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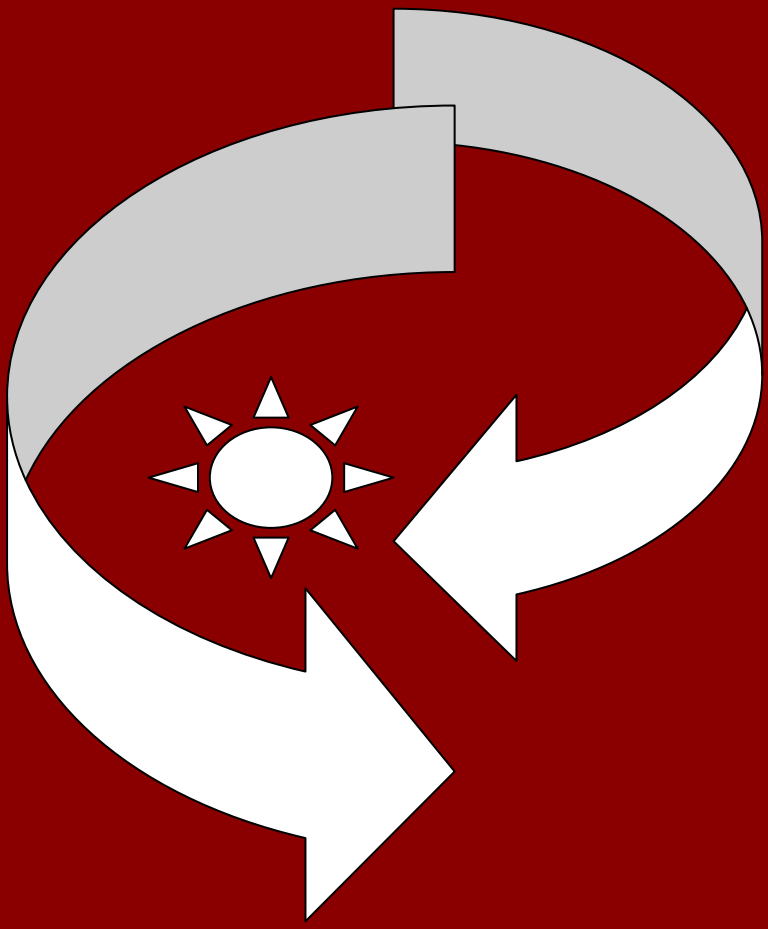

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Jurnal Perspektif Pembiayaan dan Pembangunan Daerah (The Journal of Perspectives on Financing and Regional Development) is reffered to be a forum for the delivery of scientific thought and analysis in the field of economics especially related to financing and regional development for faculty staff, researchers, alumni, students and broad community. Starting from Volume 6 No. 1, this journal is published into six times a year (originally published four times a year). The editor receives articles that have unpublished yet in any media, either inside or outside the country. The online version of this journal is available at http://online-journal.unja.ac.id/JES

Jurnal
Perspektif Pembiayaan dan Pembangunan Daerah
(Journal of Perspectives of Financing and Regional Development)

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Editor's Note

Dear readers,

I am pleased to present Volume 10, No. 5 of the Jurnal Perspektif Pembiayaan dan Pembangunan Daerah (JPPD). Our contributors in this issue offer a range of insights into various topics with a particular emphasis on economic growth and corporate governance.

In our opening article, "It Takes Two to Tango: The Joint Effect of Democracy and Fiscal Capacity on Economic Growth in Indonesia," Jamil, Ananda, and Prasetyia analyze the correlation between the degree of democracy and the fiscal capacity of a state in promoting economic growth. Their work broadens our understanding of how political structures and fiscal strength collectively contribute to Indonesia's economic development.

Following this, Yuvanda, Rachmad, and Hidayat, in "Strategy in Developing Priority Craft Industry Using SAWSWOT Model in Jambi Province," utilize the SAWSWOT model to strategize craft industry development in Jambi Province. Their study offers valuable strategic inputs for industry development policymakers.

Arham and Akib, in their research "Supporting Factors for Labor Productivity in Indonesia," delve into the crucial elements that enhance labor productivity. The authors provide meaningful suggestions that can enhance workers' efficiency and, in turn, foster Indonesia's economic development.

Pratama, Syaparuddin, and Emilia examine "Determinants of Economic Growth Regencies/Cities in Jambi Province with Dynamic Panel Data Approach." This article identifies key factors driving economic growth in regencies and cities in Jambi Province, offering a fresh perspective on regional economic expansion.

Lastly, Ngollo and Mwenda's work "Effects of Corporate Governance Disclosure on Profitability of Public Listed Firms in Tanzania" offers an intriguing analysis of the impact of corporate governance disclosure on the profitability of publicly listed firms in Tanzania. Their findings contribute to understanding the link between corporate governance disclosure and a firm's financial performance, particularly in the Tanzanian context.

We believe the rich array of articles in this issue will provide our readers with valuable insights into public policy and development and inform policy-making and academic discourses. We hope you find this issue thought-provoking and insightful.

Sincerely,

Dr. Junaidi, S.E., M.Si

Editor-in-Chief.

It takes two to *Tango*: The joint effect of democracy and fiscal capacity on economic growth in Indonesia

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Abstract

The literature continues to debate the effects of democracy and fiscal capacity on economic growth, both partially and jointly. To remedy the literature puzzle, this study examines the economic growth effects of democracy and fiscal capacity in 34 Indonesian provinces from 2016 to 2021. Using a fixed-effect model, this study documents no evidence of a partial effect; rather, it finds a joint effect of democracy and fiscal capacity on Indonesian economic growth. These findings remain relatively robust even when provincial heterogeneity, COVID-19 pandemic shocks, and sectoral composition are factored into the model. This finding indicates that regions with democracy and strong fiscal capacity possess relatively fast per capita GRDP growth. Based on these findings, the study concludes that democracy and fiscal capacity should exist side by side. Indonesia's sub-national economic growth strategy, like a *tango* game, requires reforming two types of decentralization: political decentralization to improve the quality of democracy that upholds the merit system and fiscal decentralization to expand local tax capacity to finance public goods productively.

Keywords: *Democracy, Economic growth, Fiscal capacity, Joint effect*

JEL Classification: D72, H71, 043

INTRODUCTION

Many previous studies exert that variations in democracy or fiscal capacity separately influence a country's economic growth. Democracy impacts economic growth because it is linked to the game rules that govern all aspects of life, including the economy (Acemoglu et al., 2019; Knutsen, 2012; Colagrossi et al., 2020). For example, freedom to innovate, adopt technology, and intellectual property protection that promotes interaction among economic actors is more prevalent in democratic countries than in autocratic countries (Abeberese et al., 2021; Wang et al., 2021; Nazarov & Obydenkova, 2020). Likewise, fiscal capacity generates economic activity because it reflects how much the government's ability to collect taxes is used to finance public goods (Johnson & Koyama, 2017; Dincecco & Katz, 2016; Acemoglu et al., 2015). Increased fiscal capacity can lead to a more outstanding provision of public goods in a productive way, which can boost economic activity (Besley & Persson, 2013).

However, scholars are divided on the direct impact of democracy and fiscal capacity on economic growth. Democracy and fiscal capacity have a country-specific effect on economic growth. Democracy's impact on economic growth depends on fiscal capacity and vice versa. In this regard, the interaction effect of democracy and fiscal capacity can be classified into two categories.

Initially, democracy and fiscal capacity are complementarity-relationship. This line of thought is based on the argument that economic policies implemented by democratically elected politicians are only effective if the country has a strong fiscal capacity. Politicians in democratic countries with limited fiscal capacity often pursue myopic economic policies to appease voters or constituents (Stankov, 2018; Feldmann & Popa, 2022). The net result of these conditions is a trap of low-income growth and economic uncertainty (Saint-Paul et al., 2021). Examples include democratically elected governments in several Latin American countries that adopted fiscal populism, such as Chile from 1970 to 1973, Peru from 1985 to 1990, and Argentina from 2003 to 2015 (Dornbusch & Edwards, 1990; Edwards, 2019; Devinney & Hartwell, 2020). A similar phenomenon occurred in the recent crises in Sri Lanka (Abeysinghe, 2021) and Turkey (Orhangazi & Yeldan, 2021).

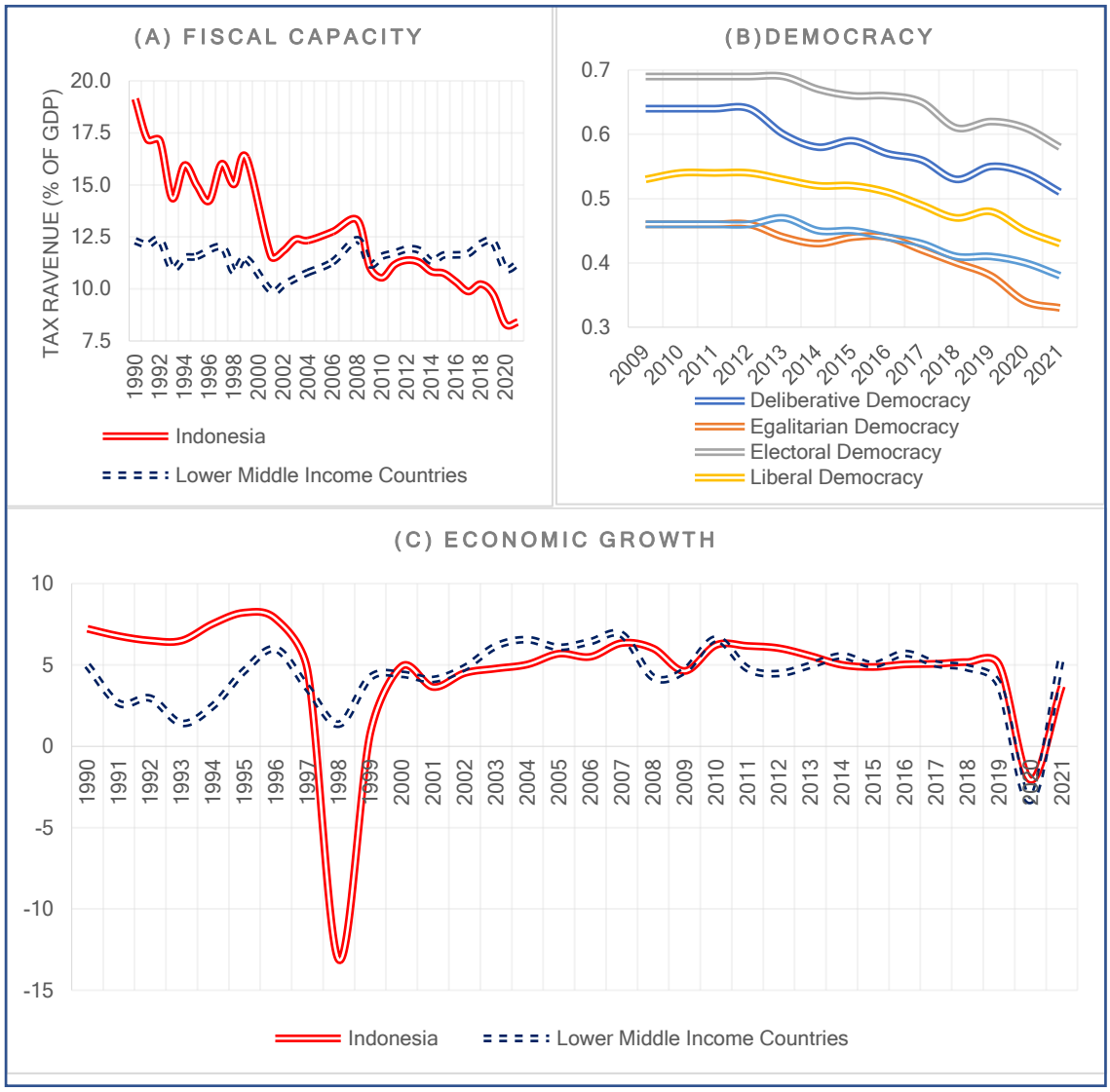
Conversely, democracy and fiscal capacity are substitutability-relationship. This school of thought contends that democracy stimulates economic activity despite a country's limited fiscal capacity. Democratically elected politicians owe it to their constituents to ensure that each program is carried out effectively and efficiently within the constraints of a limited budget (Hanson, 2015). In other words, predatory rulers can be avoided because the check and balance mechanism has been well institutionalized in a democratic environment. Knutsen (2013) demonstrates that Sub-Saharan African countries with weak state (fiscal) capacity, such as Botswana and Mauritius, have witnessed remarkable economic growth since implementing their democratic systems.

In light of previous studies that produced inconclusive results, this study investigates whether democracy and fiscal capacity affect economic growth separately. If not, does their interaction, whether complementary or substitutable, impact economic growth? In looking at the interaction between democracy and fiscal capacity on economic growth, this research differs from previous studies, which mainly focused on the country level (see Bäck & Hadenius, 2008; Knutsen, 2013; Hanson, 2015; Murshed et al., 2022). This study exploits a novel dataset at the sub-national to accommodate the heterogeneity of interregional democracy and fiscal capacity in Indonesia's economic growth context. We employ a sub-national dataset based on the same assumptions as Acemoglu et al. (2015). Compared to Colombia, which Acemoglu et al. (2015) studied, Indonesia has a greater number of provinces and a wider geographical coverage with diverse socio-political backgrounds.

Because of the three stylized facts, this paper explicitly uses the Indonesian setting as a case study to answer the puzzles in the literature and achieve the research objectives. First, Indonesia's fiscal capacity, as measured by the ratio of tax revenue to GDP, has declined since 2009, with performance falling slightly below that of lower-middle-income countries (see Graph 1a). Second, albeit Indonesia has been a democratic country for two decades, the quality of democracy (in a broader sense) in Indonesia has deteriorated since 2013 (see Graph 1b), a phenomenon alluded to by scholars as democratic regression (Warburton & Aspinall, 2018; Power & Warburton, 2020; Diamond, 2021). Third, even though the previous decade was relatively high compared to lower-middle countries, Indonesia's economic growth during the democratization era, from 1998 to 2021, was nearly the same as that of lower-middle

countries (see Graph 1c). Slower economic growth has the potential to wipe out Indonesia's dream of becoming a high-income country while also making it difficult to avoid the middle-income trap (Negara & Ramayandi, 2020; Resosudarmo & Abdurohman, 2018; Jamil, 2017; Basri et al., 2016; Aswicahyono & Hill, 2016). Based on these three facts, the Indonesian case study is expected to serve as a social laboratory for developing countries (notably newly democratized ones) interested in assessing what types of institutions are beneficial in accelerating economic growth at the sub-national level.

The following section of this paper will describe the data used in this study and the specifications of the econometric model developed. The study will then explain the impact of democracy and fiscal capacity on Indonesian economic growth, partially or jointly. This paper ends with conclusions and implications for Indonesia's economic growth policy.



Source: a) Adopted from World Bank (2022); a) Adopted from V-Dem Institute (2022) c) Adopted from World Bank (2022) and Jamil (2017)

Graph 1. The dynamic of democracy, fiscal capacity, and economic growth in Indonesia

METHODS

This study employs an econometric model, utilizing panel data in 34 provinces from 2016 to 2021, to assess the impact of democracy and fiscal capacity on Indonesian economic growth. Panel data is compiled from two prominent institutions. The Central Statistics Agency provides data on GRDP per capita growth, sectoral economic composition, and the Indonesian Democracy Index (IDI). Meanwhile, the data containing the Fiscal Capacity Index (FCI) at the provincial level is generated from the Ministry of Finance's annual publication.

The econometric model developed in this study is based on Knutsen's (2013) study, with the following equation:

$$G_{pt} = \beta_0 + \beta_1 \, log \, D_{pt} + \beta_2 \, log \, F_{pt} + \beta_3 log(D_{pt} * F_{pt}) + \beta_4 SEC_{pt}^h + \beta_5 COV_t + \upsilon_p + \varepsilon_{pt} \quad (1)$$

Where p and t denote provinces and years respectively. Under these equations, per capita GRDP growth (G) is determined by democracy (D), fiscal capacity (F), and the interaction of the two $(D * F)$.

This study incorporates a control variable, the h sector's contribution to GRDP (SEC^h), which is thought to influence GDP per capita growth. The reason for this is that provinces with an economic base in agriculture (AGR), mining (MINING), manufacturing (MANUF), and services (SERV) have different production technologies. Thus the amount of output produced varies. Several studies suggest that countries that transform to modern sectors such as manufacturing (see Cantore et al., 2017; Su & Yao, 2017; McCausland & Theodossiou, 2012) and services (see Kim & Wood, 2020; Eichengreen & Gupta, 2013; Buera & Kaboski, 2012) undergo rapid income growth. By including the composition of economic activity, this study is expected to be able to capture the sensitivity of the estimation results when sectoral effects are considered.

This study introduces a fixed-effect model comprising COVID pandemic shocks (COV) and time-invariant province characteristics (υ) into the model to account for time and province unit effects. The shock of the Covid pandemic must be included because it can create new normal conditions in the economic growth trajectory that have never existed before (Jamil, 2021; McKibbin & Fernando, 2021; Olivia et al., 2020; Sparrow et al., 2020). Meanwhile, differences in pivotal province characteristics are included because they can capture unobserved factors that certain variables cannot explicitly represent. If these two factors are considered, it is expected that plausible parameter estimation results will be obtained. Table 1 details the dependent, independent, and control variables used in this study based on definitions, measurements, and sources.

