

## WHAT MAKE THE AGRICULTURE SECTOR NOT ATTRACT THE YOUTH?

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### **Abstract**

*To ensure strong food security, regeneration becomes important and plays a real economic role. This research analyzes the influence of parents' expectations, the area of land owned by parents, technology, and the type of livestock business on young people's interest in becoming farmers in Cilongok District, Banyumas Regency. The sample consisted of 60 young people analyzed using multiple linear regression analysis. The results show that the parent's expectations and the area of land owned by parents and technology influence the youth's interest in becoming farmers. At the same time, the type of farming variable did not affect the youth's interest in becoming farmers while the type of farming does not. These results show that to ensure farmer regeneration, strong encouragement is needed to ensure welfare, family motivation, and the role of technology in the agricultural sector. Therefore, support from all elements of society is needed to ensure the regeneration of farmers.*

**Keywords:** *farmer regeneration; young farmer; agriculture*

### **INTRODUCTION**

The agriculture sector plays a significant role in the economy to lead a society that is strong in family food security. The majority of people in Indonesia are employed in the agriculture industry, making it an agricultural nation. The primary source of revenue in emerging nations and a major contributor to national income is agriculture. This generates materials for industries and guarantees a nation's food safety (Tang et al., 2021). In contrast to other industries, the agriculture sector managed to thrive during the COVID-19 epidemic and was the main driver of the country's economic recovery. In the ongoing pursuit of food security, the agricultural sector's sustainability is crucial for the time being (Wibowo and Suharno, 2022). One of the key industries is agriculture because it is a source of income for most Indonesian people. The agricultural sector is one sector that absorbs a fairly high workforce (Santoso et al., 2020). According to Survey Angkatan Kerja Nasional (SAKERNAS) (Statistics Indonesia, 2021), According to Survey Angkatan Kerja Nasional (SAKERNAS) in 2021, the majority of Indonesia's population will work in the agriculture, forestry, and fishery sectors, reaching 29.59% of the 131.06 million workers in Indonesia. In the period 2015 – 2020, the agricultural sector has a strategic role in creating income for the national economy.

Employment in the agriculture sector has continued to fall, from 44.51% in 2004 to 34.28% in 2014, and this trend is expected to continue through 2018 (Pranadji and Hardono, 2015). Between 2017 and 2018, the number of agricultural workers decreased by 1,080,722 (Arvianti et al., 2019). the decline in agricultural employment is concerning considering the sector's importance to national food security (Oktafiani et al., 2021).

The availability of quality and sustainable resources is one of the success criteria in establishing advanced, self-sufficient, and contemporary agriculture (Khamtavee et al., 2024; Ranzeez et al., 2020). Three components are required: natural resources, human resources, and proper technology (Ritonga et al., 2015). This is a concern for future generations of Indonesian farmers. If this is not addressed, the number of Indonesian farmers will continue to drop. Younger generations are less likely to work in agriculture (Chen et al., 2025; Santoso et al., 2020; Zagata and Sutherland, 2015). Youth play a critical role in ensuring the agricultural sector's viability and existence (Calo, 2020; Jun, 2024; Khamtavee et al., 2024).

Many factors cause labor to leave the agricultural sector from time to time; in addition to being less promising, the reduction in land as a result of increasingly widespread land use change, as well as the younger generation's decreased interest in farming, cause the contribution of this business field to decrease (Arimbawa and Rustariyuni, 2018; Geza et al., 2021; Sapbamrer and Thammachai, 2021). stated that not only is the agricultural sector becoming increasingly unpromising economically, but young people who are uninterested in farming are being affected by the new culture that is emerging in the modern day. Failures in agriculture are increasingly extensively broadcast, accidentally becoming a black campaign for the younger generation (Jun, 2024; Sapbamrer and Thammachai, 2021). to change the perception of the younger generation towards agriculture, this view needs to be straightened out. Perceptions of the agricultural sector are characterized by 3D, namely Dirty, Dangerous, and Difficult (Rudolphi et al., 2020; Wang, 2014).

To establish a long-term professional workforce in agriculture, the government must provide youth-oriented support. Interventions that include capacity training, financial support for startups, and continuous assistance with technical and financial elements of agribusiness operations (Balezantis et al., 2020; Geza et al., 2021; Pérez et al., 2020; Yami et al., 2019). Agriculture has the potential to give attractive employment possibilities for youth in the demographic pyramid, if increased investment and a supportive legal and policy framework are in place (Jun, 2024; Koira, 2014; Yami et al., 2019).

