Human Capital Performance in the Agriculture Sector During the Era of Covid-19

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Abstract. The research aims to analyze human capital performance in the agricultural sector during the Covid-19 pandemic. This study uses secondary data, mainly from BPS, the data is analyzed using simple statistics and descriptive analysis with literature studies. The results show that agricultural development still relies on labor and capital. The Covid-19 impact on various economic sectors is varied, the agricultural sector is the least affected compared to other sectors. In the period of August 2019, BPS data shows that the agricultural sector absorbs 27.53%, over the last five years (2015–2019) has tended to decrease, however, in August 2020 data, it increased to 29.7%, there was an increase of 2.17% points. This condition presents a new additional workforce in rural. While agricultural labor absorption decreases, policies are needed to empower workers affected by Covid-19. Young workers perspective who want to work in the agricultural sector to participate in agricultural technology development. The modern agricultural development transformation lies in its human capital quality and affects the comparative advantage of being competitive. Therefore, how to apply human capital to be more productive, effective, and efficient in the agricultural sector.

Keywords: human capital · agriculture · young workers · Covid-19 pandemic

1 Introduction

Human resource (HR) is an important element in national development. For this reason, human resource development is emphasized in Nawa Cita II (BPS, 2020a) [1]. National competitiveness is also an achievement that will be obtained to improve the quality of human resources. Therefore, the quality of human resources is one of the main focuses of the government.

Great human resources must be an asset for national development (Mulyandari et al. 2010) [2]. In measuring human capital, it is an asset that is not easy to measure, because it is dynamic and often changes according to changing situations and conditions (Hidayat, 2013) [3]. Thus, to measure human capital, the right dimensions and indicators are needed, because this can be a manifestation of a variable. The operational variable will determine the validity of the instrument that will be used to measure the human capital variable.

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The agricultural sector in Indonesia still dominates the economy both in the contribution to national income (although not in the first place) and in the absorption of labor (the first place) (Simanjuntak, 2004) [4]. Human capital, which is reflected in employment in the agricultural sector, still has many obstacles in its development. Considering the relatively low quality of human resources, especially in terms of education level, hence, it is necessary to improve the quality of both knowledge, skills, and capacities as human capital.

However, in the era of the Covid-19 pandemic, the agricultural sector was able to survive in the economy and grow positively, as well as in the absorption of labor in this sector, although during the last five years (2015–2019) before the pandemic the absorption of agricultural labor continued to decrease, in the era of Covid-19 has increased. Yusuf et al. (2020) [5] revealed that the agricultural sector was the least affected compared to other sectors. The increase in the absorption of agricultural labor in the Covid-19 era, shows that there is an additional workforce working in this sector. This is due to a large number of workers, especially urbanites and migrants who returned to the village during the Covid-19 pandemic era, while sectors that are relatively easy to enter are the agricultural and rural sectors. Thus there is a buildup of labor in the agricultural sector, while the increase in agricultural production and income is relatively stable, causing agricultural productivity to tend to decrease.

The purpose of this study is to analyze the performance of human capital (employment) in the agricultural sector during the Covid-19 pandemic era. For this purpose, the objectives are specifically detailed as follows: 1) analyzing the dynamics and structure of the workforce, 2) analyzing the workforce performance of the agricultural sector during the Covid-19 pandemic era, and 3) analyzing the perspective of smart technology in the human capital development (in agricultural sector).

2 Method

This study used the main secondary data from the National Labor Force Survey (Sakernas) obtained from BPS. The analyzed data regarding labor conditions are the condition in August 2019 and August 2020. The Sakernas data for August 2020 is data reflecting the impact of the Covid-19 pandemic, while the Sakernas data for August 2019 is used as a reference before the Covid-19 pandemic. Besides, data and information on the workforce in the Covid-19 era were obtained from secondary information through literature studies. The data was processed and analyzed descriptively using simple statistical analysis (averages, changes, etc.) as well as creating tables and graphs.

3 Result and Discussion

3.1 Workforce Dynamics and Structure

The working-age population is defined as people aged 15 years and over (BPS, 2020a). The number of workforce in Indonesia continues to increase, as well as the number of the working workforce, although the increase is slower than the increase in workforce number, due to the decrease in the labor participation rate from 64% in 2019, decreasing

Table 1. Trend of labor force status in Indonesia, 2019–2020

Type of activity	2019	2020	Change 2019–2020	
	thousand people	(thousand people)	(thousand people)	(%)
Working-age population	201.185	203.972	2.787	1,4
Economically active	135.860	138.222	2.362	1,7
- Working	128.755	128.454	-301	-0,2
- Unemployment	7.104	9.768	2.663	37,5
Non Economically active	65.325	65.750	425	0,6
(%)		(%)		(%)
Unemployment rate (UR)	5.23	7.07		1,84
- Urban	6,29	8,98		2,69
- Rural	3,92	4,71		0,79

Source: (BPS, 2020a)
Note: the period for data collection is August 2019 and 2020

to 63% in 2020 for the same month. The workforce development status in August 2019 and 2020 are presented in Table 1.

