

UDC 332

THE ROLE OF FISHERMAN'S INCOME IN MEDIATED CAPITAL AND TECHNOLOGY UTILIZATION ON THE WELFARE OF COMMUNITIES WORKING AS FISHERMAN IN KEDONGANAN, BALI

Yana Gede Astawa*, Purwanti Putu Ayu Pramitha

Faculty of Economics and Business, University of Udayana, Bali, Indonesia

*E-mail: astawayana8@gmail.com

ABSTRACT

Indonesia is very famous for its wealth of natural resources, where the utilization of the environment and nature as a source of life for the people of Indonesia. This study was designed with the aim of analyzing the relationship between variables. The research design is path analysis. The variables used are the Welfare of the Community Working as Fishermen, Capital, Utilization of Technology and Income. Data was collected through observation, interviews, and questionnaires followed by validity and reliability tests. Researchers chose Kedonganan Village as the research location. The research population is all people who work as fishermen in Kedonganan whose number is not known with certainty. The capital had no significant effect on fishermen's income and fishermen's welfare. Utilization of Technology has a positive and significant effect on Fishermen's Income and Fishermen's Welfare. Meanwhile, fishermen's income has a positive and significant effect on fishermen's welfare. Thus it can be interpreted that Fishermen's Income does not mediate the influence between Capital and Technology Utilization on Fishermen's Welfare.

KEY WORDS

Capital, technology, income, welfare, fishermen.

Indonesia is very famous for its wealth of natural resources, due to the utilization of the environment and nature as a source of life for Indonesian people. Many sectors generate economic value that supports the country's growth, including from the agricultural sector to the fisheries sector. These two sectors are very basic sectors because these sectors have the potential to develop in every Indonesian archipelago. Utilization of fish resources is not only oriented towards increasing production on the one hand, but on the other hand it must be effective and efficient so that sustainability of the fishery potential will be created (Zulfikar, 2012).

The fisheries sector has a large contribution to state revenue. Where in 2020 according to the National BPS, the fisheries sector contributed 254,112.30 billion Rupiah to the National GDP. This amount has increased from the previous year, namely Rp. 204,016 billion in 2015 to Rp. 252,278 billion in 2019. Even though the GDP of Fisheries at Constant Price (ADHK) has increased, it can be seen that the growth was not significant after the 2019 Covid Pandemic (Central Bureau of Statistics Indonesia, 2020). Weak demand due to the pandemic hit its lowest point in the middle of the second quarter, causing the fisheries sector to experience negative growth.

Fishermen are a group of people who are always active at sea by carrying out fishing activities directly, namely by using fishing gear or nets, and indirectly, such as sailing boat captains, ship captains, ship engine experts, fishing boat cooks, as the main fishermen's livelihood to earn income (Mulyadi S, 2007). According to Mulyadi S, (2007) fishermen can be divided into three groups, namely labor fishermen, skipper fishermen and individual fishermen. Fishermen who are the object of research are traditional fishermen. According to Law no. 7 of 2016 Traditional fishermen are fishermen who catch fish in waters which are traditional fisheries rights that have been used for generations in accordance with local culture and wisdom.

Tourism is a leading sector in Badung Regency. Badung Regency must maximize other sectors that have potential that can still survive in the current pandemic conditions,

namely fisheries. Based on data from BPS Badung Regency, the Agriculture, Forestry and Fisheries sector is one of the sectors that has the smallest growth decline in 2020, namely -0.02% compared to the Provision of Accommodation and Food and Drink Sector which has decreased by -30.72% and The Transportation and Warehousing Sector was -46.26%. The growth of these leading sectors can be seen from Figure 1.

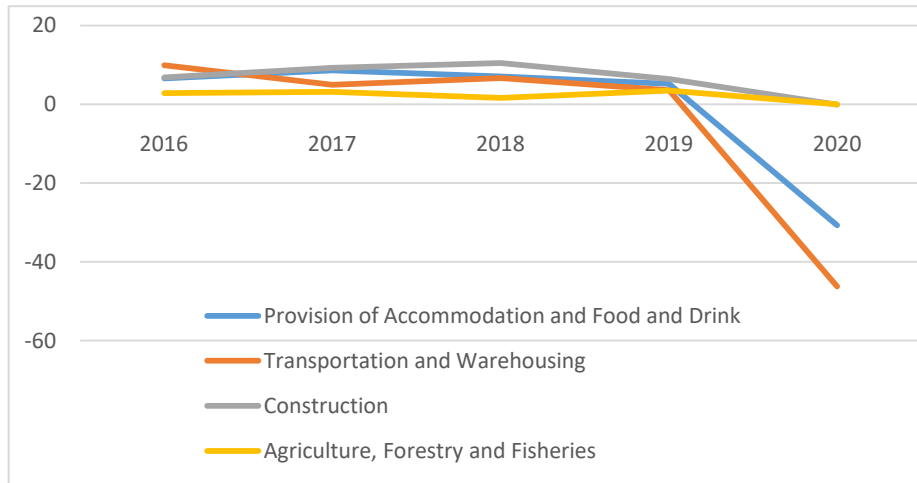


Figure 1 – GRDP of Main Sectors of Badung Regency Based on Constant Prices (In Percent), 2016-2020 (Source: Indonesian Central Bureau of Statistics, 2020)

Based on data from BPS Badung Regency, the fisheries sector together with agriculture and forestry contribute 7.45% to the GRDP at constant prices in Badung Regency. In addition, four out of five sub-districts succeeded in achieving the production targets that had been planned. This can be seen in Figure 2.

