

ANALYSIS OF PRE-PROSPEROUS HOUSEHOLD CONSUMPTION DIVERSITY IN LAMPUNG PROVINCE (SUSENAS DATA ANALYSIS, 2019)

Desmarita Nugrahanti*, Wuryaningsih Dwi Sayekti, and Dyah Aring Hepiana Lestari
Agribusiness, Faculty of Agriculture, Univeritas Lampung, Bandar Lampung, South Sumatra,
Indonesia

*Correspondence Email: desmarita17@gmail.com

Submitted 06 July 2023; Approved 13 November 2023

ABSTRACT

Food security has clear goals and impacts on efforts to improve nutrition and improve community welfare. To achieve this, diversification of food consumption plays an important role. Diversification of food consumption has a role in efforts to improve nutrition and to obtain quality human beings and reduce dependence on certain commodities. However, consumption pattern is different to each household depending on its income levels. The majority of household welfare levels in Lampung Province are categorized as pre-prosperous households. The economic situation (income) of pre-prosperous households can affect the food choice. If the food choice is inappropriate, the fulfillment of nutritional quality is not optimal and can affect the quality of human resources. As a result, research on this topic was critical, particularly in lower middle-class households especially pre-prosperous households. The goal of this study was to examine the amount of consumption diversification and its determinants among the pre-prosperous households. Secondary data from the 2019 SUSENAS raw data were used in this investigation. This survey included 2,792 households as samples. The Berry Index was employed to quantify the diversity of food consumption, and binary logistic regression analysis was performed to study its determinants. The amount of food consumption diversity among pre-prosperous households in Lampung Province was moderate. The Berry Index had an average value of 0.827. Household income, education of the head of the household, education of the mother, gender of the head of the household, and type of region all had a positive effect on household food consumption diversity, whereas the number of household members had a negative effect. Based on these results, comprehensive policies are needed with clear targets and programs that contribute to increasing employment opportunities and income so that family consumption is more diverse and of high quality. In addition, it is also necessary to increase the contribution of education both through formal and non-formal education, and promotion in the implementation of counseling or socialization on diversification of food consumption.

Keywords: *Berry Index, diversification, food expenditure*

BACKGROUND

Poverty is a condition of economic inability to provide basic needs, one of which is food. Currently, the problem of poverty continues to be discussed and efforts are being made to eradicate it. This is because poverty can hamper the economy and can create social instability, hunger, and even malnutrition. According to Rusliyadi et al. (2023), one of the problems in efforts to reduce poverty is in terms of food intake. In addition, poverty is closely related to food security because it can cause limitations to consume food (Zakiah, 2016). Lampung Province is the 11th province that has the

highest percentage of poverty rates in Indonesia and ranks 4th on the island of Sumatra. In addition, in terms of the type of area, Lampung Province is the province that has the largest number of poor people in rural areas on the island of Sumatra and the 6th largest in Indonesia, while based on the type of urban area, it is included in the top 10 with the largest number of poor people in Indonesia and the largest 3rd on Sumatra Island (BPS, 2020). Even so, Lampung Province is one of the provinces that are food secure (BKP, 2019).

The Food Security Index (IKP) value in Lampung Province is 71.36 which can be categorized as a food secure area (BKP, 2019). However, Lampung Province has the lowest food utilization index (52.67) when compared to the availability index (99.89) and affordability index (67.76). According to Dito dan Prayitno (2019), a low food utilization rate (IP) index can worsen the health quality status in the area. Therefore, it is interesting to study in more depth the condition of consumption patterns of people in Lampung Province. According to Engel's Law, the poorer the household, the greater the household food share (Deaton & Muellbauer 1980). Food share is the percentage of food expenditure issued by the household. Low income causes limitations in buying various kinds of needs so meeting food needs is a priority (Abdillah et al., 2019). Thus, in conditions of poverty, it will be difficult for the population to meet food eligibility according to the nutritional adequacy rate and to diversify their food consumption.

The condition of poverty is related to welfare. Household expenditure allocations can be used as an indication of household welfare. According to Mayasari et al. (2018), identically poor households have food expenditures of around 60% of their total expenditure. Besides that, according to Sintha (2019), pre-prosperous households are households where the percentage of food expenditure is around 50-60%. The majority of household welfare levels in Lampung Province are categorized as underprivileged/ pre-prosperous households with an average percentage of food expenditure of 52.18% in 2019 (Badan Pusat Statistik, 2019).

Diversity in food consumption is intended to increase the variety of types of food commodities consumed to meet nutritional needs to improve a better standard of living (Taruvinga et al., 2013). In addition, according to Ariani & Ashari (2016), diversification of food consumption is aimed at reducing rice consumption. The condition of food consumption diversification can be seen based on the DDP score calculation or expected food pattern. The condition of food consumption diversification in Lampung Province is still not diverse. As seen in Figure 1, the 2015 – 2018 DDP score is still around 80. This shows that DDP score is not ideal because it is still not close to 100 (Badan Ketahanan Pangan, 2019, 2021). Whereas based on the research of Ismiasih et al. (2013), consuming a variety of foods has the opportunity to increase food security. This is because, the more variety of food products that are consumed every day, the greater the opportunity for people's consumption to be fulfilled both in quantity and quality of nutrition for the body (Labadarios et al., 2011). Therefore, it is necessary to diversity consumption to minimize the risk of malnutrition due to only relying on one particular food ingredient.

Different from previous research, namely research by Dewanti et al. (2020) and Ismiasih et al. (2013), this research used the Berry Index method to measure the diversity of food consumption. The advantage of using this index is that it is easy to apply and can be used to measure a wide range of data. In addition, the Berry Index can be used to find out how much food groups are consumed by households based on food group expenditure (Miranti & Syaukat, 2016). Diversification-level research using this index has been carried out by several researchers, namely Thiele and Weiss

(2003); Alexandri et al. (2015); Miranti dan Syaikat (2016); Kunto and Bras (2019); serta Saputra, Firdaus, dan Novianti (2019).

