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Entrepreneurship, technology, and income inequality

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Abstract

The issue of income inequality between people in the world and Indonesia is still interesting to discuss. Moreover, it is the tenth target in the sustainable development goals until 2030, namely reducing inequality within and between countries. Several targets have also been set, including ensuring equal opportunities and reducing income inequality. The relationship between entrepreneurship, technology, and inequality is studied theoretically and empirically, but empirically there are still not many studies that discuss the relationship between these two variables on income inequality in Indonesia. The research objectives include analyzing the influence of entrepreneurship and technology on income inequality in Indonesia. The data used are from 34 provinces in Indonesia during the period 2013-2020. The data was processed using E-views software. To produce the best model, it will be tested statistically and with classical assumptions. The results showed that entrepreneurship and technology had a significant negative effect on the income inequality variable. Therefore, one solution to overcome income inequality in Indonesia is for the Indonesian government can increase the percentage of individuals or households that can access the Internet.

Keywords: Entrepreneurship; technology; income inequality; MSE

1. Introduction

The issue of income inequality between people both in the world and in Indonesia is still interesting to discuss. Moreover, it is the tenth target in the sustainable development goals until 2030, namely reducing inequality within and between countries. Several targets were set, including ensuring equal opportunity and reducing income inequality. Widening income inequality can lead to slower poverty reduction and an increased risk of conflict (The World Bank, 2015). Reducing inequality is important in order to achieve a more equitable distribution of income and also to overcome welfare and social problems (Jaumotte et al., 2013).

Income inequality in Indonesia over the last 10 years has shown a downward trend seen from the Gini index value which describes income inequality between communities. This downward trend started from 2014 to 2019 but is still categorized as moderate inequality. Moreover, the Covid-19 pandemic that occurred at the end of 2019, resulted in the Gini index value increasing again.

Conversely, when examining the entrepreneurship landscape in Indonesia over the period of 2013 to 2017, there was a notable increase in the number of micro-small enterprises or industries. However, this positive trajectory experienced a temporary setback in 2017 to 2018, marked by a decrease. Encouragingly, the entrepreneurial spirit rebounded in 2019, demonstrating a renewed upward trend.

Beyond just considering the sheer quantity of Micro and Small Enterprises (MSE), the vitality of entrepreneurship can also be gauged by assessing the number of workers engaged at this micro-scale level. Between 2013 and 2014, there was a decline in the number of workers associated with micro and small enterprises. Subsequently, this trend reversed with an increase in 2015, only to face a downturn

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once again in 2017 to 2018. This fluctuating pattern underscores the dynamic nature of the entrepreneurial landscape in Indonesia, marked by shifts in employment patterns within the micro and small-scale sector over the specified time frame.

The relationship between entrepreneurship and inequality is studied theoretically by (Lippmann et al., 2005). According to him, countries with higher levels of wealth inequality tend to have higher levels of entrepreneurship. Empirically, there are still not many studies that discuss the relationship between these two variables in Indonesia. Moreover, from the data, it can be seen that the number of micro and small enterprises has an upward trend and the number of workers has decreased, followed by a declining Gini index.

