



UDC 332; DOI 10.18551/rjoas.2023-12.25

COMPARATIVE ANALYSIS OF HOUSEHOLDS' INCOME OF OIL PALM AND NON-OIL PALM PLANTATION WORKERS OF KURIPAN SUB-DISTRICT, BARITO KUALA REGENCY, INDONESIA

Sila Afwan*, Fauzi Muhammad, Fajeri Hairin

Master's Program in Agricultural Economics, Faculty of Agriculture,
University of Lambung Mangkurat, Banjarbaru, South Kalimantan

*E-mail: afwansila24@gmail.com

ABSTRACT

Oil palm is a commodity expected to contribute significantly to the economy through the plantation industry. This industry has substantial potential to support economic growth and national development, particularly in terms of job creation. Barito Kuala Regency, situated under the provincial government of South Kalimantan, boasts a total oil palm plantation area of 21,582 hectares in 2022, distributed across almost all sub-districts, including Kuripan Sub-District. The presence of the oil palm plantation industry represents a significant opportunity for the local community to become the workforce, leading to a notable impact on the increased income of the surrounding population, especially in terms of household income growth. As indicated by Bangun (2018), the income of the community in Kuripan Sub-District has experienced a higher increase compared to other sectors. Apart from oil palm plantations, land use in Kuripan Sub-District includes settlements, forests, rice fields, and shrubland. Consequently, some communities utilize it for livelihoods beyond the oil palm sector, such as logging for galam wood, rattan harvesting, purun collection, and farming. They consider these activities sufficient to meet their daily household needs. Both the oil palm plantation sector and non-oil palm plantation sector have become the backbone of household livelihoods in Kuripan Sub-District, contributing to household prosperity. This research has the objective to analyze the structure and income differences between households working in oil palm plantations and those in non-oil palm plantations in Kuripan Sub-District, Barito Kuala Regency. The research data consist of primary and secondary data. Sampling was done using a simple random method, resulting in a sample of 79 households. The household income of oil palm plantation and non-oil palm plantation workers was calculated based on their occupations, and an analysis of income differences between the two groups was conducted using the independent sample t-test method. The annual household income of non-oil palm plantation workers is Rp 42,822,913/year, with the husband's income being Rp 34,659,826/year and the wife's income being Rp 8,163,087/year. The structure of household income is organized based on the type of work, with income details from galam wood seekers (64.34%), sand laborers (12.13%), purun craftsmen (9.94%), rattan leaf harvesters (7.50%), farmers (4%), daily casual laborers in oil palm (1.06%), and educators (0.49%). The test results show a probability value (sig.) of 0.002, which is smaller than the significance level of 0.01. Therefore, the conclusion is that there is a difference between the household income of oil palm plantation workers and non-oil palm plantation workers, rejecting H₀ and accepting H₁.

KEY WORDS

Comparative study, household, income, oil palm, non-oil palm.

Economic development refers to efforts aimed at improving the standard of living in a country, which can be measured by individual income levels. In addition to increasing national income, economic development also aims to enhance production efficiency (Syahza, 2017). In the process of economic development, the agricultural sector always plays a highly significant role, whether in developed or developing countries. In Indonesia, the agricultural sector is often regarded as the backbone of national development, with support from various strengths it possesses. The Gross Domestic Product (GDP) from the agricultural sector in



Indonesia reached 13.77% in 2020, ranking second after the manufacturing sector, which reached 19.88% (BPS, 2020). One of the significant agricultural sub-sectors, ranking first, is the plantation industry (BPS, 2020). The development of the plantation sub-sector is an integral part of the agricultural sector and national development efforts. The plantation sub-sector plays a significant role in supporting the Indonesian economy. Overall, the plantation sub-sector has played a role in reducing structural and cultural inequalities by increasing the income of farmers and communities in the vicinity.