Determinants of diversity in food consumption according to research by Dewanti et al., (2020) include the number of household members, income per capita (Rp/month), gender of head of household, age of head of household, education level of head of household, the status of area of residence, and per capita income. In addition, research by Codjoe and Okutu (2016) also shows that the characteristics of households, namely the gender of the head of the household, education of the head of the household, food sources (eating inside/outside the home), and household status (rich/poor) affect the diversification of household food consumption. According to Thorne-lyman et al. (2010), food consumption diversification is related to household expenditure, total food expenditure, and total non-rice food expenditure per capita. There are differences in the results of previous studies, making researchers want to identify more deeply related to the determinants of food consumption diversification in Lampung Province, especially for pre-prosperous households.

Based on the description above, the objectives of this study are 1) to analyze the level of food consumption diversification of pre-prosperous households in Lampung Province; and 2) to analyze the determinants that influence the diversification of food consumption of underprivileged households in Lampung Province. In addition, the results of this study are also expected to be taken into consideration in formulating appropriate policies to improve the quality of HR (Human Resources).

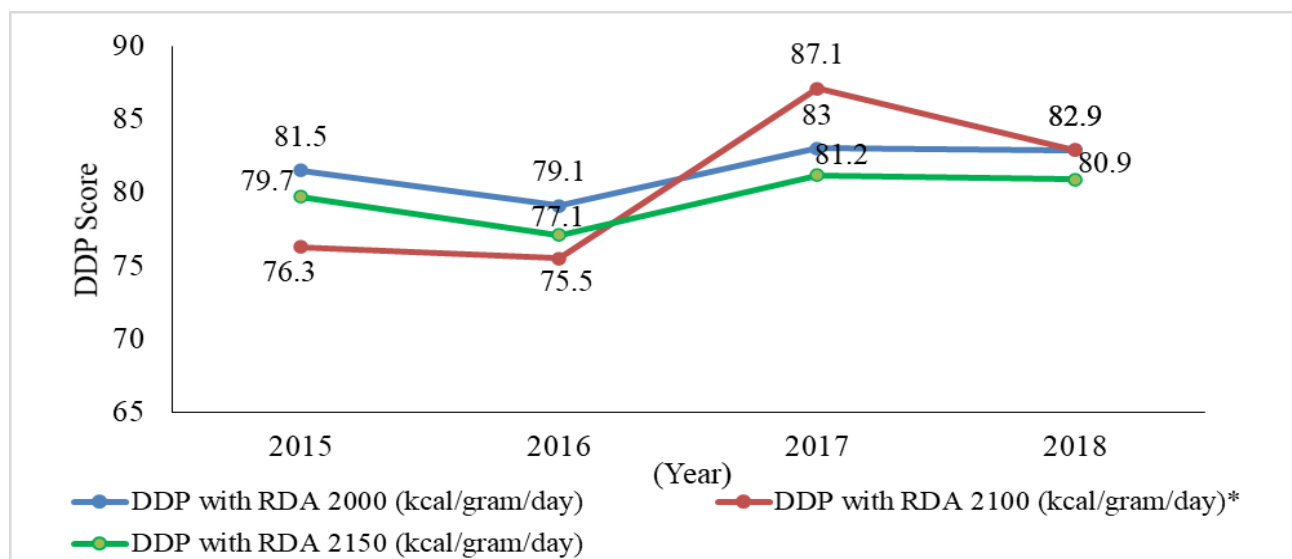


Figure 1. DDP Score in Lampung Province
Source: Food Security Agency (2019, 2021)

RESEARCH METHODS

Data Collection

This study uses secondary data in the form of cross-section data. This data is raw data from the results of the 2019 SUSENAS Food Expenditures. Data were collected at the Central Statistics Agency (BPS) from November 2020 - January 2021. The 2019 SUSENAS raw data included 9,653 household samples. From this data, the categorization of pre-prosperous households is then carried out based on the allocation of food expenditure. Pre-prosperous households are the household with

a percentage of food expenditure/ food share of around 50-60%. Based on this categorization, there are 2,792 pre-prosperous households.

Data Analysis

This study uses a quantitative descriptive analysis method and verification. Quantitative descriptive analysis is a tabular numerical summary to describe the condition of the diversity of food consumption of underprivileged households in Lampung Province. The diversity of food consumption is measured using the Berry Index. Then, the verification analysis is an analysis aimed at analyzing the determinants of diversity in food consumption using the binary logistic regression method. The independent variables used in the study included household income (Rp/month), number of household members (person), age of head of household (years), education level of head of household, level of education of mother (year), and gender of head of household and type of region. Household income is the amount of money received by the household which is approximated from calculating the total expenditure per month (Rp/month). The head of the household's gender is used as a dummy variable (1 = if female, 0 = if male). The type of area is used as a dummy variable (1 = if the type is an urban area; 0 = if the type is a rural area). The dependent variable used is the level of diversity in household food consumption where $Y = 1$ if it varies (Berry Index Value \geq average and $Y = 0$ if it has not varied (Berry Index Value $<$ average).

Berry Index Measurement

Diversity in food consumption is an important quantitative aspect of food. Household food diversity is measured using the Berry Index (Alexandri et al., 2015). In this calculation, it is assumed that if the value of $BI = 0$, it means that the household consumes only one food product, and if the value of $BI = 1$ means that the household consumes all types of food products. The Berry Index is formulated as follows:

$$BI_i = 1 - \sum_{j=1}^n s_{ij}^2$$

Information:

B_{ii} : Berry index for household i ,

S_{ij} : Share budget / expenditure for product j in household meal budget i ,

j : Food commodities consisting of (1) grains; (2) tubers; (3) animal (4) vegetables and fruit (5) oil and fat; (6) nuts; (7) oily fruit and seeds (8) sugar; (9) others (spice, beverage and cigarette ingredients)

n : Upper limit.

