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FACTORS AFFECTING THE PATTERN OF FOOD AND NON-FOOD CONSUMPTION OF FISH CULTIVATOR HOUSEHOLDS IN PASEH SUBDISTRICT, SUMEDANG REGENCY

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ABSTRACT

This study aims to analyze household consumption patterns and analyze the effect of income, education level, age, and total of family members on food and non-food consumption patterns of fish cultivator households in Paseh Subdistrict, Sumedang Regency. This research began in November 2021 until June 2022. The research data consist of two types, namely primary data and secondary data. The primary data was obtained through written questions using a questionnaire to 30 respondents. Determination of the sample in this study using a proportionate random sampling technique. The data analysis technique used is multiple linear regression. This study uses 4 (four) independent variables, namely income (X1), education level (X2), age (X3), total of family members (X4), and 1 (one) dependent variable, namely food and non-food consumption patterns (Y). The results showed that the household consumption pattern of fish cultivators in Paseh Subdistrict was still dominated by food consumption. The results of multiple linear regression analysis showed that the variables of income (X1) and total of family members (X4) had a significant effect, while the variables of education level (X2) and age (X3) did not significantly affect the food and non- food consumption patterns of fish cultivating households in Paseh Subdistrict, Sumedang Regency. R square value of 0.835, this means that the independent variables simultaneously influence the dependent variable of 83.5% while the remaining 16.5% is explained by other factors outside the research variables.

INTRODUCTION

Paseh Subdistrict has potential in the aquaculture sector which is widely developed in calm water ponds. The potential area for calm water ponds in Paseh Subdistrict is 17.10 ha. The main commodities in Paseh Subdistrict are catfish and tilapia. According to [5], Paseh Subdistrict produces fish production of 164,521 Kilograms and fish seeds of 8,295 Kilograms in one year with a total of 419 fish cultivating households.

Consumption pattern is a habit of a person or group in consumption activities to meet household needs [14]. According to [21], consumption patterns can be identified based on the allocation of their use. The allocation of consumption expenditure is classified into two groups, namely food consumption and non-food consumption. According to [5], the percentage of Sumedang Regency's

population spending for the food group is 50.58 percent while for the non-food group it is 49.15 percent. When compared to the previous year, in 2020 consumption expenditure for the food group decreased by 4.87 percent while the share of consumption expenditure for the non-food group increased by 5.24 percent.

According to [4], the total population expenditure is strongly influenced by the income earned. Consumption expenditure is carried out to maintain the standard of living of an individual or group whereas, at a low-income level, more consumption expenditure will be spent on basic needs to meet physical needs. According to [20], it is not easy for families with the main profession as cultivators to have a steady income, because most fish cultivators only have small lands or even work on other people's land so cultivators have difficulty meeting their daily needs. The condition of fish cultivators who are dependent on nature will allow fishery households to experience uncertainty in realizing food sufficiency [16].

The fishery sector can have a positive impact on the economic development of a region, along with the increasing number of fish cultivators in Paseh Subdistrict, which should be directly proportional to the welfare of people working in the fishery sector. Fisheries businesses have a dependence on nature, where business actors will face relatively large risks. Some of the obstacles that become obstacles in cultivation activities are the area of land owned, limited capital costs, availability of water, marketing of cultivation products, and pest and disease disturbances. The problems faced by fish cultivators can cause low profits obtained from them, affecting the fulfillment of their needs.

The problems experienced by fish cultivators in Paseh Subdistrict are a challenge for cultivation business actors, so it is necessary to develop self-quality so that they can earn profits to meet the needs of life. According to [2], education is stated to be able to encourage a change in one's abilities. Education has a role in the progress of an individual or a group, and education in a narrow context greatly affects the understanding of the community in managing and utilizing land [13]. Most of the fish cultivators in Paseh Subdistrict have an education equivalent to elementary school, with a percentage of 43.33%. The level of education is also a factor that affects people's consumption. Education can change a person's attitude and behavior in meeting the needs of his life. The higher a person's education, the consumption expenditure will also be higher [18].

The number of dependents also affects the level of consumption, where the number of family members will determine the number of family needs. The larger the size of the household means the more members of the household, which in the end will be heavier the burden on the household to meet their daily needs. Age influences individual or household consumption expenditures [7]. Age and consumption expenditure have a positive relationship whereas as a person's age increases, the person's needs also increase. Based on these problems, this research needs to be carried out to analyze consumption patterns and the factors that influence food and non-food consumption patterns of fish cultivator households in Paseh Subdistrict, Sumedang Regency.