Oil palm is one of the commodities expected to contribute to the economy through the plantation industry. Barito Kuala Regency, located under the administration of the South Kalimantan province, has an oil palm plantation area covering 21,582 hectares in the year 2022, distributed across almost all sub-districts.

Table 1 – Oil palm plantation area (hectares) in Barito Kuala Regency in the year 2021

No	Sub-district	Area (ha)
1	Tabunganen	11
2	Tamban	136
3	Mekarsari	50
4	Anjir Pasar	229
5	Anjir Muara	130
6	Alalak	2
7	Jejangkit	57
8	Belawang	74
9	Wanaraya	2083
10	Baramabai	277
11	Rantau Badauh	268
12	Cerbon	463
13	Bakumpai	73
14	Marabahan	681
15	Tabukan	491
16	Kuripan	65

Source: BPS (Central Statistics Agency). *Barito Kuala Regency in Figures, 2022*.

The Kuripan sub-district is one of the districts that have oil palm plantations. In essence, there are five land uses in the Kuripan sub-district: residential, plantation, forest, paddy fields, and thickets. Residential areas in each village are located along the Barito River, while the use of land for oil palm plantations is granted through an HGU (Business Use Right) owned by PT. Tasnida Agro Lestari and PT. Citra Putera Kebun Asri, covering nearly 50% of the total land area of the Kuripan sub-district.

The presence of oil palm plantations represents an opportunity for the local population to become employed, thus significantly impacting the income of the surrounding community, particularly in terms of household income improvement. Bangun (2018) revealed that the residents of the Kuripan sub-district experienced an increase in their income, surpassing income levels in other sectors.

Apart from oil palm plantations, the Kuripan sub-district also possesses forested areas and thickets rich in various natural resources. Consequently, some residents utilize these resources as livelihoods outside the palm oil sector, such as cutting galam wood, searching for rattan, and harvesting purun, activities that can be carried out year-round. They consider these activities sufficient for their daily household needs. There is also a small portion of land in the Kuripan sub-district dedicated to paddy fields; however, these fields are not suitable for rice cultivation due to frequent flooding, resulting in few residents willing to engage in paddy farming in the local village. In general, the population of the Kuripan sub-district predominantly engages in farming in other sub-districts. (Alfitri. 2010).

Both the oil palm plantation sector and sectors outside the oil palm plantation have become the backbone of household livelihoods in the Kuripan sub-district, providing household well-being. The objectives of this research are (1) to analyze the income structure of households working in the oil palm plantation and non-oil palm plantation sectors in the Kuripan sub-district of Barito Kuala and (2) to analyze the differences in income among



households working in the oil palm plantation and non-oil palm plantation sectors in the Kuripan sub-district of Barito Kuala.

METHODS OF RESEARCH

The research commenced from March to May 2023, encompassing all stages, from initial preparation to data collection, and concluding with its final report. The research was conducted in the Kuripan sub-district, Barito Kuala Regency.

The data used consists of both primary and secondary data. Household income data covers a one-year period. Primary data is obtained through various methods, such as direct observation at the research site, distribution of questionnaires to respondents, and direct interviews with workers in the oil palm and non-oil palm sectors in the Kuripan sub-district. Secondary data is used to support the primary data collected through literature review.

The initial step in the sampling process is to randomly select one village in the Kuripan sub-district as the sampling area, and then, from that village, 79 households are randomly chosen. The selected village is Jambu Baru.

Analyzing the income structure of households involved in oil palm plantation work and those not involved in oil palm plantation work begins with calculating each income based on their respective occupations. The income of oil palm plantation workers is calculated based on *take-home pay*, including wages, salaries, bonuses, and other income. For non-oil palm plantation workers, aside from agricultural activities, the calculation is based on a general income model (Halim. 1987):

$$PB = PK - B$$

Where: GPI = Gross Profit; NP = Net Profit; C = Costs incurred to obtain the income.

