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Impact of Agricultural Credit on NPAs of Indian Banks: A Focus on the Kisan Credit Card Scheme

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Abstract

This study investigates how the NPAs of banks in India are affected by the Kisan Credit Card (KCC) program and outstanding credit to agriculture. The KCC program, introduced in 1998, attempts to improve loan availability for agricultural endeavours. The impact of the program on banks' asset quality hasn't been noticed much, despite its significance. By analysing data from 2016-17 to 2022-23, this research uses regression analysis in SPSS Software to assess how variations in KCC accounts and agricultural credit volumes influence net NPAs. The Durbin-Watson test and residual analysis are applied to confirm the validity and normality of the results of the regression analysis. The findings reveal that increased financing to the agricultural sector does not contribute to higher NPAs in Indian banks, indicating strong risk management practices. This implies that increasing financial inclusion in agriculture is possible without endangering banks' capacity to remain solvent. The study underscores the importance of effectively managing KCC and agricultural credit to maintain bank stability and provides actionable insights for financial institutions and policymakers.

Keywords: Kisan Credit Card, Agricultural Credit, Net Non-Performing Assets, Indian Banks, Financial Stability

JEL Classification: Q14, G32

Introduction

A significant section of the population relies on agriculture, the backbone of many countries, for their livelihoods, jobs and access to food. To increase output and satisfy the growing needs of modern agriculture, farmers frequently need significant monetary resources. These resources are essential for investments in equipment, seeds, fertilisers and other critical inputs. Access to credit is pivotal in this process, as it enables farmers to secure the capital needed to adopt advanced agricultural techniques, improve yields and maintain operations, particularly during uncertain times. Adequate and timely credit helps bridge the gap between available resources and the growing demands of agricultural activities, thereby enhancing agricultural output and productivity (Singh & Devi, 2023).

To further support farmers' well-being, financial institutions must educate them about available financial schemes and provide effective guidance on utilising programs like the Kisan Credit Card (KCC). By maximising the benefits of these schemes, farmers can implement them more efficiently and enhance their agricultural practices (Girija, 2024). It is offered by the banks of the country. Since it would be practically difficult to achieve the intended level of inclusion without banks, they are crucial to financial inclusion (Sofi & Zamir, 2019).

The Government of India introduced the Kisan Credit Card (KCC) programme in 1998 as a major financial endeavour to provide farmers easy and reasonably priced access to finance for their farming requirements. To make it easier and more efficient for farmers to fulfil their monetary requirements, this programme was created to expedite the credit application procedure. Crop cultivation, post-harvest costs and long-term agricultural investments are just a few of the financial needs that the KCC supports. The KCC has significantly increased agricultural productivity and financial stability in India by expanding credit availability (Gaikar et al., 2021). It

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has become a cornerstone of agricultural reform in the country, offering simplified terms, low interest rates and flexible repayment options aligned with crop cycles, thereby contributing to financial stability and increased food self-sufficiency (Kaur & Hardarshan, 2020).

The KCC scheme provides both short-term and term loans, with repayment schedules aligned to harvesting and marketing cycles. Farmers benefit from smart or debit cards that facilitate easy access to their accounts via ATMs, mobile banking and other channels. Additionally, the scheme offers financial protection against a range of hazards through personal accidental insurance coverage. Commercial banks, cooperative banks and regional rural banks are in charge of its implementation. The KCC initiative, which is overseen by NABARD and the Indian government, has revolutionised the agriculture industry. In many areas, rural and cooperative banking institutions play a significant role in providing credit to farmers, even though commercial banks are the main lenders (Girija, 2024). The banking sector is the main driver of the country's economic development. During the previous 20 years, the finance sector has seen great transformation as a result of economic expansion and financial sector liberalisation (Dash, 2022). Because of its vital economic position, the banking industry's performance and health are critical to long-term economic growth (Lakshmanasamy, 2021). Bank Credit expansion is a powerful instrument to boost the economy, especially during a slowdown, since it is essential in generating demand for products and services. However, analysing sectoral expansion and evaluating the type and quality of economic growth require examining the distribution of bank lending over time across various sectors (Subrahmanyam et al., 2021).

