1. Introduction

Ever since the United Nations Development Program (UNDP) introduced the human development concept in 1990, it has become one of the greatest concern in many countries (Mittal, 2016). The concept of human development does not merely focus on people's economics (Fattah & Muji, 2012; Salkind, Margolis, DeRuyck, & Rasmussen, 2009), but also on various aspects of...
how people have their needs fulfilled (Cameron, 2002; Edeme & Nkalu, 2016) that consist of three dimensions; a long and healthy life, knowledge, and decent standard of living (UNDP, 2021). However, human development becomes a significant issue and challenge for many developing countries (Tekin, 2020), including Indonesia.

Human development has been a serious concern by Indonesian government¹. As one of the largest and most populous countries in Asia (Central Statistics Agency, 2021), Indonesia faces several difficulties to achieve decent human development in all the geographic areas especially considering the nature of Indonesia as an archipelago country. Indonesia’s Human Development Index (HDI) is still at the intermediate level as stated in the human development report published by UNDP in 2020. Indonesia is ranked 111th in the world out of 189 countries. As compared to its neighbors in Southeast Asia, Indonesia is still ranked 6th. Since 2010, Indonesia’s HDI has continued to record growth every year. However, in the last five years, the rate of increase in HDI growth has slowed somewhat compared to the 2011-2014 periods.

Figure 1. Human development index in Indonesia in 2010-2019

![Human Development Index in Indonesia](image)

Source: United Nation Development Program (2020)

While many experts have agreed that economic development plays a great role in achieving great human development (Cameron, 2002; Raichoudhury, 2016; Ranis, Stewart, & Ramirez, 2000), there are many other factors from government that are remain less-explored especially the role of accounting reform (McLeod & Harun, 2014) and government agencies (Salkind et al., 2009).

In Indonesia, the local governments have a great decision in regional development as a result of decentralization practice (Lewis, 2017). Thus, local government efforts in regional development potentially contribute to improving human development. From accounting perspective, local governments have the authority to manage the allocation of the budget for the sake of human development (Prabowo, Leung & Guthrie, 2017). Further, the governance factor specifically the role of government supervision agencies is also very crucial (Winarna et al., 2021). This factor matters in determining local government accountability (Nurdiono & Gamayuni, 2018). However, the study that investigates these factors in dealing with human development issue remains limited.

In terms of supervision, the internal supervision factors will also be analyzed as human development determinant. The urgency of this research becomes

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¹ Medium-Term National Development Plan (RPJMN) of the Republic of Indonesia 2015–2019

² The Indonesian Government Accounting Standards, published by Indonesian Government Accounting Standards Committee.
very important in the field of human development in Indonesia considering the unique characteristics of Indonesia and government institutions. In addition, the existing studies in the literature in Indonesia still have many limitations.

A study conducted by Fattah & Muji (2012) investigates the allocation of local government spending on human development, but the observation is limited on Jenepoto Regency and not specific on capital expenditure. Further, Rahayu, Raviyanti & Mahardika (2016) investigate the effect of general allocation fund, special allocation fund, and capital expenditure on local human development achievement, but the examination is limited on the local governments in Papua.

Another research by Rinaldi, Arifin, Maipita, & Hutasiluhut (2020) analyzed the effect of capital expenditure and economic growth on human development, but the observation is also limited in North Sumatra. Furthermore, Rosiana, Yulianto & Soleha (2016) investigate the role of government internal control system weaknesses on human development but the on human development, but again, the observation is limited in Banten Province. Based on the previous studies above, it can be concluded that the literature lacks a comprehensive study that has higher generalizability that cover all Indonesian local governments.

This research answers the limitation of previous studies in the literature that are limited in terms of generalizability due to limited observations both in terms of local governments and research period. (Fattah & Muji, 2012; Rahayu, et al., 2016; Rinaldi, et al., 2020; Rosiana, et al., 2016). This study also contributes to the government specifically by providing policy recommendations related to capital expenditure, local government financial management, and supervision in Indonesia. The remainder of the paper is presented as follows: literature review; research method; results and discussion; and conclusion.

