



Impact and Determinants of Credit Under KCC Scheme in Guntur District of Andhra Pradesh

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ABSTRACT

The objective of this research article is to analyze the impact and to find the determinants of credit under Kisan Credit Card (KCC) scheme in Guntur district of Andhra Pradesh. 80 farmers were selected as KCC holders and another 80 farmers taken as non-KCC holders. The KCC holders got benefits like meeting credit requirements for crop cultivation for the whole year, availability of credit whenever the credit is needed, reduction in cost of credit for availing the bank loan etc. The independent variables cost of cultivation (0.531) as a whole influenced significantly to the credit requirement under KCC compared to other variables, i.e. loan for farming sector (0.429) and consumption loan (0.021).

Key words : Credit, Cost of cultivation, Determinant, KCC.

In the sustained growth of agricultural sector credit plays an important role. Credit is not only one of the critical inputs in agriculture but also an effective means of rural development (Kumar *et al*, 2007). About 60 per cent of the credit requirement of farmers is now met by the institutional sources and the remaining 40 per cent by the informal sources like money lenders who charge high interest rate. (Rao, 2003). The effective monthly interest rate charged by them was about 5 percent to more than 100 percent (Robinson, 2001).

To provide adequate and timely credit support from the banking system to the farmers for their cultivation needs Kisan Credit Card scheme (KCCs) is being introduced for crop loans. This scheme was announced in budget speech of the Finance Minister in 1998-99. It was started by the GOI in consultation with the RBI and NABARD in 1998-99. This was implemented throughout the country by public sector commercial banks, RRBs and co-operative banks.

KCC scheme is a landmark in the history of rural credit in India (Udaykumar and Thattil, 2001). This scheme has facilitated the availability of credit in time and has simplified the procedure for availing the loan from banks to a large extent (Nahatkar *et al*, 2002). The timely availability of crop loan has helped the farmers to realize higher returns from farming (Singh and Sekhon, 2005). However Parmar and Sahil, (2009) concluded that

most of the beneficiaries (44.17%) were in the low category of attitude towards Kisan Credit Card scheme followed by 33.33 per cent in medium and 22.50 per cent in high category in Sehore district of Madhya Pradesh. In this context the present study was taken up to analyse the impact and to examine the determinants of credit under KCC scheme in Guntur district of Andhra Pradesh.

MATERIAL AND METHODS

To analyse the determinants and their degree of influence the ordinary least square model has been applied to analyse the factors accountable for total credit requirement i.e. cost of cultivation, consumption loan and loans for farming and non-farming operations. Samanthara, (2010), Patra and Sahu, (2012) conducted OLS for their research studies.

The functional form of the model

$$CR = f_i(X_{ij})$$

Or

$$CR = f_j(C, CL, N, F)$$

i, stand for individual KCC holder

j, stands for exogenous variables

CR= Credit Requirement

X_j= exogenous variables

By taking log-linear function the model becomes:

$$\text{Log CR} = \text{Log } \alpha + \beta_1 \text{ Log C} + \beta_2 \text{ Log CL} + \beta_3 \text{ log N} + \beta_4 \text{ Log F} + \xi$$

Where

α = Constant term

CR = credit requirement

C = cost of cultivation

CL = consumption loan

N = loan for allied and Non-farming operations

F = loan for farming operations

ξ = error term.

To know the impact of credit provided under KCCs the Z- test was conducted between KCC holders and non- KCC holders by comparing the yield levels of major crops cultivated by the sample respondents.

$$z = \frac{\bar{x}_1 - \bar{x}_2 - \Delta}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

Where

\bar{x}_1 and \bar{x}_2 are the means of the two samples, Δ is the hypothesized difference between the population means

σ_1 and σ_2 are the standard deviations of the two populations

n_1 and n_2 are the sizes of the two samples.

RESULTS AND DISCUSSIONS

Credit requirement of the sample farmers

To study the determinants of credit requirement under KCC the ordinary least square model has been applied. The variables included in the model were cost of cultivation (C), consumption loan (CL), loan taken for farming sector (F), loan taken for non farming sector (N) as independent variables and credit requirement (CR) as dependent variable. The analytical findings of OLS model are presented in the table 1.

The co-efficient of multiple determination (R^2) was 0.96 (significant at 5% level) which indicates that 96 per cent of variability in the credit requirement was explained by the selected independent variables namely cost of cultivation (C), consumption loan (CL), loan taken for farming sector (F), loan taken for non-farming sector (N). It is observed from the table 1, the cost of cultivation (0.531) significantly influence more to the credit requirement followed by farming sector (0.429), where as non- farming sector was non-significant

to the credit requirement. This revealed that farmers want more credit for farming in order to meet the cultivation expenses and to sustain their livelihoods. The similar findings were reported by (Samantara, 2010, Patra and Sahu, 2012).

Impact of credit on yield

The Z- test was conducted to know the impact of credit under KCC scheme. By analyzing the yield levels of major crops cultivated by the sample respondents *i.e.*, paddy, cotton, chilli and turmeric.

The table. 2 shows that estimated mean yield (quintal/ hectare) of KCC holders of paddy, cotton, chilli and turmeric were higher *i.e.*, 52.5q/ha, 27.6 q/ha, 66.7 q/ha and 60.25 q/ha respectively, compared to non- KCC holders *i.e.*, 48.9 q/ha, 27.3 q/ha, 64.07 q/ha, 58.15 q/ha respectively. This can be concluded that the KCC holders obtained more yield than non-KCC holders because of optimum allocation of inputs due to better access at credit.

