



## Impact Evaluation Of The Road Infrastructure Development Policy In Improving The Quality Of Education Services In Indonesia

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### ABSTRACT

Impact evaluation is to determine the impact of policy implementation that has been carried out by policy implementers. According to Patton, Sawicki, Clark, the method that can be used to measure the success of the performance of the impact of the policy is before and after comparison. This research uses a literature study method through analysis of data obtained from BPS, Ministry of PUPR, and Ministry of Finance. The results show that the impact of road infrastructure development policies has not been in accordance with the national development mission. Before the government increased the budget for infrastructure improvements in 2010-2014, the number of high school students who did not continue their studies to higher education at that time was 39.06%.

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### 1. Introduction

Development is defined as an attempt to change the living standard of people to a better direction in a planned, measurable, integral and sustainable manner by showing interest towards various aspects and conditions of people and adhering to the principles and objectives of the nation. Development as an embodiment of public policy that has passed through a long and comprehensive series with various stages and careful considerations before it is decided, so that it is not just becomes a formality from policy makers that will cause rejection and restlessness in community due to impartiality interests to community as the subject of development.

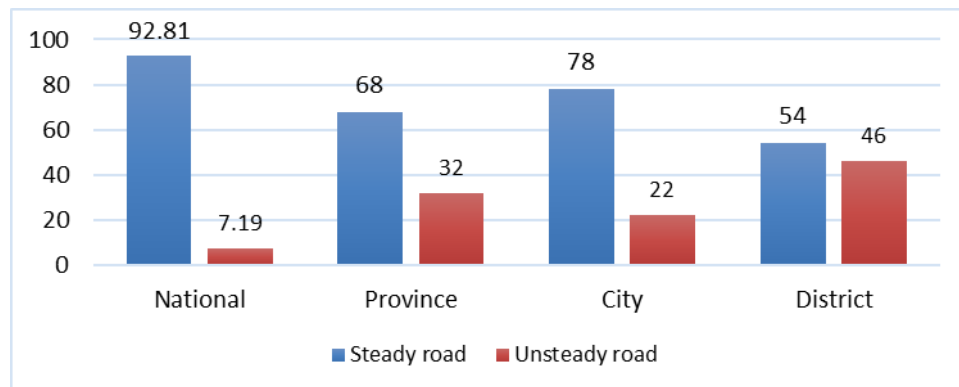
Development refers to a process of change that covers the entire social system, such as politics, economy, infrastructure, defense, education and technology, institutions, and culture. The development of an area aims to improve welfare and create social justice for all levels of society. Infrastructure plays an important role in increasing investment and expanding the scope of community participation, as well as equitable distribution of development outcomes (Sjafrizal, 2015: 19).

The existence of proper physical infrastructure such as roads, bridges, telecommunications, electricity, irrigation and transportation are also often associated as triggers for development in various fields in a region. We can easily evaluate the welfare differences in a region by observing the infrastructure gaps.

The purpose of development is basically to create advancement in the economic field and sustainable business capabilities, without neglecting equal rights and upholding the principles of justice for the Indonesian people as a whole. Infrastructure development is included in physical development and it has long been acknowledged, that the existence of good infrastructure has an essential role in supporting the fulfillment of people's basic rights such as food, clothing, housing, education and health. Popova (2017) mentioned that the development of transportation infrastructure that has been carried out by the government has a correlation with welfare. The development of transportation infrastructure determine the accessibility of other facilities, such as education and health.



Thus, it can be said that infrastructure is the capital that is needed by the community in supporting activities in various fields. Related to this situation, it is important to pay more attention on the acceleration of infrastructure development in the future. This is based on the benefits of infrastructure such as roads, that can act as a tool to open the isolation of a region from the outside world. Thus, it is expected that the existence of infrastructure can improve the welfare of community in various sector including social, economic and capabilities, especially in the field of education as discussed in this study.



**Figure 1.** Road Infrastructure Condition In Indonesia  
Source: Central Bureau of Statistics (BPS),2019

In the figure 7, it is shown that the condition of road infrastructure in Indonesia indicate an improvement including at National, Provincial, City, and Regency levels. Nowadays, the percentage of steady road in national level is higher than unproper roads or damaged roads. Construction work on road in Indonesia currently have reached 92.18%, while the level of damage that has not been handled is only 7.19%.

However, this is different with the road conditions at other level, the percentage of damaged roads in the provintial level is 32%, the City is 22%, and the Regency is 46%. Considering the conditions of current road at the Provincial, City and Regency levels, which have a lot of damage, the Government needs to optimize the development of road infrastructure, in order to provide convenience access for public to carry out social and economic activities. In particular, access roads to support education services in all areas of the country.

