The Impact of Young Agricultural Entrepreneurs on Poverty through Gross Regional Domestic Product (GRDP): Towards a Digitalization Strategy

Azzatillah Azzatillah[1*], Tiara Fitri Rizkiyah[2]
Universitas Wiralodra, Indramayu, Indonesia[1,2]
azzatillah09@gmail.com[1*], tiarafitririzkiyah17@gmail.com[2]

Abstract

Purpose: This study explores the impact of Young Agricultural Entrepreneurs on poverty reduction through GRDP and proposes a digitalization strategy to enhance their role in promoting economic growth and alleviating poverty in Indramayu.

Methodology/approach: Utilizing an explanatory sequential mixed methods design, this research combines secondary data (2020–2024) with quantitative regression analysis (including the Sobel Test for mediation) and qualitative in-depth interviews with 10 Young Agricultural Entrepreneurs in Indramayu Regency.

Results/findings: The study finds that Young Agricultural Entrepreneurs significantly reduce poverty but have no significant effect on GRDP, indicating that poverty reduction occurs through direct household mechanisms rather than macroeconomic growth. It suggests that digitalization can enhance their contribution to GRDP by improving productivity, market access, and value-added activities, thereby supporting more sustainable poverty reduction.

Conclusion: This study shows that Young Agricultural Entrepreneurs reduce poverty in Indramayu through direct household and local economic impacts. While their activities influence GRDP, the effect is not significant. Digitalization plays a key role in enhancing productivity, market access, and value-added activities, strengthening their contribution to sustainable poverty reduction.

Limitations: The study's limitations include its reliance on aggregate secondary data over a relatively short period and a small sample size for the qualitative phase, which may not capture the full diversity of Young Agricultural Entrepreneursexperiences.

Contribution: This research offers policy recommendations for empowering Young Agricultural Entrepreneurs through a comprehensive digitalization strategy, thus fostering sustainable economic growth and long-term poverty reduction in rural areas.

Keywords: *Digitalization, GRDP, Indramayu, Poverty Reduction, Young Agricultural Entrepreneurs*

How to Cite: Azzatillah, A., & Rizkiyah, T. F. (2025). The Impact of Young Agricultural Entrepreneurs on Poverty through Gross Regional Domestic Product (GRDP): Towards a Digitalization Strategy. *Jurnal Akuntansi, Keuangan, dan Manajemen, 7*(1), 405-419.

1. Introduction

The Indonesian government has set a target to achieve sustainable food self-sufficiency by 2025 as part of efforts to strengthen national resilience and reduce dependency on imports of strategic commodities. This program requires the optimization of regions with comparative advantages in agriculture. Indramayu Regency plays a crucial role due to its position as the nation's rice granary, with abundant agricultural resources (Ministry of Agriculture, 2024). Despite various development activities carried

out by both central and local governments, these efforts have not been evenly distributed to Indonesia's remote areas, including Indramayu.

One indicator of successful development is economic growth. An increase in Gross Regional Domestic Product (GRDP) reflects economic growth that can raise per capita income and reduce poverty rates (Statistics of Indramayu, 2025). However, in Indramayu, the increase in GRDP does not correspond with a decrease in poverty, as the reduction in the poverty rate remains relatively slow despite the yearly increase in GRDP.
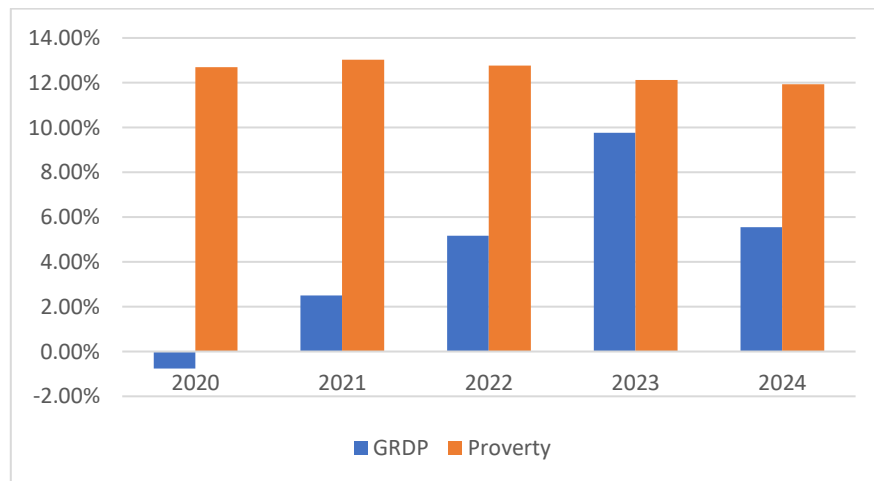

Figure 1. GRDP and Poverty Rate in Indramayu Regency (2020-2024)
Source: Processed Data, 2025

Figure 1 reveals a significant economic paradox in Indramayu Regency. In 2020, the regional economy contracted by -0.77%. Interestingly, when the economy began to recover and grew by a substantial 2.5% in 2021, the poverty rate slightly increased to 13.04%. From 2022 to 2024, GRDP experienced explosive growth, peaking at 9.76% in 2023 and remaining strong at 5.54% in 2024. However, this extraordinary economic growth was not followed by a commensurate reduction in poverty. The poverty rate showed only a gradual decrease, from 12.7% in 2020 to 11.93% in 2024. This gap confirms that the benefits of rapid economic recovery and growth have not been distributed equitably, thus requiring a more focused development strategy to substantially alleviate poverty (Fitri Rizkiyah & Nurhayati, 2020).

Indramayu holds significant potential in the agricultural sector, with fertile land, supporting irrigation systems, and a relatively stable climate for food production. However, despite these potentials, the region's economic performance does not fully reflect the wealth of its resources. The suboptimal GRDP and the still high poverty rate indicate a gap between resource potential and community welfare. Therefore, a more inclusive and equitable development strategy is needed.

One major opportunity to drive the development of the agricultural sector in Indramayu is the role of Young Agricultural Entrepreneurs, who have the potential to bring innovation and technology. Their presence can accelerate the adoption of modern farming practices that are more productive and efficient, particularly in rice cultivation. However, Young Agricultural Entrepreneurs face significant challenges, such as low digital literacy and limited access to advanced technologies. Digitalization in agriculture becomes key to overcoming these barriers, by providing real-time access to agricultural information, enabling farmers to make more accurate decisions regarding inputs, finance, and marketing of their crops (Magesa et al., 2023). This transformation not only improves operational efficiency but also expands sales channels, which can ultimately increase farmers' income (Zhang & Fan, 2023).

