Examining Factors Affecting the Food Expenditure in Indonesia

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ABSTRACT

The aim of this study is to analyze the effect of Gross Regional Domestic Product, Human Development Index, and the number of family members on the food expenditure in Indonesia. Due to its important role for the family as well as the community as a whole, managing food expenditure is very important. The management of food expenditure is very important. If the main priority of the Indonesian towards food is very high compared to the expenditures on other things such as travel, saving, or education, it is feared that the quality of their human resources tend to decline. Thus this research is important. The research explores the three factors from a sample population of 34 provinces in Indonesia in 2015. The causal research was employed and the cross-sectional method was used in this research to gather the data. Also, this research using secondary data from the Central Bureau of Statistics of Indonesia. The result of statistical analysis applying multiple regression shows that the Gross Regional Domestic Product has a positive influence on Food Expenditure. In contrast, the other factors such as the Human Development Index and the number of family members have no significant effect on food expenditure.

Keywords
Food Expenditure, GRDP, HDI, Family Members

1. BACKGROUND

The consumption level in household expenditure is divided into two categories, food and non-food [1]. Food is the most basic needs for a human being as it can improve people’s quality and productivity [2]. Furthermore, due to the limitation of incomes, food becomes the most substantial expenditure for most of developing countries [3]. Food is important of human need and consumed in large number in developing country such as Indonesia. The proportion of household food consumption expenditure is often used as a benchmark determinant of the welfare level [4]. It is assumed that welfare increases if the percentage of public food consumption expenditure also increases compared to total expenditure, especially in urban areas[5]. It will continue to improve as long as incomes are rising and will stop at the saturation point when the number of needs already fulfilled [6]. Furthermore, personal characteristics and situations such as desire, the standard of living, likes can also affect the expenditure of a family [7]. The further level of education, lifestyle, food variety, and consumption patterns are also affecting the consumption [8, 9]. This literature indicates that there are other factors besides income that can affect expenditure of food in society. The average of expenditure per capita per month in Indonesia is increasing every year, it is presented in the following Graphic 1.1 Average Per Capita Monthly Food Expenditure in Indonesia 2011-2016:

[Graphic 1.1 Average Per Capita Monthly Food Expenditure in Indonesia 2011-2016
Source: Central Bureau of Statistics of Indonesia]
The authors assume five factors affecting food spending in Indonesia. First, the Gross Regional Domestic Product (GRDP) which is the total value added of all business units or the total amount of the final goods and services produced in an area [10]. Second, the Human Development Index (HDI) that contains the level of one's life expectancy, level of education or knowledge owned, and living standards that lived[11]. Third, the number of family members of whole people who live and eat from one kitchen [12].

This study is conducted to provide benefits for all readers and also businesses, given the large of food consumption expenditure in Indonesia. Based on the explanation, this study aims to determine which factors that influence food expenditure per capita per province in Indonesia. Therefore that food expenditure can be controlled more effectively. Excessive food expenditure will lead to low quality of human resources. Especially when not offset by spending on something useful in the future such as savings, insurance, or education.

2. LITERATURE REVIEW

2.1 Household Consumption Expenditure

The pattern of household consumption is one indicator of household welfare[13]. According to Bhakti [11], the use of food expenditure on all household expenditures can provide a picture of the welfare of the household. Households own the factors of production, such as labor, land, capital, and entrepreneurship. The household sells or manages those factors to obtain remuneration or household income. The creation of the capital can improve the production. Revenue is also used for the capital inflator element derived from household income minus expenditure for consumption is called saving. The saving allows the creation of capital that can enlarge the capacity of the economy's production. However, it will work if the food supply is guaranteed. Thus, the food consumption can be increased.

The enhancement of spending food consumption leads the increase of aggregate demand. The household demand happens because of the needs for increased production and creates the wages and profit. This spending household on goods is one of the elements of aggregate demand. The different household incomes result in varying levels of consumption. At low-income levels, consumption expenditures are spent on basic needs such as clothing, housing, fuel, etc. to meet physical needs, but food consumption is the most crucial factor as food is the main item for continued survival. Food consumption can be a benchmark for national economic growth. Based on Engel's Law in Chakrabarty and Hildenbrand [14], the more significant the proportion of total expenditure that must be devoted to the provision of food, so they include low-income families. Engel states in Bhakti [11], if income tends to increase, the proportion of expenditure on food falls despite the actual increase in value. So it can be concluded when income rises, household expenditure remains unchanged, but only increases smaller than income increase.