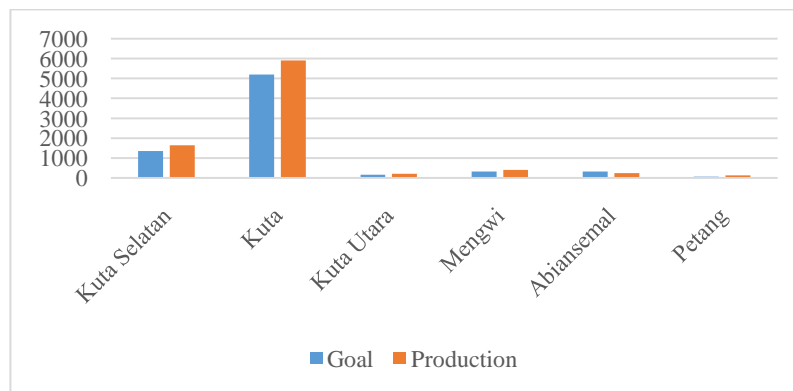


Figure 2 – Total Badung Regency Fishery Production (Tons) in 2020 (Source: Badung District Fisheries Service Performance Report, 2020)

The fisheries sector in Badung Regency is dominated by Kuta District. This is because the centre of fishery production in the Badung area is located in Kedongan Village which has fish auction facilities. With the availability of infrastructure for this auction, it is hoped that fishermen can use it as the first selling place after fish are caught at sea. The catch in the form of fresh fish is directly weighed at TPI (fish auction place). With the availability of infrastructure for this auction, it is hoped that fishermen can use it as the first selling place after fish are caught at sea. Fishermen's catches are sold using an auction system. This is so that fish caught by fishermen are not manipulated by brokers or middlemen. Usually, before the fishermen return from fishing, the widows are waiting on the beach. These buyers are generally traders who resell fishermen's catch to markets throughout Bali.

The government's decision to move the ship with purse equipment was based on the reason that Badung Regency is an area planned as a tourism destination. Especially the Kedonganan Village which is located close to the tourist destination of Kuta, so that the landing of fishing boats will be considered to affect the sight of tourists. Residents who work as fishermen have decreased every year. Of the 15 fishermen groups, only two are currently active, namely the Kerta Bali fishermen group and the Putra Bali fishermen group. This is due to the lack of interest of the younger generation to enter the fisheries sector because it is considered that the fishing profession has a low level of welfare. This is reflected in the value of fisheries production in Badung Regency which tends to decrease. The low value of fish production means that fishermen's income and welfare level is also low. These values can be seen in Figure 3.

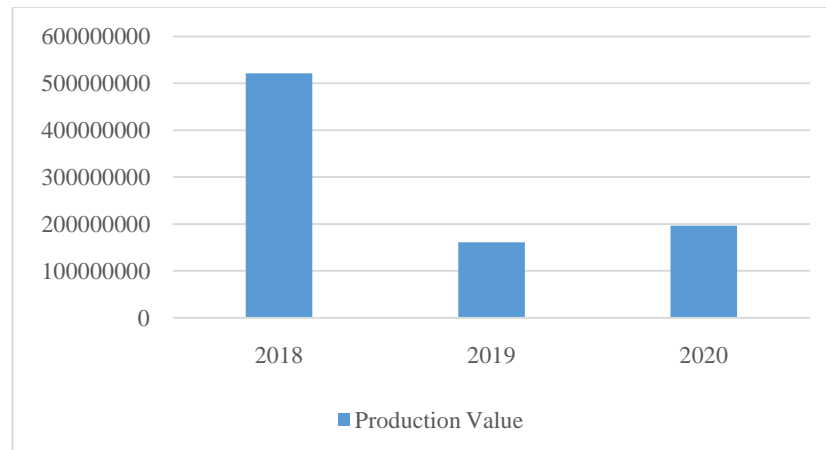


Figure 3 – Value of Fisheries Production in Badung Regency (In Thousand Rupiah) in 2018-2020
(Source: BPS Badung Regency 2020)