Determinants of Food Consumption Diversification

Binary logistic regression analysis was used to identify the determinants of food consumption diversification at the household level in Lampung Province. The regression model used is as follows:

$$Y_i = \text{Ln} \frac{P_i}{1-P_i} = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \alpha_1 D_1 + \alpha_2 D_2$$

Information:

- Pi : The probability of a household having a certain level of diversity in food consumption
Yi : Opportunity for household i to have a certain level of food consumption diversification
Y : 1 for households with diverse food consumption (diversification)
Y : 0 for households whose food consumption is not yet diversified (not yet diversified)
A : Intercepts
 $\beta_1 - \beta_5$: Coefficient of independent variables
X1 : Household income (Rp/month)
X2 : Number of household members (person)
X3 : Age of head of household (years)
X4 : Head of household's education level (years)
X5 : Mother's education level (years)
D1 : Region Dummy (1= if the area is urban; 0 = if the area is rural)
D2 : Dummy Gender of Head of Household (1= if female; 0 = if male)

Estimation of the logit model is carried out by a simultaneous test using the Likelihood Ratio (LR) which functions to test whether all the slopes of the regression coefficients of the independent variables simultaneously affect the dependent variable. If the Probability Likelihood Ratio $< \alpha$ then H_0 is rejected and if the Probability Likelihood Ratio $> \alpha$ then H_0 is accepted. Furthermore, a partial test (Zstat) was carried out using the Wald Test. If Probability Wald $< \alpha$ then H_0 is rejected and if Probability Wald $> \alpha$ then H_0 is accepted. To see how well the model can explain the relationship between the dependent and independent variables, the Goodness of Fit test was carried out. In logistic regression, the coefficient of determination (R^2) used is Nagelkerke Rsquare (Wahyudi, 2016).

RESULT AND DISCUSSION

Characteristics of Pre-Prosperous Households in Lampung Province

The majority of pre-prosperous households in Lampung Province were led by men (90.27%) and live in rural areas (77.07%). In addition, the average age of the pre-prosperous household heads was 48 years. It can also be seen that 60.12% of pre-prosperous households have 3-4 household members (Table 1). According to Ghassani & Ernah (2021), the greater the number of household members, the more purchases they will need.

Table 1. Characteristics House Ladder Pre-prosperous in Lampung Province

Variable	Frequency (n = 2,792)	Percentage (%)	
Gender of the head household	Male	2,524	90.27
	Female	272	9.73
A number of member household (person)	1 – 2	548	19.63
	3 – 4	1,688	60.17
	≥ 5	5,642	20.20
	NS	81	2.90
Age of the head household (year)	17-26	493	17.67
	27-36	829	29.69
	37-46	710	25.43
	47-56	389	13.93
	57-66	290	10.39
	>67	616	22.03
	NS	870	31.12
The head household's education level	Elementary school	605	21.64
	Junior high school	619	22.14
	Senior high school	86	3.08
	Bachelor Degree	893	31.94
	NS	733	26.22
Mother's education level	Elementary school	607	21.71
	Junior high school	455	16.27
	Senior high school	108	3.86
	Bachelor Degree	641	22.93
Region type	Urban	2,155	77.07
	Rural	350	12.53
Income household	< 1.5 million	926	33.16
	1.5 – 2.5 million	765	27.39
	2.5 – 3.5 million	751	26.89
	> 3.5 million		

*NS = Not graduating from elementary school or not school

Source: Susenas (2019)

Based on Table 1, the educational level of KRT and IRT showed that they were still not in accordance with the provisions of the legislation regarding 9-year compulsory education. In the majority of pre-prosperous households, the education level of the head of the household was Elementary School (SD) and the mother's level of education was not graduating from SD or not attending school. Education is a basic need for humans, so the government must pay attention to this condition.

With a good education, a person will gain broad insights and advanced patterns of thinking. According to research by Aini et al., (2018), education is one of the essences that contains morals in individuals and is a social means of achieving a better welfare of life. This means that the higher the level of education, the more feasible a person is to be able to sustain his life which is also related to the higher his income. Likewise, according to Jacobus et al. (2018) which states that a person's higher education level can reduce the increase in the household poverty rate.

The average income of pre-prosperous households per month was Rp 2,903,733.29. When viewed from the type of area, pre-prosperous households in urban areas had a higher average monthly

income than those in rural areas. The average household income in urban areas was Rp 3,347,615.57/month while in rural areas it was Rp 2,771,701.49/month. In addition, the income of pre-prosperous households in Lampung Province was above the poverty line. According to BPS (2020), the household poverty line in Lampung Province in 2019 was Rp 1,966,052.00/month.

This study also classified household income per month into 4, namely household income < Rp 1,500,000, household income of Rp 1,500,000 - 2,500,000, household income of Rp 2,500,000 - 3,500,000 and household income stairs > Rp 3,500,000. Based on Table 4, households in Lampung Province were classified as income group 3 (Rp 2,500,000 – 3,500,000) with an average income of Rp 2,905,125.37/month. Judging from the type of area, it turns out that there were differences between households in urban and rural areas. In urban areas, the majority of household income was group 4 (household income > Rp 3,500,000) while in rural areas it was class 2 (household income of Rp 1,500,000 – 2,500,000).

