

**ANALYSIS OF ADDED VALUE OF PROCESSED PATIN FISH
(*Pangasius*) A CASE STUDY OF PROCESSED PATIN NOODLES AT
GRIYA ULAM-Q, KEDIRI REGENCY**

**Analisis Nilai Tambah Produk Olahan Ikan Patin (*Pangasius*) Studi Kasus Pada
Olahan Mie Patin di Griya Ulam-Q Kabupaten Kediri**

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(Received October 27th 2025; Accepted December 28th 2025)

ABSTRACT

Pangasius catfish is a freshwater fish that offers numerous health benefits. *Pangasius* fish noodles are a modified fish-based product. The idea for processing *pangasius* catfish into noodles emerged due to the abundant production of the fish and its relatively low market price. This study aims to analyze the added value, profit, and business feasibility of producing *pangasius* fish noodles. The research was conducted at Griya Ulam-Q Outlet, a showcase and retail store for *pangasius* processing, located in Ngasem District, Kediri Regency. The study took place from December 2023 to January 2024. A quantitative descriptive method was used, utilizing both primary and secondary data. Primary data were collected through interviews, while secondary data were obtained from relevant institutions such as the Fisheries Department and the Central Statistics Agency of Kediri Regency. Respondents were selected purposively based on their ability to provide relevant information and their direct involvement in the processing of moringa-based *pangasius* fish noodles. Data analysis methods included value-added analysis, cost and profit analysis, and business feasibility analysis. The results showed that the added value of moringa-based *pangasius* noodles was IDR 37,500.00 per kilogram, with a value-added ratio of 41.65%. This added value was influenced by output prices, contributions from other inputs, and raw material costs. Profit analysis indicated a profit of IDR 55,500.00 per production cycle. The R/C ratio analysis yielded a value of 1.45, indicating that the moringa-based *pangasius* fish noodle business is financially feasible to continue.

Key words: Analysis, Fish, Value Added, Processed Product, *Pangasius*

ABSTRAK

Ikan patin merupakan ikan air tawar yang mempunyai segudang manfaat baik untuk tubuh. Mie ikan patin adalah olahan ikan yang dimodifikasi. Ide usaha pengolahan ikan patin muncul karena produksi ikan patin melimpah namun harga ikan patin segar yang relatif murah. Penelitian ini bertujuan untuk mengetahui besarnya nilai tambah dan keuntungan serta kelayakan usaha pengolahan mie ikan patin. Penelitian ini dilakukan di Gerai Griya Ulam-Q

yang merupakan etalase dan toko pengolahan ikan patin yang berlokasi di Kecamatan Ngasem Kabupaten Kediri. Penelitian ini dilaksanakan selama bulan Desember 2023 – Januari 2024. Metode yang digunakan dalam penelitian ini adalah deskripsi kuantitatif dengan menggunakan data primer dan data sekunder. Data primer diperoleh dengan wawancara dan data sekunder diperoleh dari instansi terkait seperti Dinas Perikanan dan Badan Pusat Statistik Kabupaten Kediri. Penentuan responden dilakukan secara sengaja (*Purposive Sampling*) dengan kriteria responden yang mampu memberikan informasi dan terlibat secara langsung dalam proses pengolahan mie ikan patin kelor sesuai dengan tujuan penelitian. Metode analisis data yang digunakan yaitu analisis nilai tambah, analisis biaya dan keuntungan serta kelayakan usaha. Hasil penelitian menunjukkan bahwa nilai tambah mie ikan patin kelor sebesar Rp 37.500,00 tiap kilogram dengan rasio nilai tambah sebesar 41,65%. Nilai tambah pada pengolahan mie ikan patin kelor dipengaruhi oleh harga output, sumbangan input lainnya, dan harga bahan baku. Berdasarkan perhitungan analisis keuntungan produk olahan ikan patin, diperoleh keuntungan mie ikan patin kelor sebesar Rp 55.500,00 tiap produksi. Sedangkan analisis kelayakan R/C ratio, diperoleh nilai sebesar 1,45 sehingga usaha mie ikan patin kelor layak untuk terus dijalankan.

Kata Kunci: Analisis, Ikan, Nilai Tambah, Olahan, Patin

INTRODUCTION

Fish and fishery products are natural resources that are very beneficial for human life. The advantages of fishery products compared to other fishery products are their relatively high protein content, unsaturated fatty acids with very low cholesterol levels, and a number of minerals and vitamins (Rabiatul, 2014). Freshwater fish farming is now widely practiced by the general public, especially in the household sector due to the ease of caring for the fish and the utilization of empty land around the house.