RESEARCH METHODS

The research method used is a quantitative method. The data used consists of primary data and secondary data. The primary data was obtained through written questions using a questionnaire to 30 respondents. Determination of the sample in this study using a proportionate random sampling technique. Proportionate random sampling technique is a sampling technique where all members have the same opportunity to be sampled according to their proportions [25]. This primary data includes data on income, education level, age, total of family members, and consumption patterns of research respondents. Secondary data was obtained from data from the Department of Fisheries and Animal Husbandry of Sumedang Regency, Central Statistics Agency, and Paseh Subdistrict. Analysis of the data used in this study is multiple linear regression analysis. Furthermore, a descriptive analysis will be carried out to describe the collected data.

RESULT AND DISCUSSION

Geographical Location and Regional Condition of Paseh Subdistrict, Sumedang Regency

Paseh Subdistrict is located in Sumedang Regency, West Java. Administratively, Paseh Subdistrict is bordered by Conggeang District in the north, Cimalaka District in the west, Tomo District in the east, and the south by Cisarua District and Situraja District. Paseh Subdistrict is one of 26 Subdistricts in Sumedang Regency. The total area of Paseh Regency is 3,633.50 Ha, with an altitude of 500-575 m above sea level. Paseh Subdistrict is located at coordinates 6 47'59" south latitude and between 107 59'52" east longitude. Paseh Subdistrict is divided into 10 village administration areas, 28 hamlets, 73 RW, and 253 RT. Land use in Paseh Subdistrict is divided into 668,70 hectares of settlements, 1.457,30 hectares of agricultural land, and 1.507,50 hectares of rice fields.

Paseh Subdistrict is divided into 10 villages, namely Paseh Kidul, Paseh Kaler, Legok Kidul, Legok Kaler, Bongkok, Padanaan, Pasireungit, Cijambe, Haurkuning, and Citepok villages. Based on [17], it is stated that the population in Paseh Subdistrict based on

age is dominated by the age group above 65 years, namely 4.717 people consisting of 2.343 men and 2.374 women. Age group 15-19 years as many as 3.574 people consisting of 1.947 men and 1.627 women. The age group with the lowest number is the age group 60-64 years with a total of 2.060 people, the number consisting of 982 men and 1.078 women.

The residents of Paseh Subdistrict have different educational backgrounds. Based on the level of education, the population in Paseh Subdistrict who have not received education is 4.064 people, the population with elementary school education is 11.926 people, the population with junior high school education is 6.419 people, the population with high school education is 7.237 people, and the population with high school education is 7.237 people. 2.045 people have completed their last education at university.

Characteristics of Fish Cultivators in the Paseh Subdistrict

The characteristics of the fish cultivators are aimed at knowing the background of fish cultivators in Paseh Subdistrict. These characteristics include income, education level, age, and the total of family members, as described in the data below.

Base on Income

Based on the results of the questionnaire, the lowest income of fish cultivators in Paseh Subdistrict is Rp. 1.041.000, while the highest income is Rp. 7.700.000. The total income of the respondents is the sum of their main income as fish cultivators and side income. The main income from cultivation is calculated from total sales minus the total capital spent such as for seeds, feed, and other needs so that a monthly net income is obtained. Most of the income of fish cultivators in Paseh Subdistrict is in the medium category, namely with a total income of Rp. 1,500,000 - Rp. 2,500,000. The income of each respondent has differences, which are determined by the type of commodity sold, the number of harvests produced, and the length of the harvest cycle. The fish farming cycle of each respondent is different with a time span of 4-6 months. The income distribution of fish cultivators in Paseh Subdistrict showed in Table 1.

Table 1. Distribution of Income

Category	Income	Total	Percentage (%)
Low	< Rp. 1.500.000	4	13.33
Medium	Rp. 1.500.000 - Rp.2.500.000	15	50.00
High	Rp. 2.500.000 - Rp. 3.500.000	4	13.33
Very High	> Rp. 3.500.000	7	23.33
Total		**30**	**100.00**

Base on Education Level

According to [19], a person's education influences consumer decision-making. A high level of education will affect a person in making a decision. In consuming an item, the consumer will know more about what quality products to use. Meanwhile according to [23], higher education is able to increase one's abilities, insights, and expertise to improve the standard of living.

