Fiscal Analysis Based on the Implementation of Regional Development in Badung Regency, Bali in 2021

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ABSTRACT: The purpose of this study was to analyze the effect of Covid-19 on the Regional Budget of Badung Regency in 2021 in terms of the aspect of the resulting fiscal gap. This study was designed using a quantitative approach and validated by a qualitative approach. Quantitative data was obtained from budget documents before and after the Covid-19 outbreak and analyzed using the fiscal gap formula. Qualitative data were analyzed by sorting and selecting data (reduce), presenting data (display), and concluding data (conclusion: drawing/verifying). These three analytical techniques are carried out at each stage of the research, both at the preparation stage, the implementation stage in the field, and after the stage in the field. The results of the study found that the weighted value of the population index was 0.344 GDP/capita 0.324 human development 0.267 construction cost 0.247 and area 0.03. Based on the results of these studies, it is recommended to the Badung Regency Government, so that in making development policies pay attention to the value of the index weights that affect the general allocation fund in designing the regional revenue and expenditure budget.

KEYWORDS: Construction Cost, GRDP, Human Development, Population, Region.

I. INTRODUCTION

1.1 Background problem

Article 1 Paragraph (6) of Law Number 23 of 2014 concerning Regional Government states that regional autonomy is the right, authority, and obligation of an autonomous region to regulate and manage its government affairs and the interests of the local community to improve the welfare of the community by taking into account the principles of democracy, equity, justice, privilege, and regional specificity and diversity within the framework of the Unitary State of the Republic of Indonesia. To implement the principle of autonomy and the duties and responsibilities of regional heads and deputy regional heads, they have the rights, obligations, and authority in preparing and submitting the draft Regional Revenue and Expenditure Budget (APBD), Revised APBD, and Accountability Reports (LKPJ) for the implementation of APBD to the Council, Regional People's Representatives (DPRD).

The granting of rights, obligations, authorities, and responsibilities to regional heads and deputy regional heads is intended so that the implementation of governance and public services which includes obligatory basic service affairs, non-basic service mandatory affairs, and elective affairs can proceed according to plan. Various efforts have been made by the Regional Government of Badung Regency to fulfill its obligations, including by referring to the Vision and Mission of the elected Regional Head/Deputy Regional Head as outlined in the Regional Medium-Term Development Plan (RPJMD). The RPJMD is translated into an annual work plan in the form of the APBD. The results achieved during the period 2017 to 2020 can be summarized in a table that describes performance in terms of regional revenues and expenditures for four years showing that fiscal needs are smaller than fiscal capacity (see Table 1).

Table 1. Regional Revenue and Expenditure Budget for Badung Regency After Changes 2017-2020

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Regional Income</th>
<th>Regional Shopping</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2017</td>
<td>4.939.386.133.912.09</td>
<td>4.462.658.405.048.65</td>
<td>476.727.728.863.44</td>
</tr>
<tr>
<td>2.</td>
<td>2018</td>
<td>5.420.099.298.379.53</td>
<td>4.965.886.908.873.71</td>
<td>454.122.389.505.82</td>
</tr>
<tr>
<td>3.</td>
<td>2019</td>
<td>5.792.967.591.407.56</td>
<td>4.663.810.754.155.87</td>
<td>1.129.156.837.251.69</td>
</tr>
<tr>
<td>4.</td>
<td>2020</td>
<td>3.906.162.801.873.79</td>
<td>3.585.992.983.051.33</td>
<td>320.169.818.822.46</td>
</tr>
<tr>
<td>5.</td>
<td>2021</td>
<td>3.800.966.247.293.00</td>
<td>2.946.511.587.026.00</td>
<td>854.454.660.267.00</td>
</tr>
</tbody>
</table>

Source: BPKAD Bookkeeping Section of Badung Regency 18 June 2021.
However, due to the impact of the Covid-19 pandemic which harmed the fiscal capacity of a region, the Head of the Badung Regency in the directive stated that Fiscal Needs (KBF) and Fiscal Capacity (KPF) should be designed in the range of 2.9 trillion. Before the COVID-19 pandemic, the average KBF for four years was 4.4 trillion while the KPF was 5.5 trillion, so the Fiscal Gap (CF) was negative 1.1 trillion. This fact strengthens the public's appreciation that Badung Regency is one of the richest regencies in Indonesia.

