive the effectiveness of the cash transfer as they were able to utilize the amount given in purchasing newer varieties or trying with a different cropping pattern and support their family.

Occupation with Impact of PM-KISAN scheme on beneficiary farmers

Occupation found to have no significant (0.017) relationship with impact of PM-KISAN on beneficiary farmers. It might be due to that PM-KISAN scheme is designed to provide financial support to all eligible farmers regardless of their occupation. Whether a farmer's primary occupation is agriculture or they are involved in secondary activities, the scheme aims to provide equal benefits. The results are agreed with the findings of Reddy et. al (2021).

Landholding with Impact of PM-KISAN scheme on beneficiary farmers

Land holding had a negative and non-significant (-0.053) relationship with impact of PM-KISAN on beneficiary farmers. It was found that PM-KISAN provides a fixed amount of financial support to all eligible farmers regardless of the size of their landholdings. This uniformity in the disbursement means that the relative benefit may be more noticeable to smallholders but less impactful for those with larger landholdings who may require more substantial support proportional to their operational scale. For farmers with larger landholdings, the amount received from the PM-KISAN scheme represents a smaller proportion of their overall income and expenses. Consequently, this support might not significantly alter their farming practices or economic situation compared to smallholders who might rely more heavily on the additional income. The results are agreed with the findings of Kavitha et.al (2020) and Varshney et al., (2020).

Farming experience with Impact of PM-KISAN scheme on beneficiary farmers

The results shown that, there was a negative and highly significant (-0.175**) relationship with farming experience and impact of PM-KISAN on beneficiary farmers at 0.01% level of probability. It might be due to the scheme's impact is felt more strongly by less to medium experienced farmers, who may be more adaptable, in need of support, and open to new agricultural practices. This aligns with the scheme's objective to uplift small and marginal farmers who might be newer to farming or have fewer resources.

Annual income with Impact of PM-KISAN scheme on beneficiary farmers

Annual income had a negative and non-significant (0.079) relationship with impact of PM-KISAN scheme on beneficiary farmers. The possible reason might be the fixed financial support provided by the PM-KISAN scheme is likely to have a more significant impact on farmers with lower annual incomes. For wealthier farmers, this amount represents a smaller portion of their overall income, diminishing its relative importance and impact on their farming activities. Farmers with higher incomes typically have better access to various resources, such as advanced farming equipment, quality seeds, fertilizers, and financial services. As a result, the additional support from the PM-KISAN scheme might not substantially alter their farming operations or productivity,

compared to those with fewer resources.

Extension contact with Impact of PM-KISAN scheme on beneficiary farmers

Extension contact found to have positive and highly significant (0.178**) relationship with impact of PM-KISAN scheme on beneficiary farmers at 0.01% level of probability. This could be due to the farmers with regular extension contact are better informed about the PM-KISAN scheme and other government programs. They receive up-to-date information on eligibility, application procedures, and utilization of funds, ensuring they can take full advantage of the scheme. Farmers with strong extension contact are guided on optimizing their resources, such as water, fertilizers, and seeds. This guidance helps them use the financial aid from the PM-KISAN scheme more efficiently, maximizing its impact on their agricultural operations. The results are agreed with the findings of Kavitha et.al (2020).

Mass media exposure with Impact of PM-KISAN scheme on beneficiary farmers

Mass media exposure found to have positive and high significant (0.353**) relationship with impact of PM-KISAN scheme on beneficiary farmers at 0.01% level of probability. This could be due to mass media plays a crucial role in spreading information about the PM-KISAN scheme, including eligibility criteria, application processes, and benefits. Farmers who regularly engage with mass media are more likely to be aware of new policies, changes in existing programs, and other government initiatives that can complement the PM-KISAN scheme. This holistic awareness helps them make better decisions regarding their farming activities. Mass media also facilitates virtual networking and community learning among farmers. By sharing experiences and solutions through media platforms, farmers can collectively benefit from the scheme, leading to a more significant overall impact.