Food Consumption Diversification for Pre-Prosperous Households

The results of this study show that the average household Berry Index was 0.827 with a standard deviation of 0.037. Furthermore, the diversity level of pagan consumption was categorized into 3 levels, namely low diversification (BI < 0.790), moderate diversification (0.790 ≤ BI ≤ 0.864), and high diversification (BI > 0.864). It can be seen in Figure 2, the majority of the diversity level of food consumption of underprivileged households in Lampung Province was in the moderate category (91.74%). According to Alexandri et al. (2015) in Romania, households categorized as very highly diversified were households with a Berry Index value > 0.950. The Berry Index value, which was getting closer to 1.00, shows that the household has consumed all available food products.

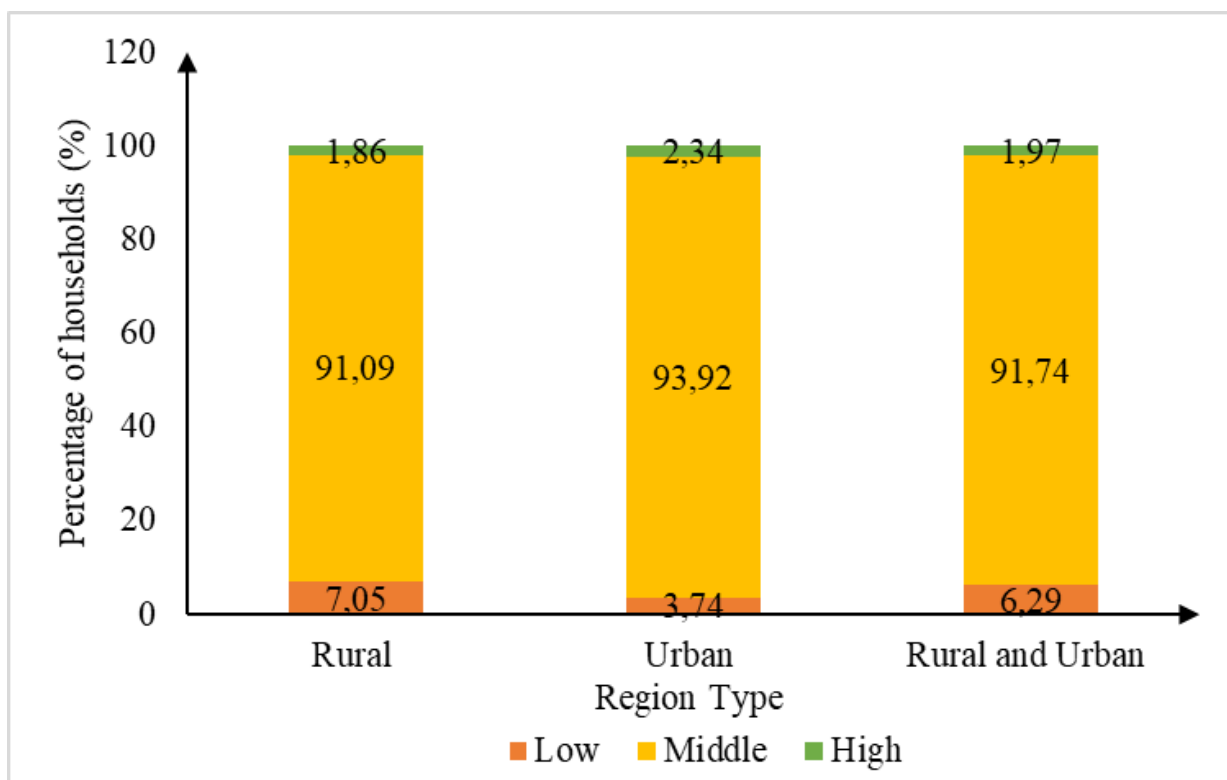


Figure 2. Percentage of Households Based on The Level of Diversity in Food Consumption and Type of Region
Source: Susenas (2019)

The aspect used in measuring the Berry index (diversity) was food expenditure (Zhao & Barry, 2013; Ariani & Ashari, 2003). The results of this study indicate that households with pre-prosperous households spend more on food (55.44%) than non-food expenditure. This means that around 55.44% of their income was for food expenditure needs. The average expenditure on food and non-food items for pre-prosperous households are Rp 1,606,028.93/month and Rp 1,297,704.36/month, respectively. In terms of the type of region, there was no difference in the pattern of expenditure allocation for poor households, both in rural areas (55.51%) and urban areas (55.24%), most of the expenditure is for food needs.

The largest expenditure for underprivileged households was the other group (28.61%) and the smallest was the commodity group of fruit and oily seeds (coconut and candlenuts) with 0.73% (Table 2). In this study, the other food group consisted of spices, beverage ingredients, and cigarettes/tobacco. This high group was due to the large expenditure on cigarettes and tobacco. According to BPS in 2019, food expenditure for the cigarette and tobacco group per capita in Lampung Province was the second largest food expenditure after processed food.

The results of this study also categorize the level of diversity into 2 categories, namely households with diverse/diversified food consumption ($BI \geq 0.826$) and households with not yet diverse/diversified food consumption ($BI < 0.826$). Households whose consumption had not been diversified are 1,085 households (38.86%), and households whose food consumption was secured (diversified) were 1,707 households (61.13%). One of the foundations of food security is diversification of food consumption. Diversification of food consumption is one of the efforts to fulfill the consumption utilization subsystem. Consumption utilization in food security is aimed at improving the quality of food consumption of the population in terms of quantity, quality and diversity of food. There are associations between food security and the diversity of household food consumption (Harris-Fry et al., 2015). According to Rozaki (2021), food diversification is one of the strong predictor components as an indicator for economic status and malnutrition (stunting and wasting). However, food diversification also plays an important role in several ways, such as reducing rice consumption or reducing dependence on rice imports or certain commodities. In addition, food diversification will change the allocation of resources to be more efficient, stable and flexible if supported by empowering local potentials (Ni, 2008).

