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Government Expenditure Efficiency Towards Islamic Human Development Index (IHDI): Data Envelopment Analysis Application

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Abstract. *This study examines the efficiency of local government spending in 34 provinces in Indonesia against the indicators of the Islamic Human xDevelopment Index (IHDI) in 2018-2020. Data Envelopment Analysis is used in this study as a method of measuring the efficiency of each province. This study uses local government spending based on function as an input variable and IHDI indicators which are built based on maqashid sharia in the form of crime rate, national zakat index, life expectancy, the average length of schooling, birth rate, gini ratio, and expenditure per population capita as output variable. The results of this study indicate that the efficiency level of local government spending on the hifdz an-nafs aspect has the highest average efficiency score among other aspects, namely 96-97%. Furthermore, Gorontalo could have gotten a better efficiency score on the hifdz al-'aql indicator.*

Keywords: *Efficiency, Government Expenditure, IHDI, DEA*

Abstrak. *Penelitian ini mengkaji efisiensi belanja pemerintah daerah pada 34 provinsi di Indonesia terhadap indikator Indeks Pembangunan Manusia Islam (IPMI) tahun 2018-2020. Data Envelopment Analysis digunakan dalam penelitian ini sebagai metode pengukuran efisiensi masing-masing provinsi. Penelitian ini menggunakan belanja pemerintah daerah berdasarkan fungsi sebagai variabel input dan indikator IHDI yang dibangun berdasarkan maqashid syariah berupa angka kriminalitas, indeks zakat nasional, angka harapan hidup, rata-rata lama sekolah, angka kelahiran, rasio gini, dan pengeluaran per kapita penduduk sebagai variabel output. Hasil penelitian ini menunjukkan bahwa tingkat efisiensi belanja pemerintah daerah pada aspek hifdz an-nafs memiliki skor efisiensi rata-rata tertinggi di antara aspek lainnya, yaitu 96-97%. Selanjutnya, Gorontalo seharusnya bisa mendapatkan skor efisiensi yang lebih baik pada indikator hifdz al-'aql.*

Kata Kunci : *Efisiensi, Belanja Pemerintah, IPMI, DEA*

Introduction

After the reform, Indonesia experienced a change in the national development paradigm. Development is no longer described by a growth paradigm but instead shifts towards equitable, sustainable development (Wilopo, 1995). So that the increase in the Human Development Index (HDI) is very appropriate to be used as an indicator of the success of national development, complementing the previous indicators, which only focused on the growth rate of gross domestic product (GDP). This change in the national development paradigm is implemented through regional autonomy policies and financial balances between the central and regional governments (RI Finance Memorandum, 2002).

Regional autonomy (decentralization) can be interpreted as awareness that development is a complex process to be planned and managed from the center (Berkowitz & Mitchneck, 1992). Local governments are considered better to understand the needs and aspirations of the community. Thus, being able to mobilize economic resources owned for more effective and efficient public services (Hermawan, 2012). The efficiency of local government spending affects economic growth and human development in the area (Rusydi et al., 2015)

Quoting from UNDP (1990), Anto (2011) states that HDI is measured through four components, namely: (1) Life Expectancy Rate (AHH), (2) Literacy Rate (AMH), (3) Average Years of Schooling (RLS), and (4) Average Expenditure Per Capita. In Indonesia, HDI is commonly used to describe the success of human development. Table 1 displays data on Indonesia's HDI achievements in the 2011-2021 period. Based on the table below, Indonesia's HDI has experienced a consistent increase every year. Based on an international scale, Indonesia's HDI results are included in the upper middle category (66<HDI<80).

Table 1. Achievements of HDI in Indonesia in 2011-2021

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021

IPM	67,09	67,70	68,31	68,90	69,55	70,18	70,81	71,39	71,92	71,94	72,29

Source: Central Bureau of Statistics (2021)

On the other hand, from an Islamic perspective, human development has a more holistic scope and purpose, covering two dimensions: the world and the hereafter. Therefore, HDI cannot comprehensively describe the success of Muslim human development (Rafsanjani, 2014). Thus, the Islamic Human Development Index (IHD-I) is more appropriate to be used as an indicator for measuring human development achievements, especially in Indonesia, where the majority of the population is Muslim, around 86.90% of 273.87 million people (Ministry of Home Affairs, 2022).

Previously, IPM-I was proposed by Anto (2011) as an indicator of human development achievement in countries that are members of the Organization of Islamic Cooperation (OIC). IHD-I was also popularized by Amin et al. (2015) with a slightly different model, namely "*The Integrated Development Index (I-Dex*)". IHD-I and I-Dex are built based on the principle of fulfilling basic needs in the five *maqashid sharia* according to Ash-Syatibi's view (*hifdz ad-diin , hifdz an-nafs, hifdz al-'aql, hifdz an-nasl*, and *hifdz al-maal*). *Maqashid sharia* is implemented to meet basic human needs in this world and the hereafter (holistic). HDI has been widely used in measuring human development achievements, including Anto (2011), Rafsanjani (2014), Hapsari & Herianingrum (2014), Aydin (2016), and Rama & Yusuf (2019).

Research that measures the efficiency of government spending on HDI achievements has been carried out by several researchers before, both in Indonesia and other countries (Gupta & Verhoeven, 2001; Afonso & Aubyn, 2006; Varhoeven et al., 2007; Pertiwi, 2007; Hermawan, 2012; Putri, 2015; Yanti & Kustiani, 2016). Interestingly, of the many studies mentioned above, no research has applied the HDI indicator as the primary variable to measure the level of efficiency of government spending, especially in Indonesia. Thus, this study considers the *maqashid sharia* approach in measuring the efficiency of government spending in Indonesia, manifested in the IHD-I indicator. It is an

update in the research model that measures the efficiency of government spending. This research contributes to the body of knowledge by using the IHD-I indicator to accommodate the concept of welfare based on an Islamic perspective.

Literature Review

Efficiency Concept

Efficiency is described from two perspectives: the perspective of producers and consumers. From the producer's perspective, efficiency is minimizing costs and maximizing profits. A production frontier line in production theory describes the maximum output level obtained from input (Charnes, Cooper, & Rhodes, 1978).

Based on economic theory, efficiency has two meanings: economic and technical efficiency. The two meanings have different points of view; economic efficiency from a macroeconomic point of view and technical efficiency from a microeconomic point of view. In the concept of microeconomics, efficiency is described by converting inputs and outputs. Thus, technical efficiency is often expressed by "the smallest cost is expected to produce the maximum" (Farrell, 1957). In microeconomics, efficiency is defined as technical efficiency, whose measurement is limited to technical operations. At the same time, economic efficiency theory explains that prices cannot be considered as given because macro policies can influence prices (Alesina, Roubini, & Cohen, 1997).

Within the company's scope, Farrell (1957) states that efficiency is described by allocative efficiency and technical efficiency. If these two components are combined, it is referred to as economic efficiency (Ali & Ascarya, 2010). Technical efficiency reflects the company's ability to achieve optimal output at certain input levels. Meanwhile, allocative efficiency reflects the company's ability to optimize inputs with production technology and price structure management. A company stated that at an optimal efficiency level can produce a specific output level at the lowest cost (Farrell, 1957) and

with the level of technology generally used (Ascarya & Yumanita, 2006). If the three types of efficiency are at the right combination level, it will achieve more optimal profits because they are interrelated (Kumbhaker & Lovell, 2004).