Social participation with Impact of PM-KISAN scheme on beneficiary farmers

Social participation had positive and significant (0.142*) relationship with impact of PM-KISAN scheme on beneficiary farmers at 0.05% level of probability.

Socially active farmers are more likely to be involved in farmer groups, cooperatives, and community meetings where information about government schemes like PM-KISAN is shared. This participation ensures they

are well-informed about how to apply for and utilize the scheme effectively. Farmers with higher social participation can access collective resources and support networks. These networks can provide assistance in completing the application process for PM-KISAN, understanding eligibility criteria, and troubleshooting any issues that arise.

Risk Orientation with Impact of PM-KISAN scheme on beneficiary farmers

Risk orientation found to have positive and significant (0.144*) relationship with impact of PM-KISAN scheme on beneficiary farmers at 0.05% level of probability. Farmers with a higher risk orientation may be more inclined to invest in high-return but potentially riskier ventures, such as high-value crops, improved seeds, or modern irrigation systems. These investments, supported by PM-KISAN funds, can significantly enhance their returns compared to traditional, low-risk farming methods. Risk-takers are often more willing to leverage credit and other financial instruments to expand their operations. The financial support from PM-KISAN can be used as collateral or a down payment to secure additional funding, enabling them to scale their activities and improve their overall financial health.

Economic motivation with Impact of PM-KISAN scheme on beneficiary farmers

The results in table 3.37 showed that economic motivation had positive and highly significant (0.326**) relationship with impact of PM-KISAN scheme on beneficiary farmers at 0.01% level of probability

Farmers with high economic motivation are more inclined to invest in inputs that enhance productivity, such as high-quality seeds, fertilizers, and modern equipment. The support from PM-KISAN allows them to afford these inputs, resulting in increased agricultural productivity and income. Economically motivated farmers are more likely to set clear financial goals and actively work towards achieving them. The PM-KISAN scheme provides them with the necessary financial resources to invest in activities that align with their economic objectives, leading to better utilization of the funds. The results are agreed with the findings of Chauhan et.al (2016) and Kavitha et.al (2020).

Achievement motivation with Impact of PM-KISAN scheme on beneficiary farmers

Achievement motivation found to have positive and highly significant (0.269**) relationship with impact of

PM-KISAN scheme on beneficiary farmers at 0.01% level of probability. Farmers with high achievement motivation are driven by a desire to set and achieve ambitious goals. The financial assistance from PM-KISAN provides them with the necessary resources to pursue these goals, whether it's increasing crop yield, expanding farm operations, or diversifying their agricultural activities. These farmers are typically better planners and managers, focusing on long-term success. The regular income from PM-KISAN allows them to implement well-thought-out plans, such as crop rotation, soil conservation, and efficient resource utilization, leading to sustained agricultural success.

Multiple regression analysis

Multiple regression analysis was calculated to know the combine effect of all thirteen independent variables in explaining the dependent variable i.e impact of PM-KISAN scheme. It was revealed from Table 2 that, coefficient of determination (R^2) of the independent variables was 0.653. it means that 65.30 per cent of the total variation in the impact of PM-KISAN scheme on its beneficiaries was explained by the selected 13 independent variables. The unexplained variation may be due to the factors not included in the study. It is also may be due to the certain factors which were out of the scope of present study.

Table 2: Multiple Linear Regression analysis of profile of the beneficiary farmers and impact of PM -KISAN scheme

(n=300)

