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Species Composition and Catch Rate of Cast Net Fisheries in Kerinci Lake, Jambi

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ABSTRACT

Capture fisheries in inland waters play a vital role in supporting food security and the economy of the community, including fishermen in Lake Kerinci who utilize cast nets as an economical and effective fishing gear. However, scientific information on catch composition, catch rates, and technical factors influencing the productivity of this gear is still limited. The purpose of this study was to analyze catch composition, catch rates, and factors influencing catch yields from cast nets in Lake Kerinci, Kerinci Regency, Jambi. The study was conducted from June 29 – August 7, 2025, using a survey method through participatory observation and interviews with 17 fishermen using cast nets, with a total of 34 data collection trips. Data collected included fish species, weight and number of catches, fishing duration, number of casts, and gear dimensions, then analyzed descriptively and using multiple linear regression. The results showed that the catch composition consisted of 162 tilapia (84.49% of the total weight) and 39 Nile tilapia (15.51%). The average catch rate of the throw nets reached 1.74 kg/hour, with the highest value for tilapia at 2.94 kg/hour. Regression analysis results showed that fishing duration, number of throws, and gear dimensions had no significant effect on catch results ($p>0.05$). It can be concluded that the throw nets in Lake Kerinci predominantly catch tilapia, while technical factors of the gear are not the main determinants of catch results. Environmental conditions and fish stock availability are suspected to have a greater influence on catch results.

INTRODUCTION

Kerinci Regency is located between 101°08' and 101°50' East Longitude and 10°40' and 20°26' South Latitude. Its territory covers 332,814 hectares or approximately 3,328.14 km².

More than half of this area, 1,990.89 km² to be exact, is the Kerinci Seblat National Park (TNKS), while the remaining 1,337.15 km² is used for settlements and cultivation areas. Kerinci Regency also has several lakes with the potential to be developed for the fisheries sector, one of which is Lake Kerinci (BPS Kerinci Regency, 2018).

Lake Kerinci is a lake located in Kerinci Regency, Jambi Province, Indonesia. This lake has an area of approximately 4,200 square hectares with an altitude of 783 m above sea level. Situated at the foot of Mount Rayo, this lake is the largest in Kerinci Regency. Lake Kerinci is included in the category of volcanic lakes with a depth of up to 110 meters (Candra *et al*., 2023). Lake Kerinci is located in Jambi Province, Kerinci Regency and Sungai Penuh City with a circumference of 37.82 km. (Ministry of Environment and Forestry, 2022). Lake Kerinci is surrounded by four districts with 57 villages.

The most dominant fishing activity in Lake Kerinci is capture fisheries, where local residents fish almost daily. Fishing is a vital part of the community's livelihoods, with the aim of generating income. The lake boasts significant natural resource potential in the fisheries sector. Fishermen from various villages around Lake Kerinci operate a variety of fishing gear (Nur & Eriawan, 2023). These include traps (bubu), anco, cast nets, fixed nets (bagan tancap), and gillnets (Azmi, 2021). One of the fishing gear used in Lake Kerinci is the cast net. The net is a simple fishing tool that traps fish to prevent them from escaping. Furthermore, it can catch large numbers of fish if used at the right time and with a mesh size appropriate to the target catch (Bandi *et al*., 2021). A throw net is a fishing tool that is operated by throwing it, so that fish within the net area will be trapped (La Nane, 2012). Fishermen operate the throw net fishing tool by using a one-day fishing method or one day of fishing activities.

The catch obtained from the throwing net fishing gear includes Nila (*Oreochromis niloticus*), Mujair (*Oreochromis mossambicus*), medic fish (*Osteochilus waandersii*), semah fish (*Tor douronensis*), carp (*Cyprinus carpio*) and barau (*Hampala macrolepidota*). It can be said that low rainfall variations also affect fish diversity, because the water surface shocks that occur will be related to changes in conditions and habitat availability for fish (Pramoda & Nasution, 2011). Fishing performance using throwing net fishing gear can be seen from the composition, catch rate and factors that affect the catch of throwing net fishing gear which describes the ability of fishing gear to produce catches per unit time. Fishing activities in throwing nets are influenced by the duration of fishing, the size and dimensions of fishing gear, thus affecting the ability to catch. In accordance with the opinion of Firdaus (2010), specifications of the mesh size affect selectivity towards fish size and species.

