Fishermen's food consumption behavior at Bubun Village, Langkat

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Abstract. The problems of this research are how consumers act with respect to food consumption and how the influence of social, economic, cultural, and environmental factors affects the variation in food consumption based on local resources. The primary data were obtained directly from the study respondents of the people in the East Coast of North Sumatra in the Bubun villages in the district of Tanjung Pura. Their main occupation is as fishermen where they had little or no education, with little income to meet the daily needs of the family. The conclusions of this study i.e., age, education level of housewife, marital status and ethnicity significantly affected the household food consumption. The socio-economic fishermen of Bubun village were below average compare to national average.

1. Introduction
Nutritional imbalance due to the consumption of food which is less diverse, could lead to the incidence of malnutrition as well as over-nutrition. Consequently, the government established policies and programs to improve the quantity and quality of food consumption such as (1) Presidential Decree No. 14 Th 1974, which was later refined by Presidential Decree No. 20 Th 1979 on "Improved Food Menu for People, (2) the Act No. 7 TH, 1996, which defines food security as a condition needed for the fulfillment of every household, reflecting mainly in the availability of safe food, both in quantity and quality.

Some of these policies are yet to give optimal results in the context of diversification of food consumption, considering the fact Indonesia is still faced with the problem of having quality food for consumption. This is indicated by the score pattern of food expectancy (PPH) and the fragility of food security, where the National Socio-Economic Survey (SUSENAS 2005) reported the PPH score as 78.2 out of 100. Also, if these problems and condition are left unchecked, they will impact on the quality of human health.

According to the World Economic Forum on diversification (2003) and Monek (2007), some of the obstacles encountered in the diversification of food in Indonesia are due to (a) the relatively low level of knowledge especially among the lower middle class, (b) the difficulty in changing the cultural eating habit, (c) the positioning of rice as a superior food and (d) the relatively late innovations in the the
exploration of other foods. Likewise, in addition to factors of production, availability, and culture, food consumption patterns are also influenced by economic, social, educational, lifestyle, knowledge, accessibility etc.

There are sufficient local resources in North Sumatra to enhance food security throughout the region, which could also support the creation of national food security. However, about thirty percent of the households in the region feed below the consumption requirements thereby subjecting more than a quarter of children, aged under 5 years, to underweight status, of which about 8% were in very bad condition. The availability of resources on one hand and the non-fulfillment of PPH on the other side could be solved if addressed in a very comprehensive and holistic manner.

The performance of food consumption can be seen from the pattern of food consumption in the regions concerned, which include the types of food, the amount consumed, the frequency as well as the timing of meals. There is need to consider the performance of food consumption which should lead to a huge increment through increased revenue, as well as knowledge of food and nutrition using all the resources owned by the regions concerned.

The problems due for consideration in this research are how consumers behave with respect to food consumption in Langkat and secondly how the influence of social, economic, cultural, and environmental factors affect the variation in food consumption based on local resources in Langkat.

The purpose of this study is to describe consumers’ behaviors in food consumption in Langkat and know the influence of social, economic, cultural and environmental factors on the variation of food consumption based on local resources in Langkat.

2. Research Methods
2.1 Research locations
This study was conducted in the East Coast of North Sumatra, which has the largest population in North Sumatra in terms of food consumption. This region is made up of eleven districts/cities, which are: Langkat, Binjai, Deli Serdang, Serdang Bedagai, Tebing Tinggi, Simalungun, Pematang Siantar, Asahan, Tanjung Balai, Labuhan Batu District, and County Coal.

However, the district used as the sample area among the eleven, selected through purposive sampling method was Langkat. This district was selected based on its geographical location, which is at the tip of the East Coast. Afterwards, the sub-district was also purposively selected based on the region with a coastal administrative area where most of the population lack socialization diversification. This led to the selection of Langkat district of Tanjung Pura. The research was conducted from March to June 2019.

2.2 Method of data collecting
The survey method was used to collect data in this study. The survey research process is described as a process of collecting data from respondents through questionnaires.

2.3 Sampling method
The random sampling method was used in this research. This was conducted on a population of fishermen numbering up to 391 people.

2.4 Data collection instrument
The primary data were obtained directly from the study respondents who provided answers to the questionnaires. While administering the questionnaires, explanations were made to the respondents on the questions for proper comprehension and interpretation.

According to Stone (1978), the technique of collecting data directly through field survey gives better results compared with the mail survey. This is due to the fact that it minimizes the difference that could result in interpretation between the researcher and the respondent. In addition, field survey is better because it requires immediate action when it comes to providing responses.
2.4.1 Observation
A direct observation was carried out on the field to look at the condition of the people in the East Coast of North Sumatra, based on the research questions.

