

**ANALYSIS OF THE IMPACT OF FISCAL DECENTRALIZATION ON  
EDUCATION OUTPUT ON THE ISLANDS OF JAVA AND BALI 2010-2019**

**ANALYSIS OF THE IMPACT OF FISCAL DECENTRALIZATION  
ON EDUCATION OUTPUT ON THE ISLANDS OF JAVA AND  
BALI 2010-2019**

**Hanida Widi Astuti, Hadi Sasana<sup>1</sup>, Retno Sugiharti<sup>2</sup>**  
Fakultas Ekonomi, Universitas Tidar, Magelang, Indonesia

***Abstract***

*Fiscal decentralization has been implemented since 2001 with the aim of providing greater capacity to the community for the services that the government provides to the community. This research aims to analyze the impact of education spending, GDP per capita, student to teacher ratio, number of schools on the average student test scores on the islands of Java and Bali in 2010-2019. This research uses panel data sourced from BPS, ministry of education and culture. The method used is the random effect model. From the test results, spending in the education sector has a significant effect on the average student test scores, the ratio of students per teacher, GDP per capita and the number of schools do not have a significant effect on the average test score. Overall, modelling with REM produces an  $R^2$  value of 9.3 percent. The results of this research show that increasing average students test scores can be done by increasing spending on education.*

**Keywords:** *fiscal decentralization, education, Java and Bali*

## **1. INTRODUCTION**

Fiscal decentralization is a central government policy package which aims to increase the capacity of its services to be able to meet the needs of society at even the smallest level from the provincial to village level. The Indonesian government, which was originally centralized, changed its system to a decentralized system because in principle it is the regional government that better understands the conditions of the people in the regions and the aspirations of the people will be quickly handled if the bureaucratic process is cut down to the regional level, so that the process of absorbing aspirations and providing public services can take place quickly. (Huda and Sasana 2013).

In Law Number 23 of 2014 concerning Regional Government, it is stated that education is one of the affairs whose authority is shared between the central government and regional governments. The central government has the authority to manage higher education, the provincial government has the authority to manage special and secondary education, while the district/regional government has the authority to manage early childhood, basic and non-formal education. The implementation of decentralization is followed by the transfer of authority related to finance to regions, which is called fiscal decentralization, namely the authority to carry out regional spending and authority related to regional financing.

---

\*Corresponding author. Email address: [hanida.astuti@gmail.com](mailto:hanida.astuti@gmail.com)

Education is believed to be the key to the progress of a nation, including Indonesia. This is reflected in the Preamble to the Constitution (UUD) of the Republic of Indonesia in 1945 that one of the goals of the Indonesian State is to make the nation's life more intelligent. Furthermore, the 1945 Constitution article 31 paragraphs 1 and 2 states that the Government is obliged to promote education by seeking and implementing national education system units that increase faith and piety as well as noble morals for all Indonesian people. Based on these statutory regulations, it is clear that the Government's role is needed in ensuring the fulfillment of educational services, both access and quality of education at all levels for all Indonesian people.

Indicators that can be used to see the success of the Education Development Program, namely the availability of educational services, affordability of educational services, improving the quality of education, realizing equality for education, and especially the final mission is to ensure certainty of getting educational services or equality in educational services at the national level, provinces and districts/cities, have not been fulfilled to date (Kemendikbud 2010).

The government has successfully implemented the 9 year Compulsory Education (Wajar) program. However, the Government is still unable to anticipate the surge in junior high school graduates as a positive impact on the success of the 9 year Fair program. Until now, every year there are always children who graduate from junior high school who are unable to continue to upper secondary education or equivalent. Nationally, secondary schools can only accommodate 76.45 percent of junior high school graduates. Or in other words, of the 13 million children aged 16 – 18 years in Indonesia, more than 3 million children face the world of work with only a junior high school education with minimal expertise and skills or, worse still, become unemployed at a young age.

The existence of Vocational High Schools (SMK) can be one solution to overcome unemployment among young people who lack skills. This is because vocational schools are schools that prepare skilled graduates who are ready to work or capable of entrepreneurship. Not to mention the industry's need for middle-level workers increases along with the country's economic growth. It is not surprising that currently the Government is promoting vocational programs, especially vocational secondary education.

The budget allocation is expected to meet needs related to improving the quality of education. The education budget allocation is more specifically outlined in article 49 of Law Number 20 of 2003 article 1, namely that education funds other than teacher salaries and official education costs are allocated a minimum of 20% of the State Revenue and Expenditure Budget (APBN) in the education sector and a minimum of 20% of the Revenue and Expenditure Budget. Regional Expenditures (APBD).