Abundant fish and fishery supplies cannot be used up quickly. If left untreated, they will undergo a process of change that leads to damage and results in a decrease in prices. For this reason, a processing process is needed that aims to inhibit or stop the activity of destructive microorganisms or enzymes that can cause quality deterioration and damage, as well as to extend the shelf life and diversify processed fishery products. Another reason for carrying out the processing process is so that the fish and fishery products have added value. Vania *et al.* in (Sa'adah, 2012) stated that added value is one of the important indicators resulting from a company's economic activities and reflects its economic strength.

One of the most popular freshwater fish is the catfish, or pangasius in Latin. Catfish are a freshwater fish with numerous health benefits. Among the benefits of catfish is that they are a good source of vitamin B12. This nutrient helps the body produce DNA and maintains proper nerve and blood cell function. The omega-3 fatty acids in catfish are also good for the health of the brain, heart, immune system, and eyes. The environmental requirements for cultivating catfish are not complicated, as catfish are a type of fish that can survive in poor water conditions, but catfish prefer waters with good conditions (Kordi, 2010). Among the regions that have the highest production of Patin fish in East Java Province are Tulungagung Regency with a production volume of 14,429 tons/year, Keldiri Regency with a production volume of 1,418 tons/year, and Jombang Regency with a production volume of 1,379 tons/year.

Patin fish noodles are processed fish that have been modified into raw materials for making noodles. The purpose of fish processing is to reduce the water content in the fish's body, one way is by making fish noodles. Patin fish is primarily chosen as the raw material for noodles because it is affordable when fresh, and when processed into patin fish noodles, it tastes delicious. Therefore, there is a need for supporting the fish processing industry to meet public demand for these needs.

One of the medium-scale agro-industries that focuses on increasing the added value of local products in Ngaselm District, Kediri Regency is Griya Ulam-Q, a business entity engaged in post-panel processing, one of whose products is patin noodles, selling kello patin noodles. This business entity is one of the fostered outlets of the Kediri Regency Fisheries Service, managed by the Kediri Regional Fish Processing and Marketing Association. This outlet was established with the aim of becoming a forum for fish farmers, fish farming groups, and fish communities in the Kediri region in marketing fresh fish and processed fish products.

Added value is defined as any increase in the value of a commodity due to the functional input applied to the commodity. The functional input is a process of changing form, moving place, and storage. According to Hayami (Maharani, 2013:78), one of the main objectives of analyzing added value is to measure how much the processing activity contributes to the sustainability of income and employment, which will later influence the local community's economy. Added value analysis is necessary for decision makers to take policies that can maintain the sustainability of the agro-industry. Through this research by analyzing added value, it can provide benefits because it concerns the comparison between income and expenditure, this is very necessary for the catfish agroindustry to do because it can be used as a consideration for investors in making decisions to invest in Griya Ulam-Q which produces processed catfish which is formed into catfish noodles. This is also useful for the development of agroindustry in the future.

This research is expected to provide information on how far the catfish agro-industry can cover all its obligations and its future prospects, and whether this business is feasible or not. For investors, a value-added analysis can provide benefits, namely understanding the company's prospects and potential profits.

METHODS

This research was conducted from December 2013 to January 2014. The sample was collected at Mitra Griya Ulam-Q, a business entity that processes catfish into kelor catfish noodles in Ngaselm District, Kediri Regency. The research was descriptive. According to Juliansyah (2011), descriptive research attempts to describe a phenomenon, event, or occurrence that is currently occurring. The selection of respondents for this research was carried out using purposive sampling based on specific objectives in accordance with the research objectives. So the respondents of this study are people involved in the processing of patin fish into kello patin fish noodles which supplies its products to Griya Ulam-Q which is located in Ngaselm District, Kediri Regency. The data sources in this study are primary data and secondary data. Primary data are obtained directly in the field through observation and interviews with respondents using questionnaires, while secondary data are obtained from related institutions such as the Fisheries Service, the Central Statistics Agency, and previous research such as journals, books, and intelligence related to the research.

Value Added Analysis

Value added is the increase in value of a commodity due to processing, transportation, or storage during production.

