The Effects of PAD, DAU, and Employee Expenses on Capital Expenditures with Population Density as a Moderating Variable

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DOI: http://dx.doi.org/10.15294/jda.v11i2.21004

Received: May 5, 2019 Revised: September 15, 2019 Accepted: September 20, 2019 Published: September 30, 2019

Abstract
The aims of this study are to analyze the effect of PAD, DAU, and employee expenses on capital expenditure with population density as a moderating variable. The main theories are stewardship and resource dependency theory. The population is 35 districts/cities in Central Java in 2013-2017. There are 175 units that chosen by saturated sampling method. There are 14 of outlier data. Thus, there are 161 unit of analysis. The analytical tools used are descriptive statistic, inferential analysis, and MRA. The results showed that PAD have positive and significant effect on the capital expenditure, DAU does not have significant effect on the capital expenditure, employee expenditure does not have negative and significant effect on the capital expenditure. Population density can moderate the effect of PAD on the capital expenditure. However, population density cannot moderate the effect of DAU and employee expenses on the capital expenditure. The conclusions are PAD has a significant positive effect on the capital expenditure and employee expenses have a significant negative effect on the capital expenditure. It can be a reason that regional governments must increase PAD and reduce employee expenses for capital expenditure.

Keywords: capital expenditure; locally generated revenue; general allocation fund; employee expenses; population density

How to cite (APA 6th Style)

INTRODUCTION
The government since 2014 has announced that the focus of the programs implemented is related to development in each region. This development is intended to improve infrastructure so as to facilitate the lives of citizens in various fields, including economy. The regional government must follow the direction of development that is planned by the central government, so this should be reflected in the regional government capital expenditure.

The Regional Revenue and Expenditure Budget (APBD) is used as a handle by the regional government when running the government and providing services to the society. The regional government in managing the APBD must allocate funds in the form of a budget that must be realized. The allocation for development will be functioned to provide services to the community by procuring regional fixed assets. Government expenditure for procurement of fixed assets

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is often referred to as capital expenditure. The realization of this capital expenditure could be achieved because the regional government has the right of autonomy to regulate its own territory and utilize all its potencies maximally to realize regional infrastructure development.

The management process of APBD is inseparable from fiscal constraints and is often highlighted every year. The Government of Central Java Province in 2017 experienced a decrease in the realization of capital expenditure compared to 2016 which amounted to 48.36%. This decline clearly makes the people of Central Java wonder because the Province of Central Java still needs development of infrastructure in areas of Central Java. Other constraints according to Arapis (2013), the use of capital expenditure is often not well targeted and over-allocated, so that development cannot be enjoyed equitably and evenly.

Data on the Budget Realization Report (LRA) of Regency / City of Central Java Province in 2013-2017 shows the percentage of capital expenditure has not met the specified target. According to Perpres No. 5 of 2010 concerning the National Medium Term Development Plan (RPJMN) in 2010-2014, the target of capital expenditure is 29% whereas according to Perpres No. 2 of 2015 concerning the 2015-2019 RPJMN, the target of capital expenditure is 30%. This fact makes the problems related to capital expenditure still have to be resolved so that the development expected by the community can be achieved.

Locally Generated Revenue (PAD) is considered to be a factor influencing capital expenditure. Giving flexibility to the regions to finance their own activities depending on the ability of each region is the goal of the PAD. PAD plays a central role because through this source of funds can be assessed the success of the region in funding government activities and regional development (Fahlevi, 2017). The increase in PAD will later be used by the regions to carry out regional development in the form of capital expenditure by not being too dependent on central government subsidies. However, in reality, many regions have smaller PAD allocations than government transfer funds. Supported by the statement if the central government is still dependent on local governments, especially the need for transfer funds (Bartle et al. 2011).

The previous research on the effect of PAD on capital expenditure was conducted by Sholikhah & Wahyudin (2014), Febriana & Praptoyo (2015), Prastiwi et al. (2016), Nuarisa (2013), and Nugraha (2018) which provide an explanation that there is a positive significant effect between PAD on capital expenditure. Contrary to research from Wandira (2013) and Jiwatami (2013) which explains the results that there is no significant influence between PAD on capital expenditure.