Despite its success in broadening credit access, concerns have arisen about the KCC scheme's impact on banks' financial health, particularly concerning non-performing assets (NPAs). NPAs, representing unpaid loans after provisions, are crucial indicators of a bank's financial stability. Profitability is being strained by the rising rates of NPAs in different nations, forcing banks to take drastic steps and reorganise their businesses (Joshi, 2022). Elevated levels of NPAs can signal poor asset quality, potentially affecting banks' profitability and overall stability. Because they impede the efficient flow of credit, NPAs are a concern for all parties involved. They affect profitability as well because loan loss provisions need a sizeable amount of earnings to be set aside (Agarwal et al., 2021).

This research aims to examine the relationship between KCC accounts and outstanding agricultural credit on the net NPAs of Indian banks. By analysing data from 2016-17 to 2022-23, the research investigates how variations in KCC accounts and agricultural credit influence the asset quality of banks. This study aims to shed light on how well the KCC programme manages credit risk and improves financial stability through regression analysis, offering valuable information for banks and policymakers on the dynamics between agricultural finance and bank performance.

Literature Review

The Kisan Financing Card programme has greatly aided in the expansion and development of the agricultural sector in the country by improving farmers' access to financing. Mehta, Trivedi and Mehta (2016) highlight the vital role the KCC scheme plays in providing timely credit, simplifying documentation and offering flexible cash withdrawals to farmers. Their study underscores the scheme's contributions to the consistent increase in agricultural credit, thereby supporting farmers' financial needs. Despite its advantages, challenges such as complex eligibility criteria, limited awareness and insufficient crop insurance coverage persist. The authors recommend simplifying loan applications, focusing on underserved regions and improving farmer databases to optimise the scheme's impact.

Likewise, Bista, Kumar and Mathur (2012) investigate the KCC scheme's regional performance, identifying substantial disparities between districts in Bihar. The number of issued cards, loan amounts and per-card values showed significant variation across the state. The authors observe that KCC beneficiaries achieved higher gross returns and net margins compared to non-beneficiaries, with education and land size positively influencing adoption, while factors such as age and cooperative society membership negatively affected uptake.

A more comprehensive summary of the KCC scheme's expansion is given by Kaur and Dhaliwal (2018), who observe a notable rise in the total credit approved and the volume of the cards distributed between 1998-99

and 2012-13. Commercial banks did better than RRBs and cooperative banks in the quantity of credit amounts provided and cards distributed, indicating the significance of these organisations in supporting the programme.

In another study, Patra and Sahu (2012) analyse the KCC scheme's impact determined by a 300-farmer survey, with 76% of respondents considering the KCC highly farmer-friendly. The year-round availability of credit and reduced interest costs were among the benefits identified. The study emphasises that cultivation costs play a significant role in determining credit requirements, outweighing the need for loans for consumption or non-farm sectors.

Prakash and Kumar (2016) further substantiate the scheme's benefits, showing that beneficiary farmers had higher cultivation costs and net revenue per hectare for important crops. However, the study notes that transaction costs for KCC beneficiaries, although lower, still require further reduction. Challenges such as excessive paperwork, loan delays and issues with timely credit availability were identified as persistent constraints.

Kaur, Hardarshan (2020) expand on the uneven growth of the scheme across the country, highlighting regional disparities in the number of cards issued. According to her data, the Northeastern region issued the most cards for every hectare of planted area, followed by the Central, Eastern, Western, Northern and Southern regions. The necessity for focused measures to overcome regional disparities in loan availability is highlighted by this uneven growth.

Gaikar et al. (2021) examine the way different financial institutions are involved in the KCC scheme, finding that the most KCCs were issued by commercial banks and sanctioned the most credit, followed by cooperative banks and regional rural banks. The study notes that while cooperative banks dominated card issuance in the Southern Region, both regional rural banks and commercial banks were major players in the Central Region.

Further supporting these findings, Singh and Devi (2023) illustrate the steady growth of KCCs and the sanctioned loan amounts across all Indian banks during their study period. Particularly, it was shown that cooperative banks performed better than commercial and regional rural banks when it came to issuing cards and disbursing loans, highlighting their critical role in the success of the KCC scheme.

Finally, Girija (2024) underscores the dominance of commercial banks in outstanding loan funds covered by the KCC plan, surpassing cooperative and regional rural banks. Her study reveals fluctuations in the growth of active KCCs and the outstanding loan amounts, particularly in Karnataka, linking these trends to the socio-economic well-being of farmers. This implies that the KCC scheme's effectiveness is directly related to more general socioeconomic elements that impact borrowers.

