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Efficiency of Government Spending in Reducing Poverty Rate in Bengkulu Province

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A B S T R A C T

The study aims to measure the efficiency of local government expenditure in poverty reduction in 10 regencies and cities in Bengkulu Province. The study is quantitative descriptive. Research method applied is Data Envelopment Analysis (DEA) based on input-oriented model with the Variable Retrun to Scale approach. Output is poverty rate. Three inputs used are capital expenditure, goods and service expenditures, and employee expenditure. The results show that out of the 10 regencies and cities in Bengkulu Province in 2019 and 2022 only three regencies are relative efficiency, they are Lebong, Kepahiang, and Bengkulu Tengah. Three peers in Bengkulu Province are Lebong, Kepahiang, and Bengkulu Tengah. The most efficient in 2019 is Lebong regency and in 2022 is Bengkulu Tengah regency. To be efficient, the inefficient regencies and cities government should reduce their expenditure, especially employee expenditure, which is the biggest source of inefficiency.

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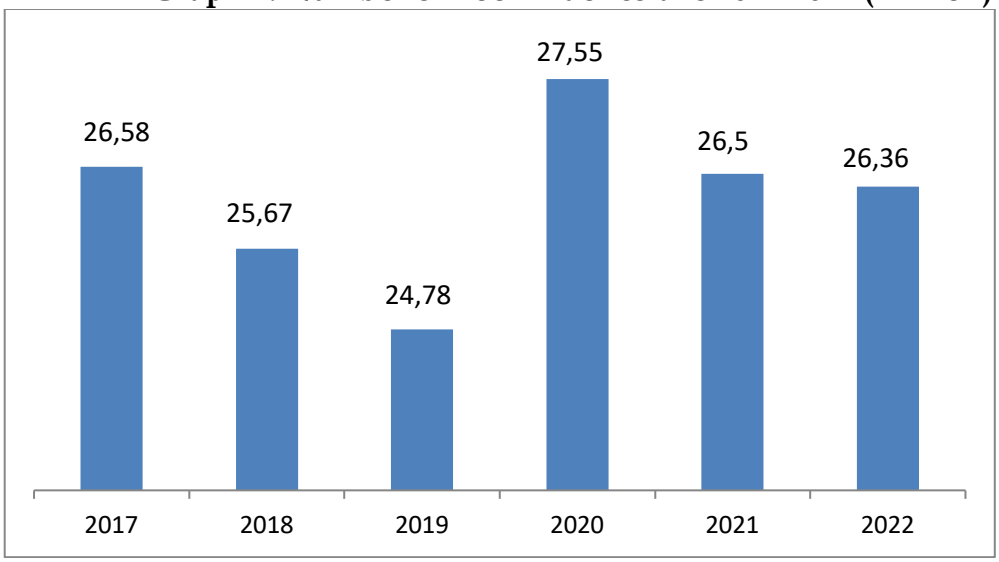
INTRODUCTION

Natural disasters or disease outbreaks are one of the causes of poverty that are not often discussed. The Corona virus outbreak or known as the Covid-19 pandemic has shaken the world since the end of 2019, which has spread widely. In early March 2020, Covid-19 entered Indonesia with an increasing number of exposures and an expanding distribution area, so it was declared a non-natural national disaster (Tarigan et al., 2020). The International Organization for Health, namely WHO, states that Covid-19 can infect the respiratory tract in humans. The virus has effects ranging from mild to very serious flu (Kiriga &; Muthuri, 2020). According to Surhayadi, Covid-19 caused many economic activities to contract, resulting in an increase in the number of unemployed, a decrease in the productivity level of individuals and companies, and encouraging the emergence of new poor people (Wibisono, 2022).

Poverty in a macroeconomic perspective is seen as a failure of a country to be able to achieve optimal economic performance because there are still production factors that are not used in accordance with their capacity (Kristiyanto, 2017). Not only seen as a failure of a country but also as a reference for the progress of a country's welfare, a country with a low poverty rate then the country can be said to be prosperous or developed and able to overcome poverty problems in its country.