1.2 Formulation of the problem
From the above background, regarding the Fiscal Needs of Badung Regency compared to fiscal capacity, for the implementation of regional development in 2021, the problem can be formulated as follows:
How is the calculation process for Fiscal Needs compared to Fiscal Capacity, in the implementation of development in Badung Regency in 2021?

1.3 Research Aims and Objectives
From the description above, it can be said that Badung Regency is facing a decline in KPF, so the purpose and objective of this research is to determine the Fiscal Needs (KBF), which is compared with Fiscal Capacity in the development of the Badung Regency area in 2021, following the principles of autonomy, and plans that have been set.

Regarding the calculation of KBF, the reference used in Article 27 of Law Number 33 of 2004 concerning Financial Balance between the Central Government and Regional Governments and the Formula for Calculation of KBF and KPF issued by the Directorate General of Fiscal Balance.

2. THEORETICAL REVIEW
2.1 Population Growth and Economic Development
James Grant, Director General of UNICEF said that "the core issue of today revolves around the world's efforts to tackle population explosions." A.W. Clausen, Former President of the World Bank, also said the same thing that “all efforts by the government and society today to influence demographic conditions in the future are the foundation of development strategies in the next century.

The same thing was also stated by Todaro (2000). Todaro said that by the end of 1992 the total world population was estimated to be around 5.5 billion people. The projected figures for the population compiled by the United Nations will reach more than 6.3 billion by the end of the twentieth century and 8.5 billion by 2025 and more than four-fifths of the population live in developing countries.

The population problem concerns the welfare of mankind as a whole and the interests of development. Such rapid population growth poses serious problems for the welfare of mankind in the world. If only the development efforts that have been implemented in the future succeeded in increasing the standard of living of the community which included improving the level of income, health, education, and welfare, as well as including self-esteem and freedom of choice, then the important questions that arise due to the explosion problem are: The population is: To what extent will it support or otherwise hinder their chances of achieving development goals not only for the present generation but also for future generations.

Of the many relevant issues, some of them are fundamental that need attention, namely: At the growth rate, what percentage will make it difficult to realize public services? How does the government concerned prepare jobs so that unemployment does not increase? Is the government able to expand and improve the quality of the existing health and education system so that everyone has equal opportunities? To what extent is the low standard of living of the community a major factor limiting the freedom of parents to determine the size of their family members? Is there a significant relationship between the level of poverty and the size of their family members? To what extent have the increasing prosperity of developed countries become a constraining factor for developing countries in their efforts to cope with population growth? Are the efforts to increase the level of prosperity of the rich countries a factor causing environmental damage, as well as a force that hinders efforts to improve the standard of living that the government is engaged in, to offset the population explosion (Todaro)?

Referring to the problem of population explosion, Thomas Maltus in his book entitled Essay on the Principles of Population published in 1978, Thomas Maltus formulated a concept of diminishing returns or known as diminishing return to scale. That is, the population in an area increases geometrically every 30 years or 40 years unless suppressed by famine. At the same time, due to the process of diminishing returns to scale from a fixed number of factors of production, the food supply will only increase arithmetically. Even because the land ownership of each member of the community is getting smaller and smaller, the marginal
contribution is decreasing. Because the growth in food supply cannot keep pace with population growth, per capita income continues to decline to such a low level that the entire population survives in a condition where all income is only sufficient to fill the stomach. Referring to the thoughts put forward by James Grant, A.W. Clausen, Robert Malthus, and Todaro about the importance of controlling population explosion, the government of a country/region needs to pay serious attention to solving population problems. Because in determining the KBF the Population Index (IP) is important and relevant.