Research Gap

Despite extensive studies on the advantages of the KCC scheme for farmers, there is limited focus on its impact on banks' financial health, particularly regarding non-performing assets (NPAs). Most studies explore credit distribution and regional disparities but do not sufficiently address how KCC growth and agricultural credit influence bank NPAs. Moreover, the relationship between outstanding KCC loans and financial risks for banks remains underexplored. This study addresses these gaps by analysing the impact of KCC accounts and agricultural credit on NPAs across Indian banks over seven years.

Objectives

- To analyse the influence of the number of KCC accounts and outstanding KCC amounts on the net non-performing assets of banks.
- To analyse the effect of outstanding agricultural credit on the net non-performing assets of banks.

Research Hypothesis

H_{o1}: The number of KCC accounts and the outstanding KCC amounts have no significant impact on the net non-performing assets of banks.

H_{o2}: The outstanding amount of agricultural credit has no significant effect on the net non-performing assets of banks.

Research Methodology

Nature of the Study

This study's nature is quantitative and analytical, as it relies on statistical methods—particularly regression

analysis—to investigate the connections among the number of KCC accounts, outstanding agricultural credit amounts and the net NPAs of banks over seven years. It is empirical in that it uses real-world data to identify patterns and test hypotheses. The study is also explanatory, as it aims to explain the impact of specific variables (KCC and agricultural credit) on banks' financial health, specifically concerning non-performing assets.

Data Sources

Solely secondary sources of information are used in this research, comprising information extracted from research papers, journals and the websites of NABARD and the Trends and Progress Report from the RBI.

Time Frame for the Study

The study has focused on seven consecutive financial years spanning from 2016-17 to 2022-23.

Tools and Methods Employed in the Research

The research makes use of linear and multiple regression analysis to examine how KCC accounts and agricultural credit influence the NPAs of banks. The variability of important variables is measured and summarised using descriptive metrics like the arithmetic mean and standard deviation, providing a clear overview of their central tendencies and dispersion. The Average General Growth Rate (AGR) highlights growth trends over the seven-year period. Together, these methods offer a comprehensive analysis of the data, revealing important relationships and trends related to KCC accounts, agricultural credit and NPAs. Moreover, regression analysis and the Durbin-Watson test (Sofi & Zamir, 2019) have been employed in the study. All the analysis is done in the SPSS software.

Data Analysis and Interpretation

The KCC number refers to the total number of cards that were issued during a particular year, while the KCC outstanding (O/S) amount represents the total outstanding amount against these issued credit cards. The Agri O/S amount reflects the total outstanding credit provided to the agricultural sector and the Net NPA represents the amount of non-performing assets held by Indian bankers in a certain year. Descriptive metrics such as the standard deviation, mean and average annual growth rate (AGR) have been calculated for these factors to analyse the average values, variability and growth trends over the 7 years.

Table 1: KCC Accounts, KCC and Agricultural Credit Outstanding Amounts and Net NPA of Indian Banks

Year	*KCC Number*	*KCC O/S Amount*	*Agri o/s Amount*	*Net NPA*
2016-17	71,474 (-)	6,49,610 (-)	9,92,400 (-)	4,33,100 (-)
2017-18	69,217 (-3)	6,70,930 (3)	11,93,400 (20)	5,20,700 (20)
2018-19	66,299 (-4)	7,09,587 (6)	12,17,594 (2)	3,55,068 (-32)
2019-20	65,281 (-2)	6,97,018 (-2)	12,39,575 (2)	2,89,531 (-18)
2020-21	73,769 (13)	7,53,133 (8)	13,84,815 (12)	2,58,050 (-11)
2021-22	71,348 (-3)	8,13,945 (8)	14,61,719 (6)	2,04,231 (-21)
2022-23	73,547 (3)	8,85,921 (9)	16,87,191 (15)	1,35,333 (-34)
MEAN	70,134	7,40,021	13,10,956.3	3,13,716
SD	3,347.4	84,307.7	2,23,176.5	1,33,101.5
AAGR	1%	5%	9%	-16%

Source: Author's compilation from RBI trends and Progress Report.

