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Analysis of Labor Absorption in the Agricultural Sector in Regency/City in Jambi Province

Septria Rahayu[1*], Yulmardi[2], Hardiani[3]
Jambi University
Corresponding Author: Septria Rahayu septriarhyu023@gmail.com

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A B S T R A C T

This study aims to analyze the development of GRDP in the Agricultural Sector, Agricultural Land Area, and Human Development Index on Labor Absorption in the Agricultural Sector and the contribution of the agricultural sector to total GRDP, and to analyze the effect of each of these variables on Labor Absorption in the Agricultural Sector for the period 2018-2022. The method used in this study is descriptive and quantitative analysis. The analytical tool used is panel data regression analysis, namely secondary data sourced from the Jambi Province Central Statistics Agency for the period 2018-2022 using the EViews 12 software tool. The best model in this study is the Fixed Effect Model (FEM). The results of this study indicate that the variables GRDP in the Agricultural Sector, Agricultural Land Area and Human Development Index together have a significant effect on Labor Absorption in the Agricultural Sector for the period 2018-2022. While the results of partial testing indicate that the GRDP variable in the Agricultural Sector has a negative and significant effect on Labor Absorption in the Agricultural Sector. While the variable Agricultural Land Area has no effect on Labor Absorption in the Agricultural Sector. The HDI variable has a positive and significant effect on labor absorption in the agricultural sector

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INTRODUCTION

Economic development in a region is basically the result of the interaction of various factors such as human resources, natural resources, capital, technology, and others. Therefore, the role of humans is very important and cannot be separated from the economic development process. Humans function as labor, development inputs, and consumers of development products. Based on development theory, quality human resources can increase the role of humans as factors of production who are able to master technology, which in turn will increase economic productivity. To achieve high quality human resources, human capital is needed (Sari et al., 2016).

Agricultural development in Indonesia, especially in Jambi Province, is an important part of the totality of the national development process (Simanjuntak et al., 2018). During 2018-2022 the prominence of the agricultural sector (A) has been declining, but in the past year, the sector has seen an increase which means that the agricultural sector can overcome the impact of COVID-19. The industrial sector (M) is the sector that has seen a considerable increase in the last year. Meanwhile, the services sector (S) is the sector that has been affected by the COVID-19 pandemic (BPS, 2023).

Table 1. Percentage of Working Population by Main Occupation

Main Occupation	Year				
	2018	2019	2020	2021	2022
Agriculture (A)	47,84	45,92	46,44	45,89	47,96
Industry (M)	13,25	13,87	14,20	13,68	13,46
Service (S)	38,91	40,20	39,37	40,43	38,58
Total	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**

Source : BPS Jambi Province, 2023

The main employment in most regencies in Jambi Province is dominated by the agricultural sector, while the service sector is the leading sector in labor absorption in Jambi City and Sungai Penuh City. In 2022, there are three regencies/cities in Jambi Province whose employment in the agricultural sector is below 50%, namely Sarolangun Regency, Sungai Penuh City, and CityJambi. From the data, which means that these three regencies/cities are more dominated by the industrial and service sectors (BPS, 2023). The agricultural sector contributes to high national income including generating foreign exchange for the country, providing a high economic upside effect due to low dependence on imports (Astuti, 2017).

Based on the theory presented by Keynes in Mankiw (2010) , low aggregate demand has the consequence of low income and high unemployment resulting in economic decline. Therefore, to reduce unemployment, it is necessary to increase aggregate expenditure through the growth of Gross Regional Domestic Product (GRDP) in the region. The structure of Jambi Province's GRDP based on business fields at constant prices is still led by the

agriculture, forestry and fisheries sectors, followed by mining and quarrying, repair of cars and motorcycles, and processing industry (Pemprov Jambi, 2023).

Another factor that can be related to the absorption of labor in the agricultural sector is the size of agricultural land. Agricultural land area can affect the absorption of agricultural sector labor. The size of agricultural land determines the scale of the business, the greater the land area used, the greater the scale of the business business (Andrias et al., 2017). The more extensive the agricultural land, the more open employment opportunities for people who want to open farms. Conversely, when the area of agricultural land is insufficient, the more the labor force will switch to other sectors that they consider can generate income (Halim et al., 2015).

