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CORRELATION ANALYSIS OF HOUSEHOLD FOOD CONSUMPTION EXPENDITURE WITH PPH (STANDARD DIETARY PATTERN) IN SEMBAWA DISTRICT, BANYUASIN REGENCY

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ABSTRACT
Introduction: *This study analyzes the correlation of food consumption expenditure on the achievement of PPH scores which is influenced by several factors such as the number of household members, non-food expenditures, and length of education.* ***Methods:*** *This research method is using quantitativemethods. The method of determining the number of samples used is disproportionate stratified random sampling. The data analysis method regarding the correlation of food consumption expenditure to the value of PPH uses Spearman Rank correlation analysis and the method of analyzing factors that affect household food consumption expenditure using multiple linear regression analysis methods.* ***Result:*** *From the results of the study, it was found that the correlation value between food consumption expenditure and the achievement of the PPH score was 0.665, which means that it is strongly correlated and simultaneously the factors that affect food consumption expenditure affect because of the significant value of f is less than 0.005 which is worth 0.00 and partially which was tested with the T-test, the results were significant only on the high-income dummy variable, which was worth 0.23 which could be interpreted that households with high incomes had higher household consumption expenditures as much as 393,336,718 compared to food consumption expenditures of medium and low-income households.* ***Conclusion:*** *To formulate recommendations for efforts that can be made to achieve the optimal outcome for postpartum hemorrhage, participants are expected to be able to eat well-balanced nutritious foods of good nutritional value, focusing not only on quantity but also nutritional quality and nutrition. food content.*

Keywords: *PPH, Food Consumption, Expenditure, Income, Household, Nutrition Recommendations*.

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INTRODUCTION

Indonesia as a country with a large population and a very large area, food security is an important agenda in economic development. Food insecurity is a very sensitive issue in the dynamics of social life, therefore Indonesia needs to be able to realize national, regional, household and individual food security based on self-sufficiency in domestic food supply ("Analysis of Community Level Food Consumption Supports the Achievement of Food Diversification, " 2010) Food is the most basic human need, so the availability of food for the community must always be guaranteed. In the development of community civilization to meet the quality of life that is advanced, independent, in a peaceful atmosphere, and physically and mentally prosperous, food

consumption is increasingly demanded to be provided in sufficient quantities, quality, safe, and evenly distributed.

Food sufficiency for a nation is a very strategic matter to support the development of healthy, active, and productive human resources, this condition can be fulfilled and is reflected in the availability of sufficient food, both in quantity and quality, distributed at affordable prices and safe for consumption to support daily activities around the clock (Faradina et al., 2018). The development of food security in Indonesia is emphasized in Food Law number 7 of 1996 concerning Food and Government Regulation Number 68 of 2002 concerning Food Security (Rachman & Ariani, 2016). The diversity and balance of food consumption at the family level will determine the quality of consumption at the regional, district/city, provincial and national levels. The quality of food consumption of the population at the regional (macro) level is reflected in the Expected Food Pattern (PPH) score, which meets the nutritional needs of the population, it can be determined by conducting an assessment of food consumption, through a portion calculation approach (Purwati, 2021). Currently, the PPH score has become a fairly strategic indicator and is a performance indicator in the field of food security listed in the 2009 - 2014 RPJMN and 2015 - 2019 RPJMN.

The importance of achieving the PPH score is also mandated by Law (UU) Number 18 of 2012 concerning Food and Government Regulation No. 17 of 2015 concerning Food Security and Nutrition(Suryana et al., 2017). Article 60 of Law No. 18 of 2012 it is stated that the Government and Regional Governments are obliged to realize the diversification of food consumption to meet the nutritional needs of the community (Ariani, 2015). The achievement of diversification in food consumption is measured through the achievement of value, composition, food patterns, and balanced nutrition, using the Food Expectation Pattern (PPH) approach (Pangan, 2015). The Hope Food Pattern (PPH) is the composition or composition of food or food groups based on their energy contribution, both absolute and relative, which fulfills nutritional needs in quantity, quality, and diversity by considering social, economic, cultural, religious, and taste aspects (Cahyani, 2008). The purpose of making PPH is to produce a normal composition or (standard) food to meet the nutritional needs of the population that considers nutritional *balance* supported by taste *(Portability),* digestibility *(digestability), and* acceptance of the community *(Acceptability),* quality and affordability (*Affordability)*, so that PPH is expected to provide usefulness as an instrument to assess the availability and consumption of food in the form of the amount and composition of food by type of food, as a basis for calculating the PPH score which is used as an indicator of food nutritional quality and diversity of food consumption both at the level of availability and level of consumption and for planning consumption and food availability (Sukesi & Shinta, 2011). The higher the PPH score, the more diverse people's food consumption will be towards the Expected Food Pattern (PPH).

Indonesia's PPH score nationally in 2017 was 90.4 out of an ideal score of 100, although this score is high but has not yet reached the maximum score, meaning that Indonesia is not yet ideal in meeting food needs and food consumption nationally(Nur Azizah, 2022). In detail, the value of 90.4 is the total value of food consumption which consists of 9 food groups, among others: the grains group of 25.0 in the ideal category, the tubers group of 1.7 from the ideal score of 2.5

with the category not yet ideal, animal food 22.3 out of an ideal score of 24 with not yet ideal category, oil and fat 5.0 in the ideal category, oily fruit or seeds 0.9 out of an ideal score of 1.0 which was categorized as not yet ideal, nuts 6, 2 out of an ideal score of 10 in the not yet ideal category, sugar 2.5 ideal, vegetables and fruit 26.8 from ideal 30.0 in the not yet ideal category and finally for other groups 0, so that out of 9 food consumption groups only 3 food consumption groups the ideal category are grains, oils and fats, and sugar consumption group and the remaining 6 groups such as root food consumption group, animal food, oily fruit or seeds, nuts and vegetables, and fruit are still in the not ideal category. The South Sumatra Province PPH score in 2017 was 89.3 out of an ideal score of 100 and below the national PPH score with a difference of 1.1. (Food, 2015) . The Banyuasin Regency PPH score is 87.20 for 2020.