Table 2. The Percentage of Food Expenditure Based on The Level of Diversity in Food Consumption in Pre-Prosperous Households in Lampung Province (%)

Group Commodity	Diversification Level			Total
	Low	Middle	High	
1. Grains	34.03	19.53	13.23	20.32
2. tubers	0.56	0.89	2.29	0.89
3. Food animal	12.51	21,13	26.82	20,70
4. Vegetables and Fruits	15.59	18.22	19.50	18.08
5. Nuts	3.02	3.84	4.32	3.80
6. Oil and fat	4,44	4.21	4.77	4.23
7. Fruit and seeds greasy	0.46	0.73	1.45	0.73
8. Sugar	3.05	2.61	3.19	2.65
9. others (seasonings, ingredients drinks and cigarettes)	26.33	28.85	24.43	28.61
Total	100	100	100	100

Source: Susenas Data (2019)

The results of binary logistic regression analysis showed a Nagelkerke R-Square value of 0.125, which means that the variables of household income, number of household members, age of head of household, education level of head of household, education level of the mother, dummy area, and gender dummy of the household head can explain 12.5% of the variation in the diversity of household food consumption. The determinants that had a significant effect on the diversification of household food consumption can be seen in Table 3.

Based on the results of the analysis, it was known that the positive effect on the diversity of food consumption is household income, education level of the head of household, education level of the housewife, type of region, and gender of the head of household, while the number of household members had a negative effect on diversification of household food consumption (Table 3). The age variable of the household head had no significant effect on the diversity of household food consumption because the confidence level was less than 90%. The regression equation for the determinant of the diversity of household food consumption was obtained as follows:

$$Y = -0,623 + 0,481 X1 - 0,274 X2 + 0,004 X3 + 0,024 X4 + 0,040 X5 + 0,362 D1 + 0,274 D2$$

Table 3. Analysis Results Binary Logistic Regression

Variable	B	SE	Wald	Sig.	Exp(B)
Constant	-0.623***	0.253	6.047	0.014	0.537
Income_household	0.481***	0.000	150.739	0.000	1.618
Number of household members	-0.274***	0.037	55.980	0.000	0.760
Age_the head household	0.004 ^{ts}	0.004	0.207	0.272	1.004
Level of Education's head household	0.024 *	0.013	3.320	0.068	1.024
Level of Education_mother	0.040***	0.013	9.120	0.003	1.041
Dummy_Region	0.362***	0.103	12.308	0.000	1.437
Dummy_Gender the head household	0.278 *	0.149	3.482	0.062	1.321

Information:

*** : Significant $\alpha = 0,01$

** : Significant $\alpha = 0,05$

* : Significant $\alpha = 0,1$

ts : Not significant.

Household Income

Household income (X1) had a significant effect on the diversity of food consumption of underprivileged households at a confidence level of 99% and an odds ratio value of 1.618 is obtained. This means that if household income increases by Rp 1 million, the probability of diversity in food consumption would increase by 1.618 times, assuming all other independent variables were constant. This was in line with the research of Taruvinga et al. (2013) and Rinaldi et al. (2017), as well as research by Hutagaol & Sinaga (2022) which states that an increase in income will further increase the variety of food consumed so that it can influence food consumption patterns. In addition, according to Gevisioner et al. (2015) and Handayani et al. (2019) an increase in income has a great

opportunity to choose and buy various types of food products with better quality and quantity by balanced nutrition provisions.

Number of Household Members

The number of household members (X₂) had a negative effect on the diversity of food consumption of underprivileged households at the 99% confidence level and an odds ratio value of 0.760 is obtained. This means that if household members increase by one person, the probability of diversity in food consumption decreases by 0.760 times, assuming that all other independent variables remain the same. The results of this study are following the research of Ismiasih et al. (2013) and Qineti et al. (2016) which showed the number of household members had a negative effect on diversity in food consumption. In addition, according to Dewanti et al. (2020), households with more than 4 members tend to have less chance of achieving high diversity in food consumption.

An increase in the number of household members causes an increase in the expenditure burden borne by the head of the household which is getting bigger. Thus, an increasing number of household members without an increase in income can make these households prioritize the allocation of their income to meet the quantity of food rather than diversifying the food they consume. In addition, households with a larger number of household members tend to consume only one type of staple food which is cheap (Hutagaol & Sinaga, 2022). This condition causes the level of food diversity to be increasingly diversified.

Education Level of Head of Household

The results of this study also showed that the education level of the head of the household had a significant effect on the diversity of food consumption in underprivileged households at the 95% confidence level. In addition, it can be seen that the odds ratio is 1.024, which means that an increase in the education of the head of the household will increase the diversity of food consumption in underprivileged households by 1.024 times. This was in accordance with the research of Iftikhar et al. (2020) and Ntakyio & van den Berg (2019) which state that the education of the head of the household has a significant effect on the diversity of food consumption. According to Suryana (2015), a higher level of education can provide opportunities for accelerating the process of increasing awareness and knowledge about nutrition so that good nutritional status was expected to be achieved. This is because good knowledge will underlie a person's attitude towards food selection, so that in the end the action that someone chooses is appropriate, namely choosing a variety of foods (Sayekti et al., 2020).

