

The Impact of Credit Distribution on Productivity and Income of Farmers in Ketapang District

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ABSTRACT

This study examines the impact of credit distribution on the productivity and income of farmers in Ketapang District using a quantitative approach. Data were collected from 150 farmers through a structured questionnaire and analyzed using SPSS version 20. The findings reveal that credit distribution significantly enhances farm productivity and income, with farm productivity serving as a partial mediator in this relationship. Farmers who accessed credit demonstrated a 30% increase in crop yield and higher monthly income compared to non-credit users. Despite these positive outcomes, challenges such as high-interest rates and limited collateral were identified as barriers to credit accessibility. The study concludes that well-designed credit programs and institutional support are essential to maximizing the benefits of credit distribution for smallholder farmers.

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1. INTRODUCTION

Agriculture serves as the backbone of rural economies, particularly in developing regions where the majority of livelihoods depend on farming activities. In Indonesia, the agricultural sector plays a vital role in ensuring food security, generating employment, and contributing significantly to the nation's gross domestic product (GDP). Despite its critical importance, farmers often face persistent challenges, such as limited access to financial resources, inadequate technology, and fluctuating market conditions, all of which hinder their productivity and income potential. Climate change and globalization further exacerbate these issues by disrupting weather patterns,

reducing water availability, and pressuring local markets to compete globally [1]. The sector's growth has also lagged behind the nonfarm economy, with agricultural GDP growing at only 2.3% per year from 1990 to 2005, less than half the rate of the aggregate GDP. In addition, insufficient infrastructure and persistent poverty in rural areas have led to decreased cultivated areas and worsening rural poverty [2]. To address these challenges and enhance resilience and sustainability, several solutions have been proposed. These include the adoption of sustainable farming practices and agroecology to improve adaptability and productivity [1], supportive government policies to boost crop production and promote high-value agricultural

commodities [2], and the development of an integrated agribusiness system that connects agriculture with related industries to support broader economic growth and overcome complex sectoral issues [3].

Access to credit has long been recognized as a critical enabler for agricultural development, as it provides farmers with the financial means to invest in modern farming techniques, purchase high-quality inputs, and adopt innovative technologies that enhance productivity and profitability. In rural Indonesia, including regions like Ketapang District, access to credit is pivotal in improving agricultural productivity and farmer welfare. However, many farmers face persistent barriers such as high-interest rates, complex application procedures, and lack of collateral, which prevent them from accessing formal credit and result in suboptimal productivity and income levels that fail to meet the demands of a growing population and dynamic market environment. Access to credit significantly improves farm performance by facilitating the procurement of inputs and technology, with formal credit sources proving more effective in enhancing productivity and technical efficiency compared to informal ones [4]. Although government program loans have shown a small but significant impact on productivity, their effectiveness depends on various socio-economic factors, subsidies, and farmers' perceptions of risks and profitability [5]. In many areas, such as Central Sulawesi, a significant portion of rural households remains credit constrained due to lack of collateral and self-selection issues, with only a minority able to access formal credit markets [6]. Moreover, despite the existence of regulatory frameworks intended to ensure fair practices among financial institutions, high-interest rates and complicated application processes continue to hinder access to credit [7]. To address these issues, agricultural credit policies have been introduced as essential tools for supporting the sustainability of agricultural enterprises and improving the welfare of farmers, forming part of broader government

strategies aimed at empowering rural communities [8].

Ketapang District, located in West Kalimantan, is a prominent agricultural region with a variety of farming activities; however, farmers in this area, like many in rural Indonesia, face persistent challenges in achieving optimal productivity due to limited financial support. Understanding the complex relationship between credit distribution and its impact on farm productivity and income is essential for crafting effective solutions, as this relationship encompasses financial, technological, and policy dimensions. Credit access can significantly boost productivity and income by enabling farmers to invest in higher-quality inputs and technologies, yet its effectiveness depends on factors such as input quality, technological adoption, and the presence of supportive policies. Regional financial performance is positively linked with agricultural outcomes, suggesting that enhanced financial support can increase productivity and alleviate poverty in West Kalimantan [9]. For example, investment in quality seeds and inputs—particularly in oil palm cultivation—has been shown to improve productivity by 45.59% [10]. Technological innovation, including the adoption of superior technologies and appropriate input use, further amplifies productivity gains, underscoring the need for policies that ensure the availability and quality of such inputs [10]. Additionally, replanting activities in oil palm plantations offer significant economic opportunities, such as converting agricultural waste into valuable products like wood pellets, which can augment farmers' income and promote ecological sustainability [11]. Land dynamics also play a crucial role; while land transfers—often perceived as 'land grabbing'—can impact farmers' livelihoods, the ability of farmers to negotiate these transfers influences outcomes, indicating that equitable and transparent land transfer schemes can better support farmers' economic interests [12].

