Consumption pattern and hope food pattern in Salahutu District, Maluku Tengah Regency

N R Timisela¹, W Girsang¹,* and L Tupamahu²

¹ Departement Social Economic of Agriculture, Agriculture Faculty, Pattimura University, Jl. Ir. M. Putuhena, Kampus Poka, Ambon 97233 Maluku, Indonesia
² Agribusiness Management Post Graduate Program, Kompleks Kampus PGSD, Pattimura University, Jl. dr. Tamaela, Ambon 97113

* E-mail: girsangwardis@yahoo.com

Abstract: This study aims to analyze food consumption patterns, the hope food patterns, and the factors that influence household food consumption patterns. The research was located in Suli and Liang Villages, Central Maluku Regency. The location was determined purposively based on the 2017 Central Maluku Regency Food Security and Vulnerability Atlas (FSVA) results included in Priority 1 and 2 as Food Vulnerable Areas. The research sample was determined by simple random sampling using the Slovin formula with a total sample size of 87 households, 44 (Suli Village) and 43 (Liang Village). The research data were analyzed qualitatively and quantitatively. The results showed that the pattern of household food consumption in the two villages was lower than the ideal weight of food consumption, namely 870 g/capita/day, respectively 783.83 (Liang Village) and 709.81 (Suli Village). The score of the hope food pattern in Liang Village is 75, and Suli Village is 76.9. Analysis of the factors that influence household food consumption patterns in the two villages with a coefficient of determination of 51.56 (Liang Village) and 59.19 (Suli Village). The results of the t-test show that the factors that influence the pattern of household food consumption in Liang Village include income (X₁), the number of family members (X₂), and the education of housewife (X₄), while the factors that influence food consumption patterns Households in Suli Village include income (X₁), age of the housewife (X₃), and education of housewife (X₄).

1. Introduction

Food is everything that comes from biological sources and water, both processed and unprocessed, intended as food and beverage for human consumption, including food additives, food raw materials, and other materials used in preparing, processing food and beverages (Law Number 18 of 2012). Food consumption patterns are related to the type and amount of food consumed by individuals with specific objectives at a particular time. As one indicator of food security, food consumption is strongly influenced by food availability. Law of the Republic of Indonesia Number 18 of 2012 concerning food defines food security as: "The condition of the fulfilment of food for the state to individuals, which is reflected in the availability of sufficient food, both quantity, and quality, safe, diverse, nutritious, equitable and affordable. And not against the community's religion, belief, and culture to live a healthy, active, and productive life sustainably. Food security includes macro aspects, namely the availability of..."
sufficient food, and the micro aspect, namely the fulfilment of food needs for individuals to lead a healthy and active life.

Food's importance in realizing national food security, the government's role, is very much needed to develop excellent and quality food types. The diversity and balance of food consumption at the family level will determine food consumption quality at the regional level, both district/city, province to the national level [1]. Consumption of quality (balanced) food impacts human resources quality and in a region can be determined through the regional expected food pattern score. The Hope Food Pattern Score (HFP) is an indicator of food diversity in food consumption, including value achievement, dietary patterns, and balanced nutrition. HFP score as an indicator in measuring Food Security performance, as stated in the 2015-2019 RPJMN. The achievement of HFP scores in the 2015-2019 RPJMN has been regulated in Government Regulation No. 17 of 2015 concerning Food Security and Nutrition. National and Regional Governments are obliged to realize the diversification of food consumption to meet the community's nutritional needs.

The Maluku region's geographical conditions, most of the oceans, and archipelago areas have various potential sources of local food that are quite diverse, such as sago, corn, cassava, sweet potato. One of the Maluku government's concrete steps towards the potential of local food resources is the Governor's Instruction Number 01 of 2010 concerning Food Diversification in Maluku Province as a form of support for the Indonesian Presidential Regulation Number 22 of 2009 concerning the Policy for Accelerating the Diversity of Local Resource-Based Food Consumption. This instructs all agencies about implementing a diversification program for food consumption from upstream to downstream, increasing foodstuffs' availability to household consumption. The people's food consumption pattern has become increasingly diverse, with the PPH score getting the biggest. However, to get to the hope food patterns, rice consumption must be reduced; on the other hand, for tubers, animal food, and vegetables + fruit, it still needs to be significantly increased [2]. Local food networks as innovations that initially function and develop in local niches within a given food regime. As niche-innovations in local food networks induce socio-ecological changes on the local level, they can foster the dominant food regime [3]. That suggests [4], in their research on local government policies in developing food security, explained that local knowledge has a vital role to play in promoting the effectiveness of food policy.

