

IMPACT OF FISCAL DECENTRALIZATION ON THE PUBLIC SERVICE IN INDONESIA

DAMPAK DESENTRALISASI FISKAL TERHADAP PELAYANAN PUBLIK DI INDONESIA

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ABSTRACT

The broader autonomy for local governments has impacted regional economics and increased public services in both the health and education sectors. This research has tried to analyze the impact of fiscal decentralization on the health and education sector in Indonesia. This research was carried out from 2013 to 2020 using sample data from Indonesia's districts and city clusters. A data panel is used as the analysis method. The study shows that in all cluster data, fiscal decentralization has a positive but not substantial effect on public services in the health sector. In addition, fiscal decentralization positively and significantly impacts public services in the education sector. This study recommends the need for the government to relocate the spending to public health and education. The local government should evaluate minimum service standard indicators in public services that the districts/cities have done to local government people.

Keywords: fiscal decentralization, panel data regression, public education sector, and public health sector

Abstrak

Otonomi yang lebih luas bagi pemerintah daerah telah berdampak pada perekonomian daerah dan peningkatan pelayanan publik baik di sektor kesehatan maupun pendidikan. Penelitian ini bertujuan untuk membangun model konseptual dampak desentralisasi fiskal pada sektor kesehatan dan pendidikan. Penelitian ini dilakukan dari tahun 2013 hingga 2020 dengan menggunakan sampel data dari kabupaten dan kota di Indonesia. Panel data digunakan sebagai metode analisis. Hasil studi ini menunjukkan dalam semua data klaster, desentralisasi fiskal memiliki efek positif tetapi tidak substansial terhadap layanan publik di sektor kesehatan. Selain itu, desentralisasi fiskal berdampak positif dan signifikan terhadap pelayanan publik di sektor pendidikan. Studi ini merekomendasikan perlunya pemerintah merelokasi pengeluaran untuk kesehatan dan pendidikan masyarakat. Pemerintah daerah harus mengevaluasi indikator standar pelayanan minimal dalam pelayanan publik yang telah dilakukan kabupaten/kota kepada masyarakat pemerintah daerah.

Kata Kunci: desentralisasi fiskal, data panel, bidang Pendidikan masyarakat, dan bidang Kesehatan masyarakat

Introduction

Historically, a wave of fiscal decentralization reforms has questioned central governments' ability to deliver effective public services. The assumption is that local governments, because they are closer to their citizens, can distribute public goods much more effectively. The government may face significant challenges in exercising fiscal competence. Nonetheless, there are reasons to believe the lower thirds.¹ In Indonesia, the centralized govern-

ment system eventually failed to bring prosperity and progress to the nation and the state, increasing the emergence of regional inequalities amid Java Island and the exterior of Java Island and amongst the western part besides the eastern parts of Indonesia.²

The dissatisfaction with the local government's overly centralized government system triggered the demand for broader autonomy and inevitably came to Indonesia's

¹ H. Arends, "The Dangers of Fiscal Decentralization and Public Service Delivery: a Review of Arguments," *Politische Vierteljahresschrift*, 61(3),

(2020). 599–622. <https://doi.org/10.1007/s11615-020-00233-7>.

² M. Kuncoro, *Otonomi Daerah: Menuju Era Pembangunan Daerah* Ed. 3. (3rd ed.). (Jakarta: Penerbit Erlangga, 2014).

local governments. Following the 1999 reform, President Habibie signed Law No. 22/1999 on local government and Law No. 25/1999 on central and local government fiscal balance. The broader autonomy of local governments has brought consequences with fiscal decentralization funds.³

Tiebout (1956), the pioneer who introduced fiscal decentralization theory, said that fiscal decentralization impacts increasing efficiency in increasing public service.⁴ Furthermore, the decentralization theorem provides accessible services to people because of local governments' numerical benefits concerning the regions' economic or social characteristics. Hence, more attention should be given to evaluating the effect of decentralization arranged eminence in public services provision.⁵ The central government provides conceptually fiscal decentralization funds to bring change to local government. Fiscal decentralization aims to bring the local government closer to the community.^{6,7,8,9}

