

The Effect Of Government Expenditure On Education Performance In NTB 2010-2016

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Abstract: This study aims to evaluate the role of government on education with a logic model framework. The logic model as an evaluation tool provides a logical framework in assessing the role of government. The tools reflected a logic reason the use of inputs in the form of government expenditure on health toward outcomes in the form of health index. This study uses quantitative methods with data in the form of unbalanced panels from 10 districts/cities in NTB in 2010-2016. The independent variable is the government expenditure on health and the control variable is household consumption expenditure while the dependent variable is the health index. The analysis is done by panel regression and the estimation method is random effects. The results of this study that government expenditure on education does not affect the education index.

Index Terms: Government Expenditure, Logic Model, Health Index.

1 INTRODUCTION

The government has a role in influencing the economy. The government has the role of allocation, distribution, and stabilization. The economic consequences of these roles can influence various economic variables. The role of the government is manifested in various forms of policies and programs/activities. Each policy has a different purpose and its impact on the economy also varies. The form of policy will be reflected in the budget allocation issued. The role of the government will only be effective if it is supported by a system of good governance. One good government can be seen from the accountability of the performance of its government agencies. Performance accountability of government agencies maintains that governance is oriented towards achieving results/objectives. Therefore, the use of the government budget requires to use the principle of performance-based budgets. In the sense that the use of government budgets must be able to achieve the set targets/objectives. To assess the performance of the government, performance measurement is carried out to assess accountability or accountability for the results achieved from the use of the budget. (KemenpanRB, 2016) Government agencies that are considered accountable or whose performance accountability is "good" are agencies that are based on the evaluation results that have a minimum score of > 60 or with the title "B" (Good). The better evaluation results indicate the better the level of effectiveness and efficiency of budget use compared to the achievement of its performance and the better the quality of the development of a culture of bureaucratic performance in the agency. (KemenpanRB, 2016)

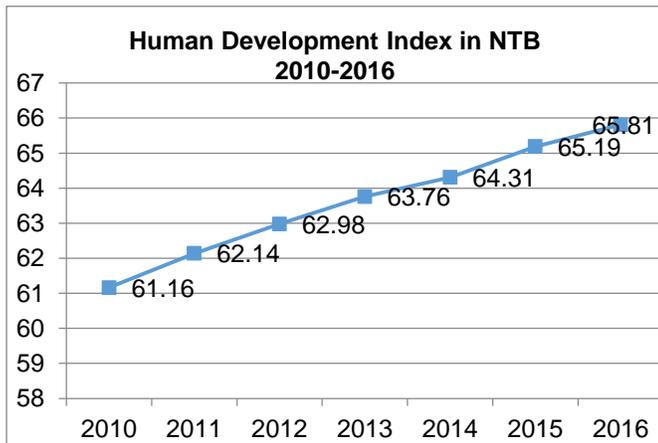
Table 1.1 Percentage of Government Agencies whose accountability for performance is "good" on a national average:

	Province	City/ Regency (%)	A score of accountability for Government Institution in NTB
2010	31.03	3.31	-
2011	63.33	12.22	-
2012	75.76	24.37	CC
2013	84.85	36.56	-
2014	87.88	44.9	CC
2015	50	8.58	CC (58,65)
2016	64,71	14,53	B (60,64)

