Anjoro: International Journal of Agriculture and Business
Vol. 7 Issue 1, April 2026
p-ISSN: 2721-8678 | e-ISSN: 2721-7914. **DOI: 10.31605/anjoro.v7i1.5680**

Analysis of income, expenditure, and welfare of durian farmer households in Kemiri Village based on NTRPR

Mochammad Wisnu Wachidan*, Nuriah Yuliati, and Dona Wahyuning Laily

Departement of Agribusiness, Faculty of Agriculture, University of Pembangunan Nasional "Veteran" East Java, Surabaya, Indonesia

**Corresponding author's e-mail: wisnupro87@gmail.com*

Received November 9th, 2025; revised December 27th, 2025; accepted January 2nd, 2026

ABSTRACT

Kemiri Village relies on the plantation sector, especially durian, as its main commodity. The decline in durian farming income over the past two years has prompted farming households to seek additional sources of income through off-farm and non-farm businesses. This study aims to (1) analyze the income and expenditures of durian farming households and (2) analyze the welfare levels of durian farming households. A quantitative descriptive method with stratified random sampling was employed based on the number of durian trees taken from 50% of the population, resulting in a sample of 53 respondents. The data analysis used included income, expenditure, contribution, and the Net Top Replacement Price Ratio (NTRPR) analysis. The results showed that the annual income from durian farming was IDR 311, 926, 385. Household expenditures amounted to IDR 43, 431, 073 per year, including food and non-food items. The welfare level of durian farmers using NTRPR with a value of 5.5 indicates that NTRPR > 1 means that, on average, farmers are able to meet the needs of their households from their agricultural and non-agricultural businesses. The results of this study highlight the importance of strengthening durian agribusiness and diversifying income to maintain the sustainable welfare of farming households in Kemiri Village.

Keywords:
Durian, Expenditures, Household, Income, Welfare

1. Introduction

The horticulture sub-sector is one of the drivers of the economy and has great potential in East Java. The horticulture sub-sector includes several types of plants, such as fruits. Among the various fruit commodities from the horticulture sub-sector in East Java is durian. Durian fruit is the most commonly used part of the plant, consisting of three main components: flesh, seeds, and skin. Many people enjoy ripe durian flesh because of its distinctive aroma and attractive yellow color [1].

East Java Province is known as the largest producer of durian, with a production of 488,356 metric tons. This figure is the highest nationally and makes East Java Province one of the provinces with the highest durian production in Indonesia. The region with the highest durian production in East Java is Pasuruan. According to the BPS [2], Pasuruan Regency was the largest producer of durian in 2021 and 2022, with a production of 1,082,920 quintals and 1,134,078 quintals, respectively. These data show that Pasuruan Regency is the highest producer of durian in East Java Province.

Pasuruan Regency had the highest durian production rate, as seen in the Puspo district. Durian is one of the agricultural commodities cultivated by farmers in Pasuruan Regency. The Puspo District is one of the main durian-producing areas in Pasuruan Regency, with a production of 120,863 quintals and a harvest area of 66,053 trees. This represents a significant advantage in terms of harvest area compared with other districts [3]. With its substantial contribution, the Puspo District has cemented

its position as one of the most important durian production centers in Pasuruan Regency. According to Pasuruan District Government [4], "Puspo District is one of the largest durian producing districts in Pasuruan Regency."