Furthermore, this study has three coefficients of interest to answer the research objectives. β_1 and β_2 represent the partial effects of democracy and fiscal capacity on per capita GRDP growth, respectively. Meanwhile, β_3 reflects the joint effect of democracy and fiscal capacity. To put it into context, if β_1 and β_3 are both positive, this indicates a positive democratic effect on per capita GRDP growth, where this effect tends to strengthen in regions with high fiscal capacity. If β_2 and β_3 have positive values, this indicates that fiscal capacity has a positive effect as long as the level of democracy in a region is high. These two examples demonstrate a complementarity relationship, whereas if β_1 (or β_2) has a different sign than β_3, it is referred to as a substitutability relationship (see Berry et al., 2012; Andersson et al., 2014; Hainmueller et al., 2019).

Table 1: Variables, definitions, and data sources

Variables	Definition & Measurement	Data Sources
Dependent		
Real GRDP growth per capita (G)	The annual percentage growth rate of GDP per capita at a constant 2010 base price as measured by: $G = log\left({GRDP_t}/{GRDP_{t-1}}\right)$	Central Statistics Agency
Main Independent		
Democracy (D)	The Indonesian Democracy Index (IDI) is composed of three components: civil liberties, political rights, and democratic institutions, which are all weighted, w, using the Analytical Hierarchy Process (AHP) method. $D = \sum_{i=3}^{3} w_i * I(A_i)$	Central Statistics Agency
Fiscal Capacity (F)	The Fiscal Capacity Index (FCI) is the financial capacity of each region which is reflected in total revenues (TR) minus revenue whose use is determined by the central government (SAF), and operational expenditure borne by the province (EX), as stated annually in the Ministry of Finance Regulation, PMK. $F = \frac{TR - SAF - EX}{Total\ Provinces}$ where: TR : original local government revenue + transfer income from central or other regional entities + other local legitimate income; SAF : cigarette tax + tobacco, reforestation, and oil and gas revenue sharing funds + special allocation fund + special autonomy funds + grants; EX : personnel expenditure + interest payments expenditure + profit sharing expenditure.	Ministry of Finance
Additional Control		
Sectoral Composition to GRDP (SEC^h)	The ratio of GRDP in sector h to GRDP. Sector h in this study consists of four sectors, namely: agriculture (AGRI), mining (MINING), manufacturing (MANUF), and services (SERV).	Central Statistics Agency
Covid Shock (COV)	1= the period of the covid-19 pandemic in 2020 & 2021, and 0= otherwise	Coding by the authors based on the information of the Indonesian Covid-19 Task Force

RESULT AND DISCUSSION

Summary of statistical description

Before delving into the appropriate research estimation results, a descriptive statistical review must be completed first. Descriptive statistics serve as the foundation for inferential statistical considerations, which will be discussed in the following section. Table 2 shows the summary results of the descriptive statistics for each variable used in this study.

Most of the standard deviation values are greater than the observed mean values. Five variables have high standard deviation values: real GRDP growth per capita (G), fiscal capacity (F), the interaction of democracy and fiscal capacity (D*F), dummy

Covid (Cov), and mining to GRDP (SEC^{MINING}). A high standard deviation value usually corresponds to an extreme observation value, resulting in overestimation or underestimation. To overcome this bias, estimates of the impact of democracy and fiscal capacity must include simulations without or with control variables.

Table 2 shows the three variables observed in this study and their characteristics. The average GDP per capita growth rate is approximately 2.45%. Due to a decline in the mining sector, the area's production base during the pandemic, Papua will experience the lowest per capita GRDP growth of -22.47% in 2020. In contrast, Central Sulawesi experienced the highest per capita GRDP growth of 17.26% in 2018, owing primarily to the emergence of industrialization expansion in the region.

Foremost, the Indonesian Democracy Index has an average value of approximately 74.22%, indicating a moderate level of democracy. West Sumatra experienced its lowest level of democracy in 2016, with a score of 54.41. In contrast, DKI Jakarta experienced the highest level of democracy in 2020. The extreme conditions in these two regions are explained by the differences in democratic levels in terms of civil liberties.

Finally, the average Fiscal Capacity Index is close to 1.00. The average fiscal capacity in this high category is largely driven by DKI Jakarta, which has more than six times the national average over the 2016-2021 period. In contrast, Gorontalo experienced low fiscal capacity in 2020, owing primarily to low local revenue long before Covid.

Table 2. Statistical description

Variables	Obs	Mean	SD	Min	Max
Dependent Variable					
Real GRDP growth per capita (G)	204	2.45	4.33	-22.47	17.26
Variable of Interest					
Democracy (D)	204	74.22	5.82	54.41	89.21
Fiscal Capacity (F)	204	1.00	1.59	0.10	11.47
Democracy (D) x Fiscal Capacity (F)	204	76.08	131.52	8.32	1012.69
Control Variables					
Covid Shock (Cov)	204	0.33	0.47	0	1
Agriculture to GRDP (SEC^{AGR})	204	0.20	0.09	0	0.44
Mining to GRDP (SEC^{MINING})	204	0.10	0.11	0	0.47
Manufacturing to GRDP (SEC^{MANUF})	204	0.16	0.11	0.01	0.43
Service to GRDP (SEC^{SERV})	204	0.55	0.13	0.24	0.88

Estimation result

This section will present the findings from the estimation of the impact of democracy and fiscal capacity on per capita GRDP growth, both partial and joint effects, to answer the research objectives stated in the introduction. As shown in Table 3, this study investigates the impact of democracy and fiscal capacity by first employing a specification that only includes covid shocks and provincial heterogeneity. This study examines the robustness of the estimation results by adding the sectoral composition of economic activity as an additional control variable, as shown in Table 4. To enable the interpretation of each variable, we examined the significance of the control variables used in this study before examining the effect of the main independent variable.

The control variable, in the form of the Covid shock, has a significant impact on GRDP per capita growth. Table 3 shows that the covid shock coefficient is six times

greater than the standard error. Table 4 also shows the covid shock coefficient, which is five times greater than the standard error. With a significance level of 1%, all models show a negative coefficient of the covid shock to the growth of GRDP per capita. Based on these findings, the Covid-19 pandemic period had lower per capita income growth of around 1.60-1.65% compared to the pre-pandemic period, assuming all other variables remained unchanged. These results indicate that the pandemic has indeed changed the economic growth trajectory of the provinces in Indonesia.

Table 3. The economic growth impact of democracy and fiscal capacity (including the covid shock)

Variables	Dependent: GRDP *per* Capita Growth (G)			
	(1A)	(1B)	(1C)	(1D)
Variable of interest				
Democracy (D)	0.0167		0.0161	0.00722
	(0.0300)		(0.0291)	(0.0300)
Fiscal Capacity (F)		-0.00490	-0.00487	-0.00824
		(0.00675)	(0.00672)	(0.00793)
Democracy (D) x Fiscal Capacity (F)				0.597*
				(0.304)
Control variables				
Covid Shock (Cov)	-0.0165***	-0.0165***	-0.0165***	-0.0160***
	(0.00257)	(0.00257)	(0.00258)	(0.00257)
Constant	0.0162***	0.0162***	0.0161***	0.0159***
	(0.000847)	(0.000859)	(0.000855)	(0.000858)
Provincial Fixed-Effect	Yes	Yes	Yes	Yes
Number of Obs.	204	204	204	204
R-squared	0.213	0.216	0.217	0.251
Number of Provinces	34	34	34	34

*Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

An additional control variable, namely sectoral composition, has varying effects on per capita GRDP growth. Table 4 shows that the role of the agricultural, mining, and service sectors in economic activity seems to have an impact that is not different from zero. On the other hand, in the same table, the manufacturing sector's role positively impacts the growth of GRDP per capita with a significance level of 5%. Based on the estimation results, every 1% increase in the ratio of manufacturing to GRDP will be followed by an increase in GRDP per capita growth of around 0.477-0.518%. These results indicate that the industrialization process can spur improvement in economic activity.

In this study, the additional control variables were adequate. The independent variable's ability to explain variation in per capita GRDP growth ranges from 21-25%. (see R-squared in Table 3). When the sectoral composition is considered, the independent variable's ability to explain variation in per capita GRDP growth rises to around 37-40%. (see R-Squared in Table 4). The significant control variables allow for a deeper understanding of the main independent variables, which are democracy (D), fiscal capacity (F), and the interaction of democracy and fiscal capacity $(D * F)$.

The estimation results show that democracy has no statistically significant effect on GRDP per capita growth. This is demonstrated by Models 1A and 1C, which show that the standard error is 1.8 times greater than the average coefficient of democracy's estimated impact. Even in the 1D model, the standard error is four times greater than the average coefficient of democracy impact estimation. When the sectoral composition is considered, this pattern of findings is consistent, with models 2B and 2C having a standard error of 1.16 times the average coefficient, which increases to 1.8 in the 2D model. The fact that the standard error of the democratic coefficient increases when the

multiplicative interaction variable is included indicates that the democracy variable is not immune to the correlation of other variables. Based on these results, democracy has a partial effect on per capita GDP growth, not different from zero.

Table 4. The economic growth impact of democracy and fiscal capacity (including the covid shock and sectoral composition)

Variables	Dependent: GRDP *per* Capita Growth (G)			
	(2A)	(2B)	(2C)	(2D)
Variable of interest				
Democracy (D)	0.0232		0.0228	0.0155
	(0.0268)		(0.0263)	(0.0279)
Fiscal Capacity (F)		-0.00506	-0.00503	-0.00780
		(0.00564)	(0.00562)	(0.00595)
Democracy (D) x Fiscal Capacity (F)				0.484**
				(0.234)
Control variables				
Covid Shock (Cov)	-0.0163***	-0.0163***	-0.0163***	-0.0160***
	(0.00290)	(0.00290)	(0.00292)	(0.00296)
Agriculture to GRDP (SEC^{AGR})	0.425	0.430	0.436	0.457
	(0.325)	(0.318)	(0.321)	(0.319)
Mining to GRDP (SEC^{MINING})	0.610	0.615	0.614	0.624
	(0.390)	(0.379)	(0.380)	(0.377)
Manufacturing to GRDP (SEC^{MANUF})	0.477**	0.483**	0.486**	0.518**
	(0.231)	(0.229)	(0.231)	(0.235)
Service to GRDP (SEC^{SERV})	0.208	0.215	0.213	0.250
	(0.208)	(0.208)	(0.209)	(0.215)
Constant	-0.318	-0.324	-0.324	-0.355
	(0.231)	(0.227)	(0.229)	(0.233)
Provincial Fixed-Effect	Yes	Yes	Yes	Yes
Number of Obs.	204	204	204	204
R-squared	0.375	0.378	0.379	0.401
Number of Provinces	34	34	34	34

*Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

Statistically, fiscal capacity appears to not affect per capita GRDP growth. The standard error in models 1B and 1C is 1.38 times greater than the fiscal capacity coefficient. Even though the standard error in the 1D model is lower than the coefficient value, it is not twice as low. When the sectoral composition is examined, patterns emerge. Models 2B and 2C have a standard error of 1.16 times greater than the fiscal capacity coefficient. Although the 3D model generates larger coefficients than the standard error, the value is not twice as large. As a result, the partial effect of fiscal capacity on per capita GRDP growth is equal to zero.

The joint effect of democracy and fiscal capacity on per capita GRDP growth is statistically significant. With a significance level of 10%, the 1D model shows that the interaction coefficient value is nearly twice as large as the standard error. Taking the covid shock and sectoral composition into account, the 2D model reveals that the interaction coefficient value is more than double the standard error, indicating that the joint effect of democracy and fiscal capacity is significant at the 5% level. In all models, the interaction coefficient consistently produces a positive direction. The 2D model is interpreted further because it controls the variables that may influence GRDP per capita growth. Assuming all other variables remain constant, the 2D model predicts that a 1% increase in democracy and fiscal capacity leads to a 0.48% increase in per capita income growth.

Discussion

This section explains why democracy and fiscal capacity do not partially affect per capita GRDP growth in Indonesia. However, in the following section, this study explains why the two have a strong joint effect on per capita GRDP growth. This section discusses control variables' impact on per capita GRDP growth in the Indonesian context, such as the COVID-19 shock and the composition of sectoral economic activity.

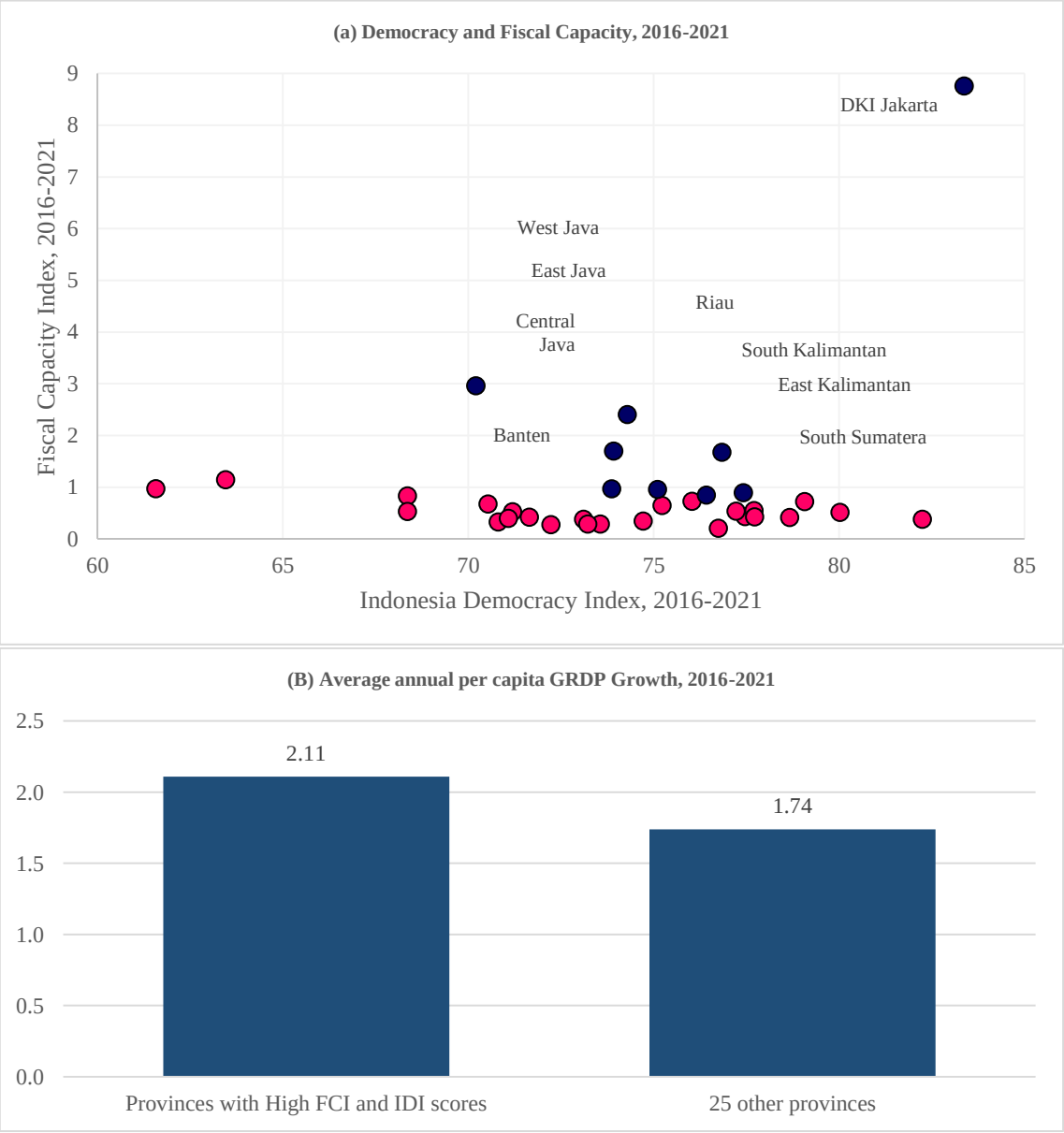
In this study, there is no evidence to support the partial effect of democracy on GRDP per capita growth because Indonesia is a democratic country that has only recently transitioned over the last two decades. During the transition period, Indonesia is more focused on procedural democracy, where democracy is only understood as a tool for the circulation of local elite power, as evidenced by the holding of regional head elections. Simultaneously, substantive democracy, defined as the electoral accountability of local leaders who promote regional economic activities such as improving the quality of public services to increase investment, is still not widely practiced in Indonesia (see Patunru et al., 2012). In other words, democracy does not instantaneously increase economic growth because it depends on the fundamental form of democracy used.

This study echoes Kis-Katos & Sjahrir (2017), Azis (2011), and Törnquist's (2006) empirical works in the Indonesian sub-national context. Kis-Katos & Sjahrir (2017) emphasized that, rather than increasing electoral accountability, as was widely expected before the reforms, the second step of political decentralization did not improve and may even worsen the local governance environment. According to Azis (2011), the assumption that local democracy will put accountability pressures on elected officials is not always correct. In a democratic system like Indonesia, political decentralization increases welfare only for developed regions, not for all, exacerbating regional disparities. Törnquist (2006) asserts, with the same nuance, that while democracy in Indonesia has a set of rules, local elites usurp the rules for their short-term interests. Instead of driving economic activity, most local democratic institutions already exist, but the majority of them are dysfunctional. Azis (2011) concludes that this phenomenon is political decentralization, which results in negative local elite capture and makes high economic performance difficult to achieve.

Like the findings on democracy, this study provides no empirical support for the partial effect of fiscal capacity on increasing economic activity in Indonesia. This is not surprising, given that the measure of fiscal capacity only touches on revenue. In the Indonesian context, regional fiscal capacity is considered adequate if the ratio of personnel expenditure, interest expenditure, and revenue-sharing expenditure is lower. Indeed, how much and how the budget is allocated for productive purposes, such as education, health, and basic infrastructure spending, is critical to stimulate economic activity.

