



## The Younger Generation and the Future of Agriculture

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### ABSTRACT

Sektor pertanian merupakan penyediaan bahan pangan yang sangat dibutuhkan terutama untuk keberlangsungan hidup, manusia membutuhkan makanan sebagai sumber energy dalam tubuh untuk melakukan aktivitas. Sektor pertanian adalah penggerak bagi sektor lainnya, dan sebagai penyediaan lapangan pekerjaan. Artikel ini bertujuan untuk mengetahui faktor-faktor yang menentukan terjadinya perubahan struktur demografi akibat menurunnya minat generasi muda untuk berpartisipasi dalam kegiatan di bidang pertanian. Dengan pendekatan tinjauan sistematis melalui metode deskriptif naratif dan meta analisis. Hasil kajian penulis terhadap literature terkait pertanian dan generasi muda diperoleh duapuluh tiga artikel ilmiah. Cakupan pembahasan dalam pasal-pasal tersebut tidak hanya mencakup Indonesia, tetapi juga negara-negara lain, seperti China, Jepang, Thailand, Korea, dan lain-lain. Hasil analisis tinjauan menunjukkan bahwa faktor ekonomi dan sosial mempengaruhi penurunan minat generasi muda untuk bekerja di sektor pertanian. Faktor ekonomi adalah pendapatan, keterbatasan lahan, margin keuntungan yang rendah, tingkat pendidikan generasi muda yang lebih baik, faktor yang dominan terjadi di Indonesia. Sedangkan faktor sosial ditemukan dalam diskusi terkait citra bekerja di bidang pertanian, keluarga, lingkungan dan dukungan pemerintah. Jika masalah ini tidak teratasi, maka akan berdampak pada jumlah pekerja atau kelompok kerja muda yang tidak cukup untuk meneruskan kegiatan proses produksi pangan yang dilakukan oleh kelompok tua. Terakhir, meningkatnya jumlah lulusan di berbagai jurusan tidak dibarengi dengan peningkatan daya tarik bekerja di sektor pertanian. Indonesia merupakan negara yang bertumpu pada sektor pertanian. Oleh karena itu, terobosan dan program kebijakan yang komprehensif di sektor pertanian perlu segera dilakukan.



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### ABSTRACT

*The agricultural sector is the provision of food that is needed especially for survival, humans need food as a source of energy in the body to carry out activities. The agricultural sector is a driving force for other sectors, and as a provision of jobs. The article purposes to find the factors that determine alterations in the demographic structure due to the declining interest of the younger generation to participate in activities in agriculture. By a systematic review approach through descriptive narrative and meta-analysis methods. The results of the author's study on literature related to agriculture and the younger generation obtained twenty-three scientific articles. The scope of discussion in the articles not only covers Indonesia, but also in other countries, such as China, Japan, Thailand, Korea, and others. The results of the review analysis show that economic and social factors affect the decline in the interest of the younger generation to work in the*

*agricultural sector. Economic factors are the income, limited land, low profit margins, the better education level of the younger generation, the dominant factors occurring in Indonesia. While social factors were found in discussions related to the image of working in agriculture, family, the environment and the government support. If this problem is not addressed, it will impact on the number of workers or young working groups that are not sufficient to continue the food production process activities carried out by the older groups. Finally, the increasing number of graduates in various majors is not accompanied by an increase in the attractiveness of working in the agricultural sector. Indonesia is a country that relies on the agricultural sector. Therefore, breakthroughs and comprehensive policy programs in the agricultural sector need to be carried out immediately.*

### INTRODUCTION

Changes in the demographic structure of the agricultural sector in Indonesia, which is dominated by old farmers with an age of more than 55 years. This happens along with the decline in the number of young farmers (Arvianti *et al.*, 2019). Structural changes in the agricultural sector in terms of labor have an effect on agricultural production (Guo *et al.*, 2015). This condition will certainly have bad implications for the future of agriculture in Indonesia. Agriculture is a relatively large provider of employment and a source of food for the population. Several factors cause the declining participation of the younger generation in agriculture, including income disparities in the non-agricultural sector are relatively higher; increasingly higher level of education; collaboration between old farmers and young farmers that is not smooth (Susilowati, 2016; Dilahur *et al.*, 2001).