The catch is greatly influenced by the ability of the cast net fishing gear to produce organisms called the catch rate, until now the assessment of the cast net catch rate in Lake Kerinci has not been carried out, research that has been conducted by previous researchers, namely Bandi *et al*. (2021) with the title of comparison of the cast net catch results at different mesh sizes in Lake Kerinci, so it is not known how much the performance of the cast net fishing gear is capable of, even though the longer the performance of the cast net fishing gear, the greater the chance of successful capture. This is in accordance with the statement Nelwan *et al*. (2015) which states that the number of catches is the main factor that reflects the ability of fishing gear in fishing activities.

METHODS

This study used a survey method conducted directly in Lake Kerinci, Kerinci Regency, Jambi Province. According to Sugiyono (2019)**,** the survey method is a quantitative research

approach used to obtain data from a sample taken from a population to describe occurrences, distributions, and relationships among variables. This method is appropriate for describing real conditions and behaviors of fishermen using cast nets in Lake Kerinci without manipulating variables.

The survey method was chosen because it is able to describe the actual conditions of fishing activities carried out by fishermen using cast nets as the main fishing gear in the public waters area. A participatory observation approach was applied by following fishing activities with fishermen, supported by structured interviews to obtain technical information on the operation of the equipment.

Study Site

This study was conducted in Lake Kerinci, Kerinci Regency, Jambi Province, from June 29 to August 7, 2025. The lake is located at an altitude of 783 m above sea level and classified as a volcanic lake with an area of approximately 4,200 ha. Sampling was carried out in the littoral zone, which is the main fishing ground for cast net operations.

Data Collection

A field survey approach was employed using participatory observation and structured interviews with 17 cast net fishermen. The respondents were selected using simple random sampling from a total of 86 active fishermen around the lake. Observations were conducted during 34 fishing trips, each representing one day of fishing activity.

Primary data collected included fish species, number of individuals, total catch weight (kg), fishing duration (hours), number of casts, and net circumference (m). Fish species were identified visually based on morphological characteristics following identification keys for *Oreochromis mossambicus* and *O. niloticus*. Fish weight was measured using a digital scale (precision 0.01 kg), and fishing time was recorded with a stopwatch. Before field data collection, a preparatory phase was conducted to:

1. Identify observation stations located in the littoral zone—the primary operational area of cast nets;
2. Verify and record gear specifications, particularly mesh sizes of 3.5 inches and 4.5 inches used by fishermen.

The main instruments used in this study included cast nets, digital scales, measuring tapes, stopwatches, GPS, and daily observation sheets. All primary data were recorded manually and tabulated using Microsoft Excel 2019 for analysis.

Data Analysis

Three analytical components were applied:

1. Catch Composition

The species composition of the catch was calculated as the percentage of the total number and weight of each species relative to the total catch (Samitra & Rozi, 2018):

$$KJ = (Wi / Wt) \times 100\%$$

Where:

KJ = species composition (%)
Wi = weight of the i-th species (kg)
Wt = total catch weight (kg).

2. Catch Rate (CR)

The catch rate was used to evaluate the fishing efficiency of the cast net (Sparre & Venema, 1999):

$$CR = \text{Catch (kg)} / \text{Effort (hours)}$$

Where:

Effort represents the total duration of fishing operations during each trip.

3. Regression Analysis of Technical Factors

To examine the relationship between technical factors and catch yield, a multiple linear regression analysis was conducted using Microsoft Excel 2019. Independent variables included fishing duration (X1), number of casts (X2), and gear dimensions (X3), with total catch (Y) as the dependent variable. The model used was:

$$Y = a + b1X1 + b2X2 + b3X3$$

Where:

a = constant
b1, b2, b3 = regression coefficients.

Prior to interpretation, the regression model was tested for normality, multicollinearity, and homoscedasticity to ensure statistical validity. The level of significance used for all statistical tests was 5% ($p < 0.05$).

RESULTS

Research Location Overview

The research location was conducted at Kerinci Lake, which is located in Keliling Danau District, Kerinci Regency, Jambi Province. Geographically, this lake is located between 2°7’28” to 2°8’14” South Latitude and 101°26’50” to 101°31’34” East Longitude. The research location can be seen below in the image.