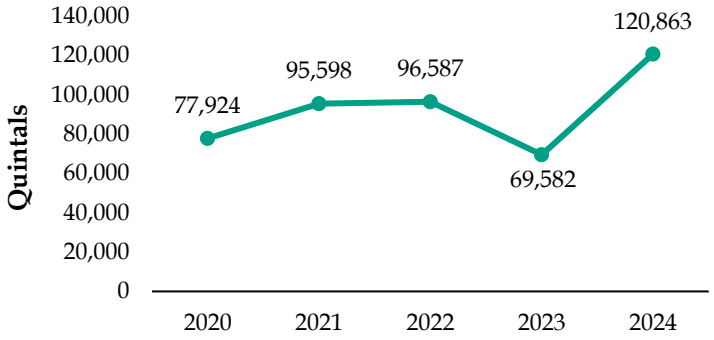

Figure 1. Durian production in Puspo District from 2020 to 2024 [3]

According to BPS [3], durian production in the Puspo District fluctuated, particularly in 2023 when it declined; however, it could increase again in 2024. The decline in durian production in Puspo, Pasuruan, may have been triggered by several factors, including suboptimal use of production inputs such as fertilizers, pesticides, and labor, climate fluctuations, pest and disease infestations, and unexpected natural conditions, which have caused a decline in production for durian farmers [5]. Kemiri Village in the Puspo District has great potential in horticulture, especially durian, as it is the main source of income for the people of Kemiri Village every harvest season. Kemiri Village is also one of the largest suppliers in the Puspo District for the Durian Festival [6].

Household welfare is directly linked to household income, which is a determinant of household welfare. The welfare level of farming households can be measured by comparing total income to household expenditures, known as the Farmer Household Income Exchange Rate (NTRPR). This calculation of the farm household income exchange rate considers all aspects, including the exchange rate of income against expenditures, production costs, food and non-food consumption costs, and total consumption [7]. According to the head of the farmer group in Kemiri Village, there has been a decline in durian income over the past two years. Therefore, the instability of income experienced by farming households has led them to seek additional sources of income through various on-farm, off-farm, and non-farm businesses to increase their income. Income from on-farm and off-farm activities is included in the agricultural sector, whereas non-farm income comes from economic activities outside the agricultural sector [8].

Based on the introduction, the researcher is interested in conducting a study entitled "Analysis of Durian Farmer Household Income and Expenditure in Improving Welfare in Kemiri Village, Puspo District, Pasuruan Regency." The researcher is interested in raising this issue because the contribution of durian affects the income of farmer households. This influence is not limited to achieving expected income targets but also includes the ability of households to meet their daily requirements. Therefore, durian income is an important indicator for assessing the welfare level of farmer households and measuring welfare based on the Farmer Household Income Exchange Rate (NTRPR). However, studies that specifically address durian

commodities using this approach at the village level are limited. Therefore, this study is important for filling the empirical gap through an integrated analysis of the income and expenditures of durian farmer households and the measurement of welfare levels based on NTRPR in Kemiri Village.

This study aims to analyze the income and expenditures of durian farming households in Kemiri Village and the welfare level of durian farming households in Kemiri Village. The impact of this research is expected to help durian farmers understand the income from durian to improve the welfare of durian farming households in Kemiri Village, Puspo District, Pasuruan Regency.

2. Methods

This study was conducted in July–August 2025 in Kemiri Village, Puspo District, Pasuruan Regency. Data on durian farming income covered one production cycle during the February–May 2024 harvest season, whereas household expenditure data were collected over a period of one year. The research location was determined purposively, considering that durian is the main commodity and there is an active group of farmers, Ramadani et al. [9]. Sampling was conducted using stratified random sampling with a population of 108 durian farmers grouped based on the number of productive trees (>5 years). A sample of 53 farmers (50% of the population) was taken to ensure the representativeness of each stratum and minimize sampling error. The tree ownership categories consisted of low strata (5–61 trees), medium strata (62–118 trees), and high strata (119–175 trees), with 29, 17, and 7 respondents, respectively. This proportion was considered sufficient to minimize sampling error and capture the variation in farm size among durian farmers.

The sample in this study consisted of farmers who grew durian and had other businesses outside of durian farming. The data analysis included an analysis of farmers' household income and expenditures, the contribution of durian income, and the welfare of farmers' households.

