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The Influence of Government Spending in Education, Health, and Economics on Indicators for Calculation of Human Development Index in Bangka Belitung Islands Province

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ABSTRACT: A country can be said to be successful in carrying out human development if its people enjoy the results of development. One of the indicators used to measure the extent to which development has affected results in a country is using the Human Development Index. In the Human Development Index there are three dimensions that are used as standardization of a decent life including the dimensions of education, health, and a decent standard of living or spending. To increase the Human Development Index based on the dimensions of education, health, and a decent standard of living, government spending is needed from the education, health and economic sectors. This study aims to analyze and determine the effect of government spending on education, health, and the economy on the indicators for calculating the Human Development Index in the Bangka Belitung Islands Province. This research uses a quantitative approach with secondary data. The analysis technique used is panel data regression with lag distribution. The results showed that there was a positive and significant effect between government spending on education in the same year and the previous year on the average length of schooling and there was a negative and significant effect between government spending on education in the same year and the previous year on the expected length of schooling. positive and significant effect between government spending on health in the same year and the previous year on life expectancy, and there is a negative and significant effect between government spending on the economy on per capita spending in the same year and in the previous year government spending on the economy is not effect on per capita spending.

KEYWORDS: Average length of schooling, Expected length of schooling, Government spending on health education and the economy, Human Development Index, Life expectancy, per capita spending.

1. INTRODUCTION

Development is a process of planned system change towards improvement which is oriented towards modernist development and socio-economic progress (Basri & Subri, 2006). To achieve sustainable development, human resources must be able to develop and optimize their capabilities. In a simple sense, development can be interpreted as an effort or process to make changes for the better.

A country can be said to be successful in carrying out human development if its people enjoy the results of development. One of the indicators used to measure the extent to which development has produced results in a country is the Human Development Index (HDI). The Human Development Index (IPM) is a composite index to measure human development achievements based on a number of basic quality of life components (BPS, 2015). The standard of a decent life according to the Human Development Index is divided into three dimensions, namely education (measured by the average length of schooling and expected length of schooling), health (measured by life expectancy), and a decent standard of living or expenditure (measured by adjusted per capita expenditure). with purchasing power) (BPS, 2022).

Human development is considered important for the government, therefore the efforts made by the government in increasing the value of the Human Development Index, namely by using fiscal policy instruments, in the sense that government spending is linked to the dimensions of the Human Development Index, namely government spending in the education sector, government spending in the sector health and government spending in the economic sector. According to the Central Bureau of Statistics, 2022 in Indonesia the Human Development Index is strategic data because apart from being a measure of government performance, the Human Development Index is also used as an allocator for determining funding. In this case, the government can realize an increase in the level of welfare of its people through the role of government expenditure allocation (Mongan, 2019).

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The Bangka Belitung Archipelago Province is one of the provinces where the development of the human development index has continued to increase in recent years where government spending on sectors supporting human development such as the education, health and economic sectors has fluctuated. In this case, government spending on education, government spending on health, and government spending on the economy are of course related to each dimension used as a measure of the value of the human development index, both dimensions of education, health, and expenditure.

2. LITERATUR REVIEW

2.1 Government Spending Theory

2.1.1 Theory of Adolf Wagner

Organic theory of state is the basis of Wagner's Theory. organic theory of state is an organic theory that considers the government as an individual who is free to act independently from other people (Prasetya, 2012). Adolf Wagner emphasized that government spending and government activity increased over time. Wagner calls this tendency the law of the increasing role of government. Wagner explained that in an economy where per capita income increases, public spending will also increase proportionately, because the government is obliged to regulate the connections between people, law, education, recreation, culture, and so on. In the context of Wagner's Law, it can be seen that there are various reasons for increasing government spending, including to increase the functions of defense and security, social functions, banking and development activities.

Wagner's law can be formulated as follows:

$$\frac{PP_kP}{PPK_1} < \frac{P_kPP_n}{PPK_2} < \cdots < \frac{P_kPP_n}{PPK_n} \quad \text{.....(2.1)}$$

Information :

PPkP : Government spending per capita

PPK : Income per capita, namely GDP/population

1, 2, … n : Period of time (years)

2.1.2 Theory of Musgrave and Rostow

Rostow and Musgrave developed a development model regarding the development of government spending that linked the development of government spending with the stages of economic development, namely the initial, intermediate and advanced stages. In the early stages of economic development, the ratio of government spending to national income is relatively large. This is because at this stage the percentage of government investment to total investment is large so that the government must provide various facilities and infrastructure such as education, health, transportation infrastructure and so on.

At the intermediate stage of economic development, government investment is still needed to spur growth so that it can take off. However, at this stage the role of private investment has grown. The role of the government remains large at the intermediate stage, because the role of the private sector which is getting bigger causes market failures and also causes the government to provide public goods and services in greater quantities and with better quality. In addition, at this stage economic development causes increasingly complicated inter-sectoral relations. For example, economic growth brought about by the development of the industrial sector has led to higher levels of air and water pollution so that the government must intervene to regulate and reduce the negative effects of this pollution on society. The government must also protect workers who are in a weak position in order to improve their welfare.

At an advanced stage Rostow (1960), argues that development occurs when government activities shift from providing economic infrastructure to spending on social services such as old-age welfare programs, education programs, public health service programs and so on.

2.2 Theory of Fiscal Decentralization

According to Oates (1999), decentralization policies were implemented for the purpose of resource efficiency to support economic growth. Fiscal decentralization is a comprehensive system. Bahl (1999) reveals that fiscal decentralization can run successfully if it satisfies the conditions in which local councils and heads are directly elected. If regional heads are appointed by higher levels of government, their accountability will be upward rather than downward to the community. This resulted in the efficiency which is the core goal of fiscal decentralization could not be achieved. Other conditions necessary for the successful

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implementation of fiscal decentralization are the existence of a series of expenditure responsibilities and the authority to collect taxes, budgetary autonomy, transparency, and strict budget restrictions (Bahl, 1999). Local governments are forced to live within their means and be held accountable for the policies they make in the presence of strict budget constraints.

Law No. 32 of 2004 defines decentralization as the granting of central government authority to the regions to carry out government matters within the system of the Unitary State of the Republic of Indonesia. Decentralization has the objective of improving public services, community welfare, and inter-regional competitiveness. The direct implication of the existence of a decentralization policy is the amount of funds needed to finance the implementation of government affairs within the scope of regional authority. Fiscal decentralization is carried out based on the principle of finance follow function, namely the transfer of authority and duties to local governments and then followed by the provision of funding (Bahl, 1999). Fiscal decentralization is carried out by giving authority to the regions to collect fees and taxes as well as providing financial assistance in the form of transfers to the regions or known as balancing funds.

2.3 Human Development Index

According to the 2019 Central Bureau of Statistics, the Human Development Index is a measure of development achievement based on several basic elements of quality of life. The three basic dimensions that form the basis for the formation of the Human Development Index include longevity and healthy living, knowledge and a decent standard of living.

In calculating the Human Development Index, each component in the Human Development Index is standardized with a minimum and maximum value before calculating, the formula used is as follows:

a) Health Dimension

Longevity and healthy life are described by life expectancy (AHH), which is the estimated number of years a newborn will live if death for age is assumed to be the same for the lifetime of the infant. The following is the calculation formula for the health dimension:

$$I_{Health} = \frac{AHH - AHH_{min}}{AHH_{maks} - AHH_{min}} \quad \text{.....(2.2)}$$

b) Education Dimension

Expected Years of School and Average Length of School are two indicators used to establish and measure the educational dimensions of HDI. Average Length of Study (RLS) is the average length of education of the population aged 15 years and over. And the Old School Expectancy (HLS) means the length of formal schooling that children are expected to attend at a certain age in the future.

The following is the calculation formula for the education dimension:

$$I_{HLS} = \frac{HLS - HLS_{min}}{HLS_{maks} - HLS_{min}} \quad \text{.....(2.3)}$$

$$I_{RLS} = \frac{RLS - RLS_{min}}{RLS_{maks} - RLS_{min}} \quad \text{.....(2.4)}$$

$$I_{Education} = \frac{I_{HLS} + I_{RLS}}{2} \quad \text{.....(2.5)}$$

c) Expenditure Dimensions

The dimensions of expenditure or a decent standard of living are described through per capita expenditure which is adjusted based on the value of per capita expenditure and purchasing power parity. The following is the calculation formula for the education dimension :

$$I_{Expenditure} = \frac{In(expenditure) - In(expenditure_{min})}{In(expenditure_{maks}) - In(expenditure_{min})} \quad \text{.....(2.6)}$$

HDI is calculated as the geometric average of the health, education, and expenditure indices. These three indices are calculated by standardizing the minimum and maximum values of each index component. HDI is an indicator that shows long-term development progress. There are two aspects that need to be considered in assessing the progress of human development, namely the speed and level of achievement.

