p-ISSN: 2723-6609 e-ISSN: 2745-5254
Vol. 5, No. 10 October 2024 http://jist.publikasiindonesia.id/

Analysis of the Effect of Labor Allocation on Changes in Farmer Household Income Due to the Development of the Gasing Industrial Zone in Talang Kelapa District, Banyuasin Regency

Muhammad Arbi*
Universitas Sriwijaya, Indonesia
Email: biaarka@gmail.com*

*Correspondence

Keywords: Labor Hours; Farmers' Household Income; Industrial Estate

ABSTRACT

Banyuasin Regency has experienced rapid industrial growth, including the Gasing Industrial Estate in Gasing Village, Talang Kelapa District. This study analyzes farmer household labor allocation and its effect on total household income due to nearby industrial activities. This research uses the survey method through observation, interviews, and a literature study and is presented descriptively and analytically. The results of this study indicate that the average allocation of farmer household labor in rice farming is 55.45 HOK per hectare per year. Meanwhile, the allocation of labor of farm household members from non-farm activities derived from the existence of activities around the location of the growing industrial area is 213.71 HOK per year. Farmer household income from rice farming by calculating family labor wages is Rp. 4,995,843.48 per hectare per year with an average farmer income of Rp. 10,667,225.12 per hectare per year, while rice farming income that does not account for labor wages is Rp. 3,413,163.98 per hectare per year with an average income of Rp. 11,458,564.87 per hectare per year. Furthermore, from the results of simple linear regression analysis, it is known that the allocation of labor allocation has a significant effect on the total income level of farmer households living around the gasing industrial area in Gasing Village, Talang Kelapa Subdistrict, Banyuasin Regency.

Introduction

Banyuasin Regency is one of the regencies that has experienced rapid industrial growth compared to other regencies in South Sumatra. These industrial activities are scattered in several locations. Currently, there is also an industrial area, one of which is called the Gasing Industrial Estate, located in Talang Kelapa Subdistrict, Banyuasin Regency. Industrial activities generally impact the region's economic progress, including contributing to the value of GRDP. Based on data from 2022, GRDP at current prices in Banyuasin Regency amounted to 28,687.76 billion rupiahs, and the industrial sector became the second largest contributor after the agriculture, forestry and fisheries sector

with a contribution of 25.97 percent or 4,693.63 billion rupiahs (Direktorat Jendral Perkebunan, 2016; Fahmi, 2013).

The industrial sector still has an important role in developing the regional economy. The existence of both large and small industries will bring changes to the socio-economic conditions of the community. Rahayuningsih (2022) states that the existence of industry positively impacts the surrounding community's economy but also hurts community social conditions such as crime, inequality, consumptiveness, and shifting values. Meanwhile, Nawawi et al. (2022) state that the existence of industries has no real effect on the cultural conditions of the community. On the other hand, real proof is needed to determine whether the industry's existence is significant enough to be felt by the people around it.

Since 2012, the industrial zone has grown rapidly, attracting numerous investors to establish businesses in various sectors. One visible impact is the shift in work patterns among farmer households (Riswanto et al., 2024). Many have sought alternative sources of income outside agriculture, such as working in the industrial sector or starting small businesses around the industrial zone. This raises the question of whether the allocation of working hours in the industrial sector affects farmers' household income.

This is because labor allocation for activities in agriculture does not require intensive labor; it is only needed at certain times, such as in food crop farming activities, and plantations only allocate their labor to fertilization, weeding and harvesting. In connection with the allocation of labor required for agricultural activities, there is very little, so there is much free time owned by farmers. Farmers can utilize this free time to work various jobs outside of farming. Thus, farmers around the growing industrial area can increase household income. The allocation of labor directly affects the level of household income. Farmer household income can come from three main sectors: agriculture (on-farm), off-farm (agricultural business), and *non-farm*. Income from agriculture comes from farming (*on-farm) and agricultural businesses (off-farm*). In this case, farm income is one component of income that can be included *on the farm*. *On-farm income* is obtained through selling rice farms, oil palm plantations, and other farms. In contrast, *off-farm income* is obtained from working in plantation companies or agricultural industries, such as palm oil mills, rubber factories, and other agricultural businesses. Meanwhile, non-farm is income derived from working outside the agricultural sector, such as warehousing, electronic factories, and other types of businesses. However, labor allocation is sometimes not determined by the income conditions of farming households. This causes the allocation of labor to be unoptimal.