2.1. Analysis of Farmers' Household Income and Expenditure

The evaluation of income from durian cultivation considers the overall expenses that farmers face throughout a growing season, including fixed and variable costs. According to Mustari et al. [10], when these two costs are used, they result in costs that can be calculated using the following formula:

$$I = TR–TC \quad (1)$$

$$TR = P \times Q \quad (2)$$

$$TC = FC+VC \quad (3)$$

Description:
I = Income
TR = Total Revenue
TC = Total Cost
P = Product selling price (IDR/unit)
Q = Number of products produced (Unit)
FC = Fixed Cost
VC = Variable Cost

An analysis of farmer household expenditures was conducted to determine household expenditures using quantitative analysis and tabulation methods. As Sajogyo (11) states, household expenditure can be formulated as follows:

$$CT = Ca+Cb \quad (4)$$

Description:
Ct: Total household expenditure (IDR)
Ca: Expenditure on food (IDR)
Cb: Expenditure on non-food items (IDr)

2.2. Analysis of Farmer Household Welfare

The farmer household income exchange rate (NTRPR) is calculated from the ratio of total household income to total expenditure for food and non-food as a measure of welfare, using Tulong's et al. [11] equation.

$$NTRPR = Y/E \quad (5)$$

Description:
NTRPR = Farmer Household Income Exchange Rate
Y = Farmer Household Income (IDR)
E = Farmer Household Expenditure (IDR)

Therefore, the decision-making process based on the exchange rate of farmers' household income, which is used as a benchmark for the level of welfare [7]:
NTRPR < 1, that the welfare level of farmers is not yet classified as prosperous
NTRPR = 1, that the welfare level of farmers remains stable and unchanged
NTRPR > 1, that the welfare level of farmers is classified as prosperous

3. Results and Discussion

3.1. Durian Farming Income

The total production costs (TC) in durian farming are calculated by adding fixed costs (FC) and variable costs (VC). All these expenses are borne by farmers to operate their farms and earn an income from durian production [12]. Table 1 presents the details of the average total costs incurred by farmers.

Table 1. Average total durian farming costs in Kemiri Village

Description	Average Total Cost (IDR per Year)
Fixed Costs	
1. Tax Costs	197,708
2. Equipment Depreciation Costs	49,443
Total Fixed Costs	**247,151**
Variable Costs	
1. Fertilizer Costs	3,540,529
2. Pesticide Costs	465,455
3. Labor Costs	15,880,943
Total Variable Costs	**19,886,927**
Average Total Cost	**20,134,078**

Source: Primary data after processing, 2025

Table 1 presents the average total cost of durian farming in Kemiri Village in 2024, which amounts to IDR 20,134,078 per year. These costs consist of fixed costs of IDR 247,151 and variable costs of IDR 19,886,927. Fixed costs in this study include taxes with an average of IDR 197,708 and equipment depreciation of IDR 49,443. Fixed costs are relatively small compared to the total production costs of durian farming. Meanwhile, variable costs contribute the most to the total production costs. Of the total variable costs, the largest component is labor costs, with an average of IDR 15,880,943 annually. Therefore, durian farming activities are highly dependent on labor, both in maintenance and harvesting activities. Other components of variable costs are fertilizers, with an average of IDR 3,540,529, and pesticides, amounting to IDR 465,455. This is in line with Thongkaew et al. [13], who showed that one of the positive factors affecting durian production is the size of the workforce, indicating the dependence of durian farming activities on the availability of labor for maintenance and harvesting.