According to (Rafiq, 2016) the costs incurred to buy and meet food needs are called household food consumption expenditures, this cost is the value of spending made by households to buy various types of needs at a certain time. Consumption is one of the determinants of economic growth which is also an indicator of the welfare of the population. People's consumption patterns based on the allocation of their use can be classified into user groups, namely spending on food and non-food (Sarimunding & Aisyah, 2018). Based on the source, food ingredients are divided into staple foods, animal side dishes, vegetable side dishes, vegetables, and fruits. The type of food consumed should ideally meet the quality and quantity requirements. The quality of the food consumed must be able to meet all nutritional needs. Food that is consumed if it can provide all the types of nutrients needed, the food can be called quality (Normalita, 2018).

Nationally, the average monthly per capita expenditure for the food group is 603,236 rupiah, each for rural areas is 518,073 and for urban areas is 670,304 rupiah. Based on food commodity groups, there are 5 highest groups consumed in rural and urban areas such as prepared food and beverages (34.27 percent), cigarettes and tobacco (12.17 percent), grains (11.07 percent), fish/shrimp/ squid/shellfish (7.72 percent), and vegetables 7.52 percent (Istighfarin, 2022). Meanwhile, 27.24 percent of other commodity groups consist of eggs and milk, fruits, meat, beverage ingredients, oil and coconut, nuts, spices, tubers, and other food ingredients**.** South Sumatra is one of the provinces in Indonesia whose food consumption expenditure costs are 517,928 rupiahs with each for urban areas of 566,869 rupiahs and rural areas of 488,761 rupiahs per month in 2019.

The factors that influence consumption expenditure are income, tastes, socio-cultural factors, wealth, government debt, *capital gains,* interest rates, price levels, *money illusion*, distribution, age, geographical location, and income distribution (Takahindangen et al., 2021). Income is one element that can reflect the socio-economic status of the community. Socio-economic status can also be interpreted as the level of prestige that a person has based on the position he holds in a society based on work to meet needs or circumstances that describe the position or position of a family in society based on material ownership (Taluke et al., 2021).

Based on the description of the background explanation above and seen from the achievement of the PPH score of Banyuasin Regency in 2020 of 87.20 this value is considered quite high from the ideal PPH score of 100, but the PPH score of Banyuasin Regency is still below the national PPH score of Indonesia in 2017 of 90.4. Therefore, researchers are interested in analyzing

and calculating the PPH score in one of the sub-districts in Banyuasin Regency, precisely in Sumbawa District. With research objectives 1). Analyzing the factors that influence household food consumption expenditures in high, medium, and low-income communities in Sumbawa District, Banyuasin Regency, 2). Analyzing the correlation of household food consumption expenditure with the PPH value score in Sumbawa District, Banyuasin Regency, 3). Formulating recommendations for efforts to achieve the ideal PPH score in Sumbawa District, Banyuasin Regency.

Argandi et al. conducted research in 2019 regarding Factors Affecting Hopeful Food Patterns (PPH) in Bandung Regency (Argandi et al., 2018). One way to determine food independence is through the quality of diversity in food consumption as measured by the Expected Food Pattern (PPH) score. PPH can be used as a measure of nutritional balance and food diversity consumed by residents in an area. The maximum PPH score, 100, indicates a situation of diverse food consumption, good composition and nutritional quality (Baliwati, 2007). In practice, food quality and quantity indicators in Bandung Regency have not been achieved. This study aims to determine the size of the family, education level, and income level of PPH in Bandung Regency. The primary method of this research is the method of explanation (Explanatory Research). The determination of the Paseh and Pasirjambu sub-districts was carried out by purposive sampling. Namely, the highest and lowest PPH sub-districts were determined.

Furthermore, the size of the respondents using the Slovin technique. To find out the factors that affect PPH in Bandung Regency using multiple regression analysis techniques, the test is carried out using the SPSS 20 program. The results show that family size, education level and income level positively affect Bandung Regency PPH. This means that the higher the family size, education level and income level, the higher the PPH in Bandung Regency.

Research conducted by Khirul Anwar and Hardinsyah regarding Food Consumption and Nutrition and Expected Food Patterns in Adults aged 19-49 Years in Indonesia (Anwar & Hardinsyah, 2014). This study aimed to assess food consumption, Nutritional Quality of Food Consumption (MGP), an Expected Food Pattern (PPH) score, and the correlation between PPH value and MGP for adults aged 19-49 years. This study uses Riskesdas 2010 as consumption data taken through a 24 -hour recall method. Based on the study's results, it was found that the most significant consumption of grains was (99.4%), while the minor consumption of oily seeds (2.0%). The mean PPH score was 53.1±9.3 (54.6±9.5 in males and 51.7±9.1 in females). The mean of MGP of 4 nutrients was 62.8±20.6, MGP of 10 nutrients was 51.1±15.4, and MGP of 14 nutrients was 54.1±16.1. The PPH and MGP scores obtained a correlation of 0.65-0.72, so the PPH scoring system can be used for the diversity and nutritional quality of adult food consumption

METHOD

This research was conducted in Sumbawa District, Banyuasin Regency, precisely in 3 villages, namely Lalang Sembawa Village, Harapan Island, and Limau. The selection of this location was carried out *purposively* with the consideration that in this location the community groups supported the research carried out because this study required groups of respondents with different income levels, namely high, medium and low-income people. This group difference aims to see the results of research regarding the achievement of PPH scores in high, medium, and low-

income communities, whether there are differences that are influenced by several factors such as occupation, household income, number of household members, non-food expenditure and length of education and also for looking for formulations of recommendations for efforts that can be given to support the achievement of the ideal PPH score, penelitian ini dilakukan pada Oktober 2021.

