Analysis of Household Food Security of The Bajo Community in West Muna Regency during The COVID 19 Pandemic

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Abstract. Food security during the Covid-19 pandemic is a condition in which all Bajo households have access to food both physically and economically for all their family members so that they are not at risk of losing both access during the Covid-19 pandemic. This study aims to determine the household food security of the Bajo community in the West Muna Regency during the Covid 19 pandemic. This research was carried out in March-May 2020 in Latawe Village, Napano Kusambi District, West Muna Regency. The research location was selected purposively considering that the village is a coastal village where most of the population living is Bajo people who work as fishermen as many as 180 families. Many as 64 families determined the number of research samples using the Slovin formula and sampling using a simple random sampling technique. Data analysis was carried out using a descriptive method to measure the food security of Bajo households during the Covid 19 pandemic, which was estimated using the share of food spending where if the percentage of food spending was <60% of total spending, the household was food secure and if the share of food spending was >60% of total expenditures, are households that are food insecure. The results show that 46.88% of Bajo households are food secure, and 53.12% are food insecure.

1. Introduction

Food security is where all households have access to food for all their family members, both physically and economically. Homes are not at risk of losing both access [1]. Food is an essential and strategic commodity for the Indonesian people considering that food is a basic human need that must be met by the government and society together for 95% of the population of Indonesia who consumes food where Indonesia is ranked 64 far below ASEAN countries, thus illustrating that Indonesia instead, they experienced problems in the food security sector [2] and were further exacerbated by the Covid-19 pandemic which adversely affected the public health system and exacerbated the food security crisis [3].

During the Covid-19 pandemic, the community and the government have rights and obligations to food for citizens [4], [5] concerning food mandates that the government and the community realize food security. The government implements regulations, fosters, controls, and supervises the availability of sufficient food, both in quantity and quality, safe, nutritious, diverse, evenly distributed, and affordable by people's purchasing power. The community plays a role in organizing production and supply, trading and distribution, and consumers who have the right to obtain safe and nutritious food.
One of the communities prone to food insecurity and vulnerable to falling below the poverty line during the Covid-19 pandemic is coastal communities that work as small-scale fishermen [6], [7]. Small-scale fishers living on the coast have to face the pressures of climate change, and the forces that disrupt their subsistence capacity coupled with the Covid-19 pandemic have put pressure on coastal communities even more. One of the people who live in coastal areas with their characteristic feature of being dependent on marine resources, the environment, climate, markets, and human resources in coastal areas is the Bajo community [8]. The Covid-19 pandemic significantly impacts fishing activities to affect the Bajo community's food security, especially in the Tiworo Strait, West Muna Regency [7]. The Bajo people only use coastal resources to meet their daily needs. They carry out their daily activities in coastal areas due to low education so that Bajo fishing households cannot find a livelihood other than capture fisheries [9], [10].

The Bajo community in Latawe Village, Napano Kusambi District, Muna Barat Regency, livelihoods as traditional fishers use simple/standard fishing gear and boats. The fishermen's production and income levels are relatively low [11], [12]. Low production and income, as well as the Covid-19 pandemic, can affect access to food for the Bajo community so that it can trigger food insecurity when the quality and quantity of food is insufficient to maintain a healthy nutritional and food profile [13], so it needs to be studied directly to analyze Household Food Security of the Bajo Community, West Muna Regency during the Covid-19 Pandemic.

2. Method

The research location is in Latawe Village, Napano Kusambi District, West Muna Regency. The research location was determined purposively, considering that the village is a coastal village with many Bajo people mainly living as fishermen. Determination of the number of household samples using the Slovin formula with the percentage of sampling error (10%) [14] so that the sample in this study was 64 families. Data analysis in this study was analyzed using quantitative descriptive methods. The descriptive way aims to measure the level of household food security of the Bajo community in Latawe Village, Napano Kusambi District. The measurement uses the share of food spending. The calculation of the allocation of food spending uses the following formula:

\[ PF = \frac{PP}{TP} \times 100\% \]  \hspace{1cm} (1)

Where, PF = Share of food spending (%), PP = Spending for food shopping (IDR/month), TP = Total spending (IDR/month). The percentage result is then categorized according to the provisions [15], i.e., if spending food < 60% of total spending is food-secure households. The share of food spending is 60% of spending total spending food-insecure households.