Source: processed from LAKIP Kemenpan RB,
www.menpan.go.id

Government agencies that are considered accountable or whose performance accountability is good according to (KemenpanRB, 2015) are agencies that are based on the results of the evaluation to obtain a minimum predicate of "B" or "Good". Different from the year before 2015, that is accountability, which is good if you get a minimum title of "CC" or Good enough ". (KemenpanRB, 2014). From table 1.1 it can be seen that the percentage of achievement of accountability on a national average for provincial and district/city governments is still relatively low. The lowest is achieving good categories, namely at the district/city level. The low level of accountability indicates that the regency/city government is not able to carry out the administration well, accountably and is oriented towards achieving results. Likewise, the condition of the dominant NTB (West Nusa Tenggara) Province government gets a CC score, and only in 2016 can it increase to B. The low-performance accountability of government agencies can be an early warning for not achieving policy objectives taken. In this case, performance-based budgeting that wants the use of the budget to provide optimal results is indicated not to be achieved with the low-performance accountability of government agencies. So that this needs to be studied and evaluated to what extent the role of the government can have an outcome on regional development. Evaluation of the outcome of government role can be done one of them with a logic model framework. The logic model framework can describe the relationship between the use of resources used and the outcome. The logic model is one of the rational approaches in making programs for the government that are able to provide a description of the logical relationships from the input, process, output, outcome and impact phases. Logic models provide logical thinking frameworks related to the theory of change and realistic concepts of the use of resources in order to be able to provide the expected results/impacts. Government agencies use performance indicators as a measure of the success of achieving outcomes. One of the better indicators to describe the results of development in an area is using the human development index (HDI). The human development index is simple but is able to provide an overview of the development outcomes of 3 aspects, namely healthy living and longevity reflected in the health index, knowledge reflected in the education index, and decent living standards reflected in the expenditure index. Development in these three aspects makes humans the targets of development. In addition, these three aspects are built on the basis of human needs. So that these indicators are relevant and suitable as a benchmark for

development. As a final measure, the three aspects are formed in the human development index compiler indexes which consist of health index, education index, and expenditure index. In the education sector, you can use an index in the form of an education index. The condition of the human development index in NTB (West Nusa Tenggara) from 2010-2016 continues to increase. As shown by the following graph:



Graph 1 NTB Human Development Index 2010-2016
Source: processed from BPS data

From the graph shows that the human development index continues to experience improvements from year to year. The increase in the index shows an improvement in development in NTB including on the forming side, namely in terms of education. Given the fact that government accountability at the district/city level is still low, the question is that can the role of government agencies have a real influence on improving human development (human development index). With the low accountability of the municipal district government agencies, it actually brings the presumption that the role of the government becomes ineffective and does not have an impact on development. Musgrave and Rostow argue that in order to achieve economic growth, government expenditure is the main determinant and driver. They propose that countries grow like organisms and make decisions for the social welfare of citizens. The provision of basic social facilities and infrastructure such as water, roads, energy, security, and sanitation must be provided by the public sector. When economic growth begins, public spending increases towards the development of human resources such as health and education needed to sustain economic growth (Agboro and Edema, in (ADESIYAN & Rogers, 2016). The government basically has a role that helps improve public health. However, looking at some of the facts that the regency/city government in the national average does not perform well, it raises the question whether the role of the government really can affect the development of education. So it needs to be further evaluated regarding the development impact of the government's role. One that can be done is evaluating the framework of the logic model. Impact evaluation in the framework of the logic model can connect input in the form of resources (government expenditure) used to run the program/policy, to the results (outcomes) in the form of expected performance indicators. Given that the indicators used by each district/city vary so much that in this case the education index is used as a performance indicator. From the

various explanations above, this study tries to implement the framework of the logic model empirically. The role of government is shown in the form of the use of inputs in the form of government expenditure. Given that government expenditure has several classifications, in this study it uses government expenditure based on functions. In line with the performance indicators used in the form of a composite index forming a human development index. So that this study uses government spending on the education function as a factor that influences the education index. Thus, in this study, the authors conducted an evaluation of the impact of development carried out by the NTB regional government in the framework of a logic model to be able to see the effect of input in the form of government expenditure on health functions as evidence of the government's role in performance indicators as a measure of success in the education index. So this study raises the title "Analysis of the Effect of Government Expenditures on Education Indexes". This study aims to determine the influence of input (input) in the form of government spending on education in the achievement of education outcomes in West Nusa Tenggara (NTB) in 2010-2016.

