

Dependency Ratio, Inflation And Gini Ratio To Economic Growth And Population Poverty In Indonesia

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Abstract--- Population poverty is a central issue in development, influenced by many factors including dependency ration (DR), inflation, Gini ratio (GR), and economic growth (GE). The goal is to know the direct and indirect relationship between independent variables referred to as poverty. Using the data time series from the year 1970 to 2018 and the path analysis tool which result proved that DR and GR simultaneously or partially have no significant relationship with inflation. The contribution from DR and GR to poverty is only 10 per cent. In model II, we discover that there is a significant relationship (Sign.: 0.001) between DR, inflation and GR to GE. However, in partial testing, GR is the only variable that is not significant, whereas DR (Sign.: 0,000) and inflation (Sign.: 0.002) have a significant relationship. These 3(three) variables contributed 32 per cent to economic growth (GE). In the third model which is the most comprehensive model, because it includes the interaction factors of those three variables. The result of a simultaneous test generates a significant value of 0.000, however, this is not the case for partial testing.

Keywords: Dependency Ratio, Inflation, Gini Ratio, Economic Growth, Poverty, Economics, Population

1. INTRODUCTION

The population is in a core position in development because in addition to being a market for the produced output, it also serves as the output producer. As a market, as the population grows so does the potential to increase the market for the output produced by the economy. In 2019, with a total population of 268,074,600, Indonesia, is the fourth-largest country in terms of population size. In the first place is China, followed by India and the United States (<http://id.wikipedia.org/ March 7th, 2020>). When it comes to trading, the size of Indonesia's population becomes an attractive factor for other countries. The balance of trade between Indonesia and the United States, for example, has risen from US\$ 6.35millions in 2018 to US\$ 6.88millions in 2019 (<http://katadata.co.id/March 7th, 2019>).

Increasing the number of the population alone is not enough, it must be followed by the quality of the population, to potentially improve the development in a country. In the last 3(three) years, the percentage of Indonesia's labor force is being dominated by the less educated population (\leq junior high school) than the educated (\geq high school) one. In 2017, it was 59.61 per cent, in 2018, it went down to 59 per cent, and decreased to 57.29 per cent in 2019 (<BPS.https://www.bps.go.id/staticable Sept. 20th, 2020>). The productivity provided by this group is relatively low, therefore, it has the potential to reduce economic growth while increasing the number of poverty. In March 201, 9.86 per cent was the number of poverty recorded in Indonesia, this number decreased to 9.41 per cent in March 2019 (<https://www.bps.go.id/March 7th, 2020>). However, by March 2020, the number went up to 9.78 per cent, which is about 26,42million people (<BPS.https://mediaindonesia.com/ July 31st, 2020>).

A great quality of economic growth(GE) must meet 2(two) conditions: 1) a necessary condition, and 2) a sufficient condition for population poverty. Economic growth is expected to not only reduce the poverty rate (necessary condition) but also must be effective in lowering inequality in income distribution (sufficient condition). The trickle-down

effect of development is expected to be able to meet those two conditions. Inequality in income distribution can be measured by looking at the coefficient value of the Gini Ratio(GR) which shows a certain group of people has a relatively higher income than others. Indonesia's average coefficient value of GR from the year 2000 to 2015 was 0.395, it was in the moderate inequality category. Compared to the inequality in some countries in Europe, it was better. Botswana has the highest inequality which was 0.626, it was followed by South Africa with 0.623, and Namibia with 0.623 (Figure 1.1).

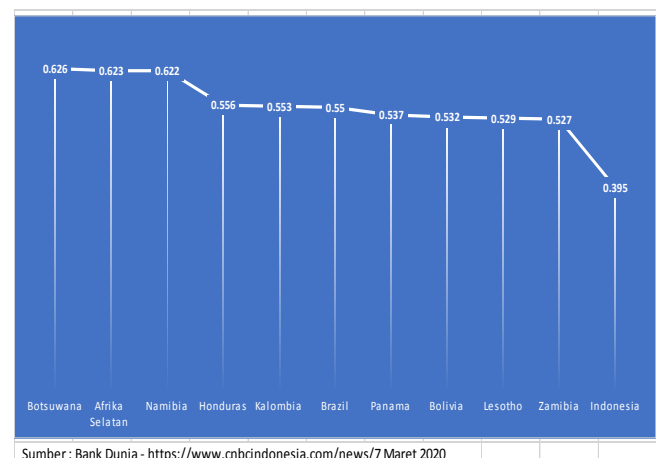


Figure 1.1 The average Gini ratio index in some countries(World Bank's ver) and in Indonesia

The inequality in income distribution has the potential to increase the number of poverty. Chen Jiandong, et al (2014), used the data time series and found that the higher the GR the higher the number of poverty (Figure 1.2).