The description above shows that the income of farmer households around the industrial area is low if they only rely on business activities in agriculture. While farmers still have much free time, it is an opportunity to increase their household income. Therefore, the researcher is interested in examining changes in the allocation of farmer household labor time to the total income of farmer households due to business activities in the growing industrial area in Talang Kelapa District, Banyuasin Regency, South Sumatra Province. This research examines the relationship between working hours, type

of work, and household income among farmer households. Additionally, it will analyze how this new industrial sector affects the dynamics of farmer households, particularly in terms of labor allocation and changes in income sources. This study is expected to provide deeper insights into the economic impact of industrial activities on households living near the Gasing Industrial Estate.

Methods

The research was conducted in the community, especially farming households near the Gasing Industry area in Talang Kelapa Sub-district, Banyuasin Regency. Over the past five years, the growing industrial area has experienced developments in both the types of business activities and the allocation of land use for industrial activities. This attracts researchers to study how the industrial development in this area affects the economic conditions of the surrounding farming households. The phenomenon that occurs, among others, is that many farmer family members who work in addition to rice farming also work in the industrial sector. Therefore, by analyzing the allocation of labor, we can determine the condition of the income of farmer households around the location of the growing industrial area (Arikunto, 2021).

The data collected are primary and secondary. Primary data collection will be conducted in July 2024 through interviews completed with a questionnaire. Primary data will be collected in July 2024. Primary data was collected using a questionnaire under the main research objectives and the model of approach to the research objectives (Sugiyono, 2018). Primary data are farming costs, prices, receipts, rice farming income, labor and family income. Secondary Data Secondary data collection will begin in March - December 2024. Secondary data is collected through literature at relevant institutions at the village level, including village monographs, data leaflets of relevant institutions, and report documents considered important by the research objectives (Creswell & Creswell, 2018).

Results and Discussion

The research was conducted in the community, especially farming households near the Gasing Industry area in Talang Kelapa Sub-district, Banyuasin Regency. Over the past five years, the growing industrial area has experienced developments in both the types of business activities and the allocation of land use for industrial activities. This attracts researchers to study how the industrial development in this area affects the economic conditions of the surrounding farming households. The phenomenon that occurs, among others, is that many farmer family members who work in addition to rice farming also work in the industrial sector. Therefore, by analyzing the allocation of labor, we can determine the condition of the income of farmer households around the location of the growing industrial area.

Farmer Family Labor Allocation

The allocation of farmer family labour around the gasping industrial area involves using family labour (husband, wife and dependent family) in rice farming activities and labor allocation for business activities outside farming (Wibowo, 2021).

1. Rice Farm Labor Allocation

Rice farming is usually carried out from August when this month will generally enter the rainy season. The allocation of rice farming family labor consists of several activities, including weeding, fertilizing, pest and disease control, harvesting, drying, transporting, milling, and post-harvesting (Pesik et al., 2022; Saputra, 2021). Farmers not only remove weeds during weeding, but it is also time for pruning coffee plants. Labor plays an important role in various farming activities, where it is not only the head of the family who works but also assisted by children, wives and family members who depend on the head of the family. Most farmers do farming activities using family labor rather than outside the family. Still, at harvest time, for example, farmers need outside family labor to help carry out harvesting activities. The fruit is already ripe and rotten if they rely on family labor alone. Not only does harvesting require additional labor assistance for some farmers, but weeding also requires the help of outside family labor. Some farmers fully use outside family labor, from weeding to post-harvest. In more detail, the allocation of labor for rice farming in various activities ranging from weeding, fertilization, HPT control, harvesting, drying, transportation and post-harvest handling can be seen in Table 1.