The following is the IPM calculation formula:

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$$IPM = \sqrt[3]{I_{kesehatan} \times I_{pendidikan} \times I_{pengeluaran}} \times 100 \quad \text{.....(2.7)}$$

2.4 Government Spending on Education

The education sector is an important sector whose funding comes from government spending. Government spending on education is a very basic government expenditure in human development. Education is an important part in achieving human capabilities, which are also essential for people's lives. Education is an investment that will always have an impact in the future. Education is the basic capital in economic growth and nation building. The government must allocate spending in the education sector which will be used to build educational facilities and infrastructure and invest in forming human capital. Human capital is a productive investment in people; includes knowledge, skills, abilities, and ideas (Todaro & Smith, 2011).

Government spending on education is a form of business undertaken by the government in an effort to increase national development. Education is a factor that can improve the quality of human resources in a region. The higher the realized government spending, the higher the output produced (Pambudi and Syairozi, 2019). With the existence of government spending in the education sector, all people can get access to proper educational facilities and infrastructure and can provide more equitable educational opportunities to the community so as to spur an increase in human resources through the education sector.

2.5 Government Expenditures in the Health Sector

The health sector is an important sector whose funding comes from government spending. Government investment in the health sector can be in the form of budget allocations to finance the procurement and maintenance of physical and non-physical facilities for the health sector. The government builds public facilities and infrastructure so that people get easy access to services in the health sector. With the convenience of the community getting access to health services, the community's basic needs for health can be met so that the quality of life of the community increases. By optimizing government spending, in this case particularly spending for health purposes, better quality health can be produced so that high productivity will be more easily achieved.

Government expenditure in the health sector is needed so that the quality of public health is guaranteed by allocating a number of funds to support adequate health facilities and other matters in the health sector such as medical personnel, medicines, as well as physical and non-physical development in the health sector. Capital Expenditure in the health sector is used to finance the construction of facilities and procurement of food which has an influence on the level of health. Health is an important element in human development. Improving the quality of health will encourage high community productivity (Sihaloho and Hardiawan, 2019).

2.6 Government Expenditures in the Economic Sector

Government expenditure in the economic sector is regional government expenditure issued to facilitate economic activities and activities in an area. Government expenditure in the economic sector is regional government spending spent on the transportation sector, labor, cooperatives and small and medium enterprises, investment, food security, agriculture, forestry, energy and mineral resources, maritime affairs and fisheries, trade, industry and transmigration. Government expenditure in the economic sector is one of the government's efforts to increase economic development, because the higher the expenditure in the economic sector, the better the level of welfare in a region.

2.7 Thinking Framework

The framework of thinking, namely the conceptual model examines related to the theory of various factors that are studied as important and is a basic understanding regarding the foundation of each thought from all research (Sugiyono, 2016). Based on this description, the framework of thought in this study is as follows:

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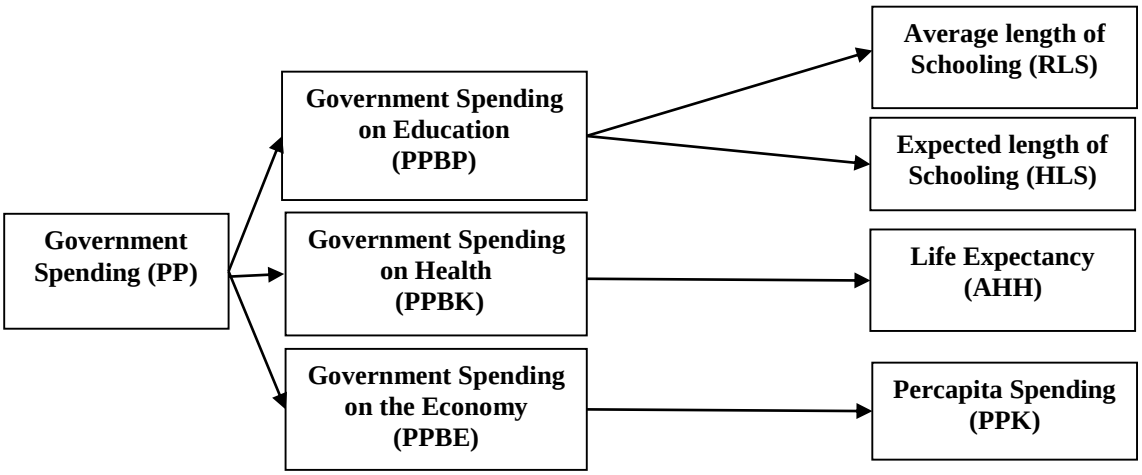

Figure 1. Thinking Framework

2.8 Hypothesis

H_1 : Government spending on education has a positive and significant effect on the average length of schooling
H_2 : Government spending on education has a positive and significant effect on Old School Expectations
H_3 : Government spending on health has a positive and significant effect on life expectancy
H_4 : Government expenditure in the economic sector has a positive and significant effect on per capita expenditure

3. METHOD

The type of research used is quantitative descriptive research. The population and sample used in this study are six districts and one city in the Bangka Belitung Islands Province with data research objects namely government expenditure budgets in the education sector, government expenditures in the health sector, government expenditures in the economic sector, average length of schooling, expected length of schooling, life expectancy, and expenditure per capita with observation time from 2015-2022, so that 56 processed data were obtained.

The analysis technique used is panel data regression using the variable lag of the previous year. Panel data is a combination of time series and cross section data. Panel data regression analysis is based on data from observations of the relationship between the two variables (Widarjono, 2017). The following is the model of the regression equation of the lag distribution panel data used in this study, namely:

$$\boldsymbol{RLS_{it} = \alpha + \beta_0 PPBP_{it} + \beta_1 PPBP_{it-1} + e_{it}} \quad \text{.....(3.3)}$$

$$\boldsymbol{HLS_{it} = \alpha + \beta_0 PPBP_{it} + \beta_1 PPBP_{it-1} + e_{it}} \quad \text{.....(3.4)}$$

$$\boldsymbol{AHH_{it} = \alpha + \beta_0 PPBK_{it} + \beta_1 PPBK_{it-1} + e_{it}} \quad \text{.....(3.5)}$$

$$\boldsymbol{PPK_{it} = \alpha + \beta_0 PPBE_{it} + \beta_1 PPBE_{it-1} + e_{it}} \quad \text{.....(3.6)}$$

Information :

RLS_{it} : Average Length of School
HLS_{it} : Old Hope of School
AHH_{it} : Life Expectancy
PPK_{it} : Expenditures Per Capita
α : Constant
$PPBP_{it}$: Government Expenditure in Education Sector
$PPBK_{it}$: Government Expenditure in Health Sector
$PPBE_{it}$: Government Expenditure in Economic Sector
i : Data Cross Section (Seven Regencies/Cities in Bangka Belitung Archipelago Province)
t : Data Time Series (2015-2022)

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β1,2,...n : Regression Coefficient
e_{it} : Error term

To test the output results of the regression analysis, there are several steps that need to be carried out including determining the panel data regression estimation model (including the Chow test, Hausman test, and Lagrange Multiplier test), classical assumption test (including normality test, multicollinearity test, and heteroscedasticity test) and hypothesis testing (including partial testing (t-test), testing and testing the coefficient of determination (R2).

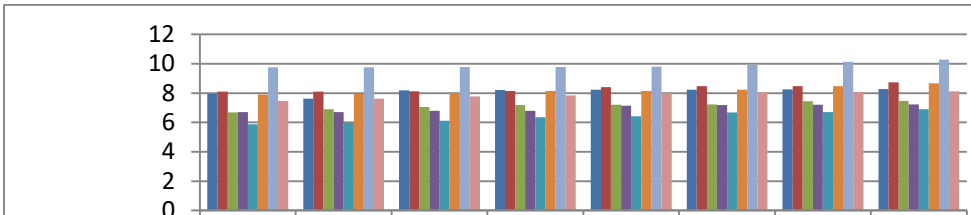
4. RESULT AND DISCUSSION

4.1 Development of Research Variables

Variables used in this study are Average Length of School (RLS), Years of School Expectation (HLS), Life Expectancy (AHH), Expenditure Per Capita (PPK), Government Expenditures for Education (PPBP), Government Expenditures for Health (PPBK)), and Government Expenditures in the Economic Sector (PPBE) consisting of six districts and one city in the Bangka Belitung Islands Province with observations from 2015-2022. The following is the development of each of the research variables:

4.1.1 Average Years of Schooling

The average length of schooling (RLS) in the Bangka Belitung Islands Province in 2015-2022 can be seen in the following figure:



	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	7.94	7.62	8.19	8.20	8.23	8.24	8.25	8.27
Belitung	8.09	8.10	8.11	8.15	8.41	8.46	8.47	8.74
Bangka Barat	6.68	6.89	7.06	7.18	7.21	7.22	7.44	7.46
Bangka Tengah	6.70	6.71	6.79	6.80	7.13	7.19	7.2	7.22
Bangka Selatan	5.88	5.96	6.12	6.36	6.42	6.67	6.71	6.89
Belitung Timur	7.91	7.95	8.00	8.14	8.15	8.22	8.47	8.67
Pangkalpinang	9.75	9.76	9.77	9.78	9.80	9.92	10.13	10.27
Bangka Belitung	7.46	7.62	7.78	7.84	7.98	8.06	8.08	8.11

Figure 2. The Average Years of Schooling in the Bangka Belitung Islands Province By Regency/City 2015-2022 (Year)
Source: Bangka Belitung in Figures, BPS Bangka Belitung, 2022

Based on Figure 2, it shows that in a period of eight years (2015-2022) the average length of schooling continues to increase every year, this increase is of course driven by an increase in the average length of schooling in 7 (seven) Regencies/Cities in the Bangka Islands Province Belitung which has also increased every year. In 2015 the highest average length of schooling occurred in the City of Pangkal Pinang and the lowest occurred in South Bangka Regency. And at the end of the research year, namely 2022, there will be no change where Pangkalpinang City and South Bangka Regency are still the regencies/cities that have the highest and lowest average length of schooling. The average increase in length of schooling in the Bangka Belitung Islands Province was 7,86 with the highest average increase in length of schooling occurring in Pangkalpinang City. Pangkalpinang City is a Regency/City in the Bangka Belitung Islands Province which has the highest average increase in length of schooling due to its more complete educational facilities compared to other districts/cities in the Bangka Belitung Islands Province.