Mother's Education Level

The mother's education level variable had a significant effect on the diversity of food consumption in underprivileged households at the 99% confidence level. The odds ratio obtained is 1.041, which means that an increase in the education of housewives will increase the chances of diversity in food consumption for underprivileged households by 1.041 times. This was in accordance with the research of Rahma et al. (2020) which shows that the level of a mother's education has a significant effect on the diversity of food consumption. Furthermore, according to Amugsi et al. (2016), mothers with a higher level of education than basic education are more likely to achieve a more varied diet when compared to mothers who are not educated. Similarly, the research of Hamid et al. (2013) and Sayekti et al. (2022), stated that the more educated the mother,

the more knowledge and insight about nutrition so that when mothers cook food every day it is not only based on habits and the concept of being full. The housewife will consider or choose a quality type of food and also pay attention to the nutritional elements contained in the food.

Region Type

The results of this study indicated that the type of region has a positive effect on the diversification of food consumption of underprivileged households at the 99% confidence level. The odds ratio value for the regional dummy variable is 1.437, which means that households living in urban areas have a greater chance of diversity in food consumption by 1.437 times compared to those in rural areas. The results of this study are in accordance with research conducted by Alexandri et al. (2015), Qineti et al. (2016) and Hamid et al. (2013) who concluded that the diversity of household food consumption in urban areas is higher than in rural areas. This was because urban areas generally have more diverse and abundant availability of food types.

In addition, the purchasing power of urban dwellers is also higher because generally, the average income of households in urban areas tends to be greater. With increasing income, it will encourage these residents to buy various kinds of food. This was different if the household lives in a rural area. In general, household income conditions in rural areas are lower. This was what makes the population experience limitations in accessing food, both the quantity, quality, and variety of food for consumption. According to Hutagaol & Sinaga (2022), the more diverse food consumption of households in urban areas is also caused by the level of food dependence on rice consumption. In general, household's in rural areas are more dependent on rice when compared to household's in urban areas. In addition, urban household consumption expenditure is also relatively more diversified and not concentrated on certain foods. This is because the availability of food and drink in urban areas is more numerous and varied than in rural areas.

Gender of Head of Household

The results of this study indicated that the gender of the head of household has a positive and significant effect on the diversity of food consumption of underprivileged households in Lampung Province at the 90% confidence level. The odds ratio valued for the gender dummy variable of the household head is 1.321, which means that a household with a female head of household had a higher chance of diversity in food consumption by 1.321 times compared to men. The results of this study are in accordance with the research of Codjoe, Okutu and Abu (2016) in Ghana, Workicho et al. (2016) in Ethiopia, and Dewanti et al. (2020) in Central Java which concluded that the gender of the head of the household affects the diversification of food consumption. According to Taruvinga et al. (2013), higher food diversity in households where the head of the household is female is due to women having more experience in managing consumption. With so much experience, the determination or select food will pay more attention to the nutritional content that is good for health. In addition, according to Amugsi et al. (2016) and Mehraban and Ickowitz (2021), women have been shown to have an important role in improving household diets.

CONCLUSION AND SUGGESTION

The Berry Index average score of 0.827 indicated that the diversity of food intake among impoverished households in Lampung Province was moderate. Pre-prosperous households spent the most on grain food. According to the findings of this study, the more diversified the food intake, the lower the spending on grain food, but the expenditure on animal food with vegetables, fruits, and nuts increases. This demonstrates that the more the variety of food ingested, the higher the quality of nutrients consumed. Household income, head of household education, mother's education, type of area, and gender of the head of household all had a favorable influence on the degree of food consumption diversification, however the number of household members had a negative effect.

There are still very few pre-prosperous households with high diversity categories. As a result, the comprehensive policies are needed with clear targets and programs that contribute to increasing employment opportunities and income so that family consumption is more diverse and of high quality. In addition, it is also necessary to increase the contribution of education both through formal and non-formal education, and promotion in the implementation of counseling or socialization on diversification of food consumption. Dissemination of information and socialization on food diversification also needs to be done more actively and intensively through social media and putting up posters and leaflets in places where there are many community activities. Further research into variables such as the prices of several important food commodities (rice, meat, chilies, shallots, etc.), type of work, age of the housewife, and knowledge of nutrition are suggested to enrich the analysis of the diversity of household food consumption.

REFERENCES

- Abdillah, J. J., Wiyono, V. H., & Samudro, B. R. 2019. Analisis Pola Konsumsi dan Kemiskinan di Jawa Tengah. *Research Fair Unisri*, 3(1): 132–138.
- Aini, E. N., Isnaini, I., Sukamti, S., & Amalia, L. N. 2018. Pengaruh Tingkat Pendidikan Terhadap Tingkat Kesejahteraan Masyarakat di Kelurahan Kesatrian Kota Malang. *Technomedia Journal*, 3(1): 58–72. <https://doi.org/10.33050/tmj.v3i1.333>
- Alexandri, C., & Kevorchian, C. 2015. The Diversity of Food Consumption in Romania. *Economics And Rural Development - Research Articles*, 72(1): 243–248. <https://doi.org/10.15835/buasvmcn-hort>
- Alexandri, C., Luca, L., & Kevorchian, C. 2015. Subsistence Economy and Food Security – The Case of Rural Households from Subsistence economy and food security – the case of rural households from Romania. *Procedia Economics and Finance*, 22: 672–680. [https://doi.org/10.1016/S2212-5671\(15\)00282-8](https://doi.org/10.1016/S2212-5671(15)00282-8)
- Amugsi, D. A., Lartey, A., Kimani, E., & Mberu, B. U. 2016. Women's participation in household decision-making and higher dietary diversity: findings from nationally representative data from Ghana. *Journal of Health, Population, and Nutrition*, 35(1): 16. <https://doi.org/10.1186/s41043-016-0053-1>
- Ariani, M., & Ashari, N. 2016. Arah, Kendala dan Pentingnya Diversifikasi Konsumsi Pangan di Indonesia. *Forum Penelitian Agro Ekonomi*, 21(2): 99. <https://doi.org/10.21082/fae.v21n2.2003.99-112>
- Badan Ketahanan Pangan. 2019. Direktori Perkembangan Konsumsi Pangan Tahun 2019. In Badan Ketahanan Pangan, Kementerian Pertanian. Badan Ketahanan Pangan, Kementerian Pertanian. <https://doi.org/10.1017/CBO9781107415324.004>
- Badan Ketahanan Pangan. 2021. Direktori Perkembangan Konsumsi Pangan Tahun 2021 (Vol. 3). Badan Ketahanan Pangan.