Kis-Katos and Sjahrir (2017) conducted a study of 271 districts and cities in Indonesia from 1994 to 2009 and found that after the year 2001, several districts had low levels of public funding and started allocating funds to

the health and education sectors. However, the study did not observe the influence of fiscal decentralization on whether there is a growth in public services, especially in the education and health segment.¹⁰ Furthermore, Gonschorek & Schulze (2018) found that under President Joko Widodo's regime, the intergovernmental fiscal transfer system is still using the necessary allocation based on the general allocation fund (DAU) formula, while allocative efficiency requires the discontinuation and replaced by a scheme where transactions are not connected to inputs.¹¹ Therefore, several districts and cities, especially in the east part of Indonesia, still suffer from poor public service in the health and education sectors. According to research conducted by Efriandi, Couwenberg, & Holzacker (2019), fiscal decentralization failed to distribute public services to the community, health, and clean water in Jayawijaya Districts, Papua Provinces.¹²

We contribute to this research by assessing the impact of fiscal decentralization on public service across all districts and cities in Indonesia. Based on facts and conclusions from the past, this study looks at how fiscal decentralization affects health and education in districts and cities in Indonesia. This research aims to provide information, particularly for other researchers interested in deepening the effect of fiscal decentralization on public services in Indonesia. Further researchers are expected to perform more studies by comprehensively analyzing other variables for increasing public services in Indonesia.

³ Sadu Wasistiono, P. Polyando, *Politik Desentralisasi di Indonesia*. (Sumedang: Institut Pemerintahan Dalam Negeri (IPDN) Press Jatinangor, 2017).

⁴ Tiebout. A Pure Theory of Local Expenditure. *Journal of Political Economy*, 64(5), (1956), 416-424. <https://doi.org/10.1360/zd-2013-43-6-1064>.

⁵ W. Oates, An Essay on Fiscal Federalism. *Journal of Economic Literature*, 37, (1999), 1120-1149.

⁶ Antonis Adam, M. D. P. K. Delis, *Fiscal Decentralization and Public Service Sector Efficiency: Evidence from OECD Countries* (No. 36889). Retrieved from https://mpr.aub.uni-muenchen.de/36889/1/MPRA_paper_36889.pdf.

⁷ Faguet, J.-P. (2008). Decentralisation's Effects on Public Investment: Evidence and Policy Lessons from Bolivia and Colombia. *The Journal of Development Studies*, 44(8), 1100-1121. <https://doi.org/10.1080/00220380802242370>.

⁸ Robinson, M. (2007). Does decentralisation improve equity and efficiency in public service delivery provision? *IDS Bulletin*, 38(1), 7-17. <https://doi.org/10.1111/j.1759-5436.2007.tb00333.x>.

⁹ Wang, W., Zheng, X., & Zhao, Z. (2012). Fiscal reform and public education spending: A quasi-natural experiment of fiscal decentralization in China. *Publius*, 42(2), 334-356. <https://doi.org/10.1093/publius/pjr039>.

¹⁰ Kis-katos, K., & Sjahrir, B. S. (2017). The Impact of Fiscal and Political Decentralization on Local Public Investment in Indonesia. *Journal of Comparative Economics*, 45(2), 344-365. <https://doi.org/10.1016/j.jce.2017.03.003>

¹¹ Gonschorek, G. J., & Schulze, G. G. (2018). Continuity or change? Indonesia's intergovernmental fiscal transfer system under Jokowi. *Journal of Southeast Asian Economies*, 35(2), 143-164. <https://doi.org/10.1355/ae35-2c>

¹² Efriandi, T. R. I., Couwenberg, O., & Holzacker, R. L. (2019). Decentralization and public service provision: A case study of the education sector in Jayawijaya District, Papua, Indonesia. *Contemporary Southeast Asia*, 41(3), 364-389. <https://doi.org/10.1355/cs41-3b>

