

Fueling Agricultural Growth In Madhya Pradesh Through Formal Credit- A Way Towards Financial Inclusion

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ABSTRACT

*Financial inclusion is emerging as new paradigm of economic growth. In India 68.84% (census 2011) population lives in rural area out of which 25.70% people are poor and rural finance is a matter of credit concern in the economy. Madhya Pradesh has reported the best productivity growth in terms of Agriculture over past few years, and has improved its infrastructure. This kind of change in one sector – agriculture – is initiating growth in the entire economy of the state. Agriculture in Madhya Pradesh (MP) grew at **9.7 per cent per annum** during the decade (2008-18). The last five years have been spectacular when agricultural growth rate stood at 18% per cent per annum. The study intend to examine the influence of access to credit on agricultural productivity in Madhya Pradesh, It is based on the secondary data compiled from several sources, has revealed that the formal credit to agriculture in real terms has increased during the past decade. The nature and availability of panel dataset constrained the study to examine the pooled data analysis for arriving at results. The analysis was carried out with the data of selected districts of Madhya Pradesh over the period 2008-2018. The findings of the study shows the evidence of long run relationship between agriculture production and agricultural credits provided to small and marginal farmers. The results revealed that total credit to agriculture has a positive and significant impact on the level of agriculture production in the region. The Study also examines nature of the relationship between formal agricultural credit and productivity of crops which ultimately led to an improvement in state GDP. One of the major findings was related to inadequacy of credit to small and marginal farmers. Therefore more innovative models are required to be formulated using Econometric Financial Models for making the credit*

availability and accessibility more convenient. Thus it can be concluded that formal agriculture credit is required for the inclusive growth of the economy of the state.

Key Words: *Financial Inclusion, Econometric Financial model, Panel Data Set, State GDP, Inclusive Growth.*

INTRODUCTION

Financial Inclusion is a Flagship Program of RBI which aims at bringing the people under the ambit of formal financial environment. In order to have an inclusive growth of rural economy there should be ease access to finance at affordable cost that will ultimately create employment opportunities in rural areas. RBI has defined Financial Inclusion as the “process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low income groups in particular, at an affordable cost in a fair and transparent manner by regulated, mainstream institutional players”. Madhya Pradesh as primarily an agrarian state with 55 percent of its population engaged in agricultural which is 8percent more than the country’s average of 47 percent.The Primary Sector accounts for 42.89 percent of the state’s GVA as of 2017-18. The drastic progress of Madhya Pradesh in terms of Crop Productivity is a lesson worth learning for many states of India who are struggling enough to get their agriculture growth. This paper examines the sources and drivers of agricultural growth in Madhya Pradesh and also to identify the factors that have contributed to vigorous agricultural growth in the state. The study explores the measures taken by the state government to make it Krishi Sampanna State. The three main factors contributed to the rapid stride in agriculture based on past studied are expanded irrigation along with strong procurement system and all-weather best connected roads to markets. In particular, irrigation coverage through tube-wells was expanded through the state government’s strategy of initially focusing on providing good quality power supply to farmers during the wheat irrigation season. Therefore, the government planned to improve the supply chain of wheat by restructuring of the procurement system through digitization and also initiated ‘e-Uparajan’scheme. Past studies also mentions about the increased storage capacity of the state. In the light of these findings, the study makes three principal recommendations to stimulate agricultural growth in other states with somewhat similar characteristics, viz., improve the quality and quantity of rural power supply by

strengthening transmission and distribution and by separation of feeders for irrigation and household use, increase the density of surfaced roads in rural areas, and improve procurement and marketing infrastructure to reduce market risk of farmers.

RATIONALE FOR STUDY

Madhya Pradesh has made a significant progress during the past decade, the status of Bimaru(indicating sickness or backwardness) has been transformed into jujharu(Progressive) state. The current statistics on the economy is truly jaw-dropping where MP's agricultural growth rate is 18% during last five years. The state has bagged KRISHI KRAMAN AWARD for the fifth consecutive time.

