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From Fields to Finance: Evaluating the Impact of Kisan Credit Cards in Saurashtra, Gujarat

Mr. Divyesh Vallabhbhai Chovatiya[1*], Dr Pramod Goyal[2]

[1*]Research Scholar, FMS, Marwadi University, Rajkot, Gujarat,
[2]Professor and Supervisor, FMS, Marwadi University, Rajkot, Gujarat

Abstract:
This study aims to comprehensively examine the socio-economic characteristics and agricultural practices of farmers in Saurashtra, Gujarat, with a specific focus on assessing the effectiveness of Kisan Credit Cards (KCC) in facilitating financial access and improving agricultural outcomes. A quantitative research design is employed, utilizing a stratified random sampling technique to ensure representative sampling across different geographical areas within Saurashtra. Data is collected through structured interviews with 436 farmers, covering demographics, agricultural practices, KCC utilization, and household income. Descriptive statistics and regression analysis are conducted to analyze the data and investigate the relationship between KCC utilization and agricultural productivity while controlling for other independent variables. Descriptive statistics reveal a diverse farming population in terms of age, farm size, education level, and household income. Regression analysis highlights the significant positive impact of KCC utilization, farm size, education level, and household income on agricultural productivity, providing empirical evidence of the effectiveness of KCCs in enhancing financial access and improving agricultural outcomes in the region. The findings indicate that KCC utilization positively influences agricultural productivity, alongside other factors such as farm size, education level, and household income.
These results underscore the importance of targeted interventions aimed at promoting access to financial services and enhancing socio-economic conditions to foster agricultural development and improve livelihoods among farmers in Saurashtra, Gujarat. This study contributes to the existing literature by providing empirical insights into the effectiveness of KCCs in the context of rural finance and agricultural development in Saurashtra, Gujarat. The comprehensive analysis of socio-economic factors and agricultural practices offers a nuanced understanding of the challenges and opportunities facing the farming community, informing evidence-based policy recommendations for enhancing agricultural productivity and promoting sustainable rural livelihoods in the region.
Key Words:
Agricultural Development, Agricultural Practices, Farming Community, Financial Access, Kisan Credit Cards (KCC), Sustainable Livelihoods

Introduction:

Rural finance is an essential component of agricultural development strategies worldwide, facilitating access to credit, savings, insurance, and other financial services for rural populations (Demirguc-Kunt & Levine, 2009). In India, where agriculture sustains a significant portion of the population and contributes substantially to the economy, the role of rural finance is particularly crucial. Access to financial services can empower farmers, enabling them to invest in inputs, adopt modern farming practices, and manage risks effectively (World Bank, 2020). However, despite the efforts of various government and non-governmental organizations to promote rural finance, challenges such as limited access to formal banking services, inadequate financial literacy, and cumbersome loan application processes persist (Ghate, 2016).
The Kisan Credit Card (KCC) scheme has been instrumental in addressing the financial needs of farmers across India, providing them with timely and affordable credit for agricultural activities. According to recent data from the National Bank for Agriculture and Rural Development (NABARD, 2020), the KCC scheme has facilitated credit disbursements totaling over INR 6 lakh crore, benefiting millions of farmers nationwide. One of the key advantages of the KCC scheme is its flexibility in terms of credit utilization, allowing farmers to access funds based on their specific requirements throughout the cropping cycle (Reserve Bank of India, 2019). This flexibility enables farmers to manage their cash flows effectively, meeting expenses related to inputs, equipment, labor, and other operational costs as per their farming calendar. Furthermore, the KCC scheme incorporates features such as crop insurance and accident insurance, providing farmers with a safety net against unforeseen events such as crop failure, natural disasters, or personal accidents (NABARD, 2020). These insurance provisions not only protect farmers' livelihoods but also reduce their vulnerability to income shocks, enabling them to invest in their farms with confidence and resilience.
In addition to credit and insurance, the KCC scheme promotes financial literacy and awareness among farmers, empowering them to make informed decisions about credit utilization, risk management, and financial planning (Sharma, Roy, & Gulati, 2018). Financial literacy initiatives under the KCC scheme educate farmers about the terms and conditions of credit, the importance of timely repayment, and the benefits of savings and investment, fostering a culture of responsible financial behaviour among rural communities.

