

ANALYSIS OF INCOME LEVELS AND WELFARE OF SMALL-SCALE FISHERMEN'S HOUSEHOLDS IN BENGKULU CITY

Analisis Tingkat Pendapatan Dan Kesejahteraan Rumah Tangga Nelayan Skala Kecil di Kota Bengkulu

Rahmat Sudarma^{1*}, Indra Cahyadinata¹, Gita Mulyasari¹, Supriyadi²

¹Department of Agricultural Socioeconomics, University of Bengkulu, ²Center for Behavioral and Circular Economics Research, National Research and Innovation Agency

WR. Supratman Street, Kandang Limun, Bengkulu, 38371, Indonesia

*Corresponding Author: rahmatsudarma.rs@gmail.com

(Received February 2th 2025; Accepted February 25th 2025)

ABSTRACT

According to data from BPS (2023), the capture fisheries production in Bengkulu City reached 41,919 tons in 2022. Despite its significant potential, fishermen's income levels are highly dependent on unpredictable, uneven, and difficult-to-forecast catch results, often leading to their classification as "the poorest of the poor." This study aims to examine the income and welfare of small-scale fishing households in Bengkulu City, a region with substantial capture fisheries potential. Although the city recorded a production volume of 41,919 tons in 2022, many fishermen in this area continue to face challenges related to low welfare levels. Using welfare indicators from the National Population and Family Planning Board (BKKBN), this study analyzes the income and welfare levels of fishing households and explores the relationship between them. Primary data were collected through direct interviews and questionnaires, with small-scale fishermen selected using accidental sampling. Data analysis was conducted using the Chi-square test to determine the correlation between income and welfare. The findings indicate that the average monthly income of small-scale fishing households is IDR 2,130,553. The welfare levels of these households are categorized into three groups: Sejahtera II (26%), Sejahtera III (49%), and Sejahtera III Plus (25%). The Chi-square test results show a significance value of 0.010, indicating a significant relationship between income and fishermen's household welfare. These findings suggest that income is the primary factor influencing the welfare of small-scale fishermen. Increasing income levels can serve as a strategic approach to improving the quality of life for fishermen and their families

Keywords: income, welfare, small-scale fishermen, Bengkulu City.

ABSTRAK

Menurut data BPS (2023) yang menyatakan bahwa produksi perikanan tangkap pada kota Bengkulu sebesar 41.919 ton pada tahun 2022. Meskipun memiliki potensi besar tingkat pendapatan nelayan sangat bergantung pada hasil tangkapan yang tidak menentu, tidak merata, dan sulit diprediksi, sehingga nelayan sering disebut sebagai '*the poorest of the poor*'. Penelitian ini bertujuan untuk mengkaji pendapatan dan kesejahteraan rumah tangga (RT)

nelayan skala kecil di Kota Bengkulu, sebuah daerah dengan potensi perikanan tangkap yang besar. Kota Bengkulu mencatat produksi perikanan tangkap sebesar 41.919 ton pada tahun 2022, namun sebagian besar nelayan di wilayah ini masih menghadapi tantangan kesejahteraan yang rendah. Dengan menggunakan indikator kesejahteraan dari Badan Kependudukan dan Keluarga Berencana Nasional (BKKBN), penelitian ini menganalisis tingkat pendapatan dan kesejahteraan RT nelayan serta mengkaji hubungan antara keduanya. Data primer diperoleh melalui wawancara langsung dan pengisian kuesioner dengan melibatkan sampel nelayan skala kecil yang dipilih secara *ccidental Sampling*. Analisis data dilakukan dengan menggunakan uji Chi-square untuk menentukan korelasi antara pendapatan dan kesejahteraan. Hasil penelitian menunjukkan bahwa rata-rata pendapatan RT nelayan skala kecil sebesar Rp2.130.553 per bulan. Tingkat kesejahteraan RT nelayan terdistribusi ke dalam tiga kategori, yaitu Kategori Sejahtera II (26%), Sejahtera III (49%), dan Sejahtera III Plus (25%). Hasil analisis uji Chi-square menunjukkan nilai signifikansi sebesar 0,010, yang mengindikasikan adanya hubungan yang signifikan antara pendapatan dan kesejahteraan RT nelayan. Temuan ini menunjukkan bahwa pendapatan merupakan faktor utama yang memengaruhi kesejahteraan nelayan skala kecil. Peningkatan pendapatan dapat menjadi langkah strategis untuk meningkatkan kualitas hidup nelayan dan keluarganya.