The perusal of existing literature reveals that study in the area is focused on India, and other countries which give a broad view of the state. Presently the State is making a significant progress in the productivity of crops and also farmers have got easy access to finance through a variety of initiatives and other business models. Not many studies have been undertaken in Madhya Pradesh which examines the impact of agricultural credits on the productivity in the state. Consequently it is appropriate to study the impact looking at the stride in agricultural growth rate.

REVIEW OF LITERATURE

Sujlana and Kiran (2018) in the study made an attempt to express the overview of Financial Inclusion and also the importance of inclusive finance for the growth of the economy. Based on their analysis conducted, it was affirmed that the financial inclusion is in progressive stage in India in terms of branch penetration and penetration.

Thomas, Saji (2018) study focused on recovery performance of state cooperative banks in short term agricultural credits in India. The major objective is to study the trend and pattern of agricultural credit disbursement and recovery in Scheduled Commercial Banks. The recovery procedure and recovery percentage of each state was observed and few states like M.P, Goa, Tripura, Punjab, Telangana, Tamil-Nadu and Andhra Pradesh has reported more than 50% recovery rate and rest of the states shows very low recovery percentage. The paper delineates the requirement of feasible recovery mechanism to ensure timely recovery of agricultural credit.

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S. Dev, Mahendra (2018) the paper addressed the goals of agriculture and also the issues related to doubling of agricultural income by 2020. Both Primary and Secondary data was considered for analyzing the indicators of agricultural growth along with measures taken to strengthen the sustainability in agricultural growth.

Singh, Charan and Naik, Gopal (2017) in a working paper from IIMB addressed the hindrances of financial inclusion which exist in the economy. The result shows the existence of indigenous and non formal sources of finance. Bankers who have been interviewed during the study accepted that, there exist lack of Financial literacy and technical awareness among the loan beneficiary. Financial literacy at the ground level must be assured by government of India in this regard.

Gulati Ashok et al. (2017) The study indicated 9.7% pa decennial growth of agriculture in Madhya Pradesh and it is the highest growth registered amongst all the states of india. According to him M.P. could be a state from where a lesson can be learnt by other states to identify and implement the factors contributing to vigorous agricultural growth. Being the agricultural economist he identified three major factors responsible for robust growth of agriculture in M.P. explicitly includes well connected roads, strong procurement mechanism and higher MSP.

Verma, Gulati and Hussain (2017) the study conducted in the state Uttar Pradesh which has potential to double its agriculture growth from 2.55% to 5% pa. U.P. so called the granary of the nation has achieved a surprisingly low growth in past few years. This study deals with examining the perception of farmers regarding Institutional Agricultural finance. The study analysed the performance of various credit providing institutions and also proposed the model for accessible Institutional agricultural finance for rural population of Uttar Pradesh. U.P. has not achieved its untapped potential so the policy interventions are required for alleviating poverty in the state.

Thakor, Prusty (2017) the paper discussed about the need of fruitful financial Inclusion for all the sections of economy. It was found that the saving habits of tribal people was improved in Gujrat state due to penetration of banking and other financial services to unbanked areas. The impact of Pradhan Mantri Jan Dhan Yojana(PMJDY) has amplified the financial consciousness

among the resident of study area. As per the analysis the financially included tribal inhabitants enjoy better socio-economic position due to higher productivity and usage of better inputs.

Srivastava. K. Vinay (2016) the study was conducted in Udaypur district Rajasthan which is prominently inherited by the population of rural and tribal community. Henceforth the study examined a gap of basic banking facilities to poor and under privileged section of the region. The research concluded that Pradhan Mantri Jan Dhan Yojana has contributed for the financial inclusion in the district.

Hirwe. R (2016) In line with the objectives of the thesis a similar work was done titled , “A Study on Impact of Kisan Credit Card Scheme among the Beneficiary Farmers in Maheshwar block, Khargone District of M.P.” The outcome of the study reveals that the there is a significant impact of KCC provided by banks on the productivity of beneficiaries in Khargone district M.P. Beneficiaries were getting help at the time of loan but not able to get any technical assistance.

