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The Digital Divide's Effect on Local Revenue and Gini Ratio

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Abstract.
Civilization has significantly been impacted by the advancement of information and communication technology (ICT). But because ICT has developed unevenly, there is now a digital divide that influences the economy. The purpose of this study was to examine how the digital divide affects local income and the Gini ratio. The digital gap index, the original income of 34 Indonesian provinces, and this ratio are the study techniques employed quantitatively with time series data for 5 years (2015-2020). Data study reveals that local income is negatively impacted by the digital divide, but this ratio is positively impacted by local indigenous income.

Keywords: digital divide, gini, income, economy

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1. INTRODUCTION

Globally, there has been a noticeable rise in internet users. The number of people who have access to the internet in 2019 was 56.73% of the global population. Internet usage is rising in the Asian region as well. A region's economy can benefit from more people using the internet. According to [1] and [2], Internet technology can increase productivity in various ways, one of which is that it can lower prices by reducing search costs (both business to customer and business to business), reduce the cost of international communication and lower the cost of entry into multiple markets between buyers and sellers, as well as make the economy more efficient and can increase productivity.

The impact of internet use in Indonesia itself is the existence of spatial inequality between regions, in addition to the country's economic growth [3] and [4]. [3] added that the occurrence of regional spatial inequality can increase the Gini Index, and the existence of digital inequalities, especially the use of the internet, can increase inequality in socioeconomic terms.

Inequality of income and the digital divide have been the subject of numerous studies. According [5], [6], [7], [8], [4], [9], [10], [11], shown that using the internet has a detrimental impact on income disparity. Utilizing the Internet can hasten technical advancement and increase output effectiveness. Therefore, effective Internet use will enhance the income distribution and lessen income inequality. Internet use makes it simple to swiftly deploy new technologies at cheap cost, increasing income, and technological advancements can raise productivity, therefore closing the digital divide is an effective way to reduce economic disparity.

According [9], [12], [13], [14], scores on Information and Communication Technology (ICT) have a positive correlative with economic growth rates. [9] also added that the regional digital divide negatively affects income inequality. [8] and [11] explains that ICT affordability is positively related to income distribution and socioeconomic inequality. For the low-income subgroup, inequality shows a positive impact on affordability to information and communication technolophy, while for high-income households, the impact is reversed. These findings provide useful insights in the design of policies and strategies to promote ICT affordability and penetration.

[15] asserts that variable internet users result in a rise of 0.09% and that a 1% increase in internet usage via cable would result in a 2% boost in financial development. In addition to demonstrating that there was a strong and favorable relationship between the rise in internet use via cable and the percentage of GDP, the increase in money in circulation increased by 0.40% when the internet usage ratio climbed by 1%.

[16] explained that the adoption of technology is one of the efforts to overcome problems in improving supply chain management, and [17] the utilization of technology can boost productivity, thus it's important to have human resources with the skills to grasp it and employ existing resources to their full potential to boost output.

According to the above definition, which is backed by theoretical and research gaps, more research must be done to examine the influence of the digital divide on local indigenous incomes and income inequality in a region.

2. RESEARCH METHODS

This research uses an approach quantitative with time series data. Times series data or also called data a time series is a set of data from a particular phenomenon obtained in several time intervals of course. In this study, the authors will analyze the relationship of the digital divide to the disparity of Local Indigenous Income. The data source used in this research is secondary data that has been processed by the Central Statistics Agency

which consists of: Data on the Index of the Use of Information and Communication Technology in 34 provinces in 2015-2020.

Data on Regional Original Income in all districts/cities in 34 provinces in 2015-2020 and gini ratio. The method used is a multiple regression model because this study analyzes to determine the one-way influence of free variables. After model selection, the hypothesis testing can be done with the selected model. The hypothesis testing was conducted using regression analysis. Regression analyses have a purpose to estimate the average population or the average value of a variable bound by a known free variable. In addition, regression analysis also serves to measure the strength of the relationship between two variables as well as indicate the direction of the relationship. Hypothesis testing has indicators that can be used as reference, i.e. statistical test F and statistical test T.