Based on the Maluku Province Food Security and Vulnerability Map (FSVA) 2017 as one of the instruments used to explain the definition of the concept of food security based on three dimensions of food security (availability, access, and benefits of food) in all conditions, not only in food insecurity situations. It shows that one of the areas in Central Maluku Regency, namely Salahutu District, is included in Priority 4 in a composite manner. This means it is a Food Resistant area, but if viewed per indicator, out of the six (6) villages in the region Salahutu District, Suli Village, and Liang Village are still included in Priority 1 and 2 meaning they are considered vulnerable areas. Based on the Maluku Province Food Security and Vulnerability Map (FSVA) 2017, this study aims to determine the food consumption pattern and HFP score in Salahutu District.

2. Methods

The research was conducted in March-May 2019, located in Suli Village and Liang Village, Salahutu District, Central Maluku Regency. Purposive sampling based on Food Security preparation in Suli Village and Liang Village is included in Priority 1 and 2 as vulnerable food areas. The research sample consisted of 87 households consisting of 43 households in Liang Village and 44 households in Liang Village, randomly selected (simple random sampling). The data collected were analyzed quantitatively and qualitatively.

According to [5], the criteria for household food consumption patterns can be categorized into five categories, namely frequent (if > 1 × a day, 1 × a day, 4-6 × per week), enough (if three times per week),
quite often (if < 3x per week, 1-2x per week), rarely (if < once per week), and never. Food consumption can be calculated using the formula:

\[ G_{ij} = \frac{B_{Pj}}{100} \times \frac{B_{dij}}{100} \times KG_{ij} \]  

(1)

Information: \( G_{ij} \) is nutrient I consumed from food or food \( j \), \( B_{Pj} \) is the weight of the food or food \( j \) consumed in grams, \( B_{dij} \) is the edible portion \( j \) that can be eaten in percent, and \( KG_{ij} \) is the content of certain nutrients (i) of food or food \( j \) consumed following its unit.

The calculation of the expected food pattern is done by calculating the HFP score. The HFP score is calculated using the formula:

\[ Score\ HFP = \%RDA \times weight \]  

(2)

\% RDA = energy (kcal) food group \( i \): total energy of all food groups \( i \) \times 100  
Energy (kcal) = weight of food consumption \( i \) \times 100 \times energy content of food group \( i \) \times 100/100 (edible portion or BDD)

If the HFP score = 100, then household food consumption is following the expected food pattern (ideal consumption)

If the HFP score is < 100, then household food consumption does not follow the expected food pattern (ideal consumption).

Analysis of the factors that influence food consumption patterns using multiple linear regression analysis.

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e \]  

(3)

3. Results and discussion

3.1. Respondent characteristics

Age affects a person's physical endurance to do work and make decisions. At a productive period, a person can work optimally to meet the needs for quality and nutritious food [6]. The level of education affects food consumption patterns, especially the selection of food types that are good for consumption. Consumption of excellent and quality food can support both physical and non-physical activities. The high level of education is related to the economy, educational facilities and infrastructure in the region, and respondents' motivation and desire to pursue higher levels of education [7]. According to [8], the level of formal education is positively related to nutritional knowledge. Household food security and good nutritional status indicate high healthy understanding and family members' education [9]. A right level of education affects a housewife's knowledge of food and proper nutrition for family consumption. Her ability to manage food becomes more diverse, nutritious, balanced and safe. According to [10], the increasing level of public education affects changing their food consumption perspective, especially nutrition and safety.

