



A Rank-Based Quotient Analysis of Constraints Faced by PM-KISAN Beneficiaries across Southern States of India: Key Issues and Policy Implications

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This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme, launched in 2018, aims to provide crucial financial support to farmers in India. This study analyses the constraints experienced by PM-KISAN recipients across five southern Indian states: Tamil Nadu, Andhra Pradesh, Telangana, Karnataka and Kerala. Data was gathered from 1,900 farmers through open-ended surveys, and the constraints were ranked using the Rank Based Quotient (RBQ) method. The top constraint, cited by 98.2% of farmers, was the inadequacy of the Rs. 6,000 annual payments, which was considered insufficient for meaningful agricultural investment. Other key issues included exclusion due to outdated land records (88.8%), ineligibility of tenant farmers (85.5%), irregular fund disbursement (75.4%), and a lack of awareness about the scheme's guidelines (70.5%). These findings indicate the need for policy reforms, including increasing the grant amount, revising eligibility criteria, and improving awareness and transparency in fund distribution. Addressing these issues could significantly improve the impact of the PM KISAN scheme, particularly for small and marginal farmers.

Keywords: PM-KISAN; beneficiaries; constraints; direct benefit scheme; southern India; agricultural support.

1. INTRODUCTION

Indian agriculture has transformed into an agribusiness-driven, high-tech sector, incorporating innovations such as nanotechnology and agricultural biotechnology, along with precision agriculture through artificial intelligence. However, despite these advancements, the average per capita income of Indian farmers remains low, with states like Jharkhand and Bihar among the lowest, earning Rs. 4,895 and Rs. 7,542, respectively, as per the National Sample Survey Office's (NSSO) Situation Assessment Survey Survey (SAS) of Agricultural Households. While larger farmers experience increasing earnings, small and marginal farmers with less than two hectares of land continue to struggle due to issues like climate change, low productivity, credit scarcity, non-remunerative prices, and labour shortages. Over time, the average landholding size has declined from 2.28 hectares in 1970-71 to 1.08 hectares in 2015-16.

Credit access is a critical problem for small and marginal farmers, and the lack of formal credit often forces them to leave land uncultivated or abandon agriculture altogether, threatening national food security. Several studies, including those by Ramprasad [1,2] highlight the indebtedness caused by unequal credit flow favouring larger farmers and the exploitation of small farmers through informal credit sources at high interest rates [3,4]. Recognizing the need for financial support, the Indian government introduced the Pradhan Mantri Kisan Samman Nidhi (PM KISAN) scheme, offering Rs. 6,000

annually to land-owning farmers in three installments. This aims to ease farmers' liquidity constraints for purchasing agricultural inputs like seeds and bio-inputs. Since its launch in 2018, the program's reach has grown from 3.15 crore beneficiaries in 2019 to 10.45 crore in 2022. While the scheme has been reported on periodically, a comprehensive, comparative study across states, particularly focusing on the five southern states (Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, and Kerala), is lacking. This study aims to assess the reach, spending patterns, technological adoption, and constraints faced by PM KISAN beneficiaries in these states, using a blend of qualitative and quantitative methods.

1.1 Objectives

1. This study aims to assess the constraints and suggestions given by the PM-KISAN programme beneficiaries.
2. To assess the key constraints, ranking them and examine the state wise difference.
3. To suggest policy directions in the light of the results of the study.

2. REVIEW OF LITERATURE

Since its inception in 2018, few comprehensive studies have been conducted on the PM-KISAN scheme. Most research has focused on isolated aspects, limiting the scope for broader policy recommendations [5]. Only 26.6% of beneficiaries were aware of the PM Kisan portal, and while 100% appreciated the financial support

during the pandemic, only one-fourth felt the amount was adequate [6]. The scheme's initial reach, finding that 30% of farmers benefited within three months. Spending patterns were aligned with the scheme's goals, with over 50% using funds for agriculture during peak seasons and over 60% spending on non-agricultural needs during the off-season. A Social Accounting Matrix (SAM) multiplier analysis, comparing PM-KISAN with a fertilizer subsidy program. His study found a substantial positive impact on farmers' income and macroeconomic indicators like output and trade [7] examined the adoption of modern agricultural technologies under PM-KISAN in Uttar Pradesh, concluding that the scheme significantly reached farmers without social, economic, or agricultural biases, benefiting those more dependent on agriculture and with limited credit access [8]. The justification for extending PM KISAN to semi-medium and large farmers, concluding that the scheme plays a vital role in mitigating the rural economic slowdown and agricultural crises [9] state-wise implementation, showing that Uttar Pradesh had the largest share of beneficiaries (22%), followed by Maharashtra (10.2%) and Madhya Pradesh (7.2%). States like Manipur and Assam ranked higher in performance, while Sikkim, Bihar, and Goa lagged behind [10]. Haryana, finding that PM KISAN's financial support was insufficient for the beneficiaries' needs [11]. PM-KISAN in Meghalaya and found a moderate increase in cultivation costs and returns for beneficiaries [6] spending patterns in Karnataka and concluded that most beneficiaries spent the funds productively. Found that the timing of PM KISAN installments strongly influenced how the funds were spent, with agricultural expenses prioritized during peak