Based on the results of the questionnaire data, shows that the highest percentage is found in respondents with an elementary school education level, which is 43.33%, while the lowest percentage is in respondents with a junior high school education level, which is 23.33%. This shows that fish cultivators in Paseh Subdistrict still have a low level of education because based on the results of the research, the education level of fish cultivators in Paseh Subdistrict only reaches the elementary school level. The education level distribution of fish cultivators in Paseh Subdistrict can be seen in Table 2.

Table 2. Distribution of Education Level

Education Level	Total	Percentage (%)
Elementary School	13	43.33
Junior High School	7	23.33
Senior High School	10	33.33
Total	**30**	**100.00**

Base on Age

According to the results of the questionnaire data, the highest percentage is found in the age group over 51 years, which is 64%, while the lowest percentage is in the 30-35 years age group and the 36-40 years age group which is equal to 3%. Based on the age classification by the [15], fish cultivators in Paseh Subdistrict are dominated by the elderly with more than 51 years of age. The age distribution of fish cultivators in Paseh Subdistrict can be seen in Table 3.

Table 3. Distribution of Age

Age	Total	Percentage (%)
30-35 years	1	3.33
36-40 years	1	3.33
41-45 years	5	16.67
46-50 years	4	13.33
> 51 years	19	63.33
Total	**30**	**100.00**

Base on the Total of Family Members

The number of dependents also affects the level of consumption, where the number of family members will determine the number of family needs. The more family members, the more the number of family needs that must be met [26]. The highest percentage of 3 family members is 33% or 10 respondents and the lowest percentage is 1 family member, which is 17% or as many as 5 respondents. The total of family members distribution of fish cultivators in Paseh Subdistrict showed in Table 4.

Table 4. Distribution of Total of Family Members

Total of Family Members	Total	Percentage (%)
1	5	16.67
2	6	20.00
3	10	33.33
>4	9	30.00
Total	**30**	**100.00**

Household Consumption Pattern of Fish Cultivator in Paseh Subdistrict Households

Consumption pattern is the proportion of total expenditure made by households to buy various types of needs. According to [21], consumption patterns can be identified based on the allocation of their use. Broadly speaking, the allocation of consumption expenditure is classified into two usage groups, namely food expenditure and non-food expenditure.

The results of the questionnaire data show that the average household consumption expenditure of fish cultivators in Paseh Subdistrict is Rp. 2.074.903 in a month. Expenditure of respondents in a month with the highest value of Rp. 4.790.000 and the monthly respondent's expenditure with the lowest value is Rp. 830.600. The percentage of household expenditure allocation in a month in full is presented in a pie chart in Figure 1.

The results show that most of the income of fish cultivators is allocated for food consumption expenditure. This shows that the ability of fish cultivating households to consume non-food items is still low so basic needs other than food are not fulfilled optimally. According to Engel's consumption theory proposed by [9], that the level of welfare is said to be improving if the comparison of expenditure on food consumption tends to decrease and vice versa, as non-food expenditure increases.
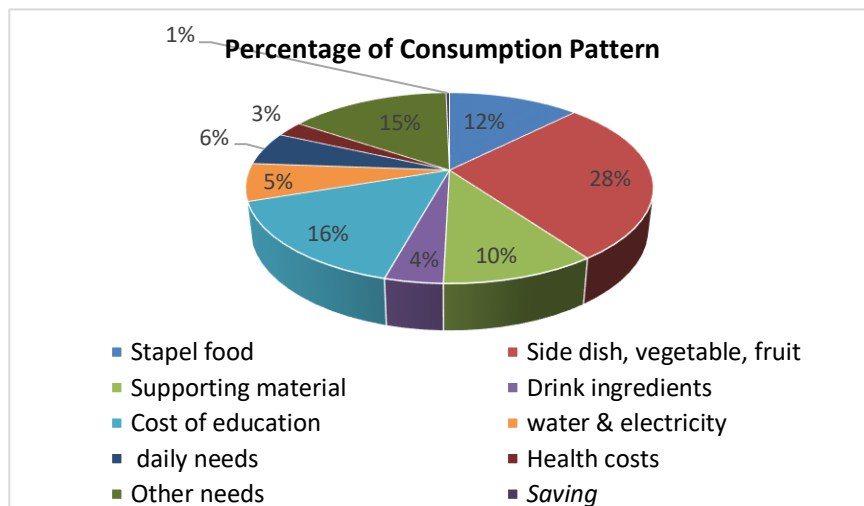
Figure 1. The percentage of household expenditure allocation in a month

Analysis of Factors Affecting Patterns of Food and Non-Food Consumption

The linear regression model was statistically tested using SPSS 25 software with a 95% confidence level. Statistical tests include normality test, linearity test, multicollinearity test, autocorrelation test, heteroscedasticity test, coefficient of determination, T-test, and F-test. The results of the analysis in this study are as follows.

