

The Influence of Government Assistance in Increasing the Income of Small-Scale Fishery Product Processing Business in Kendari City

Satria Anis Gumerlar, Roslindah Daeng Siang*, Sarini Yusuf, Rosmawati, Desy Sriwulan

Department of Fisheries Agribusiness, Faculty of Fisheries and Marine Sciences, Halu Oleo University
H.E.A Mokodompit Street, Kampus Hijau Bumi Tridarma Andounohu, 93232, Kendari, Indonesia

Correspondence:

roslindahdgsiang@uho.ac.id

Received:

October 31th, 2025

Accepted:

February 1st, 2026

Published:

February 9th, 2026

Keywords:

Distribution of Income, Financial Capital Assistance, Technology Capital Assistance, Business Development Assistance

ABSTRACT

The objective of this study was to identify and analyze the impact of financial capital assistance, technological assistance and business development assistance of government on small-scale fishery product processing income in Kendari City. Determining the sample using the purposive sampling method from 81 populations of small-scale fishery product processing business actors, it was determined that there were 8 business actors who received financial capital assistance, 10 business actors who received technological assistance and 12 business actors who received business development assistance. The data collection methods used in this experiment were questionnaires and interviews. Data analysis used multiple linear regression analysis. The results found that (1) financial capital assistance, technological assistance and business development assistance had a positive and significant effect on income levels, (2) financial capital assistance had a positive and significant effect on income levels, (3) technological assistance had a positive and significant effect on income level, and (4) business development assistance had a positive and significant effect on income level. Financial capital and technological assistance must be accompanied by coaching and mentoring, for business development and sustainability.

INTRODUCTION

As one of the pillars of the economic buffer in Indonesia, Micro, Small and Medium Enterprises (MSMEs) have an important role in shaping and growing Gross Domestic Product (GDP), job creation, contributions to the government through tax payments and increasing foreign exchange (through exports). The empowerment of MSMEs is the main task of the government considering that the existence of MSMEs in Indonesia is considered very important, so in its implementation a regulation regarding MSMEs was prepared, namely Law Number 20 of 2008 concerning MSMEs.

The development of Small and Medium Enterprises activities in rural areas and small towns will be the pillar or backbone of national economic development (Yolanda & Hasanah, 2024; Adi *et al.*, 2023). The fishery product processing industry is one of the industries that has the potential to be developed. The potential of fisheries processing Indonesian fishery products is specifically quite large. The current direction of fisheries processing has a tendency towards increasing production so that the utilization of the potential of fishery products needs to be developed (Riyanto & Mardiansjah, 2018).

MSMEs processing fishery products in Kendari City are generally small-scale MSMEs (Siang *et al.*, 2023), this is illustrated by the condition of Kendari City where the facilities and infrastructure that support the activities of fishery product processing business actors are not sufficiently adequate, the problems that are always faced by small business actors in Kendari City are capital, technology and business development.

Capital (financial) is a very important factor to independent, develop, and advance a business (Tambunan *et al.* 2022: Zulfadhlil *et al.* 2024; Soleha *et al.*, 2022), financial capital can be said to be the most important aspect in the needs of business actors (Haerany & Aneza, 2024), another problem is economics (tools), the lack of fishery product technologists in Kendari City is a fairly big problem in the small business sector processing fishery products because, in its nature technology is in the form of engineering, methods or methods, as well as equipment used to carry out the implementation of a design for the transformation of inputs into outputs, with certain goals based on the achievement of science and engineering results. According to Syahputra *et al.* (2024), the provision of goods or production tools to microbusiness actors has a significant and effective impact on increasing income.

The small business development program as one of the instruments to increase people's purchasing power, will ultimately become a safety valve from the monetary crisis situation, in Kendari City. Judging from the sustainability of the business through the Kendari City Fisheries Office, it provides solutions in the form of financial and technological capital assistance to small business actors, so that they can grow their businesses. The Kendari City Government distributes assistance in the form of financial capital, technology/tool capital and business development for small-scale fishery product processing. This description highlights the need for research to assess the impact of financial capital assistance, technology, and the development of fishery product processing businesses in Kendari City. The study aims to explore the effect of government support on MSMEs involved in fishery product processing in Kendari city.

METHODS

This research was carried out from November to December 2023. This research took place in Kendari City, Southeast Sulawesi Province. The location was determined using the purposive sampling technique, considering that Kendari City is one of the centers of small-scale fishery product processing business actors.

The population in this study is small-scale fishery product processing business actors who receive assistance from the government. The population of small-scale fishery product processing businesses in Kendari City is 81 fishery product processing samples that have received assistance from the Kendari City Government. The number of samples in this study is as many as 30 small-scale fishery product processing business actors in Kendari City. Based on the availability of data, the sample was determined: 8 business actors who received financial capital assistance, 10 business actors who received technology assistance and 12

business actors who received business development assistance. The data collection methods used include questionnaires, interviews, and documentation.

