

# Impact of Financial Support Mechanisms on Farm Productivity: A Study of Credit, Insurance, and Subsidies

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**Abstract:** *This study examines how financial support mechanisms—credit, insurance, and subsidies—affect farm productivity. It analyses farmers’ access to timely credit, risk protection through crop insurance, and the role of subsidies in reducing input costs. Using primary data from farmers and secondary sources, the study evaluates how these factors influence investment decisions, crop yield, and income stability. The findings indicate that improved access to finance and support systems significantly enhances productivity and reduces risk, contributing to sustainable agricultural growth.*

**Keywords:** agricultural finance, farm productivity, credit access, crop insurance, subsidies, farmer income, risk management

## I. INTRODUCTION

Agriculture plays a vital role in the economic development of India, contributing significantly to employment, income generation, and food security. However, the sector continues to face challenges such as uncertain weather conditions, rising input costs, lack of timely finance, and exposure to various risks. In this context, financial support mechanisms like credit, insurance, and subsidies have become essential tools for strengthening agricultural productivity and ensuring farmers’ stability. Access to agricultural credit enables farmers to purchase quality seeds, fertilizers, modern equipment, and adopt improved farming techniques. Timely and adequate credit not only increases production but also enhances efficiency. Similarly, crop insurance provides protection against risks such as crop failure due to natural calamities, pests, and diseases, thereby reducing financial uncertainty and encouraging farmers to invest more confidently in their agricultural activities. Subsidies provided by the government further support farmers by lowering the cost of inputs such as fertilizers, irrigation, and machinery, making farming more affordable and sustainable.

In recent years, the government has introduced various schemes to promote financial inclusion in agriculture, aiming to improve farmers’ access to institutional finance and risk management tools. Despite these efforts, the effectiveness and reach of these financial support mechanisms vary across regions and farmer groups.

## II. LITERATURE REVIEW

Several studies highlight the importance of agriculture and financial support in India’s economic development. A. Saravanadurai and N. Manimehalai (2016) emphasized that agriculture is the backbone of the Indian economy, with a large rural population dependent on it, though its GDP contribution is declining. Alka Kumari and Vikas Garg (2021) found that agricultural credit significantly influences development, especially in the long run. Similarly, Farman Ullah Khan (2024) and Subhrajyoti Behera (2025) highlighted the role of agricultural finance in modernisation, productivity, and food security, while also pointing out challenges in rural financial access. Other studies provide mixed and supportive evidence regarding agricultural finance. M. S. Shriram (2007) argued that increased credit alone may not directly ensure higher output. In contrast, Purushottam Kashinath Pawar and S. D. Talekar (2023) emphasized that



access to finance improves productivity and farmers' living standards. Sudha Narayan (2016) found a strong relationship between institutional credit and agricultural GDP, while Sarthak Gaurav and Ajay Singh (2012) highlighted the importance of financial literacy among farmers for better decision-making. Overall, the literature shows that credit, financial services, and awareness play a crucial role in enhancing agricultural productivity and development.

### III. RESEARCH METHODOLOGY

#### 3.1 Research Design: descriptive research

#### 3.2 Data Collection:

Primary Data: Collected through structured questionnaires.

Secondary Data: Journal, Research Paper

Respondents: Farmers

Sampling Technique: Random sampling.

Sampling Area: Buldhana District

Sample Size: 100 respondents.

Tools for Analysis: MS Excel

#### 3.3 Objectives of the Study:

To understand how financial support helps farmers increase their income.

To analyse the role of credit, insurance, and subsidies in improving productivity.

Hypothesis:

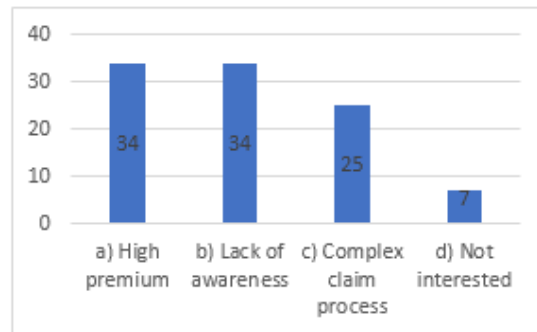
H<sub>0</sub>: Credit, insurance, and subsidies do not significantly improve agricultural productivity.

H<sub>1</sub>: Credit, insurance, and subsidies significantly improve agricultural productivity.