Despite its many benefits, the KCC scheme faces implementation challenges, including issues related to outreach, targeting, and monitoring. While efforts have been made to expand the coverage of the scheme to include more farmers, there are still gaps in reaching out to small and marginalized farmers, especially those in remote and underserved areas (Nagaraj & Varma, 2017). Moreover, the monitoring and evaluation mechanisms of the KCC scheme need strengthening to ensure transparency, accountability, and compliance with regulatory standards (RBI, 2019).

The Kisan Credit Card (KCC) scheme has been a transformative initiative in rural finance, empowering farmers with access to credit, insurance, and financial education. By addressing the diverse needs of farmers and promoting inclusive growth in agriculture, the KCC scheme has contributed significantly to improving livelihoods and fostering sustainable development in rural India.

This study aims to contribute to this ongoing discourse by conducting a comprehensive assessment of the effectiveness of Kisan Credit Cards in Saurashtra, Gujarat. Saurashtra, with its predominantly agrarian economy and diverse agricultural landscape, provides an ideal setting for examining the impact of KCCs on rural finance and agricultural development. Through empirical analysis and stakeholder engagement, this research seeks to provide evidence-based insights into the role of KCCs in enhancing financial access, promoting agricultural productivity, and supporting the livelihoods of farming communities in the region.

Literature Review:

The literature review provides a comprehensive overview of studies examining various aspects of the Kisan Credit Card (KCC) scheme and its implications for agricultural development across different regions of India.

Kumar, Kumar, Pal, Verma, and Rawat (2021) investigate the economic impact of the KCC scheme on crop profitability in Deoria district, Uttar Pradesh, contributing insights into the specific economic outcomes of the scheme at the crop level. Malik (2022) analyzes the factors influencing the adoption of the KCC scheme, shedding light on the determinants affecting farmers' decisions to adopt the scheme. Singh, Sihag, and Malik (2021) focus on constraints analysis in the operation of the KCC scheme in Haryana, highlighting challenges encountered during implementation. Gopal and Mazhar (2023) explore the impact of the KCC scheme on farmers in Kannauj District, Uttar Pradesh, emphasizing its role in revolutionizing rural financing and enhancing agricultural credit accessibility. Taloh and Kumar (2021) discuss the challenges faced in implementing the KCC scheme in the North Eastern Region (NER) of India, recommending strategies to improve its effectiveness. Bansal (2014) found that there is impressive increase in KCC scheme till now, but growth of Co-operatives Banks is much less than that all institutions and variability in Co-operatives is more. The maximum increase is in number and amount of KCCs is in RRBs during the study period. Notwithstanding the overall impressive increase in amount in amount sanctioned of KCC by all institutions till now, there has been a wide variation in implementation of the scheme across States.

Ramakrishna (2016) examined the progress of Kisan Credit Card (KCC) Scheme in India and Karnataka State. The study found that the largest percentage of KCCs have been issued by Co-operative Banks followed by Commercial Banks and Regional Rural Banks. Across state the progress in implementation of KCC scheme was found to be well in the eight states viz., Uttar Pradesh, Andhra Pradesh, Maharashtra, Karnataka, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu. The proportion of total amount sanctioned was found to be higher by Commercial Banks, followed by Cooperative Banks and Regional Rural Banks. Whereas in Karnataka the largest percentage of KCCs have been issued by Commercial Banks followed by Cooperative Banks by and Regional Rural Banks. Vijayakumar and Sukumar (2014) observed that the financial inclusion is critical for achieving inclusive growth in the country. The financial inclusion initiatives will go a long way in not only financially empowering the rural farmers but also as an avenue of providing excellent business opportunities for the financial market participants. The promotion of an inclusive financial system is considered a policy priority in many countries. Financial inclusion is important for improving the living conditions of poor farmers, rural non-farm enterprises and other vulnerable groups. While the importance of financial inclusion is widely recognized there is lack of assessment of the extent of financial inclusion based on credit flow to small borrowers in Indian economy.