Kanel S.S (2016) the study indicated the importance of Kisan Credit Card scheme in Madhya Pradesh. It was stated that the average size of land holding of beneficiaries farmers was found to be 3.39 hectares and to that of non-beneficiaries farmers it was 3.34 hectares and cropping intensity was found to be 140.33 percent and 143.78 percent respectively. Similarly it was found out that educational status of selected beneficiaries farmers were 33.33 percent, 19.23 percent and 22.22 percent for large medium and small/marginal farmers respectively and non beneficiaries farmers were 17.64 percent, 24.00 percent and 12.50 percent for large medium and small/marginal farmers respectively illiterate.

Vallasser, A.N (2015) it was studied that there has been lot of transformations in the period Pre – Post reforms. The size of land holdings is decreased drastically in the recent years. AAGR and ANOVA was used to arrive at the findings. Decennial growth rate for institutional and non institutional credit was analyzed and also it was found that RRB and Commercial Banks have dominance over the other formal credits. There was differences in pre-post reforms in the over all economy.

OBJECTIVES OF THE STUDY

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1. To study the variables responsible for access to affordable and timely agricultural credits to farmers of selected districts.
2. To assess the progress and impact of agricultural credit on overall development of the Gross State Domestic Product (GSDP).

LIMITATIONS OF THE STUDY

The study aims to assess impact of microcredit on agricultural productivity and income of farmers in selected district of Bhopal Division. The scope of the study will be limited only to districts of Bhopal Division. This is mainly because of limited availability of resources and time to undertake the study on a wider scale. Some of the farmers were reluctant to respond openly to some of the questions and due to some hesitation, some of the questions were not answered at all. The study dealt with impact of formal agricultural credit but the informal access to agriculture credit was not taken into account for and their consequences are not much assessed in greater details.

HYPOTHESES OF THE STUDY

H₀₁ There is no significant correlation of formal agricultural credits on GSDP(Gross State Domestic Product)

H₀₂ There is no significant relationship in the factors like education of farmers, farming experience and age of account on the formal credit received by farmers.

Research Methodology

Research Design

This study deals with an empirical analysis on primary as well as secondary data to find the causal relationship between agriculture credit and Gross State Domestic Product.

Collection of data

Both Primary & Secondary data is used in the research. The study has followed both qualitative and quantitative methods for understanding the impact of agricultural credits on the agricultural

productivity in the state. A close ended structured questionnaire was developed to collect data from the respondents and Multi-staged Purposive Sampling Technique is adopted to collect the Primary data from the control and target groups. Household from the selected districts is treated as a unit of analysis rather than individuals. However, secondary data is collected from various sources like journals, books, manuals, and reports of the state and center concerned for literature part. Data collected both from primary and secondary sources have been interpreted with the help of inferential statistical tools like correlation, regression, chi-square test to check the association

Sampling Plan

The primary data is collected from farmers through schedules and personal interview method from the 5 districts of Bhopal Division(Bhopal, Raisen, Vidisha, Rajgarh and Sehore), Sample of 20 respondents from each districts have been collected for the study, which makes a total sample size of 100 respondents.

DATA ANALYSIS AND TESTING OF HYPOTHESIS

H_0 There is no significant correlation of formal agricultural credits on GSDP(Gross State Domestic Product)

Table 1: Correlation of Madhya Pradesh GSDP and Agricultural credits

	Madhya Pradesh GSDP and Agricultural credits	
	GSDP constant price (in cr)	Agricultural credits (in cr)
2008-09	152946	12075
2009-10	167564	15508
2010-11	188144	19800
2011-12	315562	24493
2012-13	351683	31651
2013-14	365134	43618
2014-15	384105	49870
2015-16	407970	52502
2016-17	465136	64162
2017-18	499102	60882

Source: Nabard various Issues.