The income in agriculture is the result of revenue minus production costs (explicit costs), with the following formula. (Soekarwati. 2003):

$$\begin{aligned} TR &= Q \times P \\ I &= TR - TEC \end{aligned}$$

Where: TR = agricultural receipts (IDR); P = price of goods (IDR/kg); Q = production yield (kg); I = income (IDR); TEC = total explicit costs (IDR).

Then, household income is analyzed using the formula (Listiyandra, *et al.*, 2016):

$$It = Is + li + lo$$

Where: It = total household income (IDR); Is = husband's income (IDR); li = wife's income (IDR); lo = other sources of income (IDR).

To analyze the income differences between oil palm plantation worker households and non-oil palm plantation worker households, we will employ *an independent samples t-test*. The statistical hypothesis is as follows:

$$\begin{aligned} H_0: I_{pb} &= I_{pk} \\ H_1: I_{pb} &> I_{pk} \end{aligned}$$

The formula for the difference in household income is as follows:

$$t_{hit} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Where:

- \bar{x}_1 : Mean income of permanent oil palm plantation workers;



- \bar{x}_2 : Mean income of bamboo collectors;
- s_1^2 : Variance of permanent oil palm plantation workers;
- s_2^2 : Variance of bamboo collectors;
- n_1 : Number of permanent oil palm plantation workers;
- n_2 : Number of bamboo collectors.

The decision-making criteria are as follows:

- H_0 rejected = $t\text{-statistic} > t\text{-table } \alpha = 1\%$;
- H_0 accepted = $t\text{-statistic} \leq t\text{-table } \alpha = 1\%$;
- H_0 = There is no significant difference in household income;
- H_1 = There is a significant difference in household income.

RESULTS OF STUDY

The respondents in this research consist of households of both oil palm plantation workers and non-oil palm plantation workers in the Kuripan District. The research sample area within the Kuripan District is the Jambu Baru Village. A total of 79 households were selected as the sample. The characteristics of the respondents described in relation to the general overview include occupation, age, educational level, duration of employment, and the occupations of household members (wives).

There are various types of occupations among the respondents, both within and outside of the oil palm plantation sector.

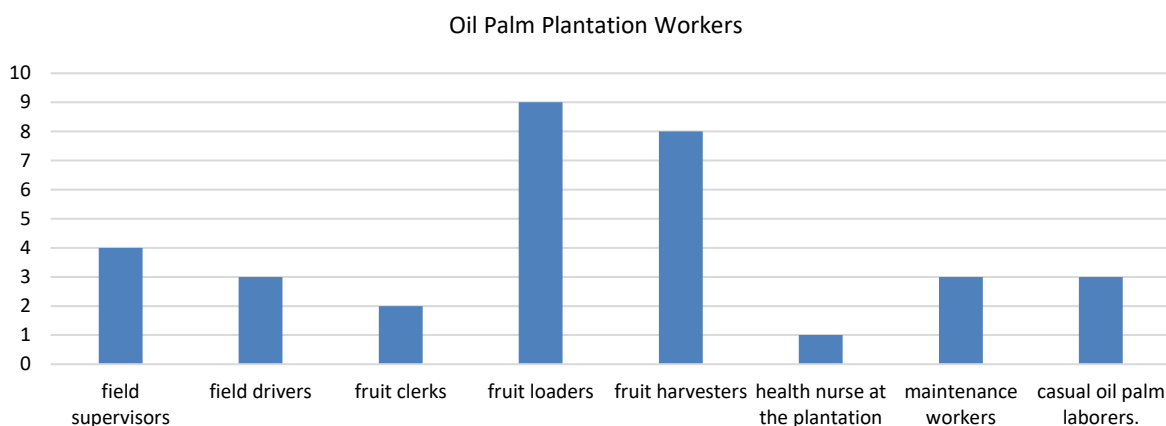


Figure 1 – Types of Occupations of Oil Palm Workers' Respondents

There are 33 oil palm plantation workers with various job positions, including 4 field supervisors, 3 field drivers, 2 fruit clerks, 9 fruit loaders, 8 fruit harvesters, 3 maintenance workers, 1 health nurse at the plantation, and 3 casual oil palm laborers.