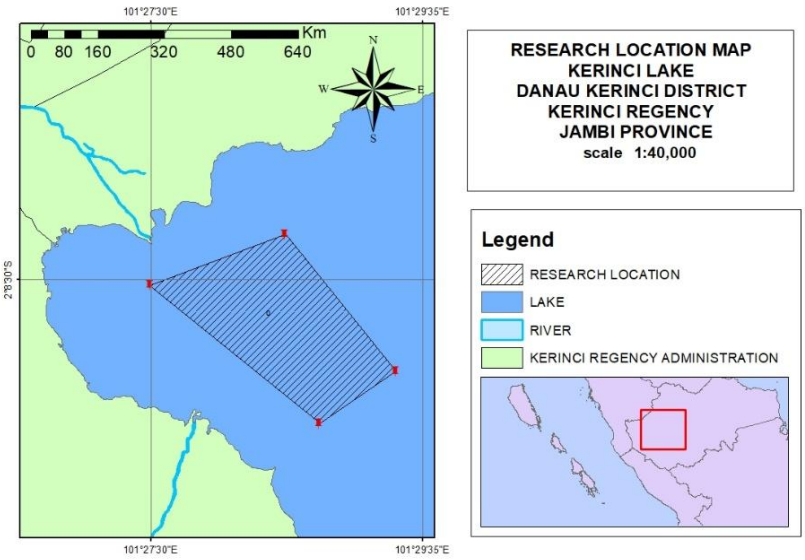

Figure 1. Research Location Map

Composition of Catch Results

The composition of the types of catch is used to determine the composition and types of fish caught by the cast net at the research location, with each calculation being shown in Table 1.

Table 1. Composition of the Catch Results of the Throwing Net

No	Species Name	Scientific Name	Number (tail)	Composition (%)	Weight (Kg)	Composition (%)
1	Mujair	*Oreochromis mossambicus*	162	80.60	99.90	84.49
2	Nila	*Oreochromis niloticus*	39	19.40	18.34	15.51
Total			201	100	118.24	100

Catch Rate

Catch rate indicates the effectiveness of a fishing gear in catching fish per fishing attempt. This effectiveness is reflected in the catch, expressed in grams, kilograms, or tons. Fishing effort, when calculating catch rate, includes the duration of the fishing activity, such as the time the gear is submerged or floated, the time it takes to lift the gear, and the total harvest time, measured in minutes, hours, or days (Firdaus, 2010). The results of the research on catch rates can be seen in table 2.

Table 2. Catch Rate of Throwing Net Equipment

Fish Names	Total Trip	Total Weight (ni) (Kg)	Catch Rate (Cr) (Kg/Hour)
Mujair	34	99.90	**2.94**
Nila	34	18.34	**0.54**
			1.74

Factors Affecting Catch Results

Understanding the factors influencing cast net catches is crucial for more efficient and sustainable fishing practices. Based on the study in the discussion chapter, variables influencing catches include fishing duration, number of casts, and the dimensions of the fishing gear used.

1. Coefficient of Determination Test (R-Square)

Determination test is used to measure how much influence the independent variables, namely fishing duration (X1), number of throws (X2), and dimensions of fishing gear (X3), have on the dependent variable, namely the results of fish catches using throw nets in Lake Kerinci.

Table 3. R-Square Determination Coefficient Test Results

Model	R	Adjusted R Square	Standard Error
1	0.32	0.02	1.51

2. F Test (Simultaneous Regression)

This simultaneous analysis was conducted to determine whether the regression model was suitable for use. This test aimed to determine the effect of fishing duration (X1), number of throws (X2), and fishing gear dimensions (X3) simultaneously or jointly on the variable of fish catches using throw nets. (Y) (Ekhsan, 2019).The results of the analysis can be seen in Table 4.

Table 4. F-Test Results of Factors Affecting Catch Results

	Model	Sum of Squares	df	Mean Square	F	Sig
1	Regression	7,975	3	2,658	1,1702	0.337
	Residual	68,153	30	2,272		
	Total	76,129	33			

3. T-Test (Partial Regression)

This test is to determine the effect of fishing duration (X1), number of throws (X2), and fishing gear dimensions (X3) partially on the catch variable (Y) (Ekhsan, 2019). Based on this, the results of the analysis of the independent variables against the dependent variables are obtained, which can be seen in Table 5.