The data analysis used in this study was a percentage descriptive analysis using a likert scale that had a score of 1 to 5, and multiple linear regression analysis which began with a classical assumption test which included a data normality test, a multicollinearity test, and a heteroscedasticity test. Then it was followed by the determination coefficient test, F test, t-test. The entire data processing in this study was conducted using the IBM SPSS statistical software.

a. Multiple Regression Analysis

Multiple regression analysis is used by researchers, when researchers intend to predict how the state (ups and downs) of dependent variables when two independent variables as predictor factors are manipulated (up and down in value) (Sugiyono, 2018). In this study, multiple linear regression was used to determine the relationship between free variables and bound variables, namely between financial capital assistance (X1), technology/tool assistance (X3) and business development assistance (X3) to income (Y). According to Sugiyono (2018), the mathematical equations for the hypothesized relationship can be formulated as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where:

Y : Dependent variable (Income)
a : Constant
X1 : Independent Variable 1 (Financial capital assistance)
X2 : Independent Variable 2 (Technology assistance)
X3 : Independent Variable 3 (Business Development Assistance)
 $\beta_1, \beta_2, \beta_3$: Regression Coefficient.
e : Error term

b. Classical Assumption Test

1. Normality Test

The normality test is used to determine whether the residuals or errors in a regression model follow a normal distribution. This test can be conducted using the Kolmogorov-Smirnov test. The data is considered to be normally distributed if the Sig value is greater than 0.5, whereas if the Sig value is less than 0.5, the data is considered to be not normally distributed (Sujarweni, 2020).

2. Multicollinearity Test

Muhson (2012), The Multicollinearity Test is used to see whether there is a very strong or perfect relationship between independent variables (X). To test whether there is multicollinearity between independent variables (X), tolerance and VIF (Variance Inflation Factor) can be used. If the VIF value is < 10 .

c. Hypothesis Test

1. Determination Coefficient (R^2)

The coefficient of determination quantifies how well a model can explain variations in the dependent variables. The R^2 value ranges from zero to one ($0 \leq R^2 \leq 1$). A low R^2 value indicates that the independent variable has limited capacity to explain the variation in the dependent variable (Yusuf & Ramadhani, 2011; Yusuf *et al.*, 2021). A value close to one suggests that the independent variable accounts for nearly all the information required to predict the variations in the dependent variable simultaneously (Sugiyono, 2018).

2. Simultaneous Test (F Test)

The F test is used to determine whether all independent variables, when entered together, have an influence on the dependent variables. In this study, the F test was used to simultaneously influence capital/financial assistance and technology/tools on income. The basics of taking a decision based on F-calculation and F-table are as follows:

$$F\text{-count} = \frac{KTR}{KTG}$$

Where:

KTR = Middle Square of Regression

KTG = Error Center Square

a. If F-calculates > F-table, then the indented variables together affect the dependent variables.

b. If F-calculates < F-table, then the indented variables do not affect the dependent variables.

So in testing hypotheses based on significant values using the F statistic, decision making criteria can be determined. If $Sig > 0.05$ then H_0 is accepted and if $Sig < 0.05$ then H_0 is rejected.

3. Partial Test (t-test)

The t-test is employed to assess the significant extent to which the independent variable affects the dependent variable. In this research, a paired test will be performed to examine the impact of each independent variable on the dependent variable. Each regression coefficient will undergo paired testing to determine the significance of the influence of each independent variable, with the dependent variable being paired accordingly (Sireger, 2017). If the t-value is calculated > t-table or $sig > 0.05$, then there is an influence of variable X on variable Y parusal (individual). The basics of taking a putsan based on the value of F-count and F-table are as follows:

$$t\text{-count} = \frac{be}{se}$$

Where:

be = Regression Coefficient of Each Independent Variable (x)

se = Error Standard of Each Free Variable (X)

RESULTS

Descriptive Statistics

Characteristics of Business Actors by Gender in Kendari City, can be seen in the following table:

Table 1. Characteristics of Business Actors by Gender

Gender	Number of Business Actors	Percentage (%)
Male	18	66
Woman	12	44
Sum	30	100

Source: Primary Data Processed in 2024

Based on Table 1, the business actors processing small-scale fishery products in this study are men and women with a total of 18 men with a percentage of 66% and a few women as many as 12 people with a percentage of 44%. Rothbard (2001), stated that men have greater energy and tenacity in the world of work.