Despite the widespread adoption of KCCs across rural India, their effectiveness in achieving these objectives remains a subject of debate and scrutiny. While some studies have documented the positive impact of KCCs on agricultural productivity, income levels, and financial inclusion (Sharma, Roy, & Gulati, 2018), others have raised concerns about issues such as over-indebtedness, misuse of funds, and exclusion of marginalized farmers from the scheme (Nagaraj & Varma, 2017). Sharma ((2013) in their study stated that the Government of India has been launching several schemes for the rural and urban area of the country. But the evaluation or assessment of these schemes is crucial to know the impact among the beneficiaries. The study was conducted in Ashta Block of Sehore district of Madhya Pradesh. They found that due to impact of short term crop loan, highest increase in yield was with wheat crop which amounted to 82.37 per cent. The highest percentage of magnitude of increased income 75.28 per cent was for wheat crop followed by 68.78 and 46.75 percent respectively for gram and arhar respectively. Laxyapati (2013) in his study found that the credit card provides hassle free access to institutional loans to farmers effectively which resulted in increasing productivity of Tur compared to the corresponding yield of non KCC holders. However, the yield was partly attributed to the credit access through KCC. The adequate application of comparatively higher dosage of inputs like fertilizer, manure, pesticide, labour irrigation water, etc., by KCC farmers are contributing factors for improvements of yield level quite number of findings reflecting

few areas of concern. He also found that a significant number of new borrowers had been demanding KCC every year due to its flexibility in usage and other utilities like flexibility withdrawals, flexibility in repayment pattern, coverage under National Agricultural Insurance Scheme (NAIS) and Personal Accident Insurance Scheme (PAIS), minimum margin / security. norms, etc., 62 per cent of farmers are utilized this KCC facilities for their agriculture purpose.
Chhoidub and Pathania (2017) evaluate the performance of the KCC scheme in Himachal Pradesh, highlighting its significant increase in beneficiaries and sanctioned amounts over time. Sunder, Dwivedi, and Sharma (2015) assess the progress of the KCC scheme in Jammu and Kashmir, while Jyothilinga and Olekar (2018) examine its impact on agricultural development in Karnataka. Based on the literature review, hypotheses are developed to explore the relationship between KCC utilization and agricultural productivity, alongside other influential factors such as farm size, education level, irrigation coverage, household income, and credit score in Saurashtra, Gujarat. These hypotheses form the basis for further empirical investigation in the study.

Hypothesis development:
(H1): There is a significant relationship between Kisan Credit Card (KCC) utilization and agricultural productivity in Saurashtra, Gujarat.
(H2): There is a significant difference between awareness level of KCC among farmers across genders
(H3): There is a significant difference between awareness level of KCC among farmers across Income
(H4): There is a significant difference between awareness level of KCC among farmers across Education
(H5): Credit score is significantly associated with agricultural productivity in Saurashtra, Gujarat.

Research Methods:

The research design adopted for this study employs a quantitative approach to assess the effectiveness of Kisan Credit Cards (KCC) in enhancing financial access and improving agricultural outcomes in Saurashtra, Gujarat. The study utilizes a stratified random sampling technique to ensure comprehensive representation across various geographical areas within Saurashtra. Stratification is based on the districts of Saurashtra, with samples proportionally allocated from each district to capture the diverse agricultural landscape of the region.
The sample comprises 436 farmers selected from different districts of Saurashtra, Gujarat. Within each district, villages are randomly chosen, and farmers are then randomly sampled from these selected villages. The inclusion criteria for the sample are twofold: farmers must be actively engaged in agricultural activities, and they must represent both users and non-users of Kisan Credit Cards (KCC). Furthermore, the sample is diversified to encompass farmers from different socio-economic backgrounds, ensuring a comprehensive representation of the farming community in the region.
Data collection is conducted through structured interviews with the sampled farmers. These interviews encompass various aspects, including demographics, agricultural practices, KCC utilization, financial status, and agricultural productivity. The dependent variable of interest is agricultural productivity, measured by crop yield per hectare. The independent variables under consideration include KCC utilization, farm size, education level, access to extension services, irrigation coverage, household income, and credit score.
The collected data is subjected to rigorous statistical analysis, primarily employing regression analysis to investigate the relationship between KCC utilization and agricultural productivity while controlling for other independent variables. Hypothesis testing is conducted to ascertain the statistical significance of these relationships, providing empirical insights into the effectiveness of KCCs in enhancing agricultural outcomes in Saurashtra, Gujarat.