The number of family members is related to food fulfilment, namely the amount of food consumed. The majority of Liang Village and Suli Village respondents are in the small family category with 1-4 family members. States that the number of family members determines the level of food security [11]. Household incomes, occupational and educational status of household heads were significant determinants of food security [12]. An increase in the number of household members without being matched by an increase in resources and sources of livelihood to support the economy will cause the allocation of food fulfilment per household member to be low [13].
Table 1. Characteristics of respondents.

| Characteristics of Respondents | Category | Village | Liang | Amount (Person) | Percentage (%) | Suli | Amount (Person) | Percentage (%) |
|--------------------------------|----------|--------|-------|----------------|----------------|------|----------------|----------------|
| Age Head of RT                | Less Productive (> 64 Years) | 9 | 20.93 | 4 | 9.09 | | | |
| Total                          | 43 | 100 | 44 | 100 | | | |
| Primary school                | 13 | 30.23 | 21 | 47.73 | | | |
| Junior High                   | 10 | 23.26 | 8 | 18.18 | | | |
| High school                   | 1 | 2.33 | 0 | 0.00 | | | |
| Total                          | 43 | 100 | 44 | 100 | | | |
| Education of the Head of RT   | Not completed in primary school | 1 | 2.32 | | | | |
| Housewife education           | Primary school | 15 | 34.9 | 15 | 34.09 | | | |
| Junior High                   | 10 | 23.25 | 15 | 47.73 | | | |
| High school                   | 15 | 34.9 | 21 | 47.73 | | | |
| University                    | 2 | 4.65 | 0 | 0.00 | | | |
| Total                          | 43 | 100 | 43 | 100 | | | |
| Family Members                | Small Family (1-4 people) | 24 | 55.81 | 31 | 70.45 | | | |
| Medium Family (5-7 people)    | 19 | 44.19 | 13 | 29.55 | | | |
| Total                          | 43 | 100 | 44 | 100 | | | |

Source: Primary Data 2019 (Processed)

3.2. Household income level

Sources of income for the community come from the agricultural sector, the non-agricultural sector, and a combination of the two sectors. The amount of household income depends on the type of work and the number of family members working. Household income will determine the number of household expenses. The results showed that most of the respondents' income in both locations came from the agricultural sector. Consisting of the food crop sub-sector (cassava commodity), the fruit horticultural sub-sector (rambutan and durian commodities), the plantation sub-sector (clove and nutmeg commodities), livestock sub-sector (goat husbandry commodity) and capture fisheries sub-sector (fish commodity).

The largest percentage of Liang Village people's income is obtained from the capture fisheries sub-sector, namely 45.19 percent because most of the population work as fishermen. The percentage of income in the plantation sub-sector was 19.71 percent. The percentage is relatively smaller because, during the big wave season, Liang Village people do not go to sea, so they choose to plant gardens. The smallest percentage of income in Liang Village was in the food crop sub-sector by 0.31 percent. Local food that is cultivated in an area of less than 0.25 ha. The harvest is for consumption, and a small portion is sold to buy other food needs.

In contrast to Suli Village, the largest percentage of income is the horticultural sub-sector, such as fruits (rambutan and durian) by 50.57 percent. During the harvest season, rambutan and durian production is very high, so the value of the community's income is relatively large. The percentage of income in the livestock sub-sector was 31.90 percent for pigs and chickens. There is no food crop sub-sector in Suli Village because it does not cultivate food plants for commercialization. Food plants are only grown to fulfil household consumption. Engel's law states that households with low wages or
incomes will spend most of their income buying top necessities. On the other hand, high-income households will pay only a small portion of their total income on principal needs.

Table 2. Level of household income.

| Source of Income       | Village |           | Percentage (%) | Village |           | Percentage (%) |
|------------------------|---------|-----------|----------------|---------|-----------|----------------|
|                        | Liang   | Suli      |                | Liang   | Suli      |                |
| Agriculture            |         |           |                |         |           |                |
| Food Crops:            |         |           |                |         |           |                |
| Total Food Crops       | 51,255.81 | 0.31      |                | 9,757,546.27 | 50.57      |                |
| Total Horticultural Plants | 862,674.42 | 5.27      |                | 2,302,818.18 | 11.93      |                |
| Total Plantation       | 3,223,859.45 | 19.71     |                | 18,216,046.27 | 94.40      |                |
| Total Livestock        | 2,079,069.77 | 12.71     |                | 6,155,681.82 | 31.90      |                |
| Total Fisheries        | 7,391,093.02 | 45.19     |                | 2,302,818.18 | 11.93      |                |
| Total Agriculture      | 13,607,952.47 | 83.21     |                | 18,216,046.27 | 94.40      |                |
| NonAgricultural        |         |           |                |         |           |                |
| Total NonAgriculture   | 2,746,511.63 | 16.79     |                | 1,080,681.82 | 5.60       |                |
| Agriculture + NonAgriculture | 16,354,464.09 | 100.00   |                | 19,296,728.08 | 100.00  |                |