Table 1. Average Allocation of Family Labor in Rice Farming

No.	Activity Type	Family Labor Allocation (HOK/year)			Total (Hok/ha/year)	Percentage (%)
		Adult Male	Mature Woman	Children		
1	Weeding	4,04	2,15	0	6,19	27,11
2	Fertilization	0,88	0	0	0,88	3,85
3	HPT Control	0,61	0	0	0,61	2,67
4	Harvesting	7,13	3,23	0	10,36	45,38
5	Drying	3,03	0,74	0	3,77	16,51
6.	Transportation	0,47	0	0	0,47	2,06
7	Post-harvest land clearing	0,55	0	0	0,55	2,41
Total		16,69	6,12	0	22,83	100

Based on Table 1, it can be seen that the labor allocation of farm family members in carrying out rice farming activities is 22.83 HOK per year. The largest allocation is in harvesting activities, 10.36 HOK per year or 45.38 per cent, while the allocation for land clearing activities after harvesting is the least, 0.55 HOK per year or 2.41 per cent.

2. Allocation of Labor Outside the Farm

Farmer household members also have other businesses besides agriculture, especially rice farming, which is an annual business or once a year, so they can still allocate labor to non-farming (Abidin, 2022). This is done to fill spare time and increase

family income, but in one family, a business is not only carried out by the head of the family because it can also be done by the wife and children who are old enough. The work types include opening stalls around the industrial area, motorcycle taxi drivers, factory laborers, night watchmen, construction workers, laundresses, domestic helpers, washers, and other jobs related to business activities around the growing industrial area. The allocation of labor in each non-farm activity varies depending on the business carried out; non-farms that have tied and fixed jobs, such as factory employees, factory supervisors, and security guards, have a larger and fixed labor allocation every day, and non-farms with jobs such as motorcycle taxi drivers around the industrial area, itinerant vegetable traders, masseurs, parking is done at certain times. The labor allocation in the services of laundresses, stalls, and builders is smaller than in jobs like security guards. Because the business of stalls and washers in the gaming industrial area is carried out almost every day, sometimes it is done from morning to evening., Still, this work can also be closed or not done temporarily if there are urgent activities. The following will explain in detail the type of work and labor allocation of farm household members for non-farm activities presented in Table 2.

Table 2. Average Family Labor Allocation By Non-Farm Work Type Group Around The Growing Industrial Area

No.	Type of Work	Men Adults	Women Adults	Children - Children	Total HOK	Percentage (%)
		1	0,75	0,5		
1	Warung	0	3.520	0	3.520	1.647
2	Ojek	271,42	0	0	271	127
3	Factory Laborer	274,29	0	0	274	128
4	Night Watch	156	0	0	156	73
5	Handyman	0	25,71	0	26	12
6	Factory Foreman	565,71	0	0	566	265
7	Builder	128,57	0	0	129	60
8	Factory Employee	260	520,00	0	780	365
9	Washerman	0	780,00	0	780	365
10	Scavengers	137,14	0	0	137	64
11	Factory Driver	38,57	0	0	39	18
12	Neighborhood helper	0	385,71	0	386	180
13	Vegetable Seller	120,01	0	0	120	56
14	Security guard	1091,44	0	0	1.091	511
15	Parking	60	0	0	60	28
	Total	3.103,15	5231,42	0	8.335	3.900