Fishermen's welfare is very dependent on the income derived from the catch. According to Kusumayanti (2018) income has a positive effect on the welfare of fishermen, where by increasing income fishermen are able to improve the quality of their family's education to a higher level of education. Rosni (2012) that income received can affect lifestyle and social relations in society, because the size of income affects purchasing power to meet life's needs. The average income owned by each person is also known as per capita income and is a benchmark for progress or economic development (Sumitro, 2010). The fishermen's catch is sometimes abundant, sometimes mediocre, even completely inadequate. This is also due to the fishermen who carry out fishing activities based on the season. According to Suseno (2013), fisheries development often faces problems which are defined as differences in the desired conditions in the fisheries sector with the reality that occurs. Kusnadi (2002) states that the difficulty in improving the welfare of traditional fishermen is influenced by a number of factors, including the limited ability of business capital and fishing technology. In Kedonganan, the local Village Unit Cooperative does not function to meet the capital needs of fishermen so that in meeting the needs of business capital, this causes most fishermen to choose to borrow money from the pembek (middlemen) if these fishermen run out of capital so these fishermen will borrow capital from the shooter, then after the fishermen harvest, they will be handed over directly to the shooters. According to Ani (2018) capital is the most important and very decisive factor to be able to start and develop a business. Prakoso (2013) states that the lack of business capital is also a factor that affects the low income of fishermen.

In addition, until now, it can be said that the fishing effort carried out by Kedonganan fishermen still uses traditional technology, such as jukung, nets, paddles, and outboard motors. This fishing gear is said to be traditional when compared to more modern equipment, such as trawlers and large boats which have a further catchment area (off-shore fishing) and the capacity to catch more fish. Lack of knowledge about modern technology is also one of

the things that makes fishermen's welfare low. According to the International Maritime Organization (2007), the captain of a small ship must have adequate work competence in operating the ship safely and safely, managing the ship well continuously. Fishing communities with traditional characteristics are less future oriented, use technology is simple, less rational, relatively closed to outsiders, and lack empathy (Lucky, 2007). Fishermen who use modern technology are characterized by the use of motorized boats as fishing fleets which are accompanied by a global positioning system (GPS) as a guide and fish finder (detecting the presence of fish) (Sulastri, 2014). Motorized boats have uses as a means of sea transportation that makes it easier for fishermen to quickly arrive at fishing destinations and can carry fish in large quantities so that fish production can increase and income will also increase. Therefore, this tool has the potential to transport fish (Maosen Xu, et. al., 2017). Because the availability of adequate fishing gear will certainly affect the level of productivity (Fanesa, 2014).

Ani (2018) suggests that partially working capital, technology has a significant and positive relationship, while the working hours variable has no significant but positive effect on fishermen's income. Then Prakoso (2013) states that labor, capital and technology have a positive and significant effect on increasing the income of fishing communities. Musdalifa (2020) found that income variables affect welfare. Unlike the research above, researchers will use income as a variable that mediates the effect of capital and the use of technology on welfare.

METHODS OF RESEARCH

This study was designed with the aim of analyzing the relationship between variables. The research design includes a causal modeling or relationship and influence, also known as path analysis. The researcher chose Kedonganan Village as the research location. This is because Kedonganan Village is the center of fishery production in Badung Regency. Kedonganan Village has a fish auction facility which is a place where fishermen meet directly with consumers. In addition, fishermen in Kedonganan Village are still dominated by traditional fishermen. The variables used are the Welfare of the Community Working as Fishermen, Capital, Utilization of Technology and Income. Capital, namely in the form of funds used by fishermen to buy everything needed during fishing in one month in rupiah units (Rp). The use of technology is the use of modern fishing equipment such as motorized boats, GPS systems, Fish Finders, and the use of sophisticated fishing systems (such as: long line system) floating fishing rods. The indicators are, (1) the size of the vessel affects the catch, (2) The type of engine affects the catch, (3) GPS technology, fish finder, and compass make it easier, and (4) Different types of fishing gear affect the catch. Fishermen's income comes from selling their catch in the market which is measured using monthly gross income (in rupiah) which is obtained by the formula (total quantity caught x selling price = gross income).

The types of data used in this research are quantitative data and qualitative data. Quantitative data collected in this study is data from the results of questionnaire answers that have been answered by respondents. The qualitative data collected was the research location, an overview of the research location, the characteristics of the respondents, which consisted of age, gender and recent educational background. Data sources include primary data and secondary data. Primary data, namely data derived from respondents' answers to the questionnaire distributed by the researcher. Secondary data in this study includes data taken by researchers through official sites that are credible and related to research. The research population is all people who work as fishermen in Kedonganan whose number is not known with certainty. The researchers set a quota for the number of samples for this study, namely as many as 100 samples with the sampling technique, namely the Accidental Sampling method. According to Sugiyono (2019) Accidental Sampling is a sampling technique based on chance, that is, fishermen who meet researchers by chance can be used as samples. If you meet the requirements and have the ability to become a fisherman. In the research data collection techniques used include Non-Behavioral Observations and

Structured Interviews. The data analysis technique that will be used to test this research uses the Structural Equation Model (SEM) method with Partial Least Square (PLS) software. The structural equation in this study is described as follows.

$$Y_1 = \beta_1 X_1 + \beta_2 X_2 + \varepsilon_1 \dots\dots\dots(1)$$

$$Y_2 = \beta_3 X_1 + \beta_4 X_2 + \beta_5 Y_1 + \varepsilon_2 \dots\dots\dots(2)$$

Where:

- Y₁= Fishermen's Income;
- Y₂= Fishermen Welfare;
- X₁= Capital;
- X₂= Utilization of Technology;
- β = Path coefficient;
- ε = Measurement error on endogenous indicators.