Literature Review

Oates (1999) explained that the local government needs to give broad decentralization. This is essential because it has better knowledge and information about public service needs than the central government.¹³ Furthermore, Musgrave (1959) explains the government function of macroeconomic stabilization, the income distribution function, and resource allocation. Decentralization is expected to boost public service by allowing local governments to have more knowledge and awareness about their communities' wellbeing, which is the government's third position.¹⁴

For several countries with a centralized government system, the attraction of decentralization of public services lies in the policy of giving more decisions to sub-central governments over decision-making and decentralization. The correlation between the sub-central government and the distribution process will significant and positive impact. Based on this thesis, decentralization encourages better results by enhancing the flow and consistency of information and enabling the transition. Specific general requirements for policymakers and assembly make it easier for people to track policymakers' choices and decisions that require them to be responsible for their outcomes.¹⁵

Cordeiro Guerra & Lastra-Anadón (2019) stated that decentralization would positively enhance policy results under the right conditions. They also found considering local governments' output in acquiring public goods.¹⁶ Furthermore, a literature review on local government conducted by Narbón-Perpiñá & De Witte (2018) identified 84 scientific studies between 1990 and 2016. This study summarizes the studies evaluating the local public sector across different countries, matching the results, procedures, and input

and output variables. Based on this study, the local government must provide a bundle of services and facilities.¹⁷

Melo-Becerra et al. (2020) conducted a study and report on Colombia's public education sector's local performance between 2008 and 2013. This study stated that after the fiscal decentralization of local government to local government, it was found that the Colombian local government has an increasingly better result in public education quality, the efficiencies varying between 26% and 98%. Possible causes of inefficiency, such as the administrative system and fiscal autonomy, are being investigated in this study.¹⁸ Moreover, Letelier S & Ormeño C (2018) conducted a study using panel data between 2005 to 2013 in Chile. The result showed that local government, with greater autonomy in fiscal decentralization, performed greater autonomy and worked even better outcomes of public service in education in Chile. Therefore, all municipal governments needed more effective fiscal decentralization to increase public service in education.¹⁹

Dwicaksono & Fox (2018) argued that the public healthcare system's fiscal decentralization is part of their report. According to the findings, decentralization significantly impacts health system indicators, meaning that it enhances health system efficiency and outcomes.²⁰ Meanwhile, Hao et al. (2020) used

¹³ Oates (1999). *Ibids*.

¹⁴ Musgrave, R. A. (1959). *The Theory of Public Finance*. New York: McGraw Hill.

¹⁵ Grindle, M. S. (2007). *Going Local: decentralization, democratization and the promise of good governance*. Princeton University Press.

¹⁶ Cordeiro Guerra, S., & Lastra-Anadón, C. X. (2019). The quality-access tradeoff in decentralizing public services: Evidence from education in the OECD and Spain. *Journal of Comparative Economics*, 47(2), 295–316. <https://doi.org/10.1016/j.jce.2018.12.004>

¹⁷ Narbón-Perpiñá, I., & De Witte, K. (2018). Local governments' efficiency: a systematic literature review—part I. *International Transactions in Operational Research*, 25(2), 431–468. <https://doi.org/10.1111/itor.12364>

¹⁸ Melo-Becerra, L. A., Hahn-De-Castro, L. W., Ariza, D. S., & Carmona, C. O. (2020). Efficiency of local public education in a decentralized context. *International Journal of Educational Development*, 76(July 2019), 102194. <https://doi.org/10.1016/j.ijedudev.2020.102194>

¹⁹ Letelier S, L., & Ormeño C, H. (2018). Education and fiscal decentralization. The case of municipal education in Chile. *Environment and Planning C: Politics and Space*, 36(8), 1499–1521. <https://doi.org/10.1177/2399654418761888>

²⁰ Dwicaksono, A., & Fox, A. M. (2018). Does Decentralization Improve Health System Performance and Outcomes in Low-and Middle-Income Countries? A Systematic Review of Evidence from Quantitative Studies Source: *The Milbank Quarterly*, Vol. 96, No. 2 (June 2018), pp. 323-368

panel data from 23 Chinese provinces between 2002 and 2012 to investigate fiscal decentralization and public health. According to the report, fiscal decentralization has a negative and substantial effect on public health, both directly and indirectly. Fiscal decentralization policy has given the local government more fiscal capacity, but at the same time, it also grows the income disparity problematic. Income inequality has an adversative effect on public service in healthcare.²¹