Competitive human resources can improve the quality of labor to add value to production, with quality human resource capital can increase work productivity according to the standards needed by the company. To increase labor productivity, it can increase the human development index first (Dewi et al., 2016).

The objectives of this study are to analyze: (1) the development of agricultural sector GRDP, agricultural land area, HDI and employment agricultural sector and contribution in the to the total GRDP of the Regency/City in Jambi Province for the period 2018-2022; (2) the influence of agricultural sector GRDP, agricultural land area, and HDI on the absorption of agricultural sector labor in the Regency/City in Jambi Province for the period 2018-2022.

LITERATURE REVIEW

Labor Force

The definition of human resources can be divided into two, namely, first there is a contribution made by individuals in the process of producing a number of goods and services produced called the form of individual effort or service. Second, regarding labor absorption is that individuals who have the readiness and ability to work will provide services or businesses. If your work is quantitative, please provide previous research that agrees or rejects your proposed hypothesis (Kawet et al., 2019). The agricultural sector has a basic function or foundation of economic development. There are several things that form the basis on which agricultural development in Indonesia has important obligations, namely: Indonesia, with its diverse and abundant natural resources, is a major contributor to the country's national income and exports. In addition, its role in meeting the food needs of local communities is very important, as well as being the foundation of economic growth in rural areas.

Economic Growth

Economic growth can be understood as an increase in economic activity that results in an increase in the amount of goods and services produced by a society. This issue falls under the macroeconomic category and has a long-term impact. From one era to the next, a country's ability to produce goods and services has increased significantly. This improved performance is due to various factors, including the quantity and quality of production factors that continue to grow (Sukirno, 2013).

Agricultural Land Area

Land is where plants grow and agricultural products are produced. Land plays an important role in the agricultural industry, because land can affect labor absorption, so the area of land use is very important for industrial processes (Istiana et al., 2023). Controlled land that has been used for agricultural purposes in the last 12 months is called agricultural land. This land includes rice fields, fields, ponds, plantations, forests and grasslands (Andriyani & Aznuriliana, 2022). Land is one of the elements of production, according to (Sukirno, 2013), land is defined as an area of the earth's surface that is not covered by air or that can be used for living, farming, and preservation of natural resources. The size of agricultural land can have an impact on the amount of labor absorbed by the agricultural sector.

Human Development Index

The Human Development Index is a tool used to measure the success of human development, which consists of a number of fundamental factors that affect a person's quality of life and in turn, their productivity. The new growth theory highlights the important role of government participation in promoting development, especially in developing human resources (HR) and increasing overall human productivity. Through investments aimed at the education sector, the main objective is to improve the quality of human capital as reflected in the growth of individual skills and knowledge (Arizal & Marwan, 2019).

Conceptual framework

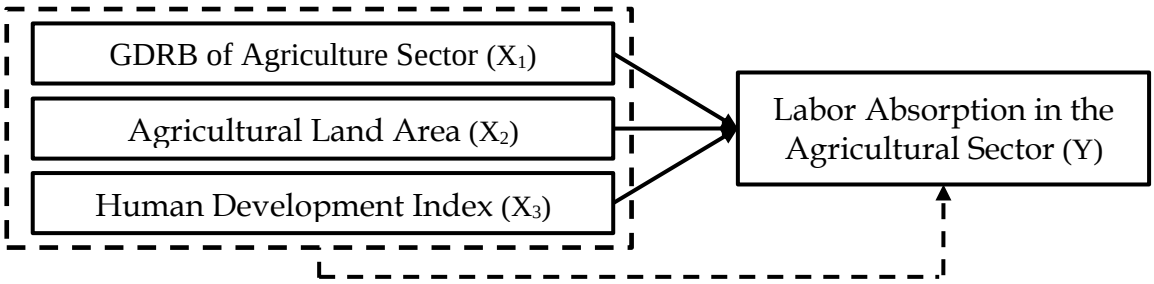

Figure 1. Conceptual Framework

Research Hypothesis

Based on the theory and the relationship between the research objectives, the framework for the formulation of theoretical problems and previous research, the hypothesis in this study is that it is suspected that agricultural GDP, agricultural land area and HDI have a significant effect on the absorption of agricultural sector labor.