RESULTS AND DISCUSSION

All valid indicators form constructs or variables because they have a loading factor above 0.6 for the intended construct. However, for early stage research, the development of a measurement scale of 0.5 to 0.6 is considered sufficient (Chin, 1998 in Ghozali, 2014).

The measurement of discriminant validity of the measurement model can be assessed based on the cross loading of measurement indicators with their constructs. The results of crossloading indicators with their constructs in this study are presented in Table 2.

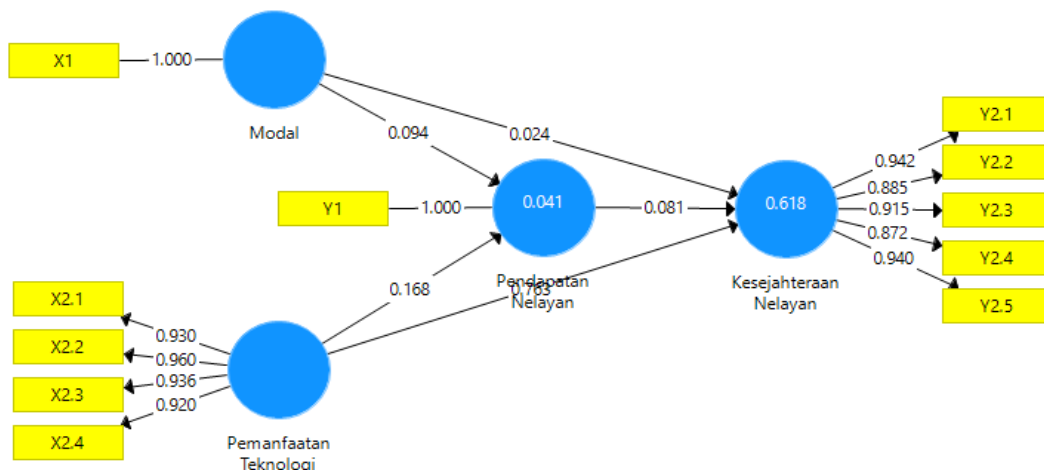


Figure 4 – Full Model of Capital Variable Relations, Technology Utilization on Income and Welfare of Fishermen in Kedonganan Village (Source: Primary Data, 2023)

Table 1 – Outer Loading Indicators of Construct Determinants of Income and Welfare of Fishermen in Kedonganan Village

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
X.1 ← X1	1.000	0.000		
X2.1 ← X2	0.930	0.020	47.332	0.000
X2.2 ← X2	0.960	0.012	78.389	0.000
X2.3 ← X2	0.936	0.019	48.734	0.000
X2.4 ← X2	0.920	0.030	30.646	0.000
Y1 ← Y1	1.000	0.000		
Y2.1 ← Y2	0.942	0.019	48.907	0.000
Y2.2 ← Y2	0.885	0.044	20.259	0.000
Y2.3 ← Y2	0.915	0.030	30.488	0.000
Y2.4 ← Y2	0.972	0.044	19.865	0.000
Y2.5 ← Y2	0.940	0.018	53.460	0.000

Source: Primary Data, 2023.

Table 2 – Crossloading of Fishermen's Income and Welfare Determinant Construct Indicators in Kedonganan Village

n/n	Capital (X1)	Technology Utilization (X2)	Fishermen's Income (Y)	Fishermen Welfare (Y2)
X.1	1.000	0.130	0.116	0.132
X2.1	0.098	0.930	0.220	0.736
X2.2	0.106	0.960	0.153	0.726
X2.3	0.099	0.936	0.150	0.706
X2.4	0.182	0.920	0.150	0.755
Y1	0.116	0.180	1.000	0.222
Y2.1	0.113	0.728	0.247	0.942
Y2.2	0.051	0.776	0.193	0.885
Y2.3	0.190	0.691	0.186	0.915
Y2.4	0.151	0.628	0.193	0.872
Y2.5	0.111	0.722	0.190	0.940

Source: Primary Data, 2023.

Discriminant validity has been fulfilled by seeing that the crossloading has been fulfilled properly because the indicator has higher crossloading in the construct compared to other constructs. For example, the indicator X2.1 has a crossloading of 0.930 in the technology utilization construct (X2), while in other constructs the indicator has a crossloading smaller than that value. The construct feasibility can also be seen from discriminant validity through Average.

Table 3 – Rho-Alpha, Composite Reliability and Average Variance Extracted (AVE) Construct Determinants of Income and Welfare of Fishermen in Kedonganan Village

n/n	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Fishermen Welfare (Y2)	0,949	0.961	0.831
Capital (X1)	1.000	1.000	1.000
Technology Utilization (X2)	0.953	0.966	0.877
Fishermen's Income (Y)	1.000	1.000	1.000

Source: Primary Data, 2023.