## **2. LITERATURE REVIEW**

According to the theory of fiscal decentralization, by implementing fiscal decentralization, the authority of regional governments in carrying out allocation, distribution and delegating authority given by the center to the regions is based on law

## ANALYSIS OF THE IMPACT OF FISCAL DECENTRALIZATION ON EDUCATION OUTPUT ON THE ISLANDS OF JAVA AND BALI 2010-2019

number 22 of 1999 concerning regional government stabilization functions will be greater, because the process of

(Margaretha and Simanjuntak, 2020) proves that the fiscal decentralization hypothesis influences the quality of education through government expenditure variables in the field of education at the high school level. (Luziziki, 2014) shows that the level of education has a significant effect on GDP per capita. (Yuwono, 2019) exam results on the island of Java are higher than other regions, followed by Kalimantan, Bali, Nusa Tenggara, Sumatra and lastly Sulawesi and Eastern Indonesia. Achievement of test scores has been proven to be closely related and significantly influenced by the ratio of the number of educational units to the number of students in an area, this means that the greater the ratio, the higher the score.

### 3. RESEARCH METHODOLOGY

The place or scope of this research was carried out on the islands of Java and Bali. The data used is panel secondary data obtained from the Central Statistics Agency (BPS). The targets in this research are education spending, GRDP, student per teacher ratio, number of schools and average test scores. The dependent variable of this research is the average exam score of high school/vocational school students. Meanwhile, the independent variable in this research is fiscal decentralization as seen from education spending, GDP per capita, student per teacher ratio and number of schools. In this research, the analytical technique used is panel data regression analysis technique. Panel data is a combination of time series data and cross section data. This research uses the Eviews program as a tool for analyzing data. The basic equation for panel data regression in general is as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Y	: average student test scores
A	: constant
$\beta_1, \beta_2, \beta_3, \beta_4$	: Independent variable coefficient
X1	: portion of education spending on total spending
X2	: GDP per capita
X3	: teacher to student ratio
X4	: number of schools
$\varepsilon$	: error coefficient
i	: number of islands of Java and Bali
t	: period of time study

### 4. RESULT AND DISCUSSION

#### Test Chow

Based on the Chow Test Results, it can be seen that the value of Prob. Cross-section Chi-square is 0.0117, then the value of Prob. Cross-section Chi-square < 0.05. So in the Chow test the model used is the fixed effect model.

### **Hausman Test Results**

Based on the results of the Hausman test, it shows that the value of prob. Random cross-section  $> 0.05$ , so that a decision can be made to choose a random effects model. After carrying out the Hausman test, it was found that the most appropriate model to use in this research was the REM model (random effects model).

### **Classic assumption test**

#### **Normality test**

Based on the normality test results, the Jarque-Bera probability value is 0.123619, this value is greater than alpha 0.05 ( $0.123619 > 0.05$ ). So it can be concluded that the data in this study is normally distributed or passes the normality test.

#### **Multicollinearity Test**

Based on the results of the multicollinearity test, it shows that the correlation value between independent variables has a correlation value of less than 80% (Correlation  $< 0.80$ ). From these results it can be concluded that there is no close relationship between the independent variables, so that there are no symptoms of multicollinearity.

#### **Heteroscedasticity Test**

Based on the results of the heteroscedasticity test, it was found that the probability value of the independent variable was  $> 0.05$ . So it can be concluded that the data used in this research is free from heteroscedasticity.

#### **Autocorrelation test**

Based on value Durbin-Watson In the results of the autocorrelation test, it is known that the value Durbin-Watson amounting to 1.423825. This value is between 1 and 3, so the data in this study does not have autocorrelation.

### **Hypothesis testing**

#### **Coefficient of Determination Test (R<sup>2</sup>)**

Based on test results R<sup>2</sup> can be seen that the R-Square value is 0.093. This means that the ability of the education expenditure variables, GDP per capita, student per teacher ratio and number of schools to explain the average student test score variable is 9.3%. Meanwhile, the remaining 90.7% is explained by variables outside the model. The average exam score for high school/vocational school students on the islands of Java and Bali is influenced by education spending, GRDP per capita, student per teacher ratio and number of schools. Meanwhile, the remaining 90.7% was influenced by other factors not included in this research.

#### **F test**

Based on the results of the F test, it shows that the f statistical probability value is 0.164093, meaning it is greater than 0.05. This shows that education spending, GRDP per capita, student per teacher ratio and number of schools together do not have a significant effect on the average student test score variable.

