

“AGRICULTURAL CREDIT’S IMPACT ON CULTIVATION OF CROPS: A STUDY OF KISAN CREDIT CARD SCHEME”

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ABSTRACT

Purpose: *One of the most important aspects is that academic researchers have focused on how agricultural financing affects the crop cultivation activities such as ploughing, irrigation, buying seeds, buying fertilizers, buying pesticides/insecticides, paying for transportation, and paying for labor. Agricultural credit is the crucial input for the cultivation of crops and also to improve the productivity and performance of agriculture sector.*

Design/Methodology/Approach: *The authors' measurement method analyses how aspects of the KCC scheme were successful in providing agricultural credit for the cultivation of crops based on a descriptive cum exploratory analysis. The data was gathered using a stratified random sampling technique and a structured interview schedule with a five-point likert scale on 600 respondents from the Uttar Pradesh Region.*

Findings: *Wilcoxon Signed Rank test estimates that there is a significant positive impact of agricultural credit on the cultivation of crops with special reference to the Kisan Credit Card Scheme. The KCC scheme has a favorable effect on crop cultivation activities such ploughing, irrigation, buying seeds, buying fertilizers, buying pesticides/insecticides, paying for transportation, and paying for labor.*

Research Limitations/Social Implications-*For a comprehensive analysis, a similar study can be expanded to include more crop cultivation activities and areas of India. This study will be crucial in helping to determine the best course of action for distributing schemes like the Kisan Credit Card.*

Originality: *This study provides a rigorous econometric analysis of the impacts. The KCC scheme was quite successful in providing agricultural credit for the cultivation of crops in rural areas of Uttar Pradesh; the study contributes to the current debate on the link between access to formal credit and agricultural productivity and provides valuable inputs for policymakers.*

Keywords: Agricultural Credit, Farm Credit, Rural Credit, KCC Scheme, Crop Cultivation.

INTRODUCTION

Despite being overused, it is nevertheless accurate to say that agriculture is essential to the growth of the Indian economy. About two-thirds of the population is dependent on it, and the

share of Agriculture and Allied Sectors in Gross Value Added (GVA) of the country during 2020-21 is 20.2% (Source: National Statistical Office (NSO), M/o Statistics & PI).

The unique position Indian agriculture occupies in the macroeconomic system and its contribution to the reduction of poverty serve as further evidence of the significance of agricultural finance as a vital input to agriculture. The government and the Reserve Bank of India (RBI) have played a crucial role in developing a broad-based institutional framework for meeting the sector's rising credit requirements because they recognise the significance of the agricultural sector in India's development.

Agriculture sector is not different from any other sector in that capital is the most important input. Availability of finance for crop cultivation activities determines the performance and productivity of the agricultural sector. Therefore, in order to grow and survive, the agriculture sector needs support in the form agricultural credit.

In his Budget Speech on June 1, 1998, Union Minister of Finance Shri Yashwant Sinha announced the KCC Scheme. The KCC Scheme was created to make it easier for farmer households to quickly and easily fulfill their credit needs for cultivation of crops. It is a cutting-edge method of providing finance to farmer households.

The present study was conducted to know the impact of agricultural credit on cultivation of crops and how the KCC scheme was successful in providing the agricultural credit for the cultivation of crops in Budaun district of Uttar Pradesh (India). The Budaun district has 5 tehsils; Budaun Sadar, Bisauli, Bilsa, Dataganj, and Sahaswan and 15 blocks include; Ambiapur, Asafpur, Bisauli, Dehwan, Dataganj, Islamnagar, Jagat, Mio, Qadarchowk, Sahaswan, Salarpur, Samrer, Ujhani, Usawan, and Wazirganj.

REVIEW OF LITERATURE

Andotra, and Gupta, (2015) found that the KCC scheme made a substantial contribution to raising the agricultural output. All of the crops studied in the current study had rising output levels, showing a gain in agricultural production. The only explanation for this is that farmer households can obtain finance for high-quality inputs under the KCC scheme.