The migration of villagers to cities led to a decrease in youth participation in agriculture. In addition to the income factor, the factor of youth cooperation with the old farmer group is an obstacle. Meanwhile, for farm workers who can be filled by the young labor force, it is replaced by the role of mothers who have rented out in conducting farming activities (Dilahur *et al.*, 2001). In general, the farm workers in the village are small farmers whose land is less than half a hectare. This certainly affects farmers' low incomes. This welfare factor also causes the younger generation to migrate to areas that can provide higher incomes (Mandang *et al.*, 2020; Oktafiani *et al.*, 2021).

Meanwhile, in terms of wages for farm workers in this village, it is relatively high compared to wages in the industrial sector, but the obstacle factor is the desire to obtain their own land is low, while the motivation for migration to the city is to get capital and be able

to return to the village to obtain farmed land. Another reason is that they do not have skills in agriculture, and identified as low income (Dilahur *et al.*, 2001). Other factors in the broader dimension not only include economics and demography, Spěšná *et al.* (2009) and Santoso *et al.* (2020) found broader factors include socio-economic and political, among them government policies related to wage and unemployment levels that affect the composition of the labor force in the agricultural and industrial sectors. In addition, the conditions of labor demand, as well as the condition of the education system that is increasing in number and quality have led to an increasingly selective influence on the young labor force in agricultural areas. In addition, the increasing aging population of farmers has an impact on food safety in both countries.

The total participation of youth working in the agricultural sector in 2010 was 5.6 percent in urban areas 56.59 percent in rural areas or 62.19 percent of total youth employed in the agricultural sector. In 2020 the number of youths working in the agricultural sector fell to 45.6 percent, of which 6.19 percent in urban areas and 39.41 percent in rural areas. This indicates a migration among youth both from the agricultural sector to the manufacturing and service sectors and from rural to urban areas. This indicator shows the conditions of structural change in the labor force of the younger generation as found in the study of Spěšná *et al.* (2009); Pongchompu *et al.* (2012) and the study of Nugroho *et al.* (2018) in Yogyakarta and latest study by Oktafiani *et al.* (2021).

It can be concluded from several studies that have been previously described that the development of industry in an area will reduce the number of participations of young farmers in agricultural sector areas located in rural areas. In addition, the improvement in the industrial sector of the number of graduates and the level of education is another reason for the decline in the participation of the younger generation working in the agricultural sector. This is partly due to fluctuating and relatively low income from farming compared to other sectors, while land ownership and relative wages factors also distort the conditions of participation of the younger generation in the agricultural sector. The consequence is the increasing number of aging farmers which affects the productivity and production efficiency of agricultural products, especially rice production. This has an impact on the future of agriculture in the future or known as sustainable agriculture.

This article will describe some of the prominent factors that cause the decline in the participation of the younger generation in the agricultural sector and then get effective solutions and policies to overcome this phenomenon to save the agricultural sector in the future.

## METHOD

This article was written with a literature review approach to obtain several dominant factors that are obstacles in the decline in youth interest and participation in the agricultural sector. Reviewed journal articles or publications are based on systematic review analysis criteria through the Meta-Analysis

method (King & He, 2005). This review method is easy to do using data from journal articles related to the topic of discussion. Hall & Rosenthal (1995) explained through two techniques, namely the combination and

comparison of study results (combining & comparing studies). Then tabulate these studies and map the variables that cause a decrease in the participation of the younger generation in the agricultural sector.