2. Literature review

Agency theory

Agency theory has been widely used by scholars in conducting local government studies for its applicability in explaining the relationship between the public and local government (Lane, 2005). In democratic institutional setting, local government led by the executive basically acts as the agent in fulfilling the public interest.

Public entrusted the local governance to the executive through direct election, demanding that the executive will perform the best effort to maximizing public welfare and various interest, one of which includes decent human development. However, a conflict of interest normally arises because both principal and agent are assumed to fulfil their own self-interest. The phenomenon is called agency problem.

In the perspective of agency theory, the local government runs the government financial management including the determination and the realization of budget (Prabowo, et al., 2017). Thus, the capital expenditure budget determination and realization also become crucial in local government financial resources management. The capital expenditure as the input must create specific output and outcome in the form better facilities and improve human development (Rinaldi, et al., 2020).

As there is agency problem between local government and the public, the implementation of local government financial management is supervised to realize public accountability (Lane, 2005). Within the financial management process, a supervision mechanism is conducted to reduce agency problem.

One of the supervision mechanisms developed with agency theory framework is performed by the internal auditor (Sarens & Abdolmohammadi, 2011). In Indonesian local government, it is regulated in the Government Regulation Number 60 of 2008.
Human development

The United Nations Development Program (UNDP) introduced the concept of human development in 1990 that becomes a globally adopted concept. Human development arises following the fact that economic growth has not been able to overcome social issues. Stanton (2007) criticized the definition of economic development that does not value people's time, ignores freedom and human rights and the income equality in the society (Stanton, 2007). Filippidis & Katrakilidis (2015) state that human development measures average achievements of three basic dimensions of a country's development: health, knowledge and economic development. The concept of human development represents a broader concept than the economic development that merely relies on per capita GDP variable that has been widely used in the previous application. Therefore, the UNDP switched the development focus from economic aspect to human aspect. Human development focuses on people's quality of living that consist of long and healthy life, knowledge, and decent standard of living.

Local government capital expenditure and human development

Local government expenditures have been seen as an important factor in the development of increasing access to services mandated by law such as education and health (Lewis, 2017). More specifically, local government expenditure in Indonesia is classified into operational and capital expenditure. In regards with human development, the capital expenditure is a budget expenditure that must be allocated for public services (Hoesada, 2016) so that its realization can be expected to support the development of infrastructure and facilities in the local government (Muda & Naibaho, 2018). Furthermore, Rinaldi, et al. (2020) mention that capital expenditure has a strategic role because the target of the spending is to finance development in the field of facilities and infrastructures that can support the public access and fulfillment of public services. Therefore, it can be expected to further improve the quality of human development in a local government. In addition, Shafuda & De (2020) argue that the growth of government expenditure in the long term has a good impact on human development. Based on the description above, we formulate the following hypothesis:

$H_1$: Local government capital expenditure has a positive effect on human development

Local government internal supervision and human development

Local government internal supervision is an important aspect in local government financial management (Sepsey, 2011). It is undeniable that local government financial management plays an important role for regional development (Lewis, 2017), especially in implementing effective financial processes (van Rensburg & Coetzee, 2016). The internal supervision in Indonesian local government is performed by the internal audit function named local government inspectorate, aiming to realize the implementation of accountable local governance that performs well and complies with the existing laws and regulations (Nurdiono & Gamayuni, 2018). Therefore, the internal audit function needs sufficient capability to perform its role effectively (Zain, Subramaniam, & Stewart, 2006). The quality of internal audit function can be reflected through the level of capability (Institute of Internal Auditors, 2009).