The regulation regarding roads, namely Law Number 38 of 2004, states that the functions and roles of roads are regulated in Article 5, which is stated in paragraph (1) The Road as a part of transportation infrastructure has a significant role in supporting the economic, social cultural, environmental, politics, defense and security, andis used for the greater prosperity of the people. Paragraph (2) The Road as an infrastructure for distribution of goods and services is the artery of the community, nation and country. Paragraph (3) The Road which is one unity of the road network system connects and binds the entire territory of the Republic of Indonesia.

Meanwhile, the Principles, Objectives, Scope, and Role of Roads that established the Government in Law Number 38 of 2004 concerning Roads are contained in Articles two, three, and four. As explained in the description of Article 2 which regulates the implementation of roads based on the principles of benefit, security and safety, suitability, harmony and balance, justice, transparency and accountability, efficiency and effectiveness, as well as togetherness and partnership.

The road management arrangement as regulated in Article 3 aims to: (a). embodied discipline and legal certainty in road administration; (b).embodied the role of the community in road administration; (c). embodied the role of road organizers optimally in providing services to the community; (d). realizing reliable and excellent road services and in favor of the interests of the community; (e). realizing an efficient and effective road network system to support the implementation of an integrated transportation system; and (f). realizing of transparent and open toll road concessions.

The road improvement carried out by the current government should have an impact on the community to obtain a qualified education. Considering the ease of access, the roads that have been built can reach every area to get better education services. Therefore, the fulfillment of the community needs in the field of education can be achieved, with the ease of road access which is continuously improved by the current Government

## 2. Literature Review

### 2.1. Public Policy Evaluation

James E. Anderson (1978) mentioned that "Public Policies are those policies developed by governmental bodies and officials. David Easton (1965) provides a definition of public policy as follows: "Public policy is the authoritative allocation of values for the whole society".

Policy evaluation is an activity that involves the estimation or assessment of policies that include substance, implementation and impact (Anderson: 1975). Policy evaluation can be considered as a functional activity, which means that it is not only carried out at the final stage but also throughout the policy process.

Evaluation is usually aimed at assessing the extent to which the effectiveness of public policies is accountable to their constituents. The extent to which the goals are achieved and to observe the extent of the gap between expectations and reality. According to Anderson in Winarno (2008:166), in general, policy evaluation can be said as an activity that involves the estimation or assessment of policies that include the substance, implementation and impact of the implementation of the policy.

Evaluation is one of the levels in the public policy process, which is a way to assess whether a policy or program is going well or not. Evaluation has various definitions, William N. Dunn, defines evaluation as: "In general the term of evaluation can be equated with appraisal, rating and assessment, words that express efforts to analyze policy outcomes in terms of units value. In a more specific word, evaluation is concerned with generate information regarding the value or benefits of policy outcomes" (Dunn, 2003:608). Policy evaluation according to Samudro, et al (1994) was conducted to find out:

- a. policy-making process;
- b. implementation process;
- c. policy consequences;
- d. effectiveness of policy impact.

Evaluation for the initial stage, can be carried out before and after the policy is implemented, both evaluations are included in the summative and formative evaluation, the evaluation for the second stage is called the implementation evaluation, the third and fourth evaluations are called policy impact evaluations.

Definition that mentioned above, explains that policy evaluation is the result of a policy which has value from the results of its goals or objectives. The final part of a policy process is policy evaluation. Policy evaluation is an activity to assess the consequences or policy impacts of various government programs. In the policy evaluation study, a distinction has been made between "policy impact/outcome and policy output. "Policy Impact/outcome" is outcomes and consequences caused by the implementation of a policy. As for what is meant by "policy output" is the result that has been produced by the government policy formulation process program (Islamy, 1986: 114-115).

There are several evaluation methods that can be used to assess public policy, which was stated by Carl Patton, David Sawicki, Jennifer Clark in his book entitled Basic Methods of Policy Analysis and Planning. In accordance with Patton, Sawicki, Clark (2015) one method that can be used to measure the success of the performance of the policy impact is before and after comparisons. It is an approach that compares the conditions (people or residents of an area) before and after the program (actual postprogram data) against the target group. In addition, this approach can also be used to compare the condition of the community after the program has been implemented (actual post-program data) with people who have not implemented the program or policy.