# ANALYSIS OF THE IMPACT OF FISCAL DECENTRALIZATION ON EDUCATION OUTPUT ON THE ISLANDS OF JAVA AND BALI 2010-2019

## Partial Test (t Test)

In this research, the t table value used is 1.669. where  $\alpha=0.05$  with a degree of freedom (df) value of 65 which is obtained from  $df=nk=70-5=65$ . From the results obtained, spending in the education sector has a significant effect, while GRDP per capita, the ratio of students per teacher, and the number of schools do not have a significant effect on the average test score.

### Discussion

#### a. Education Expenditures on average student test scores

The results show that the education spending coefficient value is 0.014931. The t test probability value is  $0.0288 < 0.05$ , so it is significant. From the coefficient and probability results, it can be interpreted that education spending has a positive and significant effect on the average student test scores. The use of the portion of education expenditure in total expenditure has a positive and significant influence on the average student test scores.

#### b. GDP Per Capita to average student test scores

GRDP Per Capita does not have a significant effect on the average student exam score. However, education is a basic and planned effort to create a learning atmosphere and learning process so that students actively develop their potential and the continuity of children's education cannot be separated from parental support, one of which is financial support.

GRDP Per Capita does not have a significant effect because the crime rate is increasing and there is the issue of bomb threats in Bali, which makes people worried and disrupts their work so that people's income decreases. The government is expected to improve security.

#### c. The ratio of students per teacher to the average student test score

In this study, no significant relationship was found between the ratio of students per teacher and the average student test scores. However, as more and more students want to receive education, the burden on teachers increases. And increasing the number of teachers can reduce the burden on teachers and can maximize learning so that students can learn more effectively.

Low teacher competency, unequal distribution and many teachers who are about to retire are the causes of the reduction in teaching staff. The government needs a new transformation related to education, but also to open up ways for teachers, so that they can answer the Sustainable Development Goals (SDGs) targets.

#### d. Number of schools on average student test scores

The variable number of schools does not have a significant effect on the average test score. In this study, no significant relationship was found between the number of schools and the average test score. However, the number of schools could be related because increasing the number of schools can provide students with choices for their specialization so that they can maximize their abilities.

Inadequate facilities and infrastructure make students less enthusiastic about learning, so the government must level educational facilities and infrastructure.

## **5. CONCLUSION**

Based on the results and discussions carried out in this research, it was found that spending in the education sector had a positive and significant effect on the average test score. Education spending is absolutely necessary for educational development and can influence human productivity or improve the quality of education.

GRDP Per Capita does not have a significant effect on the average student test score because the crime rate is increasing and there are rumors of bomb threats in Bali, which is causing people to worry and disrupting their work so that people's income is decreasing. The government is expected to improve security.

The ratio of students per teacher does not have a significant effect on the average student test score. Low teacher competency, uneven distribution and many teachers who are about to retire are the causes of the reduction in teaching staff. The government needs a new transformation related to education, but also to open up ways for teachers, so that they can answer the Sustainable Development Goals (SDGs) targets.

Number of schools does not have a significant effect on the average test score. Inadequate facilities and infrastructure make students less enthusiastic about learning, so the government must level educational facilities and infrastructure.

## **Reference**

- Adi, P.H. 2005. Dampak desentralisasi fiskal terhadap pertumbuhan ekonomi. *Jurnal Kritis*. Universitas Kristen Satya Wacana. [https://www.academia.edu/download/53149022/Dampak\\_Desentralisasi\\_Fiskal\\_terhadap\\_Pertumbuhan\\_Ekonomi.pdf](https://www.academia.edu/download/53149022/Dampak_Desentralisasi_Fiskal_terhadap_Pertumbuhan_Ekonomi.pdf)
- Anggraini, H.G. 2014. Analisis Output Dan Outcome Bidang Pendidikan Dalam Era Otonomi Daerah Di Jawa Tengah. Vol. IX, No.1. Hal. 70-82. <https://journal.unnes.ac.id/nju/DP/article/view/3357>
- Busemeyer, Marius R. 2008. *the impact of fiscal decentralisation on education and other types of spending*. 14(3): 451–81 <https://onlinelibrary.wiley.com/doi/abs/10.1002/j1662-6370-2008.tb00109.x>
- Brahmono, B., Muhammad, I., Apri, W. 2017. Pengaruh Jumlah Smu, Jumlah Guru Dan Jumlah Ruang Kelas Terhadap Jumlah Murid Yang Terdapat Di Provinsi Lampung. *Jurnal Manajemen Pendidikan Islam Al-Idarah*. Vol.2. No.1. <https://ejurnal-stitpringsewu.ac.id/index.php/jmpi/article/view24>
- Doriza, S., Deniey A. P. & Ernita M. 2012. Dampak Desentralisasi Fiskal terhadap Disparitas Akses Pendidikan Dasar di Indonesia. *Jurnal Ekonomi dan Pembangunan Indonesia* Vol. 13 No. 1, Juli 2012: 31-46. <https://scholarhub.ui.ac.id/jepi/voll3/iss1/3/>
- Ekasari, Y.K. 2018. Pengaruh Biaya Pendidikan Dan Kinerja Guru Terhadap Pencapaian Siswa. *Jurnal Ekonomi dan Bisnis*. Vol.2, No.1.
- Faguet, Jean and Fabio Sanchez. 2008. *Decentralization's Effects on Educational Outcomes in Bolivia and Colombia*. *World Development Journal*. Vol.36 <https://www.sciencedirect.com/science/article/pii/S0305750X08000569>