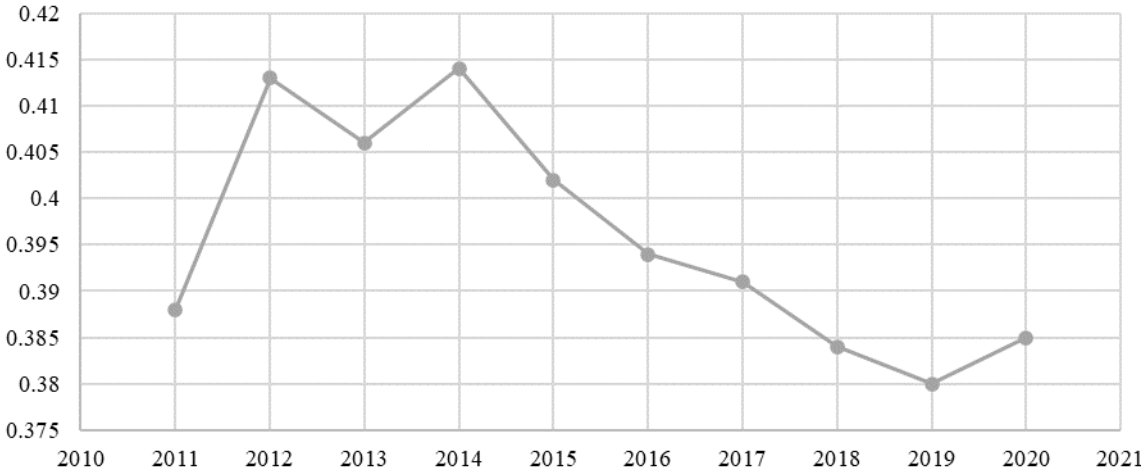

Figure 1. Gini index in Indonesia in 2011-2020

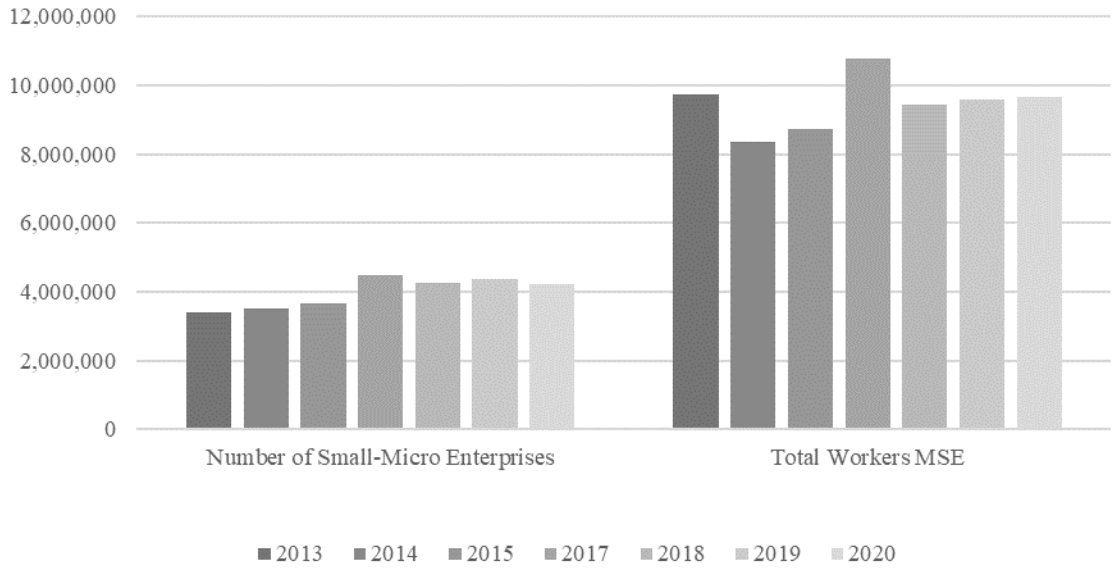

Figure 2. Number of micro-small enterprises and total workers MSE in Indonesia

It was further realized that the need for the internet for life began to be inseparable from all sides. The use of the internet is part of technological developments developed by humans and can certainly increase productivity. According to Canh et al. (2020), Socioeconomic and technological considerations also need to be taken into account to reduce income inequality optimally. The general conclusion from several studies shows that technology makes skilled workers more productive than ever before (Canh et al., 2020). In this study, the development of technology is seen from the percentage of households that have accessed the internet by province and regional classification as well as the percentage of households owning/controlling a cellular telephone by province and residence status.