seasons [12]. However, some constraints, such as lack of knowledge and complex documentation, still need to be addressed [13,14]. A 2024 study by Sharma et al. found that lack of digital literacy among rural farmers was a major constraint, with many unable to access the online portal or verify their status [15]. Research by Hull et al., [16] highlighted issues with land record digitization, noting that discrepancies between physical and digital records prevented some eligible farmers from enrolling [16]. Identified delayed payments as a persistent problem, with over 40% of surveyed beneficiaries reporting inconsistent timing of installments [17]. A comprehensive review found that language barriers in some states hindered effective communication about the scheme's benefits and processes [18]. Female farmers faced additional hurdles in accessing benefits due to gender biases in land ownership documentation [19].

3. METHODOLOGY

The study has been taken up in Five Southern States of India namely Tamil Nadu, Kerala, Andhra, Telangana and Karnataka concurrently and a Multistage Proportionate Random Sampling was followed. From each state the district wise beneficiary list was obtained from Directorate of Agriculture of the concerned states and that was arranged in descending order. The following criteria was followed for selection of Districts, three districts were categorised as Best, moderate, poor in terms of number of beneficiaries and total amount disbursed in PM KISAN and those districts were chosen for the study. Hence, 15 Districts totally were selected @3 each which included Best, moderate and Poor from each state.

Table 1. Distribution of the states and districts and states selected for the study

S. No	States	Districts Identified	Area (sq. km)
1.	Tamil Nadu	Villupuram	3725.54
		Salem	5237
		Thiruvarur	2097.09
2.	Telangana	Nalgonda	105
		Medchal	1084
		Vikarabad	3386
3.	Andra Pradesh	Ananthapuramu	19130
		Prakasam	17626
		Vizianagaram	6539
4.	Karnataka	Belagavi	13415
		Hassana	6845
		Kodagu	4102
5.	Kerala	Ernakulam	3068
		Thrissur	3032
		Thiruvananthapuram	2192

Since the beneficiaries of the PM-KISAN programme are scattered in all the districts of the selected states of the study area, respondents were identified based on snowball sampling or chain referral method in which all the beneficiaries are identified and total respondents are completed from each referral. A total of 1900 out of 380 PM-KISAN beneficiaries in each state are selected and interviewed and the distribution of respondents in each state. The data were collected with the well organised interview schedule/questionnaire prepared with the profile of the respondents and followed up the data pertaining to the constraints faced by the respondents are analyzed by the method of Rank Based Quotient (RBQ).

3.1 Rank Based Quotient (RBQ)

The constraint faced by the beneficiaries in availing the scheme was analysed through RBQ technique. Garrett's formula for converting ranks into per cent was given by

$$\text{Per cent position} = 100 * (R_{ij} - 0.5) / N_j$$

Where,

R_{ij} = rank given for i^{th} factor by j^{th} individual
 N_j = number of factors ranked by j^{th} individual

The per cent position of each rank then converted into scores referring to the Table given below [20]. For each factor, the scores of individual respondents were added together and divided the total number of the respondents for whom scores were added. These mean scores for all the factors were arranged in descending order, ranks were given and most important factors were identified.

4. RESULTS AND DISCUSSION

The constraints faced by PM KISAN beneficiaries in receiving the amount and other related constraints were collected across five southern states and they were cumulated to have comprehensive analysis of issues. An open-ended question was asked to 1900 PM KISAN beneficiaries across five southern states of Tamil Nadu, Andhra Pradesh, Telangana, Karnataka and Kerala which included 380 respondents in each of the state. Percentage for the data was worked out and the constraints were ranked for interpretation.

It is very clear from the table, that several constraints PM KISAN beneficiaries face across

Tamil Nadu, Andhra Pradesh, Telangana, Karnataka, and Kerala. The number one constraint, expressed by 98.2% of beneficiaries, was the low amount of Rs. 6,000, considered inadequate for any significant agricultural investment. Many farmers suggested that consolidating the three installments into a single lump sum would allow for more impactful use of the funds, such as investing in infrastructure. The second major constraint (88.8%) was the cut-off date of February 2019 for land records, which excluded farmers who had not updated their land titles by that date. Many heirs could not access the funds because they had not completed the patta transfer process in time. PM-KISAN has likely eased credit and liquidity constraints for farmers [21]. Another significant issue (85.5%) was the ineligibility of tenant farmers, who lease land but do not own it, thus missing out on the scheme despite cultivating the land. Farmers also highlighted irregularities in the release of funds (75.4%), causing delays in receiving timely payments, which, in turn, affected their ability to plan expenditures [3].