Normality Test

Based on the results of the normality test with Shapiro-Wilk, it is known that the probability value of p or Sig. of 0.105. Because the probability value of p, which is 0.105, is greater than the level of significance, which is 0.05. This means that the assumption of normality is met. In addition, to ensure that the data is normally distributed, it can also be seen from the location of all the points in the Shapiro-Wilk test results and their residuals. According to [24], normal data is indicated by the position of the points that are close to the diagonal line on the graph. The graph can be seen in Figure 2.
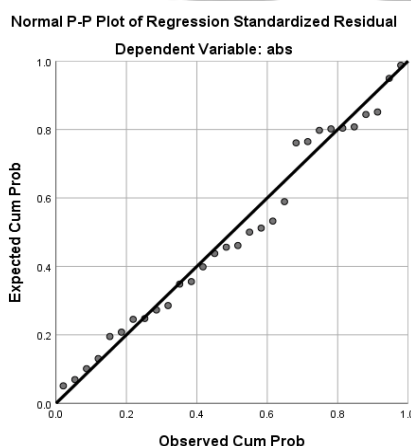

Figure 2. P-plot chart

Multicollinearity Test

The multicollinearity test is used to test whether there is a correlation between the independent variables in a regression model. To check whether there is multicollinearity or not, it can be seen from the value of the variance inflation factor (VIF) and the value of Tolerance. A good regression model if the Tolerance value > 0.10 and VIF < 10 [12].

Table 5 show the result of calculating the Tolerance and VIF value for fish cultivating households. The probability value (Sig.) of all variables is more than a significance level of 0.05, so it can be concluded that the assumption of homoscedasticity is fulfilled, which means that there are no symptoms of heteroscedasticity.

Table 5. Multicollinearity test value

Constant	Tolerance	Variance Inflation Factor (VIF)
X1	0,579	1,727
X2	0,768	1,301
X3	0,773	1,294
X4	0,903	1,108

Autocorrelation Test

This test aims to determine whether or not there is a correlation between residuals in one observation with other observations in the regression model. This test is seen from the value of Durbin Watson, a good regression model is a regression that is free from autocorrelation, the basis for decision making is if the value of Durbin Watson is in the interval du < DW < 4d - du, it can be concluded that there is no autocorrelation [22].

Based on the autocorrelation test value, the value of the Durbin-Watson statistic is 2.135. Where the DU limit value for the number of samples is 30 with 4 independent variables and a significance level of 0.05 is 1.64981. Then the value of 4-DU is 2.35019. Since the value of the Durbin-Watson statistic lies between 1.64981 and 2.35019, the assumption of non-autocorrelation is met.

Linearity Test

The results show that the Linearity of the Income variable (X1) on the Y variable is 0,000. The Linearity of the Education Level variable (X2) against the Y variable is 0,044. value Linearity of the Age variable (X3) against the Y variable is 0,037. The linearity of the number of family members (X4) on the Y variable is 0,030. Based on these results, it can be concluded that the linearity assumption is met because the probability value of all variables is smaller than the significance of 0.05 or 5%. The table of linearity test value showed in Table 6.

Table 6. Linearity test value

Constant	Linearity
X1 to Y	0,000
X2 to Y	0,044
X3 to Y	0,037
X4 to Y	0,030

Heteroskedasticity Test

Based on the Table 7, it is known that the probability value (Sig) of the Income variable is 0,072, the Education Level variable is 0,762, the Age variable is 0,055, and the number of family members is 0,608. Because the probability value (Sig) of all variables is more than a significance level of 0.05 or 5%, it can be concluded that the homoscedasticity assumption is fulfilled, which means that there are no symptoms of heteroscedasticity.

Table 7. Heteroskedasticity test value

Constant	Sign.
Income	0,072
Education Level	0,762
Age	0,055
Total of Family Members	0,608

Coefficient of Determination

The value of R^2 (R Squared) from the regression model is used to find out how much the ability of the independent variable in explaining the dependent variable [10]. It is known that the value of R^2 of 0.858, means that 85.8% of the variation in household consumption pattern variables can be explained by variations of the four independent variables (income, education level, age, and total of family members). While the rest of (100% - 85.8% = 14.2%) is influenced by other variables outside the research model.