Islamic Human Development Index

The Human Development Index (HDI) introduced by the United Nations Development Program (UNDP) is quite comprehensive but needs to be fully compatible. HDI cannot describe human development from an Islamic perspective (Anto, 2011) (Amin et al., 2015) because HDI is not built based on *maqasid sharia*. On the other hand, there are criticisms of HDI's inability to describe measures of success in human development performance and efficiency, confirming that HDI needs to be perfected.

In its development, UNDP has reconstructed the HDI into a New Human Development Index (NHDI) after previously receiving much criticism. Amin et al. (2015) state that HDI ignores the level of inequality in the quality of life (longevity, educational attainment, and standard of living) of members of the population. Furthermore, referring to Amin et al. (2015), HDI needs to develop index measurements on social stability and the quality of the natural environment. Furthermore, UNDP (2010) introduced NHDI with life expectancy (AHH), literacy rate (AMH), the average length of schooling (RLS), and average expenditure per capita as measurement variables.

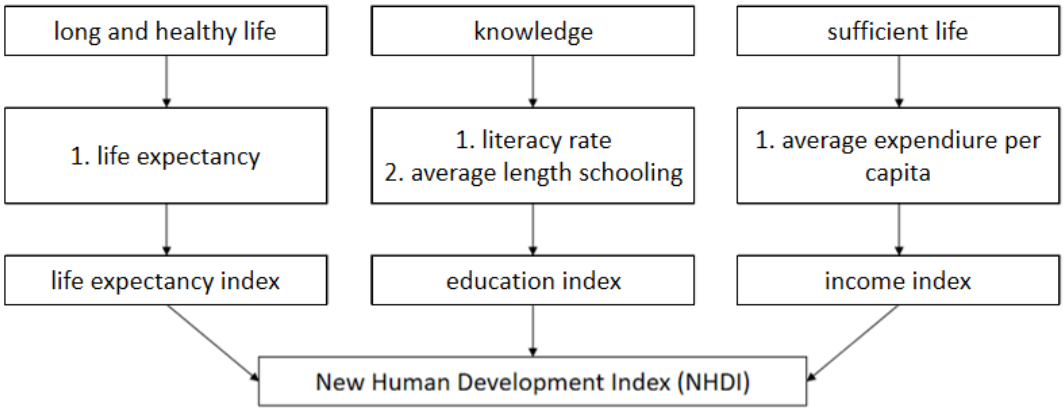

Figure 1. NHDI diagram (UNDP, 2010)

A country with a Muslim majority population certainly requires alternative indicators that can accommodate the concept of human development according to an Islamic perspective, which is comprehensive, falah-oriented, and has a more holistic scope. Based on this, Anto (2011) proposed the concept of the Islamic Human Development Index (IHDI) through an approach to five aspects of basic human needs (*maqashid sharia*). This concept describes holistic well-being as material welfare and non-material welfare. Material well-being can be affected by individual property ownership and income distribution. On the other hand, non-material welfare can be elaborated from health, education, family or heredity, and religion. Meanwhile, Amin et al. (2015), in formulating the integrated index (I-DEX), use the term development to represent the five aspects of *maqashid sharia*. Amin et al. (2015) added human dignity, morals, and self-development to the I-DEX formula.

Previous Research

Efficiency has become a topic of discussion in many previous studies, micro or macro, conventional or sharia research, private or government agencies, humanitarian organizations such as zakat management organizations (OPZ), or commercial organizations. Economic efficiency studies cover almost all lines, one of which is an efficiency study that analyzes the efficiency of government spending—from the regional scale (APBD) to the national scale (APBN) and international. Each study has a differentiation in the variables operated as input/output, the scale of analysis, and the method approach used.

In Indonesia, most government spending efficiency studies have been conducted to limit the scale of the analysis to a single local government. Yanti and Kustiani (2016) conducted a government efficiency analysis test in Banten province, Putri (2015) in West Java province, Pertiwi (2007) and Rusydi et al.

(2015) in Central Java province, Perdana (2018) in Yogyakarta province, Yabbar (2013) and Hermawan (2012) in the province of East Java, Rapiuddin & Rusydi (2017) in the province of South Sulawesi, and Sihaloho, et al., (2019) in the province of Maluku.

On a broader scale, an analytical test was carried out by Yunan (2014), which describes the efficiency level of government spending on the island of Java, Faisol (2017) and Haryadi (2011) in 403 Cities/Districts in Indonesia, Sabermahani, et al., (2012) in Iran, Sekiguchi (2019) in Vietnam, Ouertani, et al. (2018) in Saudi Arabia, Salazar Cuellar (2014) in Colombia, Almekinders, et al. (2007) in Egypt, Merini (2013) in Southeast Asia, Gupta & Verhoeven (2001) in Africa, Verhoeven, et al. (2007) in G7 countries (UK, USA, Canada, Germany, Japan, France, and Italy), Afonso & Aubyn (2006) in various OECD countries, and Brini & Jemmali (2016) in Middle Eastern and North African countries.

Meanwhile, based on the selection of variables used in measuring the efficiency of government spending, previous research used a variety of input and output variables, depending on the sector studied. In the health sector, the most frequently used output indicator is Life Expectancy (AHH); in addition, there is the Alive Birth Rate (ALH) which is also used in measuring the efficiency of government spending in the health sector. Meanwhile, in Table 2.5 regarding the classification of output indicators in the education sector, it is known that the Average Length of Study (RLS) has been used quite intensely by previous researchers to measure the level of efficiency of government spending in the education sector.

In the economic field, almost all previous researchers have used per capita expenditure indicators to measure the efficiency of government spending in the economic sector. On the other hand, the Gini index was proposed by Anto (2011) as an indicator for measuring the efficiency level of government spending in the economic sector related to the success rate of economic distribution. More straightforward than that, Rafsanjani (2014) only

uses the average expenditure per capita to describe the efficiency level of government spending in the economic sector.

Concerning output indicators, IHDI added two other indicators which measure the success of human development from the perspective of Islamic law. In their research, Anto (2011) and Rafsanjani (2014) define the crime ratio as an indicator of IHDI. That goes hand in hand with the principle of religious rights and freedom as the main focus of the dimension of religious care. Thus, the consequence is the bond to respect and defend each other's religious affairs from damage and external disturbances. The same thing was also conveyed by Ibnu Ashur (1998).

Next, through mixed methods research, Baznas RI (2017) explains that the National Zakat Index (IZN) is an indicator introduced to measure the level of achievement of the implementation of zakat towards its perfection (calculated by a multi-stage weighted index estimation technique with index results in the range 0.00 - 1.00). At the same time, Amin et al. (2015) proposed corruption level as an indicator of IHDI, which represents harmful data, while the success of implementing zakat, as described by IZN, represents positive data (the higher, the better).

Of the various output indicators used in the process of analyzing and measuring the level of efficiency of government spending in the education sector, RLS is stated in Anto's research (2011) to be a science index, AHH as a life index, ALH as a family-social index, GDP per capita and the gini ratio becomes property index, and crime ratio and NZI are described as faith index. In addition, Anto (2011), through his research entitled "Introducing an Islamic Human Development Index to Measure Development in OIC Countries," also proposes economic freedom, political freedom, and free CO2 emissions as other indexes.

Furthermore, concerning input variables in measuring the level of efficiency of government spending that has been done in previous studies, put function-based government spending is the input variable. In line with studies by Yabbar (2013), Yunan (2014), Putri (2015), Brini & Jemmali (2016),

Yanti and Kustiani (2016), Perdana (2018), Faisol (2018), and Ouertani, et al. (2018) who determined government spending in the health sector as an input variable to measure the level of efficiency of local government spending in the health sector.