Other constraints included a lack of awareness about the scheme's guidelines (70.5%), with many farmers unsure of eligibility criteria, which caused confusion and, in some cases, led to funds being misallocated. Additionally, only one family member being eligible for the grant in farm families created tensions, especially when multiple family members were actively involved in farming but could not receive the PM KISAN amount. This was expressed by 69.7% of the respondents. Many farmers (57.5%) also didn't know where to register complaints about issues related to non-payment or incorrect registration details. The cumbersome process of changing names on land records (55.5%) and registration issues following patta transfers further compounded these difficulties. A significant portion (52.5%) also reported that the release of funds did not always coincide with the cropping season, limiting its usefulness for agricultural purposes.

The figure illustrating the constraints faced by PM KISAN beneficiaries paints a comprehensive picture of the challenges farmers encounter in accessing and utilizing the scheme's benefits. The most glaring issue, faced by 98.2 per cent of beneficiaries, is the inadequacy of the Rs. 6,000 grants. This amount falls short in covering basic agricultural costs, with examples from Tamil Nadu and Karnataka emphasizing that it doesn't even cover labour wages or transportation costs

for crops. Farmers suggest that a single annual payment would help them make more substantial investments rather than spreading the funds across three smaller installments, which are often used for daily expenses. 67.50 per cent respondents found in medium constraints group, whereas 18.33 per cent respondents were perceiving high constraints and rest 14.17 per cent were perceiving low constraints about getting benefits of PM-KISAN scheme and among selected aspect of constraints, “Lack of knowledge about banking system” [12].

The second-largest constraint, affecting 88.8% of respondents, is the February 2019 cut-off date for updating land records, which excluded many potential beneficiaries. Farmers shared experiences where, despite being legal heirs, they were disqualified from the scheme because they had not transferred the land titles in time. The exclusion of tenant farmers, endorsed by 85.5% of respondents, adds to the frustration, especially in regions where tenant farming is common, such as the Cauvery Delta. These farmers work the land but are not recognized

Table 2. Distribution of PM KISAN Beneficiaries according to their constraints faced by them across five Southern States

		(n=1900)	
S. No	Constraints	Percentage	Rank
1.	Leased farmers are not getting benefits	85.50	III
2.	Rs. 6000 per year was not sufficient	98.20	I
3.	Farmer don't know where to complaint any issues	57.50	VII
4.	Irregularity In release of funds	75.40	IV
5.	Issues in registration after changing name in patta	55.50	VIII
6.	More no of days are needed for changing name in land record	42.50	IX
7.	Lack of awareness about the guidelines of PM KISAN	70.50	V
8.	Cutoff date of February 2019 for getting patta in name of the farmer	88.80	II
9.	Only one member in the family is eligible	69.70	VI
10.	PM KISAN amount not released during the agricultural peak season	25.50	X