Sr. No.	Independent Variable	Regression coefficients (Bi)	Standard Error (S.E)	't' Value	P-value
X ₁	Age	-0.025	0.037	-0.686 ^{NS}	0.494
X ₂	Education	0.225	0.016	1.915 ^{**}	0.004
X ₃	Family size	-0.017	0.47	-0.007 ^{NS}	0.908
X ₄	Occupation	0.022	0.041	0.004 ^{NS}	0.949
X ₅	Land holding	0.011	0.051	0.021	0.821
X ₆	Farming experience	0.437	0.013	0.098 ^{NS}	0.369
X ₇	Annual income	0.007	0.050	0.013 ^{NS}	0.886
X ₈	Extension contact	2.134	0.026	3.957 ^{**}	0.0002
X ₉	Mass media exposure	3.202	0.053	4.714 ^{**}	0.0001
X ₁₀	Social Participation	0.064	0.079	0.080 ^{NS}	0.193
X ₁₁	Risk Orientation	0.124	0.036	0.061 ^{NS}	0.287
X ₁₂	Economic motivation	1.839	0.024	3.496 ^{**}	0.0006
X ₁₃	Achievement motivation	0.849	0.037	1.823 ^{**}	0.003

$R^2 = 0.653$ $F = 20.122$

(* ** P < 0.05 Significant at 5 per cent level of probability)

(** P < 0.01 Significant at 1 per cent level of probability)

NS = non-significant

The value of 't' showed that impact of PM-KISAN scheme was significantly related with education, extension contact, mass media exposure, economic motivation, and achievement motivation.

The regression coefficients of these variables are 0.225, 2.134, 3.202, 1.839 and 0.849 respectively which indicates that one unit change in the variables viz., education, extension contact, mass media exposure, economic motivation, and achievement motivation would affect 0.225, 2.134, 3.202, 1.839 and 0.849 unit change in impact of PM-

KISAN scheme. The results are agreed with the findings of Kavitha et.al (2020) and Varshney et. al (2020), Vinaya et al. (2022), Ansari et al. (2023), Rathwa et al. (2023), Dubany et al. (2024) and Nyamasoka et al. (2024).

Path analysis showing the effects of profile of PM-KISAN scheme beneficiaries with overall impact of PM-KISAN scheme

Path analysis was attempted to know the influence of independent variables both directly as well as through other variables and data presented in Table 3.

Table 3: Path analysis showing the effect of profile of the beneficiary farmers on the impact of PM-KISAN scheme
(n=300)

Sr. No.	Independent variables	TE	DE	TIE	SIE	
					1	2
X ₁	Age	- 0.208	- 0.032	-0.176	0.237 (X6)	0.138 (X13)
X ₂	Education	0.249	0.114	0.135	0.120 (X7)	0.116 (X6)
X ₃	Family size	-0.375	-0.018	-0.358	0.159 (X7)	0.032 (X4)
X ₄	Occupation	0.076	0.047	0.029	0.037 (X2)	0.031 (X7)
X ₅	Land holding	0.050	0.014	0.036	0.024 (X7)	0.008 (X3)
X ₆	Farming experience	- 0.086	- 0.049	-0.037	0.049 (X1)	0.017 (X13)
X ₇	Annual income	0.090	0.024	0.066	0.028 (X5)	0.014 (X4)
X ₈	Extension contact	0.447	0.136	0.311	0.241 (X7)	0.136 (X6)
X ₉	Mass media exposure	2.815	0.824	1.991	0.824 (X7)	0.306 (X2)
X ₁₀	Social participation	0.183	0.040	0.143	0.108 (X7)	0.023 (X8)
X ₁₁	Risk orientation	0.123	0.073	0.049	0.074 (X8)	0.027 (X7)
X ₁₂	Economic motivation	0.601	0.170	0.431	0.247 (X5)	0.192 (X7)
X ₁₃	Achievement motivation	0.388	0.197	0.191	0.201 (X6)	0.140 (X3)

Path analysis

The coefficient of correlation of the data presented earlier illustrated the relationship between independent and dependent variables in the presence of all other variables, which are normally operative in real-life situations. The relationship exhibited by the correlation study may undergo changes in different situations, where some independent variables may not exist in the environment or may be concealed. To understand the influence of independent variables both directly and through other variables, the correlation coefficient values indicated earlier were used for path analysis.