The findings of research conducted by the People's Coalition for Food Sovereignty (Santoso et al., 2020) indicate that 54 percent of children of horticulture farmers express disinterest in pursuing farming, whilst 63 percent of children of rice farmers similarly lack desire. This condition is also suspected to be the cause of the low level of rural youth in agricultural development activities. The activeness of youth aged 18-24 years is 31 percent, while the age group of 25-35 years is 25 percent.

Parents are the only parties with whom children can interact directly and be regenerated from an early age. Parents play a critical part and have a significant impact on their children's generation (Pérez et al., 2020). Joose and Grubbstrom (2017) define the role of parents as socialization, respect, and inheritance. As a result, farmer regeneration can begin at a young age in the home context (Firdaus et al., 2024; Ranzeez et al., 2020). the status of farmers is sometimes a reflection of whether young people would enter the agricultural sector or not (Chatzitheodoridis and Kontogeorgos, 2020; Santoso et al., 2020).

Various policies to ensure the fulfillment of human resources in agriculture are carried out by the government through both technical training and program assistance. Support in the form of training and mentoring is a tangible form to create a real interest in the agricultural sector (Khamtavee et al., 2024; Zagata and Sutherland, 2015). Government support is very meaningful for the young farming community to pay more attention to the younger generation who are members of or not involved in farmer groups (Chen et al., 2025; Elahi et al., 2022; Suvedi et al., 2017). the encouragement and provision of knowledge, both information and techniques, often have a good and more real effect through the support of a community such as a farming group (Anwarudin et al., 2020; Khamtavee et al., 2024). The availability of facilities and infrastructure in accelerating the regeneration of farmers is in the medium category with a percentage of 75.30%, meaning that young farmers do not find it difficult to find or obtain tools and materials in vegetable farming (Elahi et al., 2022). Therefore, it is necessary to increase the availability of existing facilities and infrastructure in Semarang District, because production facilities in farming activities are one of the absolute

requirements in facilitating an activity. Facilities and infrastructure are factors needed in the production process, for example, seeds, fertilizers, pesticides, land, labor, and access to transportation.

Farmers who have enough land, on the other hand, can exist or even increase their cultivated land, which is followed by a growing divergence in agricultural goods produced. Farmers' habit of passing down their arable land (inheritance) to the next generation is frequently made easier since the following generation has enough capital to begin working in the agricultural sector (Pamungkaslara and Rijanta, 2017; Pérez et al., 2020).

The growing role of technology will be increasingly massive, through the presence of superfast networks and artificial intelligence it is possible to play its role in the agricultural industry to increase crop yields and quality while using minimal labor (Chuang et al., 2020). Smart and precision farming enables farmers to be more informed and productive (Chuang et al., 2020; Dias et al., 2019; Tang et al., 2021). This is the right momentum to attract young professional workers by bringing technology and agriculture together (Charania and Li, 2020; Ullah et al., 2024). The concept of smart farming/agriculture (Chuang et al., 2020; Grogan, 2012; Tang et al., 2021) using modern technology is a solution to increase the quantity and quality of agricultural products with minimal losses and labor (Tang et al., 2021), and take advantage of various existing limitations (Walters and Midden, 2018). The application of technology to agricultural productivity is considered a solution to meet the increasing food needs of the population. There are Information and Communication Technology innovations that can be applied to the agricultural sector in the fields of precision agriculture, the use of agricultural management software, wireless sensors, and the use of agricultural machinery. Remote sensing technology plays a key role in precision agriculture (Abdullahi et al., 2015; Ullah et al., 2024). the mechanization of agriculture in Ethiopia has helped bring about a significant increase in agricultural productivity. Therefore, there is a strong need for mechanization of agricultural operations (Amare and Endalew, 2016; Firdaus et al., 2024), which in a later stage is expected to increase land and labor productivity.

Cilongok and Sumbang District were the largest rice producers in Banyumas Regency, in 2017-2019, followed by Pekuncen District and Sokaraja District (Statistics Indonesia, 2021). Various kinds of agricultural commodities are available in Cilongok. The challenge now is how to regenerate farmers in Cilongok District to ensure the continuity of the agricultural sector in the future. The condition of declining interest of the younger generation and the aging of farmers has a crisis impact on the successors of farming activities (Pamungkaslara and Rijanta, 2017). The absence of the younger generation entering agriculture makes it difficult to spur an increase in production (Burton, 2014; Chatzitheodoridis and Kontogeorgos, 2020). The Cilongok sub-district has quite a large agricultural land and includes rice fields, fields, and plantation areas, so many of them are livelihood-oriented residents as farmers (Statistics Indonesia, 2021).