Kata kunci: pendapatan, kesejahteraan, nelayan skala kecil, Kota Bengkulu.

INTRODUCTION

Bengkulu Province is an area that has a fairly long coastline, according to BPS data (2023) around 525 kilometers, where the Bengkulu coastline stretches from the coast of West Sumatra to the coastline of Lampung Province. This provides potential for fluctuations in daily fishing results. The number of fishermen in Bengkulu Province in 2024 Based on data from the Ministry of Maritime Affairs and Fisheries is 16,509 people. Bengkulu Province has superior potential in the fisheries sector, especially in the field of capture fisheries. Geographically, Bengkulu City, which is the provincial capital, is located on the west coast of Sumatra Island and borders directly on the Indian Ocean. This geographical condition gives Bengkulu City a great opportunity to develop capture fisheries (Mulyasari, 2015). According to BPS data (2023) which states that capture fisheries production in Bengkulu City was 41,919 tons in 2022. Despite having great potential in capture fisheries, in reality this has not been able to improve the welfare of fishermen in Bengkulu City.

The above data contradicts the data found on the poor population in Bengkulu City in 2022 according to BPS data (2023) which reached 59.43 thousand people, or around 15.44 percent of the total population of Bengkulu Province. According to the data presented, it can be stated that the average population of Bengkulu City is at a low level of welfare as seen from the poverty line. The problem of social welfare is a problem where there are still Indonesian people who have not been able to feel their rights to basic needs properly because they have not been able to feel decent and comfortable public services from the state (Kalana, 2023).

Extreme and unpredictable weather conditions can greatly affect the amount of fishermen's income, this is because fishing is a job with a high level of uncertainty and is unsafe because sea conditions can be very dangerous and unfriendly at any time. Béné *et al.* (2011), stated in their research results that the level of fishermen's income is highly dependent on the catch which is uncertain, uneven, and difficult to predict, so that fishermen are often referred to as 'the poorest of the poor'. In various locations, traditional fishermen are generally poorer and their welfare levels are still low compared to people who have other jobs. In addition, the profession of fishermen is seen as having a lower social status in society.

The low income of small-scale fishing communities is a form of economic, political, and institutional marginalization of the fishing community in general, which results in the majority of fishermen not having access to economic institutions such as efficient credit markets or decent labor markets, or access to these institutions is too expensive for them. Without this access, fishermen remain unable to reach the minimum investment levels that would enable them to generate greater financial returns and escape the low productivity and poverty that ensnare them (Béné *et al.*, 2011).

This study aims to achieve several main objectives. First, this study will analyze the income of small-scale fishermen households in Bengkulu City. Second, this study will evaluate the level of welfare of small-scale fishermen households in the same area. Finally, this study will examine the correlation between household income and the level of welfare of small-scale fishermen households in Bengkulu City.

RESEARCH METHODS

Time and Place

The purposive method applied in this study deliberately selected Bengkulu City in Bengkulu Province as the research location. This research was conducted in Bengkulu Province because Bengkulu Province has very broad marine potential. This research was conducted in July - December 2024.