The sampling method used in this research is the *disproportionate stratified random sampling method*. The reason for using this technique is because this study uses heterogeneous strata, namely high, medium and low-income people with a total sample of 90, with each income group of 30 samples which refers to the basic principles of statistics in quantitative research with a minimum sample size of 30 samples so that the distribution of the data obtained can be carried out by statistical tests.

The data used in this study are primary data and secondary data. Primary data is data obtained directly in the field by interviewing respondents to fill out questionnaires that have been prepared regarding household food consumption in high, medium, and low-income communities, and secondary data is obtained from related agencies or agencies such as the Food Security Agency of the Indonesian Ministry of Agriculture. Central Bureau of Statistics, Ministry of Health, Widya Karya National Nutrition and Food, and other sources.

Find out the value of household food consumption expenditure can be seen in people's eating habits. Information about eating habits and the amount of food consumed can be obtained by several methods, namely:

1. The *24 Hours Food Recall* method is a method used to estimate the amount of food consumed during the past 24 hours in household size (URT) and then converted into grams (Khomsan, 2003).
2. The *Food Records* method is a method that asks respondents to record all food and drinks consumed during the week with URT units (Khomsan, 2003)
3. The *Food Weighting* method is a method that asks respondents to weigh and record all the food consumed in a certain period (Faridi et al., 2022)
4. The *Food History* method is a method that aims to find the core pattern of daily food over a long period and to see the relationship between food patterns and certain diseases (Khomsan, 2003).
5. The *Food Frequency* method is a method used to obtain information on food consumption patterns and the frequency with which a person consumes the food (Khomsan, 2003)

The method used to see the eating habits of respondents in this study uses the *24 Hours Food Recall method*, which means that respondents are asked to provide information on their eating habits based on 24-hour memory from the time of the last meal in URT (Household Size) which will later be converted into grams to makes it easy to calculate the value of the PPH score.

The data obtained from the field are presented in tabulation and continued with mathematical and statistical data processing and described descriptively in the discussion, data processing is assisted by *Microsoft Office Excel* and *SPSS software.*

To answer the first objective, the factors that influence household food consumption were analyzed using Multiple Linear Regression and the results were interpreted descriptively. Before performing multiple linear regression analysis, several steps must be carried out, including:

1. Classic assumption test

   This test aims to see the quality of the data so that the processed data has clear validity and to avoid bias in the processed data. The use of classical assumption test used, among others:

   a. Normality Test

      The normality test aims to test whether in the regression model the data in question is normally distributed or not. Normality tests can be done using the *Normal P-Plot Test* and the *Kolmogorov-Smirnov test*. With a decision rule where the data can be said to be normally distributed if the *Asymp value. Sig (2-tailed*) 0.05, then the data is normally distributed. If the *Asymp value. Sig (2-tailed*) 0.05, then the data is not normally distributed.

   b. Multicollinearity Test

      The multicollinearity test was used to test whether the regression model found a correlation between the independent variables. A good regression model is characterized by the absence of multicollinearity symptoms. One way to determine the presence or absence of multicollinearity symptoms is to use the *Tolerance* and VIP (*Variance Inflation Factor*) methods. As for the decision rule, if the *Tolerance value* is 0.10 and the VIF value 10 then multicollinearity occurs. On the other hand, if the *Tolerance value* is 0.10 and the VIF value is 10, multicollinearity does not occur.

   c. Heteroscedasticity Test

      The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance in the residual value from one observation to another observation. A good regression model is characterized by the absence of heteroscedasticity symptoms. This study is to test the presence or absence of heteroscedasticity symptoms by using the *scatterplot* test and the *lesser test*. As for the decision rule, if the Sig value < 0.05 then heteroscedasticity symptoms occur, and conversely if the Sig value > 0.05 then there are no heteroscedasticity symptoms.

2. Multiple Linear Regression Analysis

   Multiple linear regression analysis is used to determine the pattern of changes in the value of a variable (dependent/bound variable) caused by other variables (independent/independent variable). This regression analysis uses a mathematical model in the form of a straight-line equation that can define the relationship between variables according to the research objectives. In this study, multiple linear regression models are used to see how the *dependent* variable is household food consumption expenditure which is associated with independent or *independent variables,* namely (X_1) the number of household members, (X_2) non-food expenditure, (X_3), length of education, (D_1) high income (D_2) medium income, (D_3) self-employed. Then the multiple linear regression model used is (Iqbal, 2015):

$$Y = + {}_1X_1 + {}_2X_2 + {}_3X_3 + {}_4D_1 + {}_5D_2 + {}_6D_3 + \mu$$

Information:

Y : household food consumption expenditure (Rp/month)

B : Interceptsor constants

$\beta_1, \beta_2, \beta_3 \ldots \beta_9$: Regressioncoefficient

X_1 : Number of household members (Persons)

X_2 : Non-food Expenditure (Rp/Month)

X_3 : Length of education (Years)

$D_1 = 1$: for high income

= 0: for other income

$D_2 = 1$: for medium income

= 0: for other income

$D_3 = 1$: for Self-employed Workers

= 0: for Non-Self employed Jobs

μ = intruder error

To see the relationship between the dependent variable and the independent variable used in the multiple linear regression test, several tests must be carried out, including:

1. Coefficient of Determination Test (r^2)

   The coefficient of determination (r^2) is a test that measures how far the regression model's ability to explain the variation of the dependent variable (dependent). The value of the coefficient of determination ranges between 0 and 1. If the value of the coefficient of determination is getting closer to 1 or equal to 1, then the independent variable (independent) can explain or provide all information on the dependent (dependent) variable (Ghozali, 2005). The weakness in the use of this coefficient of determination is the bias towards the number of independent (independent) variables included in the model. With each addition of 1 independent variable, the coefficient of determination will increase regardless of whether the variable has a significant effect or not on the dependent variable (dependent).