Table 2. Average durian farm income in Kemiri Village

Description	Amount
Local Durian	
1. Durian Production (Fruit)	11,487
2. Price (IDR per Fruit)	16,849
Total Revenue	**193,544,463**
Durian Type	
1. Durian Production (Fruit)	476
2. Price (IDR per Fruit)	291,000
Total Revenue	**138,516,000**
Total Average Revenue	**332,060,463**

Source: Primary data after processing, 2025

Table 2 presents the average income from durian farming in Kemiri Village in 2024. There are two categories of durian cultivated by farmers: local and hybrid durians. For local durians, the average production reached 11,487 fruits with a selling price of IDR 16,849 per fruit. From these results, the total annual income earned by the farmers reached IDR 193,544,463. Local durians are still the main source of income for farmers because of their relatively high production volume, despite the lower selling price per fruit compared to other types. This is because local durian trees tend to produce more fruit due to their smaller size, resulting in a higher number of fruits per tree. In addition, the trees are usually older and larger, supporting greater production. A stable generative cycle also allows local durians to produce more consistently each harvest season.

Meanwhile, for hybrid durians, the average production was 476 fruits with a selling price of IDR 291,000 per fruit. Although the production volume was lower than that of local durians, the high selling price made the total income from hybrid durians significant, at IDR 138,516,000 annually. The observed data indicate that the durian variety has strong economic potential and may contribute to higher farmer incomes. The average annual income from durian farming was IDR 332,060,463. This income contributes significantly to farmers' household incomes. In line with the research by Utomo et al. [14], income from agriculture plays a strategic role in determining the ability of farming households to meet their economic needs; therefore, it can be used as an initial indicator in assessing the welfare level of farming households. The higher

and more stable the income, the greater the opportunity for farming households to meet their basic needs and improve their quality of life.

Table 3. Average durian farming income in Kemiri Village

Description	Average Income (IDR per Year)
Revenue	332,060,463
Costs	20,134,078
Average Total Revenue	**311,926,385**

Source: Primary data after processing, 2025

Table 3 shows that the average income derived from durian farming in Kemiri Village in 2024 amounted to IDR 332,060,463. This income was offset by the total farming costs incurred by farmers, which amounted to IDR 20,134,078 per year. Consequently, the average annual net income for durian farmers was IDR 311,926,385. These findings indicate that durian farming significantly contributes to household income while maintaining relatively low production costs for the farmers. Consistent with the research conducted by Utami et al. [15], factors such as the availability of production inputs, the prices of these inputs, production demand, and selling prices influence farming income.

3.2. Farm Household Expenditures

Table 4. Average expenditures of durian farmer households annually

Description	Cost (IDR)
Food	
1. Rice	4,929,681
2. Side dishes	4,365,443
3. Kitchen spices	4,396,472
4. Vegetables	1,526,274
5. Fruits	115,362
6. Drinking water	167,075
7. Cooking oil	1,161,175
8. Sugar	1,271,166
9. Cigarettes	2,720,728
10. Pocket money	8,773,585
Total Food Expenditure	**29,426,961**
Non-Food	
1. Health	304,849
2. Education	2,590,491
3. Electricity	774,676
4. Water	152,830
5. Internet	1,303,925
6. Clothing	2,161,075
7. Personal Hygiene	1,125,450
8. LPG	715,343
9. Gasoline	3,878,964
10. Social Needs	996,509
Total Non-Food Expenditures	**14,004,112**
Total Household Expenditures	**43,431,073**

Source: Primary data after processing, 2025

Households have several options to meet their needs, depending on their income levels. Household expenditures consist of food and non-food expenditures. Household expenditure can be influenced by household income levels [16].

The results of the study show that the total household food expenditure is IDR 29,426,961 annually, and the total non-food expenditure is IDR 14,004,112 per year. When compared proportionally, food expenditure contributes approximately 67.7% to the total household expenditure, while non-food expenditure contributes 32.2%. Based on the analysis, most of the income of durian farming households is still used to meet daily food consumption needs, and that the Kemiri Village area usually only consumes fruit from its harvest. As a result, most durian farming households prioritize rice, side dishes, vegetables, and kitchen spices. In addition, there is a strong consumption habit of staple foods and additional products, such as cigarettes.