Graph 1. Number of Poor Indonesians 2017-2022 (million)



Source : BPS, 2017-2022

Based on graph 1 from 2017 to 2019, poverty in Indonesia shows a graph that tends to decrease. However, in 2020 the graph increased again and showed the number of poor people in Indonesia as many as 27.55 million people. In that year, the economy in the world was affected by the Covid-19 pandemic, including Indonesia. Although in 2022 the number of poor people in Indonesia decreased to 26.36 million people compared to the previous year, which was 26.5, this figure is still quite concerning when looking at how efforts were made to reduce the number of poor people in 2019 before the Covid-19 pandemic.

The problem of poverty is so complex that it is related to various aspects including the economy. Poverty that occurs within a country must be considered

as a serious problem, because poverty makes many people experience difficulties in meeting the needs of life (Wulandari et al 2022). Reducing poverty is one of the big agendas in Indonesia's development, all government efforts in alleviating poverty in Indonesia certainly require a large budget. In government budgeting, spending needed in the context of poverty reduction is included in two broad categories, namely direct spending and indirect spending. Another problem that may arise is when linking government efforts in overcoming poverty with efficiency in the use of government budgets. In carrying out the poverty alleviation program, of course, there will be efficient districts / cities and some are inefficient. (Kristiyanto, 2017).

Local government spending through direct spending and indirect spending is a tool of government intervention in overcoming economic problems, one of which is poverty and is considered the most effective of the other intervention options. The success of a region in realizing common interests depends largely on local government policies through its expenditure allocation. The right allocation of spending is expected to improve the welfare of the population (Huda et al, 2021). Several empirical studies on the use of poverty as an output in research were revealed by Kristiyanto, 2017 and (Putri & Rambe, 2023).

Spending on community development is inefficient towards the amount of poverty in Oba District, Tidore Islands City (Hasan &; Amin, 2022). In Aceh Province, most of 74% of districts/cities have not been efficient in terms of spending on social assistance for family hope programs for poverty (Irfan et al, 2023). Government spending has a significant effect on poverty in Batu City in 2017-2020 (Wulandari, et al 2022). In research (Siregar, 2020) regional spending has a significant effect on poverty in district/city governments in North Sumatra.

Capital expenditure directly affects poverty, direct capital expenditure positively affects economic growth, and capital expenditure indirectly affects poverty through economic growth as an intervening variable in North Minahasa (Kaligis et al, 2017), in (Sumiyarti, 2022) capital expenditure statistically does not significantly affect poverty in 33 provinces for the period 2010-2017. Grant spending and social assistance can significantly reduce poverty levels between administrative regions in North Sumatra Province (Amri, 2022), spending that has a significant effect on other poverty alleviation, namely education spending and social protection spending. While health spending has no effect (Syamsuri &; Budiyono, 2018). The effects of spending on education, health, care, social security and infrastructure have a significant impact on poverty reduction in China (Liu et al, 2020). In Brazil, people are more supportive of retributive programs that increase their income in the short term such as cash transfers (Bursztyn, 2016). Based on this explanation, this study is to measure the efficiency of government spending in reducing poverty rates in Bengkulu Province. This research will focus on capital expenditure, goods and services expenditure, and indirect employee expenditure in an effort to reduce poverty rates, especially in Bengkulu Province.

LITERATURE REVIEW

Poverty

A condition of a person's inability to meet basic daily needs as a measure to survive in the form of food, clothing, and shelter is a condition called poverty (Todaro, 2009). According to Arsyad (2015), poverty is a complex and multidimensional problem so that it can be viewed from several points of view. In general, poverty is a condition or condition where a person does not have the ability to meet the needs of life, in this case the needs of clothing, food and shelter. Poverty is multidimensional, meaning that human needs vary (Wulandari &; Mawardi, 2022). BPS defines poverty as the inability from the economic, material and physical side to meet the basic needs of food and not food as measured by expenditure.

Efficiency

Adisasmita (2011, 35) suggests efficiency as inputs used can be allocated optimally to achieve output that uses the lowest cost. Permendagri Number 13 of 2006 states that efficiency is an achievement of maximum output with certain inputs or the use of the lowest inputs to achieve certain outputs. According to Coelli (2005) the efficient approach can be measured into an output-oriented approach and an input-oriented approach. The output-oriented approach assesses how much output can be increased proportionally to the quantity of inputs already available. While the input-oriented approach assesses how much quantity of input can be reduced proportionally without changing the amount of output. In other words, with a predetermined / achieved level of output, a reduction in input units will be made to achieve an efficient level.