Note: Amounts in Rs. Crores. The figures in parentheses represent the annual growth rates for each specific year. Growth rates for the first year cannot be calculated due to the absence of data from the preceding year.

Table 1 provides a detailed view of the trends in KCC accounts, outstanding amounts under KCCs and agricultural credit and net NPAs of banks over seven years. The data indicates that the number of KCC accounts and the outstanding amount under these accounts saw variable growth rates each year. For instance, the number of KCC accounts decreased by 3% from 2016-17 to 2017-18, followed by a further 4%

decline the next year. However, the growth rate improved in 2020-21 with a 13% increase and a slight 3% rise was observed in 2022-23.

The outstanding amount under KCCs grew steadily, with a 3% increase in 2017-18, a 6% increase in 2018-19 and further annual increases in subsequent years, peaking with a 9% growth in 2022-23. Similarly, the outstanding agricultural credit showed significant growth, with a notable 20% increase from 2017-18 to 2018-19 and consistent annual growth reaching 15% in 2022-23.

Net NPAs, on the other hand, exhibited a declining trend, reflecting improved asset quality over time. Most years saw negative growth rates for Net NPAs, with 2022-23 seeing a notable 34% drop from the year before. This indicates that the percentage of non-performing assets has decreased, suggesting a rise in the financial health of one bank.

Overall, the mean values indicate that the average outstanding amount under KCCs was ₹7,40,021 crores, while the average outstanding agricultural credit was ₹13,10,956 crores. The standard deviation values highlight the variability in these amounts. The average annual growth rates (AAGR) demonstrate a general trend of gradual growth in KCC accounts and outstanding amounts, while net NPAs have seen a consistent decline, indicating better management of credit risk over the period.

Kisan Credit Card's (KCC) Effect on Indian Banks' Net Non-Performing Assets

A regression analysis using multiple linear regression was employed to evaluate the effect of the KCC programme on the Net NPAs of all banks in India. The number of KCC accounts and the outstanding KCC amounts were taken into consideration as independent variables in this analysis, with the net NPA acting as the dependent variable. The following hypothesis was tested using this analysis:

H_{01}: The number of KCC accounts and the outstanding KCC amounts have no significant impact on the net NPAs of all banks in India.

Table 2: Summary of the Regression Model

R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
.901[a]	.812	.717	70768.49990

a. Predictors: (Constant), Number of KCC, Outstanding Amount of KCC. Source: Generated in SPSS.

Table 3: Results of ANOVA[a]

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	86263258998.906	2	43131629499.453	8.612	.036[b]
Residual	20032722311.952	4	5008180577.988		
Total	106295981310.857	6			

a. Dependent Variable: Total Net NPA.

b. Predictors: (Constant), Number of KCC, Outstanding Amount of KCC. Source: Generated in SPSS.

Table 4: Coefficients[a]

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
	B	*Std. Error*	*Beta*		
(Constant)	1064796.222	611403.144		1.742	.157
Outstanding Amount of KCC	-1.525	.405	-.966	-3.764	.020
Number of KCC	5.377	10.203	.135	.527	.626

a. Dependent Variable: Total Net NPA. Source: Generated in SPSS.

The influence of the number of KCC and their outstanding amount on banks' total net non-performing assets (NPA) was assessed by the regression analysis, which is shown in Table 2. With an R-squared value of 0.812 and an R-value of 0.901, the model showed a significant association, indicating that the number of KCC and the outstanding KCC amount account for about 81.2% of the variance in Total Net NPA. Even after taking the number of predictors

into consideration, the adjusted R-squared value of 0.717 shows a strong model fit.

The regression equation generated by the model is:

$$Total\ Net\ NPA = 1{,}064{,}796.22 - 1.525 \times Outstanding\ Amount\ of\ KCC + 5.377 \times Number\ of\ KCC$$

The model's overall statistical significance is confirmed by the ANOVA findings in Table 3, which highlights the F-value of 8.612 and P-value of 0.036. These lend validity to not accepting the null hypothesis (H_0), proposing there was no meaningful correlation between the number of KCC, KCC Outstanding Amounts and Total Net NPA. Rather, we adopt the alternative hypothesis (H_1), which shows that Total Net NPA is considerably impacted by at least one predictor, namely the KCC outstanding amount.