2. T Test (Partial)

   T-test (partial) in multiple linear regression is used to seethe magnitude of the relationship between each independent variable on the dependent variable and whether an independent variable affects or not the dependent variable. This test aims to test partially or individually the effect of independent variables (age of housewife, housewife's education, number of household members, household income group, and snacks consumed) on the dependent variable (household food diversification). To partially test the variables that influence X_1, X_2, X_3, D_4, D_5 on Y, the T-test is used. The formula used is as follows :

$$T = \frac{b_1}{sb_1}$$

Description :

T = Calculated value

b_1 = Coefficient value of independent variable (Variable X)

sb_1 = *Standard error value* of the independent variable (variable)

t -test decision rules are as follows:

1. If it is significant < 0.05 then Ho is rejected. Ha is accepted. This means that there is a significant effect of independent variables (occupation, household income, number of household members, non-food expenditure, and education level) partially or individually on the dependent variable (household food consumption).
2. If significant > 0.05 then Ho is accepted and Ha is rejected. This means that there is no significant effect of independent variables (occupation, household income, number of household members, non-food expenditure, and education level) partially or individually on the dependent variable (household food consumption).(Suharyadi., *et al* ., 2014).

3. F test (simultaneous)

F (simultaneous) test was conducted to determine whether all independent variables simultaneously (simultaneously) affected the dependent variable. The F test aims to show whether all the independent variables that are included in the model simultaneously or together have an influence or not on the dependent variable. This study shows whether the independent variables consisting of employment variables, household income, number of household members, non-food expenditure, and education level affect the dependent variable, namely household food consumption. The formula used is as follows:

$$F = \frac{R^2/K}{[1 - R^2][n - k - 1]}$$

Description :

K = Number of independent variables

R^2 = Coefficient of determination

nk-1 = Degrees of freedom in the denominator

Rule of decision is as follows:

1. If F count > F table then the independent variables used in this study together (simultaneously) have a significant effect on the dependent variable.
2. By comparing the calculated F value with the F table if F arithmetic < F table, then the independent variables used in this study simultaneously (simultaneously) do not have a significant effect on the dependent variable.

The second objective is about the relationship between the value of household food consumption and the achievement of the PPH score. Then the calculation is carried out first to determine the PPH value score. The steps used to calculate the PPH score based on the rules (Food, 2015) include:

1. Food grouping: The food consumed is grouped into 9 (nine) food groups according to the Expected Food Pattern (PPH) standard, as follows:

Table 1. Food Grouping 2015

No	Food Group	Commodity Type (PPH Group)
1	Grains	rice and its products, corn and its products, wheat and its products.
2	Tubers	cassava and its products, sweet potatoes, potatoes, taro, sago, and starchy foods.
3	Animal Food	meat and its products, fish and their products, eggs, and milk, and their products.
4	Oil and fat	coconut oil, palm oil, margarine, and animal fats
5	Oily Fruits/Seeds	coconut, candlenut, walnut and chocolate, and various kinds of fruit
6	Nuts	peanuts, soybeans, green beans, kidney beans, peas, cashews, cowpeas, other nuts, tofu, tempeh, taco, oncom, soy milk, soy sauce
7	Sugar	granulated sugar, brown sugar, syrup, finished drinks in bottles/cans
8	Vegetable and fruit	fresh vegetables and their processed products, fresh fruits and their products, including chips
9	etc	various spices and beverage ingredients such as shrimp paste, cloves, coriander, pepper, nutmeg, tamarind, cooking spices, tea, and coffee

2. Convert from, type and unit

   Food consumed by households is in various forms, and types with different units. Therefore, the unit of weight needs to be standardized by converting it into the same (agreed) unit and type of commodity using a conversion factor so that the weight can be added up, preferably the food consumed is converted into raw weight. Things that need to be considered in converting the form, type, and unit of food consumed are:

   a. If the food consumption data is a type of processed food made from several types of food ingredients, then first describe it into several types of single food constituents with the amount according to the unit weight of each food. For example, for 1 portion of chili fried liver, the main ingredients are 8 potatoes and 300 grams of beef liver.
   b. If the unit of weight is in household size (URT), then convert the weight of each type of food from URT to grams. For example, 8 potatoes are equivalent to 400 grams, concerning the agreed URT conversion list applicable in their respective regions.
   c. If what is known is the cooking weight, it is necessary to calculate the raw weight by multiplying the cooking weight by the raw conversion factor. For example, 200 grams of the fried liver is equivalent to 200 x 1.5 = 300 grams of beef liver.
   d. If food is processed using oil, then the weight of the oil absorbed by the food needs to be calculated by multiplying the raw weight of the food by the percent oil absorption factor. For example, 300 grams of beef liver absorbs as much as 300 x 4.8 percent = 15 grams of cooking oil.

3. Calculating the sub-total energy content by food group at this stage, the energy content of each type of food consumed is calculated with the help of the list of food ingredients composition (DKBM). The energy column in the DKBM shows the energy content (kcal) per 100gram of edible parts (BDD). Example: 50 g of rice = energy content of rice x percent BDD 360 kcal x 100/100 180 kcal x 50 g x 100/50 g Next, the amount of energy for each type of food is added up according to the food group.
4. Calculating the actual total energy of all food groups at this stage, what is done is to add up the total energy of each food group so that the total energy of all food groups will be known.

The total energy of 9 food groups = Energy of grains + tubers +.....+ energy of other groups.