<https://ditjenpkh.pertanian.go.id/uploads/download/3e8f561f9e61f478b634605ccf1effb4.pdf>

- Badan Pusat Statistik. 2019. Pola Konsumsi Penduduk Provinsi Lampung 2019. In Badan Pusat Statistik Provinsi Lampung.
- BPS. 2019. Profil Kemiskinan Provinsi Lampung Maret 2019 (Vol. 21, Issue 1). <https://lampung.bps.go.id/pressrelease/2019/07/15/744/profil-kemiskinan-provinsi-lampung-maret-2019.html>
- Codjoe, S. N. A., David, O., & Abu, M. 2016. Urban Household Characteristics and Dietary Diversity : An Analysis of Food Security in Accra, Ghana. *Food and Nutrition Bulletin*, 37(2): 202–218. <https://doi.org/10.1177/0379572116631882>
- Deaton, A., & Muellbauer, J. 1980. An Almost Ideal Demand System. *Neuroradiology* 41, 70(3): 312–326.
- Dewanti, S., Rijanta, R., & Rofi, A. 2020. Keragaman Konsumsi Pangan Rumah Tangga di Provinsi Jawa Tengah. *Jurnal Kawistara*, 10(3): 265–294.
- Dito, M., & Prayitno, G. 2019. Capaian pola pemanfaatan pangan dalam usaha peningkatan ketahanan pangan provinsi jawa barat. *Planning for Urban Region and Evironment*, 8(1): 405–414.
- Gevisioner, Febriamansyah, R., Ifdal, & Tarumun, S. 2015. Kualitas konsumsi pangan di daerah defisit pangan Provinsi Riau. *J. Gizi Pangan*, 10(3): 233–240.
- Ghassani, D., & Ernah. 2021. Analisis Pengeluaran Rumah Tangga selama Pandemi Covid-19 di Bandung. *Agroland: Jurnal Ilmu-Ilmu Pertanian*, 28(3): 224–232.
- Hamid, Y., & Setiawan, B. 2013. Analisis Pola Konsumsi Pangan Rumah Tangga (Studi Kasus di Kecamatan Tarakan Barat Kota Tarakan Provinsi Kalimantan Timur). *Agrise*, 13(3): 175–190.
- Handayani, M., Sayekti, W. D., & Ismono, R. H. 2019. Pola Konsumsi Pangan Rumah Tangga pada Desa Pelaksana dan Bukan Pelaksana Program Percepatan Penganekaragaman Konsumsi Pangan (P2KP) di Kabupaten Pringsewu. *Jurnal Ilmu-Ilmu Agribisnis (JIJA)*, 7(1): 113–119. <https://doi.org/10.23960/jiia.v7i1.3328>
- Harris-Fry, H., Azad, K., Kuddus, A., Shaha, S., Nahar, B., Hossen, M., Younes, L., Costello, A., & Fottrell, E. 2015. Socio-economic determinants of household food security and women's dietary diversity in rural Bangladesh: A cross-sectional study. *Journal of Health, Population and Nutrition*, 33(1): 1–12. <https://doi.org/10.1186/s41043-015-0022-0>
- Hutagaol, Manuntun P. & Sinaga, R. 2022. Pengaruh pendapatan dan harga pangan terhadap diversifikasi pangan di pulau jawa. *Scientific Journal If Reflection: Economic, Accounting, Management and Business*, 5(3): 702–715.
- Iftikhar, M., Yasin, M. A., & Ali, R. 2020. Factors Affecting The Household Dietary Diversity Pattern In Rural Areas Of Southern Punjab , Pakistan. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 11(7): 1–9. <https://doi.org/10.14456/ITJEMAST.2020.124>
- Ismiasih, Hartano, S., Darwanto, H. D., & Mulyo, H. J. 2013. Diversifikasi Konsumsi Pangan Pada Tingkat Rumah Tangga di Provinsi Daerah Istimewa Yogyakarta (Indeks Entropy Didekati dengan Pangsa Pangan). *Jurnal Budidaya Pertanian*, 9(2): 72–78.
- Jacobus, E. h., Kindangen, P., & Walewangko, E. N. 2018. Analisis Faktor-faktor yang Memengaruhi Kemiskinan Rumah Tangga di Sulawesi Utara. *Jurnal Pembangunan Ekonomi Dan Keuangan Daerah*, 19(3): 86–103.
- Kunto, Y. S., & Bras, H. 2019. Ethnic Group Differences in Dietary Diversity of School-Aged Children in Indonesia: The Roles of Gender and Household SES. *Food and Nutrition Bulletin*, 40(2): 182–201. <https://doi.org/10.1177/0379572119842993>
- Labadarios, D., Mchiza, Z. J., Steyn, P., Gericke, G., Maria, E., Maunder, W., Davids, D., & Parker, W. 2011. Food security in South Africa : a review of national surveys. *Bull World Health Organ*, 89(April): 891–899. <https://doi.org/10.2471/BLT.11.089243>