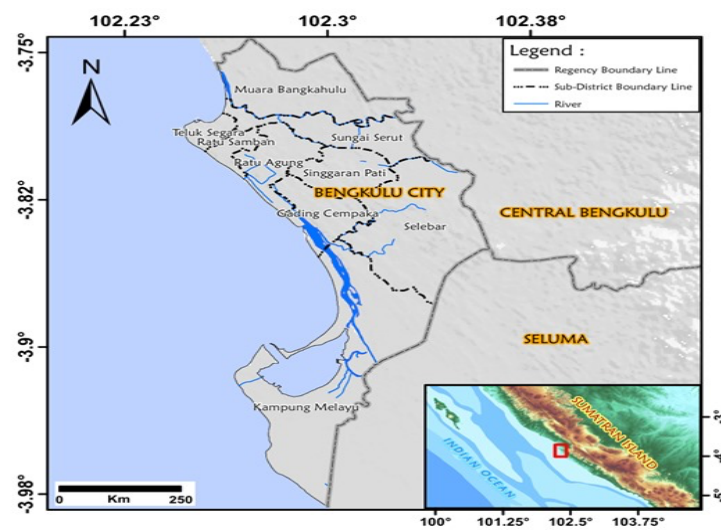


Figure 1. Map of Bengkulu Province

Bengkulu Province borders the Indian Ocean and consists of 9 districts and 1 city. Most of the areas have coastlines, except for Rejang Lebong, Kepahiang, and Lebong which are mountainous areas. This study focuses on Bengkulu City because it has the highest fisheries potential, with capture fisheries production reaching 41,919 tons according to BPS (2024).

Respondent Determination Method

The method used for sampling in this study is Accidental Sampling. Sampling techniques based on chance or incidental meetings with researchers are commonly called Accidental sampling. The limitations of researchers in calculating the total number, then the number of samples to be used needs to be determined using a certain formula. According to Sujarweni (2015) if the population is unknown, the minimum number of samples can be calculated using the following Moe formula:

$$n = \frac{z^2}{4(Moe)^2} = \frac{1,96^2}{4(10\%)^2} = 96,04$$

Description:

n = Number of samples

Z = Normal distribution level at a significance level of 5% = 1.96

Moe = Margin of error, the maximum level of sampling error that can still be tolerated or desired = 10%

The calculation carried out, obtained a figure of 96.04. This figure was then rounded up to 100 respondents. Respondents in this study were selected based on predetermined criteria, namely small-scale fishermen who carry out daily activities (one day fishing). This criterion is important to ensure that the data obtained is relevant to the economic conditions and welfare of small fishermen in the research area.

Data Collection Methods

This study, the data collected includes primary and secondary data. Primary data was obtained through direct observation in the field and face-to-face interviews using a questionnaire that had been prepared in advance with a total of 100 respondents. The primary data needed in this study is data related to on fishery, off fishery, and non fishery. In these three parts, researchers must see how much the costs are, then see the income of fishermen's households and how much the total income of the fishermen's households is in a period of one month, and from the questionnaire data researchers can see the level of welfare of fishermen's households in Bengkulu City using the BKKBN indicator. Secondary data used to support the required data is data from BPS and KPP to see the amount of capture fisheries production, the number of poor people in Bengkulu City, then to see Bengkulu province in figures 2023, then journals related to capture fisheries.

Data Analysis

The following table 1 provides data to determine the level of income of small-scale fishermen in Bengkulu City

Table 1. Formula for on-fishery, off-fishery, non-fishery and RT income

income <i>on fishery</i>	Income <i>off fishery</i> and <i>non-fishery</i>	Fishermen's RT income
$i = Y \cdot Py - TC$	$i = TR - TC$	$i RT = i_{on fishery} + i_{off fishery} + i_{non fishery}$
Information :	Information :	Information :
i = Fisherman's income (Rp/Month)	i = <i>income</i> (Rp/Month)	i RT = Household income (Rp/Month)
Y = Number of catches (Kg/)	TR = Total <i>revenue</i> (Rp/Month)	<i>i on fishery</i> = income from capture fisheries (Rp/Month)
Py = Price of total catch (Rp/Kg/Month)	TC = Total <i>cost</i> (Rp/Month)	<i>i off fishery</i> = Income from the fisheries sector but outside capture fisheries
TC = Total <i>cost</i> (Rp/Month).		<i>i non fishery</i> = Income from outside the capture fisheries sector

Source: Halil, 2019. Wahyuni, 2019. Ulva, 2019

Fishermen's Household Welfare Level

This study also aims to assess the welfare of fishermen in Bengkulu City using analysis techniques based on the welfare criteria of the BKKBN. Can be seen in table 2 assessments/indicators and criteria seen at each level of Family Welfare.