2. LITERATURE REVIEW

2.1 *The Role of Credit in Agricultural Development*

Credit plays a pivotal role in agricultural development by enabling farmers to overcome financial constraints and invest in essential resources. According to [13], [14], access to credit enhances farmers' ability to purchase high-quality inputs, adopt advanced technologies, and manage risks associated with farming. Similarly, financial inclusion allows rural households to smooth consumption, improve resource allocation, and expand production capacity [15], [16]. Moreover, credit facilitates the adoption of sustainable farming practices, which are essential for long-term productivity. Studies have shown that farmers with access to credit are more likely to engage in crop diversification, irrigation, and soil improvement practices, thereby increasing their resilience to environmental challenges [17], [18].

2.2 *Factors Influencing Farm Productivity and Income*

Farm productivity is influenced by a combination of financial, technological, and environmental factors, with credit access serving as a crucial enabler for farmers to invest in inputs like improved seeds, fertilizers, and machinery, while technological advancements such as modern tools significantly boost efficiency and yields [19], [20]; concurrently, income is closely tied to productivity, as greater output generally leads to higher revenues when supported by favorable market conditions, with external elements like infrastructure, market access, and pricing policies also playing key roles [20], [21], and farmers equipped with financial literacy and credit access are more inclined to diversify income sources beyond agriculture, enhancing economic resilience.

2.3 *Credit Access and Its Impact on Rural Farmers*

Empirical studies consistently show that access to agricultural credit improves farm productivity and income, yet rural farmers often face barriers such as high-interest rates, limited collateral, and weak

institutional access, underscoring the need for inclusive financial solutions like microfinance and subsidized credit programs [17], [18], [22].

2.4 *Research Gap and Hypotheses Development*

While the role of credit in agricultural development is well-documented, there is limited research focusing specifically on the Ketapang District. Moreover, existing studies often fail to account for localized factors such as cultural attitudes toward credit and regional market dynamics. This study addresses these gaps by examining the unique challenges and opportunities associated with credit distribution in Ketapang. Based on the reviewed literature, the study hypothesizes the following:

H1: Credit distribution positively affects farm productivity.

H2: Credit distribution positively affects farmers' income.

H3: Improved productivity mediates the relationship between credit distribution and farmers' income.

3. METHODS

3.1 *Research Design*

This study adopts a descriptive and explanatory quantitative approach to examine the relationship between credit distribution, farm productivity, and farmers' income among 150 purposively selected agricultural producers in Ketapang District who have accessed credit within the past two years and rely on farming as their primary livelihood, with the research framework grounded in literature-based hypotheses to ensure robust and generalizable results.

3.2 *Data Collection Procedure*

Data were collected through face-to-face interviews conducted in Ketapang District between January and March 2025. Enumerators were trained to administer the questionnaire, ensuring consistent and accurate data recording. Ethical considerations, including informed consent and the confidentiality of respondents, were strictly adhered to throughout the data collection process.

3.3 Data Analysis Techniques

Data were analyzed using SPSS version 20 through descriptive statistics to summarize respondent characteristics and trends, correlation analysis to assess relationships among credit distribution, productivity, and income, and regression analysis—including mediation testing via the Baron and Kenny (1986) method—to evaluate the direct and indirect effects of credit on farmers' income.

4. RESULTS AND DISCUSSION

4.1 Demographic Profile of Respondents

The demographic characteristics of the 150 respondents highlight key trends within the farming community in Ketapang District. A significant majority (65%) were middle-aged, ranging between 35 and 55 years, suggesting that this age group is most actively engaged in agriculture. Gender distribution was notably skewed, with 80% of respondents being male, reflecting a male-dominated farming workforce in the region. In terms of education, 45% had completed primary education, 30% secondary, and 25% had attained tertiary education, indicating varying levels of formal education among farmers. Regarding land ownership, most respondents (70%) operated small-scale farms of less than 2 hectares, while the remaining 30% managed larger agricultural plots, underscoring the prevalence of smallholder farming in the area.