Table 5. Results of Multiple Linear Regression Analysis of the Effect of Variables X1, X2, and X3 on Variable Y

No		Coefficient	*Standard Error*	t	*P-value*
	(Constant)	14.78	6.45	2.29	0.03
1	duration of capture (Hours)	0.49	1.11	0.44	0.66
2	Number of Throws (Times)	-0.02	0.05	-0.3	0.77
3	fishing gear dimensions (m)	-0.17	0.09	-1.85	0.07
	R Square=0.10				

DISCUSSION

Research Location Overview

The fishing area that uses the throw net fishing gear in Lake Kerinci is located around the edge of Lake Kerinci, to reach the fishing area it takes up to 30 minutes to pass through the Batang Merao River Watershed (DAS). Fishermen sell the catch from the throw net fishing gear at traditional markets or at the Balai in the fishing village where they live.

Composition of Catch Results

Based on Table 1, it is known that the types of fish caught in the throw net fishing gear are Mujair (*Oreochromis mossambicus*) and Nila (*Oreochromis niloticus*) with a total weight of 118.24 kg. The fish that were caught more were Mujair with a total of 162 fish and a weight of 99.90 kg. Meanwhile, Nila with a total of 39 fish and a weight of 18.34 kg. According to the research results (Samuel & Suryati, 2014). The catches found in Lake Kerinci include Nila (Oreochromis *niloticus*), Mujair (*Oreochromis mossambicus*), barau (*Hampala macrolepidota*), medic (*Osteochilus waandersii*), semah (*Tor douronensis*), rayo or mas (*Cyprinus carpio*), seluang (*Rasbora sp*), gabus (*Channa striata*), sepat (*Trichopodus pectoralis*), catfish (*Clarias sp*), gourami (*Osphronemus goramy*), tilan (*Mastacembelus erythrotaenia*), and freshwater lobster (*Cherax quadricarinatus*). In this study, there were only 2 types of catch, namely Mujair (*Oreochromis mossambicus*) and Nila (*Oreochromis niloticus*), the difference in catch results is due to the research being conducted on the edge of a lake or in shallow waters, tilapia and Nile tilapia are types of herbivorous fish that use aquatic plants, moss and phytoplankton as their natural food (Rahanti & Widyorini, 2017), the moss itself is on the edge of the lake, so the catch obtained is only tilapia and Nile tilapia.

The results of this study, which show the dominance of *Oreochromis mossambicus* and *Oreochromis niloticus*, exhibit a similar pattern to research conducted in marine waters that also identified certain dominant species in the catch of bagan fishing gear (Afriadi *et al*., 2024).

This indicates that environmental conditions and the type of fishing gear play an important role in determining the structure of the catch composition.

The catch composition was dominated by Mujair at 84.49% of the total catch, while Nila at 15.51%. This finding differs from the study of throw nets in Lake Kerinci (Koto Petai Village) by Bandi *et al*. (2021), which reported Mujair as the main catch from throw nets. This difference is thought to be related to gear specifications (a 3.5-inch mesh is more selective for Mujair class sizes), fishing location (shallow littoral zone), and the time and intensity of effort that can shift the composition of captured species. Despite the differences, the general direction is consistent with tilapia/tilapia dominating the catch community in Lake Kerinci.

The known composition of the catch at the research location reflects the fisheries ecosystem and the presence of the dominant fish species in the area, namely Mujair (*Oreochromis mossambicus*). This statement is supported by previous research Samuel & Subagja (2011) which states that tilapia is a type of economically valuable fish highly favored by local people as a source of food. This fish is a dominant species and breeds in the lake's littoral zone. Mujair is generally caught using nets and arrows. The high Mujair fish composition could be due to environmental factors, successful natural cultivation, or adaptation to lake conditions. This aligns with previous research (Tabaika, 2022). Environmental conditions such as pH, temperature, salinity, and the availability of fish food in the lake are also taken into consideration. These factors significantly influence fish growth. If fish habitats are polluted, the quality of the aquatic ecosystem will decline, negatively impacting fish survival.

Catch Rate

Discussion of the catch rate of throw nets is very important in understanding the productivity of this fishing gear in fishing activities. According to Apriliani *et al*. (2018) states that the measurement of catch rate is the catch divided by the number of efforts or fishing attempts which can be converted into per trip or per unit of time.