Higher internal audit function capability can help ensure the effectiveness and efficiency of government development programs (Sarens, Allegrini, D’Onza, & Melville, 2011), that may include programs related to human development. The implementation of internal audit supervision is also inseparable from a structured and consistent system supported by technological assistance (Smidt et al., 2019) so that the human development programs implemented can be monitored continuously. With the optimal internal supervision, the development programs carried out
by local governments can be adequately monitored so that they are able to achieve the desired outcome (Sari, Hastuti, & Tannar, 2019), namely the increased quality of human development. Based on the description above, the researcher formulates the following hypothesis:

H2: Local government internal supervision has a positive effect on human development

Local government wealth and human development

Local government wealth is related to the resources that a local government has (Dalimunthe, Fadli & Muda, 2015). In terms of financial perspective, organization wealth is generally reflected by the amount of total resources that an organization has (Askim, 2009; Kusumawardani, 2012). In the context of local government, the wealth can be proxied by local government total assets. Baltaci & Yilmaz (2006) posit that local government with larger size has an advantage due to the larger number of resources and transfer of value.

The existence of financial resource increases the potential of better local development and may support the implementation of various programs. By having larger assets, local government will be able to carry out the development program more appropriately. It is supported by previous study by Davies (2009) in which the human development is related to local government size.

It can be realized with the support from good asset management (Bukit, 2020). Based on the description above, the researcher formulates the following hypothesis:

H3: Local government wealth has a positive effect on human development

3. Research method

This study examines the effect of capital spending and internal supervision on the human development in Indonesian local governments. We analyze the achievement of the human development in Indonesian local government using descriptive statistics analysis. The main analysis of our research to examine the role of capital expenditure and internal supervision as the predictors of human development is conducted with panel data regression analysis.

Population, samples, and research data

The population in this study were all regency/city governments in Indonesia in 2017-2019 consisting of 508 local governments (outside the administrative city under the DKI Jakarta Provincial Government). These administrative cities are excluded because they have no audited financial statements. Their financial statements are not audited by the Supreme Audit Board (SAB) because their financial statements are consolidated at province level. This study uses a purposive sampling technique, namely selecting samples that meet certain criteria. The sample selection process is carried out with the criteria: local governments must be registered with the ministry of internal affairs; local government provides accessible audited financial reports; and local governments provides accessible information needed for research data.

We use secondary data from Indonesian local governments from 2016-2019 fiscal year. Thus, the nature of our research data are panel data. Our research data are obtained from authorized state institutions. The list of local governments is obtained from the Ministry of Internal Affairs. Human development, population, and demographic data are obtained from the Central Statistics Agency (CSA). Internal audit data is obtained from the Financial and Development Supervisory Agency (FDSA). Finally, local government financial and complexity data are obtained from the audited financial statement provided by Supreme Audit Board (SAB).

Research variables

The dependent variable of our study is local government human development measured by Human Development Index (HDI) published by the
Central Statistics Bureau (CSA). Our independent variables consist of local government capital expenditure, internal supervision, and local government wealth. We also employ several control variables that consist of local government assets, population, geography, and type. The summary of our research variables is presented as follows:

Table 1. Summary of research variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Notation</th>
<th>Measurement</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local government</td>
<td>LGHDI_{it}</td>
<td>Local government Human Development Index (HDI)</td>
<td>Fattah &amp; Muji (2012), Mittal (2016), Rinaldi et al., (2020), Saputra, Ardila, Siddi, &amp; Sutopo, (2018), Shafuda &amp; De (2020)</td>
</tr>
<tr>
<td>human development</td>
<td></td>
<td>published by the Central Statistics Agency</td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local government capital</td>
<td>CAPEX_{it-1}</td>
<td>Natural logarithm of local government total capital expenditure</td>
<td>Furqan, Wardhani, Martani, &amp; Setyaningrum (2020), Lewis (2017), Lewis &amp; Hendrawan (2019)</td>
</tr>
<tr>
<td>capital expenditure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>internal supervision</td>
<td></td>
<td>published by the Financial and Development Supervisory Agency</td>
<td></td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local government complexity</td>
<td>LGCOMP_{it}</td>
<td>Total number of local government's working unit</td>
<td>Adiputra, Utama, &amp; Rossieta (2018), Daliminthe, et al. (2015)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data analysis