Method

This research employs a mixed method that includes a qualitative method and a panel data regression. On the other hand, panel data regression looked at the effect of fiscal decentralization mainly on local government public service. Dynamic panel regression is based on cluster data divided into 4 clusters. This cluster data covered the period of 2013 to 2020 from districts and cities in Indonesia. The first cluster data includes districts/cities that received special funds and fiscal decentralization, such as districts and cities in Yogyakarta Province, Aceh Province, Papua Province, and West Papua Province. The second data cluster includes districts/cities with more than 50 percent of local government revenues from fiscal decentralization funds. The third cluster results are districts/cities with 25-50 percent local government revenues. The fourth cluster data covers districts and cities with less than 25 percent of local government revenue.

This study makes use of panel data to address the various concerns raised at the outset. Panel data is a type of econometric method due to the constraints of the time series and cross-section methods. Panel data is a type of data that includes both spatial and temporal information. The combination of the two types of data, namely cross-sectional and time-series data, is used to answer questions that cross-sectional or time-series models

alone cannot answer. The panel data regression model, according to Gujarati (2004), is a collection of time series and cross-section data, micro panel data, longitudinal data, or a combination of time-based studies from multiple variables or subject groups, event history analysis, or other studies. Under certain conditions or when subjected to current examination, objects can change.²²

Gujarati (2004) said that the regression panel data is pooled data, which collects times series, cross-section, micro panel data, longitudinal data, or a combination study on elementary time of various variables or groups of the subject, even histories, analysis or studies change the objects with a specific condition or cohort analysis.²³ Baltagi (2008) revealed that the panel regression model is often used, namely a fixed-effect model (FEM), a random effect model (REM), and a common effect model (Common). Thus, to decide between three model panel data, use panel model testing using the Wald Test and Hausman Test. The Wald test will be used to decide if a common effect model or a fixed-effect model should be used. The Hausman test will then be used to determine whether to use a fixed-effect or random-effect model.

The panel data model regression provides three estimation model options: common effect, fixed effect, and random effect. The test are including the Wald and Hausman tests, is used to determine which of the three types of estimated models is the most appropriate. The Wald Test is used to determine or select whether an individual effect exists in the model by comparing the R² values of the common effects model and the fixed effect model. The Hausman Test is used to select between fixed and random effects estimation models. The hypothesis was tested at 1%, 5%, and 10% of the significance level.²⁴

Adam and Delis (2012), who investigated the effects of fiscal decentralization funds

Published by. The Milbank Quarterly, 96(2), 323-368.

²¹ Hao, Y., Liu, J., Lu, Z. N., Shi, R., & Wu, H. (2020). Impact of income inequality and fiscal decentralization on public health: Evidence from China. *Economic Modelling*, (February). <https://doi.org/10.1016/j.econmod.2020.02.034>

²² Gujarati, D. N. (2004). *Basic Econometrics*. New York (4th ed.). McGraw Hill. <https://doi.org/10.1126/science.1186874>

²³ *Ibid.*

²⁴ Ekananda, M. (2016). *Analisis ekonometrika data panel teori dan pembahasan menyeluruh bagi penelitian ekonomi, bisnis dan sosial*. Jakarta: Mitra Wacana Media.

on public services, developed an empirical model to study fiscal decentralization funds' effect on public services. Between 1970 and 2000, the researchers researched 21 OECD nations, focusing on public service in health and education.²⁵ The result is in line with Jia et al. (2014)²⁶ and Zhong (2014)²⁷. A sample of China from 1997 to 2006 found a growth in public expenditure due to an increase in fiscal decentralization funds. This research is divided into two parts, namely public health and public service in education. Jia et al. (2014) models were used in this research. Based on previous empirical research, this study concludes that education and health are the most important public services required by local governments.²⁸ As a result, model (1) represents the effect of fiscal decentralization on public service in the health sector, while model (2) represents the impact of fiscal decentralization on public service in the education sector:

$$PS\ Health_{it} = \alpha_0 + \beta_1 FD_{it} + \beta_2 GDPR_{it} + \beta_3 PAD_{it} + \beta_4 Pop_{it} + \beta_5 Kes_{it} + u_{it} \dots\dots\dots (1)$$

Where:

PS Health is a public sector health service

where the assumption used is the number of health service facilities with i for the cross-local government's cross-section based on 4 cluster data and t for time.