The coefficient of determination value showed in Table 8.

Table 8. Coefficient of determination value

R	R Square	R Square (adj)
0,926	0,858	0,835

Multiple Linear Regression Analysis

Analysis of the factors that influence food and non-food consumption patterns of fish cultivator households in Paseh Subdistrict using multiple linear regression analysis by testing 4 independent variables and 1 dependent variable. The results of the analysis in Table 9 show that the variable income, age, and a total of family members have a positive influence on food and non-food consumption patterns, while the education level variable has a negative influence on food and non-food consumption patterns.

The resulting regression model is as follows:

$$Y = 117210.867 + 0.552X_1 - 18143.107X_2 + 3725.938X_3 + 118357.956X_4$$

Table 9. Multiple linear regression value

Constant	Unstandardized Coefficients	
	B	Std. Error
Income	0,552	0,063
Level of Education	-18143,107	37045,721
Age	3725,938	7691,429
Total of Family Members	118357,956	54951,252

F -Test

Based on Table 10, information on a significance value of 0.000 <0.05 means that the independent variables in the form of income, education level, age, and total of family members affect the dependent variable in the form of household consumption patterns. Thus, it can be concluded that there is a jointly significant effect of the independent variables, namely income, education level, age, and the total of family members on the dependent variable in the form of household consumption patterns.

Table 10. Simultaneous test (F-Test)

Model	Sum of Squares	Df	Mean Square	F	Sign.
Regression	27968047608660,032	4	6992011902165,006	37,787	0,000
Residual	4625883721006,642	25			
Total	232593931329666,664	29			

T - Test

The t-test is a statistical test for analyzing the effect of each variable and seeing the magnitude of the influence of these variable [10]. Based on the Table 11, the t value of the income variable is 0.000, the value is smaller than the significance level of 0.05 or 5% so it can be said that the income variable (X1) has an effect on the food and non-food consumption pattern variables. This is in line with [14] that the fishing community of bubu in Tondasi village has a consumption pattern of the Keynes Model. Where consumption expenditure increases based on the higher consumption patterns of fisherman. According to [6], the amount of consumption expenditure is strongly influenced by the ability of a family to manage the income and income earned.

The t value of the education level variable is 0.629, this value is greater than the 5% significance level (0.05) so it can be said that the education level variable (X2) has no effect on the household consumption pattern variable. Based on the research data, the education level of fish cultivators is dominated by the elementary education level, where the consumption expenditure of cultivators between elementary education and high school education is not much different or the same size. So the results of the analysis show that education has no significant and negative effect on food and non-food consumption patterns of fish cultivating households in Paseh District, Sumedang Regency. According to [23], the higher a person's education level, the wiser they will be in choosing good food for consumption with the consideration that the food consumed must be healthy and nutritious.

The t value of the age variable has a significance value of 0.632, the value is greater than 0.05 so it can be said that the age variable (X3) has no effect on the household consumption pattern variable. This research is in line with [1] who states that age has no significant effect on household consumption patterns in Prabumulih City, South Sumatra. The age vulnerability of fish cultivators in Paseh subdistrict ranging from 30-76 years shows that the age of fish cultivators in the study area varies. Based on the age classification by the [15], fish cultivators in Paseh District are dominated by the elderly with more than 51 years of age.

The t-value of the variable number of family members is 0.41, the value is greater than the significance level of 5% (0.05) so it can be said that the variable number of family members (X4) has an effect on the household consumption pattern variables. This is in line with [11], the number of dependents in a household will affect the amount of consumption that must be spent by the household. More family members can increase the household needs.

Table 11. Partial test (T-Test)

Term	T	Sign.
Constant	0,222	0,826
Income	8,765	0,000
Level of Education	-0,490	0,629
Age	0,484	0,632
Total of Family Member	2,154	0,041

CONCLUSION

Based on research conducted, the following conclusions can be obtained:

1. The household expenditure of fish cultivators in Paseh Subdistrict is still dominated by food consumption, this shows that the ability of fish cultivating households to consume non-food items is still low so that basic needs other than food are not fulfilled optimally.

2. The income variable and the total of family members have a positive and significant influence on the food and non-food consumption patterns of fish cultivator households in Paseh Subdistrict, while the education level and age variables do not have a significant influence.

REFERENCES

[1] Alfiati, S. 2018. Analysis of Factors Affecting Household Food Consumption Patterns. COSTING: Journal of Economics, Business and Accounting, 2(1), 76-83.