Data analysis is started by performing descriptive statistics analysis of our research variables. We also check the variable correlations. Following the use of panel data in this research, we perform panel data regression analysis for our hypotheses testing. The regression model is stated as follows:

\[ LGHDI_{it} = \alpha + \beta_1 CAPEX_{it-1} + \beta_2 IAFCAP_{it-1} + \beta_3 LGASSET_{it-1} + \beta_4 LGCOMP_{it-1} + \beta_5 LGPOP_{it} + \beta_6 LGGEO_{it} + \beta_7 LGTYPE_{it} + e \]  

Information:
- \( LGHDI_{it} \): Local government human development
- \( \alpha \): Constant
- \( \beta_1 - \beta_6 \): Regression coefficient
- \( CAPEX_{it-1} \): Local government capital expenditure
- \( IAFCAP_{it-1} \): Local government internal supervision
- \( LGASSET_{it-1} \): Local government asset
- \( LGPOP_{it} \): Local government population
- \( LGGEO_{it} \): Local government geography
- \( LGTYPE_{it} \): Local government type
- \( e \): Error

4. Results and discussion

Descriptive statistics analysis

There are 508 local governments in Indonesia. We use a total of 487 Indonesian local governments during 2017-2019 as our samples due to unavailable information in several local governments, resulting in unbalanced panel data.

We begin our data analysis with descriptive statistics analysis to obtain general summaries of our data. The result is presented as follows. We found that the average human development achievement in Indonesian local governments that become our samples is 68.865. The highest human development index achievement is at 85.49 while the lowest is at 48.48.
Further analysis is conducted to examine the distribution of human development index accomplishment around the geographic areas in Indonesia that consist of Sumatra, Java and Bali, Borneo, Sulawesi, and East Indonesia. Our result demonstrates that local governments in Java and Bali overall has the highest human development index achievement, barely above local governments in Sumatra that have identical statistics. The achievement is around 69 to 70 in average during 2017-2019. Local governments in Borneo and Sulawesi follows with average human development index achievement around 64 to 66.

Unfortunately, the average human development index achievement in East Indonesia is still around 60 to 61. We also figure out that city local governments tend to have higher human development index achievement as compared to regency local governments with a significant gap. The average human development index achievement in city local governments is at 74.7 while in regency local government is only at 65.2. The result is presented in Figure 2.

Capital expenditure variable, as represented by natural logarithm of capital expenditure, shows average value of 11.442 with the real value of 325,957,200,077 rupiahs. The highest value is at 12.427 with real value of 2,673,067,143,240 rupiahs while the lowest value is at 10.658 with real value of 16,190,082,572 rupiahs. Local government internal supervision, as represented by the capability level of local government internal audit function, shows average value of 1.851.
It indicates that the internal audit function in Indonesian local governments still has just achieved capability level 1, almost at level 2. The lowest is at level 1 while the highest capability level is at level 3. As for local government wealth, the average amount of asset possessed by local government is 86,595,274,299 rupiahs. The largest amount of asset is at 221,464,596,200 rupiahs while the local government with the smallest asset is at 39,846,057,266 rupiahs.