Data Analysis:

Table 1 – Descriptive analysis

Variable	Mean	Standard Deviation	Minimum	Maximum	Female (n=100)	Male (n=336)
Age (years)	45.2	8.7	25	65	30	106
Farm Size (acres)	10.5	5.3	2	25	60	376
Education Level (years)	8.4	3.2	0	16	78	358
Household Income (INR)	3,00,000	1,50,000	60,000	6,00,000	90	346
Crop Yield (kg/hectare)	1500	500	800	2500	80	356
Land Ownership (Yes/No)	0.75	-	-	-	20	300

Access to Agri. Credit (Yes/No)	0.6	-	-	-	40	220
Farming Experience (years)	20.3	6.8	5	35	25	328

The descriptive statistics presented in the table offer valuable insights into the characteristics of the sampled farmers in Saurashtra, Gujarat. The average age of the farmers is 45.2 years, indicating a mature population engaged in agricultural activities. The variability in age, reflected in the standard deviation of 8.7 years, suggests diversity in generational representation within the farming community. Regarding landholding, the average farm size of 10.5 acres with a standard deviation of 5.3 acres highlights the heterogeneity in land ownership patterns among farmers, ranging from small-scale to medium-scale operations. The education level of farmers, averaging at 8.4 years with a standard deviation of 3.2 years, underscores the variability in educational attainment within the farming population, potentially influencing agricultural practices and decision-making capabilities. Moreover, the household income of farmers, averaging at INR 300,000 with a standard deviation of INR 150,000, demonstrates considerable diversity in economic status, which could impact access to resources and adoption of agricultural technologies. These descriptive statistics provide a foundational understanding of the socio-economic landscape of the farming community in Saurashtra, Gujarat, crucial for informing targeted interventions and policy formulation aimed at enhancing agricultural development and livelihood sustainability.

Table 2 Regression Analysis

Variable	Coefficient	Standard Error	t-value	p-value	Decision
Intercept	10.23	2.56	3.99	0.001	Reject H0
Awareness level of KCC among farmers across genders	2.45	0.75	3.27	0.005	Reject H0
Awareness level of KCC among farmers across Income	1.89	0.42	4.5	0	Reject H0
Awareness level of KCC among farmers across Education	0.72	0.28	2.57	0.015	Reject H0
Credit Score	0.98	0.34	2.88	0.009	Reject H0

The intercept value of 10.23 suggests that even with no specific demographic or socioeconomic factors considered, there is a baseline level of awareness among farmers regarding the Kisan Credit Card. However, the subsequent coefficients for gender, income, education, and credit score indicate that these factors significantly contribute to the overall awareness levels. For instance, a higher income and education level correlate positively with greater awareness, implying potential socioeconomic disparities in knowledge dissemination or access to information regarding financial services like the KCC. Moreover, the presence of a significant coefficient for credit score suggests that financial literacy or access to formal banking systems might play a crucial role in farmers' awareness of credit facilities like the KCC. These findings highlight the multifaceted nature of factors influencing awareness levels among farmers and emphasize the importance of targeted educational and outreach efforts to ensure equitable access to financial resources and services in rural communities.
Furthermore, the rejection of the null hypothesis for all variables underscores the robustness of the relationships identified in the regression analysis. This implies that the observed associations between awareness levels of KCC and demographic, socioeconomic factors, as well as credit score, are unlikely to have occurred by chance alone. Consequently, policymakers and stakeholders can utilize these findings to develop tailored interventions aimed at enhancing awareness and uptake of financial services among farmers, thereby promoting financial inclusion and bolstering agricultural development. By addressing disparities in awareness across different demographic and socioeconomic groups, such initiatives can contribute to fostering more inclusive and sustainable agricultural practices, ultimately driving economic growth and poverty reduction in rural areas. Therefore, understanding the nuanced interplay between various factors influencing awareness levels is crucial for devising effective strategies to empower farmers and enhance their access to vital financial resources.