Slightly different from the research previously mentioned, Merini (2013), and Rapiuddin & Rusydi (2017), made modifications to the input variable data. Their research set government spending on the health sector per capita as the input variable. Meanwhile, Afonso & Aubyn (2006) and Sabermahani et al. (2013) define the number of health workers as an input variable. Moreover, Afonso & Aubyn (2006) added the number of health facilities as an input variable.

Like health, research defines education spending per capita as an input variable in the education sector. Among them are Merini (2013), Salazar Cuellar (2014), and Rapiuddin & Rusydi (2017). Meanwhile, Afonso & Aubyn (2006) and Salazar Cuellar (2014) define the teacher ratio as an input variable. Slightly different, Sabermahani et al. (2013) define the ratio of educational staff as an input variable. In the economic sector, government spending, Sabermahani et al. (2013) is also different from the others by setting the level of employment as an input variable.

Another study that classifies the pattern of the symbolic relationship between *maqashid sharia* and government spending based on the function carried out in Indonesia has been carried out by Maftukhatusolikhah (2015). Furthermore, from the classification of these criteria, this study formulates a classification of local government spending based on function into five aspects of *maqashid sharia*, which will be input variables in measuring the level of efficiency of local government spending.

From the explanation of previous studies, it is increasingly evident that this study aims to measure the level of efficiency of local government spending based on IHDI indicators which are classified into five *maqashid sharia* sectors on input and output variables. Thus, this study will operate five

efficiency measurement models, each of which will be described using the DEA method.

Method

Research Data

This research measures the efficiency of local government spending in 34 provinces in Indonesia in the 2018-2022 period. Furthermore, the input variables used in this study are government spending based on functions, and the output variables are indicators that build the Islamic Human Development Index (IHDI). Table 2 displays details of the input and output variables used in this study.

Table 2. Input and output variables

Variable Input	
Expenditure on economic function	Expenditure on public service functions
Expenditure on education function	Expenditure on order and security functions
Expenditure on health functions	Expenditure on tourism and cultural functions
Expenditure on social protection functions	Expenditure on housing and settlement functions
Expenditure on environmental functions	
Variable Output	
Crime rate (hifdz ad-diin)	Live birth rate (hifdz an-nasl)
National zakat index (hifdz ad-diin)	Gini ratio (hifdz al-maal)
Life expectancy (hifdz an-nafs)	Expenditures per capita (hifdz al-maal)
The average length of schooling (hifdz al-aql)	

Data related to the realization of regional government spending based on function (input) was obtained from the Directorate General of Fiscal Balance (DJPK) of the Ministry of Finance of the Republic of Indonesia

(Kemenkeu RI). Meanwhile, the output data, a combination of several data that indicates IHDI by adjusting to *maqashid sharia* values, is obtained from several sources. Crime rates, life expectancy, average length of schooling, expenditure per capita (adjusted), and Gini ratio were obtained from the Directorate of Statistical Analysis and Development of the Central Bureau of Statistics of the Republic of Indonesia (BPS RI). The live birth rate was obtained from the Data and Information Center of the Ministry of Health of the Republic of Indonesia (Kemenkes, RI). Meanwhile, data on the national zakat index were obtained from the Center for Strategic Studies of the Republic of Indonesia's National Amil Zakat Agency (Baznas RI).

Research methods

The data analysis technique used in this study is the data envelopment analysis (DEA) method. DEA was initially developed by Charnes, Chopper, and Rhodes in 1978 and then expanded by Banker, Charnes, and Chopper in 1984. This method measures the relative efficiency of the Decision Making Unit (DMU), in this case, 34 Provinces in Indonesia, between 2018 and 2020. DEA uses non-parametric programming techniques to calculate relative efficiency scores for each DMU by comparing outputs to inputs. DEA also provides potential improvement analysis to determine the variables that cause inefficiencies and generates information about the variables needing adjustment to achieve efficiency.

The DEA analysis method measures an economic entity's relative efficiency consisting of many inputs and outputs (multi-input, multi-output) with different units. Operating perfectly with other efficiency measurement analysis techniques is challenging, even with similar input and output samples. Currently, this method is the most commonly used in measuring the relative efficiency of DMUs. Although DEA has been primarily used in microeconomic research on corporate efficiency, later research has extended its application to various macroeconomic topics, including the efficiency of public spending.

The first step to using DEA is selecting the appropriate input and output variables. In this study, the input variable used is the realization of government expenditure based on its function. It has been classified according to the criteria into five development models based on *maqashid sharia*. The output variables in this study are IHDI indicators which have also been classified based on five aspects of basic human needs (*maqashid sharia*). Thus, in this study, there are five models for measuring the efficiency of local government spending based on the classification of functions and aspects of *maqashid sharia*, and these five models will be calculated separately for each classification.

DEA has two basic models that can be used: the Charnes, Chopper, and Rhodes (CCR) model and the Banker, Charnes, and Rhodes (BCR) model. The CCR model assumes that the change in output value produced by a DMU will always equal the proportion of adding a specific input value. By follows the assumption of constant return to scale (CRS), a condition where a proportional increase in input with a certain percentage will increase output with the same percentage. In contrast to the CCR, the BCR model assumes that changes in output values produced by DMU differ for each proportion of changes in specific input values. By follows the assumption of a variable return to scale (VRS), a condition where an increase of 1 unit of input will not result in a proportional increase in output, depending on the increasing or decreasing conditions.

Farrell (1957), as one of the pioneers of efficiency measurement, divides efficiency into technical and allocative efficiency. Technical efficiency can be achieved by maximizing output with a certain amount of input or minimizing input to produce a certain amount. Meanwhile, allocative efficiency results from choosing input combinations subject to their prices to maximize output.

As for this research, the DEA method is used with the assumption model of VRS (input-oriented). Thus, adding input by x times will not cause the output to increase by x times; it can be bigger or smaller. The VRS model determines each province's regional expenditure efficiency level and identifies

DMUs that have yet to use their resources optimally. The DEA program used for efficiency analysis in this study is the MaxDea 6.1 program.

Results and Discussion

The discussion of the results of calculating the efficiency level of 34 provinces in Indonesia during the 2018-2020 period with the classification of input and output variables based on *maqashid sharia* criteria will be described separately for each classification. The Data Envelopment Analysis (DEA) measurement results will be described through an efficiency score of 0.00-1.00. A score of 1.00 describes the optimal efficiency level; the farther away from 1.00, the more inefficient.