With the increase in the average length of schooling in the Bangka Belitung Islands Province every year, it certainly has a good impact on the quality of human development, this is indicated by the increasing opportunity for the community to benefit from the importance of education as seen from the increase in the average length of schooling. The average length of schooling is used

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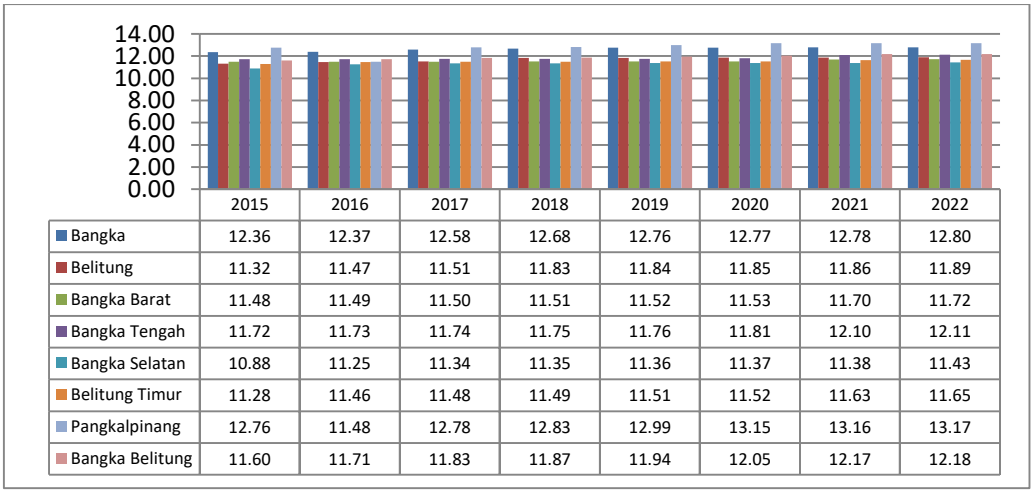
as an indicator to determine the value of the education component in forming the value of the human development index in a region. The higher the average length of schooling, the higher the level of education attained by the population, so this indicator is very important because it can show the quality of human resources.

4.1.2 Old School Expectations

The development of the Old School Expectations (HLS) in the Bangka Belitung Islands Province in 2015-2022 can be seen in the following figure:



	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	12.36	12.37	12.58	12.68	12.76	12.77	12.78	12.80
Belitung	11.32	11.47	11.51	11.83	11.84	11.85	11.86	11.89
Bangka Barat	11.48	11.49	11.50	11.51	11.52	11.53	11.70	11.72
Bangka Tengah	11.72	11.73	11.74	11.75	11.76	11.81	12.10	12.11
Bangka Selatan	10.88	11.25	11.34	11.35	11.36	11.37	11.38	11.43
Belitung Timur	11.28	11.46	11.48	11.49	11.51	11.52	11.63	11.65
Pangkalpinang	12.76	11.48	12.78	12.83	12.99	13.15	13.16	13.17
Bangka Belitung	11.60	11.71	11.83	11.87	11.94	12.05	12.17	12.18

Figure 3. The Years of School Expectation in the Bangka Belitung Islands Province By Regency/City 2015-2022 (Year)
Source: Bangka Belitung in Figures, BPS Bangka Belitung, 2022

Based on Figure 3, it shows that the Life Expectancy of Schools in 7 (seven) Regencies/Cities in the Bangka Belitung Islands Province in a period of eight years (2015-2022) tends to increase every year. In 2015, the highest long-term expectation of schooling occurred in the City of Pangkalpinang and the lowest occurred in South Bangka Regency. And at the end of the research year, namely 2022, there will be no change where Pangkalpinang City and South Bangka Regency are still the regencies/cities that have the highest and lowest expectations for school years. The average increase in expected length of schooling in the Bangka Belitung Islands Province was 11,81 with the highest average increase in expected length of schooling occurring in Pangkalpinang City.

With an increase in the expected length of schooling in the Bangka Belitung archipelago province every year, it certainly has a good impact on the quality of human development, this is indicated by the increasing length of education that will be taken by people in a region so that of course it will improve the quality of its human resources

4.1.3 Government Expenditures in the Sector of Education

Government spending on education is part of regional spending which is specific according to its function with the aim of increasing output from the education sector. The following is a picture of the realization of government spending on education in the Bangka Belitung archipelago province:

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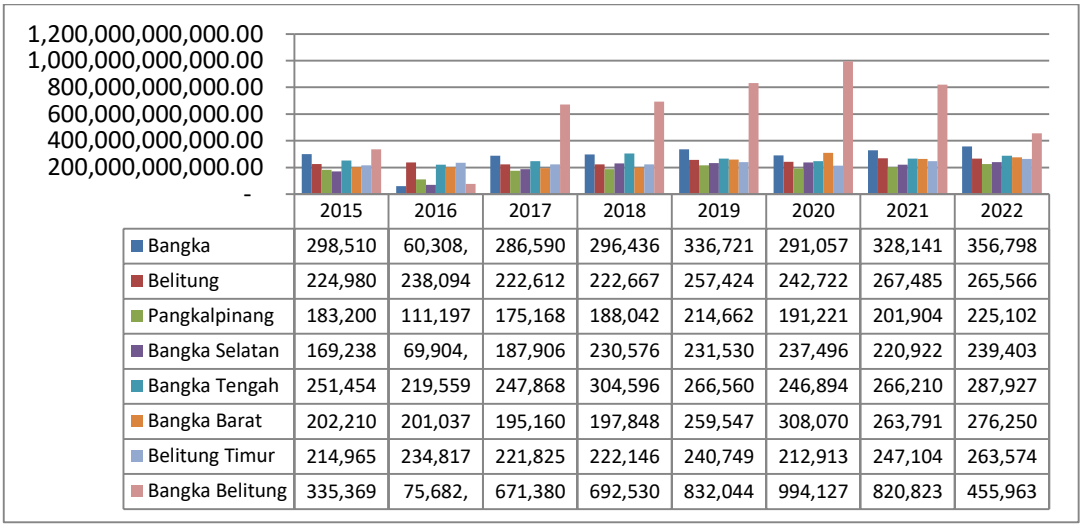


	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	298,510	60,308,	286,590	296,436	336,721	291,057	328,141	356,798
Belitung	224,980	238,094	222,612	222,667	257,424	242,722	267,485	265,566
Pangkalpinang	183,200	111,197	175,168	188,042	214,662	191,221	201,904	225,102
Bangka Selatan	169,238	69,904,	187,906	230,576	231,530	237,496	220,922	239,403
Bangka Tengah	251,454	219,559	247,868	304,596	266,560	246,894	266,210	287,927
Bangka Barat	202,210	201,037	195,160	197,848	259,547	308,070	263,791	276,250
Belitung Timur	214,965	234,817	221,825	222,146	240,749	212,913	247,104	263,574
Bangka Belitung	335,369	75,682,	671,380	692,530	832,044	994,127	820,823	455,963

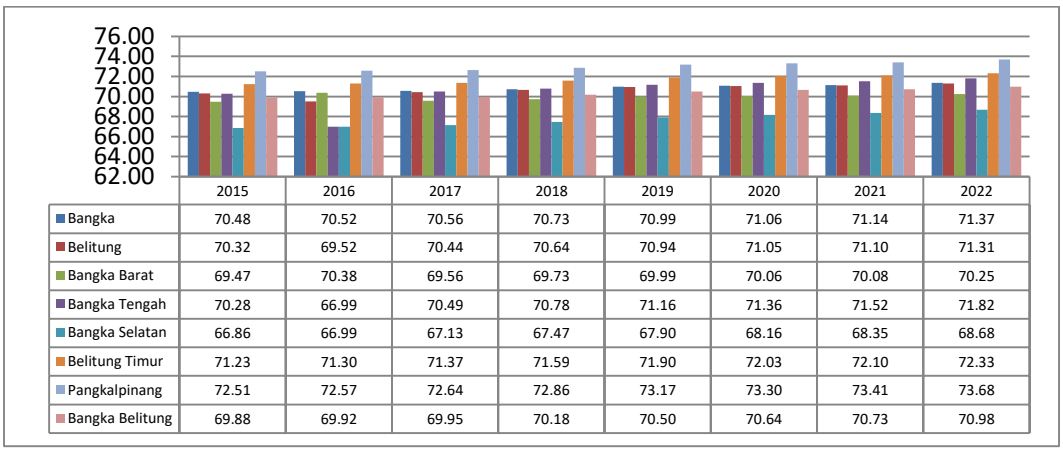
Figure 4. Government Expenditures in the Education Sector of the Bangka Belitung Islands Province By District/City 2015-2022 (Billion Rupiah)
Source: Directorate General of Fiscal Balance, Indonesian Ministry of Finance, 2023

Figure 4, shows the realization of government spending on education in 2015-2022 in the Bangka Belitung Islands Province which tends to fluctuate. In 2015, the highest government spending on education was in Bangka Regency and the lowest was in South Bangka Regency. And at the end of the research year, namely 2022, there will be a change where government spending on education in that year is the highest in Bangka Regency and the lowest in Pangkalpinang City. The average government spending on education in the Bangka Belitung Islands Province is 609.740.257.903,43 with the highest average government spending on education occurring in Bangka Regency.