3. Results and Discussion

3.1. Characteristics of Respondents

The characteristics of the respondents are a description of the household conditions of the Bajo community. The general report of the respondents described in this study includes age, education, number of household members. According to [16], there is a correlation between household food security and the housewife's age, education level, number of household members, and household income. The characteristics of Bajo Community Respondent Households in Muna Regency can be seen in Table 1.

| Characteristics of Respondents | Unit | Average |
|-------------------------------|------|---------|
| Age                           | Year | 42      |

Table 1. Household Characteristics of Bajo Community Respondents in West Muna Regency in 2020
Based on Table 1, it is known that the average age of the head of the household and the general generation of homemakers in the Bajo community is in the productive age category. According to [17], effective age is in the range of 15-54 years. Productive age influences people's physical ability and willingness to work and is one of the factors that affect the activity and productivity of the Bajo community. This shows that the productive age can affect productivity and is considered highly enthusiastic in doing a job. Through this work, the Bajo people will get income which will later be used to meet various needs.

Based on Table 1, it is known that the average formal education of the head of household and housewife of the Bajo community is in the category of the basic education level of six years of elementary school and three years of not graduating from junior high school. According to [18]–[20], it is known that a structured and tiered formal education pathway includes primary education where basic education is general education which lasts nine years, held for six years in elementary schools. And three years in Junior High School. Furthermore, [21] stated that there are fishermen who drop out of school starting from elementary school and junior high school for economic reasons so that they become fishermen and because of the busyness of doing work helping their husbands increase family income so that it has an impact on lack of time to improve education and skills training related to maritime, as well as time, focused on working to support the family does not have the opportunity to participate in improving the quality of education services in formal schools. Furthermore, based on Table 1, it is known that the proper education of the head of household and housewife of the Bajo community in the category of elementary school level education will be an essential aspect in determining the mindset and actions to be taken by fishermen because the level of education is one of the factors that determine the can affect the ability to accept technology, innovation, information, and decision making as well as the productivity of fishers in carrying out activities as fishermen. [22], [23] That the level of education has a significant effect on work productivity. Food security is also influenced by the formal education of the head of the family and housewife. The level of education of both will have an impact on household food consumption patterns which greatly determine the quality and quantity of food consumed as stated by [24], [25] that the quality of education and knowledge of food and nutrition can improve food security and affect significant effect on household consumption.

Based on Table 1, it is known that the average number of Bajo community household members is five people who are all household members who are dependents of the Bajo community family head in one household and are categorized as medium households based on income [26] that in general, the number of household members with 4-6 people is classified as a medium family. [27] stated that the larger the size of the household, the more members of the home, which in turn will be heavier the burden on the household to meet their daily needs. Furthermore [27], the number of family dependents is one factor that influences household consumption patterns because of the large number of family members. The consumption patterns are increasingly varied because each household member does not necessarily have the same taste. [27] further explains that the number of family members is related to household income which will ultimately affect the consumption pattern of the household. Therefore, the more the number of family members, the greater the economic burden that must be met in the family of the Bajo community, so that all household needs cannot be fulfilled as a whole.

### Table 1: Demographic Data of the Bajo Community

| Education   | Year | Age |
|-------------|------|-----|
| Head of household | 6    | 40  |
| Housewife   | 7    |     |

| Number of household members | Person |
|-----------------------------|--------|
|                             | 5      |

*Source: Primary Data (processed), 2020*
3.2. Household Income and Spending

Bajo community household income is the income received by Bajo community households from the income of the head of the family and household members. Income has a positive and significant effect on the consumption pattern of fishermen's families [25], [27]. The average household income of the Bajo community in the West Muna Regency can be seen in Table 1.

Table 2. Average Household Income of the Bajo Community in West Muna Regency in 2020

| Household Income                  | Number of Respondents (Person) | Percentage (%) | Average (IDR/month) |
|-----------------------------------|--------------------------------|----------------|---------------------|
| Above the District Minimum Wage   | 24                             | 37.5           | 2,562,500           |
| Below District Minimum Wage       | 40                             | 62.5           |                     |
| Amount                            | 64                             | 100            |                     |

Source: Primary Data (processed), 2020

Table 2 shows that the average household income of the Bajo community in West Muna Regency is greater than the Regency Minimum Wage (IDR2,768,592, -) as much as 37.5% and below the Regency Minimum Wage as much as 62.5%. This shows the low household income of the Bajo community in West Muna Regency, which can affect household spending on food to affect the nutritional status of family members because household income and food security have a relationship with nutritional status [28].

Bajo fishermen's household spending consists of spendings on food and non-food. Household spending is one indicator that can provide an overview of the state of the population's welfare. Household spending is influenced by household income, which will affect household consumption. [27] [29] stated that family income affects fisherman household consumption where the more significant the income earned, the higher the revenue. As well as expenses. Thus, in conditions of limited income, the need for food is prioritized so that in low-income groups, it will be seen that most of their income will be used to buy food needs. The average food and non-food spending of Bajo households in the West Muna Regency can be seen in Table 3.