Table 2. Characteristics of Business Actors by Age

Age (Years)	Number of Business Actors	Percentage (%)
21-30	5	17
31-40	12	40
41-50	9	30
51-60	4	13
Sum	30	100

Source: Primary Data Processed in 2024

Based on Table 2, the age of business actors in this study ranges from 21 to 60 years.

Table 3. Characteristics of Business Actors Based on Last Education

Education	Number of Business Actors	Percentage (%)
Junior High School	12	40.00
Senior High School	10	33.33
Bachelor's Degree	8	26.67
Sum	30	100

Source: Primary Data Processed in 2024

Based on Table 3, It can be known that the small-scale fishery product processing business actors who are business actors in this study have a sufficient level of education with junior high school graduates having 12 people with a percentage value of 40%, high school graduates with a percentage of 10 people with a percentage value of 33.33%, and undergraduate with a total of 8 people with a percentage value of 26,67%. Based on education, fishery product processing business actors can be said to have enough education to carry out their work.

Table 4. Characteristics of Business Actors Based on Business Capital

Business Capital (IDR)	Number of Business Actors	Percentage (%)
300-5 Million	24	80.00
5-10 Million	4	13.63
10-15 Million	2	6.37
Sum	30	100

Source: Primary Data Processed in 2024

Based on Table 4, fishery product processing business actors have a business capital of IDR300 until-15 million, thus the business capital owned by fishery product processing business actors can meet the business needs.

Description of Research Variables

Financial Capital Assistance X1

Table 5. Responses Regarding Financial Capital Assistance Variables

Items	Description of Business Actors Statement										Meaning of the Likert Scale	
	Frequency					Percentage						
	ST S	T S	N	S	SS	STS	TS	N	S	SS		
1) X1.1	0	0	10	16	4	0	0	33.33	5333	13.33	3.80	
2) X1.2	0	0	9	14	7	0	0	30.00	46.67	23.33	3.93	

Items	Description of Business Actors Statement											Average Item	Meaning of the Likert Scale		
	Frequency						Percentage								
	ST	T	N	S	SS	STS	TS	N	S	SS					
3) X1.3	0	0	8	18	4	0	0	26.67	60.00	13.33	3.87	Good			
4) X1.4	0	0	9	16	5	0	0	30.00	53.33	16.67	3.87	Good			
								30.00	53.33	16.67	3.87	Good			

Source: Primary Data Processed in 2024

Based on Table 5, it is evident that the majority of business owners agree that financial capital support can be utilized for purchasing business equipment (2), contribute to increased business income (3), assist in business growth (4), and enable effective business operations (1).

Technology Assistance X2

Table 6. Variable Business Actors Regarding Technological Assistance

Items	Description of Business Actors Statement											Average Item	Meaning of the Likert Scale		
	Frequency						Percentage								
	ST	T	N	S	SS	STS	TS	N	S	SS					
(1) X2.1	0	0	8	21	1	0	0	26.67	70.00	3.33	3.77	Good			
(2) X2.2	0	0	6	23	1	0	0	20.00	76.67	3.33	3.83	Good			
(3) X2.3	0	0	5	20	5	0	0	16.67	66.67	1.67	4.00	Good			
(4) X2.4	0	0	6	23	1	0	0	20.00	76.67	3.33	3.83	Good			
								0	0	20.00	72.50	6.67	3.86		
												Good			

Source: Primary Data Processed in 2024

Based on Table 6, it is known that some business actors agree that technological assistance is in accordance with the expertise/ability of fishery product processing business actors (3), agree that technological assistance can facilitate or facilitate business production (2), agree that technology assistance is used optimally (4) and agree that technological assistance is in accordance with the needs of the business (1).

Business Development Assistance X3

Table 7. Responses Regarding Business Development Assistance Variables

Items	Description of Business Actors Statement											Average Item	Meaning of the Likert Scale		
	Frequency						Percentage								
	ST	TS	N	S	SS	ST	TS	N	S	SS					
(1) X3.1	0	0	7	19	4	0	0	23.33	63.33	13.33	3.90	Good			
(2) X3.2	0	0	8	19	3	0	0	26.67	63.33	10.00	3.83	Good			
(3) X3.3	0	0	8	21	1	0	0	26.67	70.00	3.33	3.77	Good			
(4) X3.4	0	0	7	19	4	0	0	23.33	63.33	13.33	3.90	Good			
								0	0	25.00	65.00	10.00	3.85		
												Good			

Source: Primary Data Processed in 2024

Based on Table 7, it is known that some business actors agree with the statement of assistance for business development of production technical training (1), agree with the statement of assistance for business planning business development (4), agree with the

assistance for halal business licensing, BPOM, patents (2) and business planning assistance (3).

Income Variable Y1

The income variables in this study were measured using 4 indicators, namely sister's income/increased after receiving assistance (1), increased number of production cycles (2), increased the number of products produced (3), and more motivation to continue running the business and developing it (4). The income variable's response results are presented in Table 8.