Cronbach's Alpha measures the lower limit of the reliability value of a construct, whereas Composite Reliability measures the true value of the reliability of a construct (Chin and Gopal in Salisbury et al, 2002). The role of thumb value of Cronbach's Alpha or Composite Reliability must be greater than 0.7, but if the results obtained are close to 0.7 (such as 0.6), this is still acceptable in exploratory studies (Hair et al, 2006) . The results of the construct reliability test can be seen in Table 3 which shows the value of Cronbach's Alpha and Composite Reliability of each construct which has a value greater than 0.60 so that it can be said that the gauge used in this study is reliable. The three variables have an AVE value above 0.5 and the AVE root is higher than the variable correlation. This shows that all variables are said to be valid according to the criteria for testing discriminant validity with the AVE root.

The inner model test is first carried out by evaluating the goodness of fit, namely by looking at R square or R². For R² in this study there are two dependent constructs, namely Fishermen's Income (Y1) and Fishermen's Welfare (Y2).

Table 4 – R Square Value of the Determinant Construct of Fishermen's Income and Welfare in Kedonganan Village

n/n	R Square
Fishermen Welfare	0.618
Fishermen's Income	0.041

Source: Primary Data, 2023.

From the table above it can be seen that the R-square value is 0.618 for the variability of Fishermen's Welfare, which means that the variability of Fishermen's Welfare can be explained by the variable Capital and Technology Utilization of 61.8%. While the Fishermen's

Income Variable can only be explained by the Capital and Technology Utilization variables of 4%. Based on R^2 in the table above, Q^2 or the Stone Geiser Q-Square test can be calculated, namely: $Q^2 = 0,634$.

The result of the Q^2 calculation is 0.634 so that it can be said to have a strong predictive prevalence, so the resulting model is feasible to use for prediction. The Q^2 or Stone-Geiser Q Square test value of 0.634 means that 63.4% of the variation in Fishermen's Welfare and Fishermen's Income in Kedonganan can be explained by Capital and Technology Utilization. The remaining 36.6 is explained by other variables that are not in the model.

Analysis of direct influence, indirect effect, or total effect, can explain the relationship between research variables (latent variables). To find out the direct effect between variables, it can be seen from the results of the analysis of the path coefficients values shown in Table 5 below:

Table 5 – Direct Effects of Interconstruct Capital, Technology Utilization on Income and Welfare of Fishermen in Kedonganan Village

n/n	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O /STDEV)	P Values
Capital (X1) -> Fishermen's Income (Y1)	0.094	0.108	0.876	0.381
Technology Utilization (X2) -> Fishermen's Income (Y1)	0.168	0.060	2.783	0.006
Capital (X1) -> Fishermen Welfare (Y2)	0.024	0.046	0.523	0.601
Technology Utilization (X2) -> Fishermen Welfare (Y2)	0.763	0.072	10.560	0.000
Fishermen's Income (Y1) -> Fishermen Welfare (Y2)	0.081	0.039	2.094	0.037

Source: Primary Data, 2023.

Direct effect analysis can explain the relationship between research variables (latent variables). To find out the direct effect between variables, it can be seen from the results of the analysis of the path coefficients values shown in the table above. Based on the table above, it can be explained that there is an influence between research variables that is positive and significant with a p-value ≤ 0.05 except for the effect of Capital on Fishermen's Welfare and Capital on Fishermen's Income.

Capital (X1) has no significant effect on Fishermen's Income (Y1) with a path coefficient value of 0.094 and a p value of 0.381, thus it can be interpreted that capital does not significantly affect Fishermen's Income. Utilization of Technology (X2) has a positive and significant effect on Fishermen's Income (Y1) with a path coefficient value of 0.168 and a p value of 0.006, thus it can be interpreted that the better the use of technology by fishermen, the better the Income of Fishermen in Kedonganan Village. Capital (X1) has no significant effect on Fishermen's Welfare (Y2) with a path coefficient value of 0.024 and a p value of 0.601, thus it can be interpreted that Capital does not significantly affect Fishermen's Welfare. Utilization of Technology (X2) has a positive and significant effect on Fishermen's Welfare (Y2) with a path coefficient value of 0.763 and a p value of 0.000, thus it can be interpreted that the better the use of technology by fishermen, the better the Fishermen's Welfare in Kedonganan Village. Fishermen's Income (Y1) has a positive and significant effect on Fishermen's Welfare (Y2) with a path coefficient value of 0.081 and a p value of 0.037, thus it can be interpreted that the better the Fishermen's Income by fishermen, the better the Fishermen's Welfare in Kedonganan Village.

Furthermore, based on the research conceptual framework, it is also known that there are several relationships which are indirect influences between research variables. To determine the indirect effect between variables, it can be seen from the results of the analysis of indirect effects values shown in Table 6.