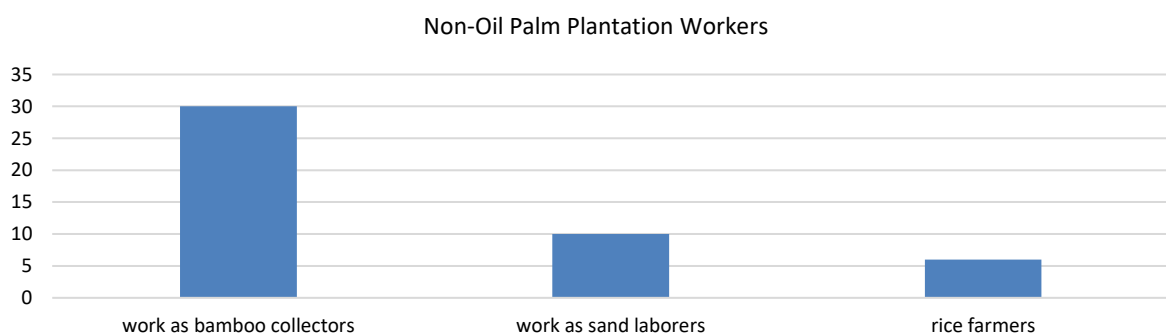


Figure 2 – Types of Occupations of Non-Oil Palm Workers' Respondents



Outside the oil palm plantation sector, there are a total of 46 workers divided into three groups. Thirty of them work as bamboo collectors, ten work as sand laborers, and the remaining six are rice farmers. Thus, the total number of workers outside the oil palm plantation sector is 46 people.

Age information has significant importance because differences in age influence knowledge, attitudes, and job quality in the performance of their duties. Age greatly affects the physical aspects of work, as good physical strength and extensive knowledge are highly beneficial.

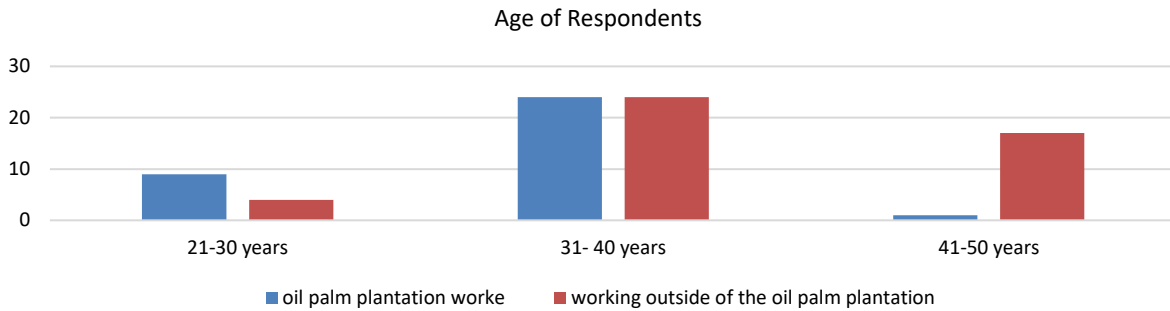


Figure 3 – Respondents' Ages

Among oil palm plantation worker respondents, the most common age group is 31-40 years, with a total of 24 individuals. Furthermore, in the 21-30 age group, there are 9 individuals, and those above 40 years old number only 1 individual. Meanwhile, among respondents working outside of the oil palm plantation sector, the highest age group is found in the 31-40-year range, with a total of 24 individuals. Additionally, in the 41-50 age group, there are 17 individuals, and in the 21-30 age group, there are 4 individuals. Therefore, both oil palm plantation workers and non-oil palm plantation workers have the highest number of respondents in the 31-40-year age group, totaling 24 individuals.