Table 8. Responses Regarding Variable Income

Items	Description of Respondent's Answer/Statement										Meaning of the Likert Scale	
	Frequency					Percentage						
	STS	TS	N	S	SS	STS	TS	N	S	SS		
1) Y1.1	0	0	8	17	5	0	0	26.67	56.67	16.67	3.90 Good	
2) Y1.2	0	0	7	19	4	0	0	23.33	63.33	13.33	3.90 Good	
3) Y1.3	0	0	5	18	7	0	0	16.67	60.00	23.33	3.07 Good	
4) Y1.4	0	0	7	21	2	0	0	23.33	70.00	6.70	3.83 Good	
						0	0	22.50	62.50	15.00		

Source: Primary Data Processed in 2024

Data Quality Test

Validity and Feasibility Test

Table 9. Recapitulation of Validity and Reliability Test Results

Variable	Indicators	Items	Coefficient	Sig.	Information	Cromnbach	Information
Financial Capital Assistance (X1)	Statement (1)	X1.1	.553**	0.002	Valid	.847	Reliable
	Statement (2)	X1.2	.429**	0.018	Valid		
	Statement (3)	X1.3	.625**	0.000	Valid		
	Statement (4)	X1.4	.857**	0.000	Valid		
Tech Assistance (X2)	Statement (1)	X2.1	.420**	0.021	Valid	.825	Reliable
	Statement (2)	X2.2	.350**	0.005	Valid		
	Statement (3)	X2.3	.420**	0.021	Valid		
	Statement (4)	X2.4	.742**	0.000	Valid		
Business Construction Assistance (X3)	Statement (1)	X3.1	.623**	0.000	Valid	.930	Reliable
	Statement (2)	X3.2	.710**	0.000	Valid		
	Statement (3)	X3.3	.720**	0.000	Valid		
	Statement (4)	X3.4	.889**	0.000	Valid		
Revenue (Y)	Statement (1)	Y1.1	.586**	0.001	Valid	.867	Reliable
	Statement (2)	Y1.2	.578**	0.000	Valid		
	Statement (3)	Y1.3	.736**	0.000	Valid		
	Statement (4)	Y1.4	.876**	0.000	Valid		

Source: Primary Data Processed in 2024

Based on Table 9, the statements in the questionnaire are valid statements, with a significant level of < 0.05 . In addition, all statement items used as instruments in this study are reliable, because the result of Cronbach alpha > 0.80 . With the data obtained it is suitable as an instrument to measure each variable.

Multiple Linear Regression Analysis

From the results of the regression equation in Table 10, the conclusions that can be drawn are as follows:

1. The value of the constant is 1.424. This result can be interpreted as if the magnitude of all independent variables is 0, then the income (Y) is 1.424
2. The X1 coefficient is 0.137 which means that when the independent variable of financial capital assistance increases by one unit, then income will increase by 0.137
3. The X2 coefficient is 0.386 which means that when the independent variable of technology assistance increases by one unit, the income increases by 0.386
4. The X3 coefficient is 0.685 which means that when the independent variable of business development assistance increases by one unit, then the income increases by 0.685

Table 10. Outcomes of the Multiple Linear Regression Examination

Model	Standardized Coefficients			t	Sig.	Collinearity	
	Beta					Tolerance	VIF
(Constant)	1.424	0.700		2.033	0.052		
Capital Assistance (X1)	0.317	0.116	0.311	2.726	0.009	0.665	1.503
Tech Assistance (X2)	0.386	0.132	0.273	2.916	0.007	0.985	1.015
Business Construction Assistance (X3)	0.685	0.120	0.654	5.719	0.000	0.661	1.512