Source: Primary Data 2019 (Processed)

Table 3. Levels of household expenditure.

| Household Expenditure Structure | Village |           |           | Village |           |           |
|---------------------------------|---------|-----------|-----------|---------|-----------|-----------|
|                                 | Liang   | Average Per Year (IDR) | Average Per Year (IDR) | Liang   | Average Per Year (IDR) | Average Per Year (IDR) |
| FOOD                            |         |               |           |         |               |           |
| Total Cereals                   | 4,971,325.58 | 30.40     | 4,776,680.71 | 25.83   |                     |           |
| Total Tubers                    | 182,790.70  | 1.12       | 183,227.29  | 0.99    |                     |           |
| Total Animal Food               | 2,399,627.91 | 14.68     | 3,356,500.00 | 18.22   |                     |           |
| Total Oil and Fat               | 572,790.70  | 3.50       | 689,072.73  | 3.74    |                     |           |
| Total Nuts                      | 867,000.00  | 5.30       | 1,038,454.55 | 5.64    |                     |           |
| Total Vegetables                | 273,976.74  | 1.68       | 510,136.36  | 2.77    |                     |           |
| Total Fruits                    | 141,125.58  | 0.86       | 154,100.00  | 0.84    |                     |           |
| Total Snacks                    | 1,064,558.14 | 6.51      | 1,249,545.45 | 6.78    |                     |           |
| Total Others                    | 849,774.19  | 5.20       | 1,088,772.73 | 5.91    |                     |           |
| TOTAL FOOD                      | 11,322,939.53 | 69.25    | 13,027,036.36 | 70.72   |                     |           |
| NONFOOD                          |         |           |           |         |           |           |
| Total Health                    | 1,060,186.05 | 6.48      | 1,106,681.82 | 6.01    |                     |           |
| Total Education                 | 1,180,465.12 | 7.22      | 1,129,409.09 | 6.13    |                     |           |
| Total Kitchen                   | 675,813.95  | 4.13       | 833,636.36  | 4.53    |                     |           |
| Total Housing                   | 801,000.00  | 4.90       | 649,295.45  | 3.52    |                     |           |
| Total Outfits                   | 304,883.72  | 1.86       | 364,545.45  | 1.98    |                     |           |
| Total Others                    | 1,005,325.58 | 6.15      | 1,309,227.27 | 7.11    |                     |           |
| NONFOOD TOTAL                   | 5,027,674.42 | 30.75     | 5,392,795.45 | 29.28   |                     |           |
| FOOD + NONFOOD                  | 16,350,613.95 | 100.00 | 18,419,831.82 | 100.00  |                     |           |

Source: Primary Data 2019 (Processed)
3.3. Household expenditure rate

Food expenditure and non-food expenditure depend on the amount of income. Not all households have the same spending, both food, and non-food spending. The results showed that most household expenditure was dominated by food expenditure. The percentage of food expenditure in Liang Village was 69.25 percent, while in Suli Village, it was 70.72 percent. Table 3 shows the level of household food expenditure. Expenditure on cereals is dominated by rice because it is the leading food [14]. The high rice consumption is due to easier access to rice food (available at any time) and relatively easy processing [14]. It is different from local food, especially tubers, whose production is still seasonal, rarely consumed. Local sago food production is still low, so it does not guarantee its availability in the long term. The people's appetite for consumption tends to consume rice as the main carbohydrate food. The convenience to consume local food is highly recommended, meaning that they should go back to local food and increase the consumption of local food for the family. It was necessary to introduce local food products to young generations so that local food will not be neglected [15].