3. RESULTS AND DISCUSSION

Based on the results of research from 34 provinces in Indonesia, data was obtained that the digital divide index from 2015-2020 with the lowest index in 2015 in Povinsi Papua was 2.13 and the highest index in DKI Jakarta Province was 7.46. The average digitital gap in Indonesia is 4.6792. The digital divide in Indonesia occurs mainly between Western and Eastern Indonesia, urban areas and rural areas. As one of the illustrations of the digital divide that occurs in the eastern region is Papua Province, the percentage of households using internet over the past three months is 11.63% of the total households with a breakdown of 29.44% of households in urban areas and only 4.89% in rural areas.

From this data, it illustrates that internet use in Papua Province is still very low, especially then compared to cities and rural areas, the digital divide is increasingly clear. From the picture for the provincial level, it can be predicted that internet use in Papua itself is also very low. Furthermore, the original regional income from 34 provinces in Indonesia for 5 years from 2015-2020 with the highest PAD in DKI Jakarta of 57.561 Trillion Rupiah and the lowest from North Maluku Province of 2.36 Trillion Rupiah. Overall, pad in Indonesia averages 45.18 trillion Rupiah. As for the highest gini ratio of 0.441 in Yogyakarta and the lowest gini ratio of 0.262 in Bangka Blitung Province. The average gini ratio in Indonesia in 2015-2020 was 0.357.

The results of data analysis by regression obtained the following data:

Based on table 1, it can be seen that the t count for ICT is -2.166 which means that the digital divide has a negative effect on local original income, while t counts for local

Table 1: Hypothesis test results.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-93.765	5.183		-18.090	.000
	ICT	-.076	.035	-.160	-2.166	.031
	PAD	.028	.007	.316	4.263	.000
a. Dependent Variable: Gini Ratio						

original income of 4,263 which means that local original income has a positive effect on the gini ratio.

According [18], improved communications infrastructure lowers transaction costs and reduces commercial costs. So, the production of various sectors of the economy will increase. [19] research shows that the use of Information and Communication Technology (ICT) can reduce poverty & inequality. ICT and other macroeconomic factors, such as the economy, investment, international trade, education, and demographic distribution to income, are examined by [20] to determine the extent of internet use. As a result, ICT infrastructure and community capabilities have the strongest and most significant influence on internet use, followed by income distribution, investment, and global trade.

While the research of [21] explained that the use of the internet increased agricultural income by 20.1% and household income by 15.47%, agricultural income by 18.12% for farmer households participating in activities outside agriculture but increased agricultural income by 14.66% for households that had access to non-fixed assets. Internet use increased household income by 31.77% for farming households doing work outside of agriculture and by 15.33% for those with access to non-fixed assets, furthermore internet use increased household income for non-farming households by 24.85% [21].

[22] explained that ICT adoption exacerbated income disparities declining initially and in border areas, but as the use of ICT goods increased, income disparities diminished over time and across borders. Income inequality greatly decreased at the last stage (upper limit), reflecting the greatest utilization of ICT commodities [22].

While the relationship between ICT and income is the research [23] which measures about ICT readiness based on three main elements, namely access, use, and expertise and explains that income has a considerable impact on the development of ICT, which is especially seen in low-income countries, so countries should respond to the increasing use of ICT by imposing special rules for their own nature and uniqueness. [23] measured about ICT readiness based on three main elements, namely access, use, and expertise

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4. CONCLUSION

Based on the results of the study, it shows that the digital divide has a negative effect on local income. With the digital divide that occurs between urban areas and suburban areas, it further increases the distance (GAP) of development progress between city areas and suburban areas because the internet or the digital world is the main door in order to accelerate the pace of development of an area. To level the development in Indonesia, the government should immediately prepare strategic steps related to the equitable distribution of information and communication technology. If we look at now the expansion of the information and communication technology network still relies on the transmitter BTS (tower) as a network expansion, maybe in the future the government will have to open new steps by providing direct access to communication information via satellite for remote areas. Thus, the hope in the future is that there will be no more digital divide in Indonesia so that development will be more evenly distributed either on the central government island or remote island or between cities and rural areas.

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