Education level has a significant impact on workers in both the oil palm and non-oil palm sectors, affecting job opportunities, the quality of work, income, and overall well-being improvement.

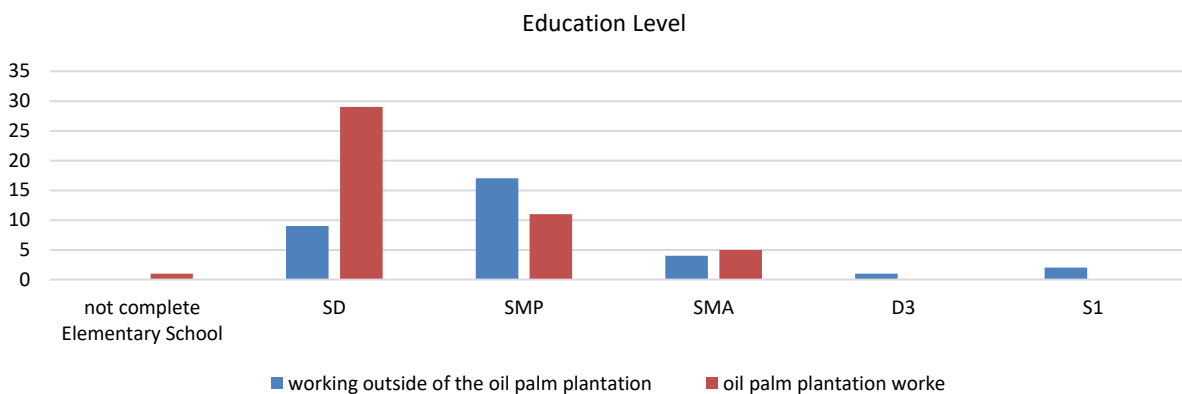


Figure 4 – Respondents' Educational Levels

Based on Figure 4, the majority of oil palm plantation workers have Middle School (SMP) education, followed by Elementary School (SD), High School (SMA), Bachelor's degree (Strata 1), and Diploma III. There are 17 individuals with SMP educational backgrounds, 9 individuals with SD and SMA backgrounds, 2 individuals with Bachelor's degrees (Strata 1), and 1 individual with a Diploma III degree. For non-oil palm plantation workers, the most common level of education is Elementary School (SD) with 29 individuals,



followed by Middle School (SMP) with 11 individuals, High School (SMA) with 5 individuals, and 1 individual who did not complete Elementary School (SD).

Experience in a job can enhance skills and resilience in workers. Typically, employees with longer work experience tend to possess a deeper knowledge.