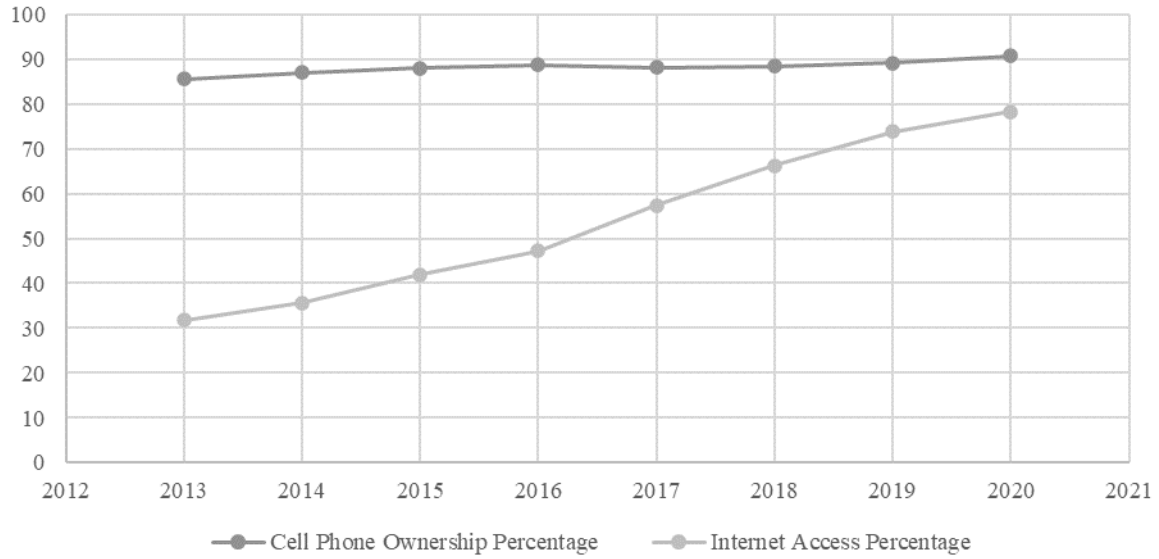

Figure 3. Percentage of cellular phone ownership and internet access in Indonesia

Based on the data in Figure 3, it appears that there has been an increase in internet access for households in Indonesia over the last 8 years. The average percentage of cell phone ownership is 80.1% and the average percentage of internet access in Indonesia is 54% over the last 8 years. Based on Figure 2 and Figure 3, it can also be seen that there were years when the percentage of ownership of cellular phones and internet access increased but income inequality also increased.

Research by Untari et al. (2019) concludes that provinces with high levels of ICT infrastructure have low levels of inequality. Kharlamova et al. (2018) state that if a country has high income inequality, the country will increasingly respond to technological changes, whether they have a positive or negative impact. Various studies continue to be developed to provide policy solutions for the government to reduce income inequality.

The relationship between entrepreneurship, technology, and inequality is studied theoretically and empirically, but empirically there are still not many studies that discuss the relationship between these two variables on income inequality in Indonesia. Therefore, the purpose of this study is to confirm empirically by examining the influence of entrepreneurship and technology on income inequality in Indonesia.

2. Hypothesis development

The relationship between entrepreneurship and inequality is studied theoretically by Lippmann et al. (2005). According to him, countries with higher levels of wealth inequality tend to have higher levels of entrepreneurship. Empirically, there are still not many studies that discuss the relationship between these two variables in Indonesia.

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3. Method

The research methods used descriptive and quantitative approaches. The data used in this study is secondary data obtained from the Central Statistics Agency or Badan Pusat Statistik (BPS) Indonesia.

The data collected is time series and cross-section data. The data for the time series is from 2013 to 2020, while the data for cross-site is used for data from 34 provinces in Indonesia.

For the record, only 7 years were processed due to the unavailability of data in 2016 for the variable number of micro-small enterprises (SME) and the variable number of workers of micro-small enterprises (EMP). In addition, there is also a limitation on 2014 data for North Kalimantan Province because this province was only established on October 25, 2012. Therefore, the data approach in this study was an unbalanced panel.

The dependent variable used in this study is income inequality which is proxied using the Gini index (Atems and Shand, 2018; Canh et al., 2020; Jaumotte et al., 2013; Kharlamova et al., 2018; Lecuna, 2019; Untari et al., 2019; Yanya, 2013). The Gini Index is a measure of inequality used by BPS to measure inequality and an aggregate measure of inequality whose values range between zero and one. The unit is an index number.

The entrepreneurship variable is proxied by data on the number of micro-small enterprises Atems and Shand (2018); Yanya (2013) and the number of workers in micro-small enterprises (Lecuna, 2019). The definition of the number of enterprises or industrial businesses according to BPS is a business unit that carries out economic activities, aims to produce goods or services, is located in a certain building or location, and has its administrative record regarding production and cost structure and there are one or more persons who responsible for the effort.

The small industry is an industrial company whose workforce is between 5-19 people, and the micro industry is an industrial company whose workforce is between 1-4 people. The unit number of this company is units. The definition of the number of workers according to BPS is the number of workers/employees on average per working day, both paid workers and unpaid workers. The unit of labor is people.