Classic Assumption Test

Normality Test

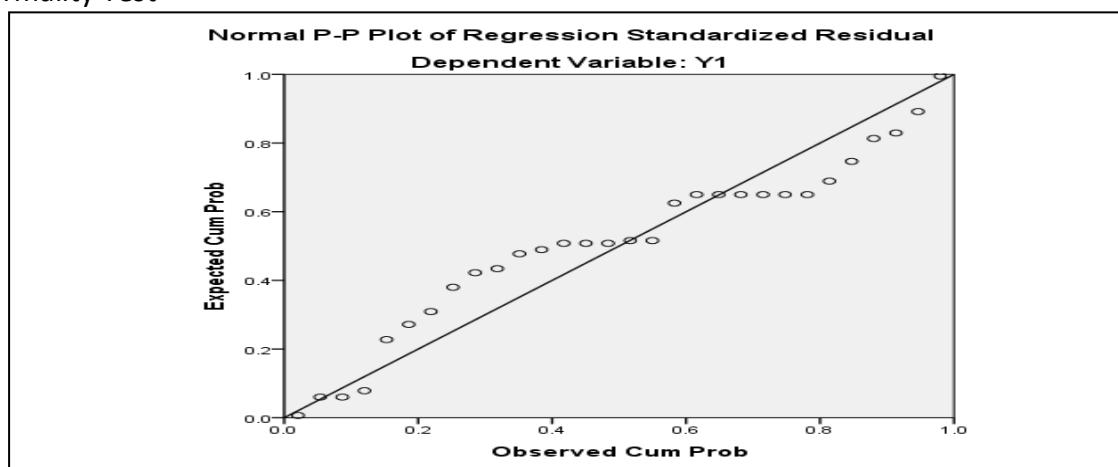


Figure 1. Normal Graph of Probability Plot

Based on Figure 1, the resulting plot points are spread out by following around a diagonal line, so it can be concluded that regression is feasible to be used to predict the influence of financial capital assistance, technological assistance and business development assistance on income, and has met the assumption of normality.

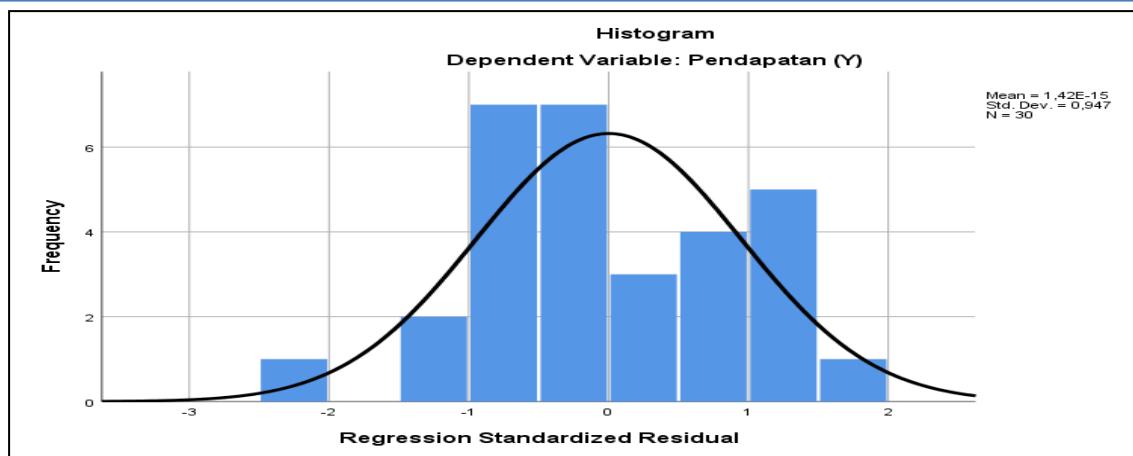


Figure 2. Histogram

Based on Figure 2, the residual points track the diagonal line without systematic left/right deviations, and the histogram in Figure 2 appears symmetric. Visually, these diagnostics support the assumption that the residuals are normally distributed. Accordingly, the multiple regression model relating financial capital assistance (X1), technology/equipment support (X2), and business coaching (X3) to the income of small-scale fish-processing entrepreneurs satisfies the error normality assumption. This strengthens the credibility of small-sample inference using OLS t-and F-statistics when assessing the significance of each type of assistance on income.

Multicollinearity Test

Table 11. Multicollinearity Test

Type 1	Co-efficient B	Toleranch	VIVID
(Contstan)	-1.424		
X1	.311	0.665	2.152
X2	.273	0.985	1.953
X3	.654	0.661	2.120

a. Dependent Variable: Y

Based on Table 11, it can be seen that the tolerance rate for each independent variable of capital assistance, technology assistance and business development assistance is above 0.01 and the VIF value is less than 10 so that the regression model in this study is stated to be non-colonial.