Table 2 : Descriptive Statistics

	Mean	Std. Deviation
Agricultural credits	37456.1	19205.98652
GDP	329734.6	122761.2391

Table 3 : Correlation Statistics

		Agricultural Credits
Agricultural credits	Pearson Correlation	1
	Sig. (2-tailed)	
	N	10
GDP	Pearson Correlation	0.954604267
	Sig. (2-tailed)	1.75866E-05
	N	10
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 4 : Regression Statistics

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.942060891							
R Square	0.887478722							
Adjusted R Square	0.871404254							
Standard Error	40274.18844							
Observations	9							
ANOVA								
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	89551925718	8.96E+10	55.21045595	0.000145619			
Residual	7	11354071783	1.62E+09					
Total	8	1.00906E+11						
	<i>Coefficient</i>	<i>Standard</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower</i>	<i>Upper</i>	<i>Lower</i>	<i>Upper</i>

	<i>ts</i>	<i>Error</i>			<i>95%</i>	<i>95%</i>	<i>95.0%</i>	<i>95.0%</i>
Intercept	113187.81 82	34505.686 8	3.28026 6	0.0134821 22	31594.834 42	194780 .8	31594. 83	194780 .8
12075	5.8642530 63	0.7892271 86	7.43037 4	0.0001456 19	3.9980273 21	7.7304 79	3.9980 27	7.7304 79

H₀₁ hypothesis is tested using Correlation and Linear Regression statistics. The Correlation Statistics shows a sig. (two tailed) value of 0.94206 this shows a high degree of correlation. It can therefore be concluded that there is statistically significant correlation between the Agricultural share of GSDP and Agricultural Credits in Madhya Pradesh. The regression statistics depicts the Significance F value of 0.000145619 which is less than 0.05 also the P-value is 0.01348 which is also less than 0.05. The value of R is 0.94206 which reflects the high degree of correlation between the Agricultural share of GSDP and Agricultural Credits in state in past 10 years. Further, the value of R Squared (coefficient of determination) calculated was 0.887478 which point towards the higher explanatory value of variance for dependent variable (Agricultural share of GSDP) by an independent variable (Agricultural Credit). The high value of 0.887478 (R Squared) established that the model explains 88.74 % of variations within the data. The greater the R squared, the better is the model. *The P-Value here (0.01348) was less than significance level of 0.05 which concludes that Null Hypothesis stands rejected and it can be established that there is positive and significant relationship between Agricultural share of GSDP and Agricultural Credits. Thus the alternate Hypothesis H_{a1} that there is a significant correlation of formal agricultural credits and KCCs on overall development of GSDP(Gross State Domestic Product found accepted and thus proved.*

H₀₂ There is no significant relationship in the factors like education of farmers, farming experience and age of account on the formal credit received by farmers.

Education of farmers	No. of Respondents	Finance /Credit	Finance /Credit not
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		Availed	Availed
High School	34	2	32
Higher Secondary	42	26	16
Graduation	18	15	3
Post Graduation	6	6	0
Total	100	49	51
Correlation (r) 0.928994			
Farming Experience(in Yrs)	No. of Respondents	Finance /Credit Availed	Finance /Credit not Availed
0 to 5	6	0	6
05 to 10	8	3	5
10 to 15	29	21	8
15 to 20	14	12	2
20yrs above	43	40	3
	100	76	24
Correlation (r) 0.828951			
Age of bank account	No. of Respondents	Finance /Credit Availed	Finance /Credit not Availed
0 to 5	21	7	14
05 to 10	17	9	8
10 to 15	34	27	7
15 years above	28	22	6
Correlation (r) 0.73759			

Testing of Hypothesis

There is no significant relationship in the factors like education of farmers, farming experience and age of account on the formal credit received by farmers.