Government spending on education is very important in order to increase quality and competitive human resources in efforts to increase human development. Government spending on education is a concern of the government in an effort to broaden people's opportunities to achieve productivity, namely quality education which is a factor of human development.

4.1.4 Life Expectancy

The development of Life Expectancy Rates (AHH) in the Bangka Belitung Islands Province in 2015-2022 can be seen in the following figure:



	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	70.48	70.52	70.56	70.73	70.99	71.06	71.14	71.37
Belitung	70.32	69.52	70.44	70.64	70.94	71.05	71.10	71.31
Bangka Barat	69.47	70.38	69.56	69.73	69.99	70.06	70.08	70.25
Bangka Tengah	70.28	66.99	70.49	70.78	71.16	71.36	71.52	71.82
Bangka Selatan	66.86	66.99	67.13	67.47	67.90	68.16	68.35	68.68
Belitung Timur	71.23	71.30	71.37	71.59	71.90	72.03	72.10	72.33
Pangkalpinang	72.51	72.57	72.64	72.86	73.17	73.30	73.41	73.68
Bangka Belitung	69.88	69.92	69.95	70.18	70.50	70.64	70.73	70.98

Figure 5. Life Expectancy in the Bangka Belitung Islands Province By Regency/City 2015-2022 (Year)
Source: Bangka Belitung in Figures, BPS Bangka Belitung, 2022

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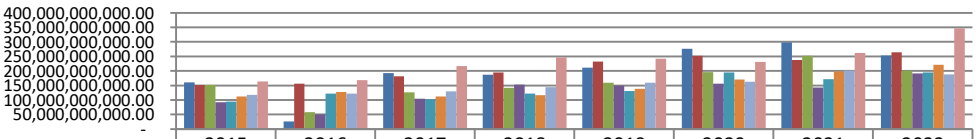
Based on Figure 5 it shows that within eight years (2015-2022) life expectancy continues to increase every year, this increase is of course driven by an increase in life expectancy in 7 (seven) districts/cities in the Bangka Belitung Islands Province which are also experiencing increase every year. In 2015 the highest life expectancy occurred in the City of Pangkal Pinang and the lowest occurred in South Bangka Regency. And at the end of the research year, namely 2022, there will be no change where Pangkalpinang City and South Bangka Regency are still the regencies/cities that have the highest and lowest life expectancy rates. The average increase in life expectancy in the Bangka Belitung Islands Province was 70,34 with the highest average increase in life expectancy occurring in Pangkalpinang City.

With an increase in life expectancy in the Bangka Belitung archipelago province every year, it certainly has a good impact on the quality of human development in terms of health because the increasing life expectancy in an area means that efforts to increase human development in the health sector are good and efforts to provide facilities and infrastructure in the field sufficient health.

4.1.5 Government Expenditures in the Health Sector

Government spending on health is a form of government effort in increasing the productivity and quality of human resources in an area, especially in terms of health, both facilities and other infrastructure that support health services in an area. The following is the realization of government spending on health in the Bangka Belitung Islands Province:



	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	160,526,	25,609,2	192,135,	187,483,	210,737,	276,697,	298,742,0	253,555,8
Belitung	152,164,	155,987,	181,746,	194,208,	231,898,	251,607,	237,388,0	263,967,1
Pangkalpinang	152,208,	57,841,7	126,336,	141,555,	159,681,	195,420,	252,494,0	201,432,5
Bangka Selatan	92,318,5	50,213,0	104,034,	152,505,	149,222,	156,099,	143,386,0	191,553,0
Bangka Tengah	94,475,8	122,043,	102,021,	122,333,	130,608,	194,566,	171,962,0	194,937,6
Bangka Barat	111,719,	127,851,	112,306,	116,599,	138,486,	169,925,	198,311,0	220,832,1
Belitung Timur	117,781,	121,904,	129,403,	144,466,	159,806,	162,278,	200,860,0	187,838,3
Bangka Belitung	163,328,	168,367,	216,809,	246,205,	242,317,	231,252,	261,901,0	346,234,5

Figure 6. Government expenditure in the health sector of the Bangka Belitung Islands province by Regency/City 2015-2022 (Billion Rupiah)
Source: Directorate General of Fiscal Balance, Indonesian Ministry of Finance, 2023

Figure 6. shows that the realization of government spending on health from 2015-2022 tends to fluctuate. In 2015 the highest government spending on health was in Bangka Regency and the lowest was in South Bangka Regency. And at the end of the research year, namely in 2022, there will be a change where government spending on health in that year is the highest in Belitung Regency and the lowest is in East Belitung Regency. The average government spending on health in the Bangka Belitung Islands Province is 234.55.206.547,26 with the highest average government spending on health occurring in Belitung Regency.

4.1.6 Expenditures Per Capita

Per capita expenditure is the cost incurred for the consumption of all household members for a month divided by the number of household members adjusted for purchasing power parity. The following is per capita expenditure data in the Bangka Belitung archipelago province:

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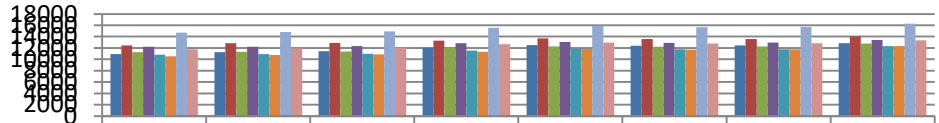


	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	10904	11279	11420	12043	12480	12416	12424	12863
Belitung	12443	12865	12910	13281	13662	13554	13563	14045
Bangka Barat	11243	11303	11394	12011	12275	12233	12269	12790
Bangka Tengah	12210	12248	12330	12836	13070	12909	12945	13422
Bangka Selatan	10824	10932	10999	11573	11910	11757	11768	12341
Belitung Timur	10523	10729	10894	11302	11831	11730	11760	12357
Pangkalpinang	14707	14807	14923	15560	15883	15663	15716	16307
Bangka Belitung	11781	11960	12066	12666	12959	12794	12819	13358

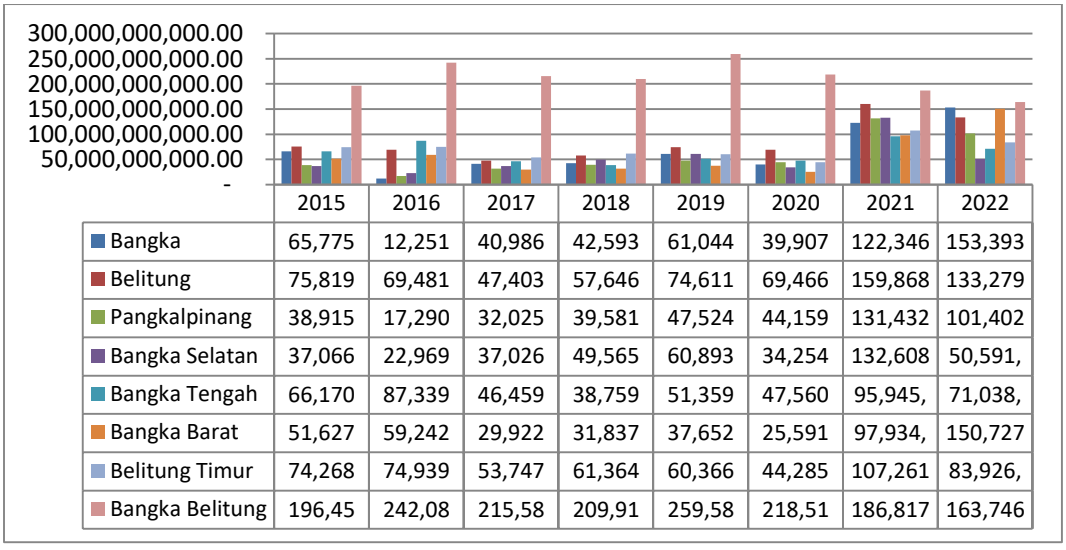
Figure 7. Per Capita Expenditures in the Bangka Belitung Islands Province By Regency/City 2015-2022 (Thousand Rupiah)
Source: Bangka Belitung in Figures, BPS Bangka Belitung, 2022

Figure 7 shows that per capita spending in 2015-2022 tends to fluctuate. In 2015 the highest per capita expenditure occurred in Pangkalpinang City and the lowest occurred in East Belitung Regency. And at the end of the research year, namely 2022, there will be a change where the highest per capita expenditure in that year occurs in Pangkalpinang City and the lowest is in South Bangka Regency. The average per capita expenditure in the Bangka Belitung Islands Province is 12.550.375 with the highest average per capita expenditure occurring in Pangkalpinang Regency.