Average	79,57	134,13	0	213,71	100

Based on Table 2, it can be concluded that the family labor allocation of farmers living around the growing industrial area for non-farm activities amounts to 213.71 HOK per year. The highest family labor allocation is in running a stall business around the growing industrial area, with a labor allocation of 3,520 HOK per year or 42.23 percent. The stall business carried out by family members of farming households is usually carried out by the wife, where the stall starts to open at 07.00 until 19.00 WIB, but some are open only until 17.00 WIB. Off-farm farming for stall activities amounted to 9 household heads. The stall business can be run around the growing industrial area by setting up a hut or semi-permanent building so that the stall can be closed temporarily if there are urgent matters. The last allocation of family labor in running a masseur service business for workers around the growing industrial area is 26 HOK per year, or 0.30 percent of the total labor allocation in non-farm activities. This activity is generally carried out by women from farmer households where the activity is only carried out once a week with a labor allocation of about 2 hours.

Farmer Household Income

1. Rice Farming Income

Farm income is the total net income received by farmers from production. Farm income is the difference between farm receipts and the total production costs incurred by farmers (Pirngadi et al., 2023). Details of farm income obtained by rice farmers in Mulya Sari Village can be seen in the following table.

Table 3. Average Rice Farming Income

No.	Description	Average (Rp/ha/year)
1.	Farm Revenue	25.737.600
2.	Total Cost of Production	7.707.895
	Farm Income	18.029.705

Source: Primary data after processing, 2024

Based on Table 3. The average income of farmer households from rice farming activities is Rp. 25,737,600 per hectare per year, and the average total cost farmers must incur in rice farming activities is Rp. 7,707,895 per hectare per year. Thus, the average total income of farmer households from rice farming around the gasing industry area of Banyuasin Regency amounts to Rp. 18,029,705 per hectare per year. Farm income received by farmers is certainly different due to differences in the amount of land owned by farmers, production costs incurred, and the receipt of the results of farming activities.

If it is associated with the previous explanation of the income group of farmers, the average farm income received by rice farmers who live around the gaping industrial area of Rp. 18,029,705 is classified as moderate. This is based on the parameters of farm income benchmarks according to BPS (2014), which states that the moderate farm income group has farm income ranging from Rp.15,000,000 to Rp. 30,000,000,—per year.

2. Non-farm Income

In addition to having a livelihood in the agricultural sector, some people around the gasing industry area have other businesses such as opening stalls, moonlighting as laundresses, cooks, gardeners, cleaning services or other jobs around the gasing industry area. The wages they get are quite varied depending on the type of work or business they do. The following is the average income earned by farmer families from businesses and work activities outside the farm:

Table 4. Farm Family Members' Average Income from Non-Farm Work is Around The Topping Industry Area

No.	Type of Work	Revenue (IDR/year)	Total (person)	Total (Rp/year)
1	Warung	12.000.000	3	36.000.000
2	Ojek	10.500.000	4	42.000.000
3	Factory Laborer	24.000.000	4	96.000.000
4	Night Watch	18.000.000	2	36.000.000
5	Handyman	5.000.000	1	5.000.000
6	Factory Foreman	24.000.000	1	24.000.000
7	Builders	10.000.000	2	20.000.000
8	Factory Employee	28.000.000	3	84.000.000
9	Washerman	6.000.000	5	30.000.000
10	Scavengers	5.000.000	2	10.000.000
11	Factory Driver	24.000.000	3	72.000.000
12	Neighborhood helper	12.000.000	3	36.000.000
13	Vegetable Seller	10.000.000	2	20.000.000
14	Security guard	24.000.000	2	48.000.000
15	Parking	6.000.000	2	12.000.000
	Total	218.500.000	40	571.000.000
	Average	5.462.500	100	14.275.000

Table 4 shows that at least 15 types of business activities can be utilized by the surrounding community with industrial activities in the growing industrial area. The average income earned from business activities around the growing industrial area is Rp14,275,000 annually.