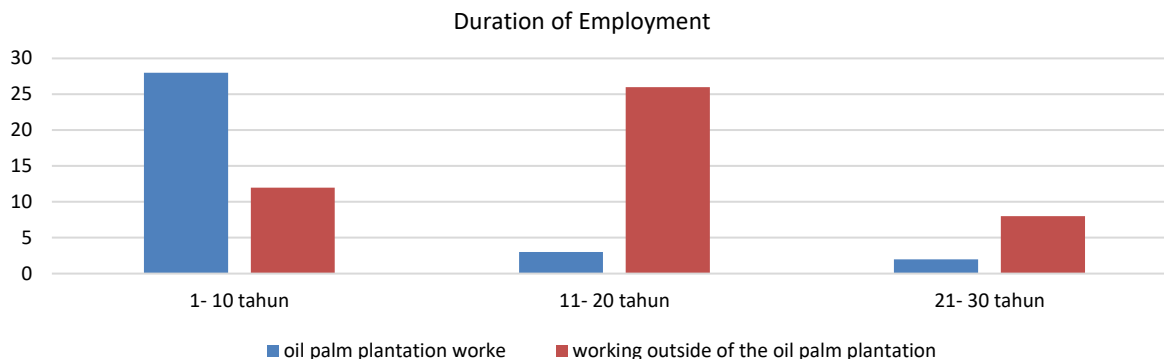


Figure 5 – Duration of Employment

The average duration of employment for oil palm plantation workers is 7.8 years. The majority of respondents have been engaged in their jobs for approximately 1-10 years, with 28 individuals, followed by 3 individuals in the 11-20 year range, and 2 individuals in the 21-30 year range. On the other hand, non-oil palm plantation workers have an average duration of employment of 15.6 years. The most common duration of employment for this group falls within the 11-20 year range, with 26 individuals, followed by 12 individuals in the 1-10 year range, and 8 individuals in the 21-30 year range.

An important factor in household income is the contribution of working wives to help the household's economy.

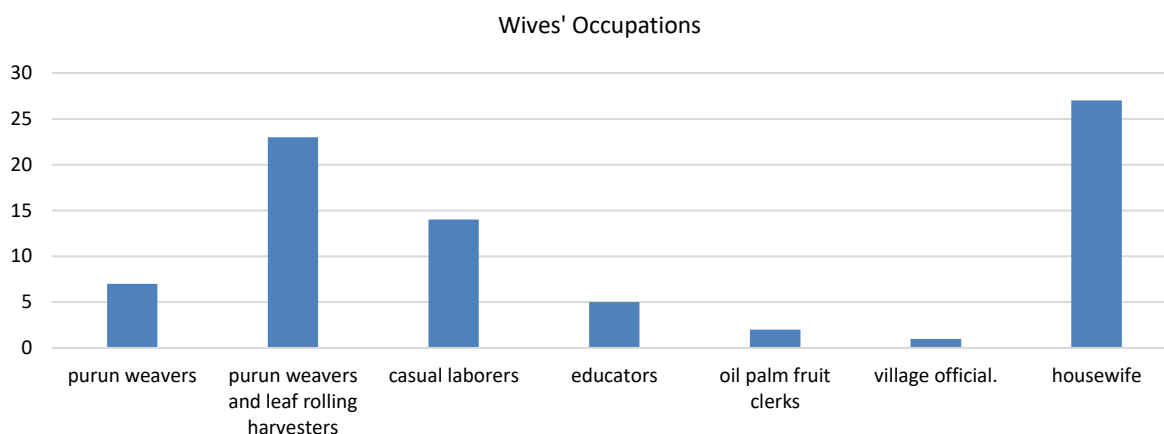


Figure 6 – Types of Household Members' (Wives') Occupations

Based on the figure above (Figure 6), there are 52 wives who also participate in employment. Out of this total, they consist of 7 purun weavers, 23 purun weavers and leaf rolling harvesters, 14 casual laborers, 5 educators, 2 oil palm fruit clerks, and 1 village official.

The income of permanent workers in the oil palm plantation is analyzed based on *Take Home Pay*, which is the income brought home and consists of basic salary and allowances. As a result, the average monthly income is Rp 3,366,667, with an average monthly allowance of Rp 70,000 and an annual allowance of Rp 6,733,334. In contrast to permanent workers, daily casual palm oil laborers do not receive allowances, and their income is



measured based on the number of working days each month. The average number of working days in the last year is 188 days, with an average daily wage of Rp 116,000. There are 30 permanent worker respondents and 3 non-permanent worker respondents in the oil palm plantation, with a total average income of Rp 45,594,667 per year.

In households of oil palm plantation workers, there are several wives who also work, either within the oil palm plantation as permanent workers or as daily casual laborers. The average income of wives of oil palm plantation workers is Rp 9,519,152 per year, resulting in a total average household income of Rp 55,113,818 per year.

The income structure of oil palm plantation worker households is organized based on income from various types of occupations. The dominant source of income comes from the oil palm plantation sector. This is due to the participation of wives in the oil palm plantation sector, which makes a significant contribution to the household income.