The size of per capita expenditure in an area is of course a benchmark for the level of social welfare in an area because per capita expenditure is used to show the level of welfare of each household economic class.

4.1.7 Government Expenditures in the Economic Sector

The following is the realization of government spending in the economic sector in the Bangka Belitung Islands Province in 2015-2022:



	2015	2016	2017	2018	2019	2020	2021	2022
Bangka	65,775	12,251	40,986	42,593	61,044	39,907	122,346	153,393
Belitung	75,819	69,481	47,403	57,646	74,611	69,466	159,868	133,279
Pangkalpinang	38,915	17,290	32,025	39,581	47,524	44,159	131,432	101,402
Bangka Selatan	37,066	22,969	37,026	49,565	60,893	34,254	132,608	50,591,
Bangka Tengah	66,170	87,339	46,459	38,759	51,359	47,560	95,945,	71,038,
Bangka Barat	51,627	59,242	29,922	31,837	37,652	25,591	97,934,	150,727
Belitung Timur	74,268	74,939	53,747	61,364	60,366	44,285	107,261	83,926,
Bangka Belitung	196,45	242,08	215,58	209,91	259,58	218,51	186,817	163,746

Figure 8. Government expenditure in the economic sector of the Bangka Belitung Islands province by Regency/City 2015-2022 (Billion Rupiah)
Source: Directorate General of Fiscal Balance, Indonesian Ministry of Finance, 2023

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Figure 8, shows that government spending in the economic sector in 2015-2022 tends to fluctuate. In 2015 the highest economic sector government spending occurred in Belitung Regency and the lowest occurred in South Bangka Regency. And at the end of the research year, namely 2022, there will be a change where government spending in the economic sector in that year is the highest in Bangka Regency and the lowest is in South Bangka Regency. The average government spending on health in the Bangka Belitung Islands Province is 211.589.191.247,18 with the highest average government spending on health occurring in Belitung Regency.

4.2 Data Analysis

The results of data analysis in this study are as follows:

4.2.1 Selection of Panel Data Regression Estimation Model

he panel data regression estimation model is determined after carrying out or according to the model criteria by carrying out the Chow test, Hausman test, and Lagrange multiplier test.

4.2.1.1 Chow Test

Chow test is used to determine the best model between the commond effect and fixed effect models. When the results of the Chow test probability value F < 0,05 then H_0 is rejected, meaning the best model is the fixed effect model. Meanwhile, when the results of the chow test show the probability value F > 0,05 then H_0 is accepted, meaning that the best model is the commond effect model. Chow test results as follows:

Table 1. Chow Test Results

	Effect test	Statistic	d.f	Prob.
PPBP (H_1)	Cross-section F	205.912701	6	0.0000
PPBP (H_2)	Cross-section F	169.746635	6	0.0000
PPBK (H_3)	Cross-section F	115.108827	6	0.0000
PPBE (H_4)	Cross-section F	120.296835	6	0.0000

Source: Statistical Output, processed secondary data, 2023

Based on table 1, the probability values of PPBP (H_1), PPBP (H_2), PPBK (H_3), dan PPBE (H_4) in cross-section F are 0,0000 with a significance level of 0,05 meaning that H_0 is rejected. The probability value of 0,0000 < 0,05 indicates that the decision model used for the Chow test is a fixed effect model.

4.2.1.2 Hausman Test

The Hausman test is used to determine the best model between the random effect model and the fixed effect model. When the Hausman test results show a probability value of < 0,05, H_0 is rejected, meaning that the best model is the fixed effect model. Meanwhile, when the Hausman test results show a probability value of > 0,05 then H_1 is accepted, meaning that the best model is the random effect model. Hausman test results as follows:

Table 2. Hausman Test Results

	Test Summary	Chi-Sq Statictic	Chi-Sq d.f	Prob.
PPBP (H_1)	Cross-section Random	1.262119	2	0.5320
PPBP (H_2)	Cross-section Random	1.102295	2	0.5763
PPBK (H_3)	Cross-section Random	2.369234	2	0.3059
PPBE (H_4)	Cross-section Random	0.568090	2	0.7527

Source: Statistical Output, processed secondary data, 2023

Based on table 2 the probability values of PPBP (H_1), PPBP (H_2), PPBK (H_3), dan PPBE (H_4) in *cross-section random* > 0,05 indicates that the decision model used by the Hausman test is a random effect model.

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4.2.1.3 Lagrange Multiplier Test

Lagrange multiplier test is used to determine the best model between the commond effect model and the random effect model. When the results of the Lagrange multiplier test have a probability value of < 0,05, H_0 is rejected, meaning the best model is the random effect model. Meanwhile, when the results of the Lagrange multiplier test show a probability value of > 0,05 then H_0 is accepted, meaning that the best model is the commond effect model. The results of the multiplier lagrange test are as follows:

Table 3. Lagrange Multiplier Test Result

		Cross-section	Test Hypothesis Time	Both
PPBP (H_1)	Breusch-Pagan	171.5707 (0.0000)	2.064352 (0.1508)	173.6350 (0.0000)
PPBP (H_2)	Breusch-Pagan	173.9576 (0.0000)	3.038999 (0.0813)	176.9966 (0.0000)
PPBK (H_3)	Breusch-Pagan	139.0993 (0.0000)	3.788233 (0.0516)	142.8875 (0.0000)
PPBE (H_4)	Breusch-Pagan	146.3685 (0.0000)	0.436599 (0.5088)	146.8051 (0.0000)

Source: Statistical Output, processed secondary data, 2023

Based on table 3, the probability value of PPBP (H_1) PPBP (H_2), PPBK (H_3), dan PPBE (H_4) in *breusch-pagan* is 0,0000 with a significance level of 0,05 meaning that H_0 is rejected. The probability value of 0,0000 < 0,05 indicates that the decision model used for the lagrange multiplier test is a random effect model.

4.2.2 Classical Assumption Test

The classic assumption test in this study consists of three tests, namely:

4.2.2.1 Normality Test

The normality test is used to determine whether the residual panel data regression model is normally distributed or not. The basis for determining whether or not the data is normal is if the Jarque Bera probability value is greater than the alpha level of 0,05 then the data is normally distributed, but if it is smaller then the data is not normally distributed. Following are the results of the normality test in this study:

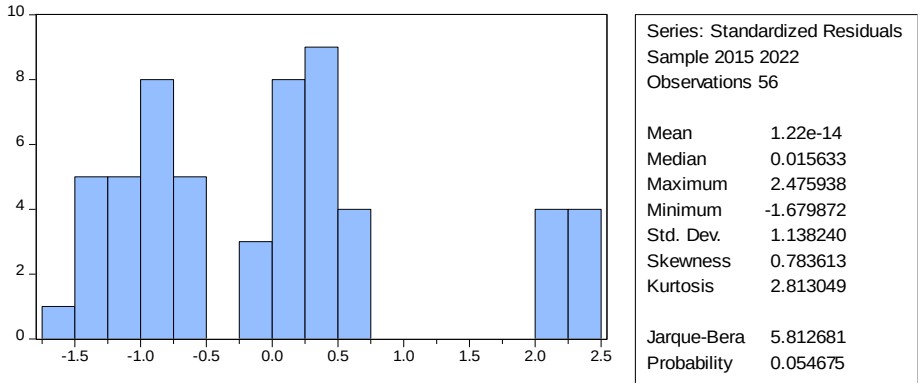

Figure 9. Normalitiy Test Results H_1
Source: Statistical Output, processed secondary data, 2023

Based on Figure 9, it is known that the probability value of Jarque Bera is 0,054 which means that the value is > 0,05 so it can be concluded that the H_1 data in this study is normally distributed.