2.4.2 Interviews and questionnaires
The interviews were conducted by directly asking the respondents questions that have been distributed to them in advance in the form of questionnaires. The selection of respondents was based on the proportional allocation using on demographic criteria such as ethnic, religious and educational level.

The nature of questionnaires given to the respondents were the closed and open ended types. Multiple choice questions prepared using a Likert scale format allow the respondents to answer the various levels of questions (Babbie, 1979: 118). Possible scores on the Likert scale was between 1 and 5 described as follows:
1: Strongly disagree
2: Disagree
3: Indifferent
4: Agree
5: Strongly agree

2.5 Data analysis method
The descriptive quantitative analysis was used to achieve both the first and second objectives. This was conducted through the identification and analysis of the pattern of food consumption (rice and non-rice) in the research area considering the PPH as well as the energy needs sourced from domestic foods. The resulting output is a tabulation of data describing the overall food consumption patterns of the selected sample.

Regression analysis technique which combines aspects of the socio-economic factors and environmental culture was used for the main analysis. The equation is as follows:

\[ Y = a + b_1 + b_3 b_2 X_2 X_1 + X_3 + X_4 + b_4 e \]  

\[ X_1 = \text{Construct Economy} \]
\[ X_{11} \ldots X_{15} = \text{Economic Indicators} \]
\[ X_2 = \text{Social Construct} \]
\[ X_{21} \ldots X_{25} = \text{Social Indicators} \]
\[ X_3 = \text{Construct Culture} \]
\[ X_{31} \ldots X_{34} = \text{Cultural Indicators} \]
\[ Y = \text{Behavior Food Consumption} \]

3. Results and Discussion
3.1 Research location overview
Bubun is among the villages in the district of Tanjung Pura. It is where the indigenous population displacement from Malaysia / Pulau Penang came through the Straits in the fifteen century. Some families who came from Penang located suitable locations more feasible for settlement.

The village experienced in 1970, leaving many rural lands eroded and submerged in seawater. Then in 1971, the Regional Government built new settlements located at the south of Tapak Kuda village but did not last as abrasion occurred again in 1979.

Currently, the native tribe who inhabit Bubun are the Malays. Other tribes inhabiting the village include: Java, Karo, Simalungun, and Aceh. Also, the majority of the people there are Muslims.
Bubun is one of four villages in the outlying district of Tanjung Pura bordering the waterway. The three other villages are Tapak Kuda, Langkat Kwala and Kwala. Also, the areas immediately adjacent to Bubun village include:

| Limit | Region / Village | sub-district |
|-------|------------------|--------------|
| North | Malacca Strait    |              |
| East  | Pantai Cermin    | Tanjung Pura |
| South side | Fine Nets     | Roast        |

Data source: processed secondary, 2018

The village has a total area of ± 3300 Ha in which the residential area is just ± 60 Ha. The remaining parts are private estate oil palm plantations. The capital city is about is quite far from the village, about ± 18.50 km apart and can be traveled by land lasting about 2-3 hours.

The population of the village in 2016 was 1,824 people, divided into 468 households spreading into five hamlets. This total population was an increment over the previous year with 1,785 inhabitants (2015). The following table shows Bubun population growth:

| Description | Male | Female | Number |
|-------------|------|--------|--------|
| Population in 2016 | 830  | 994    | 1,824  |
| Total population in 2015 | 811  | 974    | 1,785  |
| Percentage of progress | 0.1% | 0.1%   | 0.2%   |

Source: Secondary data processed, 2018

Considering Table 2, the percentage of population growth for both men and women equally increased. This increase in population was due to the growing number of heads of families (KK). The next table gives the percentage growth of the households in the village.

| Description | Male head of family | Female head of family | Number |
|-------------|---------------------|-----------------------|--------|
| Number of HHs in 2016 | 433  | 35       | 468    |
| The number of KK in 2015 | 400  | 31       | 431    |
| Development Percentage | 0.1% | 0.1%     | 0.2%   |

Source: Secondary data processed, 2018

Based on Table 3, the households experienced an increment in percentage growth by 0.2%. The village profile questionnaires were grouped into 2 KK - male and female. Also, special female-headed household is a family headed by a woman, who has also become the backbone of the family, for example, a widow.

One of the major problems closely related to the population number is the welfare of the villagers. These people are predominantly low income earners, hence, many of their under-age are not in school. Majority of the people are fishermen so they had little or no education, with income not sufficient enough to meet the daily needs of the family.

This chapter analyzes the results of the estimation of food consumption patterns of Bubun village, District of Tanjung Pura, Langkat. To determine the effect of independent variables on the dependent variable, the canonical method (KANOVA) was used for the purpose.
3.2 The canonical correlation analysis
According to Hair (2010), canonical correlation is a logical extension of regression analysis to correlate multiple metric dependent variables with several metric independent variables. It is also a statistical technique used to determine the degree of linear association between two sets of variables.