Narayanan, (2016) concluded that the study examines the nature of the relationship between formal agricultural loans and agricultural GDP in India using state-level panel data from 1995–1996 to 2011–2012. The study's main emphasis was on the farmer's contribution to the expansion of agriculture. She also found that throughout this time, a rise in agricultural institutional credit has a significant impact on all of the inputs.

Prakash and Kumar, (2016) concluded that both the farm operations and revenue of farmers were significantly impacted by the KCC scheme. This study also makes the recommendation that farmers be informed about the advantages of the KCC Scheme. The KCC beneficiaries' ability to quickly access crop loans under the scheme has helped them to generate higher per-ha gross returns. According to the study, beneficiary farmers experienced reduced transaction costs than non-beneficiary farmers.

Mehta, et al. (2016); Mohan (2006) remarked that the farmers now have a convenient way to satisfy their credit demands thanks to the development of the Kisan Credit Card, a novel and significant credit distribution system. The Kisan Credit Card scheme is one of the most creative and well supported schemes of the Indian government since it is a highly valued and nondiscriminatory financial instrument.

Sihag, (2018); Singh & Prakash, (2022) concluded that the KCC scheme in India has been performing well in terms of issuing KCCs, with a steady rise in the number of cards issued

in India. Additionally, it was shown that the KCC scheme benefits beneficiary farmers more than non-beneficiary farmers, as seen by their farms' higher expenses, returns, production, and productivity.

Kaur and Dhaliwal (2018) concluded that since the financial reforms, India's financial support for agriculture has grown significantly. The number of credit cards issued and the amount sanctioned under the Kisan Credit Card system increased during the research period. Regional rural banks, co-operative banks, and commercial banks made up the majority of the total amount sanctioned by various financial institutions under the Kisan Credit Card scheme.

RESEARCH METHODOLOGY

Objectives of the Study

1. To study the impact of agricultural credit on crop cultivation activities.
2. With the inception of KCC Scheme, how the scheme was successful in providing the agricultural credit for the cultivation of crops.

Hypothesis

Null Hypothesis: H_0 - There is no significant impact of agricultural credit on crop cultivation activities.

Alternative Hypothesis: H_1 - There is a significant impact of agricultural credit on crop cultivation activities.

RESEARCH DESIGN

The **Descriptive and Exploratory** research design was used in this research. The variables for gathering the primary data were identified before creating the structured interview schedule questionnaire. Only the closed-ended question was included in the interview schedule. The **Stratified Random Sampling** technique was used in the present study which comes under probability sampling techniques.

Selected Sample: The Budaun district has of 5 Tehsils and 15 Blocks. The selected sample includes 15 Blocks; On the basis of largest geographical area (In Hectares), Two villages from each block (15x4 i.e. 60 Villages) was selected from the stratum (Source; District Census Handbook Budaun, Directorate of Census Operations, Uttar Pradesh, Census of India 2011) and; 10 beneficiary farmers (i.e. one from each group marginal, small, semi-medium, medium and large; Table 1) from each village was selected randomly.

In agriculture Census, the operational holdings are categorised in five size classes as follows Table 1.

Sl. No.	Category	Size-Class
	Marginal	Below 1.00 hectare
	Small	1.00-2.00 hectare
	Semi- Medium	2.00-4.00 hectare
	Medium	4.00-10.00 hectare
	Large	10.00 hectare and above

Source: Press Information Bureau, Government of India, Ministry of Agriculture & Farmers Welfare, 05 FEB 2019 4:26PM by PIB Delhi.

Sample Size: The number of objects to be chosen from the entire universe to form a sample is referred to as the sample size. In the present study 600 (15x4x10) respondents (Beneficiary farmers of KCC Scheme) were taken.

Source of Data- Primary and secondary sources were also employed to gather the data for this study. The Interview Schedule was employed in this study to gather the primary data. The secondary data was gathered from a variety of publicly available reports, including those from the RBI, NABARD, Census 2011, research papers, websites, and other sources.