Table 1. Value Added Calculation

No	Variable	Value
A. Processed Product Output, Input, & Price		
1	Processed Products (Units)	A
2	Primary Raw Materials (Kg)	B
3	Labor (H/Kg)	C
4	Conversion Factor	$D = A/B$
5	Labor Coefficient (H/Kg)	$E = C/B$
6	Processed Product Price (Rp/Unit)	F
7	Labor Salary (Rp/H/Kg)	G
B. Income and Added Value		
8	Material Price (Rp/Kg)	H
9	Additional Ingredients (IDR/Kg)	I
10.	Processed Production Value (IDR/Kg)	$J = D \times F$
11a.	Value Added (IDR/Kg)	$K = J - I - H$
b.	Value Added Ratio (%)	$L\% = (K/J) \times 100\%$
12a.	Labor Income (IDR/Kg)	$M = E \times G$
b.	Labor Share (%)	$N\% = (M/K) \times 100\%$
13a.	Profit (IDR/Kg)	$O = K - M$
b.	Profit Rate (%)	$P\% = (O/K) \times 100\%$
C. Provision of Services for Factors of Production		
14.	Margin (IDR/Kg)	$Q = J - H$
a.	Labor Income (%)	$R = (M/Q) \times 100\%$
b.	Additional Other Inputs (%)	$S = (I : Q) \times 100\%$
c.	Producer Profit (%)	$T = (O/Q) \times 100\%$

Source: Hayami in Nurmainnah, 2022

Systematically, value added is as follows:

$$NT = NP - (NBB + NBP)$$

Provisions

$$NT = \text{Value Added (Rp/Kg)}$$

$$NP = \text{Value of Processed Products (Rp/Kg)}$$

$$NBB = \text{Value of Raw Materials (Rp/Kg)}$$

$$NBP = \text{Value of Supporting Materials (Rp/Kg) (Suryana in Nur, 2018)}$$

Examination Criteria according to (Sudiyono in Nur, 2018):

If the value added ratio is > 50%, the value added is considered high.

If the value added ratio is < 50%, the value added is considered low.

Processed Product Profit Analysis

According to Soekartawi (2016), profit is the difference between revenue and costs. Profit can be used as a benchmark for comparing the profitability of a business across various business types. Profit can be calculated using the following formula:

$$\pi = TR - TC$$

Prohibitions:

Π = Profit

TR = Total Revenue or Total Revenue

TC = Total Cost or Total Expense

Business Feasibility Analysis

According to Siregar (2012), business feasibility is an activity to determine whether a business is feasible to operate. The research object is not limited to large businesses, but can also be applied to simpler businesses.

R/C (Relevant Cost Ratio) is a comparison between total revenue and total costs, using the following formula (Suratiah, 2015).

$$R/C = (\text{Total Revenue}) / (\text{Total Cost})$$

Prohibitions:

R/C: Relevant Cost Ratio

TR: Total Revenue

TC: Total Cost

Decision Criteria:

R/C > 1 : Therefore, the Kelor catfish noodle business is feasible.

R/C < 1: Therefore, the Kelor catfish noodle business is not feasible.

R/C = 1: So the Kelor Berar catfish noodle business is at the break-even point.

RESULT

Value-Added Analysis

Value-added is the increase in value of a commodity due to its processing, transportation, or storage processes. To see the added value generated by the Kelor catfish agro-industry, we use the Hayami method. For more details, see Table 2.

Table 2. Added Value of Kelor Catfish

No.	Variable	Result
A. Processed Product Output, Input, & Price		
1.	Processed Products (Units)	301
2.	Primary Raw Materials (Kg)	2
3.	Labor Force (HOK)	1
4.	Conversion Factor	15
5.	Labor Force Coefficient (HOK/Kg)	0,5
6.	Processed Product Price (Rp/Unit)	6.000
7.	Labor Force Salary (Rp/HOK)	20.000
B. Revenue and Profit		
8.	Material Price (Rp/kg)	30.000
9.	Additional Ingredients (Rp/kg)	22.250
10l.	Processed Production Value (Rp/kg)	90.000
11a.	Value Added (Rp/kg)	37.500
b.	Value Added Ratio (%)	41,67
12a.	Employee Income (Rp/kg)	10.000
b.	Employee Share (%)	26,67
13a.	Profit (Rp/kg)	27.500
b.	Profit Rate (%)	73,33