2. LITERATURE REVIEW

2.1 Logic Model

The logical model according to (Milwaukee Public Schools Research and Development, 2014) is "a visual representation of a reasonable and thoughtful method of how a program will work under certain conditions to solve identified problems. This is a visualization of what a program will do and what it wants to achieve. The purpose of the logic model is to show stakeholders such as administrators, line staff, funders, and other fundamental reasons for certain programs. In addition, he identifies the resources needed for implementation and the expected effects of implementation. A well-made logic model shows, in a simple way, common sense, the relationship between the underlying rationale and evaluation elements. A logic model is a systematic and visual way to present and share your understanding of the relationship between the resources you have to operate your program, the activities you plan, and the changes or results you expect to achieve. (WK Kellogg Foundation, 2004) The framework of the logic model can be seen as follows:



Hargreaves, (2015) explains that the logic model shows the relationship between planned work, which includes inputs and activities, and expected results, which consist of outputs, outcomes, and impacts. The planned work describes the resources needed to implement the program. The intended results cover all the desired outcomes of the program (Kellogg, 2004). Input is a resource used for program implementation. This includes physical and non-physical resources. This usually means human resources, funding, facilities, and equipment. Activities include important action steps needed to produce program output and also provide clear examples of what the program will do with available resources. The output is a direct and tangible product of program activities and can include the type, level and target of services to be delivered by the program (Hulton, 2007).

Results are the most important thing to measure. It is a change that occurs as a result of the activity. Results can be positive or negative, and it is recommended that the details of the impact map be good (Lawlor, Nicholls and Nietzert, 2008). There are short-term results that occur in 1-3 years, while long-term results are seen after at least 4 years. Impacts are intended or unintentional fundamental changes that occur in organizations, communities or systems as a result of program activities in 7 to 10 years (Kellogg, 2004). In planning and budgeting in Indonesia also uses a logic model framework in practice. The framework of programming and activities is derived based on the Logic Model Theory (Bappenas, 2009). The performance preparation framework starts from "what you want to change" (impact) which requires an indicator of "what will be achieved" (outcome) in order to realize the desired change. Furthermore, to achieve the outcome information is needed about "what is produced" (output). To produce this output is needed "what will be used". (Bappenas, 2012)

2.2 Performance-Based Budgeting

One of the roles of the government is manifested in the form of fiscal policies taken by the government. Fiscal policy relates to government expenditure policies. Government expenditure in Indonesia uses a performance-based budgeting system. Performance-Based Budgeting is budgeting that is based on performance planning, which consists of programs and activities to be implemented as well as performance indicators to be achieved by a budget entity (Indrawati in (Domai, n.d.)). Through performance-based budgets, the relationship between money value and performance results can be identified. It will be possible to evaluate the input sources and how they relate to the outputs and outcomes. So that the program's effectiveness and efficiency can be assessed. (Towards & Manage, 2003) The government sets strategic priorities equipped with performance indicators and targets (to improve the relationship between performance and funding) in order to achieve development targets, which are then implemented in the form of regulatory interventions and budget interventions. (Bappenas, 2012) Performance according to (Presidential Regulation of the Republic of Indonesia Number 29 of 2014) is "output/outcome of activities/programs that have been or will be achieved in connection with the use of budget with measurable quantity and quality". While performance indicators are a measure of the success that will be achieved from the planned program and activity performance". An indicator is a measure used to measure the effects of a program. Indicators tell how much progress or changes have been made to a particular goal, result, or output. (Milwaukee Public Schools Research and Development, 2014) Evaluation greatly relies on data (performance indicators) generated through monitoring during the program or project implementation cycle. Performance indicators are a simple and reliable way to document changes in the conditions of development (yield), production, or delivery of products and services (output) that are connected to development initiatives. (UNDP, 2009) Performance Indicators are a measure of the success of a program or activity (Bappenas, 2012). Performance indicators are signs that function as a measure of the achievement of the performance of an activity, program or target and goal in the form of output (output), outcome (outcome), impact (impact). Output (output) is an end product in the form of goods or services from a series of processes on development resources so that the

results (outcomes) can be realized. Results (outcome) are the conditions that want to be achieved or maintained in the beneficiaries in a certain period of time that reflects the functioning of the output of several activities in one program. Impact (impact) is a condition that you want to change in the form of development/service results obtained from achieving outcomes in several programs. (Planning et al., 2017).