METHODOLOGY

The method used in this research is quantitative research and descriptive analysis using secondary data, namely panel data. Panel data is a combination of data time series and data cross section for the period 2018-2022 (Ekananda, 2016). The research data were obtained from the Jambi Province Central Statistics Agency (BPS) and Regency/City in Jambi Province. The data used in this study are data on the number of agricultural sector workers, agricultural sector GRDP data, agricultural land area and HDI data. The model used is as follows:

$$\mathbf{LOG(PTKSPit) = \beta_0 + \beta_2 LOG(PDRBSPit) + \beta_2 LOG(LLPit) + \beta_2 IPMit + \varepsilon_{it}}$$

Description :

PTKSP	= Agricultural Labor Absorption
PDRBSP	= Gross Regional Domestic Product of Agriculture Sector
LLP	= Agricultural Land Area
HDI	= Development Index
β0	= Intercept or constant
β1, β2, β3	= Regression coefficient
ε	= error term / degree of model error

RESEARCH RESULT

Development of Agricultural Sector Labor in Regency/City in Jambi Province Absorption

Labor in the agricultural sector is very important because it can absorb a lot of labor that contributes to the production of food and other industrial raw materials. Labor in the agricultural sector is very important not only for the production process but also to support other sectors. When viewed by region, there are significant differences in the number of workers in the agricultural sector. The district with the highest number of workers is Tebo, which in 2022 was recorded to have 117,293 workers in this sector. This figure has increased considerably especially in 2020, with growth reaching 18.9%, indicating an expansion in the agricultural sector in regionthis . The main factors contributing to this high figure are the large amount of agricultural land available and the dominance of the plantation sector, especially rubber and oil palm, which are still the mainstay of the region's economy.

On the other hand, the lowest number of agricultural sector workers was recorded in Sungai Penuh City, with only 9.662 workers in 2022. This is due to the characteristics of the city, which is more dominated by the service and trade sectors than the agricultural sector. With limited agricultural land, it is not surprising that fewer workers are absorbed in this sector compared to other regions in Jambi Province. Besides Sungai Penuh City, Jambi City also has a low number of workers in the agricultural sector, which is only 12.184 people in 2022. As the provincial capital, Jambi City is more developed in the service, trade, and industrial sectors, so that the agricultural sector is no longer the main labor absorber, This is based on the strategic potential of Jambi city as a trade center and regional government center (Parmadi et al., 2020).

Table 2. Development of Agricultural Sector Labor Absorption in Regency/City in Jambi Province 2018-2022

Region	Year					Average
	2018	2019	2020	2021	2022	
Kerinci	78.690	75.854	86.134	83.452	92.910	83.408
Merangin	102.100	102.281	99.148	101.353	102.553	101.487
Sarolangun	75.862	65.019	63.943	62.016	68.247	67.017
Batang Hari	59.643	55.163	65.206	69.387	67.084	63.297
Muaro Jambi	91.089	88.485	94.987	96.094	114.282	96.987
Tanjabtim	78.431	80.040	85.310	80.307	84.511	81.720
Tanjabbar	100.688	102,844	114.155	110.031	93.127	104.169
Tebo	119.261	105.215	105.734	104.447	117.293	110.390
Bungo	90.705	75.955	72.327	73.563	100.422	82.594
Kota Jambi	9.138	10.326	11.282	11.819	12.184	10.950
Kota Sungai Penuh	9.442	7.534	9.428	9.233	9.662	9.060
Provinsi Jambi	**815.049**	**768.716**	**807.654**	**801.702**	**862.275**	**811.079**

Source: BPS Jambi Province, 2023 (Data Processed)

Development of Agricultural GRDP in Regency /City in Jambi Province

One of the main benchmarks of economic conditions in a region at a certain period of time is GRDP which is calculated by summing up all economic sectors in the area in rupiah currency. According to (Hartono et al., 2018), good economic conditions will have an indirect impact on employment because in theory, an increase in output will encourage many workers to increase production. The sum of the added value of goods and services produced by various production units in the agricultural sector within a certain period of time (one year) is known as the GRDP of the agricultural sector (food crops, horticulture, plantations and livestock) at constant prices.