Table 2. Criteria for the Level of Community Welfare according to BKKBN indicators

Level of welfare	Basic indicators	Criteria
Family Pre-prosperous (KPS):	Not yet able to meet basic needs.	If it does not meet the KS I indicators then it is classified as KPS
Prosperous Family I (KS I):	Fulfilling basic needs, but not yet achieving psychological needs.	If one or more of the 6 KS I indicators is not met, then it is included in the KPS category.
Prosperous Family II (KS II):	Fulfilling basic and psychological needs, but not yet achieving development needs.	If one or more of the 8 KS II indicators is not met, then it is included in the KS I category
Prosperous Family III (KS III):	Meeting basic, psychological, and developmental needs.	If one or more of the 5 KS III indicators are not met, then it is included in the KS II category
Family III Plus (KS III Plus):	Meets all needs, including high self-accountability and active social participation.	If one or more of the 2 KS III Plus indicators are not met, then it is included in the KS III category

Source: BKKBN, 2024

The Relationship between Household Income and the Level of Welfare of Small-Scale Fishermen's Households in Bengkulu City.

This study will be conducted using the Rankspearman test, which is a non-parametric statistical technique used to analyze the relationship between welfare and income of fishermen's households.

$$rs = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Description:

Rs = ranksepaerman

d_i = Difference between the ranks of two variables

n = Number of data pairs

RESULT

Characteristics of small-scale fishermen

Socio-economic characteristics indicate the resources owned by fishermen to support small-scale capture fisheries. These resources include age, experience, number of dependents, hours at sea, days at sea, and boat weight (Table 3).

Table 3. Characteristics of small-scale fishermen

Variables	unit	Max	Min	Mean	Std. deviation
Age	Year	74	26	46.99	9,779
Experience	Year	57	1.5	23,575	12.0312
Number of dependents family	person	6	0	3.04	1.180
Sea Hours	O'clock	12	5	8.21	1,328
Sea day	day	30	21	23.36	2,537
Ship weight	GT	10	1	3,065	2.0994

Source: Primary data processed, 2024

Table 3 describes the characteristics of small-scale fishermen. Their average age is 47 years, with the youngest being 26 years old and the oldest being 74 years old. The average experience at sea is 24 years, with a range of 1.5 years to 57 years. Fishermen generally have 3 family members to support. They usually go to sea for 8 hours a day, around 23 days a month. The average vessel used is 3 GT, with the smallest size being 1 GT and the largest being 10 GT. This information provides an overview of the activities and capacity of small-scale fishermen in the research area.

Household Income of Small-Scale Fishermen in Bengkulu City

Household income of fishermen is the total income obtained by all members of the fishermen's household from various sources. Directly related to fishing activities and other sources of income (Ulva, 2019)

Table 4. Total income of fishermen's RT in Bengkulu City

	Average (Rp/month)	Percentage (%)
Income <i>on fishery</i>	4,530,133	82
Income <i>off fishery</i>	1,000,000	18
Total income	5,530,133	100

Source: Primary data processed, 2024

Table 4 shows the income of small-scale fishermen households in Bengkulu City. The average income from fisheries (on fishery) is Rp4,530,133 per month (82%), while from outside fisheries (off fishery) it is Rp1,000,000 (18%). The total average income reaches Rp5,530,133 per month

Welfare Level of Fishermen's Households in Bengkulu City

The welfare level of fishermen's households in Bengkulu City is grouped based on the categories of PRA SEJAHTREA, KS I, KS II, KS III, and KS III Plus. according to the established indicators. The data obtained in the study are in Figure 2:

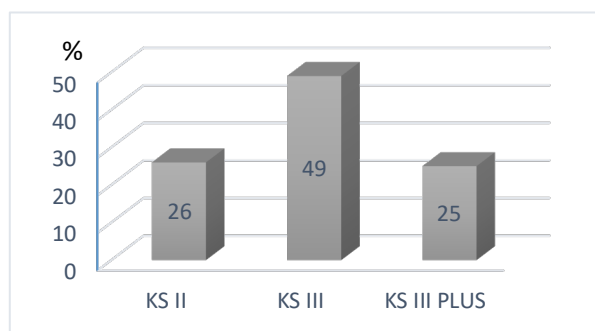


Figure 2 Level of welfare of fishermen's RT in Bengkulu City

Figure 2 shows the level of welfare of fishermen in Bengkulu City. The majority of fishermen, namely 49%, are in the KS III category. As many as 26% are in the KS II category, and 25% are in the KS III Plus category.