5. Calculating the energy contribution of each food group to the actual total energy (percent) At this stage is to assess the energy pattern/composition of each food group by calculating the energy contribution of each food group divided by the total actual energy of all food groups and multiplied by 100 percent.
6. Energy contribution per food group (percent) 100 percent Food group energy Total actual energy x Example: 100 percent 52.6 percent Actual energy contribution for the rice - grain group Energy for the rice - grain group Total actual energy x 1150 2185 6. Calculating the energy contribution of each group of food to the Energy Adequacy Rate (percent AKE). At this stage, it is a step to assess the level of energy consumption in percent (percent) by calculating the energy contribution of each food group to the AKE (AKE consumption for the 2012 national average is 2,150 kcal/cap/day). percent AKE) = 100 percent Energy in the food group AKE Consumption x Example: The energy contribution of the grains group to the AKE is x 100 percent = 53.5 percent.
7. Calculating the actual score at this stage, what is done is by multiplying the actual contribution of each food group by its respective weight. Actual score = actual energy contribution of each food group x weight of each food group.
8. Calculating the AKE score at this stage is done by multiplying the AKE contribution (percent AKE) of each food group by its respective weight. AKE score = percent AKE of each food group x weight.
9. Calculating the PPH Score The actual PPH score is calculated by comparing the AKE score with the maximum score. The maximum score is the maximum score limit for each food group that meets the ideal composition. The calculation of the PPH score for each food group is subject to the following conditions: v If the AKE score is higher than the maximum score, the maximum score is used.
10. If the AKE score is lower than the maximum score, then the AKE score is used. The PPH score for each food group shows the composition of the population's food consumption at a certain time/year. For example, the AKE score for the grains group is 26.8 compared to the maximum score for the grains group of 25.0, so the PPH score for the grains group is 25.0. Calculating the Total Score of Expected Food Patterns. The total score of the Expected Food Pattern (PPH) which is known as the quality of food consumption is the sum of the scores of 9 food groups, namely the number of the grain group to the score of the other groups. This figure is called the food consumption PPH score, which shows the level of diversity in food consumption. PPH score = PPH score for grains + tubers + ... + PPH score for other groups.

To see the relationship between household food consumption and the achievement of the PPH score, a test was conductedon parametric correlation. That is Pearson's test. Pearson correlation is a statistical analysis tool used to see the close linear relationship between 2 variables whose data scale is interval or ratio(Kurniawan, 2016). Which can be formulated, as follows:

$$r_{xy} = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{n\sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2}\sqrt{n\sum_{i=1}^{n} y_i^2 - \left(\sum_{i=1}^{n} y_i\right)^2}}$$

Where r_{XY} is a correlation coefficient that can be positive (+) or negative (-) and is in the range of -1 and 1. If $r_{XY\ is}$ close to -1 or 1 then the close relationship between the two variables is getting stronger. If the value is close to 0, then the relationship between the two variables is getting weaker. The following is an interpretation of the value of the correlation coefficient.

- 0 - 0.2 indicates a very weak relationship,
- 0.2 - 0.4 indicates a weak close relationship,
- 0.4 - 0.7 indicates a fairly strong close relationship,
- 0.7 - 0.9 indicates a strong close relationship,
- 0.9 – 1 indicates a very strong close relationship.

RESULTS AND DISCUSSION

1. Factors Affecting Household Food Consumption Expenditure

The factors that influence household food consumption expenditures in this study are the number of household members, non-food expenditures, and length of education as the main variables supported by a dummy variable, namely the job variable used as a dummy for self-employed workers and non-self-employed workers, and income, namely income. high, medium, and low, because in this research the researcher sees from 3 sides of the income group. For this purpose, the research conducted multiple linear regression tests, namely the classical assumption test consisting of normality, heteroscedasticity, and multicollinearity tests and multiple linear regression consisting of determination test (r), simultaneous f test, and partial T-test. The following multiple linear regression model can be formulated:

$$Y = + {}_1X_1 + {}_2X_2 + {}_3X_3 + {}_4X_4 + {}_5X_5 + {}_6D_1 + {}_7D_2 + + {}_8X_1 + \mu$$

Information:

Y : Household Consumption Expenditure (Rp/Month)
B : Intercepts or constants
$\beta_1, \beta_2, \beta_3 \ldots \beta_9$: Coefficient regression
X_1 : number of household member (Person)
X_2 : Household income (Rp /month)
X_3 : Number of family members (soul)
X_4 : Non-food Expenditure (Rp/Month)
X_5 : Education level (Years)
$D_1 = 1$: for high income
= 0: for other income
$D_2 = 1$: for medium income
= 0: for other income

D_3 = 1 : for low income
= 0: for other income
μ = intruder error

The following are the results of the classical assumptions that have been carried out with the help of the SPSS application.

1. Classic assumption test

This test aims to see the quality of the data so that the processed data has clear validity and to avoid bias in the processed data. The use of classical assumption test used, among others:

a. Normality test

The normality test aims to test whether in the regression model the data in question is normally distributed or not. The results of the normality test on this goal are met because the data is the *Asymp value. Sig (2-tailed*) 0.05, and the points on the Normal P-plot are on the diagonal line. It can be seen in Figure 1. Following.

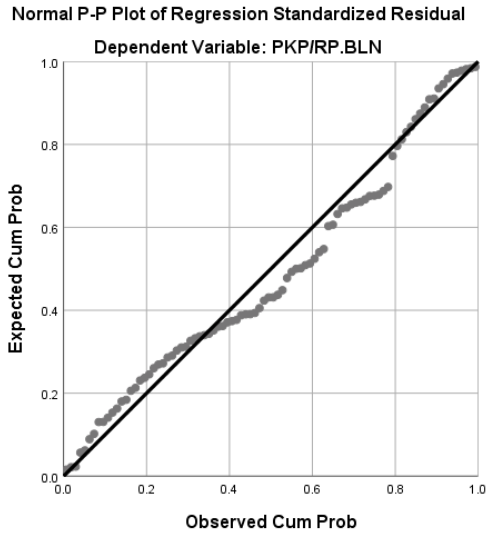

Figure 1. Normality Test

b. Multicollinearity Test

The multicollinearity test was used to test whether the regression model found a correlation between independent variables. In this study, there were no symptoms of multicollinearity because the results of the tolerance value were> 0.10 and the VIF value < 10. More clearly it can be seen in Table 2. The following Multicollinearity Test.