2.2 Region area
Indonesia as the largest country among Southeast Asian countries is an archipelagic country consisting of 17,502 islands. With 6,044 of them using names and others not yet known by name and scattered next to the equator. The western part of Indonesia consists of large islands that have the characteristics of mainland Asia, while the eastern part, except for Irian Jaya, is a collection of small islands. The western part of the Indonesian waters is relatively shallow and the eastern part of the Indonesian waters is relatively deep so that the western part of Indonesia's land area is more prominent while the eastern part of the ocean is more prominent.

The Indonesian archipelago and its waters are seen by the Indonesian people as a unified whole, not separated from one island to another. The perspective of the Indonesian people has long been internalized so that when referring to their place of life, the term homeland is used. Land and sea are one unified whole, while the sea is considered as a unifier, not as a separator between one island and another.

However, its strategic position and vast territory have inspired Rudolph Kjellen (1900) to generate an idea of geographical politics which is now known as geopolitics (Lemhanas, 1988). The importance of the area as a place for the growth of a nation is also a concern of geopolitical experts, including Ratzel (1844-1090) and Karl Hoaushofer (1896-1946). In his book entitled "AnthropoGeography and Politische Geography” Ratzel argues "the country is an organism that is subject to the laws of biology and Karl Hoauushofer said by using the term lebensraum for geopolitics. Referring to the thoughts of Rudolph Kjellen, Ratzel, and Karl Hoauushofer, it can be concluded that the Regional Indicator (IW) as one of the components in calculating the KBF of an area is important and relevant.

2.3 Cost of Construction
To realize the policy of financial balance between the Central and Regional Governments, a Construction Cost Index (IKK) is needed. The Indonesian Central Statistics Agency (2020) has published the Provincial and District/City IKKs. IKK is used as a proxy to measure the level of geographical difficulty of an area, the more difficult the geographical location of an area, the higher the price level in that area. No two office buildings are identical or bridges are the same because each has its character and design that was tailor-made to be placed in its respective location. Therefore, the calculation of the CPI is based on a certain approach or assumption. For example, the object is a residential building, then the residential building must accommodate a variety of designs and models.

To compare construction prices between regions, it is known that there are two calculation methods, the first with the input approach and the second with the output price approach. The input price approach is to record all important materials used combined with wages and equipment rental according to their respective weights. The weakness of this method is that construction activities are considered to have the same productivity and do not consider overhead costs. The output approach is done by asking the price of the finished construction. In the output price, the weakness is that the building price includes management costs and contractor profits which vary between regions and between projects so they are not sufficient for comparing construction costs between regions. An alternative is to collect construction prices that can cover overhead costs and worker productivity without including management costs and contractor profits. The trick is to collect the price of building components such as the price of walls, roofs, and so on. If the prices of these components are combined, a total project price will be obtained whose amount is above the input price but below the output price because it includes overhead costs and wages but incurs management costs and contractor profits. Such data can be obtained from the Bill of Quantity (BoQ) document for a completed project.

Referring to the description put forward by BPS (2020), it can be concluded that the IKK is an important indicator in calculating the KBF of an area both at the provincial and district/city levels.
2.4 Human Development
The Millennium Development Goals (MDGs) Declaration was agreed upon by 189 UN member countries at the Millennium Summit in September 2000. The Millennium Development Goals are a framework for social development and extend their benefits to improving the quality of human resources. The development goals are focused on eight aspects of development, namely fighting poverty and hunger, providing basic education for all, supporting gender equality and empowering women, reducing child mortality, improving maternal health, combating the spread of HIV/AIDS and other infectious diseases, preserving the environment and developing global cooperation (UNDP, 2000).

Regarding human development, Todaro and Smith (2006) said that before the 1970s development was seen as a purely economic phenomenon. The level of development progress is only measured by the level of Gross National Income, both as a whole and per capita, which is believed to be dripping by itself, creating jobs and other economic opportunities. However, in the end, economic development which was expected to foster various conditions needed to create a more equitable distribution of the results of social-economic growth did not materialize. This is widely known as the “trickle-down effect” principle, which takes precedence, while other problems such as poverty, discrimination, unemployment, and inequality in income distribution are secondary. Related to economic development which emphasizes the trickle-down effect, it will have an impact on reducing road poverty, unemployment continues to increase, the informal sector is increasingly becoming a mainstay, the welfare gap is widening, and social impacts are getting heavier (Basri, 2009). Therefore, the high and low GRDP/Capita does not reflect the success of human development and the indicator deemed relevant by the World Bank (1991) is the Humans Development Index or Human Development Index (HDI) which describes the better quality of education, health, and nutrition, environmental improvement, equal opportunity, equal distribution of individual freedom, and refreshment of cultural life.