Having a coefficient of -1.525 (p = 0.020), Table 4's coefficients show that the outstanding amount of KCC significantly reduces total net NPA. This means that, while keeping the number of KCCs constant, the Total Net NPA falls by Rs 1.525 crores with every Rs 1 crore rise in the outstanding amount of KCC. This result is significant, highlighting the impact of the outstanding amount of KCC in reducing NPAs. On the other hand, at a coefficient of 5.377 (p = 0.626), the number of KCCs has no statistically significant impact on Total Net NPA, suggesting that variations in the number of KCCs have no discernible effect on Indian banks' Net NPAs.

In summary, KCC outstanding balance has a big influence on the Total Net NPA, whereas the number of KCC accounts does not. A significant amount of the variance in Total net NPA can be stated by the analysis, underscoring the importance of effectively managing the Outstanding Amount of KCC to control NPAs. This finding is notable because it contrasts with the typical scenario where increased credit lending often leads to higher NPAs. Instead, these results suggest that banks are successfully managing NPAs despite higher credit lending through the KCC scheme.

Effect of Outstanding Agricultural Credit on the Net NPA of Banks

Regression analysis was also employed to assess the impact of outstanding agricultural credit on Indian banks' net non-performing assets (NPA). In this analysis, the net NPA was designated as the dependent variable and the outstanding agricultural credit was treated as the independent variable. This approach was employed to test the following hypothesis:

H_{02}: The outstanding amount of agricultural credit has no significant effect on the net non-performing assets of banks.

Table 5: Summary of the Regression Model

R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
.854[a]	.730	.675	75832.11997

a. Predictors: (Constant), Total Agriculture credit amount. Source: Generated in SPSS.

Table 6: Results of ANOVA[a]

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	77543429218.830	1	77543429218.830	13.485	.014[b]
Residual	28752552092.027	5	5750510418.405		
Total	106295981310.857	6			

a. Dependent Variable: Total Net NPA

b. Predictors: (Constant), Total Agriculture credit amount. Source: Generated in SPSS.

Table 7: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	981501.13	184096.55		5.331	.003
Total Agriculture credit amount	-.509	.139	-.854	-3.672	.014

a. Dependent Variable: Total Net NPA. Source: Generated in SPSS.

The R-squared value of 0.730 and an adjusted R-squared value of 0.675 in Table 5 hold 73% of the variation in net NPA. This suggests that the model successfully captures the relationship between these factors and that the amount of outstanding agricultural loans is a strong predictor of net NPA. The estimate's standard error, which is ₹75,832.12, is the mean disparity between the observed and model-predicted net NPA values.

Table 6: ANOVA validates the overall significance of the regression model. At a p-value of 0.014 and an F-value of 13.485, the model clearly explains the variation in net NPA. The regression sum of squares of ₹77,543,429,218.83 and the residual sum of squares of ₹28,752,552,092.03 show that the model accounts for a sizable portion of the variation in net NPA.

The coefficient for the entire amount of agricultural loan is -0.509, with a standard error of 0.139, according to Table 7: Coefficients. With a standardised beta of -0.854 and this negative coefficient, there appears to be a substantial inverse association between net NPA and outstanding agricultural credit. For each unit increase in outstanding agricultural credit, net NPA decreases by approximately 0.509 units. The t-value of -3.672 and the p-value of 0.014 provide additional evidence for the statistical significance of this association.

The regression equation derived from this analysis is:

Net NPA=981,501.13−0.509
× (Total Agricultural Credit Amount)

The result of this equation shows that net non-performing assets (NPA) fall as agricultural credit levels rise, suggesting that higher agricultural credit levels are linked to better bank asset quality. The null hypothesis (H_{02}), which proposed that agricultural credit had no apparent effect on net NPA, was rejected as a result of the findings. Instead, the analysis reveals that banks are successfully managing their NPAs, demonstrating an effective credit management strategy despite higher levels of lending. This finding is noteworthy as it contrasts with the typical expectation that increased lending would lead to higher NPAs.