Research Tool- In order to analyze the impact of agricultural credit on crop cultivation activities the **Wilcoxon Signed Rank Test** was used using SPSS.

DATA ANALYSIS AND INTERPRETATION

Impact of Agricultural Credit on Crop Cultivation Activities

In the present study the Wilcoxon Signed Rank Test was used to know the impact of agricultural credit on crop cultivation activities.

Guidelines for understanding correlation magnitude and power estimation were presented by Cohen (1988). Particularly, it was advised to classify $r = 0.10$, $r = 0.30$, and $r = 0.50$ as small, medium, and large in magnitude, respectively.

Parameter	Z	Asymp. Sig. (2-tailed)	Effect Size ($r = Z/\sqrt{N}$)	Inference
Ploughing	-18.943	0.000	0.773	Significant
Irrigation	-17.912	0.000	0.731	Significant
Purchasing Seeds	-13.634	0.000	0.557	Significant
Purchasing Fertilizers	-13.314	0.000	0.543	Significant
Purchasing Pesticides/Insecticides	-14.234	0.000	0.581	Significant
Transportation Cost	-19.119	0.000	0.781	Significant
Labour Charges	-20.439	0.000	0.834	Significant

Interpretation

The p value and r in table 2 shows the level of significance and effect size, respectively. The Wilcoxon Signed Rank Test was used to assess the efficacy of crop cultivation operations before and after beneficiary farmers adopted the KCC Scheme. After the adoption of the KCC Scheme with large effect, the efficacy of ploughing has changed in a statistically significant positive way, as indicated by the values of $p = 0.000$ (i.e. < 0.05) and $r = 0.773$ for ploughing. After the adoption of the KCC Scheme with large effect, the effectiveness of irrigation has changed in a statistically significant positive way, as indicated by the values of $p = 0.000$ (i.e. < 0.05) and $r = 0.731$ for irrigation. After the implementation of the KCC Scheme with large effect, the efficacy of purchasing seeds has changed in a statistically significant positive way, as indicated by the $p = 0.000$ (i.e. < 0.05) and $r = 0.557$ values for purchasing seeds. After the implementation of the KCC Scheme with large effect, the effectiveness of purchasing fertilisers has changed in a

statistically significant positive way, as indicated by the values of $p=0.000$ (i.e. <0.05) and $r=0.543$ for purchasing fertilizers.

The effectiveness of purchasing pesticides and insecticides has changed in a statistically significant positive way after the adoption of the KCC Scheme with large effect, as indicated by the values of $p=0.000$ (i.e. <0.05) and $r=0.581$ for purchasing pesticides/insecticides. The adoption of the KCC Scheme has resulted in a statistically significant improvement in the efficiency of covering the costs of transportation, as indicated by the transportation cost values of $p=0.000$ (i.e. <0.05) and $r=0.781$. After the introduction of the KCC Scheme with large effect, the efficacy of covering labour charges expenses has also changed in a statistically significant positive way, as indicated by the labour charges values of $p=0.000$ (i.e. <0.05) and $r=0.834$.

Hypothesis

Null Hypothesis: H_0 - There is no significant impact of agricultural credit on crop cultivation activities.

Alternative Hypothesis: H_1 - There is a significant impact of agricultural credit on crop cultivation activities.

Inferences

All of the crop cultivation activities in table 3 have p values less than 0.05, and the r values for ploughing (0.773), irrigation (0.731), purchasing seeds (0.557), purchasing fertiliser (0.543), purchasing pesticides/insecticides (0.581), transportation cost (0.781), and labour charges (0.834) are all greater than 0.50.

Therefore, it is clear from the statistics in the table that the KCC Scheme has had a considerable positive impact on the efficiency of crop cultivation activities. So, the null hypothesis has been rejected because the p value for all crop cultivation activities is 0.000 (i.e. less than 0.05). Hence, it can be concluded that the agricultural credit has a significant impact on crop cultivation activities.