Meanwhile, in non-food expenditures, gasoline was the largest component at IDR 3,878,964 annually, indicating the high mobility of farmers in their daily needs, followed by education at IDR 2,590,491 annually, which is a very important and useful asset in the long term. Non-food expenditures on health, electricity, water, and LPG were not high because the people of Kemiri Village rarely incur medical expenses or undergo routine health check-ups; therefore, these costs were very low. They are also not very dependent on the use of high-power electronic equipment, given the geographical conditions of Kemiri Village, which is located in a mountainous area with abundant water sources, and the fact that many households still use firewood as an easily obtainable alternative fuel. Of course, food and non-food expenditures are influenced by income. This aligns with Yuliati et al. [17], who state that food and non-food expenditures increase as income rises, consistent with classical consumption theory, which emphasizes a positive relationship between income and consumption.

3.3. The Welfare of Durian Farmer Households

Well-being is a benchmark for society, indicating that it has reached a state of prosperity [18]. The welfare of durian farmer households in this study uses the Farmer Household Income Exchange Rate (NTRPR), which is calculated by comparing the total household income from all sources with the total expenditure of farmers including consumption expenditure for food and non-food needs [19]. Off-farm income consists of dairy farming, timber trading, clove farming, avocado farming, banana farming, elephant grass farming, jackfruit farming, milk collection, non-food and goat farming. Non-farm income consists of kite string, village officials, KUD employees, milk collectors, neighborhood association (RW) and community association (RT) officials, craftsmen, timber trading, and grocery store owners.

Table 5 presents the income exchange rate of farmer households in Kemiri village, showing that the total annual income of durian farmer households is IDR 349,723,551, with the largest contribution from on-farm income (durian farming), amounting to IDR 311,926,385 annually. Additional income is also obtained from off-farm activities amounting to IDR 31,040,562 annually and non-farm activities amounting to IDR 6,756,604 annually. When compared with the total household expenditure of IDR 63,565,151 annually, there is a significant difference between income and expenditure, indicating that the economic condition of farmer households is relatively prosperous.

Table 5. Exchange rates for durian farmer households in Kemiri Village

Description	Average Value (IDR per Year)
1. Income	
- On-Farm Income (Durian Farming)	311,926,385
- Off-Farm Income	31,040,562
- Non-Farm Income	6,756,604
Total Income	**349,723,551**
2. Food and Non-Food Expenditures	
- Food Expenditures	29,426,961
- Non-Food Expenditures	14,004,112
- Production Costs (Durian Farming)	20,134,078
Total Expenditures	**63,565,151**
3. Exchange Rate of Durian Farming Income Against	
- Food Expenditures	10.6
- Non-Food Expenditures	22.2
- Production Costs (Durian Farming)	15.5
Total Expenditures	**4.9**
4. Total Exchange Value of Farmers' Household Income Against	
- Food Expenditures	11.8
- Non-Food Expenditures	24.9
- Production Costs (Durian Farming)	17.3
Total Expenditures	**5.5**

Source: Primary data after processing, 2025

The exchange rate of durian farming income against food expenditure was 10.6, against non-food expenditure was 22.2, against production costs was 15.5, and against total expenditure was 4.9 times. This means that income from durian farming alone can cover total household needs more than seven times. When viewed from the total household income (which includes on-farm, off-farm, and non-farm income), the exchange rate is even higher, namely 11.8 against food expenditure, 24.9 against non-food expenditure, 17.3 against production costs, and 5.5 against the total household expenditure. A household income exchange rate of over 1 indicates that durian farming households in Kemiri Village are in a prosperous economic condition, as their income far exceeds their total expenditure. This demonstrates that durian farming plays a crucial role in improving the welfare of Kemiri Village's durian farmers. This is in line with Nizar et al. [20], who state that the farm household income exchange rate (NTRPR) for food consumption reaches 15.38, non-food expenditure is 15.07, and total consumption is approximately 7.61, which shows that when calculated based on total household income, the exchange rate increases, indicating wealth.