Table 2 – Income Structure of Oil Palm Plantation Worker Households

No	Occupations	Income (Rp)	Percentage (%)
1	Permanent oil palm plantation workers	1.523.200.000	85%
2	Daily casual palm oil laborers	188.732.000	10%
3	Educators	52.200.000	3%
4	Village officials	39.000.000	2%
	Total	1.803.132.000	100 %

Source: Primary Data (2023).

Permanent oil palm plantation workers hold the most dominant position with a total income of Rp 1,523,200,000 (85%), making them the primary contributors to the community's economy. This highlights the significance of the oil palm plantation sector in creating employment opportunities and income for the local population. Meanwhile, daily casual palm oil laborers, although earning lower income compared to permanent workers, still play an important role in supporting the local economy with a total income of Rp 188,732,000 (10%). Their presence reflects the flexibility within the palm oil employment sector that can accommodate daily work. Educators, with a total income of Rp 52,200,000 (3%), play a vital role in educating the younger generation. Additionally, village officials, with a total income of Rp 39,000,000 (2%), provide essential contributions in carrying out administrative tasks and serving the residents.

The occupations of the respondents outside the oil palm plantation include galam wood gatherers, sand laborers, and farmers. Income analysis for galam wood gatherers and farmers will be conducted first by determining the number of working days, production, revenue, production expenses, and income.

The income of galam wood gatherers is influenced by several factors, one of which is the number of working days in each month. The total average number of working days for galam wood gatherers in a year is 304 days, with an average of 6,998 pieces of wood successfully collected. The average selling price of galam wood is Rp 7,000 per piece, resulting in a total average annual income of Rp 48,988,333. The annual production expenses for galam wood gatherers amount to Rp 6,482,600. Therefore, the total average income for galam wood gatherers is approximately Rp 42,505,733 per year.

Farmers in the Kuripan District are rice farmers. The average rice production quantity is approximately 114 "blek" per year, with one "blek" equivalent to 20 liters, resulting in a total production of 2,280 liters per year. The selling price of rice is Rp 150,000 per "blek." The total income for farmers is approximately Rp 17,125,000 per year.

The production costs in rice farming include production facility costs, which encompass the use of fertilizers and pesticides, as well as external labor costs in the process of land preparation, seedling, planting, and harvesting. The average production cost for rice farmers is Rp 3,928,333 per year, and the total income of rice farmers is Rp 13,196,667 per year. Another occupation outside the oil palm plantation is as sand haulers, who regularly transport sand from around the Barito River to the sand base in Banjarmasin. The average annual income of sand laborers is Rp 24,000,000. With a total of 30 galam wood gatherer



respondents, 10 sand laborer respondents, and 6 rice farmer respondents, the total average income from all respondents in the last year reaches Rp 34,659,826.

Households of non-oil palm plantation workers involve wives who also work, both within and outside the plantation. They work as educators, purun crafters, and leaf girdle harvesters. Income as educators consists of a basic salary and allowances. The income of purun crafters and leaf girdle harvesters is influenced by the number of working days and natural conditions such as river tides.

Purun crafters can craft around 5 "kampil" when the river water recedes and approximately 7 "kampil" when the river water rises. The selling price of 1 "kampil" of purun is Rp 5,000. The average annual production of purun is 1,386 "kampil," resulting in total revenue of approximately Rp 6,931,500 per year. Expenses occur during the search for and cutting of purun, with an average total expense of approximately Rp 378,800 per year. The average income of purun crafters is Rp 6,552,700 per year.

Leaf girdle harvesters can only work during the dry season when the river water recedes. The average production of leaf girdle reaches 791.5 kg per year. The selling price per kilogram of leaf girdle is Rp 9,000, resulting in total income for leaf girdle harvesters of approximately Rp 7,123,696 per year. Production costs are related to the purchase of pesticides with an average usage of 8 bottles per year. The total average production cost is Rp 674,783, so the average income of leaf girdle harvesters is approximately Rp 6,448,913 per year.