C. Provision of Services for Factors of Production		
14.	Margin (Rp/Kg)	60.000
a.	Worker Income (%)	16,67
b.	Other Additional Inputs (%)	37,50
c.	Worker Profit (%)	45,83

Source: Primary data processed, 20124

Cost and Profit Analysis of Processed Patin Fish Noodle Products

Total costs represent the costs incurred by the Kelor patin fish noodle entrepreneur at Griya Ulam-Q, including raw material costs, other material costs, and employee salaries. A detailed table of the total costs of processing Kelor patin fish noodle products is presented in Table 3:

Table 3. Total Cost of Kelor Patin Fish Noodles in One Production Run

No.	Raw Materials	Total	Price (Rp)
A. Main Raw Materials			
1.	Patin Fish Fillet	2 Kilograms	60.000
Amount of Main Raw Materials			60.000
B. Other Additional Ingredients			
2.	Flour	1 Kilogram	10.000
3.	Eggs	1 Egg	2.000
4.	Kelor Leaves	50g Kelor Leaves	1.000
5.	Salt	15g	1.000
6.	Mushroom Stock	10g	1.000
7.	Gas	1 Piece	4.500
8.	Packaging	30g Packaging	24.000
9.	Electricity	2 kWh	1.000
Amount of Other Additional Ingredients			44.500
10.	Labor Costs	1 Employee	20.000
C. Total Costs			124.500

Source: Primary data processed, 2024

Gross revenue, or gross income, is the product of production multiplied by the selling price. The more production sold, the greater the revenue. A detailed table of revenue costs for processing Kelor catfish noodles is presented in Table 7:

Table 4. Revenue from Kelor Catfish Noodles in a Single Production Process

No.	Description	Nilai
1.	Products Produced	30L Pack / Production
2.	Product Price (Pack)	Rp 6.001 / pack
3.	Total Production Cost	Rp 124.501 / production
4.	Profit	Rp 180.01 / production
5.	Description	Rp 55.01 / production

Source: Primary data processed, 2024

Feasibility Analysis of a Patin Fish Noodle Business

To assess the feasibility of Griya Ulam-Q's Kelor patin fish noodle business, a relevant cost ratio (R/C) analysis was used. R/C is the ratio of the cost of revenue to the total cost of the production process incurred in a single production run.

Table 5. Feasibility of a Kelor Patin Fish Noodle Business in a Single Production Run

No.	Description	Value
1.	Receipts	Rp 180.000
2.	Total Production Cost	Rp 124.500
3.	R/C Ratio	1,45

Source: Primary data processed, 2024

DISCUSSION

Value-Added Analysis

The calculation of the added value of processed catfish noodles in a single production run is presented in Table 2. The processed catfish noodles produced in a single production run are 30L packs with a weight of 120L grams per pack. The price of the main raw material is IDR 30.01/kg. The raw material required for a single production run is 2 kg of catfish. Additional ingredients or auxiliary raw materials are IDR 22.50/kg. These ingredients consist of wheat flour, eggs, salt, mushroom stock, and other ingredients. The conversion factor can be calculated by dividing the total output by the input of the main raw material. The conversion factor value of the largest patin fish noodle product is 15. This conversion value states that every 1 kg of raw material produced can produce 15 packs of patin fish noodle. The labor coefficient essentially determines the ratio between the number of workers involved in one Man-Day (HOK) and the amount of raw materials processed. In the production of processed catfish noodles, 1 worker is used, which means it produces a labor input of 1 HOK/production. The labor coefficient value is calculated by dividing the input of workers by the input of raw materials used. Based on the calculation, the production of catfish noodles produces a labor coefficient of 01.5. This shows that to process 1 kg of catfish into catfish noodles requires a work force of 0.5 HOK.

The added value of the catfish processing business is the difference between the product value, additional inputs, and the price of raw materials. The product value is the multiplication of the conversion factor and the product price. The value of the processed catfish noodles product is Rp 90,000,000/kg obtained from the conversion factor of 15 and the price of the product is Rp 6,000,000/pack. Therefore, the calculation of the added value is Rp 37,500/kg. This shows that every 1 kg of catfish after undergoing the production process into catfish noodles is able to provide a total added value of Rp 37,500/kg. The resulting added value provides a positive added value. The results of this research are in line with research (Pratama *et al.*, 2024) on the added value of processed catfish into catfish floss and nuggets which shows positive added value.