Government spending

Government expenditure is a government action that regulates the course of the economy through the annual determination of the amount of state income and expenditure reflected in the APBN and APBD regional/regional documents. The purpose of this policy is to stabilize prices, production levels, and employment opportunities as well as to encourage economic growth (Sukirno, 2004). In Permendagri- No.13 of 2006 expenditure according to shopping groups consists of direct spending and indirect spending. Direct shopping is shopping that is directly related to the implementation of programs and activities. The type of indirect expenditure can be measured by the outputs and results of the programs and activities organized, including the effectiveness of achieving these outputs and results. Capital expenditure, goods and services expenditure is part of direct expenditure and indirect employee expenditure is part of indirect expenditure.

Capital expenditure is local government expenditure intended to finance the construction of facilities and infrastructure (Tampubolon &; Ariadi, 2023). Capital expenditure is expenditure for the purchase/procurement or construction of tangible fixed assets that have a useful value of more than 12 months to be used in government activities such as in the form of land, equipment and machinery, buildings and buildings, roads, irrigation and networks, and other fixed assets (Ariadi, 2021). Regulation No. 12 of 2019, spending on goods and services to budget related to goods/services with a usage

period of less than one year, such as goods/services that will be submitted for public benefit (Dyna et al, 2023). Indirect employee expenditure in Permendagri-No. 13 of 2006 is compensation expenditure, in the form of salaries and benefits, as well as other income provided to civil servants determined in accordance with statutory provisions.

METHODOLOGY

This study measures the efficiency of government spending in 10 regencies/cities in Bengkulu Province. This research design is in the form of quantitative descriptive research. Using the Data Envelopment Anlysis (DEA) method because it is able to accommodate units of different input and output variables and directly compare the efficiency of each Decision Making Unit (DMU). The data used is in the form of secondary data obtained from BPS. There are 4 inputs used in efficiency measurement, namely capital expenditure, goods and services expenditure, grant expenditure, and indirect employee expenditure. The output used is the poverty level in 2019 and 2022. However, to meet the assumption of DEA (Bogetoft &; Otto, 2011: in Putri & Rambe 2023) that positivity the greater the output can be interpreted as better conditions, then in measuring this efficiency a proxy is used for the percentage of non-poor people (= 100% - poverty rate). The method uses an input-oriented model with a VRS (Variable Return to Scale) approach. The purpose of using this model is to find out how much more efficient expenditure should be spent by local governments in order to get efficient results or output.
The efficiency model with the DEA method is as follows:

Purpose function:

$$\text{Min } E = \mu_1X_1 + \mu_2X_2 + \mu_3X_3 \quad \text{..... (1)}$$

Constraint Function:

$$\upsilon_1X_1 + \upsilon_2X_2 + \upsilon_3X_3 = 1 \quad \text{.....(2)}$$

$$\mu_1Y_1 - (\upsilon_1X_1 + \upsilon_2X_2 + \upsilon_3X_3) \leq 0 \quad \text{.....(3)}$$

$$\mu_{1,2,3}, \upsilon_1 \geq 0 \quad \text{..... (4)}$$

with the following variables:
Y = percentage of the population is not poor
X1= Capital Expenditure
X2= Shopping for Goods and services
X3= Indirect Employee Expenditure
E = Value of efficiency of district / city government

The resulting efficiency of the DEA ranges from 0-1. A score of E = 1 is then considered relatively efficient, while a score of E < 1 is considered inefficient (Coelli et al, 2005). Furthermore, DEA will identify how much expenditure needs to be reduced based on the poverty level in districts / cities in Bengkulu Province that are declared inefficient.