Relationship between Household Income and Level of Welfare of Fishermen's Households in Bengkulu City

Analyzing the relationship between fishermen's household income and household welfare levels, a Spearman Rank test was conducted. This test aims to determine whether there is a significant relationship between the two variables. The results of the analysis are presented in Table 5 below.

Table 1. Rank spearman

	Correlation Coefficient	N	Sig. (1-tailed)
Spearman's rho	.188	100	0,031*

* = $\alpha = 0.05$

Source: Primary data processed, 2024

The Spearman's rho correlation test results show a correlation coefficient of 0.188. The significance value (p-value) of 0.031, which is smaller than 0.05, indicates that this correlation is statistically significant at the 0.05 level.

DISCUSSION

Characteristics of Small-Scale Fishermen

The majority of small-scale fishermen have an average age of 47 years, with an age range of 26 to 74 years. This reflects the diversity of ages involved in capture fisheries activities, which is in accordance with the findings of Laapo (2021) which shows that the traditional fisheries sector in Indonesia involves both the older generation and younger fishermen. As also explained by Cahyandi (2021), older fishermen tend to have deeper knowledge of fishing practices and ecosystems, but younger fishermen bring new perspectives that may be more open to adopting technology.

The data shows that the average fishing experience of fishermen is 23.575 years with an experience range of 1.5 to 57 years. This reflects a fairly large variation in experience between young and senior fishermen. Cahyandi (2021) noted that long experience at sea can affect fishermen's ability to manage fishery resources and generate income. In addition, Mulyani (2016) stated that experience is related to fishermen's skills in navigating the sea, which can contribute to higher catches.

The average number of family dependents is 3.04 people, with low variation (standard deviation 1.180). This finding is in accordance with Suryana (2017) who showed that the number of family dependents is directly related to the economic welfare of fishermen. The more dependents, the greater the economic burden that must be borne by fishermen, which has the potential to influence their decisions on the number of days and hours at sea. These family dependents can affect household expenditure and consumption patterns.

An average of 8.21 hours per day and 23.36 days at sea per month, this shows that fishermen work in a fairly routine pattern. Suryanto *et al.* (2018) showed that fishermen who go to sea routinely with long working hours have the opportunity to obtain a more stable income, although there are risks associated with health and physical endurance. In this case, the number of hours and days at sea is directly related to their income potential.

Data on the weight of the vessels used ranges from 1 to 10 tons, with an average of 3.065 tons, indicating that most fishermen use small to medium-sized vessels. This is in line with research by Sitorus *et al.* (2019) which noted that traditional fishermen often use small-capacity vessels, which limits their reach and efficiency at sea. Smaller vessels also have limitations in dealing with bad weather conditions and can affect the catch and welfare of fishermen.

Household Income of Small-Scale Fishermen

Household income of small-scale fishermen has a direct impact on the fulfillment of basic needs such as food, shelter, and clothing. In the context of fishermen in Bengkulu City, most of whom rely on marine catches as their main source of income, the higher their income, the better their ability to meet these needs. This is in line with the theory of welfare economics which states that higher income allows individuals or households to have better access to goods and services that are essential for survival and quality of life. Relevant previous research supports this finding. For example, Béné *et al.* (2011), in their study, stated that the income of traditional fishermen plays a major role in determining household welfare, because it provides access to sufficient basic needs. In this study, Béné *et al.* highlighted the importance of sufficient income to support the survival and economic stability of the family, although fishermen's income is highly dependent on fluctuations in catches.

Another relevant study, namely by Halil (2019), found that households with higher incomes tend to have better access to nutritious food and more decent housing. Halil also revealed that increased income allows families to meet psychological and social needs, such as education and health, which contribute to overall well-being. In Bengkulu City, as found in this study, higher income helps fisher households to better meet their basic needs. For example, when fish catches increase, fisher households can buy more nutritious food, improve housing conditions, and provide better education for their children. This condition shows how income can play a role as a determinant of fisher household welfare.