### IV. DATA ANALYSIS:

#### 4.1 Statistical Analysis:

##### 4.1.1 What factors prevent taking crop insurance?

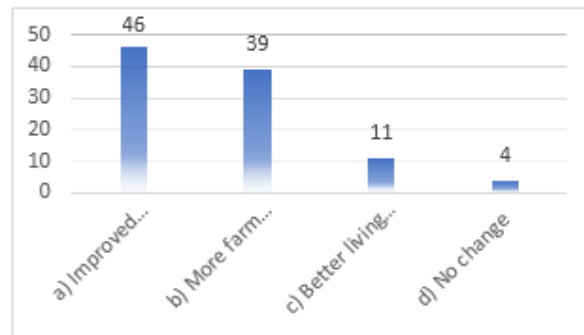


Interpretation:

High premium and lack of awareness (34% each) are main barriers to crop insurance, followed by complex claims (25%). Improving affordability, awareness, and simpler procedures can increase farmer participation.



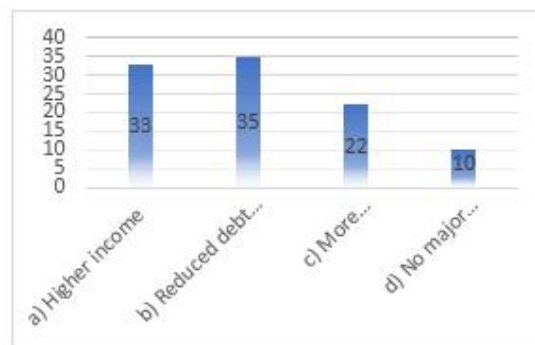
**4.1.2 What positive changes have been observed due to easy access to finance**



**Interpretation:**

Agricultural finance mainly improves irrigation (46%) and mechanisation (39%), boosting productivity. Some report better living standards (11%), while few see no change, indicating strong positive impact on farming development.

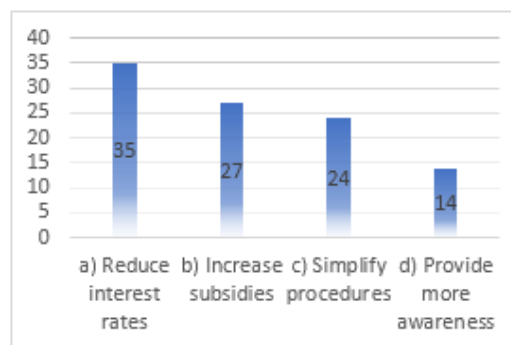
**4.1.3 What is the biggest impact of credit availability on farmers' lives?**



**Interpretation:**

Agricultural finance reduces dependence on moneylenders (35%), increases income (33%), and boosts farm investment (22%). Overall, it improves financial stability, though 10% report no significant impact.

**4.1.4 What should the government do to improve agriculture finance?**



**Interpretation:**

Reducing interest rates (35%) is the top priority, followed by increasing subsidies (27%) and simplifying procedures (24%). Awareness (14%) is the least preferred.

**4.2 Hypothesis Analysis:**

Applied Method: Chi-Square test

Financial Support ↓ / Productivity Impact →	Positive Impact	No Effect	Negative Impact	Total
Bank Credit	20	5	3	28
Crop Insurance	25	6	4	35
Govt Subsidy	22	4	3	29
Moneylender	5	3	5	13
Total	72	18	15	105

Chi-Square Formula

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Calculation

After calculating all cells:

$$\chi^2 = 18.5$$

**Critical Value:** At 5% significance level and df = 6:

$$\chi_{table}^2 = 12.592$$

**Decision Rule**

- If  $\chi^2$  calculated >  $\chi^2$  table → Reject  $H_0$
- If  $\chi^2$  calculated <  $\chi^2$  table → Accept  $H_0$

$$18.5 > 12.592$$

**Interpretation:**

The calculated Chi-square value is greater than the table value at 5% level of significance.

The null hypothesis is rejected, and the alternative hypothesis is accepted.

**V. CONCLUSION**

The study concludes that financial support mechanisms such as credit, insurance, and subsidies play a significant role in improving agricultural productivity. The Chi-square test results confirm that these factors have a meaningful impact on farmers' production and income. Access to timely credit enables better investment in inputs, while crop insurance reduces risk and uncertainty. Government subsidies further support farmers by lowering production costs. Overall, effective financial support not only enhances productivity but also ensures stability and sustainability in the agricultural sector, leading to improved livelihoods for farmers.



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