2.3 Government Expenditures in the Health Sector

Government spending on health is usually interpreted to include these costs together with expenditures from the public budget. This refers to failures or market conditions where the private market cannot be expected to function at all. In this case, the public budget for the health sector is needed to provide public goods in the health sector. (Musgrove, 1996) Government expenditures in the health sector are government expenditures according to health functions that are used in the context of implementing government affairs that are the authority of the province or district/city. According to regulations (Menteri Keuangan Republik Indonesia, 2011) that expenditures based on health functions are divided into 6 sub-sections. The classification of government expenditures for health sub-functions consists of medicine and medical supplies, individual health services, public health services, family planning, health research and development, and other health.

2.3 Education Index

In 1990, aware of the importance of human development, an indicator was developed by UNDP called the Human Development Index (HDI), which can measure the welfare of society both from an economic and social dimension. The concept of human development sounds different when compared to the classical concept of development which focuses primarily on economic growth, not improving the quality of human life. (Central Statistics Agency, 2016a). The HDI is formed by 3 (three) basic dimensions:

- a. Long life and healthy life (a long and healthy life)
- b. Knowledge
- c. A decent standard of living

The Human Development Index is calculated from three indexes which describe those 3 dimensions. The indexes are namely the education index, health index, and expenditure index. Expenditure index was used to replace the GNI Index which could not be counted in city/regency level in Indonesia. Indicators for measuring knowledge (education index) are taken from the components of the expected years of schooling (HLS) and the mean years of schooling (RLS). Each HDI component is standardized with minimum and maximum values before being used to calculate the index. This standardized component will later become an education index. The Education Index is a standardized HDI component of education dimensions (expected years of schooling and mean years of schooling) with minimum and maximum values before being used to calculate HDI. The Education Index is formed from standardized indicator values in the form of expected years of schooling and mean years of schooling. The Education Index can be calculated as follows:

$$I_{HLS} = \frac{HLS - HLS_{min}}{HLS_{max} - HLS_{min}}$$

$$I_{RLS} = \frac{RLS - RLS_{min}}{RLS_{max} - RLS_{min}}$$

$$\text{Health Index} = \frac{I_{HLS} + I_{RLS}}{2}$$

Expected Years of Schooling (HLS) is the length of school (in years) that is expected to be felt by children at a certain age in the future. It is assumed that the opportunity for the child to remain in school at the following ages is equal to the chance of the population attending school per population for the same age at this time. Expected years of schooling are calculated for residents aged 7 years and over. Expected years of schooling can be used to determine the condition of the development of the education system at various levels, which is indicated in the form of education (in years) that is expected to be achieved by each child. As for the formation of index values, standardization is carried out using the value of the expected years of 0 years and a maximum value of 18 years (BPS, 2014). Mean Years of Schooling (RLS) is the number of years used by residents in undergoing formal education. It is assumed that under normal conditions the average length of school in a region will not decrease. The population coverage calculated in the calculation of the average years of school is the population aged 25 years and over. To standardize the education index value in the HDI, the minimum value for the mean years of schooling is 0 years and the maximum value is 15 years (BPS, 2014).

2.4 Demand for Good/Service

The quantity/quantity of goods requested is the number of products that the household will buy in a certain period if he can buy all he wants at the current market price. Of course, the number of products that the household finally buys depends on the number of products actually available on the market. The relationship between the quantity/quantity of goods and services requested has a negative relationship with the price of these goods/services. The law of demand reads When the price rises, the quantity demanded decreases; with the price drop, the quantity demanded increases. (Case, Fair, & Oster, 2012a) Household decisions about the number of items requested according to (Case et al., 2012a) depend on several factors, namely Price, income, wealth accumulation, Prices of other products, Household tastes and preferences and Household expectations / expectations about future income, wealth and prices.