In Table 2 above, the catch rate of the throw net is calculated by dividing the total catch by the total number of fishing trips. The highest catch rate was for Mujair (*Oreochromis mossambicus*) with a value of 2.94 kg/trip, while the lowest was for Nila (*Oreochromis niloticus*) with a value of 2.94 kg/trip.0.54kg/trip. Regional fisheries data also reports that tilapia and mujair are the dominant species in the catch composition of Lake Kerinci, along with four other fish (Barau, Seluang, Tilan, and Koan) (Idris *et al*., 2013).

The dominance of *Oreochromis mossambicus* and *O. niloticus* in cast net catches in Kerinci Lake shows a similar pattern to gillnet fisheries in marine waters, where differences in species composition are strongly influenced by habitat type and gear selectivity (Sitorus *et al*., 2023). The lack of catch rates for other fish is due to the mesh size of the nets used not being appropriate for the size of the fish, because the target of the throw net fishermen in Lake Kerinci is Mujair and Nila. This is in accordance with the opinion of Rumkorem *et al*. (2021) which states that the size of the net mesh has a strong relationship with the size of the fish caught, where the mesh is chosen according to the size of the fish that is the main target of the catch. Based on research in Lake Pauh comparing 2.5 inch and 3 inch mesh sizes, the results showed that 2.5 inch mesh was more optimal in catching Mujair species including Nila (*Oreochromis niloticus*) (Monica *et al*., 2024). Other research in Semarang waters also shows that the 3.5 inch size is effective for catching fish (Putri *et al*., 2018), while in Lake Kerinci the mesh sizes used are 3.5 inches and 4.5 inches.

Factors Affecting Catch Results

1. Coefficient of Determination Test (R-Square)

R-square (R^2) or the coefficient of determination is a measure that indicates the extent to which variations in the dependent variable can be explained by the independent variable. This value is an indicator of how much influence the independent variable has in explaining changes that occur in the dependent variable (Indartini & Mutmainah, 2024).

On Table 3 shows the coefficient of determination R square value of 0.10 This means that 10% indicates that the catch is influenced by the duration of the catch, the number of throws and the circumference of the circle, then the remaining 90% is influenced by other factors that were not examined in this study. Based on the opinion (Rhamadhani & Saputri, 2023), states that R square is a value that shows how much the independent (free) variable influences the dependent (bound) variable.

It can be seen that the determination (R^2) is 0.02 and is equivalent to 2%, meaning that the independent variables (fishing duration, number of throws and dimensions of fishing gear) are only able to explain the diversity of the dependent variable Y (catch). Meanwhile, 98% is influenced by other factors outside the variables studied, this is in line with the opinion of Mainassy (2017), several factors that influence the catch are temperature, salinity, current speed, water depth and also water clarity.

2. F Test (Simultaneous Regression)

In Table 4, it can be seen that the significance value (sig.) for variables X1, X2, and X3 simultaneously or together has no significant effect with a significance value of 0.337, this value is greater than >0.05, meaning that it can be concluded that X1 (duration of fishing), X2 (number of throws) and dimensions of fishing gear (X3) together do not have a significant effect on variable Y (catch). This is in accordance with the statement (Dewi & Asriani, 2019). The probability value in the F test was 0.337, which is greater than the significance level of 0.05. This indicates that all independent variables in the model have no significant effect on the catch of the throw net fishing gear in Lake Kerinci.

3. T-Test (Partial Regression)

Based on Table 5. The Multiple Linear Regression Equation can be formulated as follows:

$$y= 14.78 + 0.49x1-0.02x2-0.17x3$$

From the multiple linear regression equation, the constant value is 14.78, indicating that when the value of the independent variable is If the duration of fishing (X1), the number of throws (X2), and the dimensions of the fishing gear (X3) are equal to 0, then the catch with the throwing net fishing gear will be worth 14.78. After testing the influence of the independent variables simultaneously, the next step is to test the influence of each independent variable on the dependent variable partially. This test is carried out using a t-test, namely by comparing the calculated values of the independent variables with a significance level > a = 0.05.