When analyzed by region, Tanjung Jabung Barat Regency recorded the highest agricultural sector GRDP with an average of Rp6,906,688 million over the last five years. This explains that the agriculture, forestry and fisheries sector of Tanjung Jabung Barat Regency is a sector that is warming to its regional economic growth rate even though the region's market share is relatively smaller than the national average (Munthe et al., 2019). Meanwhile, the lowest agricultural sector GRDP is found in Jambi City with an average of only IDR182,364 million. This is because Jambi City concentrates more economic activities on business activities, services and trade. Related to the shifts that occur in the sectors that shape economic activity in Jambi City, the need for development and attention for less productive sectors is carried out by empowering the population in the labor force range according to age and type of work (Simamora, 2022).

Table 3. Development of Agricultural GRDP in Regency/City in Jambi Province 2018-2022

Region	Year					Average
	2018	2019	2020	2021	2022	
Kerinci	3.135.348	3.233.614	3.236.365	3.240.245	3.346.634	3.238.441
Merangin	4.609.023	4.753.789	4.836.484	5.071.166	5.407.498	4.935.592
Sarolangun	2.788.965	2.876.090	2.920.605	2.958.776	3.086.480	2.926.183
Batang Hari	4.337.824	4.535.538	4.608.804	4.732.552	4.892.784	4.621.500
MuaroJambi	6.402.610	6.719.670	6.810.091	7.105.889	7.480.085	6.903.669
Tanjabtim	2.674.730	2.753.590	2.823.630	2.827.190	2.897.870	2.795.402
Tanjabbar	6.444.900	6.731.150	6.792.290	7.098.490	7.466.610	6.906.688
Tebo	4.964.878	5.190.079	5.315.227	5.506.730	5.648.601	5.325.103
Bungo	2.394.647	2.511.597	2.580.929	2.672.373	2.790.236	2.589.956
Kota Jambi	195.980	190.880	189.620	166.650	168.690	182.364
Kota Sungai Penuh	237.212	238.206	242.929	238.843	247.830	241.004
Jambi Prov.	**38.041.613**	**39.160.078**	**39.751.937**	**41.209.130**	**43.267.878**	**40.286.127**

Source: BPS Jambi Province, 2023 (Data Processed)

Development of Agricultural Land Area in Regency/City in Jambi Province

Land is where crops grow and agricultural products are produced. Land plays an important role in the agricultural industry, because land can affect labor absorption, so the area of land use is very important for the industrial process (Istiana et al., 2023). Controlled land that has been used for agricultural purposes in the last 12 months is called agricultural land. This land includes rice fields, fields, ponds, plantations, forests and grasslands (Andriyani & Aznuriliana, 2022). Land is one of the elements of production, according to (Sukirno, 2013), land is defined as an area of the earth's surface that is not covered by air or that can be used for proper living, farming, and preservation of natural resources. The size of agricultural land can have an impact on the amount of labor absorbed by the agricultural sector.

The size of the business is determined by the area of agricultural land, the larger the area of land used, the greater the business (Soekartawi, 2010). Large agricultural land can accommodate a relatively large number of agricultural

workers, on the contrary, narrow agricultural land can accommodate a relatively small number of agricultural workers.

When viewed by region, the highest agricultural land area on average over five years is in Merangin Regency, which is around 185,815 hectares. With an area of 7,679 km² or around 15.31 percent of the Jambi Province area, Merangin District is the largest district in Jambi Province (BPS, 2023). The regency consistently has a large agricultural land area, although it has experienced some fluctuations, with a significant increase in 2019 by 35.29% compared to the previous year. In contrast, Jambi City recorded the lowest agricultural land area, with an average of only 3,341 hectares. This is because Jambi City is an urban area that is more oriented towards the service and trade sectors compared to the agricultural sector (Simamora, 2022).

Table 4. Development of Agricultural Land Area in Regency/City in Jambi Province 2018-2022

Region	Year					Average
	2018	2019	2020	2021	2022	
Kerinci	151.197	148.433	99.934	97.337	96.989	118.778
Merangin	148.189	200.483	199.007	189.943	191.455	185.815
Sarolangun	79.334	61.793	61.852	53.061	44.203	60.049
Batang Hari	79.523	69.816	70.968	80.765	86.281	77.471
Muaro Jambi	99.908	87.672	92.215	89.814	89.363	91.794
Tanjabtim	36.680	39.178	53.597	45.640	44.360	43.891
Tanjabbar	28.106	18.389	17.851	15.152	10.741	18.048
Tebo	96.152	95.732	97.464	107.400	111.139	101.577
Bungo	120.848	120.039	119.829	114.542	113.154	117.682
Kota Jambi	4.213	3.916	2.692	2.673	3.213	3.341
Kota Sungai Penuh	21.254	9.721	10.374	8.905	9.615	11.974
Jambi Province	**865.492**	**855.183**	**825.781**	**809.274**	**801.518**	**831.450**