2.5 Effect of Government Expenditures on Education Index

Education plays an important role in a country to be able to absorb technology and develop the capacity for the realization of development and sustainable growth. Human capital is a productive investment in people that includes knowledge, skills, abilities, ideas, health which often results from expenditures in education, training programs in employment, and health care. By investing both in the form of physical and non-physical, it is hoped that it will be able to increase productivity in the education and health sectors for the future. According to Schultz (1961), investment in human capital actually drives economic growth faster than other forms of capital investment. Becker (1975) also stated in his research that investment in human capital can increase income. Increased income will occur along with the activities that can improve human quality. Various activities which are efforts of human capital investment according to Becker, namely working, schooling, seeking information, increasing productive

wages. This indicates that the role of the government in providing educational facilities is very important because the greater the government expenditure on the education sector will be able to increase the quantity and quality of education. Thus the next will be followed by an increase in the HDI value.

3. Research Method

This research uses a positivist approach. Because in this study trying to provide confirmation/justification of the realities that occur by doing logical analysis and validation by basing knowledge/theory that is consistent with the information we obtain. The positivist approach to scientific inquiry is based on acceptance as the fact that the world around us is real, and that we can know about these realities (Nicholas, 2011). The place of this research is the Regency / City in the province of West Nusa Tenggara (NTB). This study took all 10 existing districts/cities. The regencies/cities are Bima City, Mataram City, Bima Regency, Dompu Regency, Sumbawa Regency, West Sumbawa Regency, East Lombok Regency, Central Lombok Regency, West Lombok Regency, and North Lombok Regency. While the research period was used, namely in the period 2010 to 2016. Data collection methods used in this study are secondary data. So in this study using data that has been published by other parties. The research data is sourced from the Central Bureau of Statistics and the Ministry of Finance. The data analysis technique used in this study is by using unbalanced panel data regression. Estimating parameters in panel data regression used random effects. The use of regression analysis in order to determine the effect of the independent variables that exist on the dependent variable. And the data used in this study is panel data because it is a combination of time series data with data between regions (cross-section). The variables of this study consist of government expenditure on education as an independent variable, household expenditure as a controlling variable, and education index as the dependent variable. The research model specifications are made in the form of the following equations:

$$IPD = \alpha_1 + \beta_1 PP + \beta_2 KRT + \varepsilon_1$$

Information:

PP: Government expenditure on education

KRT: Household Expenditures

IPD: Education Index

The educational index value is obtained through the following calculations:

$$I_{HLS} = \frac{HLS - HLS_{min}}{HLS_{maks} - HLS_{min}}$$

$$I_{RLS} = \frac{RLS - RLS_{min}}{RLS_{maks} - RLS_{min}}$$

$$\text{Health Index} = \frac{I_{HLS} + I_{RLS}}{2}$$

Information:

HLS : Expected Years of Schooling

RLS : Mean Years of Schooling

HLS min : 0

HLS max : 18

RLS min : 0

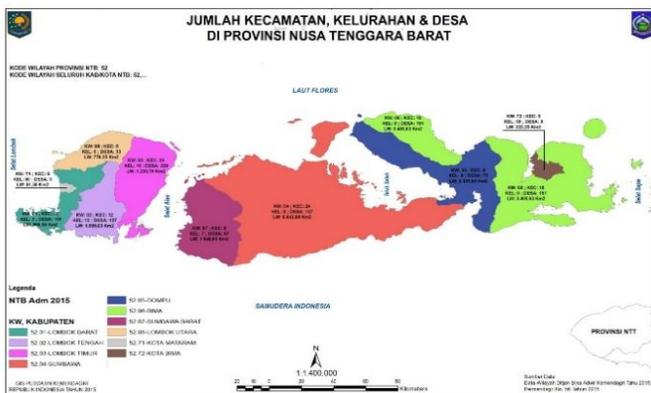
RLS max : 15

4. FINDING AND DISCUSSION

4.1 Description of NTB (West Nusa Tenggara) Province

West Nusa Tenggara based on its geographical position, has boundaries: North - the Java Sea and the Flores Sea; South - Indian Ocean; West - Lombok Strait and Bali Province; East - Strait of Sape and Province of East Nusa Tenggara. (BPS West Nusa Tenggara Province, 2017). West Nusa Tenggara consists of two islands with 10 districts/cities.