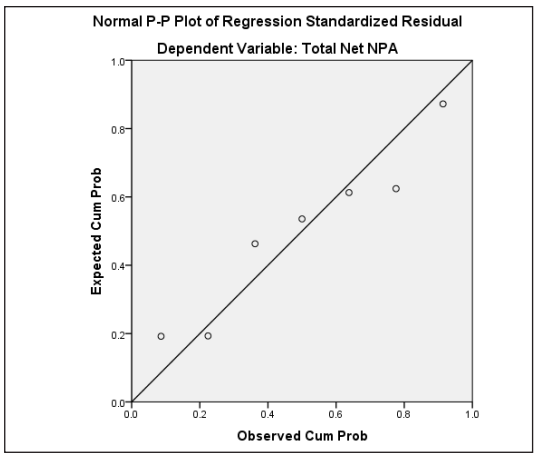
Durbin-Watson Test (Autocorrelation Check) Residual Analysis (Normality and Homoscedasticity Check)

To confirm the assumptions and guarantee the reliability of the regression analysis underlying the model, two key tests were conducted: residual analysis for homoscedasticity and normality and the Durbin-Watson test for autocorrelation. These tests aid in confirming that the results are trustworthy and that the regression model's assumptions are met.

Table 8: Residuals Statistics[a]

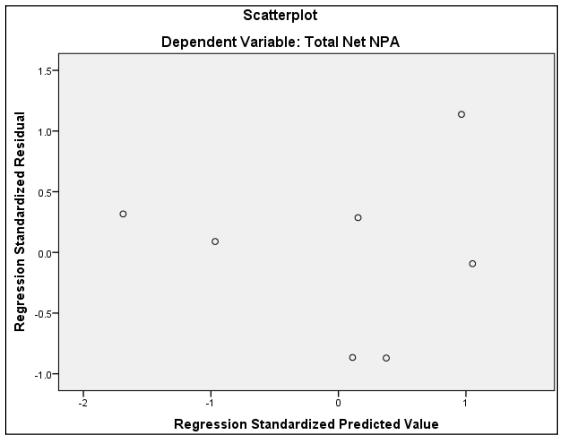
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	110101.3125	440527.6563	313716.1429	120577.83296	7
Residual	-69387.80469	90662.20313	.00000	56364.73263	7
Std. Predicted Value	-1.689	1.052	.000	1.000	7
Std. Residual	-.870	1.137	.000	.707	7

a. Dependent Variable: Total Net NPA. Source: Generated in SPSS.



Source: Generated in SPSS.

Fig. 1: Normal P-P Plot of Regression



Source: Generated in SPSS.

Fig. 2: Scatterplot

As seen in Table 8 and Figs. 1 and 2, the examination of residuals and autocorrelation provides crucial information about the reliability and effectiveness of the regression model. According to Table 8, the expected net NPA values range from roughly ₹110,101.31 to ₹440,527.66, with a mean of ₹313,716.14. With a mean of 0, the residuals—the discrepancies between observed and anticipated values—range from -₹69,387.80 to ₹90,662.20. This indicates that the model's predictions are generally balanced, though there is some variability in how closely the predictions match the actual values, as reflected by a standard deviation of ₹56,364.73.

The usual P-P plot of the standardised residuals is shown in Fig. 1. The plot indicates that the residuals have a normal distribution since they closely match the diagonal line, which is a fundamental premise of regression analysis. The scatterplot of standardised residuals versus standardised expected values is shown in Fig. 2. It suggests that the conditions of homoscedasticity (constant variance of residuals) and linearity are satisfied because it shows a random distribution of residuals without any obvious patterns or funnel shapes. Together, these residual analyses confirm that the regression model is appropriately specified and its predictions are valid.

The residual and autocorrelation checks show that the regression model performs well in predicting net NPA. The residuals are normally distributed and exhibit random dispersion, indicating that the model's assumptions are satisfied and its predictions are reliable.

Findings of the Study

The data study clarifies the connection between Indian banks' net NPAs, outstanding agricultural loans and Kisan loans Card (KCC) accounts. Over the past 7 years, while the number of KCC accounts has slightly declined, the outstanding amounts for both KCC and agricultural credit have significantly increased. Specifically, the average outstanding amount of KCC has grown by 5% annually and agricultural credit by 9%. With an average yearly growth rate of -16%, net non-performing assets (NPAs) have significantly decreased in spite of the surge in credit, demonstrating better quality of assets and efficient risk management by banks.