This challenge aligns with the Technology Acceptance Model (TAM), which states that the adoption of technology is influenced by two main factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Azzatillah et al., 2024). Although Young Agricultural Entrepreneurs in Indramayu recognize

the importance of digital technology, low digital literacy hinders their ability to utilize it effectively. Therefore, providing access to technology alone is not enough; technology must also be perceived as beneficial and easy to use to ensure widespread adoption. With increased digital literacy, Young Agricultural Entrepreneurs will be better able to recognize the benefits and ease of technology, which ultimately encourages them to adopt digital solutions in agriculture (AbdulKareem & Oladimeji, 2024).

This research proposes empowering Young Agricultural Entrepreneurs through a comprehensive digitalization strategy to address the challenges in Indramayu. By facilitating the adoption of digital tools from precision farming technology, data-driven supply chain management, to digital marketplaces and mobile-based financial services this initiative has the potential to accelerate local economic growth and promote more equitable wealth distribution. Therefore, this research is relevant in linking youth agricultural entrepreneurship, digitalization, and its impact on poverty alleviation through GRDP, which can provide a policy framework aligned with local development needs and the national food security agenda.

2. Literature Review and Hypothesis Development

2.1 The Negative Effect of Gross Regional Domestic Product (GRDP) on Poverty

The increase in Gross Regional Domestic Product (GRDP) plays a crucial role in poverty reduction, directly impacting the improvement of living standards and the creation of broader economic opportunities. Poverty is viewed as the inability to meet basic needs, both food and non-food, as measured by the poverty line (Mukti, 2024). In this context, GRDP serves as a primary indicator to understand the economic dynamics of a region and to measure the prosperity and well-being of its population (Wulandari et al., 2019). The increase in GRDP is closely correlated with human development, which contributes to poverty alleviation (Machmud & Sidharta, 2023). Economic growth has the potential to create new job opportunities, which in turn reduces unemployment and inequality, thereby potentially lowering the poverty rate in the region (Dalimunthe et al., 2022).

Furthermore, sustainable economic growth provides the government with the capacity to increase spending on social infrastructure, education, and healthcare. Better education and more affordable healthcare services will improve the quality of life for previously marginalized communities, helping them escape poverty (Perera & Lee, 2013). With more job opportunities and economic independence for communities, inclusive growth becomes a key factor in poverty reduction (Dalimunthe et al., 2022). This aligns with the findings of Fatmasari et al. (2022); Rosyadi, Gunarto, and Yuliawan (2025), which show that economic growth that reaches all segments of society can significantly reduce poverty. The contribution of young agricultural entrepreneurs in increasing productivity, income, and job creation is a vital factor in strengthening the regional economy and reducing poverty levels.

H$_1$: Gross Regional Domestic Product (GRDP) has a negative effect on poverty

2.2 The Positive Effect of Young Agricultural Entrepreneurs on Gross Regional Domestic Product (GRDP)

Young agricultural entrepreneurs are the younger generation with an entrepreneurial spirit who are determined to thrive in the agricultural sector (Harniati & Anwarudin, 2018). They have significant potential to positively impact the Gross Regional Domestic Product (GRDP) through increased agricultural productivity and the application of innovation. Hlouskova and Prasilova (2020) emphasize that young farmers often manage larger plots of land compared to their older counterparts, indicating a tendency among young agricultural entrepreneurs to leverage technology and innovative practices to maximize yields. This not only enhances agricultural output but also has a positive impact on the regional economy, creating new economic opportunities. Research by Shams et al. (2024) and Damoah (2020); Yonla, Auta, Katunku, and Dafeng (2024) shows that young farmers often prioritize innovative agribusiness solutions, which have a significant impact on local economic performance, accelerate economic diversification, and ultimately increase GRDP in rural areas.

Moreover, young agricultural entrepreneurs play a key role in job creation and income generation, both of which directly impact GRDP. Studies by Pek, Mollet, and Urip (2025); Saridakis et al. (2021); Saghaian et al. (2022) demonstrate that entrepreneurship in agriculture boosts household income levels

and creates job opportunities, contributing directly to GRDP. Research by Fasakin et al. (2022); Safitri et al. (2024) further strengthens these findings by showing that active youth involvement in agricultural activities correlates with higher household incomes in rural areas, thus supporting overall economic growth. Hlouskova and Prasilova (2020) also state that young farmers typically exhibit higher productivity and adaptability to new technologies compared to their older counterparts, which allows them to overcome market changes and environmental factors. This is crucial for increasing GRDP in rural areas, which, in turn, strengthens the regional economy.

H₂: Young Agricultural Entrepreneurs has a Positive Effect on Gross Regional Domestic Product (GRDP)

2.3 The Negative Effect of Young Agricultural Entrepreneurs on Poverty

Young agricultural entrepreneurs play a crucial role in poverty alleviation, particularly in rural areas, by increasing productivity and diversifying sources of income. Several studies indicate that youth involvement in the agricultural sector directly contributes to poverty reduction. Osabohien et al. (2019) found that youth participation in agriculture as a primary occupation can increase household income and reduce poverty. This is because young entrepreneurs tend to bring innovations and modern farming techniques that enhance efficiency and agricultural output. This aligns with the findings of Himawan, Kurniawan, Kusyairi, and Laksono (2020); Zhang et al. (2023) who showed that young farmers transitioning into entrepreneurs play a key role in driving rural economic development by injecting talent and investment, reducing dependence on external aid, and fostering economic independence within communities.

Innovative youth entrepreneurship practices have also been proven to be an important factor in poverty alleviation strategies in underdeveloped areas. Ismail (2021) revealed that young entrepreneurs with adequate skills can make significant contributions to poverty reduction through job creation and economic diversification. Youth involvement in agriculture not only increases food production but also opens opportunities for innovation and rural development (Kote et al., 2024). Heryadi, Widarawati, and Suprapto (2025); Naminse and Zhuang (2018) emphasize the positive relationship between farmers' entrepreneurs and rural poverty reduction, where qualitative growth in young entrepreneurs contribute to poverty alleviation.

H₃: Young Agricultural Entrepreneurs has a Negative Effect on Poverty

2.4 The Negative Effect of Young Agricultural Entrepreneurs on Poverty with Gross Regional Domestic Product (GRDP) as a Mediating Variable

Young entrepreneurs in the agricultural sector play a key role in enhancing agricultural productivity and innovation, which directly contributes to the improvement of regional economic performance. Research shows that the growth of the agricultural sector has a significant impact on poverty reduction through the increase in income levels for farming households, which in turn improves regional economic metrics such as GRDP (Suryahadi et al., 2009). The sustainable farming methods adopted by young agricultural entrepreneurs are becoming increasingly vital, as they enhance resilience and long-term productivity. Products produced sustainably often fetch higher market prices, boosting the income of young farmers and contributing positively to GRDP and poverty reduction (Shams et al., 2024). This increase in income, in turn, plays a crucial role in reducing poverty in regions that rely on the agricultural sector.