- Mayasari, D., Satria, D., & Noor, I. 2018. Analisis Pola Konsumsi Pangan Berdasarkan Status IPM di Jawa Timur The Pattern of Food Consumption Based on HDI in East Java Pendahuluan. 18(2): 191–213.
- Mehraban, N., & Ickowitz, A. 2021. Dietary diversity of rural Indonesian households declines over time with agricultural production diversity even as incomes rise. *Global Food Security*, 28: 100502. <https://doi.org/10.1016/j.gfs.2021.100502>
- Miranti, A., Syaukat, Y., & Harianto. 2016. Pola Konsumsi Pangan Rumah Tangga di Provinsi Jawa Barat. *Jurnal Agro Ekonomi*, 34(1): 67–80.
- Ni, M. S. Y. 2008. Diversification Of Food Consumption For Food Security Based On Local Potency At Household Level In Semin , Gunung Kidul. *Economic Journal of Emerging Markets*, 13(1): 1–5. <https://doi.org/10.20885/vol13iss1aa539>
- Ntaky, P. R., & van den Berg, M. 2019. Effect of market production on rural household food consumption: evidence from Uganda. *Food Security*, 11(5): 1051–1070. <https://doi.org/10.1007/s12571-019-00959-2>
- Qineti, A., Braha, K., Cupák, A., & Pokrivčák, J. 2016. Demand for food diversity in the case of Kosovo. 964–975. <https://doi.org/10.15414/isd2016.s12.08>
- Rahma, R. M. W., Ilsan, M., & Rosada, I. 2020. Analisis Diversifikasi Konsumsi Pangan dalam Meningkatkan Ketahanan Pangan Rumah Tangga Nelayan. *Wiratani*, 3(1): 57–66.
- Rinaldi, Y., Irianto, Heru & Rahayu, W. 2017. Pengaruh Faktor Sosial Ekonomi terhadap Diversifikasi Konsumsi Pangan Rumah Tangga Anggota Kelompok Tani di Kecamatan Ngunter Kabupaten Sukoharjo. *Paper Knowledge . Toward a Media History of Documents*, 5(3): 441–452.
- Rozaki, Z. 2021. Food security challenges and opportunities in indonesia post COVID-19. *Advances in Food Security and Sustainability*, 6: 119–168. <https://doi.org/10.1016/bs.af2s.2021.07.002>
- Rusliyadi, M., Yudistira, Y. W., & Winarno, K. 2023. The Factors Influencing Technology Adaption Process of Farmers in Term of Agricultural Extension Policy Case In Center Java Indonesia. *Agrosocionomics: Jurnal Sosial Ekonomi Dan Kebijakan Pertanian*, 7(2): 250–260. <http://dx.doi.org/10.21107/agriekonomika.v7i1.2513%0AABSTRACT>
- Saputra, M. F., Firdaus, M., & Novianti, T. 2019. Pola Konsumsi Pangan Non Karbohidrat pada Provinsi Tahan dan Rawan Pangan (Provinsi Kalimantan Timur dan Nusa Tenggara Timur) Tahun 2017. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 5(2). <https://doi.org/10.18196/agr.5282>
- Sayekti W.D., Lestari, D.A.H., Ismono, R.H. 2020. Faktor Determinan Konsumsi Pangan Lokal Rumah Tangga di Provinsi Lampung. *Jurnal Pangan*, 29(2): 127–140.
- Sayekti, W. D., Zakaria, W. A., & Syafani, T. S. 2022. Dominant factors on food coping mechanism of poor households in Pringsewu Regency, Indonesia. *Mal J Nutr*, 28(3): 441–452. <https://doi.org/10.31246/mjn-2020-0099>
- Sintha. 2019. Tingkat Kesejahteraan Ruma Tangga Nelayan di Kelurahan Bereng Bengkel Kecamatan Sabangau Kota Palangka Raya. *J-SEA (Journal Socio Economics Agricultural)*, 14(2): 57–65.
- Suryana, A. 2015. Penganekaragaman Konsumsi Pangan dan Gizi Faktor Pendukung Peningkatan Kualitas Sumber Daya Manusia. 52.
- Taruvunga, A., Muchenje, V., & Mushunje, A. 2013. Determinants of rural household dietary diversity: The case of Amatole and Nyandeni districts, South Africa \n. *International Journal of Development and Sustainability*, 2(4): 2233–2247. <http://isdsnet.com/ijds-v2n4-4.pdf>
- Thiele, S., & Weiss, C. 2003. Consumer demand for food diversity: Evidence for Germany. *Food Policy*, 28(2): 99–115. [https://doi.org/10.1016/S0306-9192\(02\)00068-4](https://doi.org/10.1016/S0306-9192(02)00068-4)
- Thorne-lyman, A. L., Valpiani, N., Sun, K., Semba, R. D., Klotz, C. L., Kraemer, K., Akhter, N., Pee, S. De, Moench-pfanner, R., & Sari, M. 2010. Household Dietary Diversity and Food

Expenditures Are Closely Linked in Rural Bangladesh , Increasing the Risk of Malnutrition Due to the Financial Crisis 1 – 3. <https://doi.org/10.3945/jn.109.110809>.of

- Wahyudi S. T. 2016. *Konsep dan Penerapan Ekonometrika Menggunakan E-Views*. Rajawali Press.
- Workicho, A., Belachew, T., Feyissa, G. T., Wondafrash, B., Lachat, C., Verstraeten, R., & Kolsteren, P. 2016. Household dietary diversity and Animal Source Food consumption in Ethiopia: Evidence from the 2011 Welfare Monitoring Survey. *BMC Public Health*, 16(1): 1–11. <https://doi.org/10.1186/s12889-016-3861-8>
- Zakiah, N. 2018. Ketahanan Pangan dan Kemiskinan di Provinsi Aceh (Food Security and Poverty in Aceh Province). *Analisis Kebijakan Pertanian*, 14(2): 113.
- Zhao, J., & Barry, P. J. 2013. Implications of different income diversification indexes : the case of rural. 2(1): 13–20.