Farmer regeneration is a process of transferring farming activities from old farmers to the next generation (Kontogeorgos, 2014). According to Alina and Marcu (2014) Regeneration of agricultural farmers is important because it determines productivity and competitiveness due to the aging of farmers hindering changes in social structures and rural modernization. Therefore, it is important to identify what determines the youth's interest in the agricultural sector (Calo, 2020).

## METHODS

This research is included in quantitative descriptive research using primary and secondary data. Primary data comes from respondents through interviews and questionnaires about youth's interest in the agricultural sector, while secondary data comes from Statistics Indonesia as well as other relevant references. This study takes a case study in Cilongok District, Banyumas Regency. Respondents were young people who had entered working age. Through the multistage random sampling method, 60 respondents came from different families and their parents owned agricultural land. The research was conducted in July-August 2022.

The dependent variable is the youth's interest in the agricultural sector, while the independent variables are the expectations of parents, the area of land owned by the parents, the role of technology, and the type of farming business. Which is then analyzed using Multiple Linear Regression Analysis. Then, to overcome the obstacles caused by differences in data in the form of ordinal data such as WP variables and Tech variables into interval data, data transformation is carried out using the Successive Interval Method (MSI). Furthermore, to ensure that the model used is the best model, a classical assumption test is carried out including heteroscedasticity using the glejser test and multicollinearity using the Breusch-Godfrey Serial Correlation LM Test.

### RESULTS

The respondents in this study were young people who had entered working age and their parents owned agricultural land. There are 60 respondents scattered in Cilongok District, Banyumas Regency. Figure 1 shows that respondents based on age are dominated by respondents with an age range of 21-23 years, which is 66.67%. While the rest are spread from the age of 16 to 25 years.

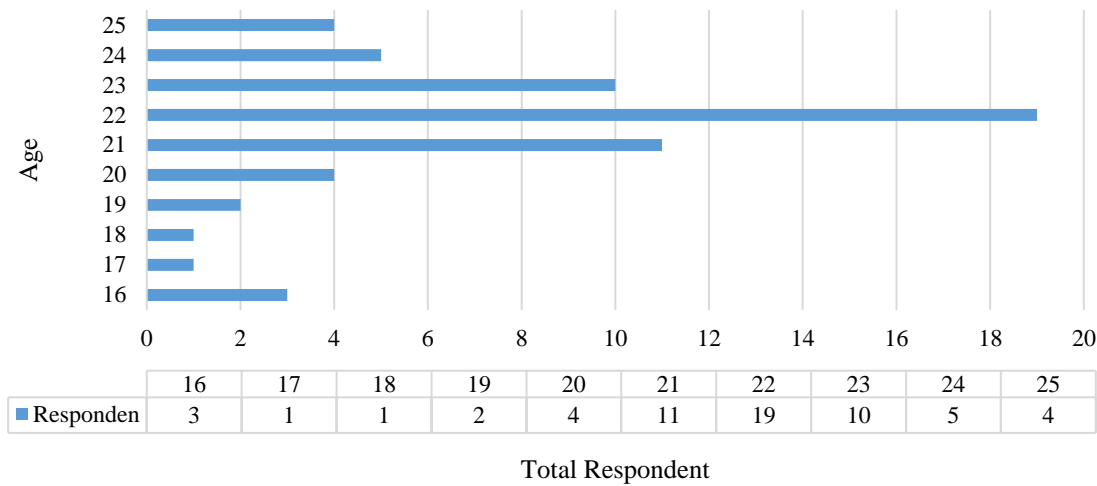


Figure 1. Distribution of Respondents by Age  
Source: Primary Data, processed, 2022

Respondents with the latest high school graduates dominate with 70%, bachelor’s degrees 20%, and the rest are junior high school graduates and diplomas. Education often gives respondents a new perspective on what jobs they want in the future and they understand very well about the agricultural sector. Data in this study were free from multicollinearity symptoms with a chi-square Prob value of 0.2278 more than the alpha value (0.05) and free from heteroscedasticity symptoms with a Chi-square Prob value of 0.1777 more than the alpha value (0.05). Then to find out what factors influence youth interest in the agricultural sector through multiple regression analysis. Here is the equation used:

$$\widehat{Int} = 1.3116 + 0.32898WP + 0.0003Land + 0.9722Tech - 0.0959ToA \dots\dots(1)$$

Where Int is the Youth's Interest in becoming a farmer, WP is the hope of parents, Land is the area of land owned by parents, Tech is the role of technology, ToA is a type of farming business, and  $\mu$  is the error term.