The FD is a decentralized fund the local government receives;

GDPR is the local government's regional economic growth.

PAD is the original local government revenue.

POP is the population of the local government.

Kes is the proportion of local government expenditure on health.

The second model of education is as follows.

$$PS\ Educ_{it} = \alpha_0 + \beta_1 FD_{it} + \beta_2 GDPR_{it} + \beta_3 PAD_{it} + \beta_4 Pop_{it} + \beta_5 Educ_{it} + u_{it} \dots\dots\dots (2)$$

Where:

PS Educ is a public sector education service

where the assumption used is the number of years employed by inhabitants aged 15 years and older in undergoing prescribed education, with i for the cross-section of local government based on 4 cluster data and t for time.

The FD is a decentralized fund the local government receives;

GDPR is the local government's regional economic growth.

PAD is the local government's income

POP is the local government's population

Educ is the proportion of spending by local government on education.

²⁵ Adam, Antonis; Delis, M. D. P. K. (2012). Fiscal Decentralization and Public Service Sector Efficiency: Evidence from OECD Countries (No. 36889). Retrieved from https://mpr.aub.uni-muenchen.de/36889/1/MPRA_paper_36889.pdf.

²⁶ Jia, J., Guo, Q., & Zhang, J. (2014). Fiscal decentralization and local expenditure policy in China. *China Economic Review*, 28, 107-122. <https://doi.org/10.1016/j.chieco.2014.01.002>

²⁷ Zhong, Y. (2014). Do Chinese People Trust Their Local Government, and Why? *Problems of Post-Communism*, 61(3), 31-44. doi:10.2753/ppc1075-8216610303.

²⁸ Jia et al. (2014). *ibids*

Table 1. Research Variables and Explanation

Variable	Description	Explanation
Dependent Variables		
PS Health	Public Service in the Health Sector	Public services of the health sector are proxies with the sum of health care facilities such as hospitals, health centers, and clinics in districts and cities with clusters 1 to 4 with a period of 2013 to 2020
PS Educ	Public Service in Education Sector	Between 2013 and 2020, the number of years used by residents aged 15 and older to pursue a formal education in districts and cities with clusters of 1 to 4 in the public service education sector
Independent Variables		
FD	Fiscal decentralization	Fiscal decentralization is the amount that districts and cities received with clusters 1 to 4 from 2013 to 2020
GDPR	Regional Gross Product Domestic	Regional Gross Product Domestic is the local government's regional economic development in districts and cities in clusters 1 to 4 from 2013 to 2020.
PAD	Original Local Government Revenue	The original revenue of local government in the districts and cities in clusters 1 to 4 with a period from 2013 to 2020.
POP	Population	It is the number of populations in the districts and cities in clusters 1 to 4 with a period from 2013 to 2020
Kes	Local Government spending on health	It is the local government proportion expenditure on health in all districts and cities in clusters 1 to 4 with a period of 2013 to 2020
Educ	Local Government Expenditure on Education	It is the local government proportion of education in all districts and cities in all clusters with a period from 2013 to 2020

4. Result and Discussion

Using STATA software, the study variables are gathered and encoded for statistical interpretation. The study collected around 482 districts and cities from all Provinces in Indonesia and grouped them into four clusters. Several districts and cities were excluded from the study due to a lack

of data. Districts/cities of the Special Province of the Capital City (DKI) Jakarta are excluded from the research data since they have never received central government fiscal decentralization money. Table 2 provides descriptive statistics for variables used to estimate regression equation (1) and regression equation (2).