3.4. Household food consumption pattern based on weight of food consumed

Based on the quantity aspect, food consumption is measured by the Nutritional Adequacy Rate (RAN) approach, which includes the Energy Adequacy Rate (RAE) and the Protein Adequacy Rate (RAP). The level of food consumption based on WNPG (2004) is the ideal standard for RAN of at least 2000 kcal/cap/day and RAE of at least 52 grams/capita/day. Simultaneously, the quality aspect or quality of food consumption is seen from the value/score with the HFP approach. For Maluku Province, according to the results of the analysis of food consumption patterns in 2018, it shows that the PPH score is 84.6, with the composition of the grains group being the choice of carbohydrate food sources for consumption, then the animal food group, nuts, fruit, and vegetables.

The results showed that the two villages' household food consumption had not yet reached the ideal weight of food consumption, namely 870 grams/capita/day. The total weight of food consumption in Liang Village is 783.83 grams/capita/day, while in Suli Village is 709.81 grams/capita/day. The two villages' ideal food consumption weight has not reached the standard because there is no balance in consuming the required food types. The type of food consumed goes the perfect weight of food in Liang Village, namely tubers, oils and fats, nuts, and other food types, while Suli Village is animal food, nuts, and other foods. Table 4 shows the pattern of public food consumption based on the standard of consumption (weight) of ideal food.

| Food Group      | Standard Ideal Food Consumption Weight (gram / capita / day) | Average Weight of Food Consumption (gram / cap / day) |
|-----------------|-------------------------------------------------------------|------------------------------------------------------|
|                 | Liang Village                                              | Suli Village                                         |
| Grains          | 275                                                        | 239.89                                               | 240.46                                               |
| Tubers          | 100                                                        | 164.31                                               | 74.56                                                |
| Animal food     | 150                                                        | 111.79                                               | 159.93                                               |
| Oil and fat     | 20                                                         | 28.43                                                | 37.87                                                |
| Oily fruit / seeds | 10                                                        |                                                       |                                                       |
| Nuts            | 35                                                         | 58.84                                                | 81.33                                                |
| Sugar           | 30                                                         | 16.75                                                | 26.85                                                |
| Vegetable and fruit | 250                                                       | 101.13                                               | 72.62                                                |
| etc             |                                                            | 16.70                                                | 16.19                                                |
| Total           | 870                                                        | 737.83                                               | 709.81                                               |

Source: Primary Data 2019 (Processed)
Table 4 shows that rice as the main carbohydrate food is routinely consumed but has not yet reached the ideal food weight. This is because rice consumption depends on the respondent's income. If income decreases or increases, it will affect the importance of the food consumed. Table 5 shows the percentage of food security levels based on ideal food consumption standards. The results showed that most households in the two villages were classified as food insecure based on the ideal consumption weight standard, namely 90.70 percent (Liang Village) and 86.36 percent (Suli Village). Food consumption per capita per day is still below 850 g or less than 2000 kcal. It is necessary to balance tubers' consumption, animal foods, nuts and vegetables, and fruits, to achieve better food quality. This condition shows that food consumption has not met the recommended balanced nutrition standards: Diverse, Nutritious, Balanced, and Safe Food (DNBSF).

Table 5. Percentage of respondents food security level based on ideal food consumption standards.

| Standard Bert for Food Consumption (gram / capita / day) | Liang Village | Liang Village |
|---------------------------------------------------------|---------------|---------------|
| Amount (Person) | Amount (Person) | Amount (Person) | Amount (Person) |
| <850 g or <2000 kcal (Vulnerable to Food) | 39.00 | 90.70 | 38.00 | 86.36 |
| > 850 g or> 2000 kcal (Food Resistant) | 4.00 | 9.30 | 6.00 | 13.64 |
| Total | 43.00 | 100.00 | 44.00 | 100.00 |

Source: Primary Data 2019 (Processed)

3.5. Household food consumption pattern based on PPH score

The hope food pattern reflects the recommended food consumption pattern for a healthy, active, and productive life. Based on the food score of nine foodstuffs, the availability of food at all times in sufficient quantities, and affordable prices greatly determines food consumption level at the household level [16]. As a guideline for measuring food consumption diversification, including staple food, PPH is an arrangement of various foods based on the main food group's energy contribution from a pattern of availability or consumption pattern. The food consumption pattern of the people is not yet diverse because it is still dominated by grains (56.3%), especially rice (86.3%) [17].