Level of Welfare of Small-Scale Fishermen

Ferse *et al.* (2010) in their research emphasized that welfare is not only determined by the fulfillment of basic needs, but also by the capacity of households to access social services, such as education and health. They found that higher incomes allow fishing families to take better care of their health and provide better education for children, which has a long-term positive impact on overall family welfare. This is in line with the research conducted in which the level of welfare of RT fishermen in Bengkulu City is at KS II, KS III and KS III PLUS where at the level indicator fishermen families in Bengkulu City meet to be able to access decent social, education and health services.

Goma (2014) that differences in economic conditions of society will affect the pattern of human life itself, can be proven by the various activities and busyness of the community which are diverse according to their respective professions. This is in line with the KS II level, with a data distribution of 26%, the majority are families who are stated to be less active in the community, this is because the community is less concerned about social and political life due to the busyness of survival, fishermen in Bengkulu City as described in Table 3 show the number of hours and days at sea which are quite routine and the government is wrong in providing assistance to fishermen. This is in line with the results of Pramudyasmono's research (2010) which states that the government often provides assistance that is wrongly targeted, such as providing boats and fishing gear to people who are not fishermen. Assistance for fishermen is often incomplete, for example boats without engines or engines without boats and fishing gear.

Figure 2 shows the percentage of small-scale fishermen's RTs of 49% in KS III, which states that small-scale fishermen in Bengkulu City have been able to meet basic, psychological and development needs, this is in contrast to Baiq's research (2022) on fishermen in Batulayar District, West Lombok Regency, which was 52.63% in KS I. This is supported by several factors that can be stated as the superiority of fishermen in Bengkulu City, namely the average experience of fishermen in Bengkulu City of 23.575 years, which is in line with Mulyani's research (2013) which states that experience has a significant effect on fishermen's income which supports family welfare. Then another supporting factor is the hours at sea which are stated to be quite routine with 8.21 hours/day, this is in line with Musdalifah's research (2023) which states that fishermen's hours at sea affect their income. The faster the time at sea, the greater the possibility of getting more results, so that income will be higher. Level III PLUS welfare has a data distribution of 25% which says that small-scale fishing families in Bengkulu City are already prosperous.

The Relationship between Income and Welfare of Small-Scale Fishermen Households

The results of the Rankpearman test show a significant relationship between household income and welfare levels Sig. (1-tailed) = 0.031. This is in line with Wahyuni's research (2019) which found that fishermen's household income plays a role in improving their welfare, although this income is greatly influenced by external factors such as fish prices on the market and government policies. This study also shows that even though fishermen's income is relatively middle, they can still have a relatively good level of welfare if there is support from social policies and access to better public facilities such as education, health, and infrastructure. This is in line with the theory of welfare economics which states that higher income allows individuals or households to have better access to goods and services that are important for survival and quality of life. This strengthens the findings of Béné *et al.* (2011), which highlights that traditional fishermen's income plays a major role in determining family welfare, although it is still affected by fluctuations in catches. These results indicate that the higher the income of fishermen's households, the better the level of welfare achieved.

The income of fishermen in Bengkulu City is influenced by the days of going to sea and the hours of going to sea which are fairly routine with a high level of experience, this is in line with Putri's research (2019) which states that fishermen's income can be optimized if they have adequate experience, so that it can reduce the possibility of errors. In addition, fishermen's income can also be used as an indicator of welfare, where maximum income will have an impact on increasing the welfare of fishing communities in fishing activities. However, there are several factors that influence fishermen's income, namely the capital used to go to sea, duration of work, and experience in fishing

CONCLUSION

This study found that the average household income (RT) of small-scale fishermen in Bengkulu City is IDR 5,530,133 per month. The level of welfare of fishermen is divided into three categories, namely Prosperous Category II (26%), Prosperous III (49%), and Prosperous III Plus (25%). The results of the rankspearman test showed a significant relationship between income and welfare of fishermen with a significance value of 0.031. This finding underlines that income is the main factor influencing the welfare of small-scale fishermen. Therefore, increasing fishermen's income can be a strategic step to improve the quality of life of them and their families. Overall, small-scale fishermen in Bengkulu City are quite capable of achieving good welfare thanks to their long experience at sea and adequate income. However, they still need support from government policies and improvements in public facilities such as education and health to achieve better welfare.