The relationship between young agricultural entrepreneurs and GRDP is influenced by the dynamics of the labor force in rural economies. When young individuals enter the agricultural sector, they not only create job opportunities for themselves but also open up employment opportunities for other community members (Naminse & Zhuang, 2018). This leads to increased labor force participation, contributing to broader economic activities and a more equitable distribution of income, which subsequently boosts GRDP. Furthermore, Anríquez and López (2007) demonstrate that increased agricultural output can significantly reduce national poverty rates, with a greater impact in rural areas. As catalysts for more efficient and productive farming practices, young entrepreneurs are often more adaptable to change and technology, which is crucial for modernizing the agricultural sector and enhancing its output (Geza et al., 2021). Therefore, young agricultural entrepreneurs can accelerate the transformation from

subsistence farming to profitable agribusinesses, improving regional economic performance through their contribution to GRDP and effectively reducing poverty (Saridakis et al., 2021).

H₄: Gross Regional Domestic Product (GRDP) Mediates Young Agricultural Entrepreneurs on Poverty
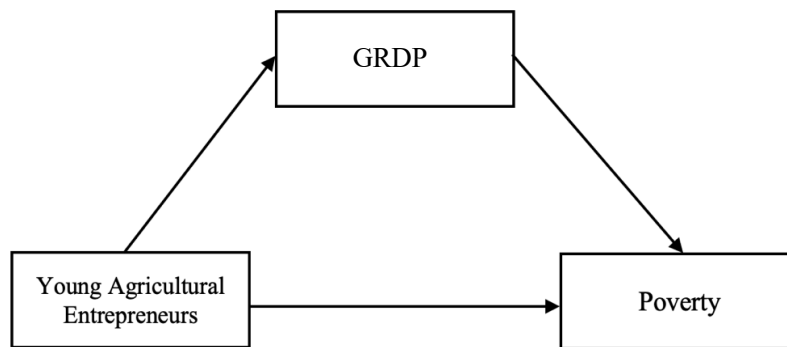

Figure 2. Reseach Model

3 Research methodology

This study employs a mixed methods approach with an explanatory sequential design to provide a more holistic understanding of the research problem. The quantitative phase is conducted first, collecting numerical data that offers broad, generalizable insights. The findings from this phase then form the foundation for the qualitative phase, which explores these results in greater depth by gathering rich, contextual information.

3.1 Quantitative Phase

The quantitative phase employed an ex post facto research design, utilizing secondary data collected from official institutions in Indramayu Regency, including the Central Bureau of Statistics, the Regional Development Planning Agency, the Regional Revenue Agency, the Department of Agriculture, and the Department of Social Affairs. The data covered the period from 2020 to 2024. The variables examined included the number of millennial entrepreneurs (X_1), Gross Regional Domestic Product (GRDP) (Z), and the poverty rate (Y). A census sampling technique was applied, as data on millennial entrepreneurs were only available for a five-year period and were not yet fully structured, thereby necessitating data verification and confirmation through direct coordination with the relevant government agencies.

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) and began with classical assumption testing, which included tests of normality, multicollinearity, heteroscedasticity, and autocorrelation. The data were considered normally distributed when the significance value (Sig. or p-value) exceeded 0.05 (Ghasemi & Zahediasl, 2012). Multicollinearity was examined using the Variance Inflation Factor (VIF), where VIF values below 10 indicated the absence of multicollinearity (Field, 2018). Heteroscedasticity was assessed based on a significance value greater than 0.05, which indicated that the residuals had constant variance (Li & Yao, 2019). Autocorrelation was evaluated using the criterion that an Asymp. Sig. (2-tailed) value greater than 0.05 signified no autocorrelation (Uyanto, 2020). After the classical assumptions were met, hypothesis testing was conducted in two stages: first, direct effects were examined using regression analysis, with statistical significance determined by a p-value less than 0.05 (Pallant, 2020); second, mediation effects were tested using the Sobel test to assess the significance of the indirect effect through the mediating variable. Finally, the coefficient of determination was used to measure the proportion of variance in the dependent variable explained by the independent variables, with values closer to 1 indicating stronger explanatory power (Lind et al., 2018).

3.2 Qualitative Phase

The qualitative phase aimed to explore the contextual role of digitalization as a policy instrument. Primary data were collected through in-depth interviews and direct observations of 10 informants selected using purposive sampling in several key agricultural districts, namely Losarang, Lelea, Cikedung, Terisi, Gabus, and Haurgeulis. The informant selection criteria included millennial farmers

aged 19–39 years in accordance with the provisions of the Regulation of the Minister of Agriculture No. 04 of 2019, active involvement in agricultural activities, and a minimum of two years of experience in utilizing digital technology in their business operations. The collected data were analyzed using a thematic approach.

3.3 Integration of Results

The findings from both research phases will be integrated to provide a more comprehensive understanding. The quantitative analysis will offer a macro-level overview of the causal relationships among variables, while the qualitative analysis will complement and elucidate the mechanisms underlying the quantitative findings, particularly regarding how digitalization can function as an effective policy instrument to support young entrepreneurs and reduce poverty.

4. Results and Discussion

4.1 Classical Assumption Testing

Following the estimation of the regression models, classical assumption tests were conducted to assess whether the data met the fundamental requirements of regression analysis. To examine the mediating effect, two regression models were employed. Model I analyzed the relationship between the independent variable and the mediating variable, whereas Model II examined the relationships among the independent variable, the mediating variable, and the dependent variable. Classical assumption tests were applied to both models to ensure the robustness and validity of the regression results prior to hypothesis testing.

Table 1. Classical Assumption Test Results for Model I

Classical Assumption Tests	Testing	Sig.
Normality	Shapiro-Wilk	0.76
Multicollinearity	Variance Inflation Factor	1.000
Heteroscedasticity	Gletsjer	0.945
Autocorrelation	Run Test	0.913

Source: Processed Data, 2025

Based on Table 1, the results of the classical assumption tests for Model I, which examines the effect of Young Agricultural Entrepreneurs (X1) on Gross Regional Domestic Product (GRDP) (Z), indicate that all regression assumptions were met. The normality test using the Shapiro–Wilk test produced a significance value of 0.76 (> 0.05), indicating that the residuals were normally distributed. Multicollinearity, assessed using the Variance Inflation Factor (VIF), showed a value of 1.000, suggesting no multicollinearity issues. Furthermore, the heteroscedasticity test using the Glejser test yielded a significance value of 0.945 (> 0.05), indicating homoscedastic residuals. Finally, the autocorrelation test based on the Run Test resulted in a significance value of 0.913 (> 0.05), indicating the absence of autocorrelation.