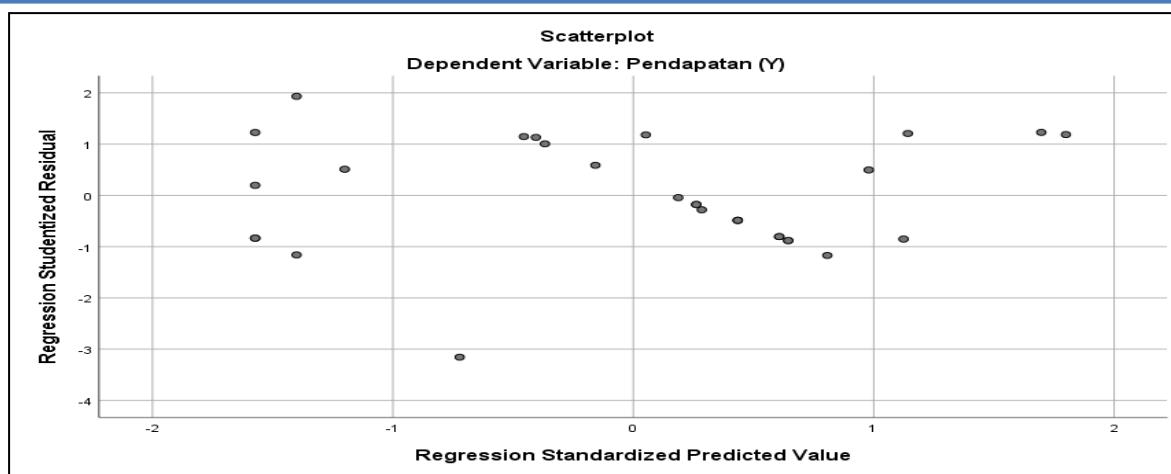


Figure 3. Heteroscedasticity

Based on Figure 3, the distribution of residuals against the predicted (fitted) values in the income model (Y) shows no systematic pattern, such as a fan shape (widening/narrowing), waves, or curvature; instead, the points are randomly scattered around the zero axis across the range of fitted values. Visual diagnostics therefore indicate homoscedasticity (approximately constant error variance), implying that the multiple regression model linking financial capital support (X1), technology/equipment support (X2), and business coaching (X3) to the income of small-scale fish-processing enterprises is suitable for estimation and prediction. Consequently, the OLS coefficients remain unbiased and consistent, and significance tests (t-tests and F-tests) based on OLS variances are not distorted by unequal variances. This graphical finding aligns with regression-diagnostic practice, which recommends the absence of trends in the residual-fitted plot as an initial indicator of homoscedasticity in field studies of MSMEs.

Hypothesis Test

Table 12. Summary of t-test, f-test and coefficient of determination

Variable	Stuttgart	Table	Sig	Calculation	Ftable	Sig	R Square
X1	2.726	2.056	0.009				
X2	2.916	2.056	0.007	29.903	2.98	.000b	0.749
X3	5.719	2.056	0.000				

Coefficient Determination (R^2)

The value of the determination coefficient in Table 12 can be found that the result of R Square is 0.749. These results indicate that the independent variables of capital assistance, technology assistance, and business development assistance account for 74.9% of the variation in income. The remaining 25.1% can be attributed to other factors not considered in this study, such as the geographic location and workforce size. On the income obtained a $t_{calculated} > t_{table}$ value with a significant level of more than α , so it can be concluded that the business development assistance influences the level of income from small-scale fishery product processing businesses. In this case, the better the business development assistance is owned by a small-scale fishery product processing business actor in Kendari City, the more income will increase.

The descriptive analysis showed that most small-scale fishery product processors in Kendari City were male (66%) and within the productive age range of 31–50 years (70%). Educational attainment was dominated by junior and senior high school graduates, suggesting

a moderate educational background. The majority of respondents had business capital ranging from IDR 300,000 to IDR 15 million, indicating limited financial resources.

Descriptive statistics revealed that financial capital assistance, technological assistance, and business development assistance were each perceived positively by respondents, with average Likert scores above 3.7 ("Good"). This indicates that the assistance provided by the government was effective and aligned with the needs of small-scale fishery processors.

The validity and reliability tests showed that all instrument items were valid ($\text{Sig} < 0.05$) and reliable (Cronbach's Alpha > 0.8). The regression results indicated that all three independent variables—financial capital assistance (X1), technological assistance (X2), and business development assistance (X3)—had a positive and significant influence on income (Y). The equation derived from the multiple regression analysis is presented below:

The coefficient of determination (R^2) was 0.749, indicating that 74.9% of income variation could be explained by the three assistance variables, while the remaining 25.1% was explained by other factors such as location and workforce size. The F-test results ($F = 29.903$; $\text{Sig} < 0.05$) showed that the model was significant overall. Each variable also had significant t-values ($p < 0.05$), confirming partial effects on income.

Diagnostic tests confirmed that the regression assumptions were met: the residuals followed a normal distribution, no multicollinearity existed ($\text{VIF} < 10$), and no heteroscedasticity was observed.

DISCUSSION

Financial capital assistance (X1) has a significance level of $0.009 < 0.05$ with t-calculation value of $2.726 > 2.056$ (t-table). The value of t-calculation shows a positive value so that it can be concluded that financial capital assistance has an effect on the level of income. So that H1 in this study was accepted. This result shows that the greater the capital assistance owned by small-scale fishery product processing actors, the higher the income. These results align with the research of Rahman (2022) and Farhan (2020), which indicate that greater financial capital contributes to higher income. The results demonstrate that financial capital assistance significantly increases the income of small-scale fishery product processors. Adequate capital allows business actors to expand production, purchase better raw materials, and invest in marketing, thus enhancing productivity and profitability. These findings who found that micro-enterprise income is strongly correlated with access to sufficient financial support.