Based on Table 6 it can be seen that the indirect effect between research variables is not significant where the p-value is greater than 0.05. The indirect effect of capital on fishermen's welfare through fishermen's income is insignificant with p-values greater than 0.05, which is 0.127. This means that Fishermen's Income does not mediate the influence

between Fishermen's Capital and Welfare. The indirect effect of the use of technology on fishermen's welfare through fishermen's income is insignificant with p-values greater than 0.05, which is 0.394. This means that Fishermen's Income does not mediate the influence between Technology Utilization and Fishermen's Welfare.

Table 6 – Indirect Effects of Capital Constructs, Technology Utilization on Income and Welfare of Fishermen in Kedonganan Village

n/n	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Capital (X1) -> Fishermen's Income (Y1) -> Fishermen Welfare (Y2)	0.008	0.009	0.083	0.394
Technology Utilization (X2) -> Fishermen's Income (Y1) -> Fishermen Welfare (Y2)	0.014	0.009	1.530	0.127

Source: Primary Data, 2023.

Based on the test results, the path coefficient value thus it can be concluded that capital has a positive effect on the income of fishermen in Kedonganan but not significant. Capital in the form of assets or the value of work equipment such as fishing rods and bait used in the fishing/production process can affect the increase in the fishermen's own income. The facts on the ground turned out to be different. This is because most fishermen are labor fishermen where they get capital such as ships, fuel and equipment from skipper fishermen so that the results they get must be shared or deposited with their employer according to an agreement that has been agreed beforehand. Based on the results of interviews and observations during the questionnaire distribution period, the majority of labor fishermen only received a share of 20 to 30 percent, the remaining 80 to 70 percent was paid to the skipper who owned the capital. This makes capital does not have a significant effect on fishermen's income. This is supported by research conducted by Erawati (2020), which states. Mistakes in managing the capital structure will result in large debts, and this will also increase financial risk due to the company's inability to pay interest charges and debts, then the company's value will decrease in the case of the effect of company size on firm value with capital structure as an intervening variable.

Based on the results of testing the path coefficient value, Technology Utilization has a positive and significant effect on Fishermen's Income. Thus it can be interpreted that the better the use of technology by fishermen, the better the Income of Fishermen in Kedonganan Village. The use of technological tools will make it easier for someone to carry out a production activity. So the use of modern technology besides providing convenience will be able to increase productivity and will contribute to income. This is supported by the statement that the dependence of fishermen on fishing technology is very high, because fishing areas are mobile so that they require sophisticated technology to carry out production activities. The technologies usually used by fishermen in Kedonganan Village include motor boats and motorized nets. There are also several fishermen who already use an application-based navigation tool called Fish Go developed by the Badung Regency Government. However, there are still many fishermen who cannot operate it due to lack of training and lack of knowledge of fishermen about digital devices. Prakoso (2013), also states that the more sophisticated the technology used by fishermen, the more productivity it will increase, which implies the conclusion that people will earn higher incomes. Advances in technology will tend to increase labor productivity (Mankiw, 2007).

Based on the test results, it was found that the value of the path coefficient meant that capital had a positive effect on fishermen's welfare but was not significant. This has caused most fishermen to choose to borrow money from the broker (middlemen) when these fishermen run out of capital. Tengku Klak is a fish collector who usually buys fish caught by fishermen. After the fishermen harvest, they will be handed over directly to the pembek if he borrows capital from the pembek. This causes the income from the catch of fishermen to be reduced so that the income that should be able to further the welfare of fishermen must be cut off. This is what causes capital to have no significant influence on the welfare of fishermen. The results of Wardana's research (2018) show that capital is a factor affecting

the income of fishermen in Serangan Village, South Denpasar District. Kusnadi (2002) states that the difficulty in improving the welfare of traditional fishermen is influenced by a number of factors, including the limited ability of business capital and fishing technology. According to Purwadi (2019) in Kedonganan, the local KUD does not function to meet the capital needs of fishermen so as to meet business capital needs.

Based on the test results, it was found that the use of technology had a positive and significant effect on fishermen's welfare. Thus it can be interpreted that the better the use of technology by fishermen, the better the welfare of fishermen in Kedonganan Village. The use of more modern technology results in an increase in the number of catches obtained. So it can be concluded that the more sophisticated the technology used by fishermen, the more it will increase its productivity so that it can further increase production, in which it is implied that the community will earn higher incomes and be able to produce prosperous life. The use of modern and traditional technology tools provides different levels of income to fishermen because the use of modern technology will provide convenience to fishermen so they can increase productivity. The explanation above is in accordance with Amir's research (2020) which states that technology has a positive and significant effect on the level of welfare of fishing communities in Makassar City.