The findings of this study supplement the set of case studies conducted at the regional level. According to Purbadharmaja et al. (2019), regional fiscal allocations for improving public services and infrastructure development boost regional economic capacity. Safitri et al. (2021) added that fiscal capacity must be accompanied by spending that stimulates economic activity while also involving the community. This can only be accomplished if the government can allocate funds based on the local community's needs. As a result, effective control over the distribution of public spending is required to ensure that it is on target.

In contrast to the partial effect, this paper confirms a joint effect of democracy and fiscal capacity on economic activity in the Indonesian context. These findings suggest that neither democracy nor fiscal capacity can be achieved unilaterally. As revealed in the literature at the outset, for democracy to fulfill the aspirations of its constituents, a strong regional fiscal capacity is required. High fiscal capacity also must be accompanied by quality spending that reflects the majority vote and stimulates economic activity. These two forces have a complementary relationship.



Note: We reclassified the level of democracy and local fiscal capacity. The level of democracy is high if the IDI score is more than 70%, while the level of local fiscal capacity is high if the FCI score is more than 0.75.

Source: Various series are calculated from the Central Statistics Agency and the Ministry of Finance.

Graph 2. The heterogeneity of democracy, fiscal capacity, and economic growth in Indonesia

Only nine provinces in Indonesia have a high level of democracy and fiscal capacity, which are as follows: DKI Jakarta, West Java, East Java, Central Java, East Kalimantan, Banten, Riau, South Sumatra, and South Kalimantan (see category these is

in Graph 2A). During the 2016-2021 period, the nine provinces' annual per capita GRDP growth rate is around 2.11. This region's economic activity is progressing faster than in other parts of Indonesia (see Graph 2B). This finding corroborates that democracy and fiscal capacity must go hand in hand to promote regional economic growth in Indonesia.

After answering the main objective of the study's question, another finding is that the Covid-19 shock has resulted in a different trajectory of economic growth than before. This outcome is unsurprising given that the Covid-19 pandemic has disrupted economic activity on both the demand and supply sides. The decline in people's purchasing power was caused by social restrictions that required only workers in the essential sector to work. On the supply side, the decline in output was caused by a lack of incentives for enterprises in the non-essential sector to produce. This finding is consistent with Olivia et al. (2020) and Sparrow et al. (2020) research in the Indonesian context.

Besides, in terms of sectoral composition, this research reveals that only the manufacturing sector could significantly speed up Indonesia's economic activity. This is because the manufacturing sector is thought to have high added value due to its strong forward and backward linkages (Verico, 2021). If the manufacturing sector experiences deindustrialization, the engine of Indonesia's economic growth will be hampered (Kuncoro, 2018). The agricultural and mining sectors have almost no influence because they are extractive, with economic activity centered in the upstream stage and weak in the downstream process (Shrestha & Coxhead, 2018). Meanwhile, the service sector has little impact on economic growth because the developing service sector has low skill and technology requirements (Pratomo & Manning, 2022; Wihardja & Cunningham, 2021; Allen, 2016). According to the explanation, preventing deindustrialization is critical in Indonesia (Tadjoeddin et al., 2017), given the weak leverage of the agricultural, mining, and service sectors.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Given that previous literature does not provide clear conclusions, we partially and jointly investigate the impact of democracy and fiscal capacity on Indonesia's economic growth. This study takes the setting of Indonesia to answer the puzzle in the literature because there is a decline in fiscal capacity, signs of democratic regression, and slowing economic growth. Case studies from sub-national Indonesia provide lessons for developing countries where democracy remains in its infancy.

This study concludes that economic growth has no partial effect on democracy or fiscal capacity. The study, on the other hand, confirms the joint effect of economic growth and democracy in the case of the Indonesian sub-national level. These results indicate that democracy and fiscal capacity must coexist. Despite the inclusion of province heterogeneity, the COVID-19 shock, and sectoral composition in the model, the conclusions are relatively robust.

Recommendations

Like a *tango* game, Indonesia's subnational economic growth strategy must simultaneously reform two forms of decentralization. First, political decentralization must be executed by encouraging the existence of a meritocracy for the developing democracy to be substantive. Second, fiscal decentralization should be implemented by

increasing regional fiscal capacity based on local revenue while improving the allocation of productive expenditures to stimulate economic growth.

Yet, the study's conclusions include two caveats for future literature enrichment. First, the results of this study remain questionable across multiple alternative measurement variables. As a result, more research is needed to address the issue of measuring democracy (see Amri & Pasha, 2020; Harbers et al., 2019) and fiscal capacity (see Hollenbach & Silva, 2019; Allers & Ishemoi, 2010), which several scholars have criticized. Second, the findings of this study have yet to address the issue of endogeneity and reverse causality, even though variables outside the model can influence democracy and fiscal capacity. As a result, further studies are needed to overcome this issue in the case of the multiplicative interaction model.

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Strategy in developing priority craft industry by using SAWSWOT Model in Jambi Province

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Abstract

This study aims to determine the quality creative craft industry to be developed and to formulate a strategy for developing these priority creative industries. The analytical model used to determine the priority creative craft industry is the SAW (Simple Additive Weighting) model. The SAWSWOT model is used to formulate the priority creative industry development strategy. The result of the study shows that the batik industry has been selected as a priority creative craft industry. At the same time, the strategies that can be used to develop the batik industry are increasing IT mastery by management staff, workforce skills, using Jambi batik design applications, and marketing through E-Commerce.

Keywords: *Creative industry, Priority, Strategy, SAWSWOT*

JEL Classification: C69, L67, O31, O38

INTRODUCTION

The development of creative economic potential, especially in the creative handicraft industry, impacts the progress of the national economy. 48.03 percent of developing countries prioritize the creative economy. Therefore, policies relevant to developing creative industries will help improve the national economy and exports (De Beukelaer, 2014). In line with this thought, Boccella & Salerno (2016) also argue that the development of the creative economy is a reflection of national policies based on regional culture and social institutions. For this reason, the creative industry as a part of the creative economy, which is the focus of future economic development

The development of the creative industry implies that young people in Bandung could respond to it by developing a creative craft industry. They establish a creative music and clothing industry known as Distro. These young people received support from the British Council, which later developed Bandung's city into a creative city. These youth efforts receive support from the central government to develop creative industries in other areas. It is clarified by the issuance of Presidential Instruction No. 6 of 2009 concerning the Development of the Creative Economy. The instruction states that the government supports a creative economy development strategy based on

individual creativity, skills, and talents to create individual creative and ability that has economic value and affects the welfare of the Indonesian people.

The role of creative industries in national economic development can be traced from each sub-sector's contribution toward the national economic growth rate or to the gross domestic product. Indonesia has initiated the progress of the world's creative economy so that in 2021 it was determined as an international creative year through United Nations General Resolution (UN) number 74/198. Based on the Creative Economy Agency Performance Report in 2019, the creative economy sub-sector has become a priority. Among 17 sub-sectors, 3 have the largest creative economy contribution to GDP in 2021, namely fashion, culinary, and craft. Culinary, ranked first, contributed the largest gain, as much as 41%, fashion contributed 17%, and crafts accounted for 14.9%. This is in line with the opinion of Hotho & Champion (2011), who states that the contribution of the creative industry has been widely recognized where the industry shows the growing number of industrial businesses.

The development of creative industries can accelerate the downstream process. To create downstream, the development of the creative industry needs to be the focus of attention because the creative industry can create added value and large jobs. However, downstream for the creative industry is not easy to implement because it requires capital, technology, and reliable human resources (Nasution & Aminah, 2021). Therefore, the development of creative industries must focus on the imagination and creativity of industrial players. The creative industry consists of 14 groups. One of them is the creative craft industry group. The creative craft industry can develop new markets and increase the added value of products that will have an economic and social impact. Fitriana et al. (2014), Brouillette (2020), Fazlagic & Skikiewicz (2019), Zheng et al. (2020), and Tuech et al. (2020) state that creative industries' development requires innovative and creative human resources. The existence of creativity will make creative industries help the economic development of a region. Creative industry development should be based on potential regions. According to the research by Mangifera (2016), the creative industry should grow based on potential regions. Therefore, creative industry holders should be competent to use regional resources to grow creative industries in line with market demand.

Specifically for Jambi Province, the manufacturing sector's contribution to GRDP is 10.5%. This contribution has greater meaning because it can create employment and business opportunities and increase the added value of the products produced by Jambi Province. One of the activities in the manufacturing sector that seeks to create added value is the creative industry. The creative industry is an industry that utilizes individual creativity, skills, and talents to create prosperity and create jobs from the results of individual creativity (Departemen Perdagangan Republik Indonesia, 2007). During the Covid-19 pandemic, the creative industry can develop faster because it has community and government support.

In order to increase sustainable regional economic growth depends on the region's ability to increase innovation (Kamil, 2015; Pradhan et al., 2020; Zhou et al., 2021). In the industrial era 4.0, the creative industry must be developed based on digital technology. For this reason, it is necessary to start with sorting, selecting, and determining the priority industries. The priority creative craft industry is developed based on industry 4.0 in order to accelerate competitiveness and increase the added value of the community's economy.

Creative industries are grouped into 14 categories. One of the creative industry groups is the creative craft industry. There are some creative craft industries, especially

in Jambi Province. For example batik craft industry, the songket craft industry, the embroidery craft industry, the woven industry, and the souvenir craft industry. There are 69 business units of the creative industry spread across Jambi Province.

To develop the creative craft industry in Jambi Province, it is necessary to set a priority creative craft industry. The selected priority creative craft industry must also be developed with an appropriate and superior development strategy to produce a competitive priority creative craft industry. This research will give the novelty of using the newest model to determine the priority of the craft industry and the strategy to grow the craft industry. Therefore, deeper research is needed on the determination of the creative craft industry, which is prioritized to be developed in Jambi Province, as well as a strategy for developing the creative craft industry that is right on target.

METHODS

The data used in this research is secondary data from the industrial and trading institution Jambi Province. The observation is done towards 27 Batik industries chosen as the craft industry priority. The selection of the 27 batik industries came from a database set by the Jambi Province Industry and Trade Office as a priority for creative craft industries to be developed. The selected batik industries are spread over 13 units in the city of Jambi, 3 units in Bungo Regency, 1 unit in Kerinci Regency, 1 unit in Merangin Regency, 1 unit in Batanghari Regency, 2 units of Muaro Jambi Regency, 1 unit of Sarolangun Regency, 1 unit of West Tanjung Jabung Regency, East Tanjung Jabung Regency 3 units, and Tebo Regency 1 unit. The structural interview was conducted with the industry holder to support that observation. The result of observation is used to arrange the creative industry priority strategy in Jambi Province.

The data analysis model used to determine the strategy for developing this priority creative craft industry has 2 stages, namely:

Determination of priority creative industries

The Simple Additive Weighting (SAW) analysis model determines the priority of creative industries. Munthe (2013) explains that the SAW method is a decision making that uses the weighted summation of the performance on each criterion. The use of the SAW model in determining the leading creative industry has been carried out by Hidayat & Rachmad (2019). Furthermore, Asnawati & Kanedi (2012) stated that the assessment criteria could be determined according to the needs of the company/industry.

This SAW analysis model has the advantage of being able to make an accurate assessment because the criteria and weight values have been determined correctly. In addition, the normalized value attribute value is calculated by the attribute value.

The stages of determining the priority creative craft industry are:

1. Determination of criteria and weighting
2. Determination of the value of each priority product alternative
3. Treatment of the normalized matrix with the formula:

$$R_{ij} = \begin{cases} \dfrac{X_{ij}}{Max\ X_{ij}} \\ \dfrac{Min\ X_{ij}}{X_{ij}} \end{cases}$$

Definition:

R_{ij} = Matrix of normalization of performance

Max X_{ij} = Maximum value of each alternative

Min X_{ij} = Minimum value of each alternative

Formulation of development strategy

For the formulation of a priority creative craft industry development strategy in Jambi province, researchers used SAWSWOT Analysis Model. SAWSWOT is a SWOT analysis based on the criteria used in the SAW model. The criteria used to develop the strategy are the criteria for business units, labor, production, investment, and income. The five criteria were chosen as the basis for the SWOT analysis because those criteria were also used as the basis for determining the creative craft industry. The SAWSWOT analysis model is the novelty of this research. Based on the results of tracking, the SAWSWOT model has never been used in various studies in the same field of science

RESULT AND DISCUSSION

Priority creative craft industry

In determining the priority creative craft industry in Jambi province, researchers used SAW (simple additive weighting) model. The SAW model was conducted through 4 stages. The four stages were:

Determining criteria and weighting

The criteria that will be measured in determining the priority creative craft industry are taken from the variable factors of production. These criteria are business units, labor, production, investment, and turnover. Furthermore, each criterion will be given a weight which can be seen in Table 1.

Table 1. Criteria and weight

No	Criteria	Code	Weight
1	Unit of business	C.1	0,200
2	Labor	C.2	0,133
3	Production Value	C.3	0,333
4	Investment Value	C.4	0,067
5	Income	C.5	0,267

After having the results of the criteria weighting, the next step is to determine the value of each alternative priority creative industry.

Determine the value of each priority creative industry alternative

Based on the 5 criteria, where weights have been determined, the value of each alternative from the priority creative craft industry have been determined. The results of the determination of the alternative values are presented in Table 2.

Table 2. The value of each creative craft industry

No	Category	Code				
		C.1	C.2	C.3	C.4	C.5
1	Batik	27	193	7.268.000.000	2.508.077.000	10.484.500.000
2	Songket	5	54	980.000.000	1.440.000.000	1.630.000.000
3	Embroidery	12	66	390.500.000	271.000.000	653.500.000
4	Souvenir	14	64	1.168.300.000	302.000.000	2.176.400.000
5	Woven	11	104	950.600.000	472.500.000	1.575.750.000

Determination of normalized matrix

The results of determining the value of each alternative priority creative craft industry in Jambi province are normalized to the resulting matrix. Normalized matrix Priority creative craft industry is presented in Table 3

Table 3. Normalized matrix

No	Category	Code				
		C.1	C.2	C.3	C.4	C.5
1	Batik	1,000	1,000	1,000	1,000	1,000
2	Songket	0,185	0,280	0,135	0,574	0,155
3	Embroidery	0,444	0,342	0,054	0,108	0,062
4	Souvenir	0,519	0,332	0,161	0,120	0,208
5	Woven	0,407	0,539	0,131	0,188	0,150
	Weight	0,200	0,133	0,333	0,067	0,267

After the normalized matrix has been obtained, the next step is calculating each alternative's total value from each creative industry.

Decision-making on priority creative industry ranking

The decision-making for determining the Priority creative craft industry in Jambi province is carried out by multiplying the results of the normalized matrix with the weight vector of the criteria used to determine the priority creative craft industry. The matrix of the multiplication results is presented in Table 4

Table 4. Decision-making matrix

No	Category	Code					Total Value
		C.1	C.2	C.3	C.4	C.5	
1	Batik	0,200	0,133	0,333	0,067	0,267	1,000
2	Songket	0,037	0,037	0,045	0,038	0,042	0,199
3	Embroidery	0,089	0,045	0,018	0,007	0,017	0,176
4	Souvenir	0,104	0,044	0,054	0,008	0,055	0,265
5	Woven	0,081	0,072	0,044	0,013	0,040	0,249

Based on the decision matrix, the ranking of decisions can be taken and shown in Table 5.

Table 5. The determination of priority creative industry ranking

No	Category	Total Value	Rank of Priority
1	Batik	1,000	I
2	Songket	0,199	IV
3	Embroidery	0,176	V
4	Souvenir	0,265	II
5	Woven	0,249	III

Table 5 shows that the batik industrial product of Jambi is chosen as the priority creative craft industry to be developed in Jambi Province, namely the batik Industry. The second rank is the souvenir creative craft industry, and the third rank is the woven creative craft industry.

This batik craft industry needs to be developed because it has a characteristic in the form of a typical Jambi motif so that it has an attraction and allure for consumers and the pride of the Jambi community. Jambi Batik has been branded for batik fashion at the national level because it has special characteristics in patterns and designs that come from various animals, plants, and ecosystems from the Regency/City in Jambi Province.

Culturally, the Jambi Batik industrial product, which was selected as a product of the creative craft industry, strongly supports the preservation of Jambi's culture in the form of Tengkuluk and Sarong/Sampingan for elders and young people. However, in

terms of business, the Jambi batik industry products also attract the market through uniforms and gifts. Therefore, the production of the batik industry has the potential to be increased to fulfill market needs. In addition, industrial development will help preserve the environment and culture (Fahmi et al. 2017).

Creative Craft Industry Development Strategy in Jambi Province

It is necessary to make a strategic analysis for developing the priority creative craft industry in Jambi Province. The formulation of the strategy uses SAWSWOT. The SAWSWOT analysis used is based on the criteria used by SAW, namely business units, labor, production, investment, and income. These five criteria are chosen as the basis for the SWOT analysis because they have also been used for determining the creative craft industry by the SAW analysis as described previously. The SAWSWOT analysis based on the main criteria for determining priorities is listed in Table 6.