ACKNOWLEDGEMENTS

I would like to express my gratitude to Allah SWT for His mercy and grace, so that I can complete this thesis well. I express my gratitude and love to my beloved mother for giving moral and material support. I express my gratitude to my supervisors, Mr. Dr. Indra Cahyadinata, SP. M.Si and Mrs. Dr. Gita Mulyasari, SP. M.Si. and thank you to my best friends who always give moral support.

REFERENCES

- Badan Pusat Statistik Kota Bengkulu. (2023). *Kota Bengkulu dalam Angka Tahun 2023*. BPS Kota Bengkulu. <https://bengkulukota.bps.go.id/id/publication/2023/02/28/2db37fb59aca7d189266e3b/kota-bengkulu-dalam-angka-2023.html>
- Badan Pusat Statistik Provinsi Bengkulu. (2024). *Produksi dan Nilai Produksi Perikanan Tangkap di Laut Provinsi Bengkulu, 2022*. <https://bengkulu.bps.go.id/id/statistics-table/1/MTc3MyMx/produksi-dan-nilai-produksi-perikanan-tangkap-di-laut-provinsi-bengkulu-2022.html>
- Badan Pusat Statistik Sumberdaya Laut dan Pesisir. (2023). *Ekonomi Laut Berkelanjutan dan Tantangan Pengelolaan Kawasan Pesisir* (Katalog: 3312002 ISSN 2086-2806). <https://www.bps.go.id/id/publication/2023/11/30/45b0e0c30911979641959fe5/statistik-sumber-daya-laut-dan-pesisir-2023.html>
- Béné, E., Steel, E., Kambala, L., & Gordon, A. (2009). Fish as the "Bank in the Water" – Evidence from Chronic-Poor Communities in Congo. *Food Policy*, 34(1), 108-118. <https://doi.org/10.1016/j.foodpol.2008.08.002>
- Béné, G., Macfadyen, G., & Allison, E. H. (2011). *Increasing the Contribution of Small-Scale Fisheries to Poverty Alleviation and Food Security* (FAO Fisheries and Aquaculture Technical Paper No. 530). Food and Agriculture Organization of the United Nations.
- Béné, R. M. (2011). Poverty in Small-Scale Fisheries: Old Issue, New Analysis. *Progress in Development Studies*, 11(2), 119–144. <https://doi.org/10.1177/146499341001100203>
- BKKBN. (2024). *Rencana Strategis Badan Kependudukan dan Keluarga Berencana Nasional Tahun 2020-2024*. https://e-ppid.bkkbn.go.id/assets/uploads/files/a1b01-renstra_bkkbn_2015-2019_revisi.pdf
- Cahyandi, K. (2021). Pengaruh Pengalaman dan Jarak Tempuh Melaut terhadap Pendapatan Nelayan di Kabupaten Cilacap. *Saintara: Jurnal Ilmiah Ilmu-Ilmu Maritim*, 5(2), 99-112.