Table 2. Classical Assumption Test Results for Model II

Classical Assumption Tests	Testing	Variable	Sig.
Normality	Shapiro-Wilk	Young Agricultural Entrepreneurs	0.760
		GDRB	0.257
Multicollinearity	Variance Inflation Factor	Young Agricultural Entrepreneurs	1.014
		GDRB	1.014
Heteroscedasticity	Gletsjer	Young Agricultural Entrepreneurs	0.333
		GDRB	0.863
Autocorrelation	Run Test		1.000

Source: Processed Data, 2025

Based on Table 2, the results of the classical assumption tests for Model II, which examines the effects of Young Agricultural Entrepreneurs (X1) and Gross Regional Domestic Product (GRDP)

(Z) on Poverty (Y), indicate that all regression assumptions were met. The normality test using the Shapiro–Wilk test produced significance values of 0.760 for Young Agricultural Entrepreneurs and 0.257 for GRDP, both exceeding 0.05, indicating normally distributed residuals. Multicollinearity was assessed using the Variance Inflation Factor (VIF), which yielded values of 1.014 for both independent variables, indicating no multicollinearity issues. Furthermore, the heteroscedasticity test using the Glejser test resulted in significance values of 0.333 for Young Agricultural Entrepreneurs and 0.863 for GRDP, suggesting homoscedastic residuals. Finally, the Run Test for autocorrelation produced a significance value of 1.000, indicating the absence of autocorrelation.

4.2 Hypothesis Testing

Hypothesis testing was conducted to examine the proposed relationships among the research variables based on the regression models developed in this study. The analysis focused on assessing both direct and indirect effects to determine the significance of the hypothesized relationships, using a significance level of 0.05 as the decision criterion.
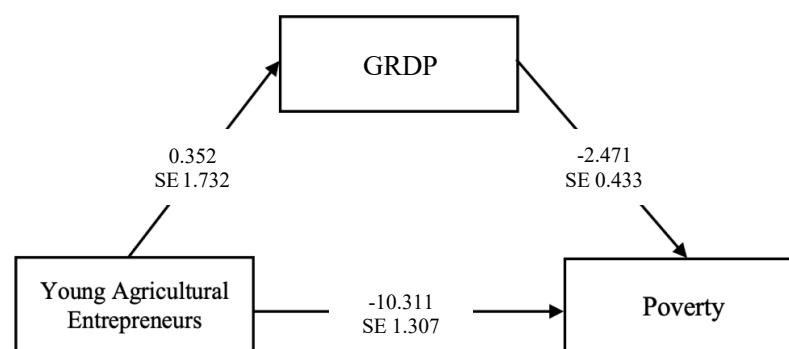

Figure 3. Hypothesis Test Results

Table 3. Hypothesis Test Results

	Unstandardized Coefficient (B)	Sig.	Conclusion
GRDP→Poverty	- 2.471	0.029	Hypothesis accepted
Young Agricultural Entrepreneurs → GRDP	0.354	0.852	Hypothesis not accepted
Young Agricultural Entrepreneurs → Poverty	-10.311	0.016	Hypothesis accepted
Young Agricultural Entrepreneurs → GRDP → Poverty	- 0.870	0.839	Hypothesis not accepted

Source: Processed Data, 2025

Based on Table 3, the hypothesis testing results indicate mixed findings across the proposed relationships. The regression analysis shows that GRDP has a significant negative effect on poverty (B = −2.471, p = 0.029), indicating that an increase in GRDP is associated with a reduction in poverty, thus supporting the hypothesis. In contrast, Young Agricultural Entrepreneurs do not have a significant effect on GRDP (B = 0.354, p = 0.852), indicating that this relationship is not statistically supported. However, Young Agricultural Entrepreneurs have a significant negative effect on poverty (B = −10.311, p = 0.016), suggesting that an increase in young agricultural entrepreneurship is associated with a decrease in poverty levels. Furthermore, the mediation analysis indicates that GRDP does not mediate the relationship between Young Agricultural Entrepreneurs and poverty, as the indirect effect is not statistically significant (B = −0.870, p = 0.839). Therefore, the mediating hypothesis is not supported.

Table 4. R Square Results

	R Square
Model I	0.116
Model II	0.991

Source: Processed Data, 2025

Table 4 presents the R-square values for both regression models. Model I yields an R-square value of 0.116, indicating that the independent variable explains approximately 11.6% of the variance in the mediating variable. Although the explanatory power of Model I is relatively modest, this result remains acceptable within the context of mediation analysis, as the primary objective of this model is to examine the significance of the relationship between the independent variable and the mediating variable rather than to maximize predictive accuracy. In contrast, Model II produces an R-square value of 0.991, suggesting that approximately 99.1% of the variance in the dependent variable is jointly explained by the independent variable and the mediating variable. This exceptionally high R-square value indicates very strong explanatory power and suggests that the proposed model provides an excellent fit to the data.

4.3 Discussions
4.3.1 Interpretation of Quantitative Findings
4.3.1.1 Gross Regional Domestic Product (GRDP) on Poverty
Gross Regional Domestic Product (GRDP) has a negative and statistically significant relationship with poverty levels in Indramayu Regency, indicating that improvements in regional economic performance contribute to poverty reduction. GRDP serves as a key indicator for measuring the economic performance of a region, contributing to the increase in purchasing power and providing better access to essential resources such as education, healthcare, and social welfare. As noted by Falah and Rahmawati (2024), the increase in per capita GRDP has been linked to poverty reduction, as it enhances purchasing power and facilitates better welfare outcomes for individuals and households. This aligns with the research of Erfiana, Iqbal, and Malik (2025); Ningrum and Jainuddin (2023) which shows a significant negative relationship between GRDP and poverty, indicating that higher per capita income can improve living standards and effectively reduce poverty.

The agricultural sector, which is a key driver of GRDP in Indramayu Regency, plays a significant role in poverty reduction. Research by Wibisono and Arymurthy (2023) highlights the role of the agricultural sector as a major contributor to GRDP, as well as its significance in job creation and poverty reduction. Haile (2025); Jumhur (2024) adds that the growth of the agricultural sector effectively contributes to poverty and malnutrition reduction by increasing labor demand and higher wages. Therefore, the positive impact of GRDP growth, driven largely by the agricultural sector, is crucial in reducing poverty and improving the overall economic well-being of Indramayu.

4.3.1.2 Young Agricultural Entrepreneurs on Gross Regional Domestic Product (GRDP)
The findings indicate that youth agricultural entrepreneurship in Indramayu Regency has a positive but statistically insignificant effect on Gross Regional Domestic Product (GRDP). This result suggests that although youth entrepreneurial activities in agriculture have contributed to the regional economy, the existing scale and intensity of these enterprises remain insufficient to drive aggregate regional economic growth. This condition is consistent with the argument of Artananda et al. (2025), who contend that the agricultural sector holds substantial potential for stimulating economic growth; however, fluctuations in labor and income can constrain its consistent contribution to GRDP. In the context of Indramayu, the predominance of small-scale farming enterprises and limited transformation toward value-added activities serve as key factors restricting the impact of youth agricultural entrepreneurship on GRDP.