How the KCC Scheme was Successful in Providing the Agricultural Credit for the Cultivation of Crops

Crop Cultivation Activity	Level of Impact	No. of Respondents	Percent
Ploughing	LI- Low impact	72	12.0
	MI- Medium impact	67	11.2
	N- Neutral	22	3.7
	HI- High impact	180	30.0
	VHI- Very high impact	259	43.2
	Total	600	100.0
Irrigation	LI- Low impact	90	15.0
	MI- Medium impact	100	16.7
	N- Neutral	20	3.3
	HI- High impact	147	24.5
	VHI- Very high impact	243	40.5

	Total	600	100.0
Purchasing Seeds	LI- Low impact	61	10.2
	MI- Medium impact	65	10.8
	N- Neutral	30	5.0
	HI- High impact	160	26.7
	VHI- Very high impact	284	47.3
	Total	600	100.0
Purchasing Fertilizers	LI- Low impact	53	8.8
	MI- Medium impact	67	11.2
	N- Neutral	24	4.0
	HI- High impact	150	25.0
	VHI- Very high impact	306	51.0
	Total	600	100.0
Purchasing Pesticides/Insecticides	LI- Low impact	55	9.2
	MI- Medium impact	72	12.0
	N- Neutral	23	3.8
	HI- High impact	162	27.0
	VHI- Very high impact	288	48.0
	Total	600	100.0
Transportation Cost	LI- Low impact	112	18.7
	MI- Medium impact	211	35.2
	N- Neutral	22	3.7
	HI- High impact	147	24.5
	VHI- Very high impact	108	18.0
	Total	600	100.0
Labour Charges	LI- Low impact	65	10.8
	MI- Medium impact	145	24.2
	N- Neutral	13	2.2
	HI- High impact	176	29.3
	VHI- Very high impact	201	33.5
	Total	600	100.0

Interpretation

The extent of the KCC scheme's influence on cultivation of crops.

- i. The majority of the respondents (beneficiary farmers) who responded agreed that the KCC scheme had a favorable effect on ploughing makes it very evident that the greatest majority of respondents (73.2%) of the total said that the KCC scheme has produced VHI- Very high impact (43.2%), followed by HI- High impact (30%). Only a small number of respondents claimed that the KCC scheme had LI (low impact) and MI (medium impact) on ploughing.
- ii. The majority of the respondents (beneficiary farmers) who responded agreed that the KCC scheme had a good influence on irrigation it very evident that the majority of respondents (65%) of the total believed that the KCC scheme had produced VHI- Very high impact (40.5%), followed by HI- High impact (24.5%). Only a small number of respondents claimed that the KCC scheme had LI- Low impact and MI- Medium impact on irrigation.
- iii. The KCC scheme has improved seed purchasing, according to the majority of respondents (beneficiary farmers), who agreed with this assertion it abundantly evident that the majority of respondents (74%) of the total respondents believed that the KCC scheme had produced VHI- Very high impact (47.3%) and HI- High impact (26.7%). Only a small number of respondents claimed that the KCC scheme had LI- Low and MI- Medium impacts on the purchasing of seeds.