Table 2. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
JART/ORG	.944	1.060
PNP/RP.BLN	.549	1,822
LP/THN	.641	1,561
PT	.274	3,655
PS	.476	2.103
PW	.499	2003
T		

c. Heteroscedasticity Test

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance in the residual value from one observation to another observation. In this study, there were no symptoms of heteroscedasticity because there was no clear pattern on the scatterplot, and the dots spread above and below the number 0, which more clearly can be seen in Figure 2.

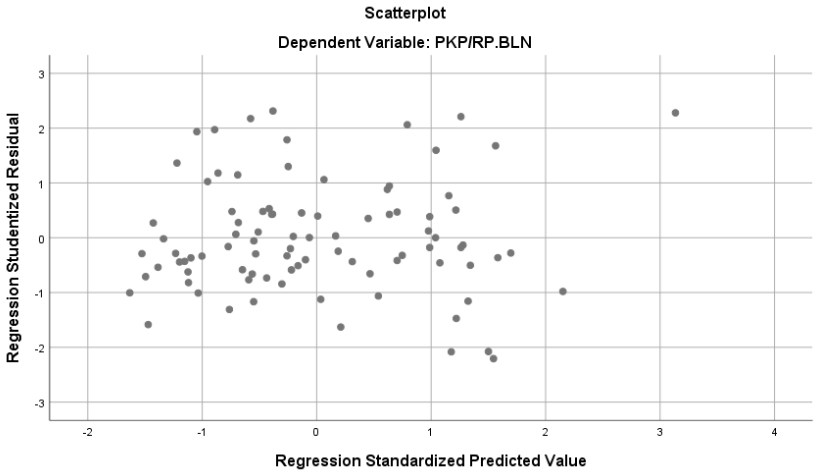

Figure 2. Heteroscedasticity test

2. Multiple Linear Regression Analysis

Multiple linear regression analysis was used to determine the pattern of changes in the value of a variable (dependent/bound variable) caused by other variables (independent/independent variable). To see the relationship between the dependent variable and the independent variable used in the multiple linear regression test, several tests must be carried out, including:

1. Coefficient of Determination Test (r^2)

The coefficient of determination (r^2) is a test that measures how far the regression model's ability to explain the variation of the dependent variable (dependent). The value of the coefficient of determination ranges between 0 and 1. In this study, the value of r2 is 0.263, meaning that only 26.3 percent of the variables affect each other. It can be seen more clearly in Table 3. Coefficient of Determination Test (r^2).

Table. 3. Coefficient of Determination Test (r^2)

Model Summary [b]				
Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	.559 [a]	.313	.263	398444.253

2. T Test (Partial)

T-test (partial) in multiple linear regression is used to seethe magnitude of the relationship between each independent variable on the dependent variable and whether an independent variable affects or not the dependent variable. partially tested with the T-test, the results are significant only on the high-income dummy variable, which is worth 0.23 which can be interpreted that households with high incomes have higher household consumption expenditures as much as 393,336.718 compared to food consumption expenditures of medium and low-income households. It can be seen more clearly in Table 4. T Test (Partial).

Table 4. T Test (Partial)

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	693017.380	288681.325		2.401	.019
	JART/ORG	73841,218	45125.852	.153	1,636	.106
	PNP/RP.BLN	.230	.255	.111	.902	.370
	LP/THN	16016,787	16400,848	.111	.977	.332
	PT	393336,718	170339,621	.402	2,309	.023
	PS	168497,865	129203427	.172	1.304	.196
	PW	-40650.454	119361.868	-.044	-.341	.734
	PW	-40650.454	119361.868	-.044	-.341	.734

3. F Test (Simultaneous)

F (simultaneous) test was conducted to determine whether all independent variables simultaneously (simultaneously) affected the dependent variable. The F test aims to show whether all the independent variables that are included in the model simultaneously or together have an influence or not on the dependent variable. Simultaneously, the factors that affect food consumption expenditures have an effect simultaneously because the significant value of f is less than 0.005, which is 0.00. It can be seen more clearly in table 5. F-test (simultaneous).

Table 5. F test (simultaneous)

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5998499186188.850	6	999749864364.808	6.297	.000 [b]
	Residual	13176899294366,705	83	1587578228233.695		
	Total	19175398480555.555	89			

2. Correlation of Household Food Consumption Expenditure Value with PPH Value Score (Hopeful Food Pattern)

To see the relationship between household food consumption expenditure and the achievement of the PPH score, a test was carried outon parametric correlation. That is Pearson's test. Pearson correlation is a statistical analysis tool used to see the close linear relationship between 2 variables whose data scale is interval or ratio. The results obtained show that the correlation value between food consumption expenditure and the achievement of the PPH score is 0.665, which means that it is strongly correlated. Clear results can be seen in Table 6. Parametric correlation test (Pearson test).

Table 6. Parametric correlation test (Pearson test).

Correlations

		PPH	PKP
PPH	Pearson Correlation	1	.665 **
	Sig. (2-tailed)		.000
	N	90	90
PPK	Pearson Correlation	.665 **	1
	Sig. (2-tailed)	.000	
	N	90	90

**. Correlation is significant at the 0.01 level (2-tailed).

3. Formulating Effort Recommendations to Support Achieving the Ideal PPH Score

The formulation of recommendations for efforts that can be given to support the achievement of an ideal PPH score is that households must pay attention to the content of food that is spent and cooked and served to the family starting from the content of energy, protein, vitamins, minerals and the content of substances contained in foodstuffs that are consumed. What is needed by the body does not only focus on one staple food because our bodies need a variety of nutrients and nutrients to support health and energy in activities. The following is the result of the PPH score in high, medium, and low-income households, which can be seen in Table 7. PPH Score Score.