- Ferse, S. C. A. (2010). The Role of Small-Scale Fisheries in the Livelihoods and Food Security of Coastal Communities in Southeast Asia. *Ecology and Society*, 15(3), 1-12.
- Goma, M. H. (2014). Pergeseran Budaya Molihuto di Desa Sonuo Kecamatan Bolangitang Barat. *Jurnal Jurusan Sejarah Fakultas Ilmu Sosial Universitas Gorontalo*.
- Halil, H. (2019). The Relationship Between Household Income and Quality of Life: A Study on Coastal Communities in Indonesia. *Journal of Coastal Management*, 47(4), 453-468.
- Halil, H. (2019). Analisis Pendapatan dan Efisiensi Usaha Pembibitan Udang Vaname (*Litopenaeus vannamei*) di Kabupaten Takalar. *Jurnal Tabaro*, 3(2), 373-379.
- Kalana. (2023). Analisis Faktor-Faktor yang Mempengaruhi Pendapatan Nelayan di Kota Langsa. *Jurnal Ekonomi dan Studi Pembangunan*, 2(1), 36-52.
- Laapo, A. (2021). Pengaruh Faktor Sosio-Ekonomi dan Teknis terhadap Hasil Tangkapan Nelayan Skala Kecil. *Jurnal Ilmu Perikanan*, 8(2), 45-58.
- Muflikhati. (2010). Kondisi Sosial Ekonomi dan Tingkat Kesejahteraan Keluarga: Kasus di Wilayah Pesisir Jawa Barat. *Jurnal Ilmu Keluarga & Konsumsi*, 3(1), 1-10.
- Mulyasari. (2015). Prospek Pengembangan Usaha Perikanan Tangkap di Kota Bengkulu. *Jurnal Social Economic of Agriculture*, 4(2), 1-7.
- Munparidi. (2010). Pengaruh Pendapatan dan Ukuran Keluarga terhadap Pola Konsumsi: Studi Kasus Desa Ulak Kerbau Lama Kecamatan Tanjung Raja Kabupaten Ogan Ilir. *Jurnal Ilmiah*, 2(3).
- Musdalifah. (2023). Pengaruh Modal Kerja, Tenaga Kerja, dan Jam Kerja Melaut terhadap Pendapatan Nelayan di Kampung Wuring Kecamatan Alok Barat Kabupaten Sikka. *Jurnal Accounting UNIPA*, 2407-1110.
- Putri. (2019). Analisis Determinan Pendapatan Nelayan di Kecamatan Tejakula Kabupaten Buleleng. *E-Jurnal Ekonomi Pembangunan*.
- Pramudyasmono. (2010). Perilaku Masyarakat Miskin di Kota Bengkulu dan Model Pengentasan Kemiskinan Berbasis Nilai Sosial-Budaya Lokal. *Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Bengkulu*.
- Ramadani, M., Kurniawan, B., & Erliana, N. (2023). Analisis Faktor-Faktor yang Mempengaruhi Pendapatan Nelayan di Kelurahan Nipah Panjang 1 Kabupaten Tanjung Jabung Timur. *Jurnal Masharif Al-Syariah: Jurnal Ekonomi dan Perbankan Syariah*, 8(2), 45-58.
- Roflin. (2021). *Kupas Tuntas Analisis Korelasi*. Penerbit NEM.
- Roxes, M. (2017). Analisis Faktor-Faktor yang Mempengaruhi Pendapatan Nelayan Tradisional di Kelurahan Belawan Bahagia Kecamatan Medan Belawan Kota Medan. *Jurnal Ilmu Ekonomi dan Studi Pembangunan*, 18(2), 123-135.
- Safriani, E. W., Jayanti, R. D., Merselena, M., et al. (2019). Karakteristik dan Dinamika Nelayan Rawa Pening (Kasus Kecamatan Banyubiru). *Jurnal Pendidikan dan Ilmu Geografi*, 4(2), 43-56.
- Statistik Kementerian Kelautan dan Perikanan. (2022). *Jumlah Nelayan Menurut Kabupaten/Kota Provinsi Bengkulu*. https://statistik.kkp.go.id/home.php?m=nelayan_kabupaten_tangkap
- Suherman. (2018). Korelasi sikap dan pengetahuan dengan indeks DMF-T pada murid sekolah dasar. *Jurnal Endurance*, 3(2). Diunduh pada 20 Desember 2024 dari <http://publikasi.ildikti10.id/index.php/endurance/article/view/1228/596>
- Suratiyah. (2006). Ilmu Usahatani. Penebar Swadaya.
- Ulva. (2019). Analisis pendapatan dan tingkat kesejahteraan rumah tangga nelayan tradisional di Kecamatan Teluk Pandan Kabupaten Pesawaran (Skripsi, Jurusan Agribisnis, Fakultas Pertanian, Universitas Lampung, Lampung).

- Wahyuni. (2019). Pendapatan rumah tangga nelayan di pesisir Kota Agung Kabupaten Tanggamus (Skripsi, Jurusan Agribisnis, Fakultas Pertanian, Universitas Lampung).
- Yuliana, N. N. R., & Budhi, M. K. S. (2021). Pengaruh Jumlah Kapal, Jenis Kapal dan Frekuensi Melaut Terhadap Produksi dan Pendapatan Nelayan di Kota Denpasar. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, 10(4), 1624-1655.