- iv. The majority of respondents (beneficiary farmers) who responded agreed that the KCC scheme had a good considerable effect on purchasing fertilisers makes it abundantly evident that the majority of respondents (76%) of the total respondents believed that the KCC scheme had produced VHI- Very high impact (51%) and HI- High impact (25%). Only a small number of respondents claimed that the KCC system had LI- Low impact and MI- Medium impact on the purchase of fertilisers.
- v. The majority of respondents (beneficiary farmers) who responded agreed that the KCC scheme had a beneficial effect on purchasing pesticides and insecticides makes it abundantly evident that the majority of respondents (75%) of the total respondents believed that the KCC scheme had produced VHI- very high impact and HI- high impact respectively. Only a small percentage of respondents claimed that the KCC scheme had a LI- Low Impact and MI- Medium Impact on the cost of pesticides and insecticides.
- vi. Since the majority of respondents (beneficiary farmers) disagreed with the statement that the KCC scheme has not had a significant positive influence on transportation costs. According to which represents 53.9% of the total respondents, the biggest percentage of respondents claimed that the KCC scheme had a MI- Medium Impact (35.2%), followed by a LI- Low Impact (18.7%). HI- High Impact and VHI- Very High Impact on Transportation Cost were both reported by a very small number of respondents as being caused by the KCC scheme.
- vii. The KCC scheme has improved labour charges, according to the majority of respondents (beneficiary farmers), who agreed with this assertion makes it abundantly evident that the greatest majority of respondents (62.8%) of the total said that the KCC scheme has produced VHI- Very high impact (33.5%), followed by HI- High impact (29.3%). Only a small percentage of respondents claimed that the KCC scheme had a LI- Low Impact and MI- Medium Impact on labour charges.