The General Allocation Fund (DAU) and employee expenses are other components that are considered to have effects on capital expenditure. DAU is funding originating from the central government which is distributed to the local governments and is intended to reduce the fiscal gap and aimed for equity (Guga, 2018). The fiscal gap occurs because there is a negative difference in fiscal needs (government activities) and fiscal capacity (DAU) where central government transfers are needed to close this gap. Therefore, an increase in fiscal capacity must be done. After the central government gives the DAU transfer, the local government should be able to increase capital expenditure, but in reality, the increase in DAU does not always lead to an increase in capital expenditure.

Several previous studies examining the effect of DAU on capital expenditure have been conducted by Nuarisa (2013), Darmayasa & Suandi (2014), Nugraha (2018), Febriana & Praptoyo (2015) and Suwandi & Warokka (2013) who proved that there is a significant positive effect on DAU on capital expenditure. This means that the greater the DAU, the greater the budget spent on capital expenditure. This is not in line with Sholikhah & Wahyudin (2014) and Suryana (2017) that the influence of DAU is not significant on capital expenditure.

Employee expenses are state compensation allocated for central government employees, retirees, members of the TNI / Police, and state officials (domestic or foreign) in return for activities that have been carried out, except for activities related to capital formation. This compensation is given in the form of money or goods (Law No. 13 of 2005 concerning the State Budget of 2006
Budget Year). The enactment of regional autonomy has an impact on employee expenses policies in the regions. The APBD is mostly allocated for employee and operational expenditure which are less important than allocated for capital expenditure as development.

Previous research that resulted in the statement that employee expenses has a significant influence on capital expenditure with a negative direction has been done by Sugiyanta (2016), Prastiwi et al. (2016), Jiwatami (2013) and a study by the Ministry of Finance in collaboration with LPEM FEUI in 2010 means that the higher employee expenses causes lower capital expenditure. This result is disputed by Darmayasa & Suandi (2014) who explained that the effect of employee expenses on capital expenditure realization is not significant.

Another determinant of capital expenditure is population density. In accordance with Law No. 33 of 2004 Article 28, residents are used as the main variable in determining regional financing needs. Population density is measured by comparing the number of people with the area (km2). The government benchmark in allocating capital expenditure in the context of development is one of which is population density (Williams & Kavanagh, 2018). The greater the population density of an area, the obligation of local governments in efforts to meet the need for infrastructure development and infrastructure facilities is higher.

The purpose of this study is to examine the effect of PAD, DAU, and employee expenses on capital expenditure with population density as the moderating variable. The originality of this research is to use the variable of employee expenses because employee expenses spends a very large fund from year to year while capital expenditure gets a small portion and makes population density as the moderating variable because population density becomes the government's benchmark in allocating capital expenditure. Large areas and large populations will also consume large funds to realize this development.

Stewardship Theory explains the attitude of managers who are able to put aside individual interests and are more concerned with the interests of the organization. Local governments provide services to the community to the fullest according to the needs of the community. Therefore, in this theory the local government as the executor of the government will work and behave to achieve common goals. Resource Dependence Theory explains that the government has a dependency on its population where the population will help the government's performance to run as expected.

Stewardship Theory states that local government as a public sector organization aims to serve the public interest, one of which is in the form of capital expenditure. This goal can be achieved if local governments are able to utilize their own PAD. The biggest PAD contribution comes from the regional taxation and retribution sectors (Park & Park, 2018). PAD acquisition will affect capital expenditure because local governments can use these funds to finance capital expenditure according to regional initiatives. Research from Liliana et al. (2011) and Ogujia & Abraham (2012) said that a very strong increase in PAD would affect capital expenditure. Previous research from Sholikhah & Wahyudin (2014), Febriana & Praptoyo (2015), Nuarisa (2013), Prastiwi et al. (2016) and Nugraha (2018) stated that PAD has a significant effect on the positive direction of capital expenditure.