Based on the test results, fishermen's income has a positive and significant effect on fishermen's welfare. Thus it can be interpreted that the better the Fishermen's Income by fishermen, the better the Fishermen's Welfare in Kedonganan Village. The welfare of fishermen is very dependent on the income obtained from the catch besides that according to Kusumayanti (2018) Income has a positive effect on the welfare of fishermen, whereby increasing income fishermen are able to improve the quality of their family's education to a higher level of education, maintain health conditions with proper treatment better. Rosni (2012) that income received can affect lifestyle and social relations in society, because the size of income affects purchasing power to meet life's needs. The higher the income, the ability to buy goods becomes more. This means that income affects welfare. This is also supported by Musdalifa (2020) which states that income has a positive and significant effect on welfare.

The indirect effect of Capital on Fishermen's Welfare through Fishermen's Income is positive but not significant and the indirect effect of Technology Utilization on Fishermen's Welfare through Fishermen's Income is positive but not significant. This means that Fishermen's Income does not mediate the influence between Capital and Technology Utilization on Fishermen's Welfare. Based on observations and data from respondents, most of the fishermen in Kedonganan Village are labor fishermen whose all capital and equipment come from skipper fishermen. The catch received by the labor fishermen will be shared by the skipper and the labor fishermen, only around 20 to 30 percent of the catch. This is considered reasonable because the skipper bears all costs and risks, even when a loss occurs due to the lack of catches the skipper fisherman is the one who bears it. In addition, the Village Unit Cooperative, which should be able to absorb and distribute fishermen's catch, does not operate as it should. Marketing of catches is carried out not through the KUD system that is there, but directly between fishermen and pembek. KUD only sells fish caught by fishermen (Purwadi, 2019). Selling fishermen's products through middlemen (pengambek) can be detrimental to fishermen where the price of the catch can be manipulated and bought cheaply by middlemen (pengambek). This will have an impact on the income of fishermen which will certainly affect the welfare of these fishermen. So it can be concluded that fishermen's income does not mediate the effect of capital and technology utilization on fishermen's welfare.

CONCLUSION

Capital (X1) has no significant effect on fishermen's income (Y1). This is because most of the fishermen are labor fishermen whose capital comes from skipper fishermen. Utilization of Technology (X2) has a positive and significant effect on Fishermen's Income (Y1). Thus it can be interpreted that the better the use of technology by fishermen, the better the Income

of Fishermen in Kedonganan Village. Capital (X1) has no significant effect on Fishermen's Welfare (Y2). This is because the income earned must be paid in accordance with the agreement with the owner of the capital, namely skipper fishermen. Utilization of Technology (X2) has a positive and significant effect on Fishermen Welfare (Y2). Thus it can be interpreted that the better the use of technology by fishermen, the better the welfare of fishermen in Kedonganan Village. Fishermen's income (Y1) has a positive and significant effect on fishermen's welfare (Y2). Thus it can be interpreted that the better the Fishermen's Income by fishermen, the better the Fishermen's Welfare in Kedonganan Village. Fishermen's Income does not mediate the influence between Capital and Technology Utilization on Fishermen's Welfare.

It is hoped that the government will more aggressively socialize the means of providing capital assistance to fishermen who do not have capital, such as providing the People's Business Credit program which is a low-interest loan for fishermen who do not have capital so that these fishermen do not have to borrow capital from middlemen or skipper fishermen. which of course will reduce their income from fishing which of course this will reduce the guarantee of the fishermen's welfare. It is hoped that the Kedonganan Village government will be able to provide facilities that can help fishermen, such as the use of Village Unit Cooperatives which should be able to absorb fishermen's catches and then distribute them to consumers engaged in tourism such as hotels and restaurants. Fishermen are expected to be able to adapt to advances in digital technology such as the use of application-based navigation tools developed by the Badung Regency Government.

REFERENCES

1. Amir, Ramadhoni B., Akhmad, dkk. 2020. Analisis Biaya and Pendapatan Pedagang Ikan yang Membuka Lapak di Pinggir Jalan di Kota Makassar. 4 (2). 148-156
2. Ani, Sri Rezky 2018. Pengaruh Modal, Jam Kerja and Teknologi terhadap Pendapatan Nelayan di Kelurahan Lappa Kecamatan Sinjai Utara Kabupaten Sinjai. Jurusan Ilmu Ekonomi Fakultas Ekonomi and Bisnis Islam Universitas Islam Negeri (UIN) Alauddin Makassar.
3. Arliman M. 2013. Pengaruh Modal, Jam Kerja, Pengalaman Kerja and Teknologi Terhadap Pendapatan Nelayan Tangkap di Desa Tamasaju Kecamatan Galesong Utara Kabupaten Takalar. Fakultas Ekonomi and Bisnis. Jurusan Ilmu Ekonomi. Universitas Hasanuddin Makassar
4. Badan Pusat Statistik. 2007. Indikator Kesejahteraan Rakyat 2007. Badan Pusat Statistik. Jakarta.
5. Barnes-Mauthe M., K.K.L. Oleson and B. Zafindrasilivonona. 2013. The total economic value of small-scale fisheries with a characterization of post-landing trends: an application in Madagascar with Global Relevance, *Journal of Fisheries Research* 147: 175-185.
6. Ele, I.E. and M.O. Nkang. 2014. Analysis of Production Determinants and Technical Efficiency in Crayfish Production in the Lower Cross River Basin. Nigeria, *Journal of Research In Humanities and Social Science*. 2(11): 30-36.
7. Fanesa, Fargomeli. 2014. Interaksi Kelompok Nelayan Dalam Meningkatkan Taraf Hidup di Desa Tewil Kecamatan Sangaji Kabupaten Maba Halmahera Timur. *Journal "Acta Diurna"*. 3 (3)
8. International Maritime Organization. 2007. Any Other Business. Outcome of SLF 50. STW 39/11/1. Sub Committee on Standard of Training and Watchkeeping. 39 th Session. London (EN): International Maritime Organization (IMO).
9. Kusumayanti D., Setiawina D., Utama M.S. 2018. Analisis Faktor-faktor yang Mempengaruhi Kesejahteraan Nelayan di Kabupaten Jembrana. *Jurnal Buletin Studi Ekonomi*. 23(2). 251-268.
10. Lucky, Zamzami. 2007. Pemanfaatan Budaya Lokal Terhadap Teknologi Penangkapan Ikan Pada Masyarakat Nelayan: Studi Kasus Di Pasar Laban Kelurahan Mankiw, N.G. 2007. *Macroeconomics*. 6th. New York: Worth Publishers.