The average income of wives of non-oil palm plantation workers is approximately Rp 8,163,087 per year. Therefore, the total average income of non-oil palm plantation worker households is approximately Rp 42,822,913 per year.

The structure of income in non-oil palm plantation worker households is organized based on income from various types of occupations.

Table 3 – Structure of Income in Non-Oil Palm Plantation Worker Households

No	Occupations	Income (Rp)	Percentage (%)
1	Galam wood gatherer	1.275.172.000	64.34%
2	Sand laborer	240.000.000	12.13%
3	Farmer	79.180.000	3.99%
4	Purun crafter	196.581.000	9.94%
5	Leaf girdle harvester	148.325.000	7.50%
6	Daily casual palm oil laborer	20.996.000	1.06%
7	Educator	9.600.000	0.49%
Total		1.969.854.000	100 %

Source: Primary Data (2023).

Galam wood gatherers constitute the primary source of income, accounting for 64.34% of the total income of non-oil palm plantation workers, with a total income of Rp 1,275,172,000 per year. This indicates that galam wood gathering activities play a significant role in the local economy, and workers in this sector may have a key role in supporting their families. Additionally, sand laborers have an income of Rp 240,000,000 per year (12.13%), while purun crafters earn Rp 196,581,000 per year (9.94%). Sand laborers play an important role in the local construction or development industry, while purun crafters may be involved in processing traditional products. Meanwhile, rice farmers have an income of Rp 79,180,000 per year (3.99%), leaf girdle harvesters earn Rp 148,325,000 per year (7.50%), and daily casual palm oil laborers have an income of Rp 20,996,000 per year (1.06%). Additionally, educators have an income of Rp 9,600,000 per year (0.49%).

Based on the testing, the income difference between the two households of workers obtained a t-count value (3.200), which is greater than the t-table value (2.37576) at 77 degrees of freedom and a significance level of 0.01. The probability value (*sig.*) of 0.002 is smaller than the significance level of 0.01, leading to the conclusion that the income of households with oil palm plantation workers is significantly higher than the income of households with non-palm oil workers. Therefore, we reject the null hypothesis (H0) and accept the alternative hypothesis (H1).



CONCLUSION

The annual household income of oil palm plantation workers is Rp 55,113,818, consisting of the husband's income of Rp 45,594,667 and the wife's income of Rp 9,519,152 per year. The structure of household income is organized based on the type of work, with details of income from permanent plantation employees at 85%, daily casual laborers in oil palm at 10%, educators at 3%, and village officials at 2%.

The annual household income of non-oil palm plantation workers is Rp 42,822,913, with the husband's income being Rp 34,659,826 and the wife's income being Rp 8,163,087 per year. The structure of household income is organized based on the type of work, with details of income from galam wood seekers at 64.34%, sand laborers at 12.13%, purun craftsmen at 9.94%, rattan leaf harvesters at 7.50%, farmers at 4%, daily casual laborers in oil palm at 1.06%, and educators at 0.49%.

The test results yielded a probability value (sig.) of 0.002, which is smaller than the significance level of 0.01. Therefore, the conclusion is that there is a difference between the household income of oil palm plantation workers and non-oil palm plantation workers, rejecting H₀ and accepting H₁.

SUGGESTIONS

For respondents employed in the palm oil plantation sector, it is expected that they can develop their skills and experience in this sector to enhance their income. Non-palm oil workers may need to consider opportunities to acquire additional education or training that can improve their skills and assist them in entering more lucrative job sectors. It is important for all households, regardless of their employment sector, to have sound financial planning. This includes budgeting, saving, and managing debt wisely. Every household can consider ways to diversify sources of income within the household. This may involve side businesses or investments that can help increase overall income.

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