H1: PAD has a positive and significant effect on capital expenditure

The central government provides DAU to assist regions in carrying out service activities to the community. This DAU will reduce the gap between the ability of regions that are capable and those lacking in carrying out development. This is consistent with the stewardship theory which explains that the government is motivated to meet the needs of its citizens, so that it will undertake the construction of various facilities for the optimal implementation of services. Local governments in meeting these needs will increase the portion of the use of DAU provided by the central government for infrastructure development so that will increase capital expenditure. The amount of transfer revenue will make local governments have greater opportunities to use it in the context of community service (Abba et al., 2015). Thus, the existence of DAU is very
important for development in regions that will increase capital expenditure. Previous research by Darmayasa & Suandi (2014), Nugraha (2018), Febriana & Praptoyo (2015), Nasution (2015) and Suwandi & Warokka (2013) states if there is a significant influence on the DAU capital expenditure with a positive direction. This means that the high DAU will affect the high capital expenditure.

H$_2$: DAU has a positive and significant effect on capital expenditure

Service to the community requires more effort done by the state civil apparatus (ASN). The more the local government wants to increase the satisfaction of the community, the qualified ASN with a sufficient amount is demanded so that the service time can be shorter. The large number of ASN employed certainly requires sufficient funds to pay them, thus budget in the APBD allocated in a large portion for employee expenses and this reduces the portion of capital expenditure that can be done by local governments. This service is according to Stewardship theory that both the central and regional governments need many employees to help provide services to the community optimally so that more ASN recruitment. This causes budget for employee expenses becomes bloated and reduces the share of capital expenditure. Previous research conducted by Sugiyanta (2016), Prastiwi et al. (2016), and Jiwatami (2013) explain that employee spending has a significant effect on the negative direction of capital expenditure. That is, the level of employee expenses affects the level of capital expenditure.

H$_3$: Employee expenses has a negative and significant effect on capital expenditure

PAD is a factor that determines the level of regional independence. According to the resource dependency theory, one of the important components that can trigger economic development and growth is population density. Increased population density will cause more infrastructure to be built (Hoffman & Howard, 2017). The regional governments that have high PAD certainly will not depend on funds provided by the central government. They will try to build good infrastructure in their regions with PAD owned. They understand that with proper infrastructure, it will spur economic growth in the area so that it will give results back to the local government itself. This means that PAD will increase regional government capital expenditure.

H$_4$: Population density moderates the effect of PAD on capital expenditure

Regions with high population density will make the government pay more attention to these areas. The government will consider the area as having the potential to develop its economy and show that the government provides the best service for its citizens. Many residents in one region certainly have many requests related to public facilities that must be available, so that the government in accordance with the theory of stewardship tries to fulfill the function of service to the community by carrying out development in the area so that capital expenditure will get a greater portion.

H$_5$: Population density moderates the effect of DAU on capital expenditure

Increased population density from year to year requires the government to improve services to the community. However, ministries and high state institutions currently still lack staff. Resource dependency theory explains that governments need many employees to help in providing services to the community. Without assistance from civil servants, the government cannot provide services to the community so the government is doing more recruitment of employees to deal with this problem. This has an impact on increasing government expenditure.
on employee expenses where this condition will reduce spending on capital expenditure.