Figure 5.1 Map of the Administrative Region of NTB



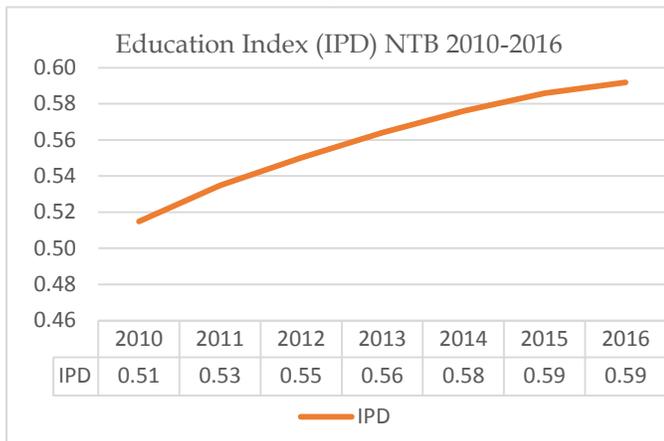
Source: (Kemendagri, 2015)

District/city areas in NTB are divided into two islands, namely:

- Lombok Island has administrative areas, namely West Lombok Regency, Central Lombok, East Lombok, North Lombok and the City of Mataram
- Sumbawa Island has 5 administrative regions namely Sumbawa, Dompu, Bima Regency, Sumbawa West Sumbawa, and Bima City.

4.2 Education Index in NTB in 2010-2016

The description of the development of the education index in NTB is shown by the following picture:



Source: Processed from BPS Data

In Figure 5.2 above shows the rate of value of the education index and expenditure in NTB in 2010-2016. The education index experiences an increase in the index each year. If further investigated about the changes in the value of the education index, it can be seen that there has been general progress at the district/city level. This is in line with the increasing value of the education index. BPS classifies the human development index value in 4 groups, namely the HDI

value of fewer than 60 means low HDI, HDI value between 60 to less than 70 means medium HDI, HDI value between 70 to less than 80 means HDI is high, and HDI value is greater than the same with 80 means the HDI is very high. The value of the HDI-forming index when compiled with these criteria, it will be seen that the district/city education index value in NTB has improved. This can be seen in the comparison map of the education index values in 2010 and 2016 compiled based on BPS groupings seen below:

Health Index 2010



Health Index 2016



Source: Geoda

Judging from the education index also seen improvements. This is indicated by the reduced number of districts/cities with a low education index, namely from a total of 8 municipal districts to only 4 city districts. From here it can be seen that the 4 municipal districts have increased their educational index values into a moderate group. While 2 cities, namely the City of Mataram and the City of Bima, which were originally in the medium category have increased to a high category.

4.3 Selection of Estimation Method

The analytical tool used in this study uses panel data regression which is processed using Stata software 14. In panel data regression analysis it is necessary to select the best estimation method. Selection of estimation method to find out whether the estimation of the model will use the common effect, fixed effect or random effect. Of the four hypotheses used in this study, four models of econometric equations will be tested. The results of extracting the estimation method for the four econometric models can be shown in the following table:

Estimation method selection test table

Chow Test		Hausman Test		LM Test	
Prob	Sig.	Prob	Sig	Prob	Sig
0.00	Significant			0.00	Significant

Source: Stata 14.0

From the four models of equations, it can be concluded that for the method that can be used is the random effect method.

4.4 Estimation and Hypotheses Testing

This section will explain the results of estimation and hypothesis testing of the equation model used. The estimation results and hypothesis testing are presented in the following table:

IPD = f (PP, KRT)			
Variable	Coefficient	T test/F test	Prob.
C	-1.461318	-12.53	0.000
PP	0.0018177	0.55	0.582
KRT	0.1316945	16.44	0.000
R ²	0.9039		
F Test		333.06	0.0000