Samantara (2010) also observed the mean yield level of paddy for KCC holders (24.99 q/ha) was high compared to non-KCC holders (20.30 q/ha). Samanthara and Badatya (2011) stated that the increasing the crop yield was partly attributed to the credit access through KCC. Olekar (2012) observed value of output per hectare was higher for paddy (13.3%) cultivated by KCC holders as compared to the control farmers due to use of higher doses of purchased inputs. Banafar *et al.*(2011) observed the cropping intensity for credit beneficiaries was found to be 165.4 per cent and for non- beneficiaries the cropping intensity was found to be 124.97 per cent, and opined that agricultural credit play a great role in increasing production and productivity of crops. It was concluded from the study that more yields obtained by KCC holders is significant in paddy, cotton, chilli and turmeric, which can be attributed to timely access to crop loans.

CONCLUSION

It is observed that Kisan credit Card provides hassle free access to institutional loans to farmer effectively which resulted in increasing productivity of crops compared to the corresponding yield of non-KCC holders. The adequate application of comparatively higher doses of inputs like fertilizer,

Table 1. Factor influencing the credit requirement by the farmers (n=80).

S. No.	Particulars	Regression Coefficients	t calculated value
1	Intercept	0.55 (0.12)	4.50
2	Cost of cultivation (C)	0.531* (0.027)	19.22
3	Consumption loan (CL)	0.021** (0.003)	5.93
4	Loan for farming sector (F)	0.429* (0.026)	16.25
5	Loan for non- farming sector	0.003 NS (0.003)	1.02 NS

Co-efficient of multiple determination R^2 : 0.96*, 't' table value - 1.99

Note: Figure in parentheses indicate standard errors,

* Significant at 5% level,

** Significant at 1% level, NS= Non-significant

Source: Field Survey data

Table 2. Mean yield levels of KCC and non KCC holders.

Crop	Mean yield levels (q/ha)		Z-calculated values	Z- table values	Probability values
	KCC holders	non- KCC holders			
Paddy	52.5	48.9	3.15	1.95	0.006**
Cotton	27.6	27.3	0.65	1.95	0.51
Chilli	66.7	64.07	3.05	1.95	0.002**
Turmeric	60.25	58.15	2.47	1.95	0.01*

* Significant at 5% level,** Significant at 1% level

Source: Field Survey data

manure, pesticide, labour, irrigation waters, etc. by KCC farmers are contributing factors for improvement of yield level. Cost of cultivation is the most significant determinant of credit requirement under Kisan Credit Card scheme. It is analysed that the sample farmers need more credit for farming in order to meet the crop cultivation expenses and to sustain their livelihoods. It was also concluded from the study that more yields obtained by KCC holders is significant in paddy, cotton, chilli and turmeric, which can be attributed to timely access to crop loans. The study also suggests that KCC should not only be a vehicle of short term credit to

agriculture but also increasingly as a source of investment and consumption needs of farmers and evolve the KCC into a truly multipurpose card and to make KCC into a farmers' friendly efficient instrument for credit delivery system.

LITERATURE CITED

Banafar K N S, Verama O, Chandrakar M R and Gauraha A K 2011 Performance of PACS: A case study of Chhattisgarh. *Indian Journal of Agricultural Economics*, 66(3): 484.

- Kumar A, Singh D K and Kumar P 2007** Performance of Rural credit and Factors affecting the choice of credit sources. *Indian journal of agricultural Economics*, 62(3): 297-313.
- Nahatkar S B, Mishra P K, Raghuvanshi N K and Beohar B B 2002** An Evaluation of Kisan Credit Card Scheme: A case study of Patan tehsil of Jabalpur district of Madhya Pradesh. *Indian Journal of Agricultural Economics*, 57(3):578.
- Olekar R O 2012** Effectiveness of Kisan Credit Card Scheme in Karnataka State. *International Journal of Research in Commerce, It & Management*, 2(7): 104-109.
- Parmar and Shail 2009** A study on repayment behavior of beneficiaries of Kisan Credit Card scheme in Sehore block of Sehore district of Madhya Pradesh. M.Sc. thesis, R.A.K. COA, Sehore, JNKVV, Jabalpur.
- Patra S and Sahu K K 2012** An Econometric Study of Determinants of Credit under Kisan Credit Card. *International Journal of Arts and Commerce*, 1 (2): 100- 113.
- Rao C H H 2003** Reforms agenda for Agriculture. *Economic and Political Weekly*, 38(2): 615-620.
- Robinson M R 2001** The microfinance revolution, Sustainable Finance for the poor. *Open Society Institutio and World bank*, Washington, D.C., U.S.A.
- Samantara S 2010** Kisan Credit Card - A Study Occasional Paper- 52. Department of Economic Analysis and Research. NABARD. <https://www.nabard.org/pdf/Kisan%20Credit%20Card.pdf>.
- Samanthara S and Badatya K C 2011** Implimentation of Kisan credit card (KCC)-NABARD's Experiances. *Indian Journal of Agricultural Economic*, 66 (3): 484- 485.
- Singh H and Sekhon M K 2005** Cash benefit of the Kisan credit Card Scheme: Onus upon the farmer. *Indian Journal of Agricultural Economics*, 60(3): 319-334.
- Udaykumar and Thattil G S 2001** Agricultural finance and total credit requirement of Farmers-A case study based upon Kisan Credit Card. *Indian Co-operative Review*, 39 (2): 89-101.

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