Source: BPS Jambi Province, 2023 (Data Processed)

Development of Human Development Index of Regency / City in Jambi Province

Affect a person's quality of life and in turn, their productivity. The new growth theory highlights the important role of government participation in promoting development, especially in developing human resources (HR) and increasing overall human productivity. Through investments aimed at the education sector, the main objective is to improve the quality of human capital as reflected in the growth of individual skills and knowledgeThe Human Development Index is a tool used to measure the success of human development, which consists of a number of fundamental factors that (Arizal & Marwan, 2019).

The highest average HDI was recorded in Jambi City with an average of 78.06 during the 2018-2022 period. As the capital city of the province, Jambi City has bette infrastructure than other regions, as well as greater access to education,

health services, and employment in the services and trade sectors. These factors contribute to the high HDI rate in Jambi City compared to other regions in the province. There is also an indicator of Life Expectancy (UHH) that increases every year. This indicates that the better the level of public health, the higher the contribution to the city's economy (Permana et al., 2020). Meanwhile, the HDI lowest was recorded in East Tanjung Jabung Regency with an average of 64.47 percent. East Tanjung Jabung Regency has had the lowest HDI since 2010. Although every year it has increased, when compared to other districts the HDI figure in this district is quite different. Infrastructure that has not developed optimally and the low level of education of the population are the main factors that cause HDI growth in this area to be slower than other regions (BPS, 2022).

Table 5. Development of Human Development Index of Regency/City in Jambi Province 2018-2022

Region	Year					Average
	2018	2019	2020	2021	2022	
Kerinci	70,59	70,95	71,21	71,45	71,99	71,24
Merangin	68,81	69,07	69,19	69,53	69,98	69,32
Sarolangun	69,41	69,72	69,86	70,25	70,89	70,03
Batang Hari	69,33	69,67	69,84	70,11	70,51	69,89
Muaro Jambi	68,34	69,01	69,18	69,55	70,18	69,25
Tanjabtim	63,33	63,92	64,43	64,91	65,77	64,47
Tanjabbar	67,13	67,54	67,54	68,16	68,79	67,83
Tebo	68,67	69,02	69,14	69,35	69,78	69,19
Bungo	69,42	69,86	69,92	70,15	70,55	69,98
Kota Jambi	77,41	78,26	78,37	79,12	79,58	78,55
Kota Sungai Penuh	74,67	75,36	75,42	75,70	76,17	75,46
Jambi Province	**70,65**	**71,26**	**71,29**	**71,63**	**72,14**	**71,39**

Source: BPS Jambi Province, 2022 (Data Processed)

Contribution of Agriculture Sector to Total GRDP

The contribution of the agricultural sector to GRDP reflects its strategic role as the backbone of the regional economy, especially in agrarian-based regions such as Jambi Province. The plantation subsector is the subsector with the highest percentage of 18.17 percent in 2022. This is due to the dominance of superior commodities such as oil palm and rubber, the size of the land, and the high value of exports and processing industries that increase added value. Meanwhile, the subsector with the lowest percentage is the agricultural and hunting services subsector at 0.24 percent in 2022. This is because economic activity in this sector focuses more on primary production, such as crops, rather than supporting services. The low development of supporting services such as consulting, technology and logistics has limited the added value of this subsector. In addition, many supporting services are still small-scale or informal, so they are not recorded significantly in GRDP.

Table 6. Contribution of Agriculture Sector to ADHK GRDP of Regency/City in Jambi Province in 2018-2022

No.	Business Field	Contribution (%)				
		2018	2019	2020	2021	2022
1.	Food Crops	2,06	1,83	1,89	1,60	1,41
2.	Horticulture	2,86	2,86	2,85	2,81	2,83
3.	Plantation	17,18	17,06	17,52	17,97	18,17
4.	Livestock	1,16	1,17	1,14	1,12	1,15
5.	Agricultural and Hunting Services	0,24	0,23	0,24	0,24	0,24
6.	Forestry and Logging	1,18	1,18	1,26	1,10	1,05
7.	Fisheries	1,94	1,78	1,74	1,94	1,89

Source: Secondary Data Processing Results, 2024.