The technology variable is proxied using data on the percentage of households that have ever accessed the internet by province and regional classification (Canh et al., 2020; Cioacă et al., 2020; Untari et al., 2019), percentage of households owning/controlling cellular telephones by province and status of residence control (Canh et al., 2020; Untari et al., 2019). The unit is percent.

The control variable used is economic growth (Fadli, 2016; Khoirudin and Musta'in, 2020; Kuznets, 1955; Lecuna, 2019; Tsaurai, 2020; Untari et al., 2019). Economic growth according to BPS is the development of the production of goods and services in an economic area in a certain year against the value of the previous year which is calculated based on GRDP based on constant prices, the unit is percent.

The model in this study is as follows:

$$IEQ_{it} = \beta_0 + \beta_1 SME_{it} + \beta_2 EMP_{it} + \beta_3 INT_{it} + \beta_4 CEL_{it} + \beta_5 GRW_{it} + \varepsilon_{it} \ldots (1)$$

Description:

IEQ = income inequality
SME = number of micro-small enterprises
EMP = total workers
INT = percentage of households that access the internet
CEL = percentage of households owning a cell phone
GRW = Economic growth
ε = error term
β_0 = constant
$\beta_1 - \beta_5$ = regression parameters to be estimated
i = province to be observed
t = observation period

4. Results and discussion

The presentation of the results of descriptive statistical data processing of all variables used in the research model is presented in Table 1. Table 1 shows the average value for 8 years in 34 provinces in Indonesia. The average income inequality proxied by the Gini index data is 0.36, the average number of micro and small enterprises in Indonesia is 119,098 units, the average number of workers for micro and small enterprises is 282,695 people, the average percentage of households accessing the internet is

52.52%, the average percentage of households that have cellular phones is 87.81%, and the average economic growth is 3.01%.

Table 1. Descriptive statistics of variables

Description	IEQ	SME	EMP	INT	CEL	GRW
Mean	0.36	119098	282695	52.52	87.81	3.01
Median	0.36	57571	121849	53.63	89.66	3.92
Maximum	0.46	1030374	2716163	93.33	98.40	20.20
Minimum	0.28	1300	3115	10.98	41.85	-20.13
Std. Dev.	0.04	205328.2	526741.4	20.34	8.46	4.12
Skewness	0.17	2.95	3.05	-0.04	-2.87	-1.57
Kurtosis	2.52	10.67	11.37	1.87	13.93	12.17
Observations	234	234	234	234	234	234

Equation 1 is processed using Eviews software. Based on the results of the Chow test and Hausman test, the research model uses a fixed effect approach. Furthermore, multicollinearity test was carried out, and the result of equation 1 model was that multicollinearity occurred between SME and EMP variables as well as INT and CEL variables. One way that can be taken to overcome this multicollinearity problem is to remove the detected variable multicollinearity and perform variable transformation (Wahyudi, 2020).

Therefore, the next research model will eliminate one of the proxies of the entrepreneurial variable, namely the variable number of micro-small enterprises (SME) or the variable number of workers for micro-small enterprises (EMP), and eliminate one of the proxies from the technology variable, namely the percentage of houses variable. households accessing the internet (INT) or the variable percentage of households owning a cellular telephone (CEL). The transformation of the entrepreneurial variable which is proxied by the SME or EMP variable is also carried out from the level form to the natural logarithm form in order to minimize multicollinearity. The research model is further broken down into the following:

$$IEQ_{it} = \beta_0 + \beta_1 Log(SME)_{it} + \beta_2 CEL_{it} + \beta_3 GRW_{it} + \varepsilon_{it} \ldots(2)$$
$$IEQ_{it} = \beta_0 + \beta_1 Log(SME)_{it} + \beta_2 INT_{it} + \beta_3 GRW_{it} + \varepsilon_{it} \ldots(3)$$
$$IEQ_{it} = \beta_0 + \beta_1 Log(EMP)_{it} + \beta_2 CEL_{it} + \beta_3 GRW_{it} + \varepsilon_{it} \ldots(4)$$
$$IEQ_{it} = \beta_0 + \beta_1 Log(EMP)_{it} + \beta_2 INT_{it} + \beta_3 GRW_{it} + \varepsilon_{it} \ldots(5)$$

Equation 2 to 5 is processed so that it can compare which independent variables will have a positive or negative effect on income inequality. As for the results of the Chow test and Hausman test, Model 2 uses a fixed effect approach, and Model 3-5 uses a random effect approach. Furthermore, multicollinearity tests were carried out on the four models to ensure that there was no relationship between the selected independent variables. The result of the four models does not occur in multicollinearity.

