

Total Specific Allocation Grant for Population Development and Population Growth in Indonesia

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Abstract

National family planning program and other development programs have contributed to the decline of fertility and mortality levels and in turn population growth in Indonesia (Samosir 1992; Haub 1989). Under the New Order regime, in Indonesia, family planning program was initiated and supported centrally by the government. However, in the Reformed era, family planning program is decentralized to the district government. Central government still provides districts with Specific Allocation Grant (*Dana Alokasi Khusus/DAK*) to support population development including family planning program. This study aims to examine the association between specific allocation grant for population development and population growth rate in Indonesia. The data used came from INDODAPOER of the World Bank in 2009 covering 372 districts in Indonesia. The dependent variable in this study was the population growth rate during 2010–2015. The independent variables were the total DAK for population development, net enrollment ratio (NER) of primary school, and household expenditure for the poorest 20 percent. The data was analyzed using a multiple linear regression. The results of the study show that lower population growth rate was associated with larger DAK for population development, higher NER of primary school, and lower household expenditure for the poorest 20 percent.

Keywords

Total Specific Allocation Grant, Population development, Population growth, District, Indonesia.

1. Introduction

The General Stipulation Article 1 point 3 of Law No. 33/2004 of the Republic of Indonesia states that fiscal balance between the Central Government and Regional Administrations is a just, proportional, democratic, transparent, and efficient financial allocation system for funding decentralization implementation taking into account the regional potency, condition, and need, as well as deconcentration and assistance task (Republik Indonesia 2004). One form of that fiscal balance is that the Government of Indonesia provides *Dana Alokasi Khusus* (Specific Allocation Fund/DAK) to districts (*kabupaten/kota*) that comes from the State Budget that is allocated with a purpose to fund specific activities that are region's affairs according to the national priority (Republik Indonesia 2004 and 2020).

DAK are divided into two types, that is physical and nonphysical. Among physical DAK is operational assistance fund for family planning activities (Article 1 No. 16, Republik Indonesia 2020). This fund is used to increase family planning participation and to improve the even quality of and access to family planning services. In this paper this fund is called Total Specific Allocation Grant for population development (in IDR Billion). Indeed, family planning prevalence is a result of funding source from the government (Lee et al. 2009; United Nations 2012; Muhoza et al. 2013).

Family planning program was initially conducted in 1950s – 1980s in some developing countries. This program was one of important social experiments in the period after the World War II. Although the implementation and analysis were very complex, it resulted in the best talent of human race to be demographers, that involved multidisciplinary sciences, and resulted lower population growth rate than before (Robinson and Ross 2007). Family planning program produced for the first time in human history where a world with health, education, and fulfilling opportunities could happen safely for all people in the world.

The success of national family planning program and other development programs have contributed to the decline of fertility and mortality and as a consequence the decline in population growth rate (Haub 1989). Government program

in family planning has also contributed to the decline in population growth rate in Indonesia through the increase in contraceptive prevalence and decline in fertility level (Samosir 1992 and 1994; Rajagukguk 2017, Samosir et al. 2018). The results of the 1971 Population Census showed that on average an Indonesian woman would have between five and six children at the end of her reproductive age (Statistics Indonesia 2012). The total fertility rate declined to 2.28 children per woman according to the results of the 2015 Intercensal Population Survey (Statistics Indonesia 2016). Meanwhile, the contraceptive prevalence rate increased from 47.7 percent in 1987 (Central Bureau of Statistics et al. 1989) to 63.6 percent in 2017 (National Population and Family Planning Board et al. 2018).

Before the decentralization era, the family planning program in Indonesia was centralized. This allowed the central National Family Planning Coordination Board to ensure the achievement of its programs aiming to reduce fertility and population growth at regional level overall Indonesia. With decentralization, this authority was given to the regional government. Thus, the success of family planning program at regional level then depends on the head of regional government. DAK for population program can contribute to the success of family planning program at regional level. Does family planning program through DAK for population program affect population growth rate in Indonesia?

1.1 Objectives

This study is aimed to investigate the association between Total Specific Allocation Grant for population development and population growth in districts in Indonesia after controlling for the effects of education achievement and poverty.