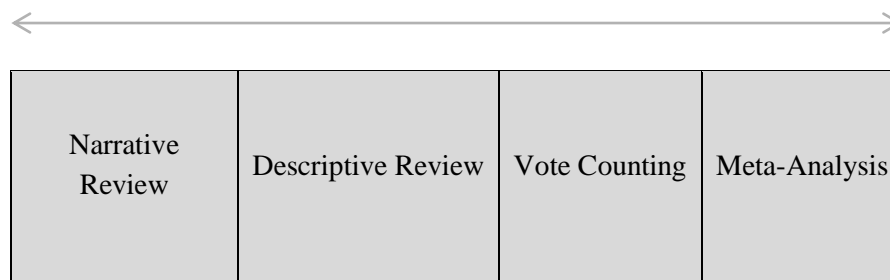


Figure 1. Systematic approach to article review (King & He, 2005)

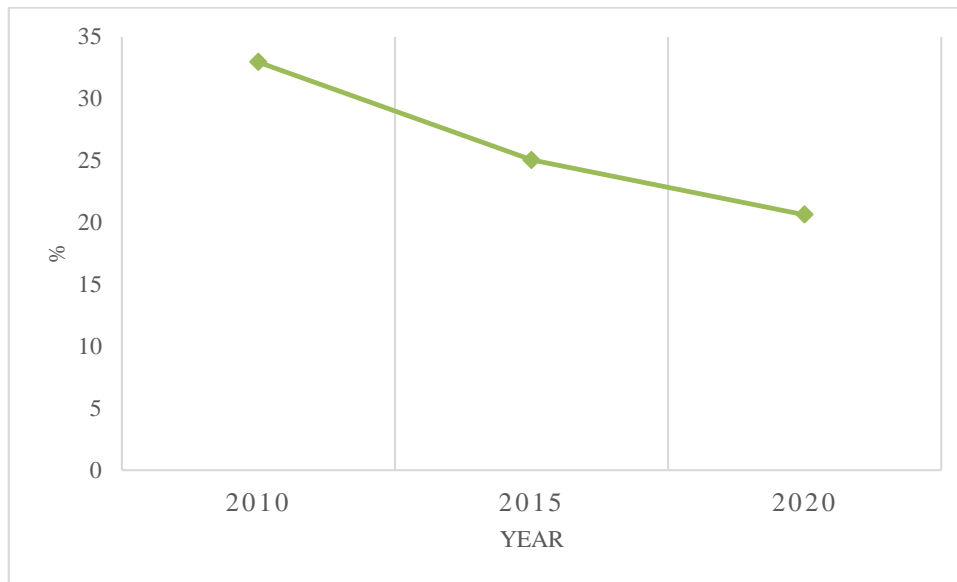
The approach used in reviewing articles related to the topic of discussion in this article, namely the younger generation and agriculture, is a systematic approach starting with creating a narrative from the collected articles then describing it descriptively and deciphering it systematically. This approach is in line with that suggested by (King & He, 2005; Hall & Rosenthal, 1995). In addition to the second approach, a qualitative approach will also be reviewed with a simple quantitative method to identify the causative factors. Furthermore, grouping in tabulations by giving the number of frequencies of the emergence of these causal factors and then ranking the dominant factors is carried out. Furthermore, a meta-analysis is conducted with statistical correlation techniques to obtain the relationship of factors in one region to another to the same causal factors.

## RESULT AND DISCUSSION

The phenomenon of farmer aging caused by the decline in the interest of the younger generation to work in the agricultural sector has been written in several articles in the form of qualitative descriptive analysis, empirical studies of quantitative approaches from various points of view and cases. Based on the scope of the journal, it also shows variations, including from the perspective of agriculture, geography, economics with varied sub-studies as well. In addition, one article was obtained that reviewed this phenomenon with a qualitative descriptive approach, namely an article written by Susilowati (2016). In his works that discuss structural changes, especially labor in the agricultural sector. This suggests that the symptoms of falling interest of young farmers involved in the agricultural sector have been a concern from a variety of viewpoints and varied disciplines. Similar point of view showed in works of Konyep (2021); Farkhan *et al.* (2022); and Oktafiani *et al.* (2021).