Beyond business scale, structural constraints also influence the limited contribution of youth farmer entrepreneurship to GRDP. Insufficient access to entrepreneurial training and knowledge remains a major obstacle, resulting in business activities that are not yet capable of generating economic output that accumulates significantly within GRDP indicators (Devkota et al., 2023). Moreover, empowerment initiatives and investments in entrepreneurship are not always directly reflected in macroeconomic

indicators when they are not supported by robust policy and institutional frameworks (Okolo-obasi & Uduji, 2023). Additionally, contributions from the agricultural sector by new entrants such as young entrepreneurs often exhibit time lags, meaning that their effects on GRDP tend to materialize only in the long term (Awokuse & Xie, 2015). Therefore, the statistically insignificant effect of youth farmer entrepreneurship on Indramayu's GRDP reflects a transitional phase of economic development rather than an absence of potential.

4.3.1.3 *Young Agricultural Entrepreneurs on Poverty*

Young agricultural entrepreneurship in Indramayu Regency has been shown to have a negative and significant effect on regional poverty levels. This finding indicates that increased engagement of young farmers in entrepreneurial activities can directly contribute to poverty reduction by strengthening the economic capacity of farming households. Entrepreneurial activities in the agricultural sector encourage the adoption of technology and innovation that enhance productivity and business efficiency, thereby reinforcing income sources for young farmers (Devkota et al., 2023). In addition, agricultural entrepreneurship acts as a catalyst for livelihood improvement and the reduction of household vulnerability to poverty, particularly in rural areas that depend heavily on the agricultural sector (Osei & Zhuang, 2020). In the context of Indramayu Regency, more independent and market-oriented farm management practices adopted by young farmers create income stability, which in turn contributes to poverty reduction at the regional level.

Furthermore, the role of young agricultural entrepreneurship in poverty alleviation is also influenced by social characteristics and the individual capacities of entrepreneurs. Newly emerging farm enterprises play a crucial role in strengthening rural economies and reducing poverty, especially in communities dominated by smallholder farmers (Dzingirai, 2021);(Naminse & Zhuang, 2018). Young farmers tend to be more adaptive to innovation and market changes, thereby enhancing business sustainability and local economic resilience (Devkota et al., 2023). Therefore, in the context of Indramayu Regency, young agricultural entrepreneurship functions not only as a means of improving household welfare but also as a key mechanism for reinforcing rural economic structures that directly contribute to regional poverty reduction.

4.3.1.4 *Young Agricultural Entrepreneurs on Poverty Through Gross Regional Domestic Product (GRDP)*

The finding that GRDP does not mediate the relationship between youth agricultural entrepreneurship and regional poverty levels indicates that poverty reduction in Indramayu Regency does not occur entirely through macroeconomic growth pathways. Although GRDP exhibits a negative relationship with poverty, the contribution of youth farmer entrepreneurship to GRDP remains insufficient to generate a significant mediation effect. Sihombing et al. (2023) demonstrate that increases in GRDP have a substantial impact on poverty reduction; however, this effect is highly dependent on the extent to which economic activities are accumulated within the regional GRDP structure. In the context of Indramayu, youth agricultural entrepreneurship operates primarily at the micro and household levels, thereby limiting its aggregate impact on GRDP despite its effectiveness in reducing regional poverty.

Furthermore, the non-significant mediating role of GRDP is also influenced by regional characteristics and local economic mechanisms. The impact of entrepreneurship on poverty varies across regions depending on economic structures and prevailing social conditions (Chen, 2025). In Indramayu Regency, limited market access, infrastructure, and financial resources constrain the ability of young agricultural entrepreneurs to contribute substantially to GRDP. Consistent with this perspective, entrepreneurship can reduce poverty through the strengthening of local economic capacity without necessarily operating through increases in GRDP (Falah & Rahmawati, 2024). These findings underscore that while youth agricultural entrepreneurship affects regional poverty reduction in Indramayu, this influence occurs primarily through a direct pathway rather than being mediated by GRDP.

4.3.2 Implementation of Digitalization as a Policy Framework

Based on previous empirical findings, it can be concluded that youth agricultural entrepreneurship in Indramayu Regency has made a tangible contribution to reducing regional poverty levels; however, this contribution has not yet been significantly accumulated in the Gross Regional Domestic Product (GRDP). This condition indicates the existence of a *missing link* between the micro-level impacts of youth farmer entrepreneurship which directly affect household welfare and the macroeconomic performance of the region. In other words, although youth agricultural entrepreneurship is effective in alleviating poverty, limitations in business scale, productivity, and market access have constrained its impact, preventing it from being sufficiently strong to drive significant GRDP growth and to establish an effective mediation pathway.

Within this context, digitalization is positioned as a strategic policy framework to strengthen the causal relationship between youth agricultural entrepreneurship and GRDP, without eliminating the direct pathway through which entrepreneurship has been proven to significantly reduce poverty. Digitalization functions as a structural instrument that enables youth farmers' entrepreneurial activities in Indramayu to scale up from micro-level operations toward more measurable regional economic contributions. Consequently, in the medium to long term, digitalization has the potential to reinforce the role of GRDP as an indirect channel for poverty alleviation. Therefore, the implementation of digitalization is systematically designed through several key aspects as follows.

4.3.2.1 Conceptual Aspects (Three Strategic Pillars)

This policy framework is built on three interrelated strategic pillars, with integrated operational aspects:

1. **Upstream Digitalization**: Focuses on enhancing efficiency and productivity through the use of smart farming applications and IoT-based land sensor (Nishant Wasatkar et al., 2023). The use of technologies such as precision irrigation and data-driven fertilization allows farmers to analyze historical data to identify best practices, predict harvest outcomes, and increase efficiency while reducing operational costs. Additionally, this policy facilitates the establishment of a cooperative for the rental of agricultural machinery, managed by Young Agricultural Entrepreneurs, with an integrated digital system for booking and management. This model is designed to minimize individual investment costs and improve collective productivity, thereby directly strengthening the agricultural sector's contribution to GRDP.
2. **Downstream Digitalization**: Aimed at expanding markets and increasing product value through the utilization of e-commerce platforms and digital logistics systems. Research by Judijanto, Defitri, Mu'min, Harsono, and Isma (2024); Kumar (2024) found that farmers selling their products online had profit margins 15% to 25% higher. Its operational aspects include digital marketing training and strategic partnerships with national e-commerce platforms, in line with programs already launched in Indramayu.
3. **Digitalization for Sustainability**: Emphasizes capacity building and collaboration through digital training centers and multi-party synergies (Agung, 2025). Operational aspects involve crucial multi-party collaborations, including partnerships with academia, the private sector (agritech start-ups), and farming communities. This ensures the policy's relevance and long-term sustainability.