According to (Septiani *et al.*, 2024) the value added ratio is the ratio of added value to product value. The value added ratio of catfish noodles is 41.57%. This shows that 41.57% of the product value is the result of the value added process in the processing of catfish noodles at Griya Ulam-Q. The research results show that the value added ratio of processed catfish noodles is less than 50%. This means that the added value of catfish noodles is relatively low. The low added value will certainly affect the profit or benefit obtained by the catfish noodles business.

Worker income is the salary received directly by workers from the acquisition of added value. According to (Margaritha; Maharani, 20124) worker income is the multiplication of the worker coefficient with the worker salary (Rp/HOK). The average worker salary is Rp

20.000/day and the average worker coefficient value is 01.5, so the average worker income obtained is Rp 10.000/kg. This shows that every 1 kg of catfish processed into catfish noodles is able to provide a reward to the average worker of Rp 10.00.00/kg. Therefore, the share of workers in the processing of catfish noodles is 26.67% of the added value, which means that for every Rp 10.00 of the added value, the share value for the average worker share is Rp 26.67. The large proportion of the labor force does not reflect the large labor turnover. This figure only illustrates the balance between the large share of income and the share of business owners' income. Soelharjo in (Hasanah *et al.*, 2015) stated that if the level of profit obtained (in turnover) is high, then the agro-industry will be able to increase economic growth. If the ratio of labor compensation to added value (in turnover) is high, then the agro-industry will be able to provide income for its workers, thus being able to overcome the problem of unemployment through equalizing job opportunities.

The profit of the catfish noodle processing business is the difference between the added value and the worker's salary, or the net added value received by the business owner. The profit obtained from processing catfish noodle is approximately Rp 27.50/kg. The results of this value analysis also show the margin from raw catfish to catfish noodle, which is distributed among the worker's income, additional inputs, and the business owner's profit. This margin is the difference between the product value and the price of catfish raw materials, each processing of catfish noodles is Rp 601.010101,0101 distributed to each factor, namely labor income 16.67%, additional other inputs 37.501%, and the actor's profit 45.83% of the margin. The largest labor income reward of 16.67% means that labor income contributes a maximum of Rp 16.67 from every Rp 10101 of the company's margin. The distribution of the next margin comes from additional inputs of 37.50%, which means that labor income contributes Rp 37.50% for every Rp 10% of the company's margin, while the profit of the actor is 45.83%, meaning that the actor's profit contributes Rp 45.83 for every Rp 10% of the company's margin.

Cost and Profit Analysis of Processed Patin Fish Noodle Products

Based on Table 3, the total cost is the sum of the main raw material costs, additional material costs, and labor costs. The total cost above represents the cost of a single production run. The raw material cost for patin fish fillets is Rp 60,000. The cost of other additional ingredients, including flour, eggs, moringa leaves, salt, mushroom stock, gas, packaging, and electricity, totals Rp 44,500. This results in a total cost of Rp 10,450. Meanwhile, the labor costs require a total cost of Rp. 20,000,000, so that the total cost incurred by the Kelor catfish production team for one production requires a total cost of Rp. 124,500.

Profit is the difference between the cost of receipt and all costs (total costs) incurred in one production process. The large income of the kelor catfish noodle product at Griya Ulam-Q during one production process. The income is larger than the total costs incurred so that the profit obtained by Griya Ulam-Q is quite large. In addition, based on the table above, it can be seen that the income obtained by the kelor catfish noodle in one production process is Rp 55.500.

Feasibility Analysis of a Patin Fish Noodle Business

The research results indicate that the feasibility analysis of the R/C ratio shows a value of 1.45. If the R/C ratio (1.45) is greater than 1, then the revenue received is greater than the costs incurred. This means that the Patin fish noodle business is feasible to continue and operate.

CONCLUSION

The added value of kelor catfish noodles in Griya Ulam-Q, Ngasem District, Kediri Regency is Rp 37.50 per kilogram with a value-added ratio of 41.67%. The profit obtained is

Rp 55.50 per kilogram per production. The R/C ratio of 1.45 indicates that the kelor catfish noodles business is feasible to run and develop.

ACKNOWLEDGEMENT

We would like to express our gratitude to the research partners, namely the Fisheries Service of Kediri Regency and Griya Ulam-Q, Ngasem District, Kediri Regency, for the permission and assistance provided during the research process. The authors would also like to express their gratitude to all parties involved and who helped throughout the research process until this research was completed.

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