### 2.2. Evaluation of Public Policy Impacts

According to Samodra Wibawa et al (1994: 29): "Impact evaluation gives greater attention to the output and impact of policies than to the implementation process, although the latter is not ruled out and research is evaluative. The expected impact implies that when the policy is made, the government has



determined or mapped out what impacts will occur. Among the impacts that are expected to occur, there are expected and unexpected impacts. At the end of policy implementation, it also assesses unexpected impacts, of which there are expected and unexpected, or desired and unwanted".

There is an essential stage in the policy-making process, namely forecasting. The policy is intended to create certain conditions in the future, and this effort will be closely related to the development of the environment, both as a target for changing conditions and as a resource provider. Thus, forecasting is a fairly crucial stage. Inaccuracy of forecasting, which manifests as overestimating or underestimating, might cause an ineffective policy. For example, some reservoirs or water dams that have less functional by the age of 20 years (from an expected life of 100 years), are the result of inaccurate predictions of watershed erosion rates. Perhaps the policy makers were not able to predict forecasting and industrial needs which cause increased demand of space for residences and factories resulting in reduced water catchment areas also lead to high demand for forest products. Therefore, erosion is more likely to occur.

This forecasting can be considered as a form of evaluation, namely an evaluation carried out before the policy is set or implemented. Another term for this kind of evaluation is estimating, assessment, prediction or forecast. Evaluation at this pre-policy stage can be in the form of predictions about policy outputs as well as its impact. The analysis must be empirical, which means that the assessments should not only be hypothetical speculative or theoretical-assumptive, but must be tested or proved with data or at least the results of research that has been done. According to Samodra Wibawa et al (1994: 34) stated that an analyst conducts at least three things in policy impact analysis, namely: (1) vertically mapping the types of impacts that may occur, (2) horizontally identifying and predicting the tendency of reactions given by the affected subjects, and (3) comprehensively formulate policy adjustments that must be made by policy makers.

### **3. Methods**

The analysis of this study was carried out through a literature review related to the policy issues of road infrastructure development in Indonesia which were studied from various literatures and the results of previous studies compiled from various surveys. Literature review is carried out from various points of view; theories and journals to study the determinants and factors of education services provided by the Indonesia Government. In this study, the data were obtained from the National Central Statistics Agency (BPS), the Ministry of PUPR, and the Ministry of Finance, for the improvement of infrastructure development that has been carried out by the government with the indicators achievement in the education sector during 2010-2019 period.

### **4. Results and Discussion**

#### **4.1. Direction of Policy for Infrastructure Development in Indonesia**

According to Neil S. Grigg (1998), Infrastructure can be interpreted as a physical system that provides drainage, irrigation, transportation, buildings, and other public facilities needed to be able to meet various kinds of basic human needs. social and economic needs. In general, infrastructure can be classified into 6 groups, namely:

1. road group, which includes roads, highways, and bridges;
2. transportation service group, which includes transit, rail roads, ports, and airports;
3. water group, which includes clean water, dirty water, and all water systems including waterways;
4. waste management groups such as solid waste management systems;
5. group of buildings and outdoor sports facilities; and
6. Energy production and distribution group, covering electricity and gas.

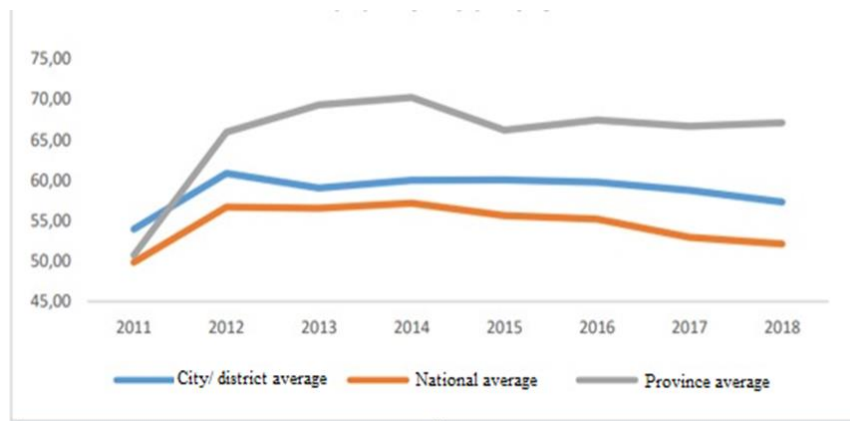
The availability of infrastructure in the region greatly affects the number of population movements from villages to cities or better known as urbanization. It is undeniable that there is a tendency for people to choose to live in areas with more complete and adequate infrastructure, because the potential for job opportunity in these areas is greater than other with infrastructure which is still lagging behind.