<i>Regression Statistics</i>	
Multiple R	0.892918646
R Square	0.797303708
Adjusted R Square	0.729738278
Standard Error	9.799183124
Observations	5

ANOVA

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1133.12803	1133.13	11.8005	0.0413812
Residual	3	288.0719697	96.024		
Total	4	1421.2			

Since the value of probability is less than 5% the null hypothesis is rejected thereby establishing a significant relationship in the factors like education of farmers, farming experience and age of account on the formal credit received by farmers.

<i>Regression Statistics</i>	
Multiple R	0.990637537
R Square	0.981362729
Adjusted R Square	0.976703412
Standard Error	4.381013869
Observations	6

ANOVA

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	4042.56	4042.56	210.6237	0.000131073
Residual	4	76.77313	19.19328		
Total	5	4119.333			

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Since the value of probability is less than 5% the null hypothesis is rejected thereby establishing a significant relationship in the factors like education of farmers, farming experience and age of account on the formal credit received by farmers.

FINDINGS AND OUTCOMES OF THE STUDY

The result of the study intent to extract the information about the variables accountable for accessing the affordable and timely agricultural credits to farmers in selected districts of Madhya Pradesh, the research reveals that the factors like education of farmers, farming experience and years of association with bank account facilitates in the delivery of formal credits to farmers. As per the statistical analysis done on data gathered from primary sources it can be concluded that the value of probability is less than 5% the null hypothesis is rejected thereby establishing a significant relationship in these factors. There is also a significant association of formal agricultural credits on GSDP which can be established from the secondary data sources such as economic survey, economic review, RBI annual Report, NABARD annual publications etc. The major findings of the study are:

1. Agricultural loan was used for purchasing seed, fertilizer, pesticides but it was not used for meeting expenses related to asset acquisition and technology up gradation.
2. The study revealed that the land holding dimensions has drastically been declined during past few years, it was found out that out of total respondents only 13.5 % of the respondents were holding land above 5 hectares and they were called as large farmers, the medium farmers holding the land of 2-5 hectares were only 22.5% and small farmers world 19.5%, this data truly reflects that landholding had been declined in past few years.
3. It was observed that the number of crops grown by the farmers per annum was majorly two, 43% of the farmers cultivate only one crop 53% of the farmers grows two crops and remaining 4% of the farmers goes for the cultivation of three crops per annum.
4. The study shows that the respondent's income above 2 lacs was only 5.25%, establishing the fact that Madhya Pradesh is still an underdeveloped state. It was found out in the

study that 53.2 5% of population was able to earn less than rupees 50000 per month per annum and therefore the deprived and underprivileged population is growing in Madhya Pradesh.

5. Minimum support price is one of the game changer phenomena in Madhya Pradesh, it was found out in the study that 55.7 5% of the people have awareness on MSP minimum support price and remaining 40 4.25% were not aware of minimum support price concept.
6. The results reveals that in spite of the fact that Madhya Pradesh serves higher MSP to the farmers it is surprising but discouraging that majority of the respondents were not satisfied were not found to be satisfied with the Madhya minimum support prices offered in the state. 78.5 percent of the respondents were not satisfied with minimum support price offer by the government.

The observations during the research reveal that the agricultural credit is inadequate especially to small and marginal farmers. Overdue and mis-utilization of credit is a major problem for bankers in rural areas. Majority of the respondents believed that inadequate credit is the main reason for low productivity in some areas.

CONCLUSION

Several studies have been conducted in this area but Madhya Pradesh is almost untouched in respect of availability and adequacy of formal agricultural credit to farmers. The findings of the research suggest that there is a strong relationship exists between the access to agricultural credit and the variables like education level, farm experience, and age of bank account status of farmers. The amount of agricultural credit that can be borrowed by the farmers is significantly affected by these socio-economic characteristics. Financial inclusion not merely means opening of accounts rather it means involving eligible individuals into the financial system by eliminating exploitation. It can therefore be concluded that easy and accessible agricultural Credit can leads to agricultural growth and agriculture has tremendous power to grow all sectors of the economy inclusively.

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