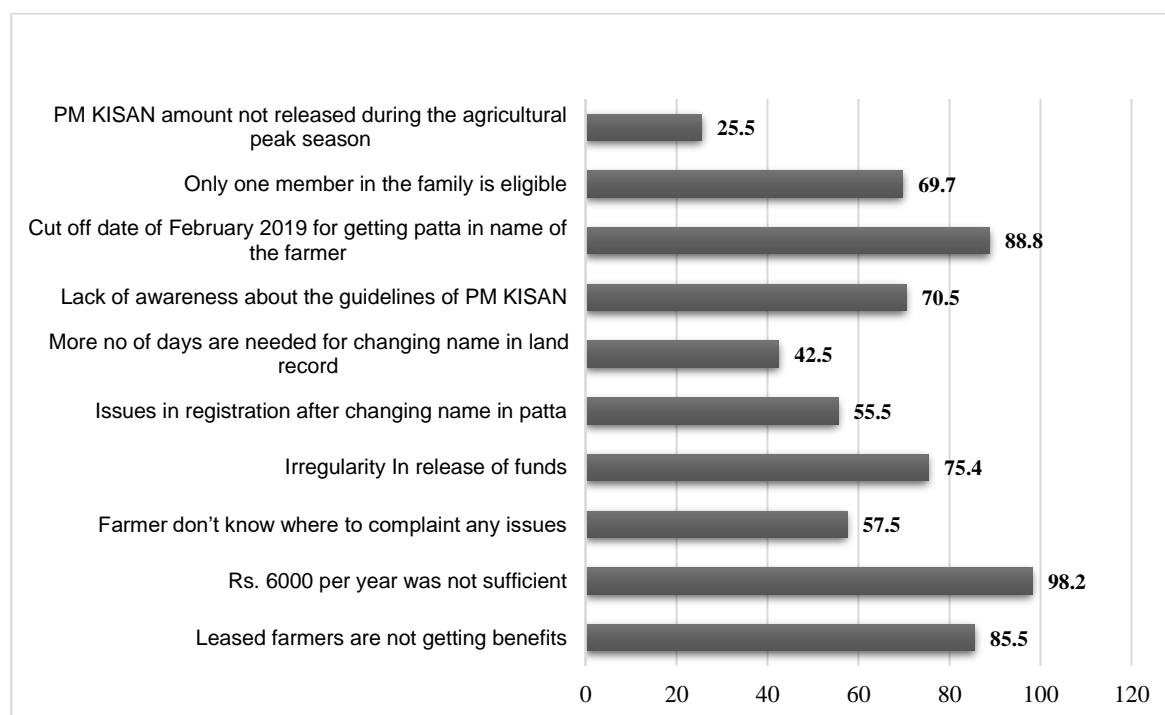


Fig. 1. Distribution of PM KISAN Beneficiaries according to the constraints expressed by them

by the scheme due to their lack of land ownership, prompting calls for revisions to the eligibility criteria. Irregular fund release schedules (75.4%) also emerge as a major issue, with delays caused by administrative hurdles preventing farmers from receiving payments on time. Additionally, a lack of awareness (70.5%) about the scheme's guidelines, eligibility conditions, and complaint registration channels adds to the confusion, as many farmers are unsure of how to navigate the system. Furthermore, the restriction allowing only one family member to receive the grant (69.7%) causes disputes within farm families where multiple members contribute to farming but cannot all benefit from the scheme. Other significant issues include registration problems following patta changes (55.5%) and the disbursement of funds not aligning with agricultural cycles (52.5%), reducing the scheme's overall effectiveness for many farmers. To summarise, majority of PM KISAN beneficiaries expressed the constraints of Rs. 6000 per year was not sufficient, Cutoff date of February 2019 for getting patta in name of the farmer, Leased farmers are not getting benefits, Lack of awareness about the guidelines of PM KISAN, only one member in the family is eligible. Significant proportion of PM KISAN beneficiaries also expressed that Farmer don't know where to complaint any issues, Issues in registration after changing name in patta and PM KISAN amount not released during the agricultural peak season [22,23].

5. CONCLUSION

The PM KISAN scheme has provided financial support to millions of farmers, yet the study highlights several critical constraints that hinder its full potential. The inadequacy of the Rs. 6,000 annual payment is the most significant challenge, with nearly all beneficiaries agreeing that it is insufficient to cover even basic agricultural expenses. Farmers have expressed the need for a consolidated annual payment to make more impactful investments. Additionally, the exclusion of farmers due to outdated land records and the ineligibility of tenant farmers underscore the need for revising eligibility criteria. Issues such as irregular fund disbursement and a lack of awareness about the scheme's guidelines further complicate its effectiveness, particularly for small and marginal farmers who rely on timely payments. Addressing these constraints requires policy interventions that include streamlining the registration process, improving fund release

schedules, and enhancing communication and awareness efforts. Such changes will ensure that the PM KISAN scheme better serves its intended beneficiaries, enabling them to utilize the financial support for agricultural and livelihood improvements. Expanding the scope of the scheme to include tenant farmers and revising the payment structure could significantly enhance the economic impact on rural farming communities.

6. SUGGESTIONS FOR FUTURE RESEARCH

Future studies could focus on the long-term impacts of PM KISAN on agricultural productivity and farmer welfare. Additionally, examining the regional differences in scheme implementation could provide insights into state-level policy improvements.

7. POLICY IMPLICATIONS

This study suggests increasing the PM KISAN payment to provide meaningful financial support for agricultural investment. Additionally, revising eligibility criteria to include tenant farmers, ensuring regular fund disbursement, and improving awareness of the scheme's guidelines are essential to maximize its impact and better support small and marginal farmers.

8. LIMITATIONS

The study is limited by its geographic focus on southern India, potentially excluding region-specific constraints from other parts of the country. Additionally, it relies on self-reported data, which may introduce biases. Further research is needed to assess the scheme's long-term impact on agricultural productivity and rural livelihoods across diverse regions.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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