The next step of the classical assumption test is the heteroscedasticity test. This test was carried out with the Glejser test, the result was that there was still heteroscedasticity. According to Wahyudi (2020), the problem of heteroscedasticity as a result of the existence of a non-minimum variance in a model has the consequence that the conclusions are invalid.

Therefore, the estimation of the panel data model containing the problem of heteroscedasticity can be overcome by several techniques. One of them is to use the Generalized Least Square (GLS) technique, where this method performs a kind of weighting of the regression data before estimating the panel data with a weighting factor (Gujarati, 2004). For this reason, model 2, model 4, and model 5 use the GLS technique. Another classic assumption test is the autocorrelation test. This test was not carried out because autocorrelation testing on cross-section or panel data would be useless (Basuki and Prawoto, 2017). The regression results for models 2 to 5 can be seen in Table 2.

Table 2. Regression results of income inequality research model

Independent variable	Model 2	Model 3	Model 4	Model 5
C	0.623157	0.361533	0.489560	0.335341
Log (SME)	**-0.013166***	0.003041	-	-
Log (EMP)	-	-	0.000234	0.005078
INT	-	**-0.000639***	-	**-0.000634***
CEL	**-0.001360***	-	**-0.001510***	-
GRW	0.000176	-0.00006	0.000323	-0.000009
R-squared	0.908570	0.267879	0.073962	0.266350
Adj R-squared	0.890857	0.258412	0.061883	0.256781

*significant α=1%; **significant α=5%

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Model 2 examines the effect of SME, CEL, and GRW on income inequality. Model 3 examines the effect of SME, INT, and GRW on income inequality. Model 4 examines the effect of EMP, CEL, and GRW on income inequality. Model 5 examines the effect of EMP, INT, and GRW on income inequality. The entrepreneurship variable is proxied using the SME or EMP variable, while the technology variable is proxied using the INT or CEL variable.

The unobserved factor values for each cross-section in the second model can be seen in Table 3. This value is used to analyze the comparison of income inequality between regions in Indonesia. Based on the value of the unobserved factor in Table 3, 15 provinces have positive values. This means that if the value of the independent variable remains constant, income inequality will increase by the value of the unobserved factor of each province. The 15 provinces are Lampung, Banten, Jawa Barat, DKI Jakarta, Jawa Tengah, DI Yogyakarta, Jawa Timur, Kalimantan Barat, Kalimantan Tengah, Sulawesi Tengah, Sulawesi Tenggara, Bali, Nusa Tenggara Barat, Papua Barat, dan Papua.

19 provinces in Indonesia have negative unobserved factor values. This means that if the value of the independent variable remains constant, income inequality will decrease by the value of the unobserved factor of each province. The 19 provinces are Aceh, Sumatera Utara, Riau, Kepulauan Riau, Sumatera Barat, Jambi, Bengkulu, Sumatera Selatan, Bangka Belitung, Kalimantan Utara, Kalimantan Timur, Kalimantan Selatan, Sulawesi Utara, Gorontalo, Sulawesi Barat, Sulawesi Selatan, Nusa Tenggara Timur, Maluku, and Maluku Utara.

The results of the test of the equation model 2 to 5 in Table 2 show that the entrepreneurial variable has a significant negative effect on income inequality, along with the percentage of households owning a cell phone and economic growth as predictors in the research model. This indicates that the increase in the number of micro and small enterprises will decrease income inequality. The results of this study are in line with research by Khyareh and Amini (2021), Kimhi (2010), and Lecuna (2019).

However, entrepreneurship can have a positive effect on income inequality. In models 4 and 5, entrepreneurship is proxied using total workers. This indicates that the increase in workers in micro and small enterprises will increase income inequality. The results of this study are in line with research by Atems and Shand (2018), Cobb and Linb (2017), Halvarsson et al. (2018), and Yanya (2013).