4.3.2.2 Operational Aspects

The implementation of this policy requires measurable operational steps to ensure success.

- **Implementing Pillar**: Synergy between the Department of Agriculture and Food Security Office, as the main implementer; the Department of Communication and Informatics Office, as the designer of digital training; and cooperatives or youth farmer groups, as the front line in the field.
- **Funding Mechanism**: Implementation funding can be sourced from the Regional Government Budget, Village Fund allocations, and CSR (Corporate Social Responsibility) partnership schemes from companies. Collaboration with banks can facilitate access to People's Business Credit for Young Agricultural Entrepreneurs as initial capital.
- **Schedule and Targets**: The implementation will be carried out in two phases. The first phase (1-2 years) will focus on pilot projects in selected sub-districts, targeting the training of 1,000 Young Agricultural Entrepreneurs, as planned by the Indramayu Regency Government. The second phase

(3-5 years) involves expanding the program to the entire Indramayu region, with a target of digital technology adoption by more than 50% of Young Agricultural Entrepreneurs.

4.3.2.3 Monitoring and Risk Mitigation Aspects
To ensure the success of the implementation, a structured monitoring and evaluation (M&E) mechanism is required.

- **Key Performance Indicators (KPI)**: M&E will focus on several key indicators, such as the level of technology adoption (the number of Young Agricultural Entrepreneurs using applications), the average increase in crop yields per hectare, and the growth of the agricultural sector's added value in GRDP.
- **Risk Analysis and Mitigation**: Potential policy failure risks may stem from cultural resistance, infrastructure limitations, and a lack of digital literacy. To mitigate these risks, the policy should include an intensive mentoring program involving agricultural extension workers and experienced Young Agricultural Entrepreneurs as mentors.

5. Conclusions
5.1 Conclusion
This study finds that Young Agricultural Entrepreneurs have a significant negative effect on poverty levels in Indramayu Regency, indicating that their activities contribute directly to poverty reduction at the regional level. At the same time, GRDP is found to have a significant negative effect on poverty, reflecting the importance of regional economic performance in improving welfare. However, although Young Agricultural Entrepreneurs positively influence GRDP, this effect is not statistically significant, resulting in the absence of a mediating role of GRDP in the relationship between young agricultural entrepreneurship and poverty. These findings indicate that poverty reduction driven by Young Agricultural Entrepreneurs in Indramayu primarily occurs through direct household-level and local economic mechanisms rather than through macroeconomic growth channels. In this context, the implementation of digitalization emerges as a critical policy framework to strengthen productivity, expand market access, and increase the value added of agricultural activities. By enhancing the scale and efficiency of young agricultural entrepreneurship, digitalization is expected to improve the integration of these activities into the regional economy, thereby reinforcing their contribution to GRDP and supporting more sustainable poverty reduction in the long term.

5.2 Limitations and Future Research
This study has several limitations that should be acknowledged. First, it relies predominantly on secondary data within a relatively short observation period, which may limit the ability to capture long-term dynamics between young agricultural entrepreneurship, Gross Regional Domestic Product (GRDP), and poverty reduction. Second, the measurement of young agricultural entrepreneurs remains aggregate in nature and does not fully account for variations in business scale, productivity, value-added activities, or levels of digital adoption. Additionally, the qualitative component involved a limited number of informants, which may not comprehensively represent the diverse conditions and experiences of young farmers across Indramayu Regency.

Future research is encouraged to employ longer time-series or panel data to better examine causal relationships over time. Subsequent studies should also incorporate more granular indicators of entrepreneurial performance, digital intensity, and market integration. Exploring alternative mediating or moderating variables such as income inequality, institutional quality, digital infrastructure, or policy effectiveness may provide deeper insights into the mechanisms linking entrepreneurship and poverty reduction. Furthermore, comparative studies across regions or expanded mixed-method approaches could strengthen the generalizability of findings and enhance policy relevance for sustainable rural development.

References

AbdulKareem, A. K., & Oladimeji, K. A. (2024). Cultivating the Digital Citizen: Trust, Digital Literacy and E-Government Adoption. *Transforming Government: People, Process and Policy*, *18*(2), 270-286. https://doi.org/10.1108/tg-11-2023-0196

Agung, M. F. M. (2025). Strengthening Governance Through Pentahelix Collaboration: a Qualitative Study in The Era of Digital Disruptions. *Journal Publicuho*, *8*(3), 1619-1626. https://doi.org/10.35817/publicuho.v8i3.873

Anríquez, G., & López, R. (2007). Agricultural Growth and Poverty in an Archetypical Middle Income Country: Chile 1987–2003. *Agricultural Economics*, *36*(2), 191-202. https://doi.org/10.1111/j.1574-0862.2007.00198.x

Artananda, W. Y., Nurhidayati, I., & Khomah, I. (2025). The Effect of Self-Efficacy, Motivation, and Business Knowledge on Millennial Farmers' business success. *IOP Conference Series: Earth and Environmental Science*, *1497*(1), 012026-012026. https://doi.org/10.1088/1755-1315/1497/1/012026

Awokuse, T. O., & Xie, R. (2015). Does Agriculture Really Matter for Economic Growth in Developing Countries? *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, *63*(1), 77-99. https://doi.org/10.1111/cjag.12038

Azzatillah, A., Nada, L., Rahmadina, D. S., Chairunnisa, C., & Savira, D. A. (2024). Technology Acceptance Model Theory on Intention to Use E-Recruitment. *Jurnal Fokus Manajemen Bisnis*, *14*(2), 241-255. https://doi.org/10.12928/fokus.v14i2.11014

Chen, N. (2025). The Impact of the Rural Digital Economy on China's New-Type Urbanization. *PLOS ONE*, *20*(4), e0321663-e0321663. https://doi.org/10.1371/journal.pone.0321663

Dalimunthe, M. B., Sitanggang, B. E., & Panggabean, F. Y. (2022). The Relationship Between Economic Growth and Poverty In Indonesia. *Journal of Social Sciences*, *5*(3), 33-38. https://doi.org/10.52326/jss.utm.2022.5(3).03

Damoah, O. B. O. (2020). Strategic Factors Predicting the Likelihood of Youth Entrepreneurship in Ghana: a Logistic Regression Analysis. *World Journal of Entrepreneurship, Management and Sustainable Development*, *16*(4), 389-401. https://doi.org/10.1108/WJEMSD-06-2018-0057

Devkota, N., Joshi, A., Khanal, G., Mahapatra, S. K., Gautam, N., Paudel, U. R., & Bhandari, U. (2023). Awareness on Agricultural Entrepreneurship Among Youth Farmers: An Empirical Study from Western Nepal. *Journal of Agribusiness in Developing and Emerging Economies*, *13*(5), 812-830. https://doi.org/10.1108/JADEE-06-2021-0150