Table 6. SWOT based on determining factors in priority creative craft

No	Instrument	Strength (S)	Weakness (W)	Opportunity (O)	Threats (T)
1	Business Unit	The business unit is managed in a family-friendly and supportive environment	Management will be limited and discontinue	Developing business through online system	Management doesn't have good ability IT in developing online business
2	Labor	Labors come from family member and already have experience	The regeneration of labor has started to end because the youth hs no interest on it	Regeneration through formal school or extracurricular activity	Wages/salary for Batik labor is still low or less than minimum wage of regional
3	Production	Production material for natural dyes is still widely available	The raw material for mori cloth for production is still taken from Java or imported from China and India	Utilization of local materials for production, especially natural dyes that have Jambi characteristics are available	Prices of raw materials for mori cloth for production in Java and import prices
4	Investment	The majority of the investment comes from the batik craftsmen themselves or from their own capital	Limited source of investment with cheap price so it detain expansion	Getting investment fund with cheap price from government	Access of investment funding from government is still limited
5	Omset	Batik of Jambi is well known for offline or online sell	The using of social media is still limited. Only the succesfull craftsmen that use this massively	Increasing income via online sell can be obtained especially if it is targeted to millennial consumers	Innovation in Batik design and online media that is used is still low and less creative

Table 6 contains a SWOT analysis based on the criteria for determining SAW, namely business units, labor, production, investment, and income, so it can also be continued to formulate a strategy for developing the selected creative craft industry, in this case the batik craft industry. The formulation of the development strategy aims to further develop the batik craft industry in Jambi province. In addition, the strategy must be drawn up in line to develop the creative industry, so cooperation between the government as a strategy maker and all stakeholders is needed (Ahmad et al. 2020). The involvement of all these parties can increase the participation of the batik craft industry in increasing economic growth. This is also in line with what Ardiana (2020) states: government support positively impacts the creative industry's success. The development strategy is presented in the form of a table as follows.

Table 7. The strategy of developing chosen priority creative craft (Industry of Jambi Batik)

No	Strategy instrument	Strategy of development
1	Unit of business	Preparing management staff who master IT and developing business through online market
2	Labor	Improving the skills of the workforce through online and offline training and preparing the regeneration of batik craftsmen
3	Production	Optimizing the use of local raw materials, especially natural dyes
4	Investment	Increasing support for investment credit without fees and without collateral for craftsmen that the government provides
5	Income	Increasing online income through collaboration with e-commerce providers such as Shopee/Tokopedia

Table 7 shows that in developing the batik industry as a priority craft industry in Jambi Province, it is necessary to focus on 5 criteria. These criteria are the development of business units through the regeneration of craftsmen, increasing the workforce's expertise, optimizing production through improving batik designs, investment support at low costs, good financial management, and increasing income through collaboration with e-commerce providers.

The batik industry selected as a priority craft industry in Jambi Province, requires innovation and creativity to accelerate regional economic recovery by optimizing the potential for regional independence and local wisdom. This study's results align with the results of Fitriana et al.'s (2014) research, which states that the creation of industrial players results in more innovative products. Training, debriefing/guidance, and monitoring increase industrial players' creativity. Furthermore, the results of this study are also in line with the opinion of Gunday et al. (2011), which states that the development of the creative craft industry will be able to increase the welfare of people's income. Industrial development must be done by conducting innovations so the market can accept creativity. This innovation will affect the performance of companies that manage the industry.

On the other hand, if the creative industry can be developed, it will impact the regional economy. This impact will be seen in expanding job and business opportunities and increasing people's income. Prioritized creative industry development will help

preserve the environment and culture (Fahmi et al. 2017). Furthermore, Satria & Prameswari (2011) stated that the creative industry also has a large multiplier effect on similar industries and other supporting industries, namely the production, distribution, and marketing processes.

In addition, the results of this study are also in line with the research results of Lita et al. (2018), which state that in developing creative industries, it is necessary to pay attention to aspects of innovation based on cultural innovation and product performance. On the other hand, Kamil (2015) supports the results of this study by stating that increasing the productivity of the creative industries towards competitive priority industries will be achieved through efforts to strengthen the capabilities of innovation-based human resources.

CONCLUSION AND RECOMMENDATION

Conclusion

The analysis of the SAWSWOT model is the novelty of this research. The model is used to determine the development strategy of the Priority Creative Crafts industry. The study's results determined that batik was selected as a creative craft industry prioritized to be developed in Jambi Province. For this reason, a batik industry development strategy based on the ability to use IT by management staff, improvement of workforce skills, the use of Jambi batik design applications, and marketing through e-Commerce.

Recommendation

This study's results recommend revitalizing the Jambi batik center by constructing batik galleries in each district/city located in shopping centers or malls. Besides that, digital marketing is also being developed through social media; Instagram, Facebook, Tik Tok, Shopee, etc. The government is also expected to be able to facilitate the development of contemporary batik motifs or a combination of flora, fauna, and nature with the latest Jambi icons, such as the Gentala Throne bridge.

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Supporting factors for labor productivity in Indonesia

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Abstract

Indonesia's investment attractiveness is still weak compared to other ASEAN countries; one of the reasons is the low labor productivity. On this basis, this study aims to find out what factors are dominantly driving labor productivity in Indonesia statistically, as well as the right policy model to encourage labor productivity, bringing Indonesia a high-income country. The analytical method used in this study is panel data regression analysis, 2014 - 2018 period, covering 34 provinces in Indonesia. The study suggests that fiscal policy through general allocation fund (DAU) or transfers signifies increasing labor productivity, while special allocation fund (DAK) does not. Economic factors such as labor costs, the contribution of the agricultural sector, and economic openness can increase labor productivity, while industrial sector share has no effect. Social factors measured by the education level of general secondary schools and life expectancy (health) affect labor productivity enhancement; it is different from a vocational school. Consequently, the number of unemployed vocational school graduates is high.

Keywords: *Fiscal policy, Labor productivity, Socio-economic*

JEL Classification: E62, I25, I15, J01

INTRODUCTION

Limited resources require government intervention to allocate functions through fiscal policy, optimize production issues to meet community needs, and enhance productivity. According to Gopinath et al. (2017), resource and capital misapplication will decrease productivity. One model of fiscal policy considered to enhance productivity is fiscal decentralization. Fiscal decentralization positively correlates with productivity. The stronger fiscal decentralization (federalism) is implemented, the more productivity increases (Dougherty & McGuckin, 2008; Blöchliger & Égert, 2013; Song et al., 2018). However, according to Brehm (2013), fiscal decentralization does not directly affect productivity but the incentive scheme. That scheme impacts local government expenditure to improve government investment conditions that will increase productivity (Kalyvitis & Vella, 2011; Bronzini & Piselli, 2009).

Government investment is used to fund education and health care, funded through transfer funds, both general (General Allocation Funds or DAU) and specific transfers (Special Allocation Funds or DAK). The increasing financing of both sectors is essential, and its factor directly influences labor productivity (Rivera & Currais, 2004a;

Arshad & Malik, 2015a). Therefore, the government has made the financing of these two sectors a priority. The education sector allocates a minimum of 20 % of the total in the State and Local Government Budget, while the allocation for the health sector is at least 5 %.

Although education and health sector budgets have been set in stone and implemented for decades, their effect on education performance does not seem to show a good result, as indicated by the average national school duration of only 8.3 years in 2019. Many Indonesians have not completed junior high school (SMP), even though sufficient funds have been allocated in the State Budget (APBN) and Regional Budget (APBD). The production level is relatively low since elementary school graduates dominate the education profile.

The relationship between education sector financing and labor productivity has a strong correlation. The more financing increases, the more the quality of human resources will improve and make them more productive (Fadilah et al., 2018; Appiah, 2017; Annabi et al., 2011). Health sector financing influences productivity enhancement, as found by Rivera & Currais (2004b) in Spain, Allen et al. (2014) in Tanzania, & Wang (2015a) in the OECD country. Determining the budget percentage in the education and health sector is intended to spur human resources quality improvement and avoid diverting funding allocations outside the basic service sector. The results of a study conducted by Corrado et al. (2009) showed that the output change rate per worker rises faster when the intangibles are calculated as capital, and the capital deepening is a source of labor productivity growth.

It is crucial to improve human resource quality to stimulate labor productivity in funding education and health sectors. In basic terms, an increase in the number of graduates from secondary schools and higher education is an indicator of enhancing the quality of human resources from the education perspective. Both general and vocational graduates are separated to compare labor productivity based on differences in graduate profiles since vocational school graduates are essential determinants of increasing productivity (Sala & Silva, 2012). Further, health indicators are seen in life expectancy and healthy living, and with government funding in the sector, access to health care will be more equitably spread to all populations.

The accumulation of physical capital formation does not merely determine the increase in total factor productivity. Yet, labor productivity cannot be denied as a manifestation of human capital. Instead, labor productivity is a source of medium to long-term economic growth, and both have causal relations (Korkmaz & Korkmaz, 2017; Nakamura et al., 2018). Aside from being a source of growth, labor productivity, accompanied by innovation, becomes the primary drive to a nation's economic competitiveness (Carayannis & Grigoroudis, 2012).

However, when referring to the latest report on global competitiveness compiled by the World Economic Forum (WEF), Indonesia's competitiveness is still lower than that of neighboring countries such as Singapore, Malaysia, and Thailand. Weak competitiveness as the effect of non-competitive labor productivity is one factor causing the low education level of the labor. Although the results of the Chansarn study (2010) supported the theory and previous studies that advances in education and technology are the most significant determinants in enhancing labor productivity growth.

The Central Bureau data (2018) showed that the over-15 aged working population, according to the highest educational level, was dominated by elementary-level graduates and lower. It was 50,458,493 people out of 124,004,950. Table 1 below shows a detailed description (Arham, 2019a).

Table 1. Over 15 years aged population with the highest education level and their past week activities, 2018

Level of Education	Total manpower	Unemployed
Elementary / Uneducated	50,458,493	16,766,881
Junior Level	22,424,728	1,131,214
Senior Level	22,336,556	1,930,320
Vocational	13,681,530	1,731,743
Academy / Diploma	3,450,541	220,932
University	11,653,102	729,601
Amount	124,004,950	22,510,691

Source: Central Bureau of Statistics, Processed (2019)

At the same time, the number of unemployed educated laborers remains high. The unemployed high school graduates are 1,930,320, and the vocational graduates are 1,731,743. In addition, 15,103,643 diplomas and university graduates are classified as open unemployment. Particularly relevant to the advent of migrant workers, in the future, this condition will be an issue in the absence of significant government attention. The foreign investment boom coupled with migrant non-skilled workers could generate social jealousy since our workforce continues to require employment.

However, the use of foreign labor cannot be ignored, as the numbers will continue to grow along with the increase in foreign investment and economic openness. Economic openness can improve energy productivity (Follmi et al., 2018; Abizadeh & Pandey, 2008). According to Cecchini & Lai-Tong (2011a), higher productivity through international openness is attributable to the indirect impacts associated with technology transfer. Nevertheless, according to Cecchini & Lai-Tong (2011b), increased productivity through international openness is caused by the indirect effects of technology transfer.

The result will be even worse because Indonesia's laborers are dominated by low education levels and work in the non-productive sector (agriculture). Consequently, their average income and labor-added value remain low (Gollin et al., 2014). The problem is that the agricultural sector still plays a supportive role in maintaining economic development alongside other sectors. Most of Indonesia's population still counts on the agriculture sector. Further, in most regions in Indonesia, the agricultural sector remains the formation of GRDP support. Concurrently, due to economic progress, people's per capita income uplift is increasingly affecting the growing needs for settlements, industrial areas, and other activities. Thus, land conversion continues. Finally, agricultural areas and proprietary are declining. The result is that agricultural land is increasingly limited. The fact that the number of workers in the agricultural sector is still high will eventually decrease the labor productivity in the agricultural sector. According to Restuccia et al. (2008), low labor productivity in the agricultural sector collectively contributes to and is responsible for impoverished countries. In contrast, in developed countries, the level of labor productivity in the agricultural sector is fairly high, as the impact of the declining number of workers in the agricultural sector shifted to the productive sector (industries).

It becomes apparent that changes in economic structure from the non-productive (traditional) sector to the productive sector (modern sector) or the industrial sector are additionally essential to create labor productivity and push a country out of the middle-income trap (Vivarelli, 2014). Overall, the industrial sector's share continues to increase year by year, even though the spread of industrial activity in Indonesia remains concentrated in Java. Future industrial activities are expected to continue to grow, and

the challenges are diverse. Particularly as regards, compared to other countries, labor productivity in the industrial sector is still low. While one of the important factors in growing the industrial sector is investment supported by productive labor, the industrial sector's share will stimulate labor productivity (Holman et al., 2008). This is in line with Yilmaz's (2016) view that the manufacturing industry sector drives the difference in labor productivity growth between countries.

The shift in economic structure will be pursued by a shift in the structure of the workforce to the industrial sector having a more secure level of wages. To improve the level of welfare, wages are an important variable stimulating labor productivity (Strauss & Wohar, 2004). Crucially, on the one hand, the wage level will improve workers' welfare. At the same time, on the other, a raise will increase the production input cost resulting in company profits deterioration. In other words, workers require a high wage raise. At the same time, companies (employers) expect insignificant increases to maintain profitability because when labor costs increase, employers will use fewer workers (Meer & West, 2016).

Based on the rationale mentioned above, this study investigates the determinants of labor productivity drivers in Indonesia. There are two reasons why this research is essential to do 1) Previous research on the factors that drive labor productivity shows that there are two poles with different findings. There is a gap between expectation and reality, such as a considerable amount of education funding, yet the progress indicators are not optimal, which results in low productivity. Thus, there are opportunities to develop studies related to these topics. 2) The variables that drive labor productivity are grouped into three categories, including decentralization and social and economic factors, where each factor is developed as a different variable from previous research. For example, the decentralization factor is divided into two variables; transfer of DAU and DAK, and social factors are proxied from the level of high school graduates by distinguishing general and vocational schools. The development of this model is a novelty as studies on this particular topic are still under-researched. This research aims to determine what factors are dominant in driving labor productivity in Indonesia statistically, as well as to identify the best policy model to encourage labor productivity so that Indonesia may become a high-income country.

METHODS

Data types and sources

The data in this study are secondary in the form of pooled data, the combination of time series data from 2014-2018, and cross-section data from 34 provinces in Indonesia. The macroeconomic, education and health performance data in each province were acquired from the Central Bureau of Statistics (BPS). At the same time, the DAU and DAK for basic service financing were taken from the Local Government Budget (APBD).

Empirical model

The factors assumed to affect labor productivity consist of fiscal policy through DAU and DAK and macroeconomic performance consisting: 1) Provincial Minimum Wage *(wages)*, assumed to have a strong impact on encouraging worker productivity enhancement. 2) The contribution of the agricultural and industrial sectors, in which the greater contribution of the agricultural sector, the lower labor productivity relatively. In contrast, labor productivity in the manufacturing industry sector is relatively higher. 3) Economic openness proxied from a province's year-to-date total exports and imports

divided by each province's total economic output. Higher economic openness of a region will foster labor productivity rivalry. 4) The education variable is measured by the education level of the population in each province, specifically the Senior and Vocational High Schools. The assumption is that a higher education level in each province stimulates labor productivity. 5) Health variables are measured from Life Expectancy, in which a person's high life expectancy illustrates their quality of life, thus maintaining their productivity. The equation model of this study can be written as follows.

$$Prod_{it} = \mu_0 + \mu_1 DAU_{it} + \mu_2 DAK_{it} + \mu_3 LnWage_{it} + \mu_4 SAgri_{it} + \mu_5 SIndus_{it} + \mu_6 LnOpeness_{it} + \mu_7 SHSGen_{it} + \mu_8 SHSVoc_{it} + \mu_9 LE_{it} + \varepsilon_{it}$$

Notes:
Prod = Labor productivity of each province (Rupiah)
DAU = DAU for each province (Rupiah)
DAK = DAKs for each province (Rupiah)
Wage = Minimum Wages for each Province (Rupiah)
Agricultural Share = Share of Agriculture Sector in each province (Percent)
Industry Share= Share of Manufacturing Sectors in each province
Eco Openness = Economic Openness of each Province (Ratio)
SHS (General) = Education level of Senior High Shool in each province (Persons)
SHS (Vocation) = Vocational Education Level of each province (Persons)
LE = Life Expectancy in each Province (Percent)

Data analysis method

For data analysis, based on the results technique's selection in panel data processing, statistical tests have been done under the Hausman and Chow test. Based on the Hausman and the Chow test results, the proper model was used through a fixed effect approach by weighting coefficient covariance white cross-section method. To get the Best, Linear, Unlimited Estimators (BLUE), the estimators need to be free from classical assumption violations, particularly multicollinearity, autocorrelation, and heteroscedasticity.

RESULTS AND DISCUSSION

Labor productivity is measured by the total GRDP of each province divided by the number of existing workers. This measurement, adopted by Freeman (2008), states that productivity is related to the efficient use of inputs in producing output (goods and/or services). Here, input means using labor for all business sectors, while the output is represented in the overall GRDP value. Based on the productivity calculation results and mapping, it is clearly observed that the average labor productivity *(GDP Workers)* is relatively low, with merely about six provinces having higher averages, as shown in Table 1.