Table 7. PPH Value Score

Low income								
Food Group	E. Act	% Actual	% AKE	Weight	Actual Score	AKE score	Max Score	PPH Score
Rice	1196.92	34.83	57	0.5	17.42	28.5	25	25
Tubers	104.96	3.05	5	0.5	1.53	2.5	2.5	2.5
Animal Food	300.32	8.74	14.3	2	17.48	28.6	24	24
Oil & Fat	790.49	23	37.64	0.5	11.5	18.82	5	5
Oily Fruits/Seeds	5.22	0.15	0.25	0.5	0.08	0.12	1	0.12
Nuts	147.38	4.29	7.02	2	8.58	14.04	10	10
Sugar	377.32	10.98	17.97	0.5	5.49	8.98	2.5	2.5
Vegetables & Fruits	127.4	3.71	6.07	5	18.54	30.33	30	30
Etc	386.31	11.24	18.4	0	0	0	0	0
Total	3436.32	100	163.63		80.61	131.9	100	99.12
Medium income								
Food Group	E. Act	% Actual	% AKE	Weight	Actual Score	AKE score	Max Score	PPH Score
Rice	1237.6	54.85	58.93	0.5	27.42	29.47	25	25
Tubers	95.35	4.23	4.54	0.5	2.11	2.27	2.5	2.27
Animal Food	286.72	12.71	13.65	2	25.41	27.31	24	24
Oil & Fat	0.06	0	0	0.5	0	0	5	0
Oily Fruits/Seeds	0.39	0.02	0.02	0.5	0.01	0.01	1	0.01
Nuts	140.07	6.21	6.67	2	12.42	13.34	10	10
Sugar	246.19	10.91	11.72	0.5	5.46	5.86	2.5	2.5
Vegetables & Fruits	138.42	6.13	6.59	5	30.67	32.96	30	30
Etc	111.61	4.95	5.31	0	0	0	0	0
Total	2256.4	100	107.45		103.5	111.21	100	93.78
High income								
Food Group	E. Act	% Actual	% AKE	Weight	Actual Score	AKE score	Max Score	PPH Score
Rice	1362.02	41.14	64.86	0.5	20.57	32.43	25	25
Tubers	97.75	2.95	4.65	0.5	1.48	2.33	2.5	2.33
Animal Food	366.83	11.08	17.47	2	22.16	34.94	24	24
Oil & Fat	593.72	17.93	28.27	0.5	8.97	14.14	5	5
Oily Fruits/Seeds	2.77	0.08	0.13	0.5	0.04	0.07	1	0.07
Nuts	137.01	4.14	6.52	2	8.28	13.05	10	10
Sugar	290.99	8.79	13.86	0.5	4.39	6.93	2.5	2.5
Vegetables & Fruits	153.09	4.62	7.29	5	23.12	36.45	30	30
Etc	306.75	9.26	14.61	0	0	0	0	0
Total	3310.94	100	157.66		89	140.32	100	98.89

It is known from table 6. The core value of PPH achieved by households of all income groups is close to ideal but the one with the closest results is the low-income group of 99.12 but

the high achievement of the PPH value is not in line with the AKE score of each food group, because the amount AKE has been regulated by the Ministry of Health nationally and the amount determined has been adjusted based on the energy needs of the human body. So if the AKE score is not met, the human body and body lack the energy and strength to support daily activities, but if the AKE score exceeds the predetermined standard, it will have side effects of disease on the body.

Based on research by Asmara, et al. 2009 regarding the Effect of Economic and Non-Economic Factors on Food Diversification Based on Expected Food Patterns. The analysis results through the calculation of the Expected Food Pattern showed that the PPH score in the research area was 52.83, with an AKE value of 1911.6 kcal/cap/day. This result is still quite far compared to the normative PPH score 100 and normative AKE 2200. The regression analysis results showed that of the 6 independent variables contained in the model, only 2 variables had a significant influence on food diversification, namely the education of housewives and the number of household members. For housewife, education positively affects PPH scores, with a regression coefficient of 4.529. Meanwhile, the number of household members negatively affects the regression coefficient of -2.765 (Asmara et al., 2009).

Based on research conducted by Manurung, et al., 2012 regarding the Expectation of Food Patterns for the Community of Tejosari Village, Metro City. The energy adequacy rate (RDA) used is the AKG set at the VIII Food and Nutrition Widya in 2004, which is 2,000 kcal. The food consumed is still less than the need, namely the root food group, animal food, fruit, sugar, etc. The animal food group showed the most "less" difference, 109.69 Kcal/cap/day. Foods that must be increased in consumption are tubers, animal foods, fruit and sugar. Based on the PPH score of 86.52, the food eaten has not met expectations and is less diverse (Manurung et al., n.d.). Based on research conducted by Mewa Ariani, 2010. People's food consumption patterns are increasingly diverse, with higher PPH scores. However, to achieve the PPH food pattern, rice consumption must be reduced; on the other hand, tubers, animal foods, vegetables and fruit still need to be significantly increased (Ariani, 2014).

CONCLUSION

Based on the analysis of the results of the research conducted, the following conclusions can be drawn: 1) The most influential factors in determining food consumption expenditure are employment and income, especially in high-income households, which are also supported by a length of education and the number of family members based on multiple linear regression tests that have been carried out. 2) There is a strong correlation between food consumption expenditure and the PPH value score, meaning that what households eat is a strong food consumption expenditure with efforts to achieve expected food patterns. 3) For the formulation of recommendations for efforts to support the achievement of the ideal pph value score, households, especially mothers as those who buy, provide, and cook food for the family can pay more attention to the nutritional and nutritional content of each food group that is processed to be given to households to meet energy values, protein, minerals, and vitamins that are needed by the body of household members to support daily activities.

REFERENCES

Anwar, K., & Hardinsyah, H. (2014). Konsumsi Pangan Dan Gizi Serta Skor Pola Pangan Harapan Pada Dewasa Usia 19—49 Tahun Di Indonesia. *Jurnal Gizi Dan Pangan*, *9*(1).

Argandi, S., Trimo, L., & Noor, T. I. (2018). Faktor–Faktor Yang Mempengaruhi Pola Pangan Harapan (PPH) Di Kabupaten Bandung. *Jurnal Agribisnis Terpadu*, *11*(2), 126–140.