2. Literature Review

A number of studies have been carried out to study the association between family planning program and population growth rate (e.g. Bongaarts et al. 1990). Bongaarts et al. (1990) proposed that the availability of family planning program would produce substantial demographic advantages in particular the slower population growth. They argued that the availability of contraceptives and socialization of small family norm have resulted in the increase of contraceptive use and consequently, the decline of fertility and population growth.

Education achievement and poverty also relates with population growth. Women with higher education tend to smaller number of children (Population Reference Bureau 2000). Smaller number of children then associates with lower population growth rate (United Nations 2015; 2019). In addition, enhanced education correlates with lower mortality, better health status, and different migration pattern. Further, better education has positive effect on human development, including health, economic growth, and democracy. Education can make population growth rate more moderate. A device to shape population growth rate is education including primary education (Murray 2015).

Education, in particular woman's education, is a single most important investment in developing the world. Women's education does not only accelerate economic growth, but also promote smaller family size, increase modern contraceptive use, and improve child health. Education for women is the best short-term strategy in woman's reproductive choice and finally reduce population growth rate (Population Reference Bureau 2000). Does achievement of primary school education influence population growth rate in Indonesia?

Economic factors also affect population growth rate. The effects of economic factors on fertility and mortality are central elements in the development of Malthus theory. Other economist, Adam Smith, Schumpeter, and David Hume (Rostow 1990) also discussed the relationship between population and subsistence resources. They predicted that increasing wealth could generate a larger rise in population growth until the constraint of food supply was attained. Although empirical study findings do not endorse the paradigm of Malthusian (e.g. Rostow 1990), its effect indicated that population started to be regarded as an endogenous component taken from economic and social conditions. In particular, as an economic factor, poverty could increase population growth rate due to inadequate access to family planning information and services that can lead to higher fertility and also due to the economic value of children as human resources to come out from poverty.

3. Methods

The data in this study were analyzed employing univariate, bivariate, and multivariate analyses. With univariate analysis, the summary statistics, i.e. the number of observations (n), minimum, maximum, mean, and standard deviation were provided. With bivariate analysis, the scatter diagrams between each covariate and the outcome

variable was displayed. With inferential analysis, a multiple linear regression was done to examine the association between each covariate with the outcome variable after controlling for the effects of other covariates.

4. Data Collection

The data in this study came from the Indonesia Database for Policy and Economic Research (INDO-DAPOER) of the World Bank. The unit of analysis is district (*kabupaten/kota*). There were 372 districts with available data on the variables in the study in 2009. The outcome variable was the population growth rate per annum in 2010–2015 (%). The covariates included the total Specific Allocation Grant for population development (in IDR billion), household expenditure for the poorest 20 percent (in IDR), and net enrollment ratio of primary school (in %).

5. Results and Discussion

The results of univariate analysis were presented in Table 1. It can be seen that the population growth rate in 2010–2015 varied between -0.114 and 0.055. Meanwhile, the total Specific Allocation Grant for population development ranged from a low of 0.50 IDR billion to a high of 1.63 IDR billion. Further, the household expenditure for the poorest 20 percent differed from 88,240 IDR to 487,97 IDR. Furthermore, the net enrollment ratio of primary school varied between 56% and 100%.