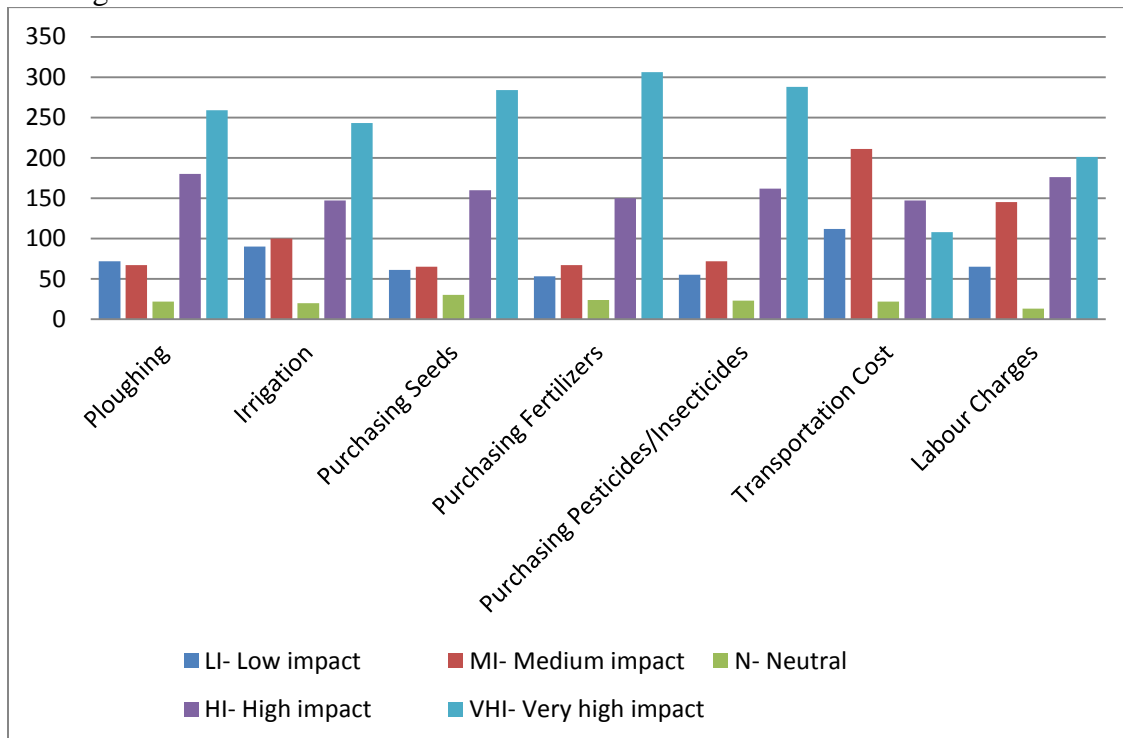


FIGURE 1

LEVEL OF IMPACT ON CROP CULTIVATION ACTIVITIES THAT THE KCC SCHEME HAS CREATED

Findings

1. According to, all crop cultivation activities have p values less than 0.05, and the r values for ploughing (0.773), irrigation (0.731), purchasing seeds (0.557), purchasing fertiliser (0.543), purchasing pesticides/insecticides (0.581), transportation cost (0.781), and labour charges (0.834) are all higher than 0.50. Therefore, it is clear from the statistics in the table that the agricultural credit through KCC scheme has had a considerable positive impact on the efficiency of crop cultivation activities.
2. The null hypothesis has been rejected because it was estimated that the p value in is 0.000 (i.e., less than 0.05) for all the crop cultivation activities. In the light of this, it can be concluded that the agricultural credit significantly affects crop cultivation activities.
3. The KCC scheme has a favorable effect on crop cultivation activities such ploughing, irrigation, buying seeds, buying fertilisers, buying pesticides/insecticides, paying for transportation, and paying for labour. The vast majority of respondents supported the KCC scheme because it helps farmer households to enhance agricultural output by investing in agricultural inputs.
4. Provided the evidence that the KCC Scheme was successful in giving farmer households access to agricultural credit to pay for ploughing expenses, irrigation expenditures, expenses of purchasing seeds, expenses of purchasing fertilizers, expenses of purchasing pesticides/insecticides, the cost of transportation and, the cost of labour charges. The vast majority of responders were in favour of the KCC Scheme because it helps farmers in the cultivation of crops.
5. The present study reveals the significant positive impact of agricultural credit on crop cultivation activities and the scheme is quite successful to the beneficiary farmers for the cultivation of crops.

CONCLUSION

The sustainable growth of agriculture is essential for the acceleration of the Indian economy because each change in the agricultural sector, whether positive or negative, has many consequences on all areas of the economy. The Indian economy is based on the agriculture sector, which is also its most significant sector. Among the many variables that affect agricultural development are infrastructure, infrastructure developments, markets, and financing. Among these factors, credit is a crucial one for the continued growth of agriculture. The policymakers have taken a number of initiatives in relation to agricultural finance and one of them is the Kisan Credit Card Scheme.

In particular, the KCC Scheme was used to examine how agricultural financing impacts crop cultivation in the present study. The study's main focus is on impact of agricultural credit on cultivation of crops and how the KCC Scheme was successful in providing the agricultural credit for the cultivation of crops. The present study reveals that there is a significant positive impact of agricultural credit on crop cultivation activities and the KCC scheme is quite successful to the beneficiary farmers for the cultivation of crops.

REFERENCES

- Andotra, N., & Gupta, P. (2015). Impact of Kisan Credit Card scheme on agriculture production: A case study of Kathua District. *International Journal of Economic Plants*, 2(2), 67-69.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum Associates.
- Kaur, H., & Dhaliwal, N. K. (2018). Progress of kisan credit card scheme in India. *Amity Journal of Agribusiness*, 3(1), 26-36.
- Mehta, D., Trivedi, H., & Mehta, N. K. (2016). Indian kisan credit card scheme: An analytical study. *BRAND. Broad Research in Accounting, Negotiation, and Distribution*, 7(1), 19-23.
- Mohan, R. (2006). Agricultural credit in India: Status, issues and future agenda. *Economic and Political Weekly*, 1013-1023.
- Narayanan, S. (2016). The productivity of agricultural credit in India. *Agricultural Economics*, 47(4), 399-409.
- Prakash, P., & Kumar, P. (2016). Performance of kisan credit card scheme in Tamil Nadu. *Indian Journal of Agricultural Economics*, 71(2), 191-211.
- Sihag, S. (2018) An economic evaluation of kisan credit card scheme in Haryana.
- Singh, S. P., & Prakash, V. (2022). An Empirical Study on the Impact of Kisan Credit Card Scheme in the light of Rural Credit. *Journal of Positive School Psychology*, 1472-1480.

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