[2] Aziz, A., Permana, IS, & Alfarisi, MJ 2019. Factors Affecting Muslim Household Consumption Patterns. *Available at SSRN 3445315.*

[3] Central Statistics Agency. 2019. Income Statistics February 2019. Jakarta : Central Statistics Agency.

[4] Central Statistics Agency of Sumedang Regency. 2021. Sumedang Regency in Figures 2021. Sumedang Regency: Central Statistics Agency.

[5] Daniel, Mahyu. 2013. The Effect of Income on Consumption Levels in Civil Servants at the Bireuen Regency Regent's Office. Journal of Economics Almuslim University Bireuen. Vol. IV. No. 7, 33-41.

[6] Dewi, I.S. 2016. Analysis of Factors Affecting the Pattern of Food Consumption of Fishermen's Households (Case Study: Bagan Dalam Village, Tanjung Tiram District, Batu Bara Regency). *Usu E-Journal*.

[7] Department of Fisheries and Livestock Sumedang Regency. 2020. *Data on the Potential and Utilization of the Sumedang Regency Area.* Sumedang Regency: Department of Fisheries and Livestock Sumedang Regency.

[8] Engel, J.F., Blackwell, RD., & Miniard, PW. 1986. Consumer Behavior (Volume 1). Tangerang: Binarupa Aksara.

[9]   Ghozali, Imam. 2013. Application of Multivariate Analysis with IBM SPSS Program. Edition 7. Semarang: Diponegoro University Publisher.

[10]   Hanum, N. 2018. The Effect of Income, Number of Family Dependents and Education on Consumption Patterns of Fishermen's Households in Seuneubok Village, Rambong, East Aceh. Journal of Ocean Economics, 2(1), 75–84.

[11]   Imam, G. 2011. Application of multivariate analysis with the IBM SPSS 19 program. *Semarang: Diponegoro University Publishing Agency*, *68*.

[12]   Jaya, R., Rijal, A.S., & Mohamad, I.R. 2020. Socio-Economic Characteristics of the Alo Sub-watershed Community on the Behavior of Physical Land Use. *Journal of Humanity and Social Justice*, 2(1), 53-67.

[13]   Lora, W.O., La Ola, L.O., & Riani, I. 2018. Analysis of Income and Consumption Patterns of Fishermen in Tondasi Village, North Tiworo District, West Muna Regency. *Journal of Fisheries Socio Economics, FPIK UHO*, 4(1), 65–72.

[14]   Ministry of Health Indonesian. 2019. *Indonesia Health Profile*. Jakarta: Ministry of Health of the Republic of Indonesia.

[15]   Nurhayati, A., & Purnomo, A.H. 2019. Household Coping Mechanism For Fisheries Community Food Security Issue. *Journal of Food Security*, 7(6), 206-211.

[16]   Paseh Subdistrict. 2019. *Village Profile and Potential*. Sumedang Regency. 18 pp.

[17]   Rahardja and Manurung. 2010. Microeconomic Theory (An Introduction). Jakarta: FEUI Publishing Agency.

[18]   Ramadhani, F. 2015. The Effect of Education Level, Motivation and Promotion on Purchase Decisions for Priority Banking Customers at Pt Bank BNI Syariah. *UMSU Journal*.

[19]   Rizal, A. (2013). Fisheries Sector Performance Banten Province. Journal of Aquatics, 4(1).

[20]   Ruslan, Rosady. 2014. Management of Public Relations and Communication Media (Concepts and Applications). Jakarta : PT. Grafindo King.

[21]   Santoso, S. 2016. *Complete Guide to SPSS Version 23*. Elex Media Komputindo.

[22]   Sitorus, S., & Kernalis, E. 2014. Food Consumption Patterns of Household Coconut Farmers and Factors Affecting It in Mendahara District, Tanjung Jabung Timur Regency. *Scientific Journal of Business Socio-Economics*, *17*(1).

[23]   Suardi. 2019. The Effect of Job Satisfaction on Employee Performance at PT Bank Mandiri, Tbk Pontianak Branch Office. Journal of Business Economics and Entrepreneurship, Vol 1 (2), pages 9-18.

[24]   Sugiyono. 2011. Quantitative, Qualitative, and R&D Research Methods. Bandung: Afabeta

[25]   Yanti, Z., & Murtala, M. 2019. The Effect of Income, Number of Family Members, and Education Level on Household Consumption in Muara Dua District, Lhokseumawe City. *Indonesian Journal of Economics*, 72–81.