The F test results show that the Prob F statistic value is 0.000064, where this value is smaller than the 5% alpha value. This shows that together, the variables of parents' expectations, the area of land owned by parents, the role of technology, and the type of farming affect youth interest in the agricultural sector in Cilongok District, Banyumas Regency.

Table 1. Results of Data Processing

No	Variable	Coefficient	Prob
1	Constanta	1.311649	0.0002
2	Parents Hope	0.328822	0.0066
3	The size of the land owned by the parents	0.000396	0.0244
4	Technological Role	0.972275	0.0000
5	Farmer Business	-0.095964	0.7364
F-statistic		7.541565	
Prob (F-statistic)		0.000064	
R Squared		0.354204	
Adjusted R Square		0.307237	

Based on the results in Table 1 the variables of parents' expectations, and the area of land owned by parents, and the technology role have a significant effect an increasing youth interest in the agricultural sector in Cilongok District, Banyumas Regency. Meanwhile, the variable type of farming does not affect youth interest in the agricultural sector.

## DISCUSSION

Parents' expectations will determine how their children view the agricultural sector. Sometimes parents will make sure that the next generation has enough land to work on by providing experiences to their children, either by inviting them to play a direct role in the agricultural sector or simply by inviting them to discuss a problem. This will provide a special attraction for their children to the agricultural sector. According to the research of See & Gorard (2015), the role of parents is often a determinant of the future of their children. How are parents able to influence and provide a clear picture of the future they might follow (Firdaus et al., 2024; Saputra et al., 2022)?

Ownership of agricultural land is the main capital in the agricultural sector. Various methods occur in the field such as through purchases, lease agreements, pawn agreements, or due to inheritance distribution. This is an advantage for families who do have enough land which will then be used by young people in the future as initial capital in the agricultural sector. The more the family owns the larger area of arable land, the more the youth will be interested in engaging in the agricultural sector This is to the research of Santoso et al (2020). the area of land gives hope for youth to start engaging in the agricultural sector because they consider that the agricultural sector is one of the sectors that requires relatively large initial capital. Thus, when parents have enough land to work on, it will be a distinct advantage for the next generation to preserve the agricultural sector at the same time.

The development of technology will facilitate work patterns and can run more efficiently. With the presence of technology in the agricultural sector, it will provide its Pull data for youth to join. Young people are very close to technology with its various limitations (Chatzitheodoridis and Kontogeorgos, 2020; Oktafiani et al., 2021; Walters and Midden, 2018). Utilizing technology is a solution to increase the quantity and quality of agricultural products with minimal losses and labor (Prabowo et al., 2023; Tang et al., 2021). In its development, the role of technology is increasingly massive, through the presence of superfast networks and artificial intelligence it is possible to play its role in the agricultural industry to increase crop yields and quality while using minimal labor. Smart and precision farming enables farmers to be more informed and productive (Dias et al., 2019; Tang et al., 2021). This is the right momentum to attract young professional workers by bringing technology and agriculture together (Charania and Li, 2020; Etana et al., 2019; Reddy et al., 2020; Takahashi et al., 2020; Ullah et al., 2024).

The sort of farming company determines the agricultural sector's characteristics, whether as a primary or secondary occupation. According to the study's findings, there is no difference between whether their parents regard agriculture to be their primary or secondary source of income, and it does not pique the interest of young people in joining the agricultural industry. Youth believe they already have opinions on the agricultural sector, its issues, and what they might expect in the future, without having to consider whether the agricultural sector is the major or a sideline. They anticipate

that agriculture would undoubtedly require a relatively long period so that the major and secondary qualities do not alter their demand.

## CONCLUSIONS

The regeneration of agricultural resources becomes crucial amidst food security challenges. The interest of young people will be able to ensure the sustainability of the agricultural sector in the future. Based on research findings, the hopes of parents and parental land ownership are essential factors for young people to be willing to become farmers in the future. They have a perspective on income and what makes a farmer respectable, according to their observations of their parents' current situation. This is important to ensure that they will receive a decent income and a dignified life. In addition to the involvement of agricultural technology, which will simplify the tasks and functions of farmers. This will be an appealing factor for young farmers to join. Young people are closely connected to technological advancements, so the involvement of agricultural technology is a must to enhance efficiency. Therefore, it is necessary to ensure good cooperation among various elements, including the government, agricultural advisors, and the younger generation in general. Therefore, to maintain this agricultural regeneration, besides the need for motivation for the younger generation, technical training programs, and assistance from the government as well as the role of parents to facilitate the regeneration process of these agricultural resources.

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