4. Conclusion

The analysis shows that durian farming households in Kemiri Village have an annual income of IDR 311,926,385 and annual expenses of IDR 43,431,073, resulting in an NTRPR value of 5.5, which reflects a condition of high purchasing power and a significant income surplus. These findings confirm the strategic role of durian farming in supporting the economy of farming households and opening

opportunities for sustainable agribusiness development through increased productivity and improved market access for durian farmers in Indonesia. Nevertheless, this study is constrained by its exclusive use of the NTRPR as the sole indicator of welfare, reliance on survey data, and focus on a single region. Therefore, further research should use more comprehensive welfare indicators and a broader geographical scope to strengthen these results. Based on the results of the analysis obtained from durian farmers in Kemiri Village, it is recommended that they strengthen their financial management by allocating funds for savings, reserves, and investments in orchard maintenance to help them cope with the risk of production fluctuations. Additionally, institutional strengthening through farmer groups can expand access to capital, production facilities, training, and joint-marketing opportunities. These efforts can go hand in hand with the development of added value and expanded market access, non-food the processing of durian derivative products or cooperation with MSMEs and large-scale traders to develop new markets.

Acknowledgements

The authors thank the academic advisor from the Department of Agribusiness, UPN "Veteran" East Java, for their time, guidance, and valuable direction, which enabled the completion of this article. The authors also extend their thanks to the Puspo District Agricultural Extension Center, Pasuruan Regency, the head of the farmer group, and the farmer respondents who provided information, data, and practical experience related to the cultivation of shallots. In addition, the authors sincerely appreciate the support of all other parties who contributed, either directly or indirectly, to the smooth implementation of this study.

References

1. Sugeng NW, Mayasari I, Ratnanigtyas H. Butter cookies substitution of durian seed flour: modernization and culinary innovation typical of Serang City as an effort to utilize durian fruit waste. J Pengolah Pangan. 2021;6(1):20–7.
2. BPS. Produksi buah-buahan belimbing, duku, durian menurut Kabupaten/Kota dan jenis tanaman di Provinsi Jawa Timur (kwintal), 2021 dan 2022 [Internet]. Badan Pusat Statistik. 2023 [cited 2025 Nov 4]. Available from: https://jatim.bps.go.id/id/statistics-table/1/MjU3NyMx/-produksi-buah-buahan-belimbing--duku--durian-menurut-kabupaten-kota-dan-jenis-tanaman-di-provinsi-jawa-timur--kwintal---2021-dan-2022.html
3. BPS-Statistics Pasuruan Regency. Pasuruan Regency in figure 2025. Pasuruan Regency; 2025.
4. Pasuruan Regency Government. Endorse potensi durian, pemkab pasuruan gencar gelar festival durian [Internet]. Suara Pasuruan. 2017 [cited 2025 Nov 7]. Available from: https://pasuruankab.go.id/e-paper/endorse-potensi-durian-pemkab-pasuruan-gencar-gelar-festival-durian-
5. Anugrah, Karimuna L, Junus M. Analisis faktor-faktor yang mempengaruhi pendapatan usahatani durian di Desa Garuda Kecamatan Padangguni Kabupaten Konawe. Bot Publ Ilmu Tanam dan Agribisnis. 2024;1(3):156–67.
6. Pasuruan Regency Gorenment. Festival durian 2024 meriah, petani raih omzet ratusan juta [Internet]. Suara Pasuruan. 2024 [cited 2025 Nov 7]. Available from: https://www.pasuruankab.go.id/e-paper/festival-durian-2024-meriah-petani-