The coefficient of fishing duration (X1) is 0.49 states that every increase in catch results will increase by 0.49 hours and the coefficient of the number of throws (X2) of -0.02 states that every increase of 1 throw the catch results will decrease by 0.02 and the regression coefficient of fishing gear dimensions (X3) is -0.17states that for every 1 m2 increase in the dimensions of the fishing gear, the catch will decrease by -0.17 kg. Considering that the main objective of regression is to predict Y based on changes in the value of X, the focus of the analysis should be more directed at the variable X, not at the constant value (Syahroni *et al*., 2024).

In Table 5, the analysis results show that the duration of capture (X1) has a coefficient of 0.49 but has no significant effect (p = 0.66 > 0.05), in line with the findings Kusnadi *et al*. (2018) in Harahap *et al*. (2013) in Rawapening, who each found no effect of fishing duration (fishing time) on catch results using the Branjang and lift net gear. This means that the longer the fishing duration, the catch increases by 0.49 kg. The coefficient value of the variable X2 number

of throws is -0.02 with a p value of 0.77> 0.05 (not significant at the test level a = 5%), meaning that for every hour of fishing duration, the catch decreases by -0.02 kg. The coefficient value of the fishing gear dimension variable (X3) is -0.17 with p > 0.05 indicating that the fishing gear dimension has no significant effect on the catch. This is in line with research (Irawan, 2016) which tested the effect of gillnet width on catch, where the net width factor was not always significant in determining the amount of catch for all species.

CONCLUSION

This study concludes that fishing activities using throw nets in Lake Kerinci show a dominance of Mujair (*Oreochromis mossambicus*), making this species the most abundant and most accessible group of fish in the lake's littoral zone. This condition indicates that the characteristics of the lake's periphery waters are more supportive of the presence and feeding activities of tilapia than tilapia. The obtained catch rate values indicate that throw nets still have the ability to produce fish effectively in small-scale capture fisheries, especially for species that live in shallow schools. However, the productivity of this gear does not reflect the maximum potential of existing fish resources, because species other than tilapia and tilapia are not reached by the gear's selectivity. Furthermore, technical factors such as fishing duration, number of throws, and gear dimensions have been shown to have no significant influence on catch results, so the effectiveness of throw nets is determined more by fish availability and the ecological conditions of the waters than by changes in the design or intensity of gear operation. Therefore, the use of throw nets in Lake Kerinci requires support for structuring the location and timing of fishing that takes into account the dynamics of the lake's ecosystem to ensure sustainability.

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REFERENCES

Afriadi, A., Mairizal, M., Magwa, R. J., Alwi, Y., Lisna, L., & Ramadan, F. (2024). Composition of the Catch of 28 GT Boat Bagan in Carocok Tarusan Waters, Pesisir Selatan District, West Sumatra Province. *Journal of Coastal and Ocean Sciences, 5*(3), 185–188.

Apriliani, I. M., Riyantini, I., Rochima, E., & Ikmal, M. F. (2018). Catch Rate and Fish Catch of Boat Lift Net on Different Position in Palabuhan Ratu Bay Water, Sukabumi, Indonesia. *Jurnal Perikanan dan Kelautan, 8*(1), 88–95. https://doi.org/10.33512/jpk.v8i1.3794

Azmi, H. A. (2021). *Differences In Fish Catches Using White Light Containers and Yellow Light Containers on Fixed-Net Fishing Gear in Lake Kerinci* [Undergraduate thesis, Jambi University]. Jambi University.

Badan Pusat Statistik Kabupaten Kerinci. (2018). *Kerinci Regency in Figures 2018*. BPS Kerinci Regency.

Bandi, Z. N., Lisna, L., & Mulawarman. (2021). Comparison of Catch Results from Throw Nets With Different Mesh Sizes in Lake Kerinci. *Jurnal Perikanan dan Kelautan, 26*(1), 13–16. https://doi.org/10.31258/jpk.26.1.13-16

Candra, D., Herlinda, & Julianto, P. (2023). Implementation of Tourism Development Policies at the Kerinci Regency Culture and Tourism Office (Case Study of Kerinci Lake Tourist Attraction). *JAN Maha, 5*(6), 646–656.

Ekhsan, M. (2019). The Influence of Motivation and Work Discipline on Employee Performance. *Journal of Economics and Entrepreneurship, 13*(1). https://doi.org/10.37849/midi.v21i2.287

Harahap, Y. A., Wibowo, B. A., & Boesono, H. (2013). Analysis of Differences in Fishing Time Using Branjang Fishing Gear on Catch Results in Rawapening Waters, Banyubiru District, Semarang Regency. *Journal of Fisheries Resources Utilization Management and Technology, 2*(3), 172–181.