Based on the mapping in Table 1, provinces with high labor productivity are DKI Jakarta, East Kalimantan, North Kalimantan, Riau, Riau Islands, and West Papua. Observing the economic characteristics of these provinces, their economic *share* is assisted by the non-agricultural sector (trade, services, industry, and mining). DKI Jakarta is the most productive province since the economic structure of the capital province is dominated by trade and services, with the workforce's education level mostly above high school graduates (62%), while the province is classified as the industrial area in Riau Islands Province. Meanwhile, East Kalimantan, North Kalimantan, Riau, and West Papua are dominated by the mining sector. The rest are

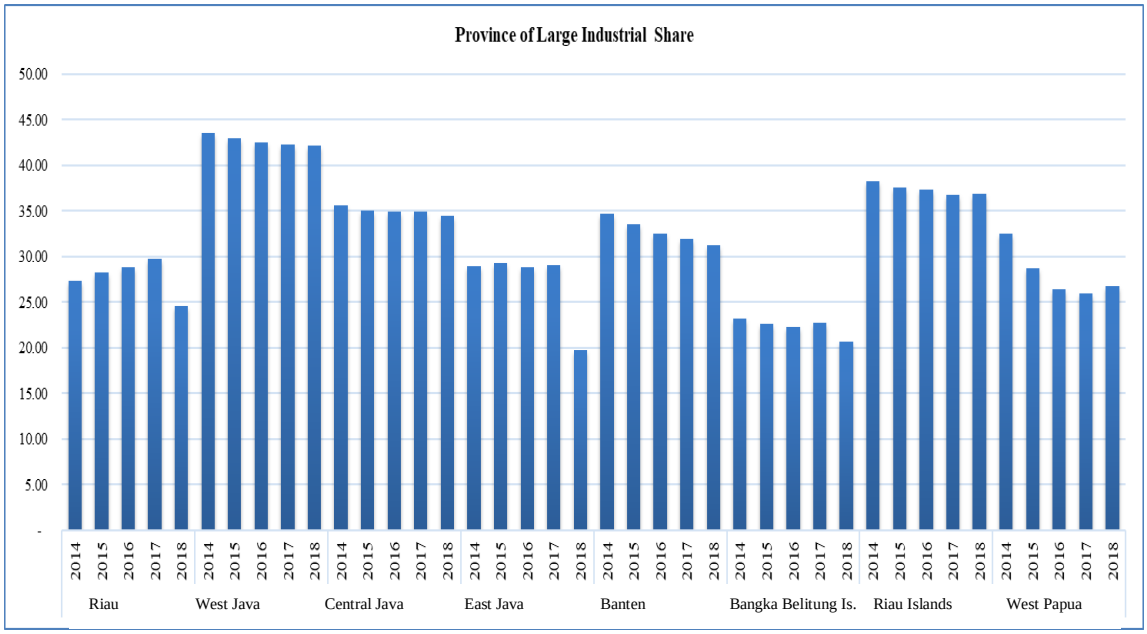
provinces relying on the agricultural sector, and East Nusa Tenggara Province has the lowest productivity level; its industrial sector share is 1.2 % of the average per year (Arham, 2019b).

Table 2. Labor productivity (GDP Workers) of each province in Indonesia

Province	Productivity of Labor (GDP Workers)
Aceh	53.533,14
North Sumatra	76.213,68
West Sumatra	68.037,09
Riau	165.121,93
Jambi	83.071,12
South Sumatra	75.329,85
Bengkulu	45.846,24
Lampung	57.190,00
Riau Islands	145.429,49
Bangka Belitung Islands	74.443,43
Banten	81.372,84
DKI Jakarta	337.842,57
West Java	68.320,02
Central Java	54.567,15
D.I. Yogyakarta	46.274,09
East Java	76.467,30
West Kalimantan	57.031,57
Central Kalimantan	72.709,99
South Kalimantan	63.366,74
East Kalimantan	287.232,16
North Kalimantan	258.957,76
North Sulawesi	76.938,39
Central Sulawesi	71.387,28
South Sulawesi	81.919,53
Southeast Sulawesi	73.151,87
Gorontalo	48.102,63
West Sulawesi	45.500,96
Bali	61.886,01
West Nusa Tenggara	41.930,54
East Nusa Tenggara	26.558,29
Maluku	52.244,72
North Maluku	48.584,37
Papua	89.876,38
West Papua	145.825,84

Source: Central Bureau of Statistics (BPS), processed data results (2019)

The assumptions above imply that the regions with economic sectors supported by the manufacturing industry and other non-agricultural sectors will be far more productive than those depending on the agricultural sector. However, this premise could not be fully applicable in the three provinces in Java, including West Java, Central Java, and East Java. Observing the economic structure of these provinces, the agricultural sector share is relatively declining temporarily, and the manufacturing sector share is increasing on average between 20 to 30 percent, as shown in Figure 2. However, there are four regions outside Java, which are industrial areas, such as Riau (Oil and Gas Industry), Bangka Belitung (Mining Industry), Riau Islands (Manufacturing Industry), and West Papua (Oil and Gas Industry).



Source: Central Bureau of Statistics (BPS), processed data results (2019)

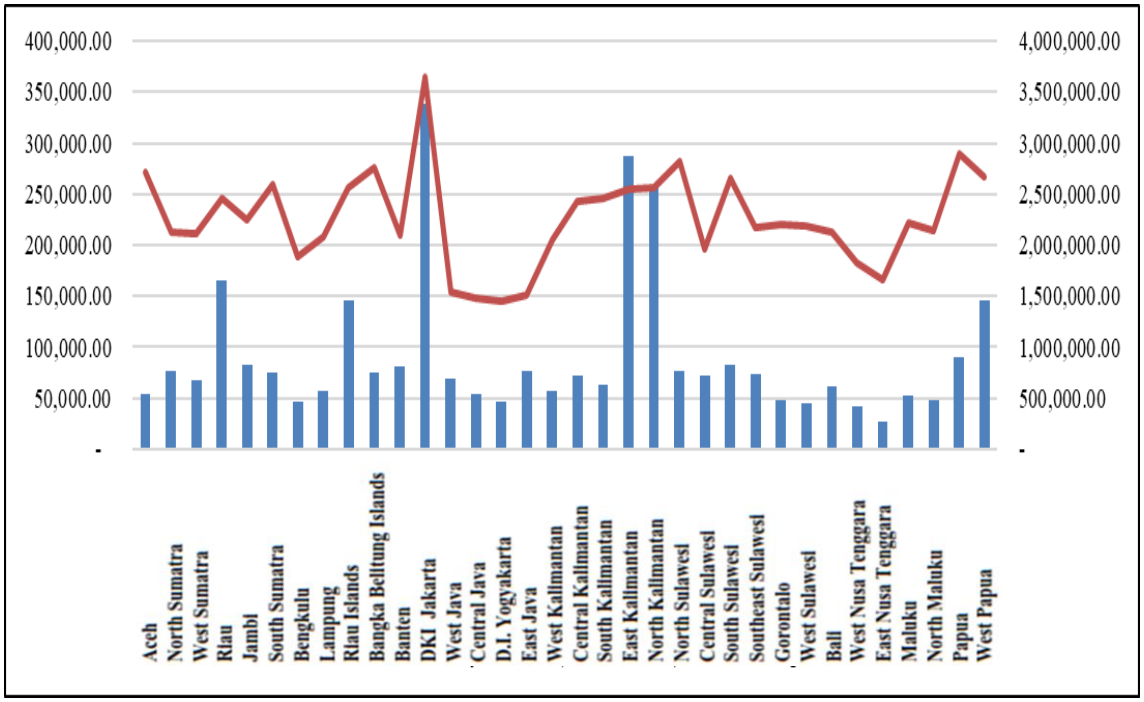
.**Figure 1.** The province with a high industrial sector share

This means that the three provinces (West Java, Central Java, and East Java) should not considerably differ from the labor productivity level of the Riau Islands, as seen in the mapping results in Table 1. The three provinces with large populations have relatively low labor productivity, though the industrial sector has expanded rapidly compared to other provinces outside Java. Thus, it can be assumed that the three regions, including Banten Province, have actually been going through a process of changing the economic structure, along with the shift of the workforce structure from the agricultural to the non-agricultural sector.

This condition is anomalous. Generally, in the GRDP process, in which the agricultural sector highly contributes, relatively lower labor productivity is not identified in the developed industrial sector. According to Nurske in Jhingan (2004) low productivity results in low income, delivering helplessness (poverty). Therefore, provinces with high poverty levels are regions leaning on the agricultural sector, while the industrial and service sectors are very limited.

Related to wage rates, as the Provincial Minimum Wage (UMP) suggested, it appears that the three provinces on Java Island apply lower rates compared to the provinces outside Java (notice Figure 3). Even though some regions outside Java with minimum natural resources, the non-processed agriculture sector is a leading sector. In fact, the industrial sector is very limited, which is actually the wage of their workers is lower than that in West, Central, and East Java.

There are two anomalous issues in West, Central, and East Java, low labor productivity and wages set by the government, even though these three provinces' economic structure changes work well. This means changes in economic structure are not in line with the assumptions of the theory proposed by Chenery & Syrquin (1975) that the process of structural transformation occurs when the share of agriculture in output decreases along with the increasing share of the non-agricultural sector (secondary and tertiary) and is followed by shifting the workforce structure to a more productive sector that can increase income per capita.



Source: Central Bureau of Statistics (BPS), processed data results (2019)

Figure 2. Comparison between wages and labor productivity levels

Figure 3 provides clear information that provinces outside Java provide higher wages, even though in most of them, the workers' wages do not align with their productivity levels, especially those in Eastern Indonesia. Ideally, high wages are positively correlated with productivity, such as in Riau Province, Riau Islands, DKI Jakarta, East Kalimantan, and North Kalimantan.

Factors driving labor productivity in Indonesia

Table 3 shows that fiscal policy factors, proxied by the DAU and the DAK, do not all stimulate labor productivity, only DAU. Thus, the more DAU is given to the regions, the more it encourages the increase in labor productivity. However, the problem, in reality, is that DAU transfer is mainly used to pay employees, while the allocation to increase labor productivity through human development is limited. DAU is a form of government fund transfer to local governments allocated to equitably distribute financial capacity among regions to fund regional needs in implementing decentralization. The amount of DAU received by each region varies, depending on the width of the fiscal gap and the amount of basic allocation for employee salaries. The higher DAU a region receives implies that its revenue source originating from Local Own-source Revenue (PAD) is relatively small. Conversely, the smaller DAU received suggests that the region is increasingly self-reliant due to a high proportion of tax revenue-sharing and vast Local Own-source Revenue.

Of 34 provinces in Indonesia, most of them are remarkably dependent on the DAU, except for DKI Jakarta and East Kalimantan. However, the proportion of the main income sources of the two provinces is different. DKI Jakarta relies on Local Own-source Revenue, while East Kalimantan is assisted by tax revenue sharing and natural resource provision. The amount of the DAU, in addition to being self-sufficient, is influenced by the number of districts or cities in a province. The higher the number, the higher DAU they receive, such as West, Java, and East Java, North Sumatra, South Sulawesi, and Papua. During the research, DAU utilization more effectively encouraged labor productivity enhancement. Due to the utilization, local governments were given

the sovereignty to allocate pursuant to their preferences and priority in the regions with elasticity towards human quality improvement (Arham, 2013).

Table 3. Summary of regression results of factors driving labor productivity

Variable	Coefficient	Std. Error	t-Statistics
C	10,22350	0.505341	20,23090
DAU?	3.07E-08	8.85E-09	3.463458 ***
DAK	-1.71E-09	2.22E-09	-0.770971
Log (Wages?)	0.012102	0.003104	3.899143 ***
ShareAgri?	-0.018634	0.002565	-7.266174 ***
ShareIndus?	0.001358	0.000819	1,657363
Log (Openness?)	0.002793	0.001136	2.457730 **
Log (SHSGen?)	0.003396	0.001416	2.399102 **
Log (SHSVoc?)	0,000656	0,000876	0.749293
LE?	0.014628	0.007808	1.873480 *
Adjusted R-squared	0.996568		
F-statistics	1134,860		
Durbin-Watson stat	2.268921		

*Note: *** 1%, ** 5% and * 10%.*

Meanwhile, DAK does not leverage the labor productivity enhancement during the study. The weak influence of the DAK to enhance labor productivity because its designation is not only used to finance education and health but also for the broader designation. This is no longer its specialty adapted to the local characteristics (regional diversity). According to Usman et al. (2008), this weakness encourages labor productivity. There are a number of policies that actually require national uniformity but still provide room for non-uniformity.

On the other hand, some policies should provide room for differences due to diverse inter-regional conditions yet impose national uniformity for sectoral financing. In practice, local governments are passive recipients of DAK grants. The attitude of the local government towards the Fund allocation process indicates an appraisal that the Central Government is not transparent. In addition, inter-agency coordination and communication in the DAK management appear to be limited.

Furthermore, the proximate wage level of the Provincial Minimum Wage (UMP) significantly and positively correlates. This means that any increase in wages for workers will result in an enhancement in labor productivity. These results are generally consistent with previous studies, as found by Katovich & Maia (2018), Fatma et al. (2017), and Bester & Pull (2003). Wages correlate with labor productivity. Derived from maximizing profits theory, this corresponds to the basic theory of microeconomics, stating that both have a relationship between productivity and wages. Besides, in the neoclassical approach, higher labor productivity is reflected in higher wages (Nikulin, 2015). Thus, to enhance labor productivity in each region, wages need to be a concern to be adjusted by the government. The problem is to enhance labor productivity by increasing wage levels; companies (producers) will limit the demand for new labor (Meager & Speckesser, 2011), while the labor market will continue to grow. The government needs to think of two interests diametrically *trade-off*, in which workers are expected to be more productive to confront increasingly intense competition. At the same time, the government is obliged to maintain a conducive investment climate since investors could relocate industries to a more efficient and productive workforce.

In an agrarian country, more than half of the 34 provinces in Indonesia remain counting on the agricultural sector, and its products appear to be international trade commodities. Since agricultural products remain low value-added, exports of its

commodities are still raw goods. Consequently, worker productivity is low. The estimation results reinforce that statement; the agricultural sector share has a significant effect yet is negatively correlated. This suggests that the agricultural sector share increases with the formation of the economy and lessens labor productivity. It would be different when the agricultural sector is directed at downstream activities (on-farm). The industrialization of agricultural products will encourage product productivity in accordance with labor productivity. To undertake down streaming, various challenges face the provinces producing agricultural products, such as low accessibility, minimum supporting infrastructure, and limited markets.

The industrial sector's contribution does not affect labor productivity enhancement since the possibility of developing manufacturing industries is capital-intensive. The education level of the available workforce remains dominated by elementary school graduates who are less absorbed in the industrial sector requiring high skills. Therefore, it is necessary to strengthen the manufacturing industry sector, especially industries related to agricultural commodities. In their studies, Diao et al. (2017) showed that in successfully industrialized countries, there is a strong positive correlation between labor productivity growth in agriculture and employment share in the manufacturing sector. This means that labor productivity enhances as a result of industrialization; some agricultural sector workers shift to work in the manufacturing industry sector, thereby increasing farmer income as the share of employment in the agricultural sector decreases and the share of jobs in the manufacturing sector increases. Therefore, to strengthen the performance of the industrial sector, investment is certainly required because investment, on the other hand, can increase productivity (Negara and Adam, 2012). In addition, investment is urged to develop outside Java, particularly in Eastern Indonesia, to diminish regional disparities.

Increased investment simultaneously illustrates economic openness. The economic openness variable estimation results are significant and positively correlated to labor productivity; thus, the more open an area's economy, the more labor productivity increases. This finding is in line with the research conclusions of Miller & Upadhyay (2000) and Jiang (2011). Economic openness will stimulate competition among workers, driven by investment to absorb an immense workforce. Local workers and workers outside the region (including foreigners) offer the labor market. This condition will result in the competition level, affecting productivity concurrently.

Workers' productivity can be driven if the education sector develops, assisted by sufficient funding. Further, it can complete the nine-year compulsory education program; even if necessary, compulsory education could be up to 12 years. It is assumed that increasing government spending to finance the education sector, both formal and informal, will stimulate parents to send their children to higher levels, such as high schools and colleges, since higher education levels influence productivity (Alvi & Ahmed, 2014a; Arshad & Malik, 2015b). It is illustrated from the estimation results that secondary school education is positively correlated and significantly increases labor productivity. The increasing number of public high school graduates will enhance labor productivity.

In contrast, vocational school graduates have no effect in labor productivity. They should strengthen labor productivity since they possess more technical skills compared to public school graduates. This finding clarifies the condition of unemployment in Indonesia, in which the open unemployment level of Vocational High School graduates is entirely major. The quality of vocational school graduates remains low since the curriculum does not meet the labor market need, and the limited industry can absorb the

workforce of vocational school graduates. Practices and pieces of training obtained by vocational school students remain minor compared to the theory, the findings of Sala & Silva (2013) in their studies, the productivity of vocational school graduates grows if the training portion is raised. Weak ability 'skills' from vocational school graduates cause additional costs for the industry to train them when employed. Dong & Manning (2017) mentioned many ways to productivity enhancement by increasing skills through the assistance of government investment in training and apprenticeships and by expanding vocational training by adopting the German model.

Meanwhile, the health variable proxied from Life Expectancy has a positive and significant effect on productivity. A country's population's availability of appropriate health care may bear better health, thus strengthening a country's human capital and contributing to economic growth through enhanced productivity (Wang, 2015b). In addition, higher life expectancy will trigger the transition to sustainable income growth supported by productivity level (Cervellati & Sunde, 2009; Alvi & Ahmed, 2014b). Even though basically productivity decreases as someone gets older, the results of the Skirbekk study (2003) found individual work performance declines at around 50 years of age. It is contrary to the wage raise for almost a lifetime. However, productivity decimation at age happens merely in jobs requiring problem-solving, learning, and speed of adjustment, in contrast with crucial experience and verbal ability.