Referring to the ideas put forward by Todaro and Smith, Basri, and the World Bank, it can be said that HDI is an important and relevant indicator in calculating KBF.

2.5 Gross Regional Domestic Product (GDP/Capita)
The concept of calculating GRDP is the same as the concept of calculating Gross Domestic Product (GDP). GRDP/capita is an indicator of as capita income for the province and district/city. While GDP is an indicator of the income of the population of a country's economy. There are three methods in calculating GRDP, namely the production method, income, and expenditure method. Whichever method is used, the results of calculating the total output must be the same or cannot be different.

The production method in practice is done by dividing the economy into several production sectors. The total output of each sector is the total output of the entire economy. Calculation with the production method that is summed is the added value or value-added of each sector. The added value is the difference between the input value and the output value.

The Income method views the value of the economy's output as the total value of remuneration for the factors of production used in the production process. The relationship between the level of production output and the factors of production used is described in a simple production function, namely, \( Q = f(L, K, U, E) \), where \( Q = \) output, \( L = \) labor, \( K = \) capital/capital, \( U = \) money/financial, and \( E = \) Entrepreneur.

The expenditure method is carried out by calculating total household expenditure, government expenditure, expenditure for Gross Domestic Fixed Capital Formation (PMTDB), and total Net Exports (X-M). GRDP is divided into two, namely at current prices and at constant prices. The benefits of calculating GRDP/Capita are for the analysis of the prosperity of the population of an area, analysis of social welfare problems, analysis of productivity problems, and analysis of other unrecorded economic activities (Prathama and Manurung, 2008).

Referring to the concept and benefits of calculating GRDP/Capita as stated by Prathama and Manurung, it can be said that the GRDP/capita Index is an important and relevant indicator in calculating KBF.

2.6 Framework of thinking
The framework of thinking in the research design is designed concerning the formulation of the research problem, the aims and objectives of the research, the general theory or grand theory to solve the research problem, and the research variables, and then put it in the flow of thought in the form of a diagram as shown in Figure 1 below. Picture
The framework of thinking above shows the flow of thought as follows. First, in calculating KBF it is determined by five determining factors, namely population, area, construction cost, human development, and GRDP/capita. Second, there are three determinants of KPF, namely Regional Original Revenue (PAD), Revenue Sharing Fund from Tax Revenue (DBH Tax), and Revenue Sharing Fund from Natural Resources (DBH SDA). Third, determine CF = KBF – KPF. Fourth, determine DAU = AD + CF.

3. RESEARCH METHODS
The research design used is concurrently embedded, which is a combination of quantitative and qualitative approaches to the same research problem (Creswell and Clark, 2007). However, the more dominantly used is the quantitative approach. That is, a qualitative approach is used as a validation of the results of quantitative research. Because this research is more dominant using a quantitative approach, the formulation of the research problem must be clear before conducting the research (Cooper and Emory, 1996).

3.1 Quantitative and Qualitative Data
Quantitative data collection techniques were obtained by studying the Parent APBD, APBD-Amendment documents, and the Regent's Accountability Report document for the period 2017 to 2020. While qualitative data was obtained utilizing in-depth interviews, attending focus group discussions, and direct observation. Focus group discussion is used to explore the thoughts, feelings, attitudes, beliefs, values, perceptions, personalities, and behaviors of the respondents. In-depth interviews were conducted with key informants, both structured and unstructured, face-to-face, or by telephone if conditions were favorable. The focus group discussion involved those who understand regional financial budgets, namely the Chair of Commission III, Deputy Chair of Commission III, Secretary of the Council, and Head of Bappeda. Indirect observations are carried out using the five senses and assistive devices in the form of cameras, stationery, voice recorders, and pictures.