2.2 Gross Regional Domestic Product

GRDP is one of the key components to create the consumption because it determines the household buying decision. Gross Regional Domestic Product (GRDP) is the amount of added value of all business units or the total cost of final goods and services that describes the ability of a region in managing its natural resources [10]. According to price applies GRDP also used to know the ability of economic resources, shift, and economic structure of a region, whether based on actual price or constant price. According to actual price (current price), GRDP shows by using the market price in the current year in the calculation of additional values of goods and services, while according to constant price, it shows by using applicable/constant price during a certain year as a basis for the additional values of goods and services [15].

The resulting GRDP value depends on the potential state of natural resources and adequate production factors [16]. The higher the potential of a region as well as production factors that support the resulting GRDP value will be high, although each district would have the shortcomings to deal with it. So that required cooperation between business people and the role of government to reach the maximum GRDP value. This will further change the pattern of public consumption in the fulfillment of needs [11]. Finally, it will also affect the level of food expenditure.

2.3 Human Development Index

Human Development Index (HDI) is a measure of the progress of a country. This statement supported by Bhakti [11] said that HDI as a development indicator which is a benchmark of country performance in achieving its development. Supported by Pratowo [17], HDI represents a composite index calculated as a simple average of several dimensions that describe the basic human capabilities of expanding choices. The HDI can also be used as the element of making policy choices or answering how two countries with same Gross National Income rate per capita have different human development result [18].
2.4 Number of Family Members
According to Ida [19], the number of family members is the total number of household members who live and eat from one kitchen with a group of people who are included in the labor group. The number of family members strongly determines the number of family needs. Families with a large number of members will be followed by the many needs that must be met. According to Engel’s original research [20] described the connection between income and family size in influencing household expenditure. Supported by other researchers Ghebawi and Sherif [21] have found that that income and household size are important factors affecting the amount of money spent on the three examined food groups (rice, fish, and meat).

The food spending on household consumption is affecting the poverty and inequality. According to Siregar and Wahyuniarti [22], the population has a positive effect on the poverty level of a region. This happens because of the increasing number of people who have low quality so that the burden of development.

3. RESEARCH METHOD
This study uses causal research to understand the causal causes of several variables of study [23, 24]. Researchers conducted literature study using external secondary data on Human Development Index, Gross Regional Domestic Product, and the number of family members affected food consumption level in Indonesia in 2015. The source data are taken from publication media namely Central Bureau of Statistics of Indonesia. Statistical analysis of this study used to test the influence of simultaneous or partial independent variable to the dependent variable. Measuring of this causal research is used multiple regression statistical analysis. Multiple regression equations are illustrated below:

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_nX_n \]

Explanation:
- \( Y \) = Dependent Variable
- \( a \) = Predictor of \( \alpha \) intercept (cutting point)
- \( b \) = Predictor of \( \beta \)
- \( X_i \) = Independent Variable

The research model in this research is as follows:

Table 3.1 Research Model

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Expenditure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRDP</td>
<td></td>
<td></td>
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<tr>
<td>Number of Family Members</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the research model above, this research hypothesis is as follows:

H1: Human Development Index dimension has a positive effect on food expenditure.

H2: Gross Regional Domestic Product dimension has a positive effect on food expenditure.

H3: The number of family members dimension has a positive effect on food expenditure.

4. ANALYSIS RESULTS AND DISCUSSION
This study covers the Indonesian population divided into 34 provinces as a source of data collection or sample. Then the method used is not-probability sampling in the form of juice sampling. This study was conducted to test the relationship between independent variables and one dependent variable metric, then the method of analysis used is multiple regression. This analysis can explain how the effect of simultaneous or partial independent variable to the dependent variable. In this study, independent variables consisting of Gross Regional Domestic Product, Human Development Index, and the number of family members influence on food consumption level in Indonesia in 2015.