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Table 3. Value of unobserved factor

No	Province	Unobserved
1	Aceh	-0.030580
2	Sumatera Utara	-0.034844
3	Riau	0.004625
4	Kepulauan Riau	-0.001585
5	Sumatera Barat	-0.039829
6	Jambi	-0.014104
7	Bengkulu	0.024146
8	Sumatera Selatan	0.010949
9	Bangka Belitung	-0.068654
10	Lampung	-0.005311
11	Banten	0.019334
12	Jawa Barat	0.040959
13	DKI Jakarta	0.062610
14	Jawa Tengah	0.011973
15	DI Yogyakarta	0.074951
16	Jawa Timur	0.017613
17	Kalimantan Barat	-0.009250
18	Kalimantan Tengah	0.012208
19	Kalimantan Utara	-0.049313
20	Kalimantan Timur	-0.024479
21	Kalimantan Selatan	-0.002896
22	Sulawesi Utara	0.037164
23	Gorontalo	0.036603
24	Sulawesi Barat	0.024807
25	Sulawesi Tengah	0.003002
26	Sulawesi Selatan	0.033431
27	Sulawesi Tenggara	0.044034
28	Bali	0.020304
29	Nusa Tenggara Barat	0.024411
30	Nusa Tenggara Timur	-0.045277
31	Maluku	-0.057200
32	Maluku Utara	-0.059892
33	Papua Barat	-0.005997
34	Papua	-0.063774

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The positive relationship between entrepreneurship and income inequality is in line with the proposition developed by Lippmann et al. (2005) that developing countries experience higher levels of entrepreneurship. Based on the GEM report, countries with higher levels of wealth inequality have larger populations of poor and low-income people so the need for entrepreneurship becomes an available option to earn a living (Lippmann et al., 2005). In addition, the high level of inequality causes rich people who have excess capital to invest their capital in new ventures, thereby increasing entrepreneurial opportunities. Yanya (2013) states that the relationship between entrepreneurial growth or company establishment and income distribution is only in the same direction where an increase in company establishment can significantly increase poverty and income inequality.

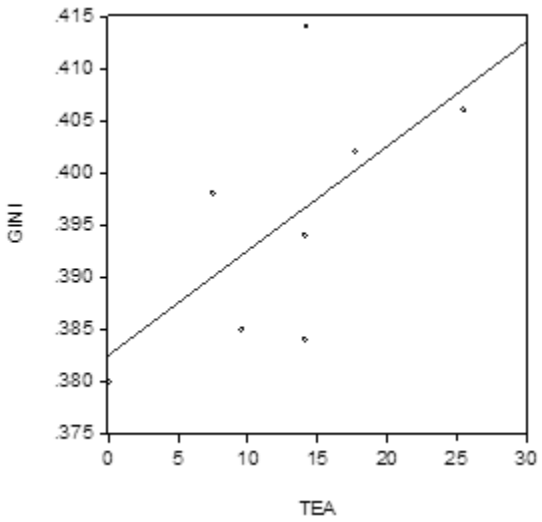

Figure 4. Total early-stage entrepreneurial activity (TEA) and gini index in Indonesia 2013-2020

Figure 4 presents the relationship between total early-stage entrepreneurial activity (TEA) and income inequality in Indonesia during the period 2013-2020. TEA is one indicator of entrepreneurial activity measured by the percentage of adults (18-64 years) who start or run a business (Bosma et al., 2021). Analyzing data from TEA Indonesia in the Global Entrepreneurship Monitor Report and Gini index data provided by BPS, a positive correlation emerges between entrepreneurial activity and income inequality in Indonesia. This correlation is consistent with regression results derived from comprehensive research models that integrate data from all 34 provinces in the country.

This observed trend is underpinned by the increasing prevalence of micro and small enterprises, which instigates a notable shift in employment distribution from the agricultural sector to the service sector. The consequential impact on the economic landscape is significant, with workers in the service sector generally enjoying higher incomes compared to their counterparts in the agricultural sector.

Consequently, the widening income gap can be attributed to the shifting dynamics in employment influenced by the burgeoning presence of micro and small enterprises. This underscores the intricate relationship between entrepreneurial activities and the evolving patterns of income distribution in Indonesia. The complex interplay between these factors highlights the need for a nuanced understanding to inform policies aimed at fostering sustainable economic development and reducing income inequality.

Based on the regression results of the four research models, it appears that the technology variable has a significant negative effect on the income inequality variable. This means that the technology variable that is proxied using data on the percentage of households owning a cellular phone or the average percentage of households accessing the internet can significantly reduce income inequality in Indonesia. This study is in line with the results of research from Canh et al. (2020), Cioacă et al. (2020), and Kharlamova et al. (2018) but contrary to the results of research from Jaumotte et al. (2013), Lei et al. (2019), and Untari et al. (2019).