Idris, A., Asrofi, A., Manurung, H., Harahap, T. N., Retnowati, I., Nasution, S. R., & Rustadi, W. C. (2013). *Lake Rescue Movement (GERMADAN)*. Ministry of Environment.

Irawan, M. Y. (2016). *The Effect of the Net Width Size of Surface Gill Net Fishing Gear on Catch Results in the Waters of Besuki Tulungagung and Prigi Trenggalek, East Java* [Undergraduate thesis, Brawijaya University].

Kementerian Lingkungan Hidup dan Kehutanan. (2022). *Profile of Lake Kerinci*. https://www.profildanau.info/danau/kerinci

Kusnadi, D. M., Boesono, H., & Setiyanto, I. (2018). The Effect of Differences in Fishing Time and Reel Time on Catch Results in Branjang Fishing Gear (Boat Lift Net) in Karimunjawa Waters. *Journal of Fisheries Resources Utilization Management and Technology, 7*(2), 11–18.

La Nane. (2012). *Rehabilitation of River Banks in Aji Kuning Village, Sebatik Tengah District, Nunukan Regency, East Kalimantan* [Undergraduate thesis, Hasanuddin University].

Mainassy, M. C. (2017). The Influence of Physical and Chemical Parameters on the Presence of Lompa Fish (*Thryssa baelama* Forsskål) in the Coastal Waters of Apui, Central Maluku Regency. *Journal of Fisheries, 19*(2), 61–66. https://doi.org/10.22146/jfs.28346

Monica, B. A., Noferdiman, & Monika, L. (2024). Comparison of Catch Results on Gillnet Fishing Gear with Different Mesh Sizes in Lake Pauh, Jangkat District, Merangin Regency. *Mantis Journal of Fisheries, 1*(1), 55–62.

Muhammad, F. (2010). Catch Results and Catch Rates of Trawl, Tugu, and Kelong Fishing Units. *Makara Teknologi, 14*(1), 22–28. https://doi.org/10.7454/mst.v14i1.445

Nelwan, A. F., Sudirman, Z., & Kurnia, M. (2015). Productivity of Large Pelagic Fish Catch Using Hand Lines Based in Majene Regency. *Journal of Marine Fisheries, 6*(2), 129–142.

Nur, R. D., & Eriawan, T. (2023). Mapping the Characteristics of Fisheries Activities in Lake Kerinci. *Abstract of Undergraduate Research, Faculty of Civil and Planning Engineering, Bung Hatta University, 1*(3).

Pramoda, R., & Nasution, Z. (2011). Transformation of Inland Public Water Management in Ogan Komering Ilir Regency. *Journal of Maritime Socioeconomics and Fisheries, 6*(2), 131. https://doi.org/10.15578/jsekp.v6i2.5769

Putri, V. L., Kurohman, F., & Fitri, A. D. (2018). Technical Efficiency and Selectivity of Gillnet Fishing Gear on Catch Composition in Semarang Waters. *Indonesian Journal of Fisheries Science and Technology (IJFST) Saintek Perikanan, 13*(2), 126–132.

Rahanti, K., & Widyorini, N. (2017). Analysis of Food Competition Between Tawes Fish (*Barbonymus gonionotus*), Mujair Fish (*Oreochromis mossambicus*), and Nile Fish (*Oreochromis niloticus*) in the Waters of Wadaslintang Reservoir, Wonosobo Regency. *Journal of Maquares, 6*(4), 515.

Rhamadhani, D. A., & Saputri, E. E. D. (2023). Analysis of Machine Learning Models in Predicting Oil and Gas Well Production Rates 15/9-F-14H. *Journal of Sustainable Energy Development, 1*(1).

Samuel, & Subagja. (2011). Habitat and Biological Characteristics of Tilapia Fish (*Oreochromis mossambicus*) in Lake Ranau, South Sumatra. *Journal of the Public Water Fisheries Research Center, 3*(5).

Sparre, P., & Venema, S. C. (1999). *Introduction to Tropical Fish Stock Assessment*. Center for Fisheries Research and Development.

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.