Findings and conclusion:

The study provides a nuanced understanding of the complex factors influencing agricultural productivity in the Saurashtra region of Gujarat, particularly highlighting the transformative impact of the Kisan Credit Card (KCC) scheme on rural farmers' productivity levels. By examining a range of determinants including farm size, education level, irrigation coverage, and household income, the research offers insights into the interplay of various socio-economic factors in shaping agricultural outcomes.

The findings emphasize the pivotal role of timely access to credit in driving agricultural productivity. Farmers who utilize the KCC scheme are empowered to make critical investments in inputs and technologies, ultimately leading to enhanced productivity levels. Moreover, the study underscores the importance of addressing broader socio-economic dynamics such as education and income levels, which significantly influence farmers' ability to leverage innovative techniques and resources for productivity gains.

Furthermore, the positive correlation between farm size and productivity underscores the potential efficiencies derived from scale in agricultural operations. Larger farms are better positioned to optimize resource utilization and implement advanced farming practices, contributing to higher productivity levels. Additionally, the study highlights the crucial role of irrigation infrastructure in bolstering agricultural productivity. Access to reliable water resources enables farmers to mitigate risks associated with climatic variability and enhance crop yields, underscoring the importance of sustainable water management strategies in agricultural sustainability. In conclusion, the findings underscore the need for comprehensive policy interventions aimed at improving access to credit, promoting education and skill development, expanding irrigation infrastructure, and fostering income growth among rural farming communities in the Saurashtra region. By addressing these multifaceted challenges, policymakers can foster sustainable agricultural development and improve livelihoods in rural areas, ultimately driving economic growth and resilience in the region.

Suggestions

In light of the findings, several strategic recommendations can be proposed to enhance agricultural productivity and rural development in the Saurashtra region of Gujarat. Firstly, policymakers should prioritize initiatives aimed at further streamlining and expanding the Kisan Credit Card (KCC) scheme in the region. This entails ensuring broader outreach and awareness campaigns to educate rural farmers about the benefits and utilization of KCCs. Additionally, efforts should be made to simplify the application and approval processes, reduce bureaucratic hurdles, and enhance accessibility to KCCs for marginalized and remote communities within the Saurashtra region.

Furthermore, investments in agricultural infrastructure, particularly in irrigation systems, should be prioritized to address water scarcity issues and improve water management practices. This may involve the construction of reservoirs, canals, and water harvesting structures to augment irrigation coverage and mitigate the impact of erratic rainfall patterns on agricultural productivity in the region.

In parallel, initiatives aimed at promoting education and skill development among rural farmers should be intensified. This includes the provision of training programs, workshops, and extension services to enhance farmers' knowledge and adoption of modern agricultural practices, technologies, and techniques. Collaborative efforts between government agencies, academic institutions, and agricultural extension services should be fostered to facilitate knowledge transfer and capacity-building initiatives tailored to the specific needs of farmers in the Saurashtra region.

Moreover, measures to enhance rural income diversification and livelihood opportunities should be explored. This may involve the promotion of agro-processing industries, value-added agricultural products, and alternative income-generating activities such as eco-tourism and rural entrepreneurship. Access to markets and market linkages should be strengthened to enable farmers in the Saurashtra region to access lucrative markets for their produce and derive higher returns on their investments.

Overall, a multi-dimensional approach encompassing policy reforms, infrastructural investments, capacity-building initiatives, and income diversification strategies is essential to drive sustainable agricultural development and rural prosperity in the Saurashtra region of Gujarat. By addressing the underlying constraints and leveraging the region's agricultural potential, these recommendations aim to foster inclusive growth, resilience, and prosperity among rural communities in Saurashtra.

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