Table 3. Average Food and Non-Food Spending of Bajo Households in West Muna Regency in 2020

| Type of Food Spending | Average (IDR/month) n= 64 | Percentage (%) | Types of Non-Food Spending | Average (IDR/month) n= 64 | Percentage (%) |
|-----------------------|---------------------------|----------------|----------------------------|---------------------------|----------------|
| Grains                | 482,500                   | 39.61          | Electricity bills          | 86,953                    | 9.11           |
| tubers                | 39,922                    | 3.28           | Water bills                | 118,750                   | 12.45          |
| Meat                  | 5,469                     | 0.45           | LPG                        | 65,469                    | 6.86           |
| Eggs and Milk         | 48,359                    | 3.97           | Kerosene                   | 50,859                    | 5.33           |
| Flour                 | 38,719                    | 3.18           | Gas                        | 76,953                    | 8.07           |
| Vegetables            | 46,438                    | 3.81           | Solar                      | 216,094                   | 22.65          |
| Fruits                | 76,953                    | 6.32           | Personal Equipment         | 54,141                    | 5.67           |
| Nuts                  | 23,234                    | 1.90           | Education                  | 185,234                   | 19.42          |
| Oil and fat           | 69,531                    | 5.71           | Health                     | 33,359                    | 3.50           |
| Spices                | 43,750                    | 3.59           | Savings                    | 66,250                    | 6.94           |
| Beverage Ingredients  | 99,906                    | 8.20           |                            |                           |                |
| Prepared Food and Beverages | 93,594              | 7.68           |                            |                           |                |
| Cigarette             | 149,781                   | 12.29          |                            |                           |                |
| Total                 | 1,218,156                 | 100            | Total                      | 954,063                   | 100            |
Based on Table 3, it can be seen that the most significant average household food spending of the Bajo community is the spending of grains of IDR 482,500, - with a percentage of 39.61% where the results are by research [30] that spending for food consumption by rural households is the largest in the grain group. The little average spending on food for the Bajo community is the spending for purchasing meat of IDR 5,469 - with a percentage of 0.45%, while the largest average non-food spending is on health, which is IDR 33,359, - with a percentage of 3.50%.

3.3. Share of Food Spending and Food Security
According to [31], the share of food spending is one indicator that can be used as a household food security because the percentage of food spending is the ratio between food spending and total monthly household spending. The cost-share is calculated from all total household spendings, and extraordinary spendings spent on food only. Adequate food consumption is an absolute requirement for the realization of household food security. Food insecurity can be described from changes in food consumption that lead to decreased quantity and quality, including changes in the frequency of consumption of staple foods. Food security has two pretty important indicators, namely the adequacy of calories and the share of food spending. Fulfilling adequate food consumption in energy units measures food security from the nutritional aspect, while the share of food spending measures food security from the economic part [32]. The percentage of household food spending of Bajo people in West Muna Regency is in Table 4.

| Table 4. Share of Bajo Household Food Spending in West Muna Regency |
|---------------------------------------------------------------|
| Food Security Category                                           | Number of Households | Percentage (%) |
| Food security, the share of food spending is low (<60%) of total spending | 30 | 46.88 |
| Food insecurity, the share of food spending is high (>60%) of total spending | 34 | 53.12 |
| **Total** | **64** | **100** |

Source: Primary Data (processed); 2020

According to the [5], food security is a condition of fulfilling food for the state to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse, nutritious, equitable, and affordable, and does not conflict with religion, beliefs, and community culture, to be able to live a healthy, active and productive life in a sustainable manner. Based on Table 4, it is known that 46.88% of Bajo households in West Muna Regency are included in the food security category with a low share of food spending, which is <60% of total food spending each month but has extensive non-food needs such as electricity bills. Bills for water, LPG, kerosene, gasoline, diesel, personal equipment, education costs, health and savings, and social gatherings must be met every month. According to [33], household income is sufficient for non-food spendings for family members. It is still necessary to increase food and nutrition knowledge to know the food and recommended types. Households like this generally still have other needs that must be met besides household food consumption. Other requirements that must be met are school fees, debts to other parties, and medical expenses.

Based on Table 4, it is also known that households with food-insecure categories are 53.12%. This is by [34], which states that food insecurity is influenced by purchasing power determined by income level. The low level of payment and the declining purchasing power of food will worsen people's energy and protein consumption. So even though food-insecure households allocate their income to food needs more than non-food needs, this can still meet household consumption needs. The higher a
household’s access to food, the higher the food security. The ability of households to access food is reflected in the share of spending to buy food.

4. Conclusion
Based on the study results, it was found that 53.12% of Bajo community households were in the food insecure category with a share of food spending 60% of total expenditure, and only 46.88% of households. Bajo community households are in the food security category with a share of food spending <60% of total expenditure. The Bajo community must be innovative with the catch obtained to be processed to add selling value and increase household income so that the household food security of the Bajo community in West Muna Regency can be categorized as food insecure.

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