DISCUSSION

Quantitative Analysis Results

Estimating the panel data model is the first step that needs to be done to fulfill the second objective of this research. The three panel data models that will be used for testing have been regressed using the description of the processed results of EViews 12 as follows :

Table 7. Estimation Results of Selected Model Panel Data Regression Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.45828	3.578604	3.201886	0.0026
LOG(PDRBSP)	-0.537918	0.261542	-2.056713	0.0461
LOG(LLP)	0.085592	0.067245	1.272838	0.2102
IPM?	0.092163	0.025304	3.642266	0.0008
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.993382	Mean dependent var		10.97140
Adjusted R-squared	0.991284	S.D. dependent var		0.863233
S.E. of regression	0.080591	Akaike info criterion		-1.983538
Sum squared resid	0.266289	Schwarz criterion		-1.472580
Log likelihood	68.54729	Hannan-Quinn criter.		-1.785946
F-statistic	473.4275	Durbin-Watson stat		2.016920
Prob(F-statistic)	0.000000			

Source: Data ProcessingEViews 12 , 2024

From the table above, the following estimation results are obtained:

LOG(PTKSPit) = 11.45828 - 0.537918LOG(PDRBSPit) + 0.085592LOG(LLPit) + 0.092163 IPMit + εi

From the results of model (2) panel data regression, a constant value of 11.45828 is obtained, which means that if the variables of agricultural sector

GRDP, agricultural land area, and HDI are considered constant, then the absorption of agricultural sector labor during the study period is 11.45 percent. The test results show that together the variables of agricultural sector GRDP, agricultural land area and HDI have a significant effect on agricultural sector employment during the 2018-2022 period. Because the Prob value (F-statistic) is smaller than the significance level α = 0.05 (0.000000<0.05). Meanwhile, the coefficient of determination (R2) is 0.993382. This shows that the effect of the independent variable on the dependent variable is 99.33 percent, while the remaining 0.67 percent is explained by other variables not used in the research model.

Effect of Agricultural GRDP on Agricultural Labor Absorption

Based on the results of data processing obtained, the agricultural sector GRDP variable has a negative effect on the absorption of district/ city agricultural sector labor in Jambi Province for the 2018-2022 period with a P-value of 0.0461 and a coefficient of -0.537918. This means that every increase in agricultural sector GRDP of 1 million rupiah will cause a decrease in agricultural sector employment of 0.53 percent.

These are also in accordance with researchresults (Sakdiyah & Taufiq, 2023) on the analysis of labor absorption in the agricultural sector in the lamongan district. This research shows that labor absorption in the agricultural sector is negatively correlated with Gross Regional Domestic Product (GRDP) in the agricultural sector. This means that when the GRDP of the agricultural sector increases, labor absorption tends to decrease, and vice versa. This is because, although Lamongan Regency still holds the largest agricultural sector GRDP role, the main occupational structure of the Lamongan community has changed from year to year. Where more labor is absorbed in the industrial and service sectors compared to the agricultural sector. Every year the number of workers in the agricultural sector decreases due to the movement of labor from the agricultural sector to the non-agricultural sector. Therefore, David Ricardo's law of diminishing returns applies. David Ricardo argued that if the production process is carried out and one of the inputs is continuously produced in the same amount while the other inputs are fixed, then the output produced will initially increase. However, the output will eventually decrease (Yasrizal & Hasan, 2016). Therefore, the value of GRDP in the agricultural sector will decrease if the increase in labor absorption continues without being accompanied by other production variables, and vice versa.

Effect of Agricultural Land Area on Labor Absorption in the Agricultural Sector

Based on the results of data processing obtained, the agricultural land area variable has no effect on the absorption of regency/city agricultural sector labor in Jambi Province for the 2018-2022 period with a P-value of 0.2102 and a coefficient of 0.085592. This means that every 1 hectare increase in agricultural sector GRDP will cause a decrease in agricultural sector employment by 0.08

percent. This is due to the large number of workers who have switched to the plantation sector, which is the mainstay sector in Jambi Province. Many workers choose to work in this sector because their income is more stable than the food agriculture sector, so that even though agricultural land is getting wider, workers' interest in working in this sector will decrease.