RESEARCH RESULT

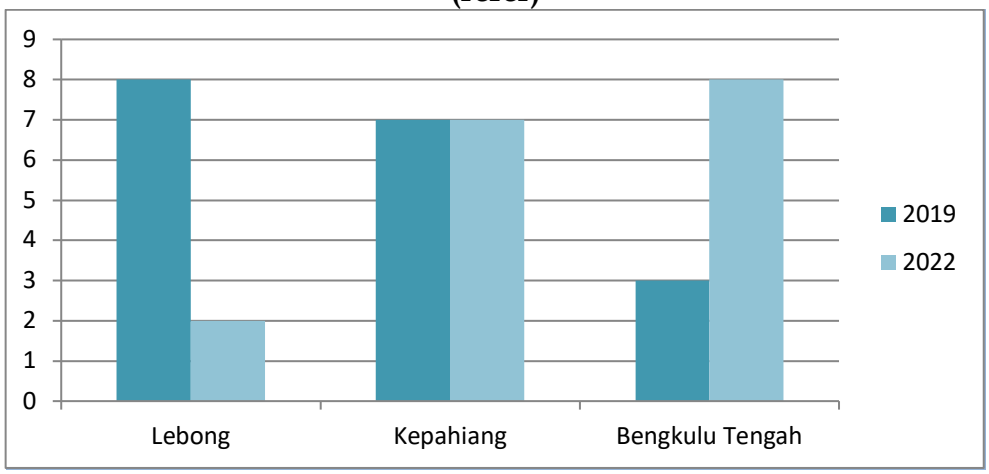
Efficiency measurements carried out using the DEA method based on the input-oriented model used in this study found that in 2019 and 2022 there were 3 efficient districts, namely Lebong, Kepahiang, and Bengkulu Tengah.. Overall, it can be said that there are 7 inefficient districts/cities. (Table 1).

Table 1. Regency/City Government Expenditure Efficiency Score in Bengkulu Province

Regency	Efficiency Score	
	2019	2022
Bengkulu Selatan	0,758	0,815
Rejang Lebong	0,634	0,949
Bengkulu Utara	0,583	0,816
Kaur	0,978	0,957
Seluma	0,718	0,892
Muko-Muko	0,757	0,943
Lebong	1,000	1,000
Kepahiang	1,000	1,000
Bengkulu Tengah	1,000	1,000
Kota Bengkulu	0,577	0,570

Of the 10 regencies and cities in Bengkulu Province in 2019 and 2022, there are 7 inefficient districts/cities. Therefore, efficient districts and cities can be used as a reference for inefficient districts / cities.

Graph 2. Peers and the Number of District/City Governments Benchmarking (refer)



In 2019, of the 3 efficient districts, Lebong regency became the most peer, while Central Bengkulu became the lowest peer. Meanwhile, in 2022, Central Bengkulu is the district with the most peers and the lowest peer owned by Lebong Regency. Inefficient districts/cities will benchmark their respective peers. Benchmarking can be seen in the radial movement of inefficient districts, so that the government can see and make the right decisions in reducing expenditure on capital expenditure, goods and services expenditure, and indirect

employee spending with the aim of making the district/city government more efficient.

In Table 2, it can be seen that in 2019 out of 7 inefficient districts/cities had the largest source of inefficiency which can be known from the value of government expenditure on capital expenditure. Based on these results, the government is expected to reduce the allocation of capital expenditure ranging from 3 million rupiah (Kaur Regency) to 98 million (Bengkulu City).

Table 2 Decrease in Government Expenditure per Capita (Radial Movement) of Inefficient Districts and Cities in Bengkulu Province in 2019

Regency/City	Reduction of Inefficient Local Government Expenditures in Bengkulu Province (in millions)		
	Capital Expenditures	Shop for goods & services	Indirect Employee Expenditures
Bengkulu Selatan	38	56	97
Rejang Lebong	72	97	163
Bengkulu Utara	97	120	184
Kaur	3	5	6
Seluma	48	67	105
Mukomuko	52	47	73
Kota Bengkulu	98	117	222

The decrease in inefficient expenditure on goods and services ranged from 5 million rupiah still held by Kaur to 120 million for North Bengkulu district. Meanwhile, indirect employee spending ranges from 6 million rupiah (Kaur) to 222 million rupiah for the Bengkulu City area.