3. Total Farmer Household Income

The total income of farmer households living around the gasing industrial area includes income derived from rice farming activities and business activities outside farming by utilizing the opening of business opportunities around the gasing industrial area. The detailed data on the total income of farmer households around the growing industrial area can be seen in Table 5 as follows:

Table 5. Average total income of farm households around the gaming industry area

No.	Income Type	Total (IDR/year)	Percentage (%)
1	Rice Farming Income	18.029.705,-	55,81
2	Off-Farm Income	14.275.000,-	44,19
Total		32.304.705,-	100,00

The table above shows that the total income of farmer households living around the gasping industrial area generally comes from farm and non-farm income, which is earned by utilizing business opportunities around the industrial area. Amounted to approximately Rp32,304,705 per year. This proves that the company's presence in the community has positively impacted the community's economy.

The Effect of Labor Allocation on Family Income Levels

1. Coefficient of Determination $(R)^2$

The coefficient of determination (R^2) essentially measures how far the model can statistically explain variations. The results of the regression model calculation show that the coefficient of determination (R^2) obtained is 0.684. This means that changes in the labor allocation variable can explain the income variable (Y), which is 68.4%. This means that the labor allocation variable can explain the high and low or the size of income growth by 68.4% while the remaining 31.6% is influenced by other factors that are not observed or observed in this study. So that the model error = 1 - R^2 = 1- 0.684 = 0.316. The following can be seen in the coefficient of determination table (R^2) in Table 6.

Table 6. Table of Coefficient of Determination $(R)^2$

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827[a]	.684	.675	6.85274E6

a. Predictors: (Constant), Labor Allocation

2. Simultaneous Testing (F Test)

Simultaneous testing obtained a calculated F value of 79.973 (seen from the ANOVA value) with a significant level of 0.000. Meanwhile, the F table can be found in the statistical table at a significance of 0.05 where df1 = 1. Df2 = 37. Got an F table of 4.11. The conclusion is Fcount of 79.973> T table 4.11, which means that the labor allocation variable has a real effect on the size of the increase and decrease in farm household income. The following simultaneous testing (F test) can be seen in Table 7.

Table 7. F test

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.756E15	1	3.756E15	79.973	.000[a]
	Residuals	1.738E15	37	4.696E13		
	Total	5.493E15	38			

a. Predictors: (Constant), Labor Allocation

b. Dependent Variable: Revenue

3. Partial Testing (t-test)

Based on the t-test estimation, the workforce allocation variable count is 8.943. The t table can be found in the statistical table at a significance of 0.05 with df = n—k—1 or 39 - 1 - 1 = 37 (k is the number of independent variables). The t-table value is 1.684.

Table 8. The t-test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.899E6	1.973E6		-1.976	.056
	Labor Allocation	302904.132	33871.399	.827	8.943	.000

a. Dependent Variable: Revenue

Based on the estimation results of the influence of farmer labor allocation variables on farmer household income around the gasing industrial area has a parameter value of 302904.132 with a significant 0.000 equal to $\alpha = 0.0\%$, which means H1 is accepted and ho is rejected. This means that if the sample farmer increases the labor allocation by 1 HOK, the farmer's household income increases by 302904.132 Rupiah per year. This means that the farmer labor allocation variable has a real effect on farmer household income.

Conclusion

The results of this study indicate that the average allocation of farm household labor in rice farming is 55.45 HOK per hectare per year. Meanwhile, the allocation of labor of farm household members from non-farm activities derived from activities around the location of the gasing industrial area is 213.71 HOK per year. Farmer household income from rice farming by calculating family labor wages is Rp. 4,995,843.48 per hectare per year with an average farmer income of Rp. 10,667,225.12 per hectare per year, while rice farming income that does not account for labor wages is Rp. 3,413,163.98 per hectare per year with an average income of Rp. 11,458,564.87 per hectare per year. Furthermore, from the results of simple linear regression analysis, it is known that labor

allocation significantly affects the total income level of farmer households living around the Gasing industrial area in Gasing Village, Talang Kelapa District, Banyuasin Regency. This research recommends that local policymakers consider enhancing farmers' access to employment opportunities in the industrial and non-agricultural sectors. Providing skill training for farmer household members to optimize their working time in these sectors could also help significantly boost household income. Additionally, future research is recommended to explore other factors influencing household income, such as access to capital and agricultural technology.

