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The Impact of School Operational Assistance Funds on Students' Performance in Jakarta

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ABSTRACT

This study explores the impact of School Operational Assistance (BOS) funds on school performance in DKI Jakarta province, Indonesia. The research focuses on schools ranked in the top 1000 in the Computer Based Writing Examination (UTBK) in 2021 and 2022. BOS funds are distributed by the Ministry of Education and Culture to provide non-personnel costs for educational units and are expected to enhance the quality of education. Using correlation analysis, the study found that in 2021, there was no significant difference in school performance between schools that received or did not receive BOS funds. However, in 2022, the research reveals that the number of students who received BOS funds can predict the UTBK score, indicating that BOS funds do impact school performance. The study concludes that the distribution of BOS funds has a positive impact on school quality, but it requires accountability, transparency, stakeholder involvement, and clarity of rules to be successful.

Keywords: School operational assistance, computer-based writing examination, students’ performance, students aid, quality of education

1. INTRODUCTION

The Indonesian Constitution places great emphasis on the State's responsibility to provide high-quality education to its citizens, which includes covering the costs of education. In practice, the National Education System views education costs as a shared responsibility among the central government, regional governments, and the community, especially parents of students. The central government distributes funds for education costs, which include the School Operational Assistance (BOS) that has consistently increased in amount from year to year [1], [2], [3].

This research highlights the question of whether the use of Student Aid (namely School Operational Assistance or BOS funds) has effectively improved the quality of schools. This is a critical issue to address as education funds in Indonesia continue to increase, yet the country's ranking in global education has not improved. Therefore, the impact of these funds on school quality must be examined [4], [5].

The objective of this study was to examine the impact of the distribution of BOS funds on school performance, as measured by student success in the Computer Based Writing Examination (UTBK), a higher education entrance exam. The researchers specifically focused on BOS recipient schools in DKI Jakarta province and analyzed schools within the province that were ranked among the top 1000 schools in UTBK scores in 2021 and 2022.

1.1. BOS Funds Enhance the Quality of Education

The BOS Fund is a government program that provides non-personnel costs for education units as the implementation of the compulsory education program starts from elementary to senior high school levels [6]. The primary objectives of distributing BOS funds are to ensure equity and expansion of access, overcome the problem of dropping out of school due to lack of funds, and support children's access to further education [2], [3], [7].
BOS funds can be used for various purposes such as library development, student enrollment, learning and extracurricular activities, exam activities, purchase of consumable materials, subscriptions to resources and services, school maintenance, honoraria of teachers and education staff, professional development of teachers, assisting poor students who need help, and purchase of other supporting facilities [7]. With adequate financial capacity and complete supporting facilities, schools are expected to be able to carry out higher-quality learning activities and improve the quality of education and schools [8], [9], [10].

Several researchers have stated that the distribution of BOS funds directly affects school quality, especially concerning infrastructure and learning resources. Depiani (2015) mentioned how BOS greatly assisted learning facilities and resources at schools in Bengkulu. Similar research was revealed by Rahmat Hidayat et al. (2019) through their research at an elementary school in Bima City, West Nusa Tenggara Province. Fathony and Prianty (2020), who conducted research at public Junior High Schools in the Solokan Jeruk sub-district, Bandung district, West Java, emphasized that the improvement in school quality was the impact of the distribution of BOS funds [11]. Nurul Widiana Amin et al. (2022), who conducted research at elementary schools in the Mataram sub-district, Sri Deva Monica, who conducted document study research, and Widodo (2021), who conducted research in Malang city, East Java Province, also stated that the distribution of BOS funds had a positive impact on improving facilities, increasing learning resources, and improving teaching and learning activities [12], [13], [14].

Path analysis conducted by Rediyanto Putra (2022) through the SPSS program showed that the BOS funds have a positive impact on improving school quality in all 33 provinces in Indonesia. Rediyanto stated that the BOS funds positively impacted the average length of graduation, thereby increasing the Human Development Index (IPM). However, there is still no evidence that the distribution of BOS funds reduces the level of illiteracy in Indonesia [7], [15], [16].