Multiple regression analysis is an analytical method used to find out how is the relationship between two or more independent variables to the dependent variable. This analysis uses a 95% confidence level. Here are the results of multiple Here are the results of multiple regression analysis of this study:

Table 4.1 Results of Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>477292.372</td>
<td>0.155</td>
</tr>
<tr>
<td>HDI</td>
<td>-922.559</td>
<td>0.786</td>
</tr>
<tr>
<td>GRDP</td>
<td>0.002</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of Family Members</td>
<td>-14349.297</td>
<td>0.684</td>
</tr>
<tr>
<td>F-statistics</td>
<td>11.825</td>
<td>0.000</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.496</td>
<td></td>
</tr>
</tbody>
</table>
The data above shows that the value of Adjusted R Square is 0.496. This data means that 49.6% of food expenditure per capita influenced by HDI, GRDP, and the number of family members. While the other 50.4% influenced by other factors. Adjusted R Square value has taken into account the variant factors of each independent variable as well as the number of samples to be more accurate.

Testing the model using the F-test is used to determine whether the model used by researchers is a model that is fit or not by empirical data. The value of F-statistics above is 11.825 greater than F table (2.56) and significant. These results indicate that the HDI, GRDP, and number of family number affect food expenditure variables per capita.

4.1 The Influence of Gross Regional Domestic Product on Food Expenditure

Gross Regional Domestic Product (GRDP) can describe the ability of a region in managing its natural resources. GRDP is the amount of added value generated by all business units within a particular area. Based on the above data, the significance value of GRDP is less than 0.05. This statistical analysis describes the GRDP factor as having a partially significant effect on the per capita food expenditure of a province. Each value of GRDP increases by 1% then the amount of food expenditure will rise by Rp0.002 assuming other factors are constant. In 2015, Indonesia's GRDP value reached Rp1,656,526,480 while in the previous year it only reached Rp1,562,342,540. This shows that there is an increasing demand from the community, one of them is food. The province with the highest GRDP value is DKI Jakarta, which is Rp195,455,330. Meanwhile, the province with the lowest GRDP value is East Nusa Tenggara Rp14,880,850 [15]. The gap between those values is due to the availability of basic infrastructure and facilities, economic problems, the quality and quantity of human resources and geographical constraints. Jakarta is located in the western part of Indonesia which is the center of development, while East Nusa Tenggara is located in the eastern part of Indonesia with limited access to Capital City and slow development. Comparison of development achievement between Western Indonesia and Eastern Indonesia is seen from the contribution of Gross Regional Domestic Product (GRDP) against National GDP. The contribution PDRB of Western Region of Indonesia in the economy reaches 80 percent of the total Gross Domestic Product (GDP) of Indonesia [25]. The inequality is inseparable from the quality factor of its human resources.

Relating to the value of the resulting GRDP relies on the state of potential natural resources and adequate production factors [16]. The more potential a region, as well as production factors that support the resulting GRDP value, will be high. Banerjee and Shivani [26] stated that economic development leads to capital accumulation. This accumulation takes place through the generation, realization, and reinvestment generated through the fixed capital with labor. Capital formation creates jobs that provide motivation for production. However, this way of development can be maintained only if the supply of food is sufficiently assured, thus the quality of human resources increases. This results in an increase in food consumption. GRDP has a significant effect on food expenditure because the higher GRDP will try an increase in food expenditure in a province. The rise in GRDP will be directly proportional to the development of added value by all business units within a province.

4.2 The Influence of Human Development Index on Food Expenditure

The Human Development Index is a benchmark of the extent to which human development in a region. Based on the above data, the significance value of HDI is 0.786 > 0.05. This explains that the HDI factor has no significant partial effect on the per capita food expenditure of a province. Each HDI value increases by 1% then the total food expenditure will decrease by Rp922,559 with the assumption that other factors are constant. Relating to the value of HDI Indonesia which has reached the medium category [27]. According to Suhariyanto [28], there are several categories of HDI itself: 1) HDI < 60 low categories, 2) 60 ≤ HDI < 70 medium categories, 3) 70 ≤ HDI < 80 high categories, 4) HDI > 80 category is very high. The Central Bureau of Statistics, in 2015 reports the value of HDI Indonesia reached 69.55. With these achievements, Indonesia can be declared as a country with medium grade HDI value. Provinces with high HDI scores achieved by eight provinces include Riau, Riau Islands, DKI Jakarta, DI Yogyakarta, Banten, Bali, East Kalimantan, and North Sulawesi. The province with the highest HDI value is DKI Jakarta reached 78.99. While the low HDI category only consists of one province, namely Papua with a value of 57.25. While the other 25 regions are categorized as being.