3.2 Data analysis technique
The data analysis technique used is the formula applied by the Directorate General of Balance, Ministry of Finance of the Republic of Indonesia in calculating DAU. The formula is as below.

$$\text{KB}_F = TBR (\partial_1 \text{IP} + \partial_2 \text{IW} + \partial_3 \text{IPM} + \partial_4 \text{IKK} + \partial_5 \text{IPDRB/Cap})$$

$$\text{KP}_F = \text{PAD} + \text{DBH}_{\text{Pajak}} + \text{DBH}_{\text{SDA}}$$

Figure 1. Fiscal Gap Analysis (CF) Thinking Framework
4. RESEARCH RESULTS AND DISCUSSION

4.1 Population Index (IP)

Based on the BPS publication (2020) it can be seen that the total population of Indonesia is: 270,230,917 people, consisting of a male population of 136,661,899 people and a total female population of 133,542,018 inhabitants. Meanwhile, the total population of the Province of Bali is 4,317,404 consisting of a male population of 2,171,105 and a female population of 2,146,299, and the total population of Badung Regency in 2020 (projection) is 683,200 people, consisting of a male population of 348,400 and a female population of 334,800.

To determine IP, it is necessary to know in advance the average population of districts/cities in Indonesia in 2020 (projection) by the total population of Indonesia (270,230,917 people) divided by the number of districts/cities (514).

So, the average population of districts/cities in Indonesia is 525,741 people. The population is a variable that reflects the need for the provision of public services in each region. IP is calculated by the formula:

\[ IP = \frac{Area \ population}{National \ average \ population} = \frac{683,200}{525,741} \]

\[ IP = 1.299 \]

This means that the population of the Badung Regency is above the national average population.

4.2 Area Index (IW)

The area is a variable that reflects the need for the provision of facilities and infrastructure per unit area. The total area of Indonesia is 1,922,570 KM², the area of Bali Province is 0.29 percent of the total area of Indonesia. The area of Badung Regency is 418.52 KM². The average area of regencies/cities in Indonesia is calculated by: dividing the total area of Indonesia (1,922,570 KM²) divided by the number of regencies/cities in Indonesia (514), then we get the average area per district/city in Indonesia is 3,740 KM². IW of a district/city calculated by the formula:

\[ IW = \frac{weigh \ an \ area}{Average \ national \ area} = \frac{418,52}{3,740} \]

\[ IW = 0.112 \text{ KM}^2 \]

IW = 0.112 means that the area of Badung Regency is far below the national average district/city area.

4.3 Construction Cost Index (IKK)

IKK is a variable that reflects the level of geographical difficulty, assessed based on the relatively high cost of physical infrastructure between regions. IKK describes the comparison of the level of the construction cost of one area to another. Based on the construction cost calculation methodology (BPS, 2020), it can be seen that the national IKK is 105.65, the IKK of Bali Province is 115.04, and the IKK of Badung Regency is 121.15. To calculate the IKK of an area, the following formula is used:

\[ IKK = \frac{IKK \ The \ area \ concerned}{Nationally \ IKK \ Average} \]
IKK = 1.100 means that the prices of construction goods in the Badung Regency are more expensive than the national average construction costs.

### 4.4 Human Development Index (IPM)

HDI is a variable that reflects the level of achievement of the population's welfare on basic services in the fields of education and health. Indonesia's HDI in 2019 was 71.92. The HDI of the Province of Bali is 75.38. The HDI of Badung Regency is 81.59. HDI is calculated by the formula:

\[
\text{IPM} = \frac{\text{IPM concerned area}}{\text{Average IPM Nationally}} = \frac{81.59}{71.92} = 1.130
\]

IPM = 1.130 means that the human development of the Badung Regency is higher than the national average of human development.