Ariani, M. (2014). Analisis Konsumsi Pangan Tingkat Masyarakat Mendukung Pencapaian Diversifikasi Pangan. *Gizi Indonesia*, *33*(1). https://doi.org/10.36457/gizindo.v33i1.84

Ariani, M. (2015). Upaya peningkatan akses pangan masyarakat mendukung ketahanan pangan. *Dalam: Pasandaran, Rachmat M, Hermanto, Ariani M, Sumedi, Suradisastra K*.

Asmara, R., Hanani, N., & Purwaningsih, I. A. (2009). Pengaruh Faktor Ekonomi Dan Non Ekonomi Terhadap Diversifikasi Pangan Berdasarkan Pola Pangan Harapan (Studi Kasus Di Dusun Klagen, Desa Kepuh Kembeng, Kecamatan Peterongan, Kabupaten Jombang). *Agricultural Socio-Economics Journal*, *9*(1), 19.

Baliwati, Y. F. (2007). Analisis Ketersediaan Pangan Wilayah Berdasarkan Neraca Bahan Makanan (NBM) dan Pola Pangan Harapan. *Kerjasama Bagian Bina Ketahanan Pangan Biro Bina Produksi Setda Provinsi Jawa Barat Dengan Tim Bagian Kebijakan Pangan Departemen Gizi Mayarakat FEMA IPB, Bogor*.

Cahyani, G. I. (2008). *Analisis faktor sosial ekonomi keluarga terhadap keanekaragaman konsumsi pangan berbasis agribisnis di kabupaten banyumas*. Program Pasca Sarjana Universitas Diponegoro.

Faradina, R., Iskandarini, I., & Lubis, S. N. (2018). Analisis Faktor-Faktor yang Mempengaruhi Pengeluaran Konsumsi Pangan Rumah Tangga (Studi Kasus: Desa Karang Gading, Kecamatan Secanggang, Kabupaten Langkat). *Talenta Conference Series: Local Wisdom, Social, and Arts (LWSA)*, *1*(1), 284–295.

Faridi, A., Trisutrisno, I., Irawan, A. M. A., Lusiana, S. A., Alfiah, E., Rahmawati, L. A., Doloksaribu, L. G., Suryana, S., Yunianto, A. E., & Sinaga, T. R. (2022). *Survei Konsumsi Gizi*. Yayasan Kita Menulis.

Ghozali, I. (2005). Analisis Multivariate dengan program SPSS. *Semarang: Badan Penerbit Universitas Diponegoro*.

Iqbal, M. (2015). Regresi Data Panel (2): Tahap Analisis. *Retrived From Https://Dosen. Perbanas. Id/Regresi-Data-Panel-2-Tahap-Analisis*.

Khomsan, A. (2003). *Pangan dan gizi untuk kesehatan*.

Kurniawan, R. (2016). *Analisis regresi*. Prenada Media.

Manurung, G. O., Pujiharti, Y., & Basri, E. (n.d.). *Pola Pangan Harapan Masyarakat Kelurahan Tejosari, Kota Metro*.

NORMALITA, H. (2018). *Hubungan Pola Konsumsi Makan Keluarga Dengan Kejadian Gizi Kurang Pada Anak Paud Di Wilayah Uptd Puskesmas Ungaran Kecamatan Ungaran Barat*. Universitas Ngudi Waluyo.

Nur Azizah, R. R. (2022). *Ketersediaan Pangan dengan Indikator Neraca Bahan Makanan untuk Meningkatkan Pangan di Kabupaten Tuban*. UPN Veteran Jawa Timur.

Pangan, B. K. (2015). Rencana Strategis Badan Ketahanan Pangan Tahun 2015-2019. *Jakarta: Kementerian Pertanian*.

Purwati, P. (2021). *Analisis Konsumsi Pangan Dan Pendapatan Rumah Tangga Peserta Program Pekarangan Pangan Lestari (P2L) Di Kota Pekanbaru*. Universitas Islam Riau.

Rachman, H. P. S., & Ariani, M. (2016). *Penganekaragaman konsumsi pangan di Indonesia: permasalahan dan implikasi untuk kebijakan dan program*.

Rafiq, M. (2016). Pengaruh Pengeluaran Konsumsi Rumah Tangga, Investasi, dan Pengeluaran Pemerintah Terhadap Pertumbuhan Ekonomi di Indonesia Tahun 2001: T1-2010: T4. *Skripsi. Universitas Lampung*.

Sarimunding, N., & Aisyah, S. (2018). Mengurai Relasi Konsumsi Rumah Tangga, Belanja Pemerintah dan Investasi Terhadap Akselerasi Pertumbuhan Ekonomi. *EcceS (Economics, Social, and Development Studies)*, *5*(2), 21–40.

SUKESI, K., & SHINTA, A. (2011). Diversifikasi Pangan Sebagai Salah Satu Strategi Peningkatan Gizi Berkualitas Di Kota Probolinggo (Studi Kasus Di Kecamatan Kanigaran). *SEPA: Jurnal Sosial Ekonomi Pertanian Dan Agribisnis*, *7*(2).

Suryana, A., Khalil, M., & Pangan, B. K. (2017). *Proses dan Dinamika Penyusunan Undang-undang Nomor 18 tahun 2012 Tentang Pangan*.

Takahindangen, W. C., Rotinsulu, D. C., & Tumilaar, R. L. H. (2021). Analisis Perbedaan Pengeluaran Konsumsi Pengemudi Ojek Online Grabsebelum Dan Sesudah Menjadi Pengemudi Ojek Online Di Kota Manado. *Jurnal Berkala Ilmiah Efisiensi*, *21*(1).

Taluke, J., Lesawengen, L., & Suwu, E. A. A. (2021). Pengaruh Status Sosial Ekonomi Orang Tua Terhadap Tingkat Keberhasilan Mahasiswa Di Desa Buo Kecamatan Loloda Kabupaten Halmahera Barat. *Holistik, Journal Of Social And Culture*.