In 2015, Indonesia's human development status has increased [29]. Life expectancy at birth reaches 70.78 years old school expectation 12.55 years mean school years equal to 7.84 years, especially per capita expenditure level per person per year reach Rp10,150,000 or Rp845,833,333 per month. Even though, the value of Indonesia's HDI is still below the world average of 71.05[25]. Then, in improving
the quality of human life, it takes effort by the government with various policies in terms of health, education, and employment. Thus, the good HDI not only on food expenditure but also can be attributed to several things including people's income allocated to their top priorities such as education and health. Thus, the unhealthy HDI on food expenditure can attribute to several things including people's income is allocated to their main priorities such as education and health. Proven on the value of HDI Indonesia increased from the previous year. Food expenditures are likely to grow, but not significantly. This is under the Law of Engel where the higher the quality of family life the lower their expenses, although the actual value increases [14]. Therefore, in this study HDI factor does not significantly influence the level of food consumption in Indonesia.

4.3 The Influence of Number of Family Member on Food Expenditure

Families with a large number of members will be followed by the many needs that must be met. According to Siregar and Wahyunarti [22], the population has a positive effect on the poverty level of a region. Based on the above data, the significance value of the number of family members is 0.684 > 0.05. This describes the fact that the number of the family members factor has no significant partial effect on the per capita food expenditure of a province. Each value of the number of the family members increases 1% then the amount of food expenditure will decrease by Rp14,349.297 with the assumption that other factors are constant. The highest number of family members achieved by Maluku which is 4,8. In contrast, the province with the lowest number of family members value is DI Yogyakarta 3.3. This happens because consumers are eager to save their income in the bank rather than spending on meals or allocating funds to insurance for members of a family with a disability or elderly. Today's younger denominational people are more aware of the importance of storing funds in bank accounts than the older generation, thereby impacting the size of family spending. The increasing number of people who have low quality so that the burden of development. Similarly, the number of children who insured and family members who are disabled or elderly will have an impact on the size of a family's spending. In the case of expenses when insufficient income or lack of supporting factors such as the number of family members or other factors resembling those factors does not significantly affect food expenditure because their expenses will be limited by the income generated by that family [30].

5. CONCLUSION

Multiple regression analysis gives a result that simultaneously Human Development Index factor, Gross Regional Domestic Product, and the number of family members have a significant effect on per capita food expenditure. However, partially these factors have different results. Only the element of Gross Regional Domestic Product has a considerable impact on food expenditure. Meanwhile, other factors individually did not have a significant effect. Gross Regional Domestic Product (GRDP) relates to the amount of added value generated by business units within a region. The higher the GRDP value, the higher the public expenditure on food. Areas that can produce high GRDP values then it can be said that the region can manage its natural resources well. However, the higher the expenditure is devoted to food then the quality of families in the region is not good enough. Therefore, the government needs to regulate the GRDP level of a region so that people do not specialize more expenditures on food. However, they can allocate more expenditure to education, healthcare, savings, etc. as the development of the community in the future.

Secondary data that used from Central Bureau of Statistics of Indonesia 2015 in this study allow the limitation, because there is a possibility of food expenditure changes. The future research can explore the latest market from latest secondary data for analyzing the market. It is creating newest research more accurate and can be used better for the society, student, businesses, and also government. Secondary data that used only one year from Central Bureau of Statistics of Indonesia 2015 allows the limitation because there is a possibility of food expenditure changes. The future research can explore the latest market from latest secondary data for analyzing the market. It will create newest research more accurate, society, student, business, and also government can use it better.

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