Table 1 Summary statistics of variables in the study

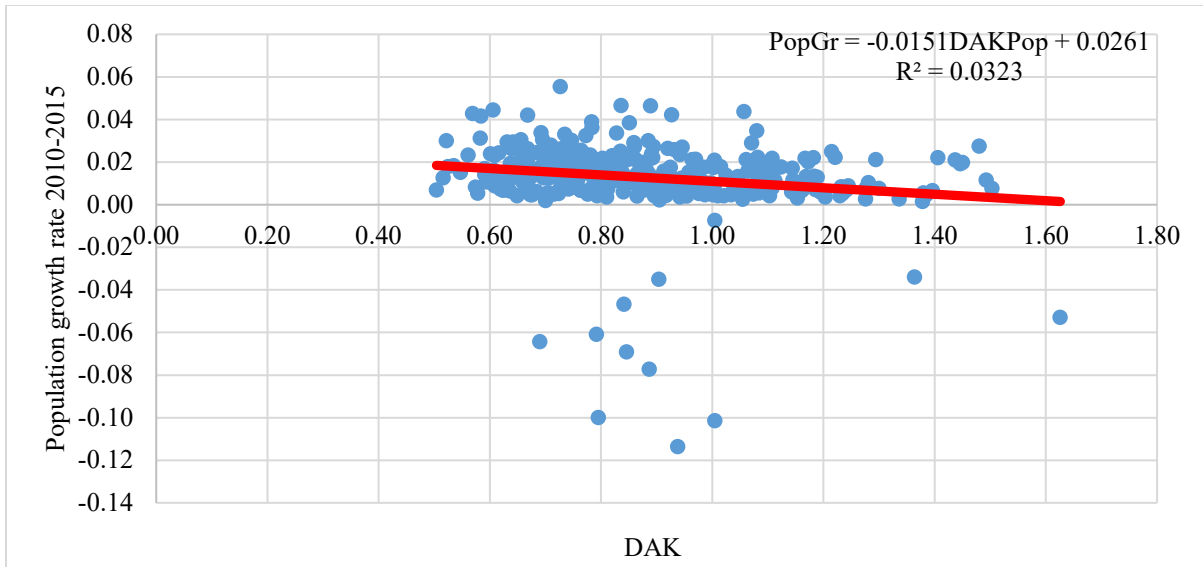
Variable	<i>n</i>	Minimum	Maximum	Mean	Standard deviation
Population growth rate 2010–2015	372	-0.114	0.055	0.013	0.017
Total Specific Allocation Grant for population development (in IDR billion)	372	0.50	1.63	0.88	0.207
Household expenditure for the poorest 20 percent (in IDR)	372	88,240	487,973	202,082.49	54,707.56
Net enrollment ratio of primary school (in %)	372	56.02	100.00	93.67	4.89

Source: World Bank (2020) (Author’s compilation).

The results of bivariate analyses were shown in Figure 1 – 3. It can be seen that, in Indonesia, the larger the DAK for population development in a district, the lower the population growth rate in 2010–2015 in that district (Figure 1). An increase of one billion IDR in DAK for population development will decrease the population growth rate in 2010–2015 by 0.015. This finding suggests the positive impact of DAK for population development in reducing population growth at district level as a result of improvement in access to family planning information and services that can lead to increased family planning practice among reproductive age couples and thus lower fertility level and population growth rate.

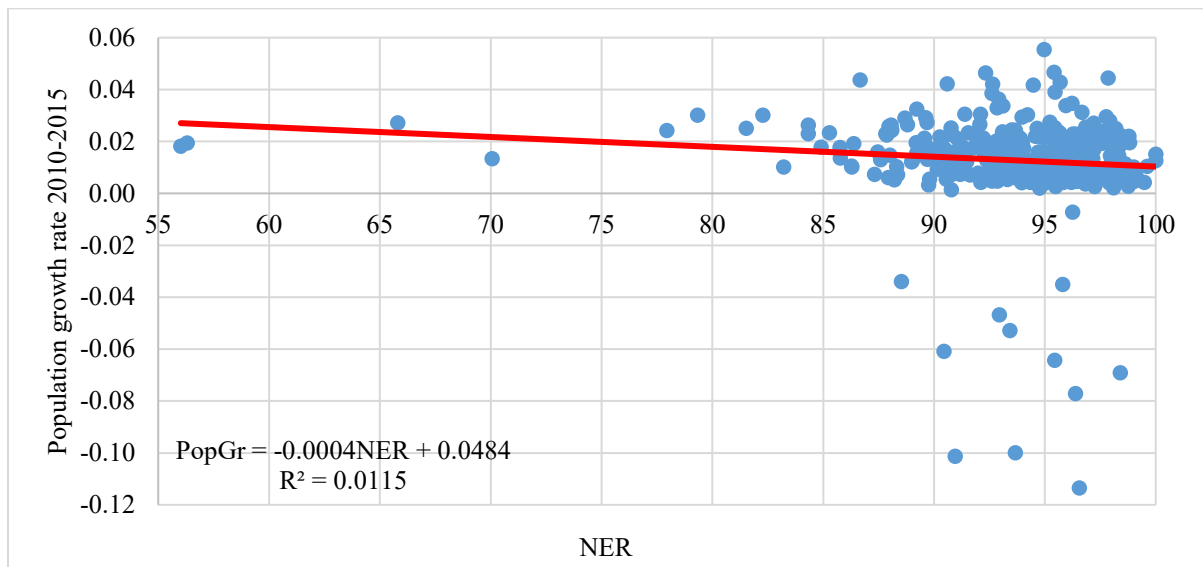
It can be seen from Figure 2 that in Indonesia, the higher the net enrollment ratio of primary school in a district, the lower the population growth rate in 2010–2015 in that district. An increase of one percent in net enrollment ratio of primary school will reduce the population growth rate in 2010–2015 by 0.0004. This result indicates the favorable influence of improving access to primary education in decreasing population growth at district level through the postponement of age at first marriage and age at first birth that can lead to lower fertility level and hence lower population growth rate.