11. Maosen Xu, Bin Ji, Jialin Zou, and Xinping Long. 2017. Experimental investigation on the transport of different fish species in a jet fish pump. *Aquacultural Engineering*, S0144-8609(17)30160-7.
12. Mulyadi S. 2007. *Ekonomi Kelautan Edisi I* (Jakarta: Raja Grafindo Persada, 2007). Bungus Selatan, Kecamatan Bungus Teluk Kabung, Kota Padang
13. Musdalifa. 2020. Pengaruh Pendapatan terhadap Kesejahteraan Karyawan pada PT. Pegadaian (Persero) Cabang Limbung Kabupaten Gowa. Program Studi Manajemen Fakultas Ekonomi and Bisnis Universitas Muhammadiyah Makassar Makassar.
14. Purwadi, Soeriadiredja, 2019. Strategi Masyarakat Nelayan Kedonganan Menghadapi Kemiskinan, *Pustaka*, 19, 33-42
15. Prakoso Jati. 2013. Peranan Tenaga Kerja, Modal, and Teknologi terhadap Peningkatan Pendapatan Masyarakat Nelayan di Desa Asemtoyong Kecamatan Taman Kabupaten Pemalang. Universitas Negeri Semarang. Fakultas Ekonomi.
16. Retnowati E. 2011. Nelayan indonesia dalam pusaran kemiskinan struktural (perspektif sosial, ekonomi, and hukum), *Jurnal Perspektif*, XVI (3): 149-159.
17. Rosni. 2012. Analisis Tingkat Kesejahteraan Masyarakat Nelayan di Desa Dahari Selebar Kecamatan Talawi Kabupaten Batubara (*Jurnal*). Medan: Universitas Negeri Medan.
18. Sanusi, Bachrawi. 2004. *Pengantar Ekonomi Pemabngunan*, Jakarta: PT Rineka Cipta, 2004.
19. Sugiyono. 2019. *Metode Penelitian Kuantitatif, Kualitatif and R&D*. Cetakan ke-24. Bandung: Alfabeta.
20. Sulastrri. 2014. *Manajemen Sebuah Pengantar Sejarah, Tokoh, Teori ,dan Praktik*. Bandung, La Goods Publishing.
21. Sumitro, 2010. *Perkembangan Pemikiran Ekonomi* (Bandung: CV Penerbit Diponegoro.
22. Suryana. 2012. *Ekonomi Pembangunan: Problematika and Pendekatan Edisi Kedua*. Jakarta: Salemba Empat.
23. Suseno, Menuju Perikanan Berkelanjutan Edisi Kedua (Jakarta: Pustaka Cidesindo, 2013) Sukirno, Sadono, *Makroekonomi Teori Pengantar*, Jakarta: Raja Grafindo, 2006.
24. Undang-Undang No 11 Tahun 2009 pasal 1 and 2 Kesejahteraan Sosial.
25. Wardana W., Yuliarmi. 2018. Analisi Faktor-faktor yang Mempengaruhi Pendapatan Nelayan di Desa Serangan Kecamatan Denpasar Selatan. *E-Journal Ekonomi Pembangunan Universitas Udayana*. 7 (12). 2549-2579.
26. Wijaya, G. C., & Marhaeni, A. A. I. N. (2019). The effectiveness analysis of village fund programs and their effect on development, empowerment, and welfare of village communities in Mendoyo, Jembrana. *Russian Journal of Agricultural and Socio-Economic Sciences*, 90(6), 282-292.
27. Zulfikar. 2012. *Pengelolaan perikanan tangkap berkelanjutan di perairan selatan pelabuhan ratu*. Tesis. Ilmu Kelautan. Pascasarjana. Universitas Indonesia. Depok.