CONCLUSION AND RECOMMENDATION

Conclusion

Several important points can be used as essential conclusions to increase labor productivity in Indonesia; firstly, fiscal transfers from DAU and DAK showed that only DAU affects increasing labor productivity in Indonesia. While DAK does not affect improving labor productivity, this is due to the non-specificity of DAK distribution for particular fields directly related to productivity gains. Second, workers' wages have a positive and significant effect on labor productivity; an increase in employees' salaries through annual Provincial Minimum Wage (UMP) adjustments will motivate workers, particularly those in the formal sector, to enhance their productivity. Third, the agriculture sector's contribution has a negative and significant impact on labor productivity, implying that the higher the share of the agricultural sector in the formation of Gross Regional Domestic Product of each province, the lower the labor productivity. Fourth, economic openness substantially impacts increasing labor productivity; the more open a region's economy is, the higher the labor force competitiveness. Fifth, while general high school and vocational high school education levels are both increasingly promoting an improvement in labor productivity, the estimation findings reveal that only general high school education can encourage a significant increase. In contrast, vocational school education does not affect labor productivity. Sixth, the life expectancy factor has a positive and considerable effect on improving labor productivity in Indonesia; increasing the average life expectancy of Indonesian people with good health insurance will increase their productivity.

Recommendation

It is recommended several essential points, including; first, DAK does not have the effect of boosting labor productivity in Indonesia; the central government needs to encourage local governments to strengthen financing and prioritize funds from DAK to sectors that can accelerate human quality improvement (labor productivity). Second, workers' wages can boost labor productivity; therefore, wage increases must be made

every year, yet it must consider the area's investment continuity. Third, since the share of the primary sector has a negative relationship with labor productivity, it is necessary to continue to stimulate the acceleration of regional economic transformations and a shift in the workforce structure. Fourth, the industrial sector's contribution does not affect labor productivity in Indonesia. Hence, the government should improve the industrial structure by encouraging labor-intensive processing industries and utilizing regional potential. Fifth, the level of vocational school education does not affect productivity improvement; therefore, the vocational education system should reform the vocational education system by increasing the proportion of training, adjusting the curriculum and the labor market, as well as regional potential.

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Determinants of economic growth regencies/cities in Jambi Province with dynamic panel data approach

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Abstract

This study aims to analyze the determinants of economic growth Regency/City in Jambi Province. The factors considered to be the determinants of economic growth are lagged economic growth, government expenditure, household consumption, labor, and infrastructure. This study used time series data from 2011-2020 and cross-section 11 regencies/cities in Jambi province. The analysis tool used in this study is dynamic panel data regression. The results of the dynamic panel data regression show the generalized system method of the moment model as the best model. Based on the analysis results, lagged economic growth had a significant positive effect. In the short term, labor had a significant negative effect, and infrastructure had a significant positive effect. In contrast, government expenditure and household consumption did not significantly affect economic growth. In the long run, infrastructure has a significant positive effect, while government expenditure, labor, and home consumption have no significant effect on economic growth.

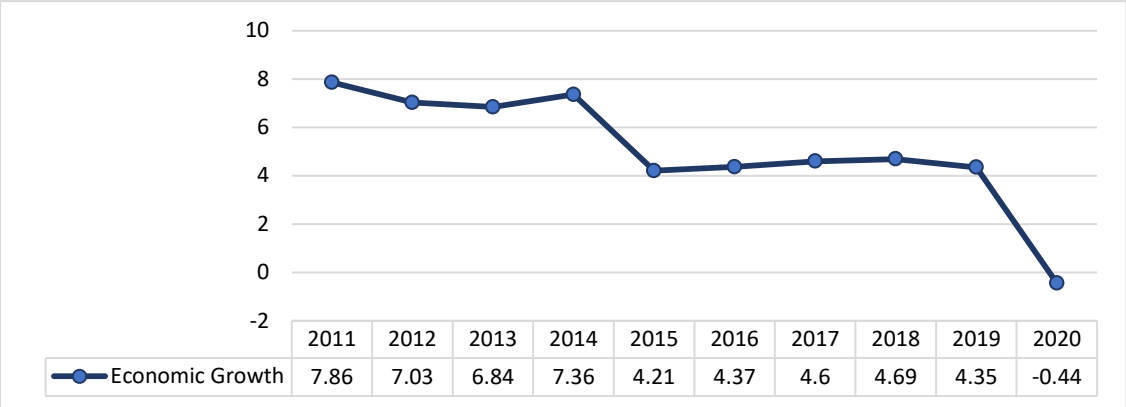
Keywords: *Dynamic panel data, Economic growth, Government expenditure, Household consumption,*

JEL Classification: O47, R11, R15

INTRODUCTION

Development is a prolonged process to achieve the goal of improving the welfare of the community. Therefore, a mandatory development strategy can spur economic development and improve the quality of human resources. Based on these development goals and strategies, the implementation of development must be shown on things that can improve mutual welfare. Efforts are needed for increased economic growth and income equality so that the level of public welfare increases (Boediono, 2009).

A rise in a nation's wealth brought on by producing products and services from one era to the next is known as economic growth (Burlando & Tartaglia, 2018). The rate of increase in a country's gross domestic product (GDP) is one of the most commonly used measures of economic growth or wealth expansion (Petrakis, 2020). Meanwhile, able to see and find out the rate of economic growth in an area can be used with the value of the gross regional domestic product (GRDP); besides that, the use of this GRDP value can see the economic conditions in an area at a certain period. This GRDP value can explain the ability of regions to use or manage existing resources; the potential of one region with other regions is not the same (Rahman, 2015).



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Economic Growth	7.86	7.03	6.84	7.36	4.21	4.37	4.6	4.69	4.35	-0.44

Source : BPS Jambi Province, 2022

Figure 1. Economic growth Jambi Province

Based on data from BPS, the economic growth of Jambi Province from 2011-2020 tends to decrease. Economic growth in 2011 was 7.86%; in 2012, it decreased to 7.03%, the decline occurred again in 2013 to 6.84%, and in 2015 to 4.21% lower than the previous year, the decline occurred again in 2019 to 4.35% and in 2020 to -0.44%. In 2020 the economy of Jambi Province contracted; this contraction occurred due to limited economic activities and the lack of recovery of society mobility fully entering the new normal due to the Covid-19 pandemic (BPS, 2020).

The central and local governments have made various efforts to accelerate development (Syaparuddin et al., 2019), one of which is a policy through government expenditure. According to Keynes, the government can either directly or indirectly control the economy with its spending policies, providing a wide range of public goods and facility services. Then Keynes was of the view that the government could reverse the case of an economic recession by increasing incomes and re-circulating them through different spending programs. With this, a multiplier effect is created due to increased consumer demand. It will stimulate investment, thus causing the economy to move on the path of expansion for endogenous growth models (Joshua, 2019).

Keynes's theory focuses on aggregate spending as important in increasing economic growth. Keynes argues that one thing that affects economic activity is household consumption expenditure Kocka in (Tapparan, 2020). In the short term, household consumption can affect the rise and fall of economic activity. In addition, household consumption in the long term has a major effect on economic growth (Halim, 2018).

The expansion of the economy has historically been one of the positive factors that have economic growth of the population or population and the growth that occurs in the labor force. The larger the population, the larger the domestic market. A large number of the working-age population with expert skills and skills and with a high level of education will be able to potentially increase the productivity and output of an area (Todaro & Smith, 2012).

Effective infrastructure also facilitates economies of scale in the production process, integrates markets, develops business prospects, and reduces transportation and production costs through timely delivery, all of which contribute to the desired economic growth. Additionally, connecting rural areas to growing hubs through the construction of roads, trade, investment, and access to goods and services may be expanded in previously disconnected regions; therefore, infrastructure has a substantial multiplier effect (Mohmand et al., 2016).

Economic problems are generally dynamic variables, meaning those that affect variables can be influenced by other variables and the variables themselves in the previous period. In the context of this study, it is suspected that previous economic growth could affect current economic growth. Based on data from BPS, the economic growth of Jambi Province from 2011-2020 tends to decrease. In the same year, government spending, household consumption, labor, and road infrastructure, have increased yearly.

This phenomenon shows that there is a gap between theory and reality. According to the theory of government spending, household consumption expenditure, labor, and road infrastructure can drive the economy, but in reality, this is not the case. Based on these conditions, it is necessary to have further identification so that the research carried out has a clear scope.

METHODS

This study used secondary data from time series during the 2011-2020 period and cross sections of 11 regencies/cities in Jambi Province. The data used were economic growth, government expenditure, household consumption, labor, and infrastructure. The data was sourced from the Central Statistics Agency of Jambi Province and the Directorate General of Finance Balance.

To answer the purpose of the study, namely analyzing the determinants of economic growth using dynamic panel data regression with two-step estimates. This research uses dynamic panel data because, in static panel data, there is an endogeneity problem; if estimated, it will produce biased and inconsistent estimators (Juanda & Junaidi, 2012). Therefore, this study uses dynamic panel data because the resulting estimate does not contain bias and consistency when using lagged dependent variables.

There are two approaches in dynamic panel data models: First Different GMM and System GMM. Blundel & Bond (Baltagi, 2005) state that the First Different GMM (FD GMM) estimator can contain bias and inaccuracy if the sample is small. Blundel and bond suggest using the System Generalized Method of Moment (SYS GMM) model, which is claimed to be more efficient regarding short-time series data. This study will use one of the best models of dynamic panel data with a two-step estimator for the general model of estimating the dynamic panel data equation of the First Different GMM model and the System GMM model, as follows (Baltagi, 2005):

$$Y_{it} = \delta Y_{it-1} + \beta_1 X_{it} + e_{it} \quad \text{.....(1)}$$

Furthermore, the estimation model of the FD GMM equation and the SYS GMM is changed as follows:

1. Equation estimation model with two-step estimator in a short time :

$$EG_{it} = \beta_0 + \beta_1 EG_{it-1} + \beta_2 GE_{2it} + \beta_3 HC_{3it} + \beta_4 L_{4it} + \beta_5 INF_{5it} + e_{it} \text{.....(2)}$$

2. Equation estimation model with two-step estimator in the long :

$$EG_{it} = \beta_1 GE_{1it} + \beta_2 HC_{2it} + \beta_3 L_{3it} + \beta_4 INF_{4it} + e_{it} \text{ .....(3)}$$

Keterangan :
EG : Economic growth
EG_{-1} : Lagged Economic growth
GE : Government expenditure
HC : Household consumption
L : Labor
INF : Infrastructure

β_0 : Constants
β_1, β_2, β_3: Regression coefficient
i : Individual (1,2,3…n)
t : Time (1,2,3…n)
ei : Eror term

Model specification test

Best model selection

The best model was selected to determine the best model between the two models in the dynamic panel data used in this study. To find out can be seen from the model whether the estimator contains bias or impreciseness, if one of the models contains bias, then the other model is the best and most appropriate to use. The unbiased estimator can be seen from the value of the coefficient-lagged dependent variable of the FD GMM or SYS GMM model. By comparing the value coefficient lagged dependent variable of the SYS GMM model, the model is not biased if the lagged dependent variable of the FD GMM or SYS GMM model is between the lagged variable dependent of the FEM model and the PLS model.

Sargan test

Sargan tests are performed to see or ensure that the instrument variables used are valid, the number of which is more than the number of estimated parameters (overidentifying conditions). The test was performed by comparing the prob chi-square or p-value value with alpha = 5%. If the p-value > alpha, it can be concluded that the instrument variable is valid, and if the p-value < alpha, then the instrument variable is invalid.

Arellano-Bond test

The Arellano-bond test is carried out to see the results of the estimated obtained consistency or not consistency; with this, it can see whether there is a correlation between one residual component and another residual component in the GMM System model. This test compares the value of prob z or the p-value of order 2 with alpha = 5%. If the p-value > alpha, then there is no autocorrelation. If the p-value < alpha, then there is an autocorrelation indicating that the resulting estimate is inconsistent.

Z test

The z-test is performed to see whether or not there is a partial influence of independent variables on dependent variables. Testing can be done by comparing prob z with alpha = 5%. If prob z < alpha, then the independent variable partially has a significant effect on the dependent variable, and vice versa (Gujarati, 2012).

Wald test

This wald test was carried out to see whether or not there was a simultaneous influence of independent variables on dependent variables. If the prob chi-square or p-value value < alpha, the independent variable simultaneously significantly affects the dependent variable and vice versa.

RESULTS AND DISCUSSION

Descriptive statistics

Based on macroeconomic aspects, the average economic growth during 2011-2020 was 5.4%, with the highest economic growth of 9.74% in Bungo Regency in 2011, while the lowest economic growth of -3.87% occurred in Tanjung Jabung Timur Regency in 2020.

Table 1. Descriptive statistics

Variable	Maximum	Minimum	Mean	Annual Growth Rate (%)
Economic growth	9.74	-3.87	5.4	-17.2
Government expenditure	1702.41	403.65	1024.65	9.3
Household consumption	12,061.80	1,551.35	5,128.54	3.7
Labor	286.387	35,842	141.098	2.2
Infrastructure	261.69	17.11	92.67	-5.3

Then the average government expenditure is 1024.65 billion rupiahs, with annual growth of 9.3%. The most government expenditure was 1702.41 billion rupiahs, namely the government expenditure of Tanjung Jabung Barat Regency in 2019. The high government expenditure was due to the increase in original local income, which included taxes, levies, and other legitimate income, then due to the increase in balance funds allocated to the government in Jambi Province. While the least government expenditure was Merangin Regency in 2011 amounted to 403.65 billion rupiahs.

Furthermore, the highest household consumption occurred in Jambi City in 2019 at 12,061.80 billion rupiahs. The high household consumption is inseparable from the increasing number of producers who innovate to meet the community's needs, then because of the influence of E-commerce because it can make it easier for people to transact and get what they need. While the lowest household consumption occurred in Sungai Penuh City in 2011, amounting to 1,551.35 billion rupiahs. The average household consumption is 5,128.54 billion rupiahs, with annual growth of 3.7%.

The most labor occurred in Jambi City in 2019, as many as 286,387 people, and the large labor is due to a large amount of incoming investment of 192,908.3 billion rupiah, which has an impact on a large number of workers absorbed. At the same time, the least labor occurred in Sungai Penuh City in 2013 as many as 35,842 people. The average workforce is 141,098, with annual growth of 2.2%.

Road infrastructure with good condition occurred the most in Merangin Regency in 2015 at 261.69 kilometers. This increase is due to the large number of projects aimed at improving road infrastructure as a form of government attention in infrastructure development to attract the attention of domestic and foreign investors. The development of infrastructure in an area can be used as the main capital to increase economic growth. At the same time, road infrastructure with good condition occurred the least in Full River City in 2018 at 17.11 kilometers. Road length infrastructure with the good condition has an average of 92.67 kilometers, with annual growth of -5.3%.

Model specifications test

In this study, we will look for the best model among the two models in the dynamic panel data that will be used in this study. To find out, it can be seen from the estimator model that it contains bias or is imprecise. If one of the models contains bias, then the other model is the best and right to use. The results of the FEM, FD GMM, SYS GMM, and PLS models can be obtained and can be seen in Table 2.

Table 2. Model estimation FEM, FD GMM, SYS GMM, and PLS

Variable	FEM	FD GMM	SYS GMM	PLS
C	10.486007	12.271009	6.146755	1.5683888
EG_{t-1}	0.3723041	0.31675317	0.5019464	0.67559438
GE	0.00106063	0.00280801	0.0011873	-0.00110503
HC	-0.0004462	-0.00166697	-0.0004462	0.00009739
L	-0.00002505	-0.00003825	-0.0141216	-7.705e-06
INF	-0.0199886	0.01274951	0.0141216	0.01298034

Based on Table 2, the value of the FEM model's lagged dependent variable coefficient is 0.37230341. The value of the lagged dependent variable coefficient of the FD GMM model is 0.316753, the lagged dependent variable of the SYS GMM model is 0.50194639, and the value of the PLS model lagged dependent variable coefficient is 0.67559435. In this case, the lagged dependent variable of the FD GMM model is below the lagged dependent variable of the FEM model, which indicates that the estimate obtained by the FD GMM model contains bias and inaccuracies.

Then the value of the lagged dependent variable coefficient is 0.5019464. This indicates that the coefficient lagged dependent variable of the SYS GMM model is between the value of the lagged coefficient lagged dependent variable of the FEM and PLS models. It can be concluded that the SYS GMM model estimation results have accuracy and do not contain bias. Therefore, the best model used in this study is the SYS GMM (System Generalized Method of Moment) model.

Sargan test

To find out and ensure that the instrument variables used are valid, a Sargan test can be carried out, for the results of the Sargan test can be seen in Table 3.

Table 3. Sargan test

Chi-Square	Prob.
9.809211	1.0000

Based on Table 3, a prob chi-square value of 1,000 is obtained, and it can be seen that prob chi-square is greater than alpha (5%). It can be concluded that the instrument variable does not correlate with an error, indicating that the instrument variable is valid.

Arellano-Bond test

In using dynamic panel data regression, the estimation results obtained must be consistent to determine if an Arellano-bond test can be carried out. The results of the Arellano-bond test can be seen in Table 4.

Table 4. Arellano-Bond test

Order	z-Statistics	Prob.
1	9.809211	0.0274
2	1.0000	0.4775

Based on Table 4 obtained the value of prob z in the 2nd order of 0.4775. It can be seen that prob z is greater than that of alpha (5%). So it can be concluded that there is no autocorrelation in the first difference error in the 2nd order so that it can be ascertained that the resulting estimate has been consistent.

The SYS GMM model estimation in the short term

Based on the results of processed data obtained, estimates of the influence of lagged economic growth and the influence of government expenditure, household consumption, labor, and infrastructure on economic growth in the short term can be seen in Table 5.

Table 5. Short-term SYS GMM model esimation

Variable	Coefficient	Std.Error	z-Statistics	Prob.
C	6.146755	2.481152	2.48	0.013
EG_{t-1}	0.5019464	0.1936762	2.59	0.010
GE	0.0011873	0.0014936	0.79	0.427
HC	-0.0004462	0.0004642	-0.96	0.336
L	-0.0141216	7.62e-06	-4.28	0.000
INF	0.0141216	0.0041375	3.41	0.001

Z test

The z-test was performed to partially determine the independent variable's effect on the dependent variable. Based on table 5, the lagged economic growth variable obtained a coefficient of 0.50194639, a statistical prob z of 0.010 < 0.05(alpha). It can be concluded that the lagged growth partially had a positive and significant effect on economic growth.