The first article that the author found due to the decline in the interest of the younger generation in working as farmers was in the [Clawson \(1963\)](#). In the article, argued that the low income of farmers is the reason for the disinterest of the younger generation to work in the agricultural sector. This circumstance was

triggered by commodity price problems caused by the surplus of agricultural production in the United States at that time. Income problem still exists in other countries such as China, Korea and Indonesia. As shown among them in the article [Dilahur \*et al.\* \(2001\)](#); [Arvianti \*et al.\* \(2019\)](#) for Indonesian conditions.



Source: *Statistik Pemuda Indonesia* (BPS, 2010, 2015, 2020)

Figure 2. The development of youth participation in the Agricultural sector 2010-2020

Changes in the demographic structure in agricultural areas caused by the aging of farmers are with the development of the industrial sector, such as in China and Korea. The article of [Guo \*et al.\* \(2015\)](#) found a negative relationship between the agricultural sector and industrial growth that led to shifts in the labor force, transition, and demographic structure. Meanwhile, agricultural areas that turn into industrial areas into a demographic transition process also have an impact on the young labor force working in agriculture and the increase in old farmers and the involvement of women in the agricultural sector ([Huang, 2012](#); [Liu \*et al.\*, 2019](#); [Seok \*et al.\*, 2018](#)). In Indonesia, studies

related to the problem of changing demographic structure and demographic transition have not been found in the article. In other words, studies related to patterns of changes in demographic structure in the agricultural sector still require further study. The demographic transition and the impact of industrialization on the agricultural sector in Indonesia, especially in the young labor force, is an essential study.

Several factors causing the low participation of the younger generation into agriculture are more internal factors. The study of [Santoso \*et al.\* \(2020\)](#) found factors of land ownership that were less than 0.5 hectares, lack of farming skills due to the transfer of skills

from old farmers to the younger generation, higher education levels and a low image of working on agriculture. Such conditions are also found in the article section [Dilahur \*et al.\* \(2001\)](#); [Susilowati \(2016\)](#); and [Arvianti \*et al.\* \(2019\)](#).

Then from that, the cause of the decline in the interest of the younger generation to agriculture according to [Arvianti \*et al.\* \(2019\)](#) and [Anwarudin \*et al.\* \(2020\)](#), the agricultural model in Indonesia is a family farming model that is inherited in a downhill manner and is able to maintain production and the sustainability of farmers' lives. Not only does that, agricultural problems in Indonesia also related to the age and productivity of agriculture. The age structure of farmers in Indonesia is 60.8% over 45 years old and 73.97% only primary school education. Therefore, the ability to master technology is low so that the productivity of Indonesian farmers is lower than that of

ASEAN countries. In addition, the small number of young people who are willing to continue their work in agriculture is due to the fact that most parents in rural areas do not want their children to work as farmers as their jobs.

What causes the younger generation's interest in participating less in the agricultural sector is that it lacks social prestige, is dirty, and risky, then there is a mismatch between the quality of education and the job opportunities available in the village. Not only that, the assumption of high-risk agriculture so that it lacks guarantees of the level, stability and continuity of income. The problem is that the dwindling number of young farmers is quite worrying. If this problem is not resolved, it will have an impact on the number of workers or young working groups not enough to continue the food production process activities carried out by the old group.