The regression analysis further clarifies these relationships. It shows that the outstanding amount of KCC has a significant negative impact on net NPA, suggesting that higher outstanding KCC amounts are associated with lower NPAs. Specifically, for every ₹1 crore increase in outstanding KCC amounts, net NPA decreases by ₹1.525 crores. Nevertheless, no statistically significant relationship exists between the quantity of KCC accounts and net NPA. Furthermore, the data reveals that net NPA is significantly impacted negatively by outstanding agricultural loans, suggesting a relationship between lower NPAs and more agricultural credit. Overall, while the KCC scheme and agricultural credit expansion contribute to a reduction in NPAs, the number of KCC accounts alone does not significantly influence NPAs. This highlights the

effectiveness of managing outstanding KCC amounts and agricultural credit in maintaining financial stability and enhancing asset quality in Indian banks. Thus, increasing agricultural lending does not appear to lead to higher non-performing assets for banks. This suggests that banks can safely expand their agricultural credit portfolios without significantly impacting their asset quality.

Implication of the Study

The KCC scheme is crucial for India's agricultural finance system, impacting both the agricultural sector and banks' financial health. The findings of this study regarding the connection between NPAs, outstanding agricultural credit and KCC accounts have important ramifications for a number of stakeholders.

Banks can enhance lending procedures and risk management tactics by comprehending how KCC-related elements affect non-performing assets. This insight can contribute to more sustainable lending, potentially lowering default rates and strengthening financial stability. The study's finding that agricultural credit is not increasing NPAs is particularly valuable, as it suggests that banks can confidently increase their agricultural lending while also exploring other factors influencing NPAs.

Policymakers can leverage these findings to refine agricultural credit programmes, ensuring they effectively support farmers while maintaining the financial stability of banks. Achieving this balance is crucial for developing a strong agricultural finance system. Given that the study shows agricultural credit does not negatively impact banks' financial health, as NPAs are decreasing, policymakers can encourage banks to increase their agricultural lending. Additionally, they can implement measures to further advance the agricultural sector of the economy.

All things considered, this study advances our knowledge of how financial products like KCC impact credit risk and bank performance. It adds to the body of knowledge about agricultural finance and how it affects banks' financial stability. The study gives recommendations for banking procedures and policy-making by offering insightful information, with the goal of enhancing assistance for agricultural growth while controlling the risks brought on by rising non-performing assets.

Conclusion

In summary, this study offers important new information about how agricultural lending and the KCC programme affect Indian banks' net non-performing assets (NPA). The huge growth in outstanding KCC and agricultural credit, along with a significant decrease in net NPAs, indicates better quality of assets and effective management of risk in the banking industry, even if the number of KCC accounts has somewhat gone down over the last seven years. The analysis reveals that while higher outstanding KCC amounts are associated with lower NPAs, the number of KCC accounts does not significantly affect NPAs. Similarly, increased agricultural credit correlates with reduced NPAs.

These findings suggest that expanding agricultural lending, particularly through managing the amounts of credit rather than the number of accounts, can enhance financial stability without adversely impacting asset quality. Banks can confidently increase their agricultural credit portfolios, knowing that this approach is linked to lower NPAs and improved financial health. For policymakers, these results offer a robust basis for encouraging greater agricultural lending while continuing to support effective risk management practices.

Research Limitations and Future Directions

There are various limitations on this study. Due to its seven-year timeframe, the analysis might not account for long-term patterns or the influence of economic fluctuations on non-performing assets. Its emphasis on Indian banks may restrict how broadly the results can be applied in other areas. The regression models might not include all relevant factors influencing NPAs, such as macroeconomic conditions or changes in agricultural policies. The data are aggregated nationally, which may obscure regional variations and the study assumes linear relationships, potentially missing non-linear effects.

Future research could extend the time frame to capture longer-term trends and include comparative studies with banks from other countries. Incorporating additional variables, exploring non-linear models and conducting detailed case studies at the bank or state level could enhance understanding. Including macroeconomic

variables and policy changes in future analyses might provide a more comprehensive view of factors affecting NPAs.

References

Journal Articles

Agarwal, P., Arora, D., Kashiramka, S., & Jain, P. K. (2021). The impact of non-performing assets on bank performance under Basel regime – Empirical evidence from India. *Journal of Commerce and Accounting Research, 10*(3), 36-45. Retrieved from http://publishingindia.com/jcar/

Bista, M., Kumar, R., & Mathur, K. (2012). Progress and performance of Kisan credit card scheme with a case study of Bihar. *Agricultural Economics Research Review, 25*(1), 125-135.