**H6:** Population density moderates the effect of employee expenses on capital expenditure

**METHODS**

This study used a quantitative descriptive approach. The study population was 29 districts and 6 cities in Central Java in 2013-2017. The saturated sampling method was used in sample selection which produced 175 units of analysis. Out of the total units of the analysis, 14 outlier data were deducted so that the total final sample was 161 data. Outlier data provisions can be seen from the Zscore value of each variable. If the value of Zscore > 2.5 is ascertained the data is outlier data (Ghozali, 2016). The operational explanation of the research variables will be explained in Table 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Variables</th>
<th>Operational Definitions</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Capital Expenditure (BModal)</td>
<td>Budget expenditures for the acquisition of fixed assets and other assets that have a use value above one accounting period (PP No. 71 of 2010).</td>
<td>BM = Land Expenditure + Equipment and Machinery Expenditure + Building and Construction Expenditure + Road, Irrigation and Network Expenditure + Other Fixed Asset Expenditure + Other Asset Expenditure Nuarisa (2013)</td>
</tr>
<tr>
<td>2</td>
<td>Locally Generated Revenue (PAD)</td>
<td>Source of income from the region itself by considering the capabilities possessed (UU No. 33 Year 2004).</td>
<td>PAD = Local Tax Results + Regional Retribution + Revenue from Profit of Regional Enterprises + Others Legitimate Revenues Nuarisa (2013)</td>
</tr>
<tr>
<td>3</td>
<td>General Allocation Fund (DAU)</td>
<td>The State Budget which budgeted aims in order to inter-regional financial capabilities are equitable and fair (Darmayasa &amp; Suandi, 2014).</td>
<td>Jiwatami (2013)</td>
</tr>
<tr>
<td>4</td>
<td>Employee expenses (BPegawai)</td>
<td>Part of the expenditure of local government operations directly related to an activity (Devi &amp; Handayani, 2017).</td>
<td>( BP = \frac{\text{Employee expenses}}{\text{Regional Expenditure}} ) Jiwatami (2013)</td>
</tr>
<tr>
<td>5</td>
<td>Population Density (KPenduduk)</td>
<td>Calculating the average population per square kilometer (km²) (Central Bureau of Statistics).</td>
<td>( KP = \frac{\text{Total Population Wide of Area (km²)}}{\text{(Central Bureau of Statistics)}} )</td>
</tr>
</tbody>
</table>

Source: Secondary data processed, 2019

Data was collected using documentation techniques in the form of Regency / City LRA in Central Java in 2013-2017 obtained from BPKAD of Central Java Province. The research model was tested through descriptive statistical analysis, inferential analysis, and regression analysis in the form of Moderated Regression Analysis (MRA) with a significance level of \( \alpha \) of 5%. The MRA test was performed in the form of an Absolute Difference Test with the following equation.

\[
B_{Modal} = \alpha + \beta_1 \cdot \text{PAD} + \beta_2 \cdot \text{DAU} + \beta_3 \cdot \text{BPegawai} + \beta_4 \cdot |\text{PAD-KPenduduk}| + \beta_5 \cdot |\text{DAU-KPenduduk}| + \beta_6 \cdot |\text{BPegawai-KPenduduk}| + e \tag{1}
\]

**RESULTS AND DISCUSSIONS**

The classical assumption tests in this study are normality, heteroscedasticity, multicollinearity, and autocorrelation. The results of the descriptive statistical analysis test are shown in Table 2.
Table 2. Descriptive Statistical Analysis

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAD</td>
<td>161</td>
<td>95.190</td>
<td>648.090</td>
<td>252.3952</td>
<td>102.351270</td>
</tr>
<tr>
<td>DAU</td>
<td>161</td>
<td>0.407</td>
<td>0.630</td>
<td>0.52317</td>
<td>0.052901</td>
</tr>
<tr>
<td>BPegeiawai</td>
<td>161</td>
<td>0.38</td>
<td>0.74</td>
<td>0.5533</td>
<td>0.07102</td>
</tr>
<tr>
<td>KPenduduk</td>
<td>161</td>
<td>471</td>
<td>7193</td>
<td>1592.66</td>
<td>1645.971</td>
</tr>
<tr>
<td>BModal</td>
<td>161</td>
<td>51.98</td>
<td>678.21</td>
<td>298.1045</td>
<td>132.37987</td>
</tr>
</tbody>
</table>

Source: Data processed SPSS 23, 2019

The Kolmogorov-Smirnov (K-S) number in the normality test shows 0.200 > 0.05, so the research variable has been declared normal. All of the variables based on multicollinearity test results have a tolerance value ≥ 0.10, and a VIF value ≤ 10 so that no multicollinearity is identified. Furthermore, the heteroscedasticity test shows that the significance of all variables > 0.05 so that there is no identification of heteroscedasticity in the research model. The autocorrelation test explains that the D-W value of 1.851 is between du - 4-dU or 1.7804 <1.851 <2.2196 and there is no autocorrelation problems in this study.