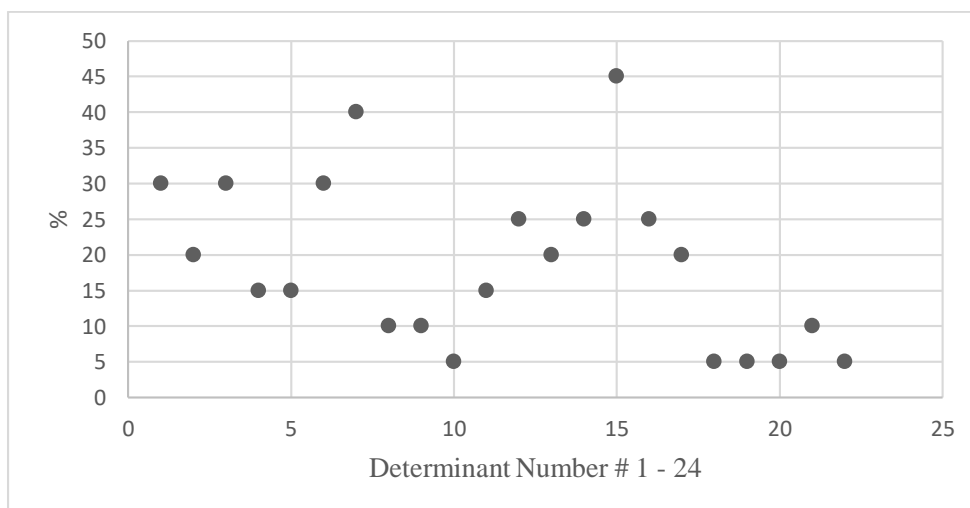


Figure 3. Declining in Youth Participation in the agricultural sector

Table 1. Identification of Factors Causing the Decline in Interest of the Younger Generation to the Agricultural Sector

No	Factors	Number of articles	%
1.	Low income	6	30
2.	Narrow land ownership	4	20
3.	Modernization and technology	6	30
4.	Image/prestige image	3	15
5.	Lack of counseling	3	15
6.	Unskilled	6	30
7.	Wages/earnings in manufacturing are higher	8	40
8.	Increased involvement of women in agriculture (Agricultural Feminism) and Industrialization in Rural Areas	2	10
9.	Family support	2	10
10.	Community Environmental Support	1	5
11.	Support informal leaders	3	15
12.	Support the government	5	25
	Information support	4	20
13.	Agricultural productivity and industrial growth	5	25
14.	The level of education is getting better	9	45
15.	Profit Per Economy	5	25
16.	Access capital is limited	4	20
17.	Limited Production Facilities	1	5
18.	The distance with the industrial sector is getting closer	1	5
19.	Farm Management	1	5
20.	Marketing Assurance	2	10
21.	Insurance	1	5

Number of articles = 20

Source: Data is processed (2021)

One of the characteristics of the millennial generation is a modern and fast lifestyle that tends to be hedonistic. Millennials now prefer a free life such as traveling, joining communities such as sports, fitness, environmentalists and continuously connecting with social media. In addition, environmental factors that are less strategic, causing the interest of the younger generation to enter the world of agriculture. The most prominent of the above causal factors is a proficient level of education, because the higher the education, the interest of the younger generation to enter agriculture will decrease. Therefore, agricultural productivity will decrease. However, the role of social media is important

in overcoming this problem, in line with a study based on information dan technology conducted by [Arianto \(2021\)](#); [Konyep \(2021\)](#); and [Farkhan et al. \(2022\)](#).

### CONCLUSION

The phenomenon of falling interest of the younger generation is a critical issue for the future of agriculture. The level of education is the reason for the decline in the participation of the younger generation who work in the agricultural sector. Led to migration to the industrial sector.

The constraining factors are the low desire to own their own land, land ownership

affects youth participation in the agricultural sector.

In terms of income, the low income from farming is the most likely reason why young people are not interested in working in the agricultural sector. The wages of farm laborers in the village are relatively higher than those in the industrial sector. Another issued that has been discussed in many scholarly articles is that the less prestigious agricultural sector has no guarantee of income stability and continuity.

Thus, farmers following increasing youth participation is an important agenda that must be addressed in the future. Among other things, utilizing activities outside farming to increase income, optimizing farmer institutions by increasing the role of youth in the agricultural sector through education, training and mentoring based on information and technology as well as support from the government.

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### CONTRIBUTION STATEMENT

In this article, Nisa Suriani acts as the main contributor, while Yoanna Pusvita Sari and Fitri Handayani acts as a member contributor, Helmi Noviar act as a member and correspondence contributor.

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