Figure 3 shows that, in Indonesia, the larger the household expenditure for the poorest 20 percent in a district, the higher the population growth rate in 2010–2015 in that district. An increase of one IDR in household expenditure for the poorest 20 percent will lead to a rise of population growth rate in 2010–2015 by 0.00000007. This finding reveals the adverse effect of larger household expenditure for the poorest 20 percent in rising population growth at district level owing to less access to family planning information and services among the poor that can lead to higher fertility level and hence higher population growth rate.



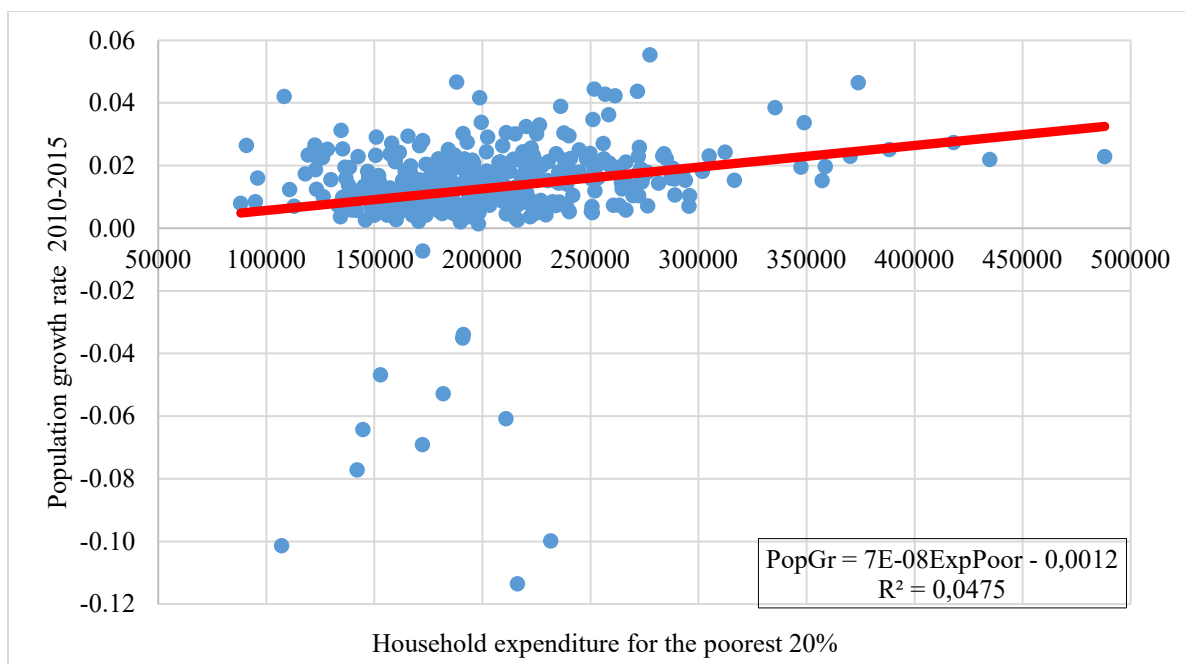
Source: World Bank (2020) (Author's compilation).