Table 4. Canonical Correlation

| Variable | Hypoth. SS | Error SS | Hypoth. MS | Error MS | F   | Sig. of F |
|----------|------------|----------|------------|----------|-----|-----------|
| Y1       | .11650     | 902.456  | .11650     | .64461   | .18072 | .677      |
| Y2       | .08830     | 591.892  | .08830     | .42278   | .20886 | .655      |
| Y3       | .01388     | .00000   | .01388     | .00000   | .000   | .000      |
| Y4       | 102.835    | 512.783  | 102.835    | .36627   | 280.761 | .116      |

Source: primary data processed, 2018

Based on Table 4 above, the significant values of variables Y1, Y3, and Y4 are greater than 0.005. Therefore, it could concluded that the age of the dependent variable (Y1), education (Y2) and marital status (Y3) strongly influence the independent variable.

| COVARIATE | B           | Beta | Std. Err. | t-Value | Sig. of t | Lower -95% | Upper       |
|-----------|-------------|------|-----------|---------|-----------|------------|-------------|
| x1        | -.10336356515 | -.1176803049 | .60569 | 1.70654 | .110      | -2.33271 | .26544      |
| x2        | -.3228834827  | -.5727891598 | .30182 | -1.06979 | .303      | -.97022 | .32445      |
| x3        | .6254922308   | 1.0662730863 | .33748 | 1.85344 | .085      | -0.9932 | 1.34931     |
| x4        | .4603532532   | .7655537014 | .63196 | .72845  | .478      | -.89507 | 1.81577     |
| x5        | 1.7649437097  | 2.9396412548 | .99767 | 1.76906 | .099      | -.37485 | 3.90473     |
| x6        | -.4446266890  | -.6739337861 | .40276 | -1.10394 | .288      | -1.30847 | .41922      |
| x7        | .9839563038   | .6999124760 | .50456 | 1.95013 | .071      | -.09822 | 2.06613     |
| x8        | -.0420015299  | -.0601529079 | .48208 | -.09252 | .928      | 1.07856 | .98936      |
| x9        | .4331020309   | .4748562274 | .49052 | .88294  | .392      | -.61896 | 1.48517     |
| x10       | -.2903762649  | -.5223142513 | .24443 | -1.18797 | .255      | -.81463 | .23388      |
| x11       | .1866253919   | .3225812052 | .27331 | .68284  | .506      | -.39956 | .77281      |

Dependent variable... Y2

Source: primary data processed

Based on the above table, variable Y2 (education) had the major effect on X10 (social institutions) in the consumption patterns with sig. of t of 0.928 > 0.05 (at 95%) with lower value of -1.07856 and upper value of 0.98936.
Considering the above table, variable Y3 (marital status) greatly affect X14 (food typical local resources) in consumption patterns of Bubun village with sig. of t of 0.996 > 0.05 (at 95%) with lower value of -1.78592 and upper value of 0.28856.

Based on the above table, variable Y4 (tribe) did not affect any variable in consumption patterns considering the fact that the sig. of t was 0.00 < 0.05 (at 95%), also with lower value of 0.000 and upper value of 0.000

4. Conclusions and Recommendations
4.1 Conclusion
1. The socio-economic characteristics of Bubun village, Tanjung Pura district, Langkat, were below average as the household income per day was IDR 57,853/day, the average family size was five people, the average age of housewives was 45 years, and the average level of education of 9 years.

2. The variables such as age, education level of housewife, marital status and ethnicity significantly affected the household food consumption behavior either totally or partially.

4.2 Recommendations

1. The government at the local level should provide socialization on the importance of varied and balanced food. This is expected to improve the welfare of the citizens in terms of actual food consumption levels and PPH.

2. There is need for further research to examine the actual picture of household food consumption in other areas, compare food consumption patterns between rural and urban areas, to examine the description of food consumption patterns among several ethnic and also analyzes the factors in addition to the above factors to see the effect on the actual food consumption of the households.

References

[1] Auliana R 1999 Nutrition and Food Processing Adi Karya Nusa Cita Yogyakarta
[2] Beni Wahyudi, Government Encourages Traditional Food. Mind CyberMedia (downloaded on May 8, 2005)
[3] Fagi A M, Irsal L, M Syam 2002 Rice Research Challenge National Food Security. Rice Research Institute, IAARD.
[4] Hutabarat B E, Pasandaran 1987 Journal of Agricultural Research & Development. Vol.VI January 1987 Research and Development Agency, Ministry of Agriculture. Hal.14-17.
[5] Hanafie R 2004 Habitat Journal of Brawijaya University Vol. XV No. 2 of June.
[6] Hardinsyah, Martianto D. 1994. Assessing the Adequacy of Energy and Protein Quality Assessment of Nutrition and Food Consumption. GMSK Department of IPB, Bogor.