Based on the Absolute Difference Test, it is obtained regression equation 2 as follows:

\[ B_{modal} = 389.162 + 139.230 \cdot PAD + 1.147 \cdot DAU - 72.376 \cdot B_{Pegeiawai} - 84.651 \cdot \left| \cdot PAD-K_{penduduk} \right| - 19.301 \cdot \left| \cdot DAU-K_{penduduk} \right| + 6.062 \cdot \left| \cdot BP_{ependuduk} \right| \]

The number of coefficient of determination of adjusted \( R^2 \) is 0.599, from this number shows that 59.9% of capital expenditure can be explained through the variables PAD, DAU, employee expenses, PAD interaction with population density, DAU interaction with population density, employee expenses interactions with population density. While the difference of 40.1% is proven by other components outside the research model. A summary of the hypothesis test can be displayed as in Table 3.

Table 3. Summary of Hypothesis Test

<table>
<thead>
<tr>
<th>No.</th>
<th>Hypothesis</th>
<th>Significance Value</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( H_1: ) PAD has a positive and significant effect on capital expenditure.</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>2</td>
<td>( H_2: ) DAU has a positive and significant effect on capital expenditure.</td>
<td>0.931</td>
<td>Rejected</td>
</tr>
<tr>
<td>3</td>
<td>( H_3: ) Employee expenses have a negative and significant effect on capital expenditure.</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>4</td>
<td>( H_4: ) Population density moderates the influence of PAD on capital expenditure.</td>
<td>0.000</td>
<td>Accepted</td>
</tr>
<tr>
<td>5</td>
<td>( H_5: ) Population density moderates the influence of DAU on capital expenditure.</td>
<td>0.143</td>
<td>Rejected</td>
</tr>
<tr>
<td>6</td>
<td>( H_6: ) Population density moderates the effect of employee expenses on capital expenditure.</td>
<td>0.614</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Source: Data processed through SPSS 23, 2019

The Effect of PAD on Capital Expenditure

PAD has a positive and significant effect on capital expenditure. That is, a high PAD will increase capital expenditure. Conversely, a low PAD will reduce capital expenditure. The Stewardship Theory that supports this study explains that the society is given services by the local government in the form of infrastructure development which is realized in capital expenditure. This development will facilitate economic activities so as to increase community productivity. This will have an impact on increasing taxes and retributions so as to increase PAD (Afonso, 2013). This result is in line with Sholikhah & Wahyudin (2014), Febriana & Praptoyo (2015),
The Effects of PAD, DAU, and Employee Expenses on Capital Expenditures with Population Density as a Moderating Variable

Nuarisa (2013), Prastiwi et al. (2016) and Nugraha (2018) where they explained that the PAD has a significant influence on capital expenditure in a positive direction. That is, the more PAD, the more funds are spent on capital expenditure.

The Effect of DAU on Capital Expenditures

There is no significant effect between DAU on capital expenditure. This shows that the Regency / City government in Central Java does not use the DAU allocation for infrastructure development but is used for operational expenditure such as employee expense, goods, interest, subsidies, grants, social assistance, and finance so that capital expenditure only gets small portion.

Stewardship Theory is not in line with this study. DAU assistance from the central government for the regions is not maximally functioned for capital expenditure. This is seen from the LRA data of the Regency / City of Central Java Province where the portion given for operating expenditure is far greater than capital expenditure. This causes the service to the community according to the needs can not be done by the local government to the maximum. This theory also explains that local governments are less motivated to give the best in achieving organizational goals. That is, the allocation of DAU based on the needs of each region fairly and evenly has not been realized by the regional government. The results of this study is in line with Sholikhah & Wahyudin (2014) and Suryana (2017) that DAU has no significant effect on capital expenditure.

The Effect of Employee Expenses on Capital Expenditures

Employee expenses have a significant negative effect on capital expenditure. The amount of government spending on employee expenses will reduce the regional government capital expenditure. Based on the APBD data, namely LRA Regency / City of Central Java Province in 2013-2017, the realization of the APBD portion for regional employee expenses is very large, exceeding 50%. The activities other than employee expenses including capital expenditure are only limited by the local governments.