Dash, M. (2022). Mergers and acquisitions in the Indian banking sector. *International Journal of Banking, Risk and Insurance, 10*(1), 29-45. Retrieved from http://publishingindia.com/ijbri/

Gaikar, S. S., Deshmukh, M. A., & Aujla, J. K. (2021). Agricultural credit in India: With reference to Kisan Credit Card (KCC). *Journal of Management Information and Decision Sciences, 24*(S1), 1-9.

Girija, M. (2024). Performance evaluation of KCC scheme in India with special reference to Karnataka. *SRUJANI: Indian Journal of Innovative Research and Development, 3*(1), 85-92.

Godara, S., Sihag, S., & Dhanju, K. (2014). Performance of Kisan credit card scheme in Haryana through regional rural and cooperative banks. *Abhinav International Monthly Refereed Journal of Research in Management & Technology, 3*(9). ISSN: 2320-0073.

Joshi, V. (2022). Changing the face of banking – What the future holds! *International Journal of Banking, Risk and Insurance, 10*(1), 1-9. Retrieved from http://publishingindia.com/ijbri/

Kaur, H. (2020). Progress of Kisan credit card scheme in India: A state and zone-wise analysis. *International Journal of Scientific Research and Engineering Development, 3*(4), 398-408.

Kaur, R., & Dhaliwal, R. (2018). Progress of Kisan credit card scheme in India. *Amity Journal of Agribusiness, 3*(1), 26-36.

Lakshmanasamy, T. (2021). Performance of commercial banks in India: DEA measurement and determinants of technical efficiency. *International Journal of Banking, Risk and Insurance, 9*(2), 42-52. Retrieved from http://publishingindia.com/ijbri/

Marichamy, R., & Aananthi, S. (2014). Kisan credit card – A boon to small farmers in India. *Tactful Management Research Journal, 2*(8), 1-6.

Mehta, N., Trivedi, P., & Mehta, A. (2016). Indian Kisan credit card scheme: An analytical study. *Broad Research in Accounting, Negotiation and Distribution, 7*(1). doi:https://doi.org/10.2139/ssrn.2848816

Patra, S. K., & Sahu, R. K. (2012). An econometric study of determinants of credit under Kisan credit card. *International Journal of Arts and Commerce, 1*(2).

Prakash, M., & Kumar, S. (2016). Performance of Kisan credit card scheme in Tamil Nadu. *Indian Journal of Agricultural Economics, 71*(2), 191-211.

Singh, A., & Devi, K. (2023). Growth and performance of KCC scheme in India. *Indian Journal of Applied Economics and Business, 5*(2), 363-371.

Sofi, Z. A., & Zamir, M. N. (2019). The impact of financial inclusion on the economic growth of India: An empirical analysis. *Journal of Commerce and Accounting Research, 8*(3), 97-102.

Subrahmanyam, N., Bhayani, S., Venkateswara Rao, P., & Rajan, G. (2021). Digital aspects of banking progress and way forward with special reference to rural areas in Andhra Pradesh. *Journal of Commerce and Accounting Research, 10*(3), 72-78. Retrieved from http://publishingindia.com/jcar/

Websites

Ministry of Agriculture and Farmers Welfare. (n.d.). *Kisan Credit Card (KCC) scheme*. Retrieved September 18, 2024, from https://www.myscheme.gov.in/schemes/kcc

Reserve Bank of India. (n.d.). *Kisan Credit Card scheme*. Retrieved September 18, 2024, from https://www.rbi.org.in/commonman/English/Scripts/Notification.aspx?Id=2311#:~:text=The%20Kisan%20Credit%20Card%20(KCC)%20scheme%20was%20introduced%20in%201998,cash%20for%20their%20production%20needs

Reserve Bank of India. (n.d.). *Trend and progress of banking in India*. Retrieved September 18, 2024,

from https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Trend%20and%20Progress%20of%20Banking%20in%20India

Wikipedia Contributors. (2024, September 17). *Kisan Credit Card*. In Wikipedia, The Free Encyclopedia. Retrieved September 18, 2024, from https://en.wikipedia.org/wiki/Kisan_Credit_Card