Spending efficiency based on the *hifdz ad-diin* indicator

The efficiency level of local government spending in 34 provinces in Indonesia based on regional spending per function classified based on *hifdz ad-diin* criteria and indicators can be seen in the following table:

Table 3 The efficiency level of government spending based on the *hifdz ad-diin* indicator

DMU	Score			Improvement		Time as		
	2018	2019	2020	2018-2019	2019-2020	2018	2019	2020
Aceh	0.87	0.87	0.48	0	-0.39	0	0	0
North Sumatra	0.88	0.74	0.73	-0.14	-0.01	0	0	0
West Sumatra	0.61	0.79	0.79	0.18	0	0	0	0
Riau	1	0.89	0.64	-0.11	-0.25	39	0	0
Jambi	0.84	0.95	0.84	0.11	-0.11	0	0	0
South Sumatra	0.86	0.95	0.89	0.09	-0.06	0	0	0
Bengkulu	0.73	0.97	0.74	0.24	-0.23	0	0	0
Lampung	0.63	0.89	0.67	0.26	-0.22	0	0	0
Bangka Belitung	0.83	1	0.68	0.17	-0.32	0	14	0

Riau islands	0.66	1	0.94	0.34	-0.06	0	5	0
DKI Jakarta	0.89	0.96	0.63	0.07	-0.33	0	0	0
West Java	0.89	1	0.98	0.11	-0.02	0	5	0
Central Java	1	1	0.89	0	-0.11	6	22	0
In Yogyakarta	0.9	1	0.95	0.1	-0.05	0	1	0
East Java	0.83	0.78	0.86	-0.05	0.08	0	0	0
Banten	0.99	1	0.88	0.01	-0.12	0	0	0
Bali	0.87	0.86	1	-0.01	0.14	0	0	10
West Nusa Tenggara	1	1	0.82	0	-0.18	24	22	0
East Nusa Tenggara	0.57	0.82	0.62	0.25	-0.2	0	0	0
West Kalimantan	1	1	0.79	0	-0.21	5	0	0
Central Kalimantan	0.74	1	0.72	0.26	-0.28	0	0	0
South Kalimantan	1	1	0.6	0	-0.4	5	13	0
East Kalimantan	0.4	0.71	0.67	0.31	-0.04	0	0	0
North Kalimantan	1	1	0.82	0	-0.18	1	0	0
North Sulawesi	0.95	0.92	0.82	-0.03	-0.1	0	0	0
Central Sulawesi	1	0.88	0.83	-0.12	-0.05	5	0	0
South Sulawesi	0.68	0.96	0.75	0.28	-0.21	0	0	0
Southeast Sulawesi	1	1	0.98	0	-0.02	8	24	0
Gorontalo	1	1	1	0	0	0	27	1
West Sulawesi	1	1	1	0	0	0	0	0
Maluku	1	0.72	0.32	-0.28	-0.4	0	0	0
North Maluku	1	1	0.82	0	-0.18	3	18	0
West Papua	0.87	0.67	0.45	-0.2	-0.22	0	0	0
Papua	0.83	0.74	0.52	-0.09	-0.22	0	0	0

Source: Processed Data (Input MaxDEA 6.1)

Based on Table 3, it is known that the efficiency value of local government spending based on the *hifdz ad-diin* indicator fluctuates. In 2018, the overall average efficiency score was 0.86; the following year, it increased to 0.91. However, in 2020 the efficiency score dropped sharply to 0.77. At the same time, the number of regional governments with a fully efficient score in 2020 also decreased until only three provinces left: Gorontalo, West Sulawesi, and Bali. In the previous two years, provinces with perfect efficiency scores totaled 12 in 2018 and 15 in 2019.

From Table 3, it can also be seen that two provinces have succeeded in achieving perfect efficiency scores for three consecutive years, namely: 1) Gorontalo province and 2) West Sulawesi province. Meanwhile, no province has consistently shown increased spending efficiency based on function in the *hifdz ad-diin* classification. The data distribution of the two *hifdz ad-diin* indicators shows that Gorontalo and West Sulawesi differ from the provinces with the best performance. However, Gorontalo and West Sulawesi were detected to be in the lowest rank on the regional expenditure realization variable per function. That is, Gorontalo and West Sulawesi are described as achieving an optimal level of efficiency due to the unit level of realization of spending, succeeding in producing the maximum output unit. Meanwhile, Pamula & Basuki (2012) analyzed the efficiency of the public sector of all local governments in Indonesia in the 2001-2008 period and concluded that with the DEA approach, provinces with a high proportion of regional spending only sometimes produced high-efficiency scores too. It aligns with Farrell's (1957) efficiency principle: minimizing input and maximizing output.

Spending efficiency based on the *hifdz an-nafs* indicator

The efficiency level of local government spending in 34 provinces in Indonesia based on regional spending per function classified based on the criteria and indicators of *hifdz an-nafs* can be seen in the following table:

Table 4. The efficiency level of government spending based on the *hifdz an-nafs* indicator

DMU	Score			Improvement		Time as		
	2018	2019	2020	2018-2019	2019-2020	2018	2019	2020
Aceh	0.93	0.93	0.93	0.00	0.00	0	0	0
North Sumatra	0.91	0.92	0.92	0.01	0.00	0	0	0
West Sumatra	0.93	0.94	0.94	0.01	0.00	0	0	0

Riau	0.97	0.96	0.96	-0.01	0.00	0	0	0
Jambi	0.95	0.94	0.95	-0.01	0.01	0	0	0
South Sumatra	0.96	0.96	0.97	0.00	0.01	0	0	0
Bengkulu	0.96	0.95	0.96	-0.01	0.01	0	0	0
Lampung	0.94	0.97	0.94	0.03	-0.03	0	0	0
Bangka Belitung	1.00	0.99	1.00	-0.01	0.01	5	0	0
Riau islands	0.95	0.95	0.95	0.00	0.00	0	0	0
DKI Jakarta	0.97	0.97	0.97	0.00	0.00	0	0	0
West Java	0.97	0.97	0.98	0.00	0.01	0	0	0
Central Java	1.00	0.99	0.99	-0.01	0.00	1	0	0
In Yogyakarta	1.00	1.00	1.00	0.00	0.00	53	13	47
East Java	0.96	0.95	0.96	-0.01	0.01	0	0	0
Banten	0.93	0.93	0.93	0.00	0.00	0	0	0
Bali	0.98	0.99	1.00	0.01	0.01	0	0	1
West Nusa Tenggara	0.89	0.90	0.90	0.01	0.00	0	0	0
East Nusa Tenggara	0.92	0.92	0.92	0.00	0.00	0	0	0
West Kalimantan	0.96	0.96	0.95	0.00	-0.01	0	0	0
Central Kalimantan	0.94	0.94	0.94	0.00	0.00	0	0	0
South Kalimantan	1.00	0.92	0.92	-0.08	0.00	7	0	0
East Kalimantan	1.00	1.00	0.99	0.00	-0.01	16	0	0
North Kalimantan	1.00	1.00	1.00	0.00	0.00	20	44	1
North Sulawesi	1.00	0.99	0.99	-0.01	0.00	0	0	0
Central Sulawesi	0.99	0.99	1.00	0.00	0.01	0	0	3
South Sulawesi	0.97	0.95	0.94	-0.02	-0.01	0	0	0
Southeast Sulawesi	0.99	0.98	0.97	-0.01	-0.01	0	0	0
Gorontalo	1.00	1.00	1.00	0.00	0.00	1	4	3
West Sulawesi	1.00	1.00	1.00	0.00	0.00	1	0	0
Maluku	1.00	0.92	0.91	-0.08	-0.01	0	0	0
North Maluku	1.00	0.97	0.96	-0.03	-0.01	0	0	0
West Papua	1.00	0.89	0.88	-0.11	-0.01	0	0	0
Papua	0.87	0.88	0.88	0.01	0.00	0	0	0

Source: Processed Data (Input MaxDEA 6.1)

Table 4 shows that the efficiency value of local government spending based on the *hifdz an-nafs* indicator is stagnant. 2018 the overall efficiency score was 0.97; in the following years (2019 and 2020), it decreased slightly to

0.96. At the same time, the number of regional governments with perfect efficiency scores from 2018-2020 was 12 provinces, five provinces, and seven provinces, respectively. Of all the provinces that have achieved a fully efficient score, four provinces have achieved a perfect efficiency score for three consecutive years, namely: 1) DI Yogyakarta, 2) North Kalimantan province, 3) West Sulawesi, and 4) Gorontalo. Meanwhile, no province has consistently shown a significant increase in efficiency performance.