Source: Stata 14.0

The research hypothesis examines the effect of input in the form of government expenditure on the function of education and household consumption as a control variable on the outcome outcomes in the form of an education index. This equation model can be written as follows:

$$IPD = \alpha_1 + \beta_1 PP_{it} + \beta_2 KRT_{it} + \varepsilon_1$$

Then substituted with the estimated value of the test results obtained by the equation as follows:

$$IPD = -1.461318 + 0.0018177 PP + 0.1316945 KRT$$

From the results of testing the hypothesis obtained a constant value of -1.461318 and the coefficient value for government spending on education functions (PP) of 0.0018177 with a probability value of 0.582 so that the probability is above the value of α of 5%. And the coefficient for household consumption is 0.1316945 with a probability value of 0.000 so that the probability is below the value of α of 5%. This shows that from the partial test that the government expenditure variable in the education function does not affect the education index and the household consumption variable partially influences the education index. Whereas through a simultaneous test (F test) a probability value of 0,000 is obtained which is below α of 5%. The results of the F test provide a conclusion that together the independent variables influence the dependent variable in the form of an education index. From the results of hypothesis testing for this equation model, it can be explained that government spending on the education function does not affect the education index. While the household consumption variable has a positive effect on the education index. If household consumption is zero with the ceteris paribus assumption, the education index will be achieved on average by -1.461318. If household consumption rises by one percent assuming ceteris paribus, the education index will increase by an average of 0.061164 percent. To test how well the equation model in explaining the effect of independent variables on the dependent variable R2 testing is used. From the results of R2 testing, the value is 0.9039. This shows that the government expenditure variable in the function of education and household consumption is able to explain its influence on the education index by 90.39%.

4.5 Discussion

According to (Hyman, 2011) that the government supplies a large amount of capital used in production. A country's physical infrastructure such as transportation and

environmental capital, including its schools, electricity and communication networks, and health care systems. The government also invests in human resources through programs designed to improve the skills and education of its citizens. Thus, government spending affects education. From the results of empirical testing shows a test of the insignificant influence of government spending on the function of education on the health index. This is tested from the t-test which has a probability of 0.582 which is greater than the value of α of 5%. Thus accepting H0, thus it is concluded that government expenditure on the education function does not have a significant effect on the health index. The results of empirical testing are also in line with several studies such as from the results of research (Yilmaz & Nasih, 2015) that there is no evidence for the influence of government spending on human development. Similarly, the results of research (Elumah & Shobayo, 2017) which states that the Johansen Cointegration and Error Correction Mechanism estimation model found that there was no significant effect of spending on education and human resource development on economic growth in Nigeria. In line with the results of the research from (Riphath, Setiawan, & Damayanty, 2016) that most financial performance does not have a causal relationship with HDI except for a number of proxies in several provinces. Likewise with the results of research from (Ruslan, 2017) that government spending in the field of education has no effect on the HDI. (Hakim & Sukmana, 2017) analyzed the role of government as reflected in government spending in the education sector on the Human Development Index (HDI) in 16 OIC Countries. The results showed that government spending in the education sector had a non-significant negative effect on the Human Development Index (HDI) in 16 OIC Countries. (Agustina et al., 2016) analyzed the effect of government spending on the education sector on the human development index in East Kalimantan Provinces. The results of the analysis show that the Education Sector Budget Allocation has a positive and not significant effect on the HDI.

4.6 Spatial Analysis

Local Indicator of Spatial Autocorrelation (LISA) is the identification of spatial autocorrelation locally or trying to identify the relationship between the Moran Index of one observation location and the other observation location (Lee & Wong, 2001). The global spatial autocorrelation, in this case, is the Moran index does not provide information on spatial patterns in certain regions. Therefore, information on the tendency for spatial relationships is needed in each location by determining LISA. Local Moran statistics are suggested in Anselin (1995) as a way to identify local clusters (groupings) and local spatial outliers. This operation has the same method as for Moran's global I, except that permutations are carried out for each observation in turn. The result is a pseudo-p-value for each location, which can then be used to assess significance. When indications of significance are combined with the location of each observation in Moran Scatterplot, a very strong interpretation is possible. Combined information allows for significant classification of locations as high and low-low spatial clusters, and high and low-high spatial outliers. It is important to remember that references to high and low are relative to the average variable, and should not be interpreted in the absolute sense. (Luc Anselin, Ibnu Syabri, & Youngihh Kho, 2019) In the LISA analysis, the tools used are LISA Significant map, LISA Cluster Map and Moran I 'Scatter Plot.