The composition of the workforce in Indonesia has changed due to the Covid-19 outbreak (Rahman et al. 2020) [6]. The economic crisis triggered by the Covid-19 pandemic has affected the workforce. Data from BPS (2020) shows that the working workforce decreased by 301 thousand people (growing -0.2%) in the Covid pandemic era compared to 2019. The decrease in the number of workers added to the unemployed workforce which reached 9.8 million with an addition of about 2.7 million people (an increase of 0.2% points) or a 37.5% growth during 2019–2020, unemployment is mainly due to the impact of the Covid-19 pandemic.

Meanwhile, the unemployment indicator can also be seen from the unemployment rate (TPT), which is the percentage of the total unemployed in the total workforce (BPS 2020a). This indicator can measure the workforce market that is not absorbed by the labor market and reflects the under-utilized labor supply. The Sakernas August 2020 data shows that the TPT is 7.07%, meaning that out of 100 people in the workforce, there are around seven unemployed. Compared to the conditions in 2019, TPT increased by 1.84% points. Compare to 2019, the unemployment rate also increased by 1.84 percentage points. This increase was mainly in cities (2.69%) while in villages it reached 0.79% points, the high level of unemployment in cities was due to a large number of layoffs and workers or employers affected by the Covid pandemic.

There is also a policy of Enforcement of Large-Scale Social Restrictions (PSBB) to suppress the spread of the virus in the society which results in deep economic pressure on urban residents, resulting in a lot of unemployment. The BPS study (2020b) [7] states that the working-age population affected by Covid-19 is 29.12 million people.

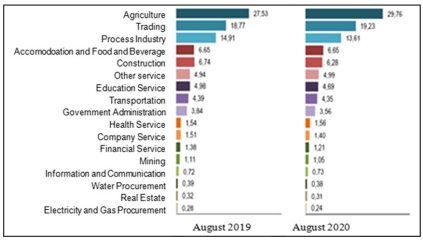

Fig. 1. Percentage of the Working Population-based on Employment Fields August 2018–August 2020. Source: BPS (2020), processed data

This number consists of a) 2.56 million people unemployed due to Covid-19; b) 0.76 million people who are Not-WorkForce (BAK) because of Covid-19; c) 1.77 million people temporarily unemployed due to Covid-19; and d) 24.03 million people in the working population who experienced a reduction in working hours due to Covid-19.

3.2 The Employment Performance in Agricultural Sector During the Covid-19 Era

Agricultural and/or rural development policies and programs have implications for the allocation of resources and the structure of the village economy. Huang (2018) reveals that the contribution of the agricultural sector to creating added value and absorbing labor changes. BPS data (2020b) shows that the structure of the workforce according to business fields is dominated by three main employment fields, namely agriculture, trade, and manufacturing (Fig. 1). The agricultural, forestry, and fisheries business fields are still reliable in absorbing the workforce in Indonesia.

In the period of August 2019, BPS data (2020b) shows that the agricultural sector absorbs 27.53%, over the last five years (2015–2019) has tended to decrease, however, in August 2020 data, it increased to 29.7%, there was an increase of 2.17% points. This condition presents a new additional workforce in rural areas. According to Romdiati and Noveria (2020) [8], the Covid-19 pandemic has changed population mobility, namely in the form of travel restrictions. Considering the Covid-19 impact, many urban residents or migrants return to their home villages, thus the village becomes the final alternative for urbanites and migrants when they cannot continue their livelihoods in the city and/or destination country. The easiest sectors for migrants to enter are the agricultural sector and other informal sectors in rural areas.

The Covid-19 pandemic also has an impact on the workforce structure based on the employment field (LIPI, 2020) [9]. Currently, in the Covid-19 era, agriculture is the only one that is still growing positively. BPS (2020c) [10] noted that the growth of the agricultural sector in the second quarter of 2020 reached 16.24%, and grew 2.15% in the third quarter of 2020.