Table 3 Decrease in Government Expenditure per Capita (Radial Movement) of Inefficient Districts and Cities in Bengkulu Province in 2022

Regency/City	Reduction of Inefficient Local Government Expenditures in Bengkulu Province (in millions)		
	Capital Expenditures	Expenditures for Goods & Services	Indirect Employee Expenditures
Bengkulu Selatan	20	47	75
Rejang Lebong	5	11	22
Bengkulu Utara	28	56	81
Kaur	7	8	12
Seluma	18	21	39
Mukomuko	8	12	19
Kota Bengkulu	78	149	226

In Table 3, it can be seen that in 2022 out of 7 inefficient districts/cities have the largest source of inefficiency which can be known from the value of government expenditure on capital expenditure. Based on these results, the government is expected to reduce the allocation of capital expenditure ranging

from 5 million rupiah (Rejang Lebong Regency) to 78 million (Bengkulu City). The decrease in inefficient spending on goods and services ranges from 8 million rupiah for the region (Kaur) to 149 million rupiah for the Bengkulu City area. As well as for indirect employee expenditures ranging from 12 million rupiah in the region (Kaur) to 226 million for the Bengkulu City area.

In 2019 is the year before the entry of Covid-19 into Indonesia and 2022 is a year of recovery for Indonesia in recovering many problems caused by the disease outbreak such as economic problems and poverty. The comparison seen in 2022 is quite good when compared to 2019, although when viewed at the decline in the number of poor people in 2022, it is not as good as in 2019. Of the 7 inefficient districts/cities, Kaur district as a whole has capital expenditure, goods and services expenditure, and indirect employee expenditure which tends to be small even though in 2022 the budget increased compared to 2019. This causes the inefficiency of government spending in this district is the smallest in Bengkulu Province. On the contrary, the greatest inefficiency is experienced by Bengkulu City, so the city government must reduce the largest government expenditure in order to be efficient in poverty alleviation in Bengkulu Province.

CONCLUSIONS

The results of the study are from 10 districts/cities in Bengkulu Province in 2019 and in 2022 only 3 districts are efficient. 7 districts/cities that are inefficient in benchmarking their respective peers. With this benchmarking, it is known that indirect employee expenditure has the highest value of inefficiency or inefficiency, so that the largest decrease in expenditure must be done to be efficient followed by spending on goods and services and the last is capital expenditure.

ADVANCED RESEARCH

The limitation in this study is that the study only examines government spending, especially capital expenditure, goods and services expenditure, and indirect employee spending while government spending is not only that. This study only examined in 2019 before the Covid-19 pandemic hit and in 2022 only, not in its entirety or in a span of several years so the research year was too narrow. Based on the limitations of the study, recommendations for future research are expected to be examined by increasing the scope of time and using or adding other variables that can affect the poverty level.

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REFERENCES

Adisasmita, Rahardjo. (2011). Regional Revenue & Budget Management. Publisher: Graha Ilmu Yogyakarta.

Amri, khairul. (2022). The Effect of Government Spending and MSME Credit on the Poverty Rate: The Role of Unemployment as Moderation (Comparative Study Between Administrative Regions in North Sumatra Province. E-Journal of Islamic Economics and Business UIN Ar-Raniry, 23-24.

Central Bureau of Statistics. (2023). Number (Million People) and Percentage of Poor People in Indonesia September 2022. BPS Indonesia

Bogetoft, P., & Otto, L. (2011). Beanchmarking with DEA, SFA, and R. In International Series in Operations Research &; Management Science, 157.

Bursztyn, Leonardo. (2016). Poverty and The Political Economic of Public Education Spending: Evidence From Brazil. Journal of the European Economic, 14(5), 1124-1125. https://doi.org/10.1111/jeea.12174

Coelli, T.J., Dodla Sai Prasada Rao, Christopher J, O'Donnell, &; George Edward Battese. (2005). An Introduction of Efficiency And Productivity Analysis.

Dyna, Desir, Rohma., Masnila, Nelly., Wahyudi, Riza. (2023). The Effect of Capital Expenditure, Goods and Services Expenditure, and Unexpected Expenditure on Budget Absorption in District/City Governments in South Sumatra Province. Journal of Business and Management, 3(2), 680-681. https://doi.org/10.53363/buss.v3i2.164

Hasan, Anisa., Amen, Chairullah., Kotib, Mohammad. (2022). The Effectiveness of Village Funds on the Number of Poverty in Oba Subdistrict, Tidore Islands City (Method: Data Envelopment Analysis). E-Journal of Economics and Business Unkhair, 8(2), 33-34

Huda, I.U., &; Karsudjono, A.J.(2021). Regional Shopping as an Effort to Overcome Poverty and Unemployment in Banjarmasin City. Al-Kalam Journal of Communication, Business and Management, 8(2), 50. https://doi.org/10.31602/al-kalam.v8i2.5298