Bibliography

Abidin, Z. (2022). *Paradigma Usaha Tani Tanaman Ternak Terintegrasi Optimal: Perspektif Sumber Daya Terbatas dan Musim Berbeda*. Penerbit Nem.

Arikunto, S. (2021). *Penelitian Tindakan Kelas: Edisi Revisi*. Bumi Aksara.

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th Edition). Sage publications.

Direktorat Jendral Perkebunan. (2016). *Statistik Perkebunan Indonesia*. Sekretariat Direktorat Jendral Perkebunan.

Fahmi, I. (2013). *Analisis Laporan Keuangan*. Alfabeta.

Nawawi, I., Ruyadi, Y., & Komariah, S. (2015). Pengaruh Keberadaan Industri terhadap Kondisi Sosial Ekonomi dan Bidaya Masyarakat Desa Lagadar. *Sosietas, 5*(2). https://doi.org/10.17509/sosietas.v5i2.1528

Pesik, N. H., Jocom, S. G., & Lumingkewas, J. R. D. (2022). Curahan Tenaga Kerja Petani pada Usahatani Padi Sawah di Desa Tumani Selatan Kecamatan Maesaan Kabupaten Minahasa Selatan (Farmer Labor Outpouring on Rice Field Business in Tumani Selatan Village, Maesaan Sub District South Minahasa Regency). *Journal of Agribusiness and Rural Development (Jurnal Agribisnis Dan Pengembangan Pedesaan)*, *4*(2), 201–213.

Pirngadi, R. S., Utami, J. P., Siregar, A. F., Salsabila, S., Lubis, W., & Intan, D. R. (2023). Analisis Pendapatan Petani Serta Faktor yang Mempengaruhi Produksi Padi Sawah di Kecamatan Baktinya Kabupaten Aceh Utara. *Jurnal Agrica, 16*(1), 1–14. https://doi.org/10.31289/agrica.v16i1.7423

Rahayuningsih, T. (2017). *Pengaruh Pembangunan Industri terhadap Kesejahteraan Sosial Masyarakat Sekitar Kawasan Industri di Indonesia*. Universitas Gadjah Mada.

Riswanto, A., Joko, J., Napisah, S., Boari, Y., Kusumaningrum, D., Nurfaidah, N., & Judijanto, L. (2024). *Ekonomi Bisnis Digital: Dinamika Ekonomi Bisnis di Era Digital*. PT. Sonpedia Publishing Indonesia.

Saputra, H. (2021). Analisis Kelayakan Mesin Combine Harvester dari Aspek Teknis, Finansial dan Sosial Budaya pada Usaha Tani Padi di Kabupaten Tulang Bawang, Provinsi Lampung. *Journal of Global Sustainable Agriculture*, *1*(2), 46–55.

Sugiyono. (2018). *Metode Penelitian Kuantitatif Kualitatif dan Staistika untuk Penelitian R&D*. CV. Alfabeta.

Wantari, W. (2022). Studi Dampak Usaha Penggilingan Batu terhadap Kondisi masyarakat di Desa Watukalangkari Kecamatan Rumbia Kabupaten Bomban. *JIDE : Journal Of International Development Economics*, *1*(01), 43–55. https://doi.org/10.62668/jide.v1i01.114

Wibowo. (2021). *Manajemen Kinerja* (4th edition). Rajawali Pers.

Yurnita, A. (2022). *Alokasi Tenaga Kerja Keluarga Petani dan Kontribusi Pendapatan Usahatani Duku Terhadap Total Pendapatan Rumah Tangga Petani di Desa Rasuan Kabuapten OKU Timur* [Skripsi]. Universitas Sriwijaya. (Tidak dipublikasikan).