Total effect

It was observed that, the highest positive total effect on overall impact of PM-KISAN on its beneficiaries was exerted by mass media exposure (2.815), economic motivation (0.601), extension contact (0.447), achievement

motivation (0.388), education (0.249), social participation (0.183), risk orientation (0.123), annual income (0.090), occupation (0.076), land holding (0.050), whereas farming experience (0.086), age (-0.208) and family size (-0.375) was not exerted total effect on impact of PM-KISAN on beneficiary farmers. Total effect means the total of direct and indirect effect exerted by all independent variable on overall impact of PM-KISAN.

Direct effect

It was observed from the Table 4.40 and Fig. 4.33 that, highest direct positive influence on overall impact of PM-KISAN scheme on beneficiary farmers were exerted by mass media exposure (0.824), achievement motivation (0.197), economic motivation (0.170), extension contact (0.136), education (0.114), risk orientation (0.073), occupation (0.047), social participation (0.040), annual income (0.024) and land holding (0.014). whereas, direct positive influence

on overall impact of PM-KISAN on beneficiary farmers were not exerted by family size (-0.018), age (-0.032) and farming experience (-0.049).

Indirect effect

It was revealed from table 4.40 and fig. 4.33 that, the highest positive total indirect effect on overall impact of PM-KISAN scheme on its beneficiaries was exerted by mass media exposure (1.991), economic motivation (0.431), extension contact (0.311), achievement motivation (0.191), social participation (0.143), education (0.135), annual income (0.066), risk orientation (0.049), land holding (0.036), and occupation (0.029) whereas, indirect positive influence on overall impact of PM-KISAN on beneficiary farmers were not exerted by farming experience (-0.037) age (-0.176) and family size (-0.358).

Substantial indirect effect

It was revealed from table 4.40 and fig. 4.33 that, the highest positive first substantial indirect effect on overall impact of PM-KISAN scheme on its beneficiaries was exerted by mass media exposure (0.824) through annual income, economic motivation (0.247) through landholding, extension contact (0.241) through annual income, achievement motivation (0.201) through farming experience, education (0.120) through annual income, social participation (0.108) through annual income, risk orientation through (0.074) through extension contact. Annual income (0.028) through land holding and land holding (0.024) through annual income.

It further showed that, highest positive second substantial indirect effect on overall impact of PM-KISAN on its beneficiaries was exerted by mass media exposure (0.306) through education, economic motivation (0.192) through annual income, Achievement motivation (0.140) through family size, extension contact (0.136) through farming experience, education (0.116) through farming experience, occupation (0.031) through annual income, risk orientation (0.027) through annual income, social participation (0.023) through extension contact and annual income (0.014) through occupation.

Thus, it was observed that, mass media exposure, extension contact, education, economic motivation, achievement motivation, age, social participation and risk orientation were important variables in absence of which independent variables are not able to influence the impact of PM-KISAN scheme on its beneficiaries.

CONCLUSION

In conclusion, this study highlights that certain characteristics of PM-KISAN beneficiaries significantly influence the scheme's impact on their livelihoods.

Specifically, social participation and risk orientation were found to have a positive and significant relationship with the scheme's effectiveness, while education, extension contact, mass media exposure, economic motivation, and achievement motivation exhibited a highly significant positive association. These findings suggest that farmers who are more socially engaged, willing to take risks, and motivated to improve economically tend to benefit more from the scheme. Conversely, factors such as age, family size, occupation, landholding, annual income, and farming experience were found to have no significant impact on the effectiveness of PM-KISAN. This suggests that the scheme's success may be more closely tied to certain behavioral and motivational traits rather than demographic or economic variables alone, underscoring the importance of targeted support that aligns with these influential characteristics. This research is vital for policymakers, agricultural economists, and development practitioners seeking to refine income support schemes and foster inclusive rural development. By linking beneficiary characteristics with livelihood outcomes, this study contributes to a more data-driven, equitable, and impactful agricultural policy framework in India.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest associated with this research paper. The research was conducted independently, and no financial, personal, or professional relationships have influenced the study's findings, conclusions, or recommendations. This work is solely aimed at contributing to academic and policy discussions for the benefit of farmers.

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