Irfan.Jannah, Nabilatul., Najmi, Isthafan., Hasrina, Cut, Delsie., Safitri, Yuni, Ayu. (2023). Regional Expenditure Efficiency and Cointegration of Poverty in Aceh Province. E-Journal of Humanities Universitas Abulyatama, 7(1), 54-55. www.jurnal.abulyatama.ac.id/humaniora

Kaligis, Engka, & Tolosang. (2017). The Effect of Capital Expenditure on Poverty in North Minahasa through Economic Growth as an Intervening Variable. E-Journal of Development Economics, Sam Ratulangi University, 17(2), 102-105.

Kiriga, J.M., &; Muthuri, R.N.D.K.(2020). The Fiscal Value of Human Lives Lost From Coronavirus Disease (Covid-19) in China. BMC Research Notes, 13(1), 1-5. http://doi.org/10.1186/s13104-020-05044-y

Kristiyanto, S. &; Widod, S. (2017). Analysis of the Efficiency of Direct and Indirect Expenditure of City District Governments in East Java in Poverty Alleviation, 17(1). https://www.jurnal.stieaas.ac.id/index.php/jei/article/view/2406

Liu, Weilin., Li, Jingdong., & Zhao, Rong. (2020). Rural Public Expenditure and Poverty Alleviation in China : A Spatial Econometric Analysis. Journal of Agricultural Science, 12(6), 53-54. https://doi.org/10.5539/jas.v12n6p46

Minister of Home Affairs Regulation on Regional Financial Management Guidelines. Permendagri Number 13 of 2006. Jakarta.

Princess, Sakinah, Setyo., Rambe, Roosemarina, Anggraini. (2023). Efficiency of Local Government Spending in Reducing Poverty Rate During Covid-19 Pandemic in Aceh Province. E-Journal of Economics and Business, University of Bengkulu, 31(2), 212. http://dx.doi.org/10.25105/me.v31i2.18313

Sadono, Sukirno. (2004). Macroeconomics, Introductory Theory, Jakarta: PT. King Grafindo Persada

Siregar, Oktarini Khamilah. (2020). The Effect of Regional Spending, Local Original Income and Economic Growth on Poverty in District and City Governments in North Sumatra. E-Journal of Accounting Universitas Pembangunan Panca Budi, 11(2), 10-11. https://jurnal.pancabudi.ac.id/index.php/akuntansibisnisdanpublik/article/view/793

Sumiyarti. (2022). The Effect of Capital Expenditure and Social Assistance Expenditure on Economic Growth and Poverty. 1(1), 40. https://doi.org/10.25217/skrikandiv1i1.1335

Tampubolon, Lusyiana Treza &; Ariadi, Wa. (2023). The Effect of Capital Expenditure and Employee Expenditure on the Original Income of the Papua Provincial Government. Journal of Economics and Business, 15(1), 26-27. https://doi.org/10.55049/jeb.v15i1.151

Tarigan, H., Sinaga, J.H., Rachmawati, R.R.(2020). Impact of Covid-19 Pandemic on Poverty in Indonesia. Center for Socioeconomic and Agricultural Policy, 3, 357-479

TN, Syamsuri, Mhd. Rizki., & Bandiyono, Agus. (2018). Local Government Expenditure Flows Based on Functions to Increase HDI and Poverty Alleviation (Study on Districts/Municipalities in Aceh Province. 2(1), 25-26. www.jurnal.pknstan.ac.id/index.php/JIA

Todaro, Michael, P., & Smith, Stephen, C. (2009). Economic Development. Publisher: Erlangga

Wa, Ariadi, S.E.(2021). Regional Expenditure Management in Concept and Analysis. Publisher: Deepublish Yogyakarta

Wibisono, Randika., Salma, Novi, Qistina., Hasanah, Nur., Mutiah, Putri., &; Noviarita Heni. (2022). Analysis of the Impact of the Covid-19 Pandemic on the Risk of Increasing Poverty in Indonesia. Islamic Economic Journal, 3(1), 23-24.

Wulandari, Mawardi, &; Junaidi (2022). The Effect of Local Government Spending on Poverty and Unemployment in Batu City in 2017-2020. E-Journal of Economics and Business Islamic University of Malang, 11(6), 25.