Triana Rosalina Noor discussed how BOS funds effectively supported schools during the Covid-19 pandemic. Some schools were grateful for the distribution of BOS funds and the flexibility in their use, which helped schools carry out their operational activities [17].

Several researchers mentioned factors that support the successful distribution of BOS funds to improve school quality, such as accountability, transparency, stakeholder involvement, and clarity of rules [18], [7], [12], [15]. Other researchers mentioned the use of software that could further increase the transparency and accountability of the use of BOS funds, which had an impact on the effectiveness of funds use [19], [9], [8].

Some studies mentioned the factors that hindered the effective use of BOS funds, such as HR competence, lack of communication and publication, inadequate response and involvement of stakeholders, and convoluted bureaucracy. Despite mentioning some inhibiting factors, these studies tend to state that BOS funds have been successfully distributed and have had an impact on improving the quality of education [11], [12], [13], [14], [18].

1.2. The Impact of BOS Funds on UTBK

Results

The question is, how to assess the positive impact of the distribution of BOS funds? How to assess the success of the distribution of BOS funds? Several studies state that the success of education can be seen from several indicators, such as the attainment of graduate competencies, school and student achievements, Human Development Index increases, and the percentage of students who continue their studies at favorite tertiary institutions [20], [21], [22].

In this study, the authors analyzed the impact of BOS funds on students’ UTBK (Computer Based Written Assessment) results. Researchers selected the school population in DKI Jakarta to ensure that BOS funds were primarily related to improving the quality of education and giving the same access and opportunities for all students to enter higher education. Researchers chose schools that received BOS funds in Jakarta for two consecutive years which were included in the 1,000 best schools in the UTBK ranking.

The government has set three ways students can choose when studying at state universities. These options are National Selection to Enter State Universities (SNMPTN), Joint Selection to Enter State Universities (SBMPTN) with a Computer-Based Writing Examination (UTBK), and the Independent Pathway. The government stated that the choice of the three paths considered inclusivity and justice. That is, the pathways to tertiary education provide equal opportunities for all students and do not consider the economic background of students [23], [24].

The first track, called SNMPTN, is carried out by selecting the best 40 percent of students from A-accredited schools to be able to enter state universities without taking the UTBK test. Students who cannot enter the first track can take the second track, namely the SBMPTN, by following the UTBK; The third path, namely the independent pathway, is a transparent exam carried out by each university.

The second path, namely the SBMPTN with a Computer-Based Writing Examination, is exciting and generates strong resonance throughout the country. This...
path is perceived as providing an overview of the 1000 best schools at the national level and the best schools at the provincial level. UTBK results are often understood as determining the 1,000 best schools in the country.

For example, Pratama (2022) emphatically states that the UTBK results inform the ranking of the best schools in Indonesia. According to him, despite some pros and cons regarding determining UTBK as a determinant of the best school rankings, UTBK results became the primary data source after the government abolished the national exam as a requirement for student graduation. Implementing UTBK aims to predict prospective students and students who can complete their studies at tertiary institutions correctly and accurately. UTBK provides opportunities for prospective students to take tests flexibly regarding the location and time of the test [23].

The UTBK test materials include a Scholastic Potential Test (TPS), an English Language Test, and an Academic Competency Test (TKA). The Scholastic Potential Test measures students’ general reasoning, quantitative abilities (Basic Mathematics), and reading and writing comprehension. The Scholastic Potential Test measures students’ reasoning through four sub-materials: (1) Cognitive potential abilities; (2). Mathematical reasoning logic; 3. Indonesian Literacy; (4). Literacy in English [24], [23].

The Academic Competency Test seeks to measure scientific knowledge and understanding taught in schools and is needed to support a person to succeed in pursuing higher education. In addition, the Academic Competency Test measures cognitive abilities directly related to the content of subjects studied at school, emphasizing Higher Order Thinking Skills (HOTS) and covering science studies, social studies, and a mixture of both [24].

Ali et al. (2009), Briones et al. (2021) and Olufemi et al. (2018) explained that four factors determine student quality, namely demographics (including the quality of parents and children), student attendance at school, active learning, and student involvement in extracurricular activities [25], [26], [27]. Briones et al. (2021) also mention internal and external factors that determine school quality, such as parental style and student quality, teacher effectiveness, the role of motivation, and the effectiveness of facilities, including the internet [26]. Kapur (2018) also mentions the teacher’s primary role, active learning, communication, and the importance of library and laboratory facilities [28]. Sarkin in Paul Suparno et al. (2017) also mentions the importance of maintaining a balance of internal and external factors, including teaching and learning processes and facilities [29].