The three things are). (Anselin, 2005). The following will be presented the results of the LISA analysis for this study by displaying the LISA Significant Map, Moran Scatterplot and LISA Cluster Map for the health index. The results of the spatial analysis for the education index in NTB districts/cities are shown as follows:

LISA Significant Map 2010



LISA Significant Map 2016



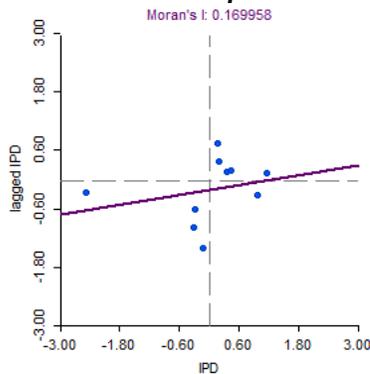
LISA Cluster Map 2010



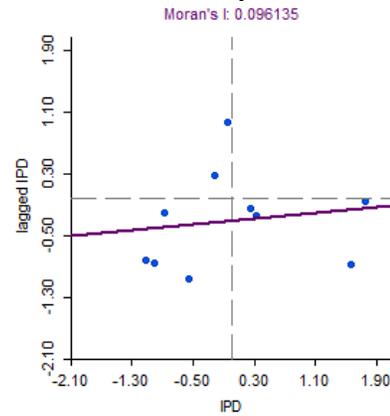
LISA Cluster Map 2016



Moran Scatter plot 2010



Moran Scatter plot 2016



Source: Geoda

Based on the Moral Scatter Plot in 2010 it was seen that there were 5 regions in quadrant I, followed by 4 regions in quadrant III and 1 region in quadrant 4. While in 2016 it was seen that there were 2 regions in quadrant II, there were 4 regions in quadrant III and there are 4 regions in the IV consciousness. Based on the Moral Scatter Plot in more detail, see the following table:

Quadrant	2010	2016
Quadrant I: High-High	Bima City, Bima Regency, Dompu, Sumbawa, West Sumbawa	
Quadrant II: Low-High		Bima Regency and Sumbawa
Quadrant III: Low-Low	North Lombok, East Lombok, Central Lombok and West Lombok	North Lombok, East Lombok, Central Lombok and West Lombok
Kuadrant IV: High-Low	Mataram City	Bima City, Mataram City, West Sumbawa and Dompu

The results of the 2010 Moral Scatter Plot show that high-high quadrant I consist of Bima City, Bima Regency, Dompu, Sumbawa, West Sumbawa. Quadrant III consists of North Lombok, East Lombok, Central Lombok, and West Lombok. And quadrant IV consists of the city of Mataram. Whereas in 2016 it was seen that in quadrant II consisted of Bima and Sumbawa Regencies. While in quadrant III consists of North Lombok, East Lombok, Central Lombok, and West Lombok. And in quadrant IV consists of Bima City, Mataram City, Sumbawa Barat, and Dompu. However, the results of the moral scatter plot must be confirmed further with the results of the LISA significance map and LISA cluster map. The results in the LISA Cluster Map image above shows that in 2010, there were 3 regions that had low-low spatial relationships, namely North Lombok, East Lombok, and Central Lombok. This means that the three regions include those with a low education index and surrounded by districts/cities that also have a low education index. And in 2010 there was 1 area that had a high-high relationship pattern, namely Bima district. This shows that Bima Regency has a higher education index and is surrounded by districts/cities that also have a higher education index. In 2016 there was a slight change in the map of Bima district, which was originally high-high in 2010, became low-high in 2016. This means that Bima districts have a low

education index and are surrounded by regions with higher education indices.

5. CONCLUSION AND SUGGESTION

5.1 Conclusion

The use of inputs in the form of government expenditure on the education function does not affect the education index in NTB in 2010-2016

5.2 Suggestion

1. Further research in order to be able to extend the year of research as well as more complete data so that it can use balanced panel data because in this study using data with a relatively short period of time and non-balanced panels
2. The government is advised to increase its role in public services again to provide health given the government's role that has not been felt to improve the health index. And it needs to improve the performance of government agencies to ensure better public services

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