The results showed that the percentage of Nutritional Adequacy Rate (% RDA) was 93 percent (Liang Village) and 92 percent (Suli Village). As measured by the PPH score, the ideal food consumption shows that the PPH score is 75 (Liang Village) and 79.6 (Suli Village). This means that Liang and Suli Villages have not achieved quality food consumption or ideal food consumption because the PPH scores are lower than the PPH standard of 100. The results of research by Hamid et al., 2013 state that the proportion of the grains, animal food, and oil and fat groups has contributed to the actual PPH score of more than 50%, but none of these food groups have achieved the perfect PPH score. There is a need for improvement in quantity as well as the quality of household food consumption by paying attention to the maximum limit so that, in the end, it can help increase the actual PPH score both in villages and in cities. The PPH score is not only influenced by income factors but also by differences in the area of residence. The PPH score of each village is based on the food group (9 food groups); it can be seen that the food groups that achieved the PPH score or achieved ideal consumption for both villages were tubers, nuts, oil, and fat. The results of calculating the PPH score are shown in Table 6.

3.6. Factors affecting household food consumption patterns in Liang Village and Suli Village

The results of the analysis of factors affecting household food consumption patterns in Liang and Suli villages include income ($X_1$), number of family members ($X_2$), age of housewives ($X_3$), education of housewives ($X_4$), and type of work ($X_5$). The F test results are 5.67 (Liang Village) and 5.34 (Suli Village), which means that the five factors simultaneously influence household food consumption patterns. The coefficient of determination or $R^2$ Adjusted was 51.56 percent (Liang Village) and 59.19
percent (Suli Village). This means that 51.56 and 59.19 percent of household food consumption patterns in Liang and Suli villages can be explained by income ($X_1$), the number of family members ($X_2$), age of housewives ($X_3$), education of housewives, stairs ($X_4$) and type of work ($X_5$). The remaining 43.49 percent and 40.81 percent are explained by other variables not included in the model. The results of the regression analysis of factors affecting the pattern of food consumption in Liang Village and Suli Village are shown in Table 7.

Table 6. The pattern of Hope Food (PPH) in Suli and Liang Villages, Central Maluku Regency, 2019.

| Food Group     | Consumption (gr) | Energy / 100 gr | % RDA | Weight | PPH Score | Standard Consumption (gr) | Energy / 100 gr | % RDA | Weight | PPH Score | Standard |
|----------------|------------------|-----------------|-------|--------|-----------|---------------------------|-----------------|-------|--------|-----------|----------|
| Liang Village  |                  |                 |       |        |           |                           |                 |       |        |           |          |
| Grains         | 239.89           | 361             | 866   | 46     | 0.23      | 25                        | 241             | 361   | 868    | 43        | 0.5      |
| Tuber          | 164.31           | 154             | 253   | 14     | 0.5       | 7                         | 75              | 154   | 115    | 6         | 0.5      |
| Animal food    | 111.79           | 90              | 101   | 5      | 0.2       | 11                        | 24              | 160   | 90     | 144       | 7        | 2       | 14.3     |
| Oil and fat    | 28.43            | 870             | 247   | 13     | 0.5       | 7                         | 5               | 38    | 870    | 330       | 0.5      | 8.2     |
| Oily fruit/seed| 0                | 359             | 0     | 0      | 0.5       | 0                         | 1               | 0     | 359    | 0.0       | 0.5      | 0.0     |
| Nuts           | 58.84            | 337             | 198   | 11     | 0.2       | 21                        | 10              | 81    | 337    | 274       | 14       | 2       | 27.2     |
| Sugar          | 16.75            | 364             | 61    | 3      | 0.5       | 2                         | 2.5             | 27    | 364    | 98        | 4.9      | 0.5     | 2.4      |
| Vegetable and fruit | 101.13          | 16.8            | 17    | 1      | 5         | 5                         | 30              | 73    | 16.8   | 12        | 0.6      | 5       | 3.0      |
| etc            | 16.7             | 6.87            | 1     | 0      | 0         | 0                         | 16              | 6.87  | 1      | 0.1       | 0.0      | 0       |
| Total          | 1744             | 93              | 75    | 100    |           |                           | 1841            | 92    | 79.6   | 100       |          |