Depiani (2015), Hidayat et al. (2019), and Putra (2022) stated that the BOS funds were intended to address problems and improve the quality of teaching and learning processes and school facilities. Thus, BOS funds should have a powerful influence on improving the quality of these schools.

2. METHODS

2.1. Data Gathering

The data used in this research were gathered from two resources namely, the Higher Education Entrance Test Institute (LTMPT) and the Ministry of Education and Culture (MOEC). Specifically, the 1000 Top Schools in Indonesia were acquired from LTMPT, while the school’s number of students who received assistance funds was acquired from the Minister of Education and Culture (MOEC). On its website, LTMPT provides information about 1000 Tops School based on the Computer Based Writing Examination (UTBK) since 2020. The information includes schools’ performance test scores. Since that information was not available for download, the researchers then applied the technique of scraping to reac the targeted information. Thus, the researchers scraped the LTMPT website using Python and BeautifulSoup 4. Ensuring that what researchers got was what researchers saw on the website, researchers randomly chose 100 schools from scraped data and compared them with the list on the LTMPT website. The two data matched each other.

Every year, the Ministry of Education and Culture offers operational assistance funds (BOS) to a selected group of students. The list of the students who is the receivers of these funds is written on a decree signed by the Minister of Education and Culture. Therefore, this list includes the name of the school and the number of students who receive the funds. Researchers took advantage of this letter to collect data on the number of students who received the funds in 2021 and 2022. However, since the original document was written in pdf format, the researchers converted it first to a CSV format file for statistical analysis purposes using Python, Pandas, and the library of Tabula.

2.2. Participants and Data Analysis

The researchers focused the analysis on schools in DKI Jakarta province that happened to receive operational assistance funds (BOS) in 2021 and 2022. For this purpose, the researchers took two steps to get the targeted schools. Firstly, the researchers selected schools belonging to DKI Jakarta province out of the 1000 Top Schools in 2021. Second, by the “national_id,” the researchers merged this set of data with data on the student who received funds in 2021. The researchers found that 112 schools were included in the 1000 Top
School 2021 as well as the receiver of assistance funds. The researchers repeated the same steps for the 2022 datasets. The researchers found 111 schools were included in the 1000 Top School 2022 as well as the receiver of the assistance funds.

For analysis needs, researchers employed both R Studio Programming and the Stata package. R version 4.2.2 was used to perform descriptive analysis and visualization. Linear regression was performed using Stata SE 15.1 to determine the correlation between UTBK score and the number of students who received assistance funds.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Descriptive Statistics

The following figures and tables show the distributions of the school based on level and district. As displayed in Figure 1, the UTBK 2021 includes 112 schools belonging to DKI Jakarta province. Further, 43 schools are from East Jakarta district (Jaktim), 36 schools are from South Jakarta district (Jaksel), 17 schools are from West Jakarta district (Jakbar), 10 and 6 schools are respectively from Central Jakarta district (Jakpus), and North Jakarta district (Jakut). Finally, Figure 2 displays that 105 out of 112 schools are from the general track (SMA), and the rest (7 schools) are from the vocational track (SMK). The distribution of DKI Jakarta's schools included in the 1000 Top Schools is shown in the following two figures and tables.

Figure 1. Distribution of Schools based on District 2021

Figure 2. Distribution of School based on Track 2021

Table 1 Student Distribution Frequency

Table 1. Linear Regression on School's Performance 2021 and BOS 2021

3.1.2. Correlation Between UTBK Score 2021 and BOS 2021

Table 1 Student Distribution Frequency

Table 1. Linear Regression on School's Performance 2021 and BOS 2021

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>2113.59845</td>
<td>1</td>
<td>2113.59845</td>
<td>112</td>
</tr>
<tr>
<td>Residual</td>
<td>8517.2655</td>
<td>110</td>
<td>78.3429723</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>85310.868</td>
<td>111</td>
<td>785.598465</td>
<td></td>
</tr>
</tbody>
</table>