Infrastructure is included in one of the missions of realizing the national development vision as stated in Law Number 17 of 2007 concerning the National Long-Term Development Plan from 2005 to 2025, namely to embody an Independent, Advanced, Equitable and Prosperous Indonesia.

In more detail, the mission is to create a competitive nation by developing quality and competitive human resources, increasing the mastery and utilization of science and technology through research, development, and application towards innovation in a sustainable manner, building advanced infrastructure, reforming the legal and apparatus fields. countries, and strengthen the domestic economy based on the advantages of each region, towards competitive advantage by building linkages between production, distribution and service systems, including domestic services.

**4.2. Condition of Road Infrastructure in Indonesia**

Steady road conditions means that roads with a plan life that can be calculated and follow a certain standard (PP No. 34 of 2006). The better the road conditions in an area, the lower the cost of carrying out economic activities. In National level, the average condition of steady road was fluctuated and tended to decline during 2011 to 2018.



**Figure 2.** Percentage of steady roads in Indonesia, 2011-2018  
Source: BPS (data processed), 2019.

Fluctuations occurred at the national, provincial, and district/city levels. In 2018, the highest percentage of stable roads at the provincial level was in Central Java which reached 99 percent, while the lowest was in North Kalimantan at 12 percent. At the City District level, the highest percentage of stable roads were in Depok City, Blitar City, Madiun City, Surabaya City, and Badung District which reached 100 percent, while the lowest was in Mahakam Ulu District by 3 percent. There was total 540 regions that have data, 281 regions out of the total were above the national average, while the remaining 259 regions were below the national average.

**4.3. Impact of Road Infrastructure Development Policy in Improving Quality Services of Education in Indonesia**

In analyzing the impact of infrastructure development policies to improve the quality of education services in Indonesia, the researcher adopted method from Patton, Sawicki, and Clark (2015). One method that can be used to measure the success of policy performance is before and after comparisons. It is an approach that compares the conditions (people or residents of an area) before and after the program (actual postprogram data) against the target group. By comparing the education indicator data, namely the Achievement of the Pure Participation Rate (APM), and the Gross Participation Rate (APK) against the increase in the budget for the road infrastructure development policy program before, namely in the period 2010-2014, and after in 2015-2019.

The Net Enrollment Rate is the sum of the population of a certain school age group who are studying at certain level of education (according to the age of the population with the provision of school age



at that level) to the population of the appropriate school age group. Since 2007, Non-Formal Education (Package A, Package B, Package C) has been considered in National Education.

The net enrollment rate used to indicate how many people attend school on time, or show how many people attend school at an age that is in accordance with the provisions of the school age group at the level of education being pursued. The APM value ranges from 0-100. The NER shows how many school-age residents are able to take education according to their level of education. If all school-age children can attend school on time, the NER will reach 100 percent. In general, the NER is lower than the GER because the GER takes into account the number of people outside the school age at the certain education level.

The results of the impact analysis on road infrastructure development policies that have been carried out by the Government using APBN financing, indicates that the impact of the policy in increasing the road infrastructure development program budget to improve the quality of services in the education sector has not been optimal. This can be seen from Figure 4.2 below.

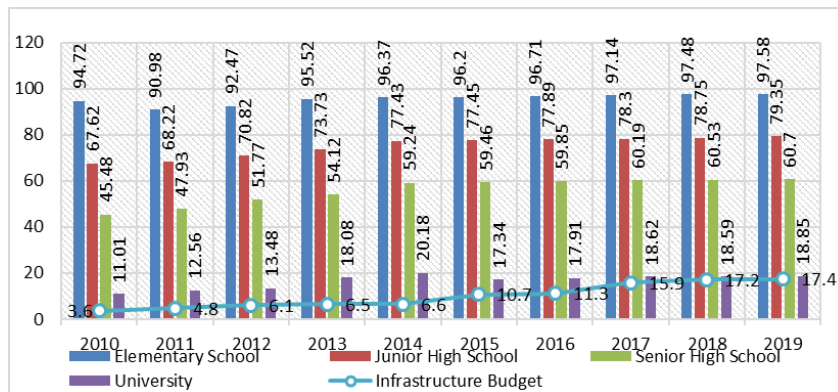
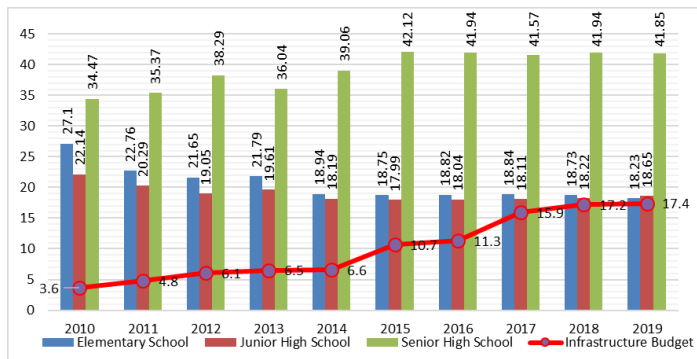