Dzingirai, M. (2021). The Role of Entrepreneurship In Reducing Poverty in Agricultural Communities. *Journal of Enterprising Communities: People and Places in the Global Economy*, *15*(5), 665-683. https://doi.org/10.1108/JEC-01-2021-0016

Erfiana, E., Iqbal, M., & Malik, A. (2025). Pengaruh Human Capital, Produk Domestik Bruto (PDB) dan Tingkat Partisipasi Angkatan Kerja (TPAK) Terhadap Kemiskinan Multidimensi di Indonesia dalam Perspektif Ekonomi Islam Tahun 2004-2023. *Jurnal Akuntansi, Manajemen Dan Ilmu Ekonomi (Jasmien), 5*(3), 56-67. doi:https://doi.org/10.54209/jasmien.v5i03.1241

Falah, M. A., & Rahmawati, F. (2024). The GRDP per Capita, Human Development Index, Open Unemployment Rate, Regional Expenditure, and Poverty in East Java Province. *Jurnal Ekonomi & Studi Pembangunan*, *25*(1), 1-16. https://doi.org/10.18196/jesp.v25i1.21327

Fasakin, I. J., Ogunniyi, A. I., Bello, L. O., Mignouna, D., Adeoti, R., Bamba, Z., Abdoulaye, T., & Awotide, B. A. (2022). Impact of Intensive Youth Participation in Agriculture on Rural Households' Revenue: Evidence from Rice Farming Households in Nigeria. *Agriculture*, *12*(5), 584-584. https://doi.org/10.3390/agriculture12050584

Fatmasari, D., Harjadi, D., & Hidayat, A. (2022). Analysis of Economic Improvement to Reduce Poverty in 2016-2020. *Khazanah Sosial*, *4*(4), 757-764. https://doi.org/10.15575/ks.v4i4.23445

Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5 ed.). Sage Publications.

Fitri Rizkiyah, T., & Nurhayati, N. (2020). Pengaruh Peningkatan Kredit BPR, Produk Domestik Regional Bruto (PDRB) dan Tingkat Pengangguran Terbuka terhadap Penurunan Tingkat Kemiskinan. *Gema Wiralodra*, *11*(2), 311-326. https://doi.org/10.31943/gemawiralodra.v11i2.135

Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (2021). Youth Participation in Agriculture: A Scoping Review. *Sustainability*, *13*(16), 9120-9120. https://doi.org/10.3390/su13169120

Ghasemi, A., & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2), 486-489. https://doi.org/10.5812/ijem.3505

Haile, D. (2025). The Effect of Agricultural Productivity on Poverty: What Does Meta-Regression Analyses Reveal?. *Cogent Social Sciences, 11*(1), 1-30. doi:https://doi.org/10.1080/23311886.2025.2580057

Harniati, H., & Anwarudin, O. (2018). The Interest and Action of Young Agricultural Entrepreneur on Agribusiness in Cianjur Regency, West Java. *Jurnal Penyuluhan*, *14*(2). https://doi.org/10.25015/penyuluhan.v14i1.18913

Heryadi, D. Y., Widarawati, R., & Suprapto, A. (2025). The Role of Youth Agripreneurship in Enhancing Food Security and Innovation in Rural Agribusiness System. *The Journal of Academic Science, 2*(8), 2009-2019. doi:https://doi.org/10.59613/dr9q8683

Himawan, H. M., Kurniawan, A., Kusyairi, I., & Laksono, Y. H. (2020). Pembuatan Pabrik Gula untuk Meningkatkan Kesejahteraan Masyarakat Tlogowaru Malang. *Yumary: Jurnal Pengabdian kepada Masyarakat, 1*(2), 81-88. doi:https://doi.org/10.35912/jpm.v1i2.102

Hlouskova, Z., & Prasilova, M. (2020). Economic Outcomes in Relation To Farmers' Age in the Czech Republic. *Agricultural Economics (Zemědělská ekonomika)*, *66*(4), 149-159. https://doi.org/10.17221/117/2019-AGRICECON

Ismail, A. (2021). Alleviating Poverty through Youth and Women Entrepreneurship Developments. *European Journal of Business and Management*. https://doi.org/10.7176/EJBM/13-11-05

Judijanto, L., Defitri, S. Y., Mu'min, H., Harsono, I., & Isma, A. (2024). Pengaruh E-Commerce dalam Pemasaran Produk Pertanian Organik terhadap Keuntungan dan Pangsa Pasar Pedesaan di Bandung. *Jurnal Multidisiplin West Science, 3*(1), 78-87. doi:https://doi.org/10.58812/jmws.v3i01.941

Jumhur, J. (2024). The Effect of Economic Growth And Poverty on Stunting in Indonesia. *Jurnal Perspektif Pembiayaan dan Pembangunan Daerah*, *11*(6), 433-448. https://doi.org/10.22437/ppd.v11i6.26871

Kote, P., M, Y., Jabeen, A., T. N, S., Prabhavathi, S. J., Ramasamy, M., Dhanalakshmi, K., Chitra, K., & Malathi, G. (2024). A Scoping Review on Youth Participation in Agriculture: Sustainable Development, Food Security, and Economic Growth. *Journal of Scientific Research and Reports*, *30*(5), 947-958. https://doi.org/10.9734/jsrr/2024/v30i52012

Kumar, A. (2024). E-Farming Management System. *Interantional Journal Of Scientific Research In Engineering And Management*, *08*(05), 1-5. https://doi.org/10.55041/IJSREM32279

Li, Z., & Yao, J. (2019). Testing for Heteroscedasticity in High-Dimensional Regressions. *Econometrics and Statistics*, *9*, 122-139. https://doi.org/10.1016/j.ecosta.2018.01.001

Lind, A. D., Marchal, G. W., & Wathen, A. S. (2018). *Statistical Techniques in Business & Economics* (Seventeenth Edition ed.). McGraw-Hill Education.

Machmud, S., & Sidharta, I. (2023). The Relationship Between Regional Development, Human Development And Poverty: A Perspective From the Indonesian Province. *Nurture*, *17*(3), 157-165. https://doi.org/10.55951/nurture.v17i3.283

Magesa, M., Jonathan, J., & Urassa, J. (2023). Digital Literacy of Smallholder Farmers in Tanzania. *Sustainability*, *15*(17), 13149-13149. https://doi.org/10.3390/su151713149

Ministry of Agriculture. (2024). Indramayu Semakin Kuat Jadi Penopang Utama Ketahanan Pangan Nasional Lewat Padi Gogo. In.

Mukti, R. (2024). *Booklet of Poverty in March 2024 of Jawa Barat Province*.