The government expenditure variable obtained a coefficient of 0.0011873, the statistical prob z of 0.427 > 0.05 (alpha). In the short term, government expenditure partially has no significant effect on economic growth. The household consumption variable obtained a coefficient of –0.0004462, the statistical prob z of 0.336 > 0.05. In the short term, household consumption partially has no significant effect on economic growth.

The labor variable obtained a coefficient of -0.0000326, a statistical prob z of 0.000 < 0.05. In the short term, labor partially has a negative and significant effect on economic growth. The infrastructure variable obtained a coefficient of 0.0141216, the statistical prob z of 0.000 < 0.05(alpha). In the short term, infrastructure partially has a positive and significant effect on economic growth.

Wald test

This wald test is carried out to determine the influence of independent variables simultaneously on dependent variables, as the results of the Wald test are in Table 6.

Table. 6 Wald test

Chi-Square	Prob.
9.809211	0.0000

Source: data processed, 2022

Based on Table 6 obtained a prob chi-square value of 0.000 < alpha (0.05), it can be concluded that lagged economic growth, government expenditure, household consumption, labor, and infrastructure simultaneously or together significantly affected economic growth.

The SYS GMM model estimation in the long run

Based on the results of processed data obtained, estimates of the influence of government expenditure, household consumption, labor, and infrastructure on economic growth in the long term can be seen in Table 7.

Table 7. Long-term SYS GMM model estimation

Variable	Coefficient	Std.Error	z-Statistics	Prob.
GE	0.0023838	0.0034459	0.69	0.489
HC	-0.000896	0.0008975	-1.00	0.318
L	-0.0000655	0.0000366	-1.79	0.074
INF	0.0283536	0.0077576	3.65	0.000

Z test

Based on Table 7 of the variable government expenditure coefficient of 0.0023838 prob z of 0.489 > 0.05. In the long run, government expenditure partially has no significant effect on economic growth. Household consumption variables have a coefficient value of -0.000896 and a prob z of 0.318 > 0.05. In the long term, household consumption partially has no significant effect on economic growth.

Labor variables with a coefficient value of -0.0000655, and a prob z value of 0.074 > 0.05, show that labor partially has no significant effect on economic growth in the long run. Infrastructure variables have a coefficient of 0.0283536 and a prob z of 0.000 < 0.05. In the long term, infrastructure partially has a positive and significant effect on economic growth.

Discussion

The effect of lagged economic growth on economic growth

Based on the processed data, the variable lag of economic growth has a positive and significant effect on economic growth. If there is an increase in the previous economic growth of 1%, then economic growth will increase by 5%. The results of this study are by Keynes's theory, where economic growth occurs when aggregate demand exceeds its supply, then experiences a state of "production shortage". In the next period, the output or the price will increase, allowing it to occur simultaneously (Mankiw, 2007). The increase in output is carried out so as not to lack stock of goods if the demand is high again, with the increase in such output, in the long run, will be able to increase economic growth. This theory is proven by research conducted by Abdouli and Hammami (2017), which found that lagged economic growth has a positive and significant effect on economic growth in MENA countries. The results of this research are different from other regions, namely Vietnam, supported by research conducted by Phuong and Tuyen (2018) shows that lagged economic growth had a negative and significant effect on economic growth in Vietnam.

The effect of government expenditure on economic growth

Based on the processed data, government expenditure variables have no significant effect on short-term and long-term economic growth. The findings of this study do not align with Keynes's theory which argues that what can determine the level of the economy is aggregate demand and one of the components of aggregate demand is government expenditure. This study's findings are consistent with Hakib's (2018) research showing that government expenditure does not significantly affect economic growth. The insignificant effect of government expenditure occurs because the expenditures incurred are not always on matters of a developmental nature to encourage the economy, such as expenditures on infrastructure and public facilities that become facilities and infrastructure in production process activities. Then the allocation of funds spent on development that can encourage economic growth is less than expenditures for funding government apparatus such as expenditures on employee salaries, official travel, maintenance expenditures, and others.

Based on data from the Directorate General of Financial Balance, the average expenditure of the Regency/City government in Jambi Province during 2011-2020, according to the type of expenditure, the average for capital expenditures of a development nature is 3,398.21 billion rupiahs or 23.16% of the total expenditure. While consumptive expenditures, namely employee expenditures, amounted to 5,801.32 billion rupiahs or 39.54% of total expenses, they were then shopping for goods and services consisting of official travel expenses, rent of the building, purchase of office stationery and other proportion of 20.09% or 2,801.78 billion rupiahs. The remaining 17.21% is for other expenditures. The proportion of expenditure for funding government officials in Jambi Province is large because there are many civil servants and honorary workers whose salaries come from the Regional Budget of Jambi

regency/city. The number of civil servants in Jambi Province in 2020 was 11,082 people.

Based on this, it illustrates that the government tends to allocate its funds to government apparatus funding. The proportion of expenditures on the nature of development is smaller than that of expenditures on matching government apparatuses, causing government expenditures to have no significant effect on economic growth in the short and long term. This research results differ from other regions, namely East Java Province. Where the total budget in East Java Province is greater, reaching 101,163.84 billion rupiahs, while in Jambi Province, in the same year, it was only 15,758.10 billion rupiahs. The size of the East Java Provincial government's output can encourage economic growth. This is supported by research conducted by Hidayat and Nalle (2017), showing that government spending has a positive and significant effect on economic growth in East Java Province.

The effect of household consumption on economic growth

Based on the processed data, the household consumption variable has no significant effect on economic growth in the short term or in the long term. The results of this study are not in accordance with Keynes's theory which explains that it can determine the level of the economy, namely aggregate demand, and household consumption is one of the components of aggregate demand. This study's findings are consistent with the research of Rasasi et al. (2021) that household consumption has no significant effect on economic growth. This study's findings demonstrate that household consumption does not always have an impact on a region's economic growth because household consumption does not have a significant impact on economic growth. This is because there are still many products or goods needed by society that are not produced in Jambi and are brought from outside the Jambi area. With this, it can be ascertained that there are still many goods consumed by the community from outside the Jambi area.

Based on data from BPS, the average per capita expenditure a month in 2011-2020 in Jambi Province for non-food expenditures the highest percentage is the housing and household facilities category of 22.42, then the second is the category of various commodities and services at 12.9%, the third highest in the durable commodity category at 4.64% and the fourth highest is for the clothing and the like category at 3.72%. Based on data from BPS, the number of apparel industry companies in Jambi Province is 1 company, namely PT Fortsindo. With a large variety of clothes and the like consumed by the people, however, there is only 1 apparel industry company in Jambi Province, meaning that Jambi Province still supplies apparel to meet the community's diverse needs. It indicates that many apparel goods are still consumed by people from outside the Jambi Province area.

Then the highest percentage for the average food expenditure, namely the food and beverage category, is 11.55% of the total expenditure. Based on data from BPS, the number of food industry companies in Jambi Province is 94 companies with 11 different types of industries (BPS, 2020). With many types of diverse types of community needs in Jambi Province, there are only 11 different types of industries, meaning that there are still many food items supplied from outside the Jambi area to meet various types of societal needs. Furthermore, the second highest average percentage of food expenditure is cigarettes at 7.73% of total expenditure. Cigarette products are still supplied from

outside the Jambi Province area because no industries or companies produce cigarettes in the Jambi Province area. Then the third highest average expenditure is grains at 7.71%. For rice products themselves to meet insufficient needs, most of them still supply rice from the provinces of South Sumatra, Lampung, and West Sumatra (BPS, 2020).

With many types of community needs, there are only a few types of goods or commodities produced in Jambi, meaning that Jambi Province still supplies many goods from outside Jambi Province. It results in many people consuming goods produced from outside the Jambi area to meet their daily needs. Thus, household consumption does not significantly affect economic growth in the short and long term. This study's results differ from other regions, namely in North Sulawesi Province, supported by research conducted by Haniko et al. (2022) showing that household consumption has a positive and significant effect on economic growth in North Sulawesi Province.

The effect of labor on economic growth

Based on the processed data, labor variables in the short term have a negative and significant effect on economic growth. Still, labor does not significantly affect economic growth in the long term. The findings of this study do not align with the Solow-Swan theory, which holds that labor is one of the production factors and that if there is a lot of labor, production output can be increased. This study's findings are consistent with the research of Pandudetya et al. (2021) that labor has a negative and significant effect on economic growth in the short term. The results of this study show the negative influence of labor on economic growth, due to the large number of unproductive labor that results in not being able to boost the economy even though there are many workers. For the creation of productivity, it is necessary to skilled experts in order to produce goods and services, one of the measures of productivity and quality of labor is the level of education.

Based on data from BPS workers with completed education, the average workforce in Jambi Province from 2011-2020 who did not graduate and elementary school graduates were 684,187 people, while junior high school graduates were 301,942 people, high school graduates were 409,805 people and college graduates were 175,863 people. This indicates that there are still many workers with education completed at a level below high school by 60.04%. This illustrates that many workers in Jambi Province still lack trained skills, so their productivity is low in carrying out production. Furthermore, this unproductive labor occurs due to many unfulfilled or underemployed labor. Based on data from BPS, the average population who worked 35 or more hours of work in a week (full labor force) in Jambi Province from 2011-2020 there were 862,170 people, and during the full workforce with as many as 709,532 people or 45.1% of the total.

This indicates that there are still many non-full workers in Jambi Province, with a large number of non-full workers; this means that there are still many unproductive workers. Therefore, the large number of unproductive and unskilled or underskilled labor results in low productivity or insufficient production levels. The results of this study differ from other regions, namely in the member countries of the Organization of Islamic Cooperation (OIC), supported by research conducted by Yeisa and Rani (2020) showing that labor has a positive and significant effect on economic growth in OIC countries.

Then, in the long run, labor has no significant effect on economic growth. This happens because the workforce does not have the skills and skills to be able to increase production in the long term. This means that labor has no long-term effect on the level of production in the long term. Therefore, labor in the long term does not have a significant effect on economic growth. The results of this study align with research conducted by Tarigan (2022), which shows that the workforce does not significantly affect economic growth in North Sumatra in the long run. However, the results of this study are different from other regions, namely in ASEAN countries, supported by research conducted by Widyawati (2017) showing that in the long run, the workforce has a positive and significant effect on economic growth in ASEAN countries.

The effect of infrastructure on economic growth

Based on the processed data, infrastructure variables positively and significantly affect economic growth in the short and long term. This study's findings are consistent with the research of Sahoo et al. (2010), where infrastructure has a positive and significant effect on growth. The positive influence of this infrastructure is that road infrastructure contributes greatly to the smooth distribution that can allow production to be greater. Adequate road infrastructure can connect one area to a remote area. In the long run, the remote area will form new reef centers and, in turn, will grow the economic level in the region. Therefore, road infrastructure has a positive and significant effect on economic growth in the short and long term. The results of this study differ from other regions, namely in North Sumatra Province, supported by research conducted by Syamsidar (2021) showing that infrastructure does not significantly affect economic growth in North Sumatra Province.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Based on the analysis results, it can be concluded that lag economic growth had a significant positive effect. In the short term, labor has a significant negative effect, and infrastructure has a significant positive effect on economic growth. At the same time, government spending and household consumption have no significant effect on economic growth. In the long run, infrastructure has a significant positive effect on economic growth. Meanwhile, government spending, household consumption, and labor have no significant effect on economic growth.

Recommendation

It is hoped that the government will be able to boost the economy by intervening or interfering with the government in policies and managing government expenditures so that their use is efficient and on target and increase the allocation of development expenditure funds.

Then it is hoped that the government can create training programs in various fields for workers to increase skills so that productivity increases. And it is hoped that the government will be able to create investment and facilitate its licensing so that investors can establish new companies and factories that can produce and supply goods for the needs of the society in Jambi Province.

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Effects of corporate governance disclosure on profitability of public listed firms in Tanzania

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Abstract

This study investigated the effect of corporate governance information (CGI) disclosure on firms' profitability in the Dar es Salaam Stock Exchange (DSE). Twenty-one listed companies were studied for a period ranging from 2006 to 2021 using a mixed research method with an explanatory sequential design. Return on equity (ROE) and Return on Assets (ROA) was employed as dependent variables in the panel data analysis. CGI disclosure was an independent variable. The control variables were geographical diversification, firm age, size, and sales growth. Secondary data was obtained from DSE. Qualitative data was gathered via semi-structured interviews. Thematic analysis and a random effect model with two estimates (1 and 2) were used to analyze qualitative and quantitative data. The findings suggested a positive and significant effect of CGI disclosure on firm profitability. The findings add to the body of knowledge by signifying stakeholder theory. The study concluded that Disclosure of CGI might undeniably result in increased profitability. We recommended that firm managers look closely at CGI disclosure, enhance their disclosure practices, and invest in disclosure strategies that benefit stakeholders.

Keywords: *Corporate governance, Information disclosure, Firm profitability, ROA, ROE*

JEL Classification: G39, O16, M10

INTRODUCTION

The accumulation of invaluable lessons from a string of business failures that occurred in different parts of the world gave rise to the continued relevance of corporate governance in various countries and regions around the globe (UNCTAD, 2007). Due to the worldwide importance of corporate governance, listed companies have been subjected to great pressure in recent decades to disclose Corporate Governance Information(CGI) (Nobanee & Ellili, 2022). CGI disclosure offers additional information to stakeholders and eliminates the information gap between insiders and investors caused by managers' dominance of information access and control (Nurfitriana & Yadiati, 2018). The annual report is regarded as one of the primary sources of information through which management may disclose CGI (Esther & Henry, 2018).

Stakeholders' theory was put forth by Edward Freeman (1984); it states that the firm's effectiveness is measured by its ability to satisfy its stakeholders. The firm's stakeholders are all the parties impacted by its operations, and its existence, in the long

run, is based on their satisfaction (Muis et al., 2022). Stakeholders include customers, workers, suppliers, political action organizations, environmental groups, local communities, the media, financial institutions, governmental bodies, and more (Rintamäki, 2018). This concept portrays the firm's environment as a biosphere of connected groups that must be satisfied to maintain the firm's health and profitability (Simon, 2016). This demonstrates that stakeholders are vested in ensuring that the resources are exploited to the fullest extent of their potential, which should ultimately benefit society as a whole (Mottis, 2019). Effective corporate governance is one of the key ingredients in satisfying the stakeholders' vested interests, as the management overlooks the optimal exploitation of firms' resources for the benefit of all the concerned parties. From that point of view, this study will test the stakeholders' theory by determining if the disclosure of CGI affects firm profitability.

Even though annual financial reports might present a brighter financial future for the firm, there exist Nonfinancial factors drive large firms to collapse (Ooghe & De Prijcker, 2008). Such failures spurred governments all around the world to seriously probe alternative methods to improve their particular countries' corporate governance frameworks (Roszaini & Mohammad, 2006). Different countries have distinct national traits as well as social and economic priorities (Joshi, 2021). What is acceptable in one nation may not be desirable in another (Ibiam & Nwogo, 2017). Similarly, each firm has its own history, culture, and commercial objectives (Vieira, 2015). As a result, corporate governance cannot be static; there is a chance for it to vary unpredictably among countries and enterprises as it is driven by internal and external environmental dynamism (Joseph & Tranos, 2018). Ultimately any effect on corporate governance might end up affecting firm profitability.

Profitability is the ability of a firm to generate more money than it spends. The majority of a firm's earnings come from its operational activities. There will be no profit if the company is not operating efficiently (Oluwaseyi et al., 2021). Profit and profitability are distinct concepts. Profit is an absolute monetary unit, but profitability is a relative measure of how efficiently and effectively a company uses its resources to generate such profit. ROA and ROE are two of the most often used metrics of profitability, and they assess profit relative to the resources used to achieve that profit (Francis, 2020). Since profitability largely depends on a firm's operational efficiency and effectiveness, it is more likely to be influenced by corporate governance (Hakimah et al., 2019). This mainly stems from the fact that individuals charged with governance have the right and duty to control and direct the entire firm's operations (Iqbal & Kakakhel, 2016). Bestowing of rights and duty to control firm's resources gave rise to the need for CGI disclosure.

The disclosure of CGI is guided by the global reporting initiative standard no 102 – governance disclosure. GRI standards offer firms a flexible and future-proof reporting framework as processes and themes of CGI are always up to-date and relevant when a firm employs the GRI standards (Strozzilaan, 2020). However, the presence of standards doesn't negate the fact they might be interpreted and implemented differently based on cultural, economic, and business variations across nations (Ghasarma et al., 2017). Due to variations in interpretations and implementation of standards, we argue that the effect of corporate governance disclosure on the profitability of businesses can vary across the globe.

Researchers across the globe have probed to establish the effect of corporate governance on firm profitability. Harisa et al. (2019) concluded that the quality of CGI disclosure does not affect the profitability of Indonesian and Malaysian Islamic banks.

They further narrated that companies found it difficult to grasp the benefits of CGI disclosure, felt that it is an activity that puts an undue demand on the firm's resources, and believed that CGI transparency is not lucrative. Buallay (2017) revealed that there was no direct effect of corporate governance on firm profitability in Saudi Arabia, as firms with low implementation of corporate governance had higher operational performance measures (ROA and ROE). Panchasara & Bharadia's (2013) results showed that the financial and nonfinancial disclosures of Corporate Governance greatly impacted the profitability of Indian banks proxied by ROA. Kaur & Vij (2017) established that the Return on Assets and Return on Equity of Nairobi Securities Exchange (NSE) Companies were positively affected by CGI disclosure.