Figure 1 District Total Specific Allocation Grant for population development (DAK, IDR billion) in 2009 and population growth rate 2010–2015 (per annum): Indonesia



Source: World Bank (2020) (Author's compilation).

Figure 2 Net enrollment ratio of primary school (NER, %) in 2009 and population growth rate 2010–2015 (per annum): Indonesia



Source: World Bank (2020) (Author's compilation).

Figure 3 Household expenditure for the poorest 20 percent (in IDR) in 2009 and population growth rate 2010–2015 (per annum): Indonesia

The results of multivariate analysis of the effects of DAK for population development, net enrollment ratio of primary school, and household expenditure for the poorest 20 percent on population growth rate in 2010–2015 were given in Table 2. These include the coefficient, standard error, *t* statistics, and significance. It can be seen that all covariates are statistically and significantly associated with population growth rate in 2010–2015.

DAK for population development is negatively associated with population growth rate in 2010–2015 and significant at the 0.001 significance level. Other things being the same, on average, an increase of one billion IDR in DAK for population development will reduce population growth rate in 2010–2015 by 0.0114. In this study, DAK for population development was the second strongest factor of population growth rate.

Net enrollment ratio of primary school is also inversely related with population growth rate in 2010–2015 and significant at the less than 0.001 significance level. After controlling for the effects of other factors, on average, an increase of one percent in net enrollment ratio of primary school will decrease population growth rate in 2010–2015 by 0.00000006. In this study, net enrollment ratio of primary school was the strongest factor of population growth rate.

Household expenditure for the poorest 20 percent was positively associated with population growth in 2010–2015 and significant at the 0.05 significance level. *Ceteris paribus*, on average, an increase of one IDR in household expenditure for the poorest 20 percent will increase population growth in 2010–2015 by 0.0004. In this study, household expenditure for the poorest 20 percent was the third strongest factor of population growth rate.

Table 2 Coefficients, standard error, *t* statistic, and significance of multiple linear regression factors influencing population growth rate in Indonesia 2010–2015

Variables	Coefficient	Standard error	<i>t</i> statistic	Significance
Constant	0.0445	0.017	2.586	0.010
Total Specific Allocation Grant for population development (in IDR billion)	-0.0114	0.001	-2.650	0.008
Household expenditure for the poorest 20 percent (in IDR)	-0.0004	0.000195	-2.047	0.041
Net enrollment ratio of primary school (in %)	6.16E-08	1.62E-08	3.806	< 0.001

Source: World Bank (2020) (Author's compilation).

6. Conclusion

The results of this study confirm the importance of Total Specific Allocation Grant (DAK) for population development in reducing population growth rate even after controlling for the effects of education achievement and poverty. It means that the availability of DAK for population development is a smart strategy to manage population growth rate in districts in Indonesia so that the regional government can promote the improvement of human welfare in their districts. The availability of DAK for population development can be used to enhance access to even and affordable quality family planning services and information in districts so that fertility and mortality level and hence population growth rate can also be managed.

The significant effect of education achievement and poverty also imply that in order to manage population growth rate, universal primary education and the elimination of poverty should be attained. Access to education can lead to the postponement of age at first marriage and birth and increase woman's participation in the labor force and then decline of number of children and lower population growth rate. Meanwhile, lower poverty suggests higher aspiration toward the smaller quantity of children and higher quality of children and hence lower fertility and population growth rate.

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Biography

Omas Bulan Sasmosir is an Associate Professor at the Department of Economics of Faculty of Economics and Business (FEB) of Universitas Indonesia (UI), Indonesia. She received B.Sc. in Mathematics from the Department of Mathematics of the Faculty of Mathematics and Sciences of UI and Ph.D. in Demography from the Department of Social Statistics of the Faculty of Social Sciences of the University of Southampton, Southampton, United Kingdom. She has published scientific articles in peer-reviewed scientific books, journals, and proceedings. Her research interests include demography, human resources economics, family planning, and population projection. She was the former Director of Demographic Institute of FEB UI and is currently a member of Academic Senate of UI.