The technology assistance (X2) has a significant level of $0.007 < 0.05$ with a t-calculation value of $2.916 > \text{t-table of } 2.056$. The value of t-calculation shows a positive value so that it can be concluded that the help of technology/tools has an effect on the level of income. So that H1 in this study was accepted. These results show that the better the technology/tools owned by small-scale fishery product processing business actors, the higher the income. The findings are consistent with studies by Wahyuni (2015) and Hasmirah (2017), which suggest that an increase in technology or equipment ownership correlates with higher income levels. Technological assistance also significantly affects income levels. Provision of modern tools and technology increases efficiency, reduces production time, and ensures product quality. This finding who reported that technological innovation enhances productivity and competitiveness among MSMEs in fisheries processing sectors.

Business development assistance (X3) has a significant level of $0.00 < 0.05$ with a t-calculation value of $5.719 > \text{t-table } 2.056$. The value of the calculation shows a positive value so that it can be concluded that business development assistance has an effect on the level of

income. So that H1 in this study was accepted. These results show that the better the business development assistance owned by small-scale fishery product processing business actors, the higher the income. The findings align with the study by Arsakti (2020), which suggests that the more effective the coaching provided to business actors, the greater the improvement in their work and income.

Among the three variables, business development assistance (coaching, mentoring, and training) had the strongest effect. This implies that skill improvement and managerial capacity are more sustainable drivers of income growth than capital or equipment alone. Business development programs such as technical training, business planning, and licensing facilitation empower entrepreneurs to operate independently and competitively. This finding is consistent with Arsakti (2020), who emphasized the effectiveness of mentoring and continuous support in improving MSMEs performance. Febriyanti dan Fikriyah (2023), business coaching from relevant agencies is essential to help MSMEs overcome business problems and improve their capabilities in business management, technology application, and accessing capital from formal financing institutions.

Based on Table 12, the F_{cal} value of 29.903 exceeds the F_{table} value of 2.98, with a significance level of 0.000, which is less than 0.05. Therefore, it can be concluded that, collectively, the variables of capital assistance, technology/tool assistance, and business development assistance significantly influence the income of small-scale fishery processing business owners in Kendari City. In summary, the combination of financial, technological, and developmental support produces a synergistic impact, where the availability of capital and technology should be paired with structured guidance and mentoring to ensure the long-term success of small-scale fishery businesses.

Given that X_3 exhibits the strongest effect, a structured coaching program—encompassing business mentoring, GMP/HACCP training, digital marketing, and financial record-keeping—should serve as the backbone of the intervention, supported by access to capital (X_1) and modernization of equipment/technology (X_2). This prioritization aligns with the small-scale fisheries processing MSME literature, which underscores that income growth is best driven by an integrated package of capacity building, financing, and technology upgrades.

CONCLUSION

This study concludes that financial capital assistance, technological support, and business development aid each contribute positively and significantly to increasing the income of small-scale fishery product processing businesses in Kendari City. Among them, business development assistance exerts the greatest influence, highlighting the importance of continuous mentoring and capacity building. The integration of these three types of support provides a sustainable model for empowering local fishery processors, fostering income growth, and strengthening the regional fishery-based economy.

ACKNOWLEDGEMENT

This research has been successfully carried out with the support of various parties. We would like to express our gratitude to the business actors who have provided relevant information for the research. Our sincere thanks also go to the village and sub district

government offices throughout Kendari City, as well as the Department of Fisheries and Marine Affairs of Kendari City, for their cooperation and assistance.

REFERENCES

Adi, H. K., Haryadi, A., Wiadi, I., Mayasari, I., Mudrika, S., & Mila, S. (2023). Organizational Learning Perspective Analysis in Accelerating Environmental, Social & Governance (ESG) Orientation: Studies in the Banking Industry. *In Proceedings of the 5th International Conference on Accounting Research and Education (iCARE2023)* Perak, Malaysia, October 17-18, 2023

Arsakti, F. D. (2020). The Role of Coaching, Training and Assistance from the Semarang City Cooperative and Micro Office in Improving the Business Performance of Fostered MSMEs. *Skripsi. Repository IAIN Pare-Pare*.

Athirafitri, N., Indrasti, N. S., & Ismayana, A. (2021). Analisis Dampak Pengolahan Hasil Perikanan Menggunakan Metode Life Cycle Assessment (LCA): Studi Literatur. *Jurnal Teknologi Industri Pertanian*, 31(3), 274-282.