Previously, through his research, Yunan (2014) also measured the efficiency level of government spending in the health sector with the output indicator of life expectancy. Of the six provinces on the island of Java that became the object of research (with the DEA approach), it was stated that DI. Yogyakarta is the most efficient province in the health sector. It aligns with the results of this study which stated that DI. Yogyakarta is one of the provinces with perfect efficiency (fully efficient) in *hifdz an-nafs*.

Concerning the efficiency of government spending in the health sector, Putri (2015) has concluded that West Java's efficiency performance could have been better, even though the budget for the health sector has tended to increase. However, from the output side, there has not been an increase. Using the DEA analysis model approach, conclusions are obtained by calculating the output variables (infant mortality, maternal mortality, and life expectancy). That is corroborated by the data in Table 4.2, which describes that West Java can still not achieve optimal efficiency levels.

Meanwhile, Maluku's efficiency level in the *hifdz an-nafs* sector is decreasing yearly. In line with that, Sihaloho et al. (2019) stated that the efficiency level of the health budget in Maluku could have been more optimal. Furthermore, research by Sihaloho et al. (2019) which was conducted using the DEA approach, described that one of the reasons for the decline in Maluku's efficiency gains was that the absorption of the health budget was still focused on routine expenses such as wages and salaries. The health budget should be realized more in providing health facilities.

Spending efficiency based on the indicator *hifdz al-'aql*

The efficiency level of local government spending in 34 provinces in Indonesia based on regional spending per function, which is classified based on the criteria and indicators of *hifdz al-'aql*, can be seen in the following table:

Table 5. The efficiency level of government spending based on the *hifdz al-'aql* indicator

DMU	Score			Improvement		Time as		
	2018	2019	2020	2018-2019	2019-2020	2018	2019	2020
Aceh	0.91	0.93	0.94	0.02	0.01	0	0	0
North Sumatra	0.94	0.95	0.96	0.01	0.01	0	0	0
West Sumatra	0.89	0.90	0.91	0.01	0.01	0	0	0
Riau	0.89	0.91	0.92	0.02	0.01	0	0	0
Jambi	0.86	0.87	0.88	0.01	0.01	0	0	0
South Sumatra	0.84	0.85	0.85	0.01	0.00	0	0	0
Bengkulu	0.94	0.97	0.98	0.03	0.01	0	0	0
Lampung	0.85	0.83	0.83	-0.02	0.00	0	0	0
Bangka Belitung	0.88	0.85	0.90	-0.03	0.05	0	0	0
Riau islands	0.99	1.00	1.00	0.01	0.00	0	1	38
DKI Jakarta	1.00	1.00	1.00	0.00	0.00	8	5	46
West Java	0.84	0.85	0.85	0.01	0.00	0	0	0
Central Java	0.76	0.78	0.79	0.02	0.01	0	0	0
In Yogyakarta	0.95	1.00	0.99	0.05	-0.01	0	3	0
East Java	0.77	0.78	0.81	0.01	0.03	0	0	0
Banten	0.88	0.89	0.90	0.01	0.01	0	0	0
Bali	0.90	0.91	1.00	0.01	0.09	0	0	12
West Nusa Tenggara	0.76	0.78	0.79	0.02	0.01	0	0	0
East Nusa Tenggara	0.75	0.78	0.79	0.03	0.01	0	0	0
West Kalimantan	0.89	0.91	0.85	0.02	-0.06	0	0	0
Central Kalimantan	0.85	0.87	0.88	0.02	0.01	0	0	0
South Kalimantan	1.00	0.84	0.85	-0.16	0.01	2	0	0
East Kalimantan	1.00	0.97	0.98	-0.03	0.01	5	0	0
North Kalimantan	0.99	1.00	0.99	0.01	-0.01	0	17	0
North Sulawesi	0.93	0.94	0.96	0.01	0.02	0	0	0
Central Sulawesi	0.86	0.88	0.89	0.02	0.01	0	0	0

South Sulawesi	0.83	0.86	0.87	0.03	0.01	0	0	0
Southeast Sulawesi	0.92	0.91	0.92	-0.01	0.01	0	0	0
Gorontalo	0.84	0.86	0.88	0.02	0.02	0	0	0
West Sulawesi	1.00	0.89	0.89	-0.11	0.00	0	0	0
Maluku	1.00	1.00	1.00	0.00	0.00	0	19	57
North Maluku	1.00	1.00	0.94	0.00	-0.06	4	0	0
West Papua	1.00	0.99	0.99	-0.01	0.00	7	0	0
Papua	0.65	0.67	0.68	0.02	0.01	0	0	0

Source: Processed Data (Input MaxDEA 6.1)

Table 5 shows that the efficiency value of local government spending based on the *hifdz al-'aql* indicator is also stagnant. In 2018 and 2019, it was noted that the overall efficiency score was 0.89, and in the following year (2020), it experienced a slight increase to 0.90. At the same time, the number of local governments with perfect efficiency scores from 2018-2020 was seven provinces, six provinces, and four provinces, respectively. Of all the provinces that received perfect efficiency scores, two provinces achieved perfect efficiency scores for three consecutive years: 1) DKI Jakarta province and 2) Maluku province. Meanwhile, provinces that have consistently shown a significant increase in efficiency performance are only represented by the Bali province, which experienced an increase of 0.09 points in 2020.

In contrast to the results of the analysis above, Yunan (2014), with literacy rates and the average length of school used as output variables, concludes that DI. Yogyakarta is achieving optimal levels of efficiency in the education sector. However, when examined in detail, the results above are not entirely different from the conclusions of Yunan (2014) because of DI. Yogyakarta is listed as a province with a high-efficiency score. Meanwhile, the optimal achievements of DKI Jakarta and Maluku have also been previously described by Rafsanjani (2014), who states that DKI Jakarta and Maluku have outstanding achievements in output in the education sector compared to other provinces.

Spending efficiency based on the *hifdz an-nasl* indicator

The level of efficiency of local government spending in 34 provinces in Indonesia based on regional spending per function, which is classified based on the criteria and indicators of *hifdz an-nasl*, can be seen in the following table:

Table 6. The efficiency level of government spending based on the *hifdz an-nasl* indicator