Source: Primary Data, 2019 (Processed)

Table 7. Results of the regression analysis of factors affecting the pattern of food consumption in Liang Village and Suli Village.

| Term            | Coef   | SE    | T-Value | P-Value | VIF | Coef   | SE    | T-Value | P-Value | VIF  |
|-----------------|--------|-------|---------|---------|-----|--------|-------|---------|---------|------|
| Income          | 3.453  | 0.283 | 12.20   | 0.000   |     | 4.250  | 0.303 | 14.00   | 0.000   | 0.00 |
| Number of family members | 0.1114 | 0.0360 | 3.09 | 0.004 | 1.18 | 0.1154 | 0.0472 | 2.45 | 0.019 | 1.15 |
| The age of the housewife | 0.0447 | 0.0290 | 2.54 | 0.031 | 1.32 | 0.0506 | 0.0320 | 1.58 | 0.122 | 1.22 |
| Housewife education | 0.0221 | 0.0376 | 0.59 | 0.559 | 1.30 | 0.1557 | 0.0503 | 3.10 | 0.004 | 1.77 |
| Type of work    | 0.0195 | 0.0313 | 2.62 | 0.036 | 1.42 | 0.1245 | 0.0442 | 2.82 | 0.008 | 1.49 |

Source: Primary Data 2019 (Processed)

Factors that influence food consumption patterns in Liang Village include income, number of family members, education of homemakers, and types of work. Simultaneously, the factors that influence food consumption pattern in Suli Village include income, the housewife's age, and the housewife's education. Income is an essential factor in determining household food consumption patterns. If income increases, household food consumption patterns will increase. In the two research locations, it can be seen that the income factor has a positive effect on household food consumption patterns, meaning that if the income increases by one percent, the consumption pattern will also increase by the coefficient value. The results of research by [18][6] stated that the level of income is high, so it is easier for households to access food of higher quality and quantity. High purchasing power also encourages households to consume more diverse, nutritious, and balanced nutrition. The higher the income, the purchasing power of a person also increases. The ability to choose and buy various foods is more elevated, indicating an increasing food consumption pattern [19].

The number of family members affects the household food consumption pattern in Liang Village. If the number of family members increases, the consumption pattern will increase. Many families mean diverse food consumption patterns because family members will choose several food types, especially...
for purchased food. Hamid et al., 2013 show that the more household members, the more food consumption quantity increases and varies. The burden that is borne by the household is getting bigger, so that the household decides to choose specific types of food that are cheaper and readily available in larger quantities to fulfill the element of satiety, not to meet the nutritional needs of the household. States that the greater the number of household members, the greater the household's burden. There are two ways that households can overcome this, namely increasing household income or reducing food expenditure by choosing cheaper and less diverse food types [20].

Housewife education affects household food consumption patterns in both villages. The housewife regulates the quality of food consumed and the frequency of meals. If the housewife's education level is getting better, knowing the importance of a healthy, safe, and suitable food consumption pattern will increase. Housewives' education is related to the level of knowledge and attitudes they have in meeting their food and nutritional needs. Hopefully, housewives with high education, the higher their knowledge of nutrition, and their awareness will increase in fulfilling nutritious food. This means that the higher the education, the higher the expertise and insight of housewives about nutrition. In processing or cooking daily food it is not only based on habits and the concept of being full. Still, it can choose quality food ingredients by paying attention to the nutritional elements in food to increase the PPH score [18].

The age of a housewife affects household food consumption patterns in Suli Village. If the age increases, the attention to regulating the household's food consumption pattern will get better. This is important because a mother will be more mature and concerned to provide proper and quality food for consumption by all family members.