Table 2. Variable description

Variables	SD	Mean	Min	Max
PS Health	211.21	592.03	27	4796
PS Educ	0.916	8.34	6.65	11.06
FD	1,378,334,312,798	1,219,044,753,011	100,235,786,200	71,567,021,624,736
GDPR	2.775	5.7625	-9,66	38,22
PAD	370,820,214,035.17	436,658,088,618	1,490,176,000.00	867,643,469,527
POP	117993	132757	7734	3692693
Kes	363489071432	120588726751	1265342632	946839548712
Educ	56182078798	35868541721	1056370807	930943288998

Source: Results from data analysis on STATA Software

The Wald test will be used in the following section to decide if the panel data regression model is a Common Effect Model (CEM) or a Fixed Effect Model (FEM) in the panel data regression of clusters 1 through 4. Following the Wald Test, the Hausman test is used to assess if the Fixed Effect Model (FEM) or the Random Effect Model (REM) should be used against data clusters ranging from 1 to 4. Table 3

summarizes the findings of the Wald and Hausman tests. The final result-based Table 3 for the model (1) above has shown that clusters I, II, III and cluster IV uses Fixed Effect Model (FEM). Meanwhile, in Table 4 for model (2) below, the analysis proves that all four-cluster panel models use the Fixed Effect Model (FEM).

Table 3. The Result of Test CEM vs FEM vs REM on Model (1)

Model	Cluster I	Cluster II	Cluster III	Cluster IV
CEM vs FEM	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model
FEM vs REM	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model
Final Result	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model

Source: Author's calculation based on the cluster panel data.

Table 4. The Result of Test FEM vs REM on the Model (2)

Model	Cluster I		Cluster II		Cluster III		Cluster IV	
CEM vs FEM	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect
FEM vs REM	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect
Final Result	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect	Fixed Model	Effect

Source: Author's calculation based on the cluster panel data.

Based on these results, the next step is to do panel regression data for models (1) and model (2). Table 5 shows the panel data regression results for model (1), the impact of fiscal decentralization on public services in the health sector. The actual data reported in Table 5 illustrate the influence of fiscal decentralization panel data model of the public health service. A fixed-effects model reveals that fiscal decentralization has a positive but small impact on public service in the health sector. Increasing fiscal decentralization across all cluster data districts and cities has little effect

on public health services, according to the findings. This analysis shows that the fiscal decentralization fund has no appreciable impact on the public health services sector. The research findings align with the analysis of Sow and Razafimahefe (2015) that found if certain stringent criteria are met, fiscal decentralization funding can enhance public service in the health sector.²⁹

²⁹ Sow, Moussé & Razafimahefe, Ivohasina. (2015). Fiscal Decentralization and the Efficiency of Public Service Delivery. IMF Working Papers. 15. 10.5089/9781484351116.001.

Table 5. The Result for the dependent variable Public Service on Health

Variable Public Health Sector	Fixed Effect Model			
	Cluster I	Cluster II	Cluster III	Cluster IV
FD	0.287	0.73	0.623	0.416
GDPR	0.468	0.419*	0.063	0.096
PAD	0.517	0.529*	0.016	0.022
POP	0.459*	0.013	0.222*	0.013*
Kes	0.228*	0.823*	0.008	0.588
R-Square	0.607	0.495	0.410	0.588
Adj-R ²	0.603	0.457	0.407	0.564
Prob F-Stat	0.000	0.000	0.007	0.000

*Significant at 5%

Source: Author's calculation based on the cluster panel data (2020).

Hao et al. (2020) analyzed how fiscal decentralization affects public health. Using a panel of data from 23 Chinese provinces, they found that fiscal decentralization had a negative impact on public health in China between 2002 and 2012. This study proposed evaluating municipal governments based on their ability to serve public health throughout time. A further recommendation of this report was for the local administration to alter the top-down system and boost the bottom-up charge in order to pay attention to the requirements of residents and address fundamental health needs.³⁰

Moreover, the varying economic growth in all districts and cities across all clusters is positive and considerable. This strong association withstands study using the GMM method. Although economic growth yields diverse results in the fixed-effects model, it only has a positive and significant impact on cluster 2. According to both Process GMM and fixed effect panel data, variable government spending on health has a significant and favorable effect on the public health systems of districts and cities in clusters I and II.