Figure 3. Percentage of Net Participation Rate, and Increase in Total Infrastructure Budget  
Source: BPS, Ministry of Finance (data processed), 2020

Based on Figure 4.2 above, it shows that the policy of increasing the amount of the budget to build road infrastructure started in 2015 until 2019 with 0% increment, while in the 2010-2014 period the increase was only 3%. It shows that the ease of access to road infrastructure provided by the government did not have a significant impact on increasing the number of people who obtain educational facilities that have been provided by the government.

In the 2010-2014 period, before the government raised the road infrastructure budget increase, the percentage of the population studied at elementary school increased by 1.65%, while after the infrastructure budget policy was increased in 2015-2019, the percentage decreased to 1.38%. Likewise, the population who continued their study to Junior High School was increase in the percentage of 9.81% before the policy to increase the road infrastructure budget in 2010-2014, but after the policy was implemented in 2015-2019 the population continued to Junior High School (SMP) level was only 1.9%. Meanwhile, at the Higher Education group level, the ease of access to road infrastructure provided by the Government to facilitate people obtain education without facing constrain due to road damage, did not have a significant impact. It can be seen from the number of people who attended college increased by 9.17% before the infrastructure budget was increased by the Government in the 2010-2014 period, but after the government took a policy to increase the road infrastructure development budget in 2015-2019 the percentage decreased by 1, 51%.



**Figure 4.** Dropout Rates, and Increasing the Amount of Infrastructure Budget

In Figure 4.2 above, it shown that the impact of road infrastructure development policies aimed at improving the quality of education services has not been successfully implemented by the government. This can be seen from the dropout rate at each level of education which is still very high every year. The highest dropout rate is shown by High School students who cannot continue to Higher Education (University). In 2014, before the government increased the budget for infrastructure improvements, the dropout rate was 39.06%, and then after the infrastructure improvement policy was carried out by increasing the budget in 2019 there was an increase in the percentage of drop out rate to 41.85%. Meanwhile, at the elementary education level, the dropout rate for those who did not continue to junior high school has shown insignificant decrease, which was not comparable to the policy of increasing the budget for road infrastructure improvement which reached 10.8% from 2014 to 2019. From these data, it can be seen that in 2014 the dropout rate at the elementary education level was 18.94%, and then decreased by 0.71% in 2019 with the percentage of the total dropout rate was 18.23%.

### 5. Conclusion and Recommendation

Development in Indonesia aims to improve people's welfare and realize social justice for all Indonesian people. Based on the allocation of public and private financing, infrastructure is considered as the locomotive of national and regional development. Infrastructure also plays an important role in improving the quality of life and human welfare, including increasing consumption rates, increasing labor productivity and access to employment opportunities, as well as increasing wealth. Infrastructure also has an important influence in increasing the consumption rate, increasing labor productivity and access to employment.

In addition to increasing competitiveness in order to encourage more investment, production and trade activities, infrastructure can also accelerate equitable development, so that poverty and unemployment rates can be reduced. In addition, the existence of infrastructure is crucial, to ensure the developing process of Human Resources in an area can run well.

Based on the results of the impact analysis of infrastructure development policies that have been carried out to revise and improve the quality of education services in Indonesia in order to obtain superior and competitive human resources, it shows that the government policies before (2010-2014) and after (2015 - 2019) has not been in accordance with the objectives in actualizing the vision and mission of national development as stated in Law Number 17 of 2007 concerning the National Long-Term Development Plan from 2005 to 2025.

This can be observed from the reduction of the number of students who received education at school and also the high dropout rate at every level of education. The government program in the improvement of road infrastructure has not been optimally utilized by community to fulfill their needs in obtaining adequate education at school.

The policy of road infrastructure development by increasing the budget which had been carried out by the government from 2010-2019 did not have a real impact on improving the quality of education services in Indonesia. This indicates that in improving the quality of education services, road infrastructure development policy was not the main factor, but government need to consider an improvement in the quality of school infrastructure, teacher welfare, curriculum adapted to employment, and improving teacher competence by provide training and certification for teachers of elementary school until high school.



It is expected that the results of this study can be used as additional reference for community and government. Further research should be carried out by using new indicators that support this research, to ensure the sustainability of this research

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