This is in accordance with research on the analysis of labor absorption in the agricultural sector in Indonesia conducted by (Melati & Idris, 2023). The results showed that the size of paddy fields has a positive and insignificant influence on the absorption of labor in the agricultural sector. Thus, the amount of labor absorbed by the agricultural sector will not increase significantly along with the increase in the size of paddy fields.

These results are also supported by research on the analysis of labor absorption in the agricultural sector in Lamongan Regency conducted (Sakdiyah & Taufiq, 2023). The results showed that the agricultural land area variable had no partial effect on the absorption of agricultural sector labor. This does not mean that the expansion of agricultural land can have a positive influence on labor absorption in the agricultural sector. This is because agricultural land area plays an important role in agricultural production. Thus, the amount of agricultural land utilized is not only determined by its size, but also by other factors such as land conditions, utilization methods, and maintenance. This is based on the assumption that efforts to achieve a degree of efficiency will be reduced if the enlarged land area is not matched by the quality of labor, the carrying capacity of productivity, and the weather or climate. Thus, efforts to improve farming efficiency can be influenced by the size of the farm.

Effect of HDI on Agricultural Labor Absorption

Based on the results of data processing obtained by the human development index variable, it has a positive and significant influence on the absorption of agricultural sector labor in districts/cities in Jambi Province with a P-value of 0.0008 and a coefficient of 0.092163. This means that every increase in the human development index by 1 percent will cause an increase in the absorption of agricultural sector labor by 0.09 percent.

This result is in line with research on the effect of GRDP, MSE, HDI on labor absorption in West Java districts/cities 2010-2020 conducted (Hafiz & Haryatiningsih, 2021). The findings of this study indicate that HDI has a positive and significant effect on labor absorption. The world of work requires skills and personal qualities, so factors such as education and health must also be considered to attract quality human resources. The higher the quality of human resources, the more advanced the business will be and the more output and profits that can be generated for the new branch of the company which will absorb labor.

These results are also in accordance with research conducted by (Pratama & Hidayah, 2023) on the determinants of agricultural sector labor absorption in Central Java Province with a panel data approach for the period 2010-2021. The estimation results explain that the human development index has a positive and significant effect on the agricultural sector workforce, HDI is a determining component in the growth of a qualified labor force and preparing workers to enter the world of work, with an increase in HDI it will increase and encourage creativity and technological ideas to advance the agricultural sector. In accordance with the opinion of Todaro and Smith (2012), that human capital can be measured through the fields of education and health. Education can create added value for individuals.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The average development of agricultural sector GRDP in 2018-2022 is 3.98 percent, then the average development of agricultural land area in the 2018-2022 period is -1.90 percent, followed by HDI with an average of 71.39 percent in the 2018-2022 time span and the average development of agricultural sector employment in the 2018-2022 period is 1.55 percent.

Based on panel data regression processing, the Fixed Effect Model (FEM) is the best model to use in this study. Jointly, agricultural sector GRDP, agricultural land area and HDI have a significant effect on the absorption of agricultural sector labor in the Regency / City in Jambi Province. While partially, the agricultural sector GRDP variable has a negative and significant effect, the agricultural land area variable has no significant effect, the HDI variable has a positive and significant effect on the absorption of agricultural sector labor in the Regency / City in Jambi Province in 2018-2022. The magnitude of the influence of agricultural sector GRDP, agricultural land area and HDI on the absorption of agricultural sector labor is 99.3 percent, while the remaining 0.67 percent is influenced by other variables that are not included in this regression equation model.

Recommendations

In order to increase the agricultural sector's GRDP, local governments are expected to support policies to modernize and diversify the agricultural sector by providing farmers with training in farm management and agricultural technology, and prioritizing agricultural infrastructure development to maximize sustainable land use. Policymakers should also concentrate on improving HDI through health and education initiatives that can improve the capabilities of the workforce in the agricultural sector, such as funding vocational education and specialized training in line with the demands of the sector. Farmers and laborers should be actively involved in training programs organized by the government or private institutions to improve their knowledge and skills, so that they can adapt to new technologies and increase production.

ADVANCED RESEARCH

For further research, it is recommended to add new variables that have a more significant effect on the research model, so that the research results obtained can be more accurate and diverse which can then develop further research. In addition, it is possible to use other models in further research.

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