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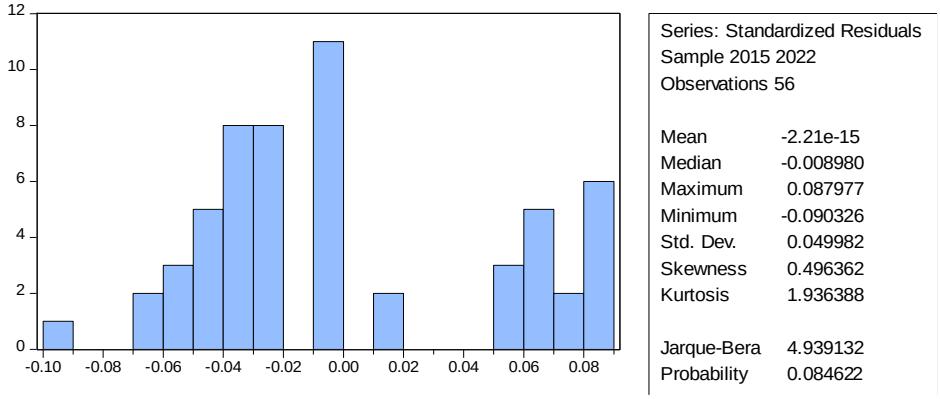

Figure 10. Normalitiy Test Results H_2
Source: Statistical Output, processed secondary data, 2023

Based on Figure 10, it is known that the probability value of Jarque Bera is 0,08 which means that the value is > 0,05 so it can be concluded that the H_2 data in this study is normally distributed.

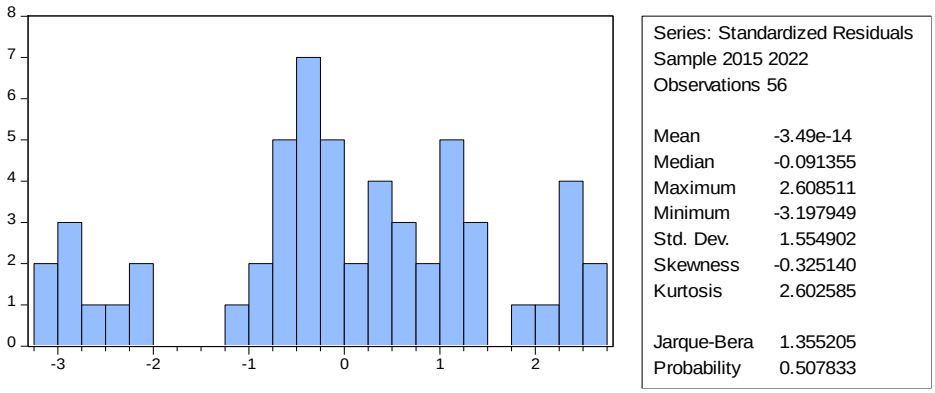

Figure 11. Normalitiy Test Results H_3
Source: Statistical Output, processed secondary data, 2023

Based on Figure 11, it is known that the probability value of Jarque Bera is 0,50 which means that the value is > 0,05 so it can be concluded that the H_3 data in this study is normally distributed.

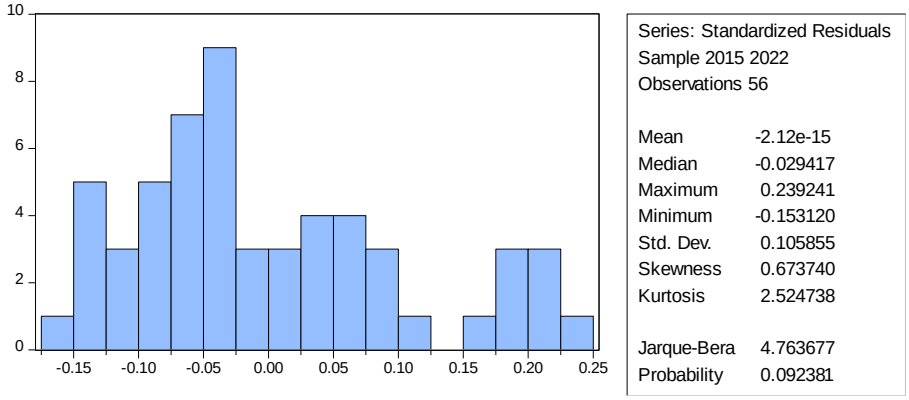

Figure 12. Normalitiy Test Results H_4
Source: Statistical Output, processed secondary data, 2023

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Based on Figure 12, it is known that the probability value of Jarque Bera is 0,09 which means that the value is > 0,05 so it can be concluded that the H_4 data in this study is normally distributed.

4.2.2.2 Multicollinearity Test

Multicollinearity test is used to determine whether there is a correlation between independent variables. It's good that the regression model does not include correlations on the independent variables. Meanwhile, if the value is < 0,80, the data does not have multicollinearity. If the value > 0,80 then the data is multicollinearity. The following are the results of the multicollinearity test:

Table 4. Multicollinearity Test Results

Variabel	PPBP	PPBK	PPBE
PPBP	1.000000	0.685383	0.450073
PPBK	0.685383	1.000000	0.616567
PPBE	0.450073	0.616567	1.000000

Source: Statistical Output, processed secondary data, 2023

Based on Table 4, it can be seen that the multicollinearity test results for all independent variables have a correlation value of < 0.80. So it can be interpreted that the data in this study did not show symptoms of multicollinearity.

4.2.2.3 Hetroscedasticity Test

The heteroscedasticity test is used to find out if the linear regression model has an inequality of variance. If the variance of the residuals is constant, this means homoscedasticity. The good thing is that the regression model does not have heteroscedasticity. The method used in the heteroscedasticity test in this study was the Glejser test. The results of the heteroscedasticity test mean that there is no heteroscedasticity or homoscedasticity when the significance probability level is > 0.05. Following are the results of the heteroscedasticity test:

Table 5. Heteroscedasticity Test Results

Variable	Coefficient	Std.Error	T-Statistic	Prob
C	1769940.	407246.8	4.346110	0.0001
PPBP	-2.40E-06	2.06E-06	-1.167599	0.2485
PPBK	-2.13E-06	2.15E-06	-0.990903	0.3265
PPBE	3.17E-06	2.30E-06	1.380916	0.1734

Source: Statistical Output, processed secondary data, 2023

Based on Table 5, it can be seen that the results of the heteroscedasticity test obtained a significance probability value for PPBP of 0.2485, PPBK of 0.3265, and PPBE of 0.1734. All variables in the study obtained a significance probability value of > 0.05. So it can be interpreted that the regression model in this study did not occur heteroscedasticity or homoscedasticity.

4.2.3 Regression Panel Data Lag Distribution

Following are the results of the panel data regression of the lag distribution:

4.2.3.1 Regression Panel Data lag Distribution H_1

Based on the results of the estimation test of the panel data regression model, namely the Chow test, Hausman test and Lagrange multiplier test that has been carried out, it can be concluded that the best model used in this H_1 study is the random effect model. The results of the random effect model analysis can be seen in the following table:

Table 6. Analysis of Random Effect Models H_1

Variabel	Coeffcient	Std.error	t-Statistic	Prob.
C	6.790093	0.512564	13.24730	0.0000
PPBPIT	3.01E-12	5.79E-13	5.205914	0.0000
PPBPIT-1	1.61E-12	5.76E-13	2.802634	0.0071

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Effect Specification			
R-squared	0.460115	Mean dependent var	0.412293
Adjusted R-squared	0.439742	S.D. dependent var	0.253086
S.E. of regression	0.189435	Sum squared resid	1.901947
F-statistic	22.58456	Durbin-Watson stat	0.833644
Prob (F-statistic)	0.000000		

Source: Statistical Output, processed secondary data, 2023

Based on Table 6 the results of the panel data regression analysis of the H_1 lag distribution using the random effect model obtained the following equation:

$$RLS_{it} = 6.790 + 3.011PPBP_{it} + 1.614PPBP_{it-1} + e_{it} \quad \text{.....(4.5)}$$

The meaning of the regression equation is:

1. If the value of government spending on education is 0, then the average length of schooling is 6,790 percent.
2. The value of government spending on education has a positive and significant effect on the average length of schooling in the same year. If government spending on education increases by 1 percent, it will increase the average length of schooling by 3,011 percent in the same year.
3. The value of government spending on education in the previous year also had a positive effect and significant on the average length of schooling in the following year. If government spending on education in the previous year increased by 1 percent, it would increase the average length of schooling in the following year by 1,614 percent.

4.2.3.2 Regression Panel Data lag Distribution H_2 (Ln)

Based on the results of the estimation test of the panel data regression model, namely the Chow test, Hausman test and Lagrange multiplier test that has been carried out, it can be concluded that the best model used in this H_2 study is the random effect model. The results of the random effect model analysis can be seen in the following table:

Table 7. Analysis of Random Effect Models H_2(Ln)

Variabel	Coeffcient	Std.error	t-Statistic	Prob.
C	2.526979	0.023437	107.8222	0.0000
PPBPIT	-1.09E-13	3.55E-14	-3.077672	0.0033
PPBPIT-1	-1.07E-13	3.53E-14	-3.026446	0.0038
Effect Specification				
R-squared	0.319888	Mean dependent var		0.182658
Adjusted R-squared	0.294223	S.D. dependent var		0.013816
S.E. of regression	0.011607	Sum squared resid		0.007140
F-statistic	12.46414	Durbin-Watson stat		0.904405
Prob (F-statistic)	0.000037			

Source: Statistical Output, processed secondary data, 2023

Based on Table 7 the results of the panel data regression analysis of the H_2 lag distribution using the random effect model obtained the following equation:

$$LnHLS_{it} = 2.526 - 1.091PPBP_{it} - 1.068PPBP_{it-1} + e_{it} \quad \text{.....(4.6)}$$

The meaning of the regression equation is:

1. If the value of government spending on education is 0, then the expected length of schooling is 2,526 percent.
2. The value of government spending on education has a negative and significant effect on the expected length of schooling in the same year. If government spending on education increases by 1 percent, it will reduce the expected value of the length of schooling by 1,091 percent in the same year.