DMU	Score			Improvement		Time as		
	2018	2019	2020	2018-	2019-	2018	2019	2020
Aceh	0.50	0.34	0.31	-0.16	-0.03	0	0	0
North Sumatra	0.73	0.69	0.60	-0.04	-0.09	0	0	0
West Sumatra	0.57	0.42	0.40	-0.15	-0.02	0	0	0
Riau	0.62	0.60	0.52	-0.02	-0.08	0	0	0
Jambi	0.45	0.41	0.38	-0.04	-0.03	0	0	0
South Sumatra	0.97	0.64	1.00	-0.33	0.36	0	0	5
Bengkulu	0.36	0.33	0.28	-0.03	-0.05	0	0	0
Lampung	0.73	1.00	0.62	0.27	-0.38	0	3	0
Bangka Belitung	0.37	0.26	0.34	-0.11	0.08	0	0	0
Riau islands	0.54	0.40	0.37	-0.14	-0.03	0	0	0
DKI Jakarta	0.19	0.19	0.19	0.00	0.00	0	0	0
West Java	1.00	1.00	0.99	0.00	-0.01	12	3	0
Central Java	1.00	1.00	0.64	0.00	-0.36	43	71	0
In Yogyakarta	0.38	0.39	0.25	0.01	-0.14	0	0	0
East Java	1.00	0.92	0.92	-0.08	0.00	4	0	0
Banten	0.83	0.76	0.65	-0.07	-0.11	0	0	0
Bali	0.39	0.46	0.54	0.07	0.08	0	0	0
West Nusa Tenggara	0.59	0.57	0.52	-0.02	-0.05	0	0	0
East Nusa Tenggara	1.00	0.89	0.67	-0.11	-0.22	0	0	0
West Kalimantan	0.79	0.64	0.51	-0.15	-0.13	0	0	0
Central Kalimantan	0.41	0.37	0.34	-0.04	-0.03	0	0	0
South Kalimantan	1.00	0.54	0.38	-0.46	-0.16	63	0	0
East Kalimantan	0.47	0.36	0.34	-0.11	-0.02	0	0	0
North Kalimantan	0.40	1.00	0.25	0.60	-0.75	0	5	0

North Sulawesi	0.32	0.28	0.36	-0.04	0.08	0	0	0
Central Sulawesi	1.00	0.94	1.00	-0.06	0.06	2	0	1
South Sulawesi	0.65	0.53	0.47	-0.12	-0.06	0	0	0
Southeast Sulawesi	1.00	0.70	0.55	-0.30	-0.15	11	0	0
Gorontalo	1.00	1.00	1.00	0.00	0.00	0	0	0
West Sulawesi	1.00	0.75	1.00	-0.25	0.25	24	0	0
Maluku	0.57	0.84	0.40	0.27	-0.44	0	0	0
North Maluku	1.00	0.34	0.31	-0.66	-0.03	4	0	0
West Papua	0.19	0.19	0.09	0.00	-0.10	0	0	0
Papua	0.25	0.36	1.00	0.11	0.64	0	0	2

Source: Processed Data (Input MaxDEA 6.1)

Table 6 shows that the efficiency value of local government spending is based on indicators *hifdz an-nasl* moving down. In 2018 it was noted that the overall efficiency score was at 0.66. However, in 2019 it decreased to 0.59, and in the following year (2020), it decreased again to 0.53. On the other hand, ten provinces in 2018 and 5 provinces in 2019 and 2020 received perfect efficiency scores. Meanwhile, provinces that were able to achieve perfect efficiency scores successively from 2018-2020 were only represented by Gorontalo province. As for the provinces that have consistently demonstrated increased efficiency performance, Bali and Papua have achieved this. Bali has improved performance at 0.07 (2018-2019) and 0.08 (2019-2020), while Papua has shown an extraordinary increase in 2019-2020, namely an increase of 0.64 points.

Expenditure efficiency based on the *hifdz al-maal* indicator

The efficiency level of local government spending in 34 provinces in Indonesia based on regional spending per function classified based on the criteria and indicators of *hifdz al-maal* can be seen in the following table:

Table 7. The efficiency level of government spending based on the *hifdz al-maal* indicator

DMU	Score			Improvement		Time as		
	2018	2019	2020	2018-2019	2019-2020	2018	2019	2020

Aceh	0.90	0.89	0.89	-0.01	0.00	0	0	0
North Sumatra	0.89	0.86	0.88	-0.03	0.02	0	0	0
West Sumatra	0.89	0.89	0.91	0.00	0.02	0	0	0
Riau	0.82	0.83	0.84	0.01	0.01	0	0	0
Jambi	0.84	0.87	0.87	0.03	0.00	0	0	0
South Sumatra	0.80	0.83	0.83	0.03	0.00	0	0	0
Bengkulu	0.82	0.88	0.88	0.06	0.00	0	0	0
Lampung	0.84	0.86	0.86	0.02	0.00	0	0	0
Bangka Belitung	1.00	0.99	1.00	-0.01	0.01	21	0	61
Riau islands	0.84	0.79	0.79	-0.05	0.00	0	0	0
DKI Jakarta	0.67	0.67	0.66	0.00	-0.01	0	0	0
West Java	0.68	0.68	0.68	0.00	0.00	0	0	0
Central Java	1.00	0.76	0.76	-0.24	0.00	0	0	0
In Yogyakarta	0.61	0.71	0.63	0.10	-0.08	0	0	0
East Java	0.72	0.73	0.74	0.01	0.01	0	0	0
Banten	0.72	0.72	0.74	0.00	0.02	0	0	0
Bali	0.73	0.72	1.00	-0.01	0.28	0	0	2
West Nusa Tenggara	0.73	0.73	0.74	0.00	0.01	0	0	0
East Nusa Tenggara	1.00	1.00	1.00	0.00	0.00	1	1	0
West Kalimantan	1.00	1.00	0.95	0.00	-0.05	0	1	0
Central Kalimantan	0.80	0.80	0.83	0.00	0.03	0	0	0
South Kalimantan	1.00	0.81	0.80	-0.19	-0.01	1	0	0
East Kalimantan	0.85	0.80	0.82	-0.05	0.02	0	0	0
North Kalimantan	1.00	1.00	1.00	0.00	0.00	3	8	56
North Sulawesi	0.76	0.76	0.76	0.00	0.00	0	0	0
Central Sulawesi	1.00	0.99	1.00	-0.01	0.01	1	0	2
South Sulawesi	0.73	0.70	0.70	-0.03	0.00	0	0	0
Southeast Sulawesi	0.77	0.73	0.74	-0.04	0.01	0	0	0
Gorontalo	1.00	1.00	1.00	0.00	0.00	0	0	0
West Sulawesi	1.00	0.97	1.00	-0.03	0.03	2	0	2
Maluku	1.00	0.94	0.93	-0.06	-0.01	0	0	0
North Maluku	1.00	1.00	1.00	0.00	0.00	3	9	9
West Papua	1.00	0.79	0.80	-0.21	0.01	0	0	0
Papua	1.00	1.00	1.00	0.00	0.00	0	0	0

Source: Processed Data (Input MaxDEA 6.1)

Table 7 shows that the efficiency value of local government spending based on the *hifdz al-maal* indicator is stagnant. While 2018 the overall efficiency score was 0.86, 0.84 in 2019, and 0.85 in 2020. On the other hand, 13 provinces in 2018, 6 in 2019, and 9 in 2020 got a perfect efficiency score. Meanwhile, five provinces can consistently achieve perfect efficiency scores from 2018-2020, namely 1) North Kalimantan Province, 2) Gorontalo Province, 3) North Maluku Province, 4) Papua Province, and 5) East Nusa Tenggara Province. As for the provinces that have consistently shown a significant increase in efficiency performance, only the province of Bali has achieved this. The performance of the increase in the province of Bali touched 0.28 points (2019-2020).

Let us look closely at the five provinces that achieved maximum efficiency scores (fully efficient). Their achievements could be better in the output variable in the *hifdz al-maal* aspect (per capita expenditure and Gini ratio). In terms of per capita expenditure performance in 2020 alone, these five provinces have shown the worst performance. Papua is the first lowest at IDR 579,500 per month. Next, East Nusa Tenggara is Rp. 633,167 per month, North Maluku is Rp. 669,334 per month, North Kalimantan is Rp. 729,667 per month, and Gorontalo is Rp. 835,000 per month. In the same year, Indonesia's per capita expenditure was IDR 890,482 monthly. It means all provinces with optimal efficiency scores perform poorly below the national figure on the per capita expenditure variable.