Farhan, M. (2020). The Effect of Business Capital Financing on the Income of Micro, Small and Medium Enterprises (MSMEs) (Study on MSMEs of Entrepreneurial Students at Brawijaya University). *FEB Student Journal*. Vol. 1. No. 2.

Febrianti, D., & Fikriyah, A. (2023). Analisis Faktor Internal dan Eksternal Usaha Mikro Kecil dan Menengah Pengolah Ikan di Jembrana, Bali. *Buletin Ilmiah Marina Sosial Ekonomi Kelautan dan Perikanan*, 9(2), 151-164.

Haerany, A., & Aneza, S. (2024). Influence Of Sharia Financial Literacy, Financial Attitudes and Perceptions on Interest in Using Sharia Banking. *Oikonomia: Journal of Management Economics and Accounting*, 2(1), 67-78.

Hasmirah. (2017). The Effect of Government Equipment Assistance on the Increase in Small and Medium Business Income in Wara District. *Skripsi. Repository IAIN Palopo*. Vol.3 No.5

Muhson A. (2012). Factors That Affect the Income of Traditional Market Traders in Antang Market, Bitoa Village, Manggala District, Makassar City, South Sulawesi Province. *Skripsi. Muhammadiyah University of Makassar*.

Rahman, A. S. (2022), The Effect of Business Capital Assistance and Business Assistance from the Small and Medium Business Cooperative Office on Micro Business Income in Kadugede District, Kuningan Regency. *Journal of Digital Library*. Vo. 7. No.11. Surabaya. Indonesia.

Riyanto, S., & Mardiansjah, F. H. (2018). Pengembangan Industri Pengolahan Perikanan Dalam Pengembangan Ekonomi Lokal. *Jurnal Litbang: Media Informasi Penelitian, Pengembangan dan IPTEK*, 14(2), 107-118.

Siang, R. D., Primyastanto, M., & Purwanti, P. (2023). Analyzing the Availability of Raw Materials for Sustainable Fisheries Processing in Micro-Small Enterprises in Kendari, Indonesia. *Tujin Jishu/Journal of Propulsion Technology* Vol. 44 No. 4: 1620-1626.

Siang, R. D., Primyastanto, M., & Purwanti, P. (2023). The Performance of Livelihood-Enterprise Sustainability of Fish Processing Micro-Small Scale in Kendari, Indonesia. *Egyptian Journal of Aquatic Biology and Fisheries*, 27(6), 1091-1107.

Siregar, S. (2023). *Statistik Parametrik untuk Penelitian Kuantitatif: Dilengkapi dengan Perhitungan Manual dan Aplikasi SPSS Versi 17*. Bumi Aksara. Jakarta

Soleha, S., Bidayani, E., & Kurniawan, A. (2022). Analysis of the Canvas Model Business for Fish Farming in Sangriang Farm, Tuatunu Sub-District, Gerunggang sub-district, Pangkal Pinang City. *Journal of Fish Health*, 2(2), 116-126.

Sugiyono, D. (2018). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D*. Alfabeta. Bandung

Syahputra, M. R., & Mardianis, M. Efektifitas Program Pemulihan Ekonomi Nasional (PEN) Bantuan Barang Bagi Pelaku Usaha Mikro di Provinsi Jambi. In *Prosiding Management Business Innovation Conference (MBIC)* (Vol. 7, No. 1, pp. 489-503).

Tambunan, E. C., Enuh, K., Ubaidullah, U., & Tamba, M. (2022). Capital Access for Micro Small Medium Enterprises. *Jurnal Ekonomi dan Perbankan Syariah*, 10(2), 148-158.

Wahyuni, T. (2015). Design and Build Online Sales Application in Knitting. I Handmade. *Infotech Journal*. Vol. 5. No. 1.

Yolanda, C., & Hasanah, U. (2024). Peran Usaha Mikro, Kecil dan Menengah (UMKM) dalam Pengembangan Ekonomi Indonesia. *Jurnal Manajemen Dan Bisnis*, 2(3), 170-186.

Yusuf, M., & Ramadhani, Y. (2011). Analisis Efisiensi, Skala dan Elastisitas Produksi dengan Pendekatan Cobb-Douglas dan Regresi Berganda. *Jurnal Teknologi*, 4(1), 61-68.

Yusuf, M., Wijaya, M., Surya, R. A., & Taufik, I. (2021). *MDRS-RAPS: Teknik Analisis Keberlanjutan*. Tohar Media.

Zulfadhl, Z., Desfitrina, D., & Pramajaya, J. (2024). The Effect of Financial Literacy, Access to Capital, Entrepreneurial Orientation, and Market Orientation on the Growth and Sustainability of Micro and Small Enterprises in Palembang. *The Economics and Entrepreneurship*, 3(02), 189-201.