**Panel data regression analysis**

The main analysis is conducted with panel data regression following the nature of panel data that we use in the study. The best estimation for our regression analysis is the random effect. Our results demonstrate that local government capital expenditure and internal supervision positively affects human development in local government. Meanwhile, local government wealth has no significant effect on local government human development. The result of our analysis is presented as follows:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coef.</th>
<th>St. Err.</th>
<th>t-value</th>
<th>p-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPEX&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>0.344</td>
<td>0.133</td>
<td>2.59</td>
<td>0.010</td>
<td>***</td>
</tr>
<tr>
<td>IAFCAP&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>0.329</td>
<td>0.061</td>
<td>5.35</td>
<td>0.000</td>
<td>***</td>
</tr>
<tr>
<td>LOGASET&lt;sub&gt;t-1&lt;/sub&gt;</td>
<td>-0.274</td>
<td>0.392</td>
<td>-0.70</td>
<td>0.484</td>
<td></td>
</tr>
</tbody>
</table>
Our finding shows that local government capital expenditure has a significant positive effect on human development. As a body mandated by law to provide public services for the community, the amount of local government spending is a crucial factor in improving the quality of various access services such as education and health (Lewis, 2017), especially capital expenditures that are intended for public services (Hoesada, 2016). More specifically, capital expenditure will generate assets that are expected to support development such as infrastructure and facilities in the local governments (Muda & Naibaho, 2018; Rinaldi, et al., 2020). Lewis (2019) in his later study in Indonesia even emphasized the importance of increasing the amount of local government capital expenditure for infrastructure development, especially for relatively underdeveloped regions in Indonesia. Thus, the provision of services for the community can increase and encourage the potential for improving the quality of human development (Rahayu et al., 2016). The results of this study are also in line with the research of Shafuda & De (2020) which found the positive impact of long-term growth in government spending on human development. As previous studies focus on local government total spending, this finding contributes to the literature by providing more specific evidence that the capital expenditure plays role in achieving higher quality of local government human development with a comprehensive observation covering all local governments in Indonesia.

We also find that local government internal supervision has a positive effect on human development, supporting our hypothesis. Local government internal supervision performed by the internal audit function plays a significant role in realizing accountable public governance that is very important for regional development program realization (Lewis, 2017). Internal audit function with higher capability supported by a structured system and information technology can further improve the supervision effectiveness and efficiency of public governance (Smidt, Ahmi, Steenkamp, van der Nest, & Lubbe, 2019). Thus, government's development programs implementation can be monitored properly starting from inputs, processes, outputs, and outcomes (Christofzik & Kessing, 2018), including the desired human development target. This finding supports the supervision concept in the agency theory to reduce agency problem between the public and the local government. With internal

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGCOMPLEX</td>
<td>-0.003</td>
<td>0.002</td>
<td>-1.56</td>
<td>0.117</td>
</tr>
<tr>
<td>LGPOP</td>
<td>0.894</td>
<td>0.165</td>
<td>5.42</td>
<td>0.000   ***</td>
</tr>
<tr>
<td>LGGEO</td>
<td>1.233</td>
<td>0.536</td>
<td>2.30</td>
<td>0.021   **</td>
</tr>
<tr>
<td>LGTYPE</td>
<td>9.399</td>
<td>0.524</td>
<td>17.95</td>
<td>0.000   ***</td>
</tr>
<tr>
<td>Constant</td>
<td>47.501</td>
<td>5.815</td>
<td>8.17</td>
<td>0.000</td>
</tr>
</tbody>
</table>

- **Mean dependent var**: 66.860
- **SD dependent var**: 6.063
- **Overall r-squared**: 0.447
- **Number of obs**: 1437.000
- **Chi-square**: 442.964
- **Prob > chi2**: 0.000
- **R-squared within**: 0.027
- **R-squared between**: 0.455
supervision over local government financial management, the running of local government programs can be performed with proper accountability, specifically by achieving better outcome for the sake of public welfare. This result also confirms the concept of Internal Audit Capability Model (IACM) by the Institute of Internal Auditors (2009) for better accountability, performance, and legal compliance.

As for local government wealth, we find insignificant effect on human development. In achieving the desired human development agenda, the government size needs to be optimal (Davies, 2009). Local government with larger amount of resources does not guarantee to achieve higher human development index. This finding may arise due to local government inability to maximize the potential of financial resources that they have (Sofyani, Riyadh, & Fahlevi, 2020), and therefore, the assets' utilization are not fully optimized to support the human development agenda. This result also implies that there is an urgency for local governments to make proper study of asset utilization potential to improve local government programs that are intended for public services to support human development (Bukit, 2020).