raih-omzet-ratusan-juta
7. Setiawan RAP, Noor TI, Sulistyowati L, Setiawan W. Analysis the prosperity of soybean farmers using approach exchange farmers rate (NTP) and exchange household income (NTPRP) (a case in Jatiwaras Village, Jatiwaras Sub District, Tasikmalaya District). J Agribisnis Terpadu. 2019;12(2):178–89.
8. Putri AA, Azzahra F, Fikri MRA. Analisis tingkat kesejahteraan rumah tangga petani padi di Desa Cadaskertajaya Kecamatan Telagasari Kabupaten Karawang. Paspalum J Ilm Pertan. 2024;12(2):405–12.
9. Ramadani UP, Muthmainnah R, Ulhilma N, Wazabirah A, Hidayatullah R, Harmonedi. Strategi penentuan populasi dan sampel dalam penelitian pendidikan: Antara validitas dan representativitas. QOSIM J Pendidik Sos Hum. 2025;3(2):574–85.
10. Mustari, Yonariza, Khairati R. Analisis faktor-faktor yang mempengaruhi produksi komoditas kelapa sawit perkebunan rakyat dengan pola swadaya di Kabupaten Aceh Tamiang. J Ilm MEA (Manajemen, Ekon dan Akuntansi). 2020;4(3):1524–42.
11. Tulong VA, Ngangi CR, Tangkere EG. Nilai tukar pendapatan rumah tangga petani padi di Desa Tolok Kecamatan Tompaso Kabupaten Minahasa. J Agribus Rural Dev (Jurnal Agribisnis dan Pengemb Pedesaan). 2019;1(2):71–9.
12. Sutaminingsih L, Sujana N. Analisis faktor-faktor yang mempengaruhi pendapatan usahatani durian. Ekuitas J Pendidik Ekon. 2020;8(2):122–8.
13. Thongkaew S, Jatuporn C, Sukprasert P, Rueangrit P, Tongchure S. Factors affecting the durian production of farmers in the eastern region of Thailand. Int J Agrucultural Extention. 2021;9(2):285–93.
14. Utomo DP, Yuliati N, Syah MA. Analisis pemenuhan kebutuhan ekonomi rumah tangga petani kentang di Desa Tosari Kecamatan Tosari Kabupaten Pasuruan. J Manag Small Mediu Enterp. 2024;17(3):1277–85.
15. Utami SD, Ferrianta Y, Firmansyah H. Analisis Pendapatan Usahatani Pembibitan Buah Durian di Desa Mandikapau Barat Kecamatan Karang Intan Kabupaten Banjar (Studi Kasus Pembibitan Suka Tanam). Front Agribisnis. 2023;7(3):271–5.
16. Martina, Praza R, Adhiana. Analisis faktor-faktor yang memengaruhi pengeluaran rumah tangga petani padi sawah di Kabupaten Aceh Utara. Agrifo J Agribisnis Univ Malikussaleh. 2021;6(1):31–40.
17. Yuliati N, Nahariyah R, Atasa D, Suryanto TLM. Adaptive and simultaneous strategies in smallholder household economics: A 2SLS approach to labor and consumption optimization. Futur Food J Food, Agric Soc. 2025;13(2):25–32.
18. Harahap MEU, Rambe FN. Kesejahteraan petani karet di Desa Ujunggading Jae Kecamatan Simangambat Kabupaten Padang Lawas Utara. J at-Taghyir J Dakwah dan Pengemb Masy Desa. 2021;4(1):15–28.
19. Salsabila, Siregar AF. Analisis indikator nilai tukar petani (NTP) dan nilai tukar pendapatan rumah tangga petani (NTPRP) untuk mengukur tingkat kesejahteraan petani kedelai di Kecamatan Barumun Tengah Kabupaten Padang Lawas. JASc (Journal Agribus Sci. 2021;5(1):57–66.
20. Nizar R, Siswati L, Ariyanto A. Struktur pendapatan dan pengeluaran rumah tangga petani hortikultura pada masa pandemi di Kelurahan Tebing Tinggi Okura Kecamatan Rumbai Pesisir. J Agri Sains. 2021;5(1):35–42.