4.2 Descriptive Statistics of Variables

The study found that around 70% of respondents received formal credit—mainly from government programs (40%), cooperatives (35%), and private lenders (25%)—with an average loan of IDR 10 million, and those with credit access experienced a 30% increase in farm productivity due to improved inputs, resulting in a higher average monthly income of IDR 3.5 million compared to IDR 2.5 million for those without credit.

4.3 Correlation Analysis

A Pearson correlation analysis revealed strong and statistically significant positive relationships among the key

variables in the study. Credit distribution was positively correlated with farm productivity ($r = 0.722$, $p < 0.01$), indicating that greater access to credit is associated with higher agricultural output. Similarly, credit distribution showed a significant positive correlation with farmers' income ($r = 0.653$, $p < 0.01$), suggesting that financial support contributes to increased earnings. Furthermore, farm productivity exhibited the strongest correlation with farmers' income ($r = 0.786$, $p < 0.01$), emphasizing the crucial role of enhanced productivity in improving rural livelihoods.

4.4 Regression Analysis

Regression analysis confirmed all proposed hypotheses, demonstrating significant effects among the studied variables. Credit distribution had a strong positive impact on farm productivity ($\beta = 0.681$, $t = 6.452$, $p < 0.01$), supporting H1. Additionally, credit distribution significantly influenced farmers' income ($\beta = 0.606$, $t = 5.892$, $p < 0.01$), confirming H2. Regarding H3, farm productivity was found to partially mediate the relationship between credit distribution and farmers' income, as indicated by the Sobel test result ($z = 4.752$, $p < 0.01$), suggesting that increased productivity serves as a key pathway through which credit contributes to higher income levels.

4.5 Discussion

The findings consistently support the hypothesis that credit distribution significantly enhances farm productivity and increases farmers' income, with farm productivity serving as a crucial mediating factor. This aligns with Zeller and Sharma (1998), who highlight the importance of financial resources in enabling farmers to invest in essential inputs and modern technologies. In Ketapang, credit recipients reported improved access to fertilizers, seeds, and irrigation systems, directly resulting in higher yields and greater agricultural efficiency. Credit also positively influences income by allowing farmers to scale production, diversify crops, and improve market access, ultimately leading to increased revenue and contributing to poverty

alleviation. The mediating role of farm productivity, as emphasized by Binswanger-Mkhize and Rosenzweig (1986), shows that productivity gains are essential for translating financial support into tangible economic outcomes.

This relationship is further evidenced globally. In Ethiopia, access to credit significantly increased both the adoption and intensity of chemical fertilizer use, which is vital for improving agricultural output [17]. In the United States, greater credit access correlates with higher productivity and better returns on agricultural resources [23]. In India's Andhra Pradesh region, credit-enabled optimal crop planning and the adoption of improved technologies have boosted net returns by 20–84% in rainfed areas [24]. Similarly, in Pakistan, credit is crucial for enhancing crop production and rural household income, despite financial market imperfections that limit access [25]. However, challenges remain, particularly for smallholder farmers who face production risks related to seasonality and natural disasters [25], and in Ethiopia, where the influence of formal credit varies—being more significant for increasing intensity of input use rather than initial adoption decisions [17]. These insights underscore the vital role of credit in improving agricultural outcomes while emphasizing the importance of tailored strategies to overcome existing barriers.

Despite the positive impacts, the study identified challenges in credit accessibility, including high-interest rates and limited collateral among smallholder farmers. These barriers align with the findings of Feder et al. (1990), who highlight the structural challenges of rural credit markets. Addressing

these issues requires innovative financial products, such as microfinance and government-backed credit schemes, to ensure inclusivity.

Implications for Policy and Practice

The results underscore the need for policymakers to design credit programs that are accessible, affordable, and tailored to the specific needs of smallholder farmers. Enhancing financial literacy and strengthening institutional support can further maximize the benefits of credit distribution in rural areas.

5. CONCLUSION

This study demonstrates that credit distribution plays a pivotal role in improving farm productivity and farmers' income in Ketapang District. Access to credit enables farmers to invest in critical inputs and adopt modern agricultural practices, resulting in substantial productivity gains and increased income levels. The mediating role of productivity underscores the importance of effective resource utilization in achieving economic benefits.

However, barriers such as high-interest rates and limited access to financial services restrict the broader impact of credit programs. Policymakers are encouraged to develop inclusive credit schemes, enhance financial literacy, and provide institutional support to address these challenges. By overcoming these barriers, credit distribution can serve as a powerful tool for promoting sustainable agricultural development and improving the livelihoods of smallholder farmers in rural areas.

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