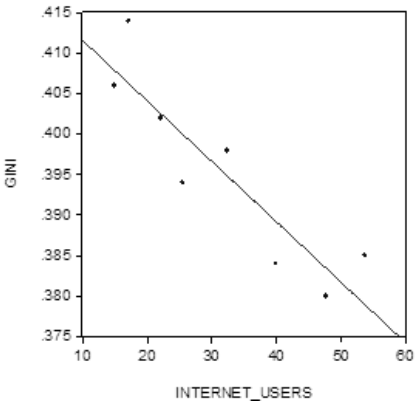

Figure 5. Total internet users and gini index in Indonesia in 2013-2020

Figure 5 shows the relationship between the Gini index and the total number of internet users in Indonesia over the last 8 years. Data on total internet users in Indonesia is sourced from The Global Economy. Total internet users describe the percentage of the population who use the internet. As shown in Figure 5, the trend between internet users and the Gini index is negative. The trend results are following the results of the regression model using data from 34 provinces in Indonesia during the period 2014-2019. The negative trend in Figure 5 can be interpreted as an increase in the percentage of the population using the internet can reduce income inequality in Indonesia.

Advances in technology and the use of the Internet can generate many new economic opportunities for unskilled or low-skilled workers Stevenson (2009) and offer jobs with better welfare (Feldman and Klaas, 2002). This causes to reduce income inequality in an area. Kharlamova et al. (2018) conclude that the more advanced a country's economy is, the less likely that technological changes will adversely affect income inequality, so the government needs to react wisely to technological changes.

In Indonesia, there is a positive trajectory in the ownership of cellular phones, as well as an increasing number of households gaining access to and actively using the internet. However, these advancements are accompanied by significant challenges in enhancing the quality of technological facilities and associated infrastructure. The critical areas of concern center around the speed and coverage of internet access. Despite the growing prevalence of technology in households, the efficiency and reach of these essential technological resources are impeded by issues related to connectivity speed and the extent of coverage. This underscores the need for focused efforts to address these challenges, ensuring that the technological infrastructure aligns with the evolving demands for reliable and widespread access to cellular and internet services throughout Indonesia.

Such improvements are crucial for maximizing the benefits of technological advancements and fostering more inclusive connectivity across the nation. The Director General for the Implementation of Post and Information Technology at the Ministry of Communication and Informatics conveyed that there are six obstacles faced in distributing the internet network in Indonesia, namely the geographical constraints of Indonesia which is very wide and consists of islands, depending on wireless internet, people's purchasing power to access the internet, internet speed, internet coverage large, and regulatory problems for internet network management.

Another independent variable as a control variable used in this study is economic growth. As seen in Figure 6, the trend between economic growth and income inequality in Indonesia is positive. This trend is the same as the regression results in the four models using data from 34 provinces in Indonesia. In Table 2, the regression results of the four research models show that economic growth has a positive and insignificant effect on income inequality. The results of this study are in line with research by Fadli (2016) and Khoirudin and Musta'in (2020).

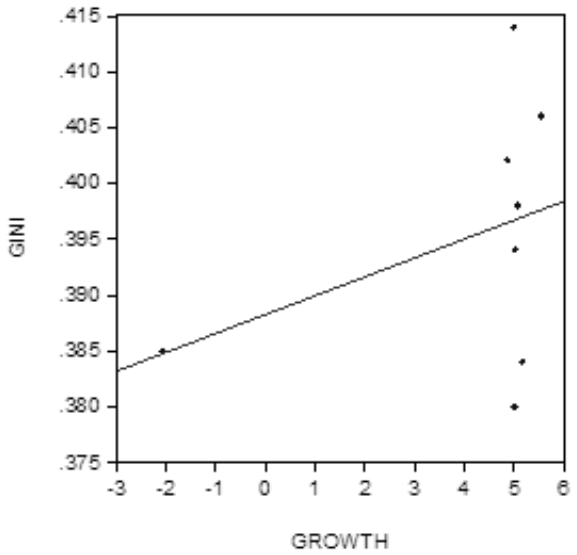

Figure 6. Economic growth and gini index in Indonesia in 2013-2021

The results of this study regarding the relationship between economic growth and income inequality do not support Kuznet's theory. The theory of income inequality stated by Kuznets (1955) assumes that sustainable economic growth will eventually lead to a lower level of inequality, where the initial period of economic development will increase income inequality to a certain level of income inequality will decrease along with increasing industrialization, democratization, and welfare development. The results of this study further support Piketty's statement which states that there is no automatic decrease in inequality at the stage of economic development (Lyubimov, 2017).