Naminse, E. Y., & Zhuang, J. (2018). Does Farmer Entrepreneurship Alleviate Rural Poverty in China? Evidence from Guangxi Province. *PLOS ONE*, *13*(3), e0194912-e0194912. https://doi.org/10.1371/journal.pone.0194912

Ningrum, R. T. G., & Jainuddin, J. (2023). Influence of Gross Regional Domestic Product (GDP) and Investment Against Poverty In East Kalimantan Province. *Journal Competency of Business*, *7*(2), 36-44. https://doi.org/10.47200/jcob.v7i02.2215

Nishant Wasatkar, N., Gajanan Chavhan, P., & Kolekar, V. K. (2023). IoT and AI-based Smart Farm: Optimizing Crop Yield and Sustainability. In *Research Trends in Artificial Intelligence: Internet of Things* (pp. 1-17). Bentham Science Publishers. https://doi.org/10.2174/9789815136449123010004

Okolo-obasi, N. E., & Uduji, J. I. (2023). Does Agri-Business/Small and Medium Enterprise Investment Scheme (AGSMEIS) impact on youth entrepreneurship development in sub-Saharan Africa? Evidence from Nigeria. *Journal of Economic and Administrative Sciences*, *39*(3), 571-595. https://doi.org/10.1108/JEAS-05-2021-0094

Osabohien, R., Matthew, O., Gershon, O., Ogunbiyi, T., & Nwosu, E. (2019). Agriculture Development, Employment Generation and Poverty Reduction in West Africa. *The Open Agriculture Journal*, *13*(1), 82-89. https://doi.org/10.2174/1874331501913010082

Osei, C. D., & Zhuang, J. (2020). Rural Poverty Alleviation Strategies and Social Capital Link: The Mediation Role of Women Entrepreneurship and Social Innovation. *Sage Open*, *10*(2). https://doi.org/10.1177/2158244020925504

Pallant, J. (2020). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using IBM SPSS*. McGraw-Hill, Open University Press.

Pek, K. M., Mollet, J. A., & Urip, T. P. (2025). Economic Impact Analysis of Coffee Enterprises on Community Income in Mimika Regency, Central Papua Province. *Journal of Multidisciplinary Academic Business Studies, 2*(4), 269-280. doi:https://doi.org/10.35912/jomabs.v2i4.3402

Perera, L. D. H., & Lee, G. H. Y. (2013). Have Economic Growth and Institutional Quality Contributed to Poverty and Inequality Reduction In Asia? *Journal of Asian Economics*, *27*, 71-86. https://doi.org/10.1016/j.asieco.2013.06.002

Rosyadi, I., Gunarto, T., & Yuliawan, D. (2025). The Effect of Financial Inclusion on Poverty Rate in Sumatra Island. *Global Academy of Business Studies, 2*(1), 33-49. doi:https://doi.org/10.35912/gabs.v2i1.3585

Safitri, W., Gusniarti, F., Al Ikhsan, M. D., Sherlyanti, A. P., Nairobi, N., Nirmala, T., & Darmawan, A. (2024). Analisis Dampak Sektor Perkebunan terhadap Pertumbuhan Ekonomi Mengacu pada SDGs Indonesia 2021. *Studi Ekonomi dan Kebijakan Publik, 2*(2), 89-99. doi:https://doi.org/10.35912/sekp.v2i2.2480

Saghaian, S., Mohammadi, H., & Mohammadi, M. (2022). Factors Affecting Success of Entrepreneurship in Agribusinesses: Evidence from the City of Mashhad, Iran. *Sustainability*, *14*(13), 7700-7700. https://doi.org/10.3390/su14137700

Saridakis, G., Georgellis, Y., Muñoz Torres, R. I., Mohammed, A.-M., & Blackburn, R. (2021). From subsistence Farming to Agribusiness And Nonfarm Entrepreneurship: Does it Improve Economic Conditions and Well-Being? *Journal of Business Research*, *136*, 567-579. https://doi.org/10.1016/j.jbusres.2021.07.037

Shams, S. H., Sokout, S., Nakajima, H., Kumamoto, M., & Khan, G. D. (2024). Addressing Food Insecurity in South Sudan: Insights and Solutions from Young Entrepreneurs. *Sustainability*, *16*(12), 5197-5197. https://doi.org/10.3390/su16125197

Sihombing, P. R., Nurhidayati, N., Purwanti, D., Budiantono, S., & Arsani, A. M. (2023). Endogenous Modeling of the Effect of Gender Development on Poverty in Indonesia in 2021. *Jurnal Perspektif*, *21*(2), 153-157. https://doi.org/10.31294/jp.v21i2.16797

Statistics of Indramayu, R. (2025). *Persentase Penduduk Miskin Menurut Kab/Kota (Persen), 2025*.

Suryahadi, A., Suryadarma, D., & Sumarto, S. (2009). The Effects of Location and Sectoral Components of Economic Growth on Poverty: Evidence from Indonesia. *Journal of Development Economics*, *89*(1), 109-117. https://doi.org/10.1016/j.jdeveco.2008.08.003

Uyanto, S. S. (2020). Power Comparisons of Five Most Commonly Used Autocorrelation Tests. *Pakistan Journal of Statistics and Operation Research*, 119-130. https://doi.org/10.18187/pjsor.v16i1.2691

Wibisono, O. S., & Arymurthy, A. M. (2023). Using Histogram Extracted from Satelite Imagery and Convolutional Network to Predict GRDP in Java Region. *Jurnal RESTI (Rekayasa Sistem dan Teknologi Informasi)*, *7*(5), 1019-1025. https://doi.org/10.29207/resti.v7i5.5092

Wulandari, D., Narmaditya, B. S., Prayitno, P. H., Ishak, S., & Asnan, L. (2019). Human Development Index, Poverty and Gross Regional Domestic Product: Evidence from Malang, Indonesia. *Jurnal Pendidikan Ekonomi Dan Bisnis (JPEB)*, *7*(2), 146-152. https://doi.org/10.21009/JPEB.007.2.6

Yonla, M. N., Auta, H. D., Katunku, F. L., & Dafeng, T. G. (2024). Roles of Positive Psychological Capital Resources Dimensions on Self-employment Creation Among Youths. *Journal of Sustainable Tourism and Entrepreneurship, 5*(2), 111-128. doi:https://doi.org/10.35912/joste.v5i2.2154

Zhang, X., & Fan, D. (2023). Can Agricultural Digital Transformation Help Farmers Increase Income? an Empirical Study Based on Thousands of Farmers in Hubei Province. *Environment, Development and Sustainability*, *26*(6), 14405-14431. https://doi.org/10.1007/s10668-023-03200-5

Zhang, Y., Yang, C., Yan, S., Wang, W., & Xue, Y. (2023). Alleviating Relative Poverty in Rural China through a Diffusion Schema of Returning Farmer Entrepreneurship. *Sustainability*, *15*(2), 1380-1380. https://doi.org/10.3390/su15021380