The autonomy era since 2001 has decentralized the health sector to local government in districts and cities. Although the responsibility to deliver public health has been

decentralized to districts and city governments, the health indicator output and outcomes are still established.³¹ The central government has set a uniform policy with minimum service standards. The standard regulates the essential public services, such as health and education, to be provided by the local government for residents this minimum service standard, especially health, causes new problems for districts and cities in all clusters. It means that the regulation minimum standard on health has been made, but the district's and cities' fiscal capacity in all data clusters is not enough to fulfill the needs of the public health standard of minimum.³² This research is consistent with the research conducted by DiNovi & Turati (2019). They analyzed fiscal decentralization with a study from the Italian government on differences in health outcomes. The findings show that fiscal decentralization relies on growth and fiscal autonomy. Rich regions that have massive spending with their revenues can increase healthcare services.³³

³⁰ Hao, Y., Liu, J., Lu, Z. N., Shi, R., & Wu, H. (2020). Impact of income inequality and fiscal decentralization on public health: Evidence from China. *Economic Modelling*, (February). <https://doi.org/10.1016/j.econmod.2020.02.034>

³¹ Law No. 23 of 2014 concerning Local Government.

³² Peraturan Menteri Kesehatan Republik Indonesia Nomor 4 Tahun 2019 tentang Standar Teknis Pemenuhan Mutu Pelayanan Dasar pada Standar Pelayanan Minimal Bidang Kesehatan.

³³ DiNovi, C., Piacenza, M., Robone, S., & Turati, G. (2019). Does fiscal decentralization affect regional disparities in health? Quasi-experimental evidence from Italy. *Regional Science and Urban Economics*, 78. <https://doi.org/10.1016/j.regsciurbeco.2019.103465>

Table 6. The result of the dependent variable Public Service for Education

Variable Public Service for Education	Fixed Effect Model			
	Cluster I	Cluster II	Cluster III	Cluster IV
FD	0.488*	0.854*	0.720*	0.309*
GDPR	0.889	0.382	0.778	0.653*
PAD	0.972	0.555	0.896	0.484
POP	0.413	0.467	0.222	0.013
Educ	0.228*	0.823*	0.163*	0.208
R-Square	0.601	0.697	0.597	0.575
Adj-R ²	0.590	0.696	0.587	0.572
Prob F-Stat	0.000	0.000	0.000	0.000

*significant at 5%

Source: Author's calculation based on the cluster panel data (2020).

Table 6 reveals a positive and statistically significant relationship between fiscal decentralization and public service in the education sector in all cluster districts and cities. This study argues that expanding fiscal decentralization and public service in education is a good idea. In contrast, population and state regional taxes have a favorable and large effect on public health services across all clusters. Original local revenue (PAD) has a favorable and important effect on public health services only in cluster II. Moreover, public health services in clusters I and II are favorable and substantial due to local government expenditures on health. The other cluster has no considerable impact on health sector public service.

The next section examined the impact of fiscal decentralization on public education sectors. In clusters, I, II, III, and IV, fiscal decentralization (FD) has a considerable and favorable effect on public services in the education sector, as shown in Table 5. The panel's model indicates that economic expansion has a substantial beneficial effect on public education services only in clusters II and IV. Population and original local revenue (PAD) variables have little effect on public service in the education sector. Moreover, local government education funding has a good and significant impact on education in all clusters, including clusters I, II, III, and IV.

The second consequence is the effect of fiscal decentralization on public service in the education sector. Based on the panel regression, fiscal decentralization positively impacts public service in the education sector in all cluster data, namely clusters I, II, III, and IV. The result means that any growth in the

fiscal decentralization funds to local governments can encourage increased public services in the education sector. The result of this study is in line with previous studies which found that the increasing fiscal decentralization fund encourages public services in the education sector, for example, Dissou et al. (2016)³⁴, Sanogo (2019)³⁵, Cordeiro & Lastra-Anadón (2019)³⁶, and Melo-Becerra et al., (2020).³⁷ Ebel and Yilmaz (2016) stated that applying fiscal decentralization increases the effectiveness of public service. Improving the fiscal decentralization fund encourages regional governments to increase their local government spending capacity.³⁸ This increase in local government expenditure can promote

³⁴ Dissou, Y., Didic, S., & Yakautsava, T. (2016). Government spending on education, human capital accumulation, and growth. *Economic Modelling*, 58, 9–21.