The above also occurs in Merini's research (2013), where it is stated that Cambodia and Laos are countries in Southeast Asia with the highest efficiency in government spending for the public sector. The output reality is that Cambodia and Laos have the worst public service level among other Southeast Asian countries. Efficiency analysis using the DEA approach to the Charnes, Cooper, and Rhodes (CCR) model conducted by Merini (2013) concluded that the low level of input variables is one of the reasons for achieving a high-efficiency score. Therefore, it is very appropriate if the conclusions from the previous discussion refer back to Farrell (1957), which

describes the efficiency achievement score can be increased in two ways, namely: 1) reducing input at a fixed level of output through budget allocations that are right on target and or otherwise 2) increase the output at a fixed input level.

Category level of government spending efficiency

Based on the scale, efficiency values can be classified into four groups, namely: fully efficient (1.00), high efficient (0.80-0.99), medium efficient (0.50-0.79), and low efficient (less than 0.50) (Rusydiana, 2018). Table 4.6 describes the efficiency achievements of each indicator in the four efficient categories.

Table 8. Categories of government spending efficiency levels based on IPMI

hifdz ad-diin	2018	2019	2020
fully efficient	12	15	3
High	14	12	14
Medium	7	7	14
Low	1	0	3
Total	34	34	34
hifdz an-nafs			
fully efficient	12	5	7
High	22	29	27
Medium	0	0	0
Low	0	0	0
Total	34	34	34
hifdz al-'aql			
fully efficient	7	6	4
High	22	23	26
Medium	5	5	4
Low	0	0	0
Total	34	34	34
hifdz an-nasl			
fully efficient	10	5	5
High	2	4	2
Medium	9	10	10
Low	13	15	17

Total	34	34	34
hifdz al-maal			
fully efficient	13	6	9
High	11	15	14
Medium	10	13	11
Low	0	0	0
Total	34	34	34

Source: Processed Data (2022)

Table 8 shows that in 2017 on the *hifdz ad-diin* indicator, there were 15 provinces with fully efficient scores, the most among other periods and indicators. The period with the highest number of highly efficient provinces was in 2019 on the *hifdz an-nafs* indicator, with 29 provinces. Furthermore, on medium efficiency, there are 14 provinces in 2020 on the *hifdz ad-diin* indicator. Meanwhile, in the low efficient category 2020, on the *hifdz an-nasl* indicator with 17 provinces.

The analysis results using the Data Envelopment Analysis (DEA) method can also explain which DMUs are the most references for other DMUs. Of course, the DMU that became the reference was included in the fully efficient category (score 1.0).

Tabel 9. Time as a benchmark

DMU	Total TaB	DMU	Total TaB
North Kalimantan	155	Gorontalo	36
Central Java	143	Central Kalimantan	0
In Yogyakarta	117	East Kalimantan	21
Bangka Belitung	101	West Java	20
South Kalimantan	91	North Sulawesi	0
Maluku	76	Central Sulawesi	14
DKI Jakarta	59	South Sulawesi	0
North Maluku	50	West Papua	7
West Nusa Tenggara	46	West Kalimantan	6
Riau islands	44	South Sumatra	5
Southeast Sulawesi	43	Lampung	3
Riau	39	East Nusa Tenggara	2

Source: Processed Data (2022)

It can be seen from the 34 provinces that are the object of research, with a research period of 3 years (2018-2020) and 5 IHDI indicator criteria, 24 provinces are used as recommendations for other regional governments to increase the efficiency of local government spending based on IHDI indicators. It is known that the province of North Kalimantan received recommendations as a referral 155 times, followed by the province of Central Java, which received recommendations as a referral 143 times, and the province of DI. Yogyakarta, which received recommendations, became referrals 117 times.

North Kalimantan received one recommendation on efficiency achievements in 2018 on the *hifdz ad-diin* indicator, 20 recommendations in 2018, 44 recommendations in 2019, and 1 recommendation in 2020 on the *hifdz an-nafs* indicator, 17 recommendations in 2019 on the *hifdz* indicator *al-'aql*, five recommendations in 2019 on the *hifdz an-nasl* indicator, and three recommendations in 2018, 8 recommendations in 2019, and 56 recommendations in 2020 on the *hifdz al-maal* indicator.

Ranking local government based on the level of efficiency

Analysis of local government spending efficiency, operated separately for each IHDI indicator, produces a ranking of efficiency scores for local governments per indicator criteria. With the categorization of efficiency achievement levels, this study describes provinces with fully efficient average achievement through the following table:

Table 10 Provinces with maximum efficiency values

Local government	Fully Efficient (mean)	Low Efficient (mean)
hifdz ad-diin	Gorontalo West Sulawesi	East Kalimantan West Papua East Nusa Tenggara
hifdz an-nafs	Gorontalo	Papua

hifdz al-'aql	West Sulawesi	West Nusa Tenggara
	North Kalimantan	East Nusa Tenggara
	DKI Jakarta	Papua
	Maluku	East Nusa Tenggara
		West Nusa Tenggara
hifdz an-nasl	Gorontalo	West Papua
		DKI Jakarta
		North Sulawesi
	Gorontalo	IN. Yogyakarta
hifdz al-maal	North Kalimantan	DKI Jakarta
	North Maluku	West Java
	Papua	
	East Nusa Tenggara	

Source: Processed Data (2022)

From Table 10, Gorontalo province could have achieved better efficiency scores on the *hifdz al-'aql* indicator. Suppose one looks at the realization of spending per function in each indicator. In that case, Gorontalo consistently ranks fifth lowest based on the total realization of regional spending per function, except for the realization of regional spending on the environment function, which is in the middle number. This fact confirms that Gorontalo can achieve maximum output levels from minimal inputs. Therefore, the level of efficiency gains reaches its optimal point.

The results obtained by the province of Gorontalo align with the government's spirit of improving the region's economy and human development. The provincial government of Gorontalo has determined economic resilience and reliable human resources as the primary mission of the 2017-2022 regional medium-term development plan (RJPMD). However, in the Regional Competitiveness Index (IDSD) data, Gorontalo is still in the medium category with a score of 1.43. That indicates the achievement of Gorontalo province's efficiency at the optimal level is significantly due to the consistency of good budget absorption; it is proven that even though it is in

the lowest five areas, it can provide not lousy performance on the IHDI output indicators set in this study.

Likewise, the province of West Sulawesi achieved fully efficient efficiency scores on two indicators (*hifdz ad-diin* and *hifdz an-nafs*). Looking at the budget realization data based on function, West Sulawesi Province is always included in the five lowest sequences for expenditure realization based on function. However, the output achievements can touch the optimal level and are not in the lowest order of achievement. It aligns with the principle of efficiency, namely minimizing input and maximizing output (Farrell, 1957).

Another province that is also fully efficient on two indicators is North Kalimantan. Judging from the results of the DEA analysis in Table 4.7, it is known that North Kalimantan is the DMU with the highest total referrals compared to the others, which is at 155 referrals. That indicates that North Kalimantan input and output variables have reached optimal levels operationally. On the other hand, North Kalimantan is still in the lowest rank in terms of expenditure realization based on function. Regarding IDSD results, North Kalimantan is relatively better than Gorontalo at 2.43. As with the IDSD principle, namely, the higher the level of welfare, it is only natural that North Kalimantan is the province that is used the most as a benchmark compared to Gorontalo. Meanwhile, Gorontalo's efficiency level is more optimal than North Kalimantan's.