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3. The value of government spending on education in the previous year also had a negative and significant effect on the expected length of schooling in the following year. If government spending on education in the previous year increases by 1 percent, it will reduce the expected value of the length of schooling in the following year by 1,068 percent.

4.2.3.3 Regression Panel Data lag Distribution H_3

Based on the results of the estimation test of the panel data regression model, namely the Chow test, Hausman test and Lagrange multiplier test that has been carried out, it can be concluded that the best model used in this H_3 study is the random effect model. The results of the random effect model analysis can be seen in the following table:

Table 8. Analysis of Random Effect Models H_3

Variabel	Coeffcient	Std.error	t-Statistic	Prob.
C	69.18523	0.638106	108.4228	0.0000
PPBKIT	4.50E-12	2.15E-12	2.098367	0.0407
PPBKIT-1	4.80E-12	2.15E-12	2.227589	0.0302
Effect Specification				
R-squared	0.329017	Mean dependent var		9.891799
Adjusted R-squared	0.303697	S.D. dependent var		0.719317
S.E. of regression	0.600233	Sum squared resid		19.09482
F-statistic	12.99428	Durbin-Watson stat		1.733465
Prob (F-statistic)	0.000026			

Source: Statistical Output, processed secondary data, 2023

Based on Table 8, the results of the panel data regression analysis of the H_3 lag distribution using the random effect model obtained the following equation:

$$AHH_{it} = 69.185 + 4.501PPBK_{it} + 4.798PPBK_{it-1} + e_{it} \quad \text{.....(4.7)}$$

The meaning of the regression equation is:

1. If the value of government spending on health is 0, then the average length of schooling is 69,185 percent.
2. The value of government spending on health has a positive and significant effect on life expectancy in the same year. If government spending on health increases by 1 percent, it will increase life expectancy by 4.501 percent in the same year.
3. The value of government spending on health in the previous year also had a positive and significant effect on life expectancy in the following year. If government spending on health in the previous year increased by 1 percent, it would increase life expectancy in the following year by 4.798 percent.

4.2.3.4 Regression Panel Data lag Distribution H_4 (Ln)

Based on the results of the estimation test of the panel data regression model, namely the Chow test, Hausman test and Lagrange multiplier test that has been carried out, it can be concluded that the best model used in this H_4 study is the random effect model. The results of the random effect model analysis can be seen in the following table:

Table 9. Analysis of Random Effect Models H_4 (Ln)

Variabel	Coeffcient	Std.error	t-Statistic	Prob.
C	16.40593	0.048890	335.5670	0.0000
PPBEIT	-6.13E-13	1.62E-13	-3.781393	0.0004
PPBEIT-1	-3.64E-13	1.99E-13	-1.824764	0.0737
Effect Specification				
R-squared	0.343630	Mean dependent var		1.748658
Adjusted R-squared	0.318862	S.D. dependent var		0.045158
S.E. of regression	0.037269	Sum squared resid		0.073616
F-statistic	13.87358	Durbin-Watson stat		0.808351
Prob (F-statistic)	0.000014			

Source: Statistical Output, processed secondary data, 2023

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Based on Table 9 the results of the panel data regression analysis of the H_4 lag distribution using the random effect model obtained the following equation:

$$LnPPK_{it} = 16.405 - 6.128PPBE_{it} - 3.636PPBE_{it-1} + e_{it} \quad \text{.....(4.8)}$$

The meaning of the regression equation is:

1. If government expenditure in the economic sector is 0, then per capita expenditure is 16,405 percent.
2. The value of government spending in the economic sector has a negative and significant effect on per-pital spending in the same year. If government spending in the economic sector increases by 1 percent, it will reduce per capita spending by 6,128 percent in the same year.
3. The value of government expenditure in the economic sector in the previous year has no effect on per capita expenditure in the following year.

4.2.4 Hypothesis test

The following are the results of hypothesis testing in this study:

4.2.4.1 t Test

The t test is used to determine the effect of the independent variables on the dependent variable partially (each). When the results of the data t count > t table, it means that the independent variable has an effect on the dependent variable partially. Meanwhile, when the results of the data tcount <ttable, it means that the independent variables do not affect the dependent variable partially. The results of the t test on each variable can be seen in the following table:

Table 10. t Test Result

Variabel	Coefficient	Std.error	t-Statistic	Prob.
C (H1)	6.790093	0.512564	13.24730	0.0000
PPBPIT (H1)	3.01E-12	5.79E-13	5.205914	0.0000
PPBPIT-1 (H1)	1.61E-12	5.76E-13	2.802634	0.0071
C (H2)	2.526979	0.023437	107.8222	0.0000
PPBPIT (H2)	-1.09E-13	3.55E-14	-3.077672	0.0033
PPBPIT-1 (H2)	-1.07E-13	3.53E-14	-3.026446	0.0038
C (H3)	69.18523	0.638106	108.4228	0.0000
PPBKIT (H3)	4.50E-12	2.15E-12	2.098367	0.0407
PPBKIT-1 (H3)	4.80E-12	2.15E-12	2.227589	0.0302
C (H4)	16.40593	0.048890	335.5670	0.0000
PPBEIT (H4)	-6.13E-13	1.62E-13	-3.781393	0.0004
PPBEIT-1 (H4)	-3.64E-13	1.99E-13	-1.824764	0.0737

Source: Statistical Output, processed secondary data, 2023

Based on Table 4.10 the results of the t test of each variable, the results of the analysis can be obtained as follows:

1. H_1 : There is a positive and significant influence between government spending on education on the average length of schooling in the Bangka Belitung Islands Province
   a. The t value of PPBPit = 5.205914 indicates that the greater the value of government spending on education in that year, the average length of schooling in the Bangka Belitung Islands Province in the same year will increase.
   b. The t value of PPBPit-1 = 2.802634 indicates that the greater the value of government spending on education in the previous year, the average length of schooling in the Bangka Belitung Islands Province in the following year will increase.
   c. The value of t table with a significance level of a (0.05) or 5 percent and degrees of freedom (df) = (n-k) or (56-2) then the value of t table obtained is 2.00488
   d. The value of t count > t table (5.205914 > 2.00488) means that H_0 is rejected and H_a is accepted.
   e. The value of t count > t table (2.802634 > 2.00488) means that H_0 is rejected and H_a is accepted

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f. The probability value of government spending on education in the same year is 0.0000 < 0.05, meaning that H_0 is rejected and H_a is accepted.
g. The probability value of government spending on education in the previous year was 0,0071 < 0,05 meaning that H_0 was rejected and H_a was accepted.

From the description of the results, it shows that government spending on education in the same year as well as in the previous year both had a positive and significant effect on the average length of schooling in the Bangka Belitung Islands Province.

2. H_2 : There is a positive and significant influence between Government Expenditures in the Sector of Education on Expectations of Old Schools in the Bangka Belitung Islands Province
   a. The t value of PPBPit = -3.077672 indicates that the greater the value of government spending on education in that year, the lower the expected length of schooling in the Bangka Belitung Islands Province in the same year.
   b. The t value of PPBPit-1 = -3.026446 indicates that the greater the value of government spending on education in the previous year, the lower the expected length of schooling in the Bangka Belitung Islands Province in the following year.
   c. The value of t table with a significance level of a (0.05) or 5 percent and degrees of freedom (df) = (n-k) or (56-2) then the value of t table obtained is 2.00488
   d. The value of t count < t table (-3.077672 <2.00488) means that H_0 is accepted and H_a is rejected.
   e. The value of t count < t table (-3.026446 <2.00488) means that H_0 is accepted and H_a is rejected.
   f. The probability value of government spending on education in the same year is 0.0033 <0.05, meaning that H_0 is rejected and H_a is accepted.
   g. The probability value of government spending on education in the previous year was 0.0038 <0.05 meaning H_0 was rejected and H_a was accepted.

   From the description of the results, it shows that government spending on education in the same year as well as in the previous year both had a negative and significant effect on the expected length of schooling in the Bangka Belitung Islands Province.

3. H_3 : There is a positive and significant influence between Government Expenditure in the health sector on Life Expectancy in the Bangka Belitung Islands Province
   a. The PPBKit t value = 2.098367 indicates that the greater the value of government spending on health in that year, the higher the life expectancy in the Bangka Belitung Islands Province in the same year.
   b. The t value of PPBKit-1 = 2.227589 indicates that the greater the value of government spending on health in the previous year, the higher the life expectancy in the Bangka Belitung Islands Province in the following year.
   c. The value of t table with a significance level of a (0.05) or 5 percent and degrees of freedom (df) = (n-k) or (56-2) then the value of t table obtained is 2.00488
   d. The value of t count > t table (2.098367 > 2.00488) means that H_0 is rejected and H_a is accepted.
   e. The value of t count > t table (2.227589 > 2.00488) means that H_0 is rejected and H_a is accepted
   f. The probability value of government spending on health in the same year is 0.0407 <0.05, meaning that H_0 is rejected and H_a is accepted.
   g. The probability value of government expenditure in the health sector in the previous year was 0.0302 <0.05 meaning H_0 was rejected and H_a was accepted.