3.3 Human Capital Quality Improvement Perspectives After Covid-19

Several studies show that the education level of the workforce has a positive effect on job opportunities (Supriyati, 2010) [11] and Hindun, 2020) [12]. This condition shows

Table 2. Presentation of the Working Workforce and Agricultural Workforce by education level

Education level	Working Workforce	Agricultural Workforce
No/never attended school	1,46	3,7
No/never finish SD	10,39	20,0
SD	27,05	41,5
SLTP	18,27	17,8
General SLTA/SMU	18,95	11,0
Vocational SLTA/SMK	11,56	4,2
Academy/Diploma	2,70	0,5
University	9,63	1,3
Total	100,00	100,0

Source: Sakernas August 2020, BPS, processed data

that the higher the level of education, the greater the job opportunities will be. It can be seen in Table 2 that the education level of agricultural workers on average is still low, data for August 2020 shows that around 65% have primary school education and below. The level of education is, on average, lower than that of the Workforce in general. This condition reflects that the quality of human capital in the agricultural sector is relatively low. Besides the important role of education as one of the main sources to achieve better economic development (Anwar, 2017) [13].

It is easy to enter agricultural employment from various segments, in this case, the workforce that is mostly absorbed is in the informal sector. Thus the workforce was also affected by the Covid pandemic. Concerning this problem, the Ministry of Agriculture has issued a policy program, with a handling strategy grouped into three agendas, namely emergency, temporary (medium-term), and permanent (long term). Meanwhile, policies related to employment are emergency and temporary, namely in the form of agricultural labor-intensive programs (Ministry of Agriculture 2020) [14]. This labor-intensive policy is also carried out by other ministries, such as the Ministry of Public Works and Public Housing (PUPR), the Ministry of Transportation (Kemenhub), and the Ministry of Marine Affairs and Fisheries (KKP), however, employment in rural areas is still lacking. In contrast to agricultural labor protection policies in other countries in dealing with the impact of Covid-19 has been carried out more massively (ILO, 2020) [15].

Prof. Dr. Ir. Lilik Sutiarso from Gajah Mada University (ugm.ac.id. 2020) [16] revealed that the key to the successful acceleration of the transformation of modern agricultural development in Indonesia lies in the quality of human capital which will leverage comparative advantages to be competitive. Therefore, it is necessary to have an innovation in the development of intelligent agricultural technology that can be implemented with the right input, the right amount, the right time, and the right place. However, with the current level of technological readiness, efforts to accelerate the process of agricultural development based on technological innovation are considered quite heavy.

The element of human capital in the modern agricultural system has a significant role in the process of developing smart agricultural technology. Intelligent Agriculture 4.0 will encourage farmer work by applying technology that makes agricultural cultivation activities smart, efficient, measured, and integrated. Rachmawati (2020) [17] revealed that the development of smart farming CB 4 with the integration of IoT (Internet of Things) devices, the use of drones, aspects of agricultural Brainware-Hardware-Software, sensor analysis for agricultural production, to resource management involving universities. One of the goals of this technology is to attract millennials to take part in the agriculture sector. Millennial farmers as part of regeneration were chosen to replace the farmers (with the majority are elderly).

The dominance of farmers in the old age category in Indonesia with a low educational background is thought to be less supportive for the progress of agricultural development in the country. Apart from that, it is one of the goals of the millennial generation to participate, because in the concept of smart agriculture 4.0 internet use will be maximized to increase productivity quickly. Furthermore, usually, the millennial generation is very close to the internet. Therefore, this millennial generation is expected to be able to implement smart agriculture more quickly, and even innovations will emerge in agriculture. Furthermore, it was stated (ugm.ac.id. 2020) that the development of intelligent agricultural technology based on human capital will provide benefits to each individual and also the human capital community of agricultural system actors if the development model uses a participatory approach.

4 Conclusion

Employment in Indonesia has changed both in structure and absorption of the sectors affected by the Covid-19 Pandemic. A significant impact is an increase in the number of unemployed. The Unemployment Rate (UR) in cities is relatively higher than in villages, which means that the impact of Covid-19 on employment and unemployment is greater in cities than in villages.

The agricultural sector is the only economic sector that is still growing positively, and the absorption of the workforce is also increasing during the Covid-19 era. Even though in the period before Covid-19, employment in the agricultural sector tended to decrease. This shows that the agricultural sector is still reliable both in terms of the economy and in providing or employment opportunities in the Covid-19 era.

The element of human capital in the modern agricultural system has a significant role in the process of developing smart agricultural technology. Intelligent Agriculture 4.0 will encourage farmer work by applying technology that makes agricultural cultivation activities smart, efficient, measured, and integrated. The development of smart agricultural technology based on human capital will provide benefits to each individual and also the human capital community in the agricultural sector if the development model uses a participatory approach. Therefore, the participation of the millennial generation as human capital in the agricultural sector is expected to be able to implement smart agriculture more quickly, even innovations will emerge in the agricultural sector so that it can be more competitive.

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