| utbk score Coef. | Std. Err. | z  | P>|z| | [95% Conf. Interval] |
|------------------|-----------|----|------|---------------------|
| sma              | 0.105586  | 0.018942| 5.65| 0.0000 | 0.0785565 | 0.1326178 |
| smk              | 0.530692  | 0.479096| 0.60| 0.5500 | 0.379303  | 0.681981  |
As shown in Table 1, the F test reveals that the F value = 0.1017. It means that the number of students who received assistance funds has no significant influence on the school’s performance as mirrored on UTBK Score. Moreover, the p-value = 0.102.

3.1.3. Correlation Between UTBK Score 2022 and BOS 2022

In Table 2, the F test reveals that the F value = 0.0156 and the p-value = 0.016. Those values imply that the number of students who received assistance funds significantly influences the school’s performance, mirrored in UTBK Score.

Table 2. Linear Regression on School’s Performance 2022 and BOS 2022

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 111</th>
<th>Estimate</th>
<th>Std. Err.</th>
<th>z</th>
<th>2.5%</th>
<th>97.5%</th>
<th>Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>0.11384</td>
<td>1</td>
<td>0.11384</td>
<td>Prob &gt; F = 0.0156</td>
<td>0.0156</td>
<td>0.005</td>
<td>3.3</td>
<td>-0.017</td>
<td>0.048</td>
<td>-0.027, 0.048</td>
</tr>
<tr>
<td>Residual</td>
<td>108.256</td>
<td>109</td>
<td>0.00983</td>
<td>R-squared = 0.00437</td>
<td>0.00437</td>
<td>0.000001</td>
<td>42</td>
<td>-0.008</td>
<td>0.017</td>
<td>-0.017, 0.017</td>
</tr>
<tr>
<td>Total</td>
<td>110.369</td>
<td>110</td>
<td>109.3659</td>
<td>Adjusted R-squared = 0.0084</td>
<td>0.0084</td>
<td>0.000002</td>
<td>42</td>
<td>-0.018</td>
<td>0.035</td>
<td>-0.018, 0.035</td>
</tr>
</tbody>
</table>

3.2. Discussion

This study look into the correlation between the number of students who received assistance funds and the school’s performance in the UTBK Score for two consecutive years of 2021 and 2022. In 2021, the linear regression analysis showed that the number of students who received assistance funds did not significantly influence the school’s performance in the UTBK Score. However, in 2022, the analysis showed that there was a significant influence of the number of students who received assistance funds on school’s performance in the UTBK Score.

The result of the study also provided insights into the distribution of schools based on the level and district in the province of DKI Jakarta. The majority of schools that were included in the 1000 Top Schools and received assistance funds came from the general track (SMA). A small number came from the vocational track (SMK). Additionally, the result showed that the schools were distributed unevenly across districts with a higher concentration in East and South Jakarta. These findings can be used by policymakers and educators to better understand the factors affecting school performance and consequently develop strategies to improve educational outcomes for all students, regardless of their socioeconomic background.

4. CONCLUSION

As explained before, the study was conducted to understand the correlation between school operational assistance fund (BOS) and education in its direct impact. No research has yet been conducted to understand the correlation between BOS and education on indirect benefits such as school performance. Therefore, this research will be the first attempt to unlock the impact of BOS on school performance. Through this research, the researcher is trying to answer whether BOS predicts school performance. Table 1 shows that the BOS is not a predictor to school performance. Whether the school received or not the assistance fund, the UTBK Score remains the same. However, Table 2 on the other hand, displays that the BOS does predict school performance.

The researchers realized that this study has two significant limitations. Firstly, limited population. BOS is a yearly student fund endowed to students and schools all over Indonesia. There are thousands of schools that have taken the advantage of this fund. Therefore, taking 112 and 111 schools as the sample of whole population is quite unfair. Secondly, the time range. A policy takes some time to bring effect after the execution. In fact, this research covers only two consecutive years of BOS grant (2021-2022).

Therefore, further research with a larger population and a broader time range needs be conducted for a more valid and reliable result.

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REFERENCES