5. Conclusion

Based on the economic analysis and discussion of entrepreneurship, technology, and income inequality in Indonesia, the following conclusions are drawn: entrepreneurship has a negative effect on income inequality when entrepreneurship is proxied with the number of micro-small enterprises. However, entrepreneurship can have a positive effect on income inequality if entrepreneurship is proxied using the number of workers in micro and small enterprises.

The intricate relationship between technology and income inequality in Indonesia is characterized by a noteworthy and inversely proportional impact of the former on the latter. Through an examination of variables such as the percentage of households owning a cellular phone or the average percentage of households accessing the internet, it becomes evident that technology plays a pivotal role in influencing income distribution patterns. Specifically, the data reveals that the adoption and utilization of technology, as measured by the prevalence of cellular phone ownership or internet access across households, have a substantial ability to mitigate income inequality. This implies that as technology becomes more prevalent among the population, there is a discernible reduction in the gap between high and low-income groups, highlighting the transformative potential of technology as a catalyst for more equitable economic conditions.

Delving into the details, the impact of technology on income inequality becomes even more apparent. The significant reduction in income inequality associated with the widespread ownership of cellular phones or internet access underscores the tangible benefits that technology can bring to societal disparities. By providing increased opportunities for income distribution and access to resources, technology emerges as a powerful tool for fostering inclusive economic growth. This observation not only emphasizes the potential of technology to bridge the gap between different socioeconomic strata but also suggests that strategic investments in technological infrastructure and digital literacy can contribute substantially to creating a more egalitarian society in Indonesia.

Addressing income inequality in Indonesia necessitates a strategic governmental approach that focuses on enhancing access to technology for all segments of the population. One key avenue for intervention is the promotion of internet access and cellphone ownership, which could be facilitated through targeted measures. To execute this strategy effectively, the government should prioritize the improvement of technology infrastructure, emphasizing the enhancement of internet speed and expanding the coverage of internet signals throughout the archipelago. However, the formidable challenges posed by Indonesia's vast geographical landscape and the economic disparities among its citizens must be acknowledged. The implementation of such policies requires a nuanced and comprehensive approach that factors in the unique geographical diversity of the nation and the varying purchasing power of its population in accessing the internet.

Overcoming these challenges demands a multi-faceted strategy that considers the distinct needs of different regions while ensuring that economic disparities are effectively addressed. Initiatives to boost internet accessibility should be tailored to accommodate the specific requirements of rural and remote areas, where geographical constraints may impede the development of robust technology infrastructure. Simultaneously, policies should be designed to account for the diverse economic conditions across the country, ensuring that measures to improve internet access are affordable and accessible to all income groups. By adopting a holistic approach that combines technological advancements with targeted socio-economic considerations, the government can pave the way for a more inclusive and equitable distribution of resources, thereby contributing to the reduction of income inequality in Indonesia.

The entrepreneurial factor examined in this study aligns with the prevailing income inequality trend in Indonesia. However, it is imperative to reconsider the utilization of data to better characterize the entrepreneurial variable in future studies. The government's facilitation of equitable employment

opportunities, coupled with efforts to enhance the overall skill set of entrepreneurs, is anticipated to contribute to the reduction of income inequality in Indonesia. In more detailed terms, this study underscores the correlation between entrepreneurial activities and income inequality in Indonesia.

Nevertheless, there is a recognition of the need for a more nuanced exploration of the entrepreneurial variable, suggesting that refining data collection methods and metrics could yield a more comprehensive understanding in future research endeavours. Moreover, the study advocates for proactive measures on the part of the government, emphasizing the importance of creating fair employment opportunities. Simultaneously, fostering an environment that supports the development of entrepreneurial skills among the workforce is seen as a pivotal strategy in the broader efforts to mitigate income inequality within the Indonesian context. This highlights the interconnectedness between entrepreneurial dynamics, government policies, and skill enhancement as potential pathways toward achieving greater economic equity.

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