Stewardship Theory is in line with this study. At present, the central or regional government agencies need many employees to help in providing services to the community. Without assistance from civil servants, the government will not be able to provide services to the community. Therefore, the government is recruiting more civil servants to deal with this problem. However, this will have an impact on the increase in the amount of employee expenses so that it will reduce capital expenditure. This result is in line with the tests conducted by Sugiyanta (2016), Prastiwi et al. (2016), Jiwatami (2013) that employee expenses has a negative and significant effect on capital expenditure. This means that the higher the employee expenses, the lower the capital expenditure.

The Effect of PAD on Capital Expenditures with Population Density as the Moderating Variable

Population density moderates the influence of PAD on capital expenditure. Because of this population density, the effect of PAD on capital expenditure is weak. Uneven population density causes the development of the area cannot be enjoyed by the entire community. The data can be seen on the website of Central Bureau of Statistics of Central Java Province in 2013-2017 which is processed.

Resource Dependence Theory is in line with this study. PAD obtained by the regional government is not influenced by the population density of the region. Uneven population density causes regional development cannot be enjoyed by all levels of society. This situation is hampering the economic activities of the people so that it is difficult to obtain income. The smaller the income received, the consumption of the society also decreases. If the consumption decreases, the payment of regional taxes and retribution decreases so that the acquisition of PAD also decreases. The decrease in PAD will not be able to maximize spending on capital expenditure.

Effect of DAU on Capital Expenditures with Population Density as the Moderating Variable

Population density does not moderate the effect of DAU on the capital expenditure. This is due to the central government when calculating DAU prioritizes regional civil servant salaries rather than population density. This can be seen from the Regency / City LRA in Central Java
where employee expenses is far more dominant than other expenditure. Population density is not a consideration in the allocation of the use of DAU by the local governments, even though this should be a priority which leads to the need to carry out infrastructure development. This result can also be caused from the beginning in the management of DAU, the local governments have assumed that the increase in transfer funds provided by the government is perceived as an opportunity to increase employee spending. This is due to there is no assertiveness from the central government that the DAU is prioritized for infrastructure development in order to overcome the development gap between regions. The result of this study is not in line with Resource Dependence Theory. The high population density does not affect the central government in distributing DAU to the local governments.

Effect of Employee Expenses on Capital Expenditures with Population Density as the Moderating Variable

Population density is not able to moderate the effect of employee expenses on the capital expenditure. This is caused by the current number of civil servants is considered sufficient and able to assist local governments in providing services to the public. The current number of civil servants is having good quality so the government does not conduct recruitment of employees routinely. The quality of the employees can be seen from the list of recapitulation of civil servants who are sentenced to discipline found on the website of the Regional Employment Agency (BKD) of Central Java Province in 2013-2017 which has decreased. The cause of the increase of expenditure on employee expenses does not depend on population density but because of an increase in employee salaries, employee benefits, and the DAU calculation formula that places greater emphasis on employee expenses. This study is not in line with Resource Dependence Theory. At present, the central and regional government agencies do not need many new employees to assist in providing services to the community. The government does not recruit more employees to deal with this problem because the current number of employees is considered to be sufficient and having good quality.

CONCLUSIONS

Hypothesis testing shows the result that the level of capital expenditure is influenced by the level of PAD, the level of capital expenditure is not affected by DAU, the high level of employee expenses will reduce capital expenditure. The influence of PAD on capital expenditure can be moderated by population density. However, the effect of DAU and employee expenses on capital expenditure cannot be moderated by population density.

The results of this study can be used as a basis that the regional governments must continue to increase PAD by maximizing local tax and retribution collection because increased PAD will trigger an increase in capital expenditure. The local governments also need to reduce employee expenses. Employee expenses must be used wisely so that expenditure does not swell. If this happens, the proportion of capital expenditure will decrease. Suggestions for further research use ratio measurements for PAD and capital expenditure variables so that the percentage of PAD and capital expenditure realization can be known and can expand the object of the study area because capital expenditure is important for measuring the economic growth of a region.

REFERENCES