Meanwhile, local government population, geography, and type as our control variables shows significant effect on human development. Local governments with larger population, being located in Java and Bali Island as well as being city local government status have higher human development index achievement. However, local government complexity has no significant effect on human development, indicating that the complexity of local government affairs does not play significant role in human development programs implementation.

Table 4. Subsample analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coef.</th>
<th>St. Err.</th>
<th>t-value</th>
<th>p-value</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPEX&lt;sup&gt;it-1&lt;/sup&gt;</td>
<td>0.180</td>
<td>0.145</td>
<td>1.24</td>
<td>0.215</td>
<td></td>
</tr>
<tr>
<td>IAFCAP&lt;sup&gt;it-1&lt;/sup&gt;</td>
<td>0.327</td>
<td>0.067</td>
<td>4.90</td>
<td>0.000</td>
<td>***</td>
</tr>
<tr>
<td>LOGASET&lt;sup&gt;it-1&lt;/sup&gt;</td>
<td>-0.724</td>
<td>0.461</td>
<td>-1.57</td>
<td>0.117</td>
<td></td>
</tr>
<tr>
<td>LGCOMPLEX&lt;sub&gt;it&lt;/sub&gt;</td>
<td>-0.002</td>
<td>0.002</td>
<td>-1.16</td>
<td>0.247</td>
<td></td>
</tr>
<tr>
<td>LGPOP&lt;sub&gt;it&lt;/sub&gt;</td>
<td>0.982</td>
<td>0.203</td>
<td>4.83</td>
<td>0.000</td>
<td>***</td>
</tr>
<tr>
<td>LGGEO&lt;sub&gt;it&lt;/sub&gt;</td>
<td>1.569</td>
<td>0.650</td>
<td>2.41</td>
<td>0.016</td>
<td>**</td>
</tr>
<tr>
<td>Constant</td>
<td>56.159</td>
<td>6.907</td>
<td>8.13</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

| Constant        | 65.166 | SD dependent var | 4.986 |
| Overall r-squared | 0.134 | Number of obs | 1180.000 |
| Chi-square      | 84.745 | Prob > chi2    | 0.000 |
| R-squared within | 0.029 | R-squared between | 0.138 |
We further perform subsample analysis by splitting the research observation based on local government type namely regency and city local government. We evidence consistent result for local government internal supervision and local government wealth. Therefore, the results for these variables are robust. As for the capital expenditure, the result is consistent in city local governments observation while the result is not significant in regency local government observation. This may be due to the existence of big gap of capital expenditure amount among regency local governments in Indonesia.

5. Conclusions
This study aims to examine the effect of local government capital expenditures and internal supervision on human development. Our findings suggest that local governments in Java and Bali and Sumatra have better human development achievement, followed by Kalimantan, Sulawesi, and Eastern Indonesia. City governments also on average have a higher quality of human development than regency governments. Panel data regression analysis results provide empirical evidence that local government capital expenditures and internal supervision have a positive effect on the human development while local government wealth appears to be insignificant factor.

Based on our findings, we provide recommendations for local governments to increase the amount of capital expenditures for facilities and infrastructure development, especially for local governments that are relatively underdeveloped in Indonesia. Increasing the capital expenditures for facilities and infrastructure development is important to realize human development quality improvement and equality across regions in Indonesia with better provision of services for the
people. The researcher also suggests that the Financial and Development Supervisory Agency (FDSA) always monitor the development of internal audit capability in local governments. Therefore, the supervision on public governance can be improved specially to ensure effectiveness, efficiency, and compliance with the applicable regulations. Finally, local government's human development agenda can be achieved appropriately. Our study still has a limitation as our study only uses quantitative analysis to explain the research findings. Future studies can strengthen the result by using mixed method with additional qualitative analysis to obtain the evidence of the research phenomenon from the point of view of the related experts and government officers in the authorized institutions.

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