## ANALYSIS OF THE IMPACT OF FISCAL DECENTRALIZATION ON EDUCATION OUTPUT ON THE ISLANDS OF JAVA AND BALI 2010-2019

- Falch, Torberg dan Justina A. V. Fischer. 2012. *Public sector decentralization and school performance: International evidence*. University of Hamburg. <https://www.sciencedirect.com/science/article/pii/S0165176511003995>
- Freinkman, lev. 2010. *Fiscal Decentralization And The Quality Of Public Services In Russian Regions*. World Bank. USA <https://journals.sagepub.com/doi/abs/10.1177/152397211001000105>
- Huda, A, Hadi, Sasana. 2013. “Analisis Dampak Desentralisasi Fiskal terhadap Outcome Pelayanan Publik bidang Pendidikan . *Jurnal Ekonomi* Vol.2. No.1 <https://ejournal3.undip.ac.id/index.php/jme/article/view/1965>
- Iskindar, A. 2021. Desentralisasi dan efisiensi belanja fungsi pendidikan serta implikasinya terhadap kesejahteraan masyarakat di provinsi Sulawesi selatan. *Info Artha* Vol.5. No.1 <http://jurnal.pknstan.ac.id/index.php/JIA/article/view/1139>
- Khotijah, Umi. 2015. Pengaruh Desentralisasi Fiskal Terhadap Outcomes Pelayanan Publik Bidang Pendidikan. *Skripsi*. Universitas Muhammadiyah Surakarta. <https://eprints.ums.ac.id/id/eprint/39060>
- Margaretha, E, Robert, A.S. 2020. Dampak Belanja Sektor Pendidikan Terhadap Kualitas Pendidikan Di Indonesia. *Info Artha* Volume 4 No. 02 (2020), 37-48 <http://jurnal.pknstan.ac.id/index.php/JIA/article/view/816>
- Miski, R. 2015. pengaruh sarana dan prasarana terhadap hasil belajar siswa. Vol.4. No.2 <https://ojs.unida.ac.id/jtm/article/view/341>
- Oates, W.E. 1993. *Fiscal Decentralization and Economic Development*. *National Tax Journal*, Vol. 46. No.2. <https://www.journals.uchicago.edu/doi/abs/10.1086/NTJ41789013>
- Rahmadi, G.A. 2020. Pengaruh Desentralisasi Fiskal Terhadap Kesejahteraan Masyarakat Indonesia Di Bidang Pendidikan. *Jurnal Ilmiah*. Universitas Brawijaya Malang <https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/6479>
- Salinas, Paula,. 2007. *Evaluation Of Effects Of Decentralization On Educational Outcomes In Spain*. Institutd’economia de Barcelona <https://dialnet.unirioja.es/descarga/articulo/3137309.pdf>
- Sasana, H. 2006. Analisis dampak desentralisasi fiskal terhadap pertumbuhan ekonomi di kabupaten/kota provinsi jawa tengah. Vol.3. No.2. 145-170 <http://eprints.undip.ac.id/16947/>
- Sasana, Hadi,. 2009. Peran Desentralisasi Fiskal Terhadap Kinerja Ekonomi di Kabupaten / Kota Provinsi Jawa Tengah. *Jurnal Ekonomi Pembangunan* Vol.10, No.1, Hal.103-124 <https://publikasiilmiah.ums.ac.id/xmlui/handle/11617/96>
- Solechah. 2013. Dampak Desentralisasi Fiskal Terhadap Outcomes Pelayanan Publik Bidang Pendidikan. Universitas Diponegoro. <https://www.neliti.com/publications/22869/dampak-desentralisasi-fiskal-terhadap-outcomes-pelayanan-publik-bidang-pendidika>