Achievement of government spending efficiency based on IHDI

Overall, each category's average efficiency level of local government spending in 2018-2020 is at high and medium efficient performance levels. The efficiency of local government spending that is in the high efficient classification is found in the indicators of *hifdz ad-diin* , *hifdz an-nafs*, *hifdz al-'aql*, and *hifdz al-maal*, while medium efficient is found in the indicator of *hifdz an-nasl*. The score for the efficiency of local government spending based on the *Hifdz an-nasl* indicator is at the lowest level compared to other indicators.

In 2018, efficiency performance was recorded at 0.66, then decreased to 0.59 in 2019 and again to 0.53 in 2020. On the other hand, the average efficiency value of local government spending based on the *hifdz* indicator *an-nafs* is at the top (close to fully efficient) with achievements of 0.97 in 2018, 0.96 in 2019, and 2020.

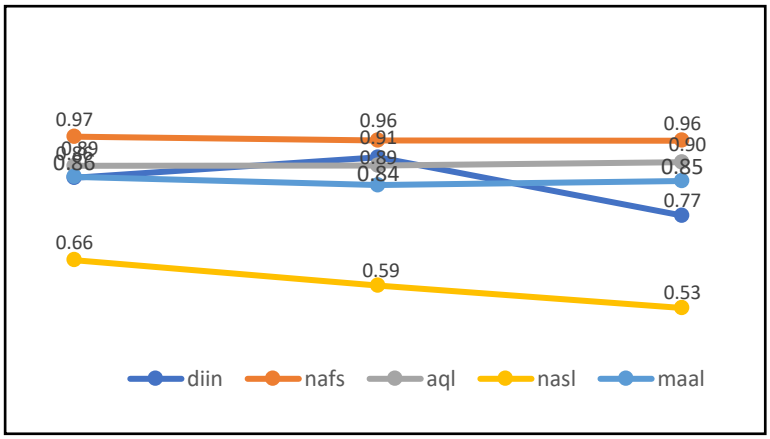

Figure 3. Efficiency Trends based on Maqahshid Shari'a (Data Processed, 2022)

From Figure 3, it is clearly described that there is a significant disparity between *hifdz an-nasl* and *hifdz ad-diin* . Meanwhile, the other three indicators are at a relatively stable level of performance and have a low level of fluctuation (not as volatile as the other two indicators). That reinforces the results of the descriptive analysis previously conducted by Rafsanjani (2014), which showed that the distribution of values from the IHDI calculation results varies. *Hifdz an-nafs*, *al-'aql*, and *al-maal* are included in the IHDI indicator, but on the other hand, they are also used in HDI.

The data in Figure 4.1 also shows that health, education, and property or economic aspects are described more solidly with the resulting efficiency gains. They indicate that local governments in Indonesia are still limited in referring to HDI on the agenda of increasing human welfare and

development. Meanwhile, the IHDI aspect, especially in the aspects of heredity and religion, has yet to feel the impact of the realization of spending by the local government. Moreover, it reinforces Rafsanjani's statement (2014), which places material welfare higher than non-material welfare (heredity and religion). On the other hand, Anto (2011) and Amin et al. (2015) have conveyed similar criticisms of previous studies.

For a country where the majority of the population is Muslim, the non-material aspect is not an ordinary variable that can be set aside from the aspect of achievement. Non-material aspects have a crucial controlling role in individual welfare. The religious dimension set aside by HDI is the central aspect controlling human development achievements. Therefore, a comprehensive and falah-oriented concept must be considered more seriously because it has a more holistic scope (Khan, 1994). Where according to Raghib al-Ashfahani (w.502 H/1108 AD), one of the variables that represent the concept of falah is 'izz (an honor in the world and eternal glory in the hereafter) which is then used as the basis for the formulation of IHDI as a new alternative in measuring the level of welfare and human development.

Conclusion

a. Measurement of the efficiency level of local government spending based on indicators*Islamic Human Development Index* (IHDI) is carried out separately for each IHDI indicator criteria. The measurement results found that the IHDI indicator on aspect *hifdz an-nafs* has achieved the highest average efficiency score for three years (2018-2020). The score on the IHDI indicator on aspect *hifdz an-nafs* reached 0.97 (2018), 0.96 (2019), and 0.96 (2020). This score shows that the efficiency of government spending is based on aspects *hifdz an-nafs* with Life Expectancy (AHH) as an indicator variable that almost reaches a perfect efficiency level (*fully efficient*), which is at 96-97%.
b. The measurement results show that the IHDI indicator is on aspect *hifdz an-nasl* and has achieved the lowest average efficiency score

among other aspects for three years (2018-2020). The score on the IHDI indicator on aspect *hifdz an-nasl* only reached 0.66 (2018), 0.59 (2019), and 0.53 (2020). Even so, the achievement of efficiency scores in aspects *hifdz an-nasl* is still in the category *medium efficient* (66%, 59%, and 53%), not up to *low efficient* (<50%). As previously explained, the IHDI indicator on aspects *hifdz an-nasl* is measured by the indicator variable Live Birth Rate (ALH).

c. The results of this study describe that Gorontalo province only achieves a partially efficient score on the *hifdz al-'aql* indicator. Details of efficiency scores for other fully efficient provinces; West Sulawesi on two indicators (*hifdz ad-diin* and *hifdz an-nafs*), North Kalimantan on two indicators (*hifdz an-nafs* and *hifdz al-maal*), and several fully efficient provinces only on one aspect of the IHDI indicator, including DKI Jakarta, DI Yogyakarta, Maluku, North Maluku, Papua, and East Nusa Tenggara
d. The results of this study also describe that the province of East Kalimantan has the lowest average efficiency score based on the IHDI indicator on the *hifdz* ad-design aspect, with a value of 0.60. Meanwhile, Papua has the lowest efficiency score in the *hifdz an-nafs* and *hifdz al-'aql* aspects, with a value of 0.88 and 0.67, respectively. As for the *hifdz an-nasl* aspect, the province of West Papua shows the lowest efficiency score with an average score of 0.16. While DI. Yogyakarta, with an average efficiency score of 0.65, has the lowest regional government spending efficiency score based on the IHDI indicator on the *hifdz al-maal* aspect.
e. It is the implication of the research that has been carried out is that it can become a reference to complement sources of knowledge in the field of IHDI in Indonesia so that human development indicators become more comprehensive, holistic, and applicable to Indonesian society. On the other hand, this research can be a reference for the central and regional governments in realizing the state revenue and

expenditure budget (APBN) and regional revenue and expenditure budget (APBD) to be more effective and efficient, referring to the five aspects of *maqashid sharia*. Thus, achieving national development is increasingly holistic, and Indonesia becomes baldatun thoyyibatun wa Rabbun ghafuur.

f. For further research, to broaden the scope of analysis on qualitative variables, the level of efficiency based on IHDI indicators can be described more comprehensively. For further research, in order to expand the research timeframe, macroeconomic analysis is well accommodated. On the other hand, for local governments to be able to pay attention to IHDI indicators based on *maqashid sharia* al-khamsah in preparing, realizing, and evaluating economic functions related to the APBN and APBD. Thus, this study hopes that the IHDI indicator will become the primary assessment variable in the success rate of human development.

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