### 4.5 Gross Regional Domestic Product Index (IPDRB)

GRDP is a variable that reflects the potential and economic activity of a region which is calculated based on the total of all gross domestic production outputs of a region. Based on the current price, GDP/Per Capita at the national level is Rp. 56,900,000.00. GRDP/Per Capita of Bali Province is Rp. 51,180,810.00 GRDP/Per Capita of Badung Regency is Rp. 72,036,060.00. IPDRB/Per Capita is calculated by the formula:

\[
\text{IPDRB/Per Capita} = \frac{\text{PDRB/Per Capita}}{\text{Average PDRB/Per Capita Nationally}} = \frac{72,036,060.00}{56,900,000.00} = 1.260
\]

IPDRB/Per Capita = 1.260 This means that the per capita income of the residents of Badung Regency in 2020 is higher than the national average per capita income.

### 4.6 Counting KBr and KPf

\[
KBF = TBRT(\partial_1 IP + \partial_2 IW + \partial_3 IKK + \partial_4 IPM + \partial_5 IPDRB \text{ Per Capita})
\]

\[
KBF = 4.419587.262.782.39(0.265 \times 1.229 + 0.023 \times 0.112 + 0.224 \times 1.1 + 0.231 \times 1.130 + 0.257 \times 1.260)
\]

\[
KBF = 4.419587.262.782.39(1.178)
\]

\[
KBF = 5.207.235.986.867.47
\]

\[
KPF = 2.946.511.587.026.00
\]

\[
CF = KBF - CF
\]

\[
CF = 5.207.235.986.867.47 - 2.946.511.587.026.00
\]

\[
CF = + 2.260.724.399.841.47
\]

\[
DAU = AD(Gaji PNSD + Years of Inherent Allowance 2020 + CF)
\]

\[
DAU = 643.831.677.178.00 + 2.260.724.399.841.47
\]

\[
DAU = 643.831.677.178.00 + 2.260.724.399.841.47
\]

\[
DAU = 2.904.556.077.019.47
\]
Based on the results of data processing in Table 2, a KBF model can be built with a population index weight value of 0.344 GDP/Capita 0.324, human development 0.261 construction costs 0.247, and an area of 0.003. From the five index weight values, it was found that the population variable has the highest index weight value of 0.344 while the lowest index weight value is the area of 0.003. This finding is that the higher the population of an area, the higher the fiscal needs of the region concerned. Meanwhile, the area index value of 0.003 means that the wider an area is, the greater the fiscal needs of the area concerned.

Based on the calculation of the KBF using the average total expenditure for four years for Basic Service Compulsory Affairs, Non-Service Compulsory Affairs, and Optional Affairs multiplied by the total index weighted value of each variable, it can be seen that the KBF (2021) is Rp. 5,207,235,986,867.47. The KBF is included in the realistic category. This is following the opinion expressed by I Putu Alit Yandinata, S.S. (Chairman of Commission III) and I Nyoman Satria, S.Sos., M.Si (Vice Chairman of Commission III) in their directive to the Chairman of Bappeda stated that “even though we are affected by Covid-19, concerning fiscal needs, it should always be based on needs. What we have been doing so far so that the positive fiscal gap and our DAU increase. However, if we formulate budget requirements with the principle of a balanced budget, then the fiscal gap will be negative, and the impact will not increase the DAU.

5. CONCLUSION AND RECOMMENDATION
The conclusion can be made by referring to the subject matter, aims and objectives of the research, general theories relevant to KBF, it can be concluded as follows.

1. The need for an increase in DAU requires the principle of consistency in determining the KBF. every year, so that the average total expenditure can be used as a reference.
2. The weighted value of the population index is 0.344 GDP/Capita 0.324 human development 0.261 construction cost is 0.247 and the area is 0.003 has a positive and significant effect in determining the KBF.

The Suggestions that can be offered are:
1. Fiscal needs are a reflection of the basic needs of development that should be achieved, therefore it is recommended that in compiling these fiscal needs they should not be changed or reduced at any time, but what needs to be changed is the strategy for achieving fiscal capacity.
2. In formulating regional development policies, it is necessary to pay attention to the index weight value of a regional development variable which is the result of research.

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