   From the description of the results, it shows that government spending on health in the same year as well as in the previous year both had a positive and significant effect on life expectancy in the Bangka Belitung Islands Province.

4. H_4 : There is a positive and significant influence between Government Expenditure in the economic sector on per capita expenditure in the Bangka Belitung Islands Province
   a. The PPBEit t value = -3.781393 indicates that the greater the value of government spending in the economic sector in that year, the lower the value of per capita expenditure in the Bangka Belitung Islands Province in the same year.
   b. PPBEit-1 t value = -1.824764 indicates that the greater the value of government expenditure in the economic sector in the previous year, the lower per capita expenditure in the Bangka Belitung Islands Province in the following year.

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c. The value of t table with a significance level of a (0.05) or 5 percent and degrees of freedom (df) = (n-k) or (56-2) then the value of t table obtained is 2.00488
d. The value of t count < t table (-3.781393 <2.00488) means that H_0 is accepted and H_a is rejected.
e. The value of t count < t table (-1.824764 < 2.00488) means that H_0 is accepted and $H_a$is rejected.
f. The probability value of government spending in the economic sector in the same year is 0.0004 <0.05 means that H_0 is rejected and H_a is accepted.
g. The probability value of government spending on health in the previous year was 0.0737 > 0.05 meaning $H_0$was accepted and H_a was rejected

From the description of the results, it shows that government expenditure in the economic sector in the same year has a negative and significant effect on per capita expenditure and the previous year had no effect on per capita expenditure.

4.2.4.2 Test of the Coefficient of Determination (R^2)

The test results for the coefficient of determination (R^2) are as follows:

Table 11. Determination Coefficient Results (R^2)

	Effect Specification	
PPBP (H_1)	R-Squared	0.460115
PPBP (H_2)	R-Squared	0.319888
PPBK (H_3)	R-Squared	0.329017
PPBE (H_4)	R-Squared	0.343630

Source: Statistical Output, processed secondary data, 2023

Based on Table 11, Results of the Coefficient of Determination (R^2) of each variable, the following analysis results are obtained:

1. The PPBP coefficient of determination (H_1) is 0.460115 or 46.0115 percent. This figure shows that the average length of school is influenced by government spending on education by 46.0115 percent and the remaining 53.9885 percent is influenced by other variables outside the variables in this study.
2. The PPBP coefficient of determination (H_2) is 0.319888 or 31.9888 percent. This figure shows that the expected length of schooling is influenced by government spending on education by 31.9888 percent and the remaining 68.0112 percent is influenced by other variables outside the variables in this study.
3. The PPBK coefficient of determination (H_3) is 0.329017 or 32.9017 percent. This figure shows that life expectancy is influenced by government spending on health by 32.9017 percent and the remaining 67.0983 percent is influenced by other variables outside the variables in this study.
4. The PPBE coefficient of determination (H_4) is 0.343630 or 34,3630 percent. This figure shows that per capita spending is influenced by government spending in the economic sector by 34.3630 percent and the remaining 65.637 percent is influenced by other variables outside the variables in this study.

4.2.5 Discussion

Discussion of the results of the analysis in this study are as follows:

4.2.5.1 The Effect of Government Expenditures on Education on the Average Years of Schooling

Government spending on education in the same year and the year before had a positive and significant influence on the average length of schooling in the Bangka Belitung Islands Province in 2015-2022. This is consistent with the results of the panel data regression which shows that government spending on education has a positive and significant effect on the average length of schooling in the Bangka Belitung Islands Province. For every 1 percent increase in government spending on education in the same year, the average length of schooling in the Bangka Belitung Islands Province will increase by 3,011 percent. And if government spending on education one year ago increased by 1 percent, this would also increase the average length of schooling in the Bangka Belitung Islands Province by 1,614 percent in the following year.

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The increase in the average length of schooling cannot be separated from the increase in government spending in the education sector which is allocated as a support to fulfill educational facilities in an area both facilities and infrastructure, as well as facilitating access in the education sector. With easy access and the availability of complete facilities and infrastructure in the field of education, it will certainly encourage increased human development in the Bangka Belitung Islands Province, which is marked by an increase in the average length of schooling.

This is in line with research conducted by Silaban (2015) which states that spending on education has a significant effect on the average length of schooling in Sarolangun Regency.

4.2.5.2 The Influence of Government Expenditure in the Sector of Education on Old Expectations of Schools

Government spending on education in the same year and the year before had a negative and significant effect on the expected length of schooling in the Bangka Belitung Islands Province in 2015-2022. This is in accordance with the results of the panel data regression which shows that government spending on education has a negative and significant effect on the longevity of schooling in the Bangka Belitung Islands Province. Every 1 percent increase in government spending on education in the same year will reduce the expected length of schooling in the Bangka Belitung Islands Province by 1,091 percent. And if government spending on education one year ago increased by 1 percent, this would also reduce the expected length of schooling in the Bangka Belitung Islands Province by 1,068 percent in the following year.

Old school expectations are one component of measuring human development in the field of education. The existence of a negative and significant effect of government spending on education on the longevity of schooling gives an indication that government spending on education should receive special attention from the allocation of the local government education budget which should be managed more for educational programs that can help the community such as tuition assistance so that the desire community to have a much higher level of education can be achieved.

The results of this study differ from research conducted by Indrayana (2021) which states that government spending on education has a positive effect on the human development index in education.

4.2.5.3 Effect of Government Expenditure in the Health Sector on Life Expectancy

Government spending on health in the same year and the previous year had a positive and significant impact on life expectancy in the Bangka Belitung Islands Province in 2015-2022. This is in accordance with the results of the panel data regression which shows that government spending on health has a positive and significant effect on life expectancy in the Bangka Belitung Islands Province. Every 1 percent increase in government spending on health in the same year will increase life expectancy in the Bangka Belitung Islands Province by 4,501 percent. And if government spending on health one year ago increased by 1 percent, this would also increase life expectancy in the Bangka Belitung Islands Province by 4,798 percent in the following year.

The influence of government spending on health on life expectancy in a positive and significant way indicates that the large amount of government spending on health allocated by the government of the Bangka Belitung Islands Province has been used for appropriate programs that can improve the quality of human development, especially in the health sector. This government expenditure in the health sector is used to implement health programs as well as the development of health infrastructure, public health services which of course will improve human development in the Bangka Belitung Islands Province, especially in the health sector.

This is in line with research conducted by Wowor (2015) which states that the realization of government spending on health has a positive effect on life expectancy in Southeast Sulawesi.

4.2.5.4 The Effect of Government Expenditures on the Economy on Per Capita Expenditure

Government expenditure in the economic sector has a negative and significant effect on per capita expenditure in the same year, but government expenditure in the economic sector in the previous year had no effect on per capita expenditure. This is consistent with the results of the panel data regression which shows that government spending in the economic sector has no effect on per capita expenditure in the Bangka Belitung Islands Province. Every 1 percent increase in government spending in the economic sector in the same year will reduce per capita spending in the Bangka Belitung Islands Province by 7,623 percent. And if government spending in the economic sector one year ago increased by 1 percent, this would also reduce per capita spending in the Bangka Belitung Islands Province by 4,605 percent in the following year.

With the negative and significant effect of government spending on the economy on per capita spending in the same year and no effect on government spending on the economy one year earlier on per capita spending in the following year, it indicates

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that the amount of government spending on the economy in the same year is inappropriate and has no effect on per capita expenditure because per capita expenditure is not influenced by government spending in the economic sector but is influenced by other variables such as per capita income.

This is not in line with research conducted by Aditia and Dewi (2019) which states that capital expenditure in the economic sector has a positive and significant effect on the level of social welfare in the Province of Bali

5. CONCLUSION

Based on the results of the discussion and analysis of research on the effect of government spending on education, government spending on health, government spending on the economy on the indicators for calculating the Human Development Index in the Bangka Belitung Islands Province in 2015-2022, the following conclusions are obtained:

1. Government spending on education in the same year and the previous year had a positive and significant effect on the average length of schooling in the Bangka Belitung Islands Province in 2015-2022.
2. Government spending on education in the same year and the year before had a negative and significant effect on the expected length of schooling in the Bangka Belitung Islands Province in 2015-2022.
3. Government spending on health in the same year and the previous year had a positive and significant effect on life expectancy in the Bangka Belitung Islands Province in 2015-2022.
4. Government expenditure in the economic sector in the same year has a negative and significant effect on per capita expenditure in the Bangka Belitung Islands Province in 2015-2022. However, government expenditure in the economic sector one year earlier did not affect per capita expenditure in the Bangka Belitung Islands Province in 2015-2022

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