In the African context, Lishenga & Mbaka (2008) concluded that better corporate governance disclosure does not significantly affect the profitability of Kenyan firms, as there was an inability to establish a significant relationship between compliance with CGI disclosure and ROA and ROE. A study done by Adefemi et al. 2018) also failed to establish any significant effect of CGI disclosure on the profitability of Nigerian firms. Herbert & Agwor (2021) determined that Nigerian banks' corporate governance disclosure of the board of directors had a considerable positive effect on ROA. Still, it had no meaningful effect on ROE.

Studies in Tanzania have examined the relationship between corporate governance and firm profitability. Masasi (2020) found that corporate governance positively affected banks' ROA and ROE. Assenga et al. (2018) determined that the ROA and ROE of Tanzanian-listed firms were negatively affected by CEO dualism but were positively affected by board size and gender diversity. Matemu (2020) found that corporate governance positively impacted the ROA and ROE of financial institutions registered in DSE. The results indicate a contradiction in the different aspects of corporate governance effects on firms' profitability. Apart from the contradiction, the researchers considered only certain aspects of corporate governance and not in its all entirety as is required to be disclosed by the standards. Masasi (2020) focused on controls, and board independence and composition, Assenga et al. (2018) focused on board's characteristics, and Matemu (2020) focused on board size, composition, and characteristics. A glimpse view offered by other researchers in Tanzania necessitates further studying the effect of corporate governance disclosure on firm profitability by considering all the aspects of CGI disclosure.

Harbaugh & To (2020) argue that disclosing information might sometimes backfire on the issuer. Thus nondisclosure might bring an equilibrium if information standards are low or if previous expectations were positive. They further argued that full disclosure of the information is viable if standards of information are high or expectations are low enough. Sticking to the same vantage point, we argue that CGI disclosure might positively or negatively affect firms' profitability. Some firms might be reluctant to fully disclose CGI due to the information being of low standards and detrimental. In that light, we sought to establish the effect of CGI disclosure on the profitability of listed firms in Tanzania.

The presence of a conclusion dilemma among researchers, variations in interpretations, and implementation of GRI standards resulting from cultural, economic, and business environment differences coupled with the focus of Tanzanian researchers on board compositions and characteristics when assessing the effect of corporate governance on firm's profitability creates a gap in the literature. Thus, the primary objective of this research is to fill that gap by investigating whether CGI disclosure affects the profitability of Tanzania's publicly listed firms. Our study looked at firms

that were traded on the Dar es Salaam Stock Exchange between 2006 and 2021. The novelty of this study stems from its research design and the substantive results on the details of the effect of CGI disclosure on the enhancement of a firm's profitability. It offers relevant information to investors and regulators, which they can use while making various decisions regarding the listed firms. To the best of our knowledge, the research approach used in this paper and the outcomes of this research have been largely underexplored in the Tanzanian context.

METHODS

The study used a mixed explanatory sequential research design to give a larger and more comprehensive view of the paper and to explain initial quantitative findings (Almeida, 2018). With this approach, it is easy to draw powerful and meaningful conclusions due to the collaboration of the design's strong numeric emphasis and relevant qualitative explanations (Almeida, 2018). While in pursuit of the research result, we formulated the following hypothesis

$H_{1:}$ Corporate governance disclosure has a positive effect on firms' profitability

Sample and data

Twenty-one firms in the Dar es Salaam stock exchange (DSE) made up the Sampling Population. The study used the census approach as all the firms in the DSE were studied financial years 2006 to 2021 were included in the study's time frame. Panel data on the dependent variable firm profitability (ROA, ROE), independent variables CGID, and control variables (firm size, firm age, geographical diversification, and sales growth) were obtained from audited annual reports of firms listed on the DSE. The research used panel data for the period extending from 2006 to 2021. The choice to use panel data was based on its capability to offer reduced collinearity while providing greater information (Barthelemy, 2017). 2006 is also the year data became available in electrical format from the DSE. The Tanzania Company Ordinance 2002 also went into effect in 2006, and most of the listed companies began complying with the ordinance's criteria and IFRSs in compiling their financial reports in the same year after it was institutionalized in 2004. As a result, this research opted to begin its investigation in 2006.

Interviews with a semi-structured format were conducted so quantitative research results could be supported. Twelve key informants were interviewed for the study. One broker, four regulators from CMSA and DSE, and Seven senior executives from various firms were chosen as key informants. Respondents were selected based on their understanding of DSE enterprises' internal transactions, governance, and tenure in office. Interviews were employed to offer better insights from many who understand the internal affairs, processes, and relationships of the organizations investigated in this study (Maia, 2021).

Analytical model

A regression model was employed to establish the effect of CGI disclosure on firms' profitability. Other researchers, such as (Kaur & Vij, 2017; Panchasara & Bharadia, 2013), have also used a similar model to determine the effect of CGI disclosure on firms' profitability. The regression model's appropriateness stemmed from the dependent variable's continuous nature. Equation (i) and (ii) presents the models

$$ROA_{it} = \beta_0 + \beta_1 CGID_{it} + \beta_2 FS_{it} + \beta_3 FA_{it} + \beta_4 Geog\ diver_{it} + \beta_5 Salgrowth_{it} + FD_i + TD_t + e_{it} \ldots (1)$$

$$ROE_{it} = \beta_0 + \beta_1 CGID_{it} + \beta_2 FS_{it} + \beta_3 FA_{it} + \beta_4 Georg\ diver_{it} + \beta_5 Salgrowth_{it}\ FD_i + TD_t + e_{it} \ldots (2)$$

Where: ROA and ROE are dependent variables, β_0 is constant, β_1 to β_5 were the estimates which included independent variables Corporate Governance Information Disclosure (CGID), Firms size (FS), Firm Age (FA), Geographical diversification (Geog diver) and Sales growth (Sal growth) while vectors FD (Firm Dummy) represented firms time invariant specific effect and TD (Time Dummy) represented time variant specific effect, e is the error term, and i and t are firm and time elements respectively

ROA was chosen because of its ability as a tool to relate profits against operational efficiency. It measures a firm's long-term financial viability by considering its use of existing assets to generate profits (Strouhal et al., 2018). Under corporate governance, ROA is a good measure of the agents' utilization of available assets to generate profits for the principal. The value of ROA was determined using the formula presented in equation (3)

$$ROA = \frac{Profit\ before\ tax}{Total\ assets} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

ROE was used due to its ability to measure profit by focusing on profitability for shareholders (Albuja et al. 2011). In this study, shareholders are a group of interest since they are among the stakeholder as presented by the stakeholder's theory. ROE was determined using the formula presented in equations (4)

$$ROE = \frac{Profit\ after\ tax}{shareholders'\ equity} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Lishenga & Mbaka (2008) and Buallay (2017), among others, are examples of researchers who employed ROA and ROE as performance measurement tools when assessing the effects of CGID on firms' profitability.

Before beginning the data analysis process, the researcher made sure that the data satisfied all of the requirements for regression assumptions and then moved on to the next step. After conducting a Hausman specification, it was determined that random effects were likely to be more consistent and efficient.

Computation of Corporate Governance information disclosure (CGID) Index

In order to construct the corporate governance disclosure index, we used information extracted from the annual reports of the firms whose corporate governance disclosures were under scrutiny. The index was constructed based on a dichotomous scale in which an item that was disclosed was marked as 1, and the undisclosed item was marked as 0. As the regulations require the disclosure of 40 items related to corporate governance, then the disclosure index was calculated as

$$CGID = \frac{Total\ score\ of\ the\ company}{Maximum\ \ score\ obtainable\ by\ the\ company\ as\ per\ regulations\ (40)} \times 100 \ldots\ldots\ldots (5)$$

The CGID value varied from 0 to 100, with 0 being the worst disclosure and 100 representing the greatest possible disclosure by a firm. Kaur & Vij (2017) and Wendy et al., 2020) adopted a similar approach to measuring CGI information disclosure. Variables measurement are presented in Table 1

Table 1. Variables measurement

Variables	Measurement	Expected Sign
Dependent Variable		
Return on Asset	Net profit before tax divided by total assets.	+/-
Return on Equity	Net profit after tax divided by shareholders' equity	+/-
Independent variable		
CGI disclosure	It is dichotomous, i.e., 1 for disclosure and 0 if otherwise	+
Control variables		
Firm size	Natural logarithm of the total assets	+/-
Geographical diversification	Dichotomous, i.e., 1 for diversification and 0 for otherwise	+
Firm age	Number of years since incorporation till the period of study	+/-
Sales growth	Current year's sales minus the previous year's sales over the results of the previous year's sales	+/-

Note that: + = positive and – = negative

RESULTS AND DISCUSSION

Descriptive statistics linking CGI disclosure and firm profitability

The effects of CGI disclosure on firm profitability were examined in this research. Descriptive statistics are presented in Table 2 to give an overview of the mean, minimum, maximum, and standard deviations of ROA, ROE, firm size, firm age, sales growth, and geographical diversification.

Table 2. Descriptive results for dependent and independent variables

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
ROA	265	12.377	25.214	-163.772	69.260	-0.739	2.603
ROE	265	14.237	24.304	-143.832	62.460	-0.238	1.401
CGI	265	0.680	0.107	0.475	0.875	0.497	2.406
FA	265	23.568	17.160	0	69	0.990	2.224
Geog diver	265	0.619	0.385	0	1	-0.660	2.657
FS	265	7.696	1.105	4.674	10.138	-0.219	2.284
Sal growth	265	0.826	8.848	-0.899	97.525	0.439	2.310

Table 2 shows that the average ROA was 12.38%, with a minimum loss of 163.7% and a maximum profit of 69.26%. ROA's standard deviation was 25.21, indicating volatility in returns. On average, ROE was 14.2% with a minimum loss of 143.80% and a maximum return of 62.460%; ROE standard deviation was 24.3, indicating volatility in returns. CGI Disclosure averaged 68%, ranging from 47.5% to 87.5%. DSE-listed enterprises satisfied 68% of CGI disclosure requirements on average. Such findings imply that stakeholders didn't obtain the whole CGI information they wanted, according to CMSA (2002). Inadequate CGI disclosure may exacerbate agency problems and affect stakeholders' assessments of governance quality and capacity to drive the firm toward profitability (Kemei, 2017)

The average company age since incorporation was 23 years, and the average business size was 7.6 out of 10. Data also showed that 61.9% of firms were geographically diverse. Average sales growth of 82.6% shows that firms were stretching their selling and distribution over time. All variables have skewness values between 0 and 0.9 and kurtosis values between 1.4 and 2.6, suggesting normally distributed data with light tails (Jaume et al., 2020).

Regression analysis for CGI disclosure and firm profitability.

In order to assess the nature of the connection that exists between the dependent and independent variables, a random effect model was used. The regression was performed using two different estimates to assess whether the findings were consistent. The outcomes of the regression analysis are shown in Tables 3 and 4, respectively.

Table 3. Corporate governance disclosure and firm profitability (ROA)

Variables	**ROA**	**ROA**
Corporate governance disclosure	161.8623***	179.7050***
	(58.611)	(58.844)
Firm size	3.3019**	
	(1.383)	
Firm age		1.4024***
		(0.393)
Geographical diversification	13.7440**	
	(6.344)	
Sales growth	1.0549***	1.0554***
	(0.125)	(0.124)
Firm dummy	Yes	Yes
Time dummy	Yes	Yes
Constant	-130.9321***	-119.2496***
	(40.938)	(41.144)
Observations	265	265

*Standard errors in parentheses: * Significant at 10%, ** significant at 5%, *** significant at 1%*

CGI disclosure had a positive and statistically significant effect on ROA in all two estimations, as seen in Table 3. These findings are similar to those of (Panchasara & Bharadia, 2013) and (Herbert & Agwor, 2021), who also concluded that corporate governance disclosure positively affected the ROA of the firms they studied. The results contradict those of (Harisa *et al*., 2019) and (Lishenga & Mbaka, 2008), who failed to establish any significant effect of CGI disclosure on ROA. CGI disclosure proved to have a significant positive effect on ROA in all two models, even when specific control variables were removed, indicating that the results are robust. These results support the stakeholders' theory which proposes that a firm's effective existence is linked to its ability to satisfy the interest of stakeholders; by doing an activity that enhances the firm's ROA, that notion is reinforced as profitability is the main interest of investors and lenders (Lado-Sestayo & Vivel-Búa, 2019).

Interviews with some key informants (KIs) were conducted in order to gain a more in-depth and crystal-clear image of the connection between CGI disclosure and ROA. The perceptions gathered from their point of view suggested that CGI disclosure makes stakeholders more likely to have faith in the corporation's governance practices, enhancing ROA. Through the disclosure of CGI, all parties concerned have the impression that those in charge of governance are acting appropriately and making

sound judgments concerning the appropriate use of available resources. During the interviews, one of the managers of the company mentioned that;

"*CGI disclosure Inspires confidence among stakeholders as it portrays a glimpse of the atmosphere of the system of rules and standards that govern our company's operations and align the interests of our stakeholders. The disclosure also indicates good corporate governance procedures and ethical business practices contributing to financial viability. I remember receiving a phone call from a non-investor who was impressed by the fact that our top 10 disclosed shareholders were 75 percent Tanzanians. He said he would continue to buy our products to support his fellow countrymen. You can only imagine the number of people who feel the same way. In the end, I am certain that CGI disclosure will have a positive impact on the firm's ROA" (firm manager)*

Table 4. Corporate governance disclosure and firm profitability (ROE)

Variables	**ROE**	**ROE**
Corporate governance disclosure	50.3829**	47.1304**
	(21.801)	(21.765)
Firm size	6.1361***	
	(1.564)	
Firm age		1.8139***
		(0.456)
Geographical diversification	14.1474***	
	(5.492)	
Sales growth	1.1506***	1.1460***
	(0.213)	(0.213)
Constant	-45.5764**	-42.0979**
	(18.705)	(18.728)
Observations	265	265

*Standard errors in parentheses: * Significant at 10%, ** significant at 5%, *** significant at 1%*

CGI disclosure had a positive and statistically significant effect on ROE in all two estimations, as seen in Table 3. These findings are similar to those of (Kaur & Vij, 2017; Assenga et al., 2018), who also concluded that corporate governance disclosure positively affected the ROE of the firms they studied. The results contradict Buallay (2017) and Khanifah et al. (2020), who failed to establish any significant effect of CGI disclosure on ROE. CGI disclosure proved to have a significant positive effect on ROE in all two models, even when specific control variables were removed, indicating that the results are robust. These results support the stakeholders' theory which proposes that firm's effective existence is linked to its ability to satisfy the interest of stakeholders. When CGI disclosure is linked to positive ROE enhancement, it indicates that the firm has effectively used the monies that shareholders have invested and can offer investors considerable profits at present. By engaging in activities that improve the ROE of the company, investors' primary interest in profitability is reinforced. (Lado-Sestayo & Vivel-Búa, 2019).

Interviews with key informants (KIs) were also conducted to obtain their perspectives on the effects of CGI disclosure on ROE. According to the opinions obtained from their perspective, CGI disclosure makes shareholders more to believe in the governance procedures of the firm and consider their investments to be in safe hands. By disclosing CGI, all parties concerned assume that the management is behaving appropriately and making sound judgments regarding the appropriate use of the invested equity. This gives the impression that those in charge of governance

appropriately use available resources, which ultimately enhances the firm's ROE. In the process of conducting the interviews, one of the employees from the Capital Market Regulatory authority stated that

"Our primary goal as a regulatory body is to safeguard the interests of the firm's shareholders. Every firm that wants to go public on the stock market must comply with the disclosure requirements, which is an absolute must. Shareholders may better understand a company's operational structure when the CGI is disclosed in the financial reports. Shareholder satisfaction increases when they know which individuals can operate the organization on their behalf and which individuals are responsible for how an organization's personnel act and perform. In essence, a strong CGI framework provides for Effective and efficient operations which contribute towards firm's ROE; thus a disclosure is paramount" (CMSA representative)

CONCLUSION AND RECOMMENDATIONS

Conclusion

According to the findings of this research, a significant portion of companies who are listed on the DSE makes public disclosures of CGI information. Disclosures of this kind are probably made to ensure compliance with regulatory obligations and boost the trust of the firm's many different stakeholders. Results also revealed that CGI disclosures had a positive and significant effect on the profitability of publicly listed firms. Since the disclosures affect profitability, there is a need to develop necessary measures that will mandate that good corporate governance procedures and disclosures be implemented in accordance with the GRI standards and local legal requirements.

Recommendation

We recommend that firm managers investigate the positive effects of CGI disclosure, improve their disclosure procedures, and invest in disclosure strategies that will bring even more value to stakeholders. The Tanzanian government needs to devise an efficient and effective method for rewarding those who disclose CGI and penalizing those who don't disclose CGI. Better Systems for CGI disclosure are to be created and strengthened, and regulatory authorities like CMSA should work toward this goal.

We propose that the area of potential future study may be narrowed by focusing on the disclosure practices of CGI across different sectors in Tanzania. In addition, the importance of each of the disclosure elements was treated the same throughout this investigation. Even though this helps to reduce biases, stakeholders may assign higher relevance to certain aspects of governance and less relevance to others. One facet of governance may be seen as a fundamental component and, as such, ought to be given greater weightage. Future studies might consider developing a weighted CGI disclosure index.

Similarly, we considered the lack of a weighted index as a limitation of this study. Perhaps the result would have been different if the items in the constructed CGI index were assigned weights in accordance with their relevance amongst stakeholders.

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