4. Conclusion

Household food consumption in the two villages has not yet reached the ideal weight of food consumption, namely 870 grams/capita/day (2000 kcal), or has reached PPH standards. The total weight of food consumption in Liang Village is 783.83 gram/capita/day, and Suli Village is 709.81 gram/capita/day. Household food consumption, measured based on the ideal food consumption standard, shows that the two villages have not reached the ideal food consumption. The PPH scores of the two villages are 75 (Liang Village) and 79.6 (Suli Village), respectively, or lower than the ideal food consumption of 100. Factors that affect household food consumption patterns in Liang Village are income ($X_1$), the number of members family ($X_2$), and housewife education ($X_4$). In contrast, the factors that influence household food consumption patterns in Suli Village are income ($X_1$), age of housewife ($X_3$) and housewife education ($X_4$).

References

[1] Badan Ketahanan Pangan 2016 Laporan Tahunan Badan Ketahanan Pangan Tahun 2015 (Jakarta: Badan Ketahanan Pangan)
[2] Ariani M 2014 Analysis of food consumption at the community level supports the achievement of food diversification Gizi Indones. 33 20–8
[3] Lutz J and Schachinger J 2013 Do local food networks foster socio-ecological transitions towards food sovereignty? Learning from real place experiences Sustain. 5 4778–96
[4] Bastian A and Coveney J 2012 Local evidenced-based policy options to improve food security in South Australia: The use of local knowledge in policy development Public Health Nutr. 15 1497–502
[5] Suhardjo, Hardinsyah and Riyadi H 1988 Survey Konsumsi Pangan [Food Consumption Survey] (Bogor: Bogor Agricultural University)
[6] Ningsih M, Suandi and Damayanti Y 2012 The factors that influence the pattern of food consumption and household nutrition of fishermen in Tungkal Ilir District, Tanjung Jabung Barat Regency Sosio Ekon. Bisnis 15 48–56
[7] Imelda 2018 Characteristics and patterns of household food consumption in Pontianak City Ethos
[8] Talahatu A H 2006 Study of Body Mass Index (BMI) and Weight Gain of Pregnant Women and Their Relationship with the Growth and Development of Babies Born in Ambon City (Bogor Agricultural University)

[9] Hardinsyah 2007 Review on determinant factors of dietary diversity J. Gizi dan Pangan 2 55–74

[10] Akbar R, Kusrini N and Yurisinthae E 2014 Analysis of food consumption in Pontianak City J. Soc. Econ. Agric. 3 24–36

[11] Rose D 1999 Economic determinants and dietary consequences of food insecurity in the United States J. Nutr. 129 517S-520S

[12] Birhane T, Shiferaw S, Hagos S and Mohindra K S 2014 Urban food insecurity in the context of high food prices: a community based cross sectional study in Addis Ababa, Ethiopia BMC Public Health 14 1–8

[13] Manesa J, Baliwati Y F and Tanziha I 2008 Household food security in village producing resin in Lampung Barat District J. Gizi dan Pangan 3 172–9

[14] Moniharapon G J, Turukay M and Luhukay J M 2013 Changes of household food consumption pattern: From local food to rice. A case in the sub-district of South Leitimur, Ambon City Agrilan J. Agribisnis Kepul. 1 83–93

[15] Timisela N R, Leatemia E D, Luhukay J M, Polnaya F J and Breemer R 2020 An analysis of factors influencing consumers’ perception towards the product attributes of sago local food agro-industry Int. J. Innov. Creat. Chang. 12 500–18

[16] Argandi S, Trimo L and Noor T I 2018 Factors that influence the Expected Food Pattern (PPH) in Bandung Regency J. Agribisnis Terpadu 11 126–40

[17] Khomsan A, Baliwati Y F and Dwiriani C M 2004 Pengantar Pangan dan Gizi [Introduction to Food and Nutrition] (Depok: Penebar Swadaya)

[18] Hamid Y, Setiawan B and Suhartini 2013 Analysis of household food consumption (Case study in Tarakan Barat Sub District Tarakan City East Borneo Province Agrise 13 175–90

[19] Rachman H P S and Ariani M 2008 Diversifying food consumption in Indonesia: Issues and implications for policies and programs Anal. Kebijak. Pertan. 6 140–54

[20] Suyastiri N M Y P 2008 Diversification of staple food consumption based on local potential in realizing food security for rural households in Semin District, Gunung Kidul Regency J. Ekon. Pembang. 13 51–60