<https://doi.org/10.1016/j.econmod.2016.04.015>

³⁵ Sanogo, T. (2019). Does fiscal decentralization enhance citizens' access to public services and reduce poverty? Evidence from Côte d'Ivoire municipalities in a conflict setting. *World Development*, 113, 204–221. <https://doi.org/10.1016/j.worlddev.2018.09.008>

³⁶ Cordeiro Guerra, S., & Lastra-Anadón, C. X. (2019). The quality-access tradeoff in decentralizing public services: Evidence from education in the OECD and Spain. *Journal of Comparative Economics*, 47(2), 295–316. <https://doi.org/10.1016/j.jce.2018.12.004>

³⁷ Melo-Becerra, L. A., Hahn-De-Castro, L. W., Ariza, D. S., & Carmona, C. O. (2020). Efficiency of local public education in a decentralized context. *International Journal of Educational Development*, 76(July 2019), 102194.

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³⁸ Ebel, Robert; Yilmaz, S. (2016). On the Measurement and Impact of Fiscal Decentralization (World Bank Policy Research Working Paper No. 2809). World Bank Policy Research Working Paper No 2809.

expanded public services. As shown in Tables 5 and 6, fiscal decentralization can affect the allocation of resources available to local governments to provide better public services.

The National Development Planning Framework is governed by Law No. 25 of 2004, which stipulates that local governments must prepare Regional Medium-Term Development Plans to translate the vision, mission, and work programs of regional leaders as well as regional development strategies, general policies, and priority programs. However, difficulties or challenges happen despite the fact that planning has occurred. Frequently, budgetary restrictions prevent the implementation of plans and activities.³⁹ District/city governments are frequently compelled to pursue a single plan due to limited resources. Regional autonomy in Indonesia, which has provided local governments with budgetary decentralization in order to carry out these responsibilities for more than 19 years, is imperfect. Some articles explore the autonomy of local governments as a public policy alternative for the structure of ties between the central and local governments. The note discusses growing fiscal decentralization to enhance public services, particularly in the health and education sectors of the regions.

The implementation of regional autonomy over the past 19 years must now be examined. Regional autonomy policies must be able to have a significant impact on district/city administrations when combined with fiscal decentralization in order to improve public services and the regional economy.

Conclusion

This study demonstrates that fiscal decentralization has a largely favorable impact on public services in the district/city educational sector across all clusters I, II, III, and IV. In the meanwhile, budgetary decentralization has a large but minor impact on public services in the district/city health sector across clusters I, II, III, and IV. Consequently, fiscal decentralization becomes necessary for districts/cities to expand public services in the health and education sectors. However, fiscal decentralization must be supplemented by other

measures, such as reviewing the public services in districts/cities by analyzing the SPM indicators that the districts/cities have produced.

The district/city government is the time to allocate the budget in the APBD to a more rational expenditure allocation, especially for public spending in the health and education sectors. The local government's mission is to strengthen community public health and education programs. In addition to assessing the achievement of Minimum Service Standards (SPM) indicators for public services in the health and education sectors, the central government must evaluate the accomplishment of Minimum Service Standards (SPM) indicators for public services in the health and education sectors. Incentives and fines must be used in accordance with the evaluation of these indicators for local governments to enhance public services in the health and education sectors.

This study contains various limitations that can be used as a basis for further inquiry. This study focuses exclusively on the influence of fiscal decentralization on the expansion of public services in the health and education sectors. Additional research on the impact of fiscal decentralization funds on public services should inspire an increase in the Minimum Service Standards for both education and health. Additional study is required to determine that this fiscal decentralization can fulfill its primary goal of enhancing regional community welfare.

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