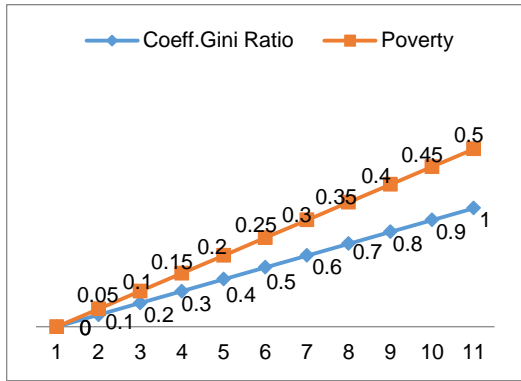


Figure 1.2 The relationship between GR and poverty
 Source: Chen Jiandong, et al 2014.
<https://doi.org/10.1155.2014/186564>

Poverty reduces the effective demand, it worsens people's ability to make the purchase which will result in not all of the goods being sold in the market, causing overproduction that could potentially lower company's profits. These conditions can lead to unemployment, poverty and a decline in economic growth. However, the situation could be changed if everyone had relatively the same income. If the Gini coefficient that's close to 0(zero) was more evenly distributed, then the demand would be effective, and in the end, would increase people's purchasing power. If the ceteris paribus laws was being applied, then the output in the market would sell better which would increase company's profits, as well as possibly increasing the capacity of the company, which in turn would improve economic growth, reduces unemployment and poverty. Using the data time series in Pakistan, Chen, et al (2014), found that a short-term economic growth is negatively related to poverty, although it is not significant, on the other hand, inflation has a significant positive relationship with population poverty.

There is a trade-off law between inflation and unemployment. Philips's theory (1958), proved that the higher the inflation(wages), the lower the unemployment is. An increase in wages will aggregate the demand, encouraging companies to boost the produced output, resulting in the number of higher demand for workers needed, which will reduce unemployment.

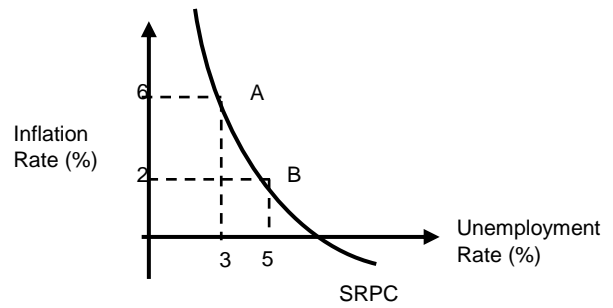
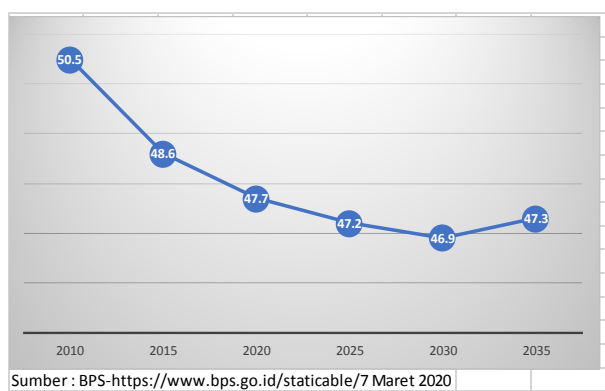


Figure 1.3 Trade-off between inflation and unemployment
 Description: SRPC = Short Run Philips Curve

Unemployment rates are divided into 2(two) groups: people aged 0-14 and people age 65 and older, people who are not productive and have yet to produce. However, at the same time, these groups of people still need clothing, food, and shelters. Their needs are the same as those of productive age. Who is responsible for providing all of those things for those people? Whether we like it or not, people who are not productive will need those who are working to fulfil their everyday needs, this situation is called dependency ratio(DR). Indonesia's DR rate tends to stagnate from the year 2010 to 2035 (Figure 1.4).



Sumber : BPS-<https://www.bps.go.id/staticable/7> Maret 2020
 Figure 1.4 Indonesia's dependency ratio 2010-2035

The greater the value of DR, the higher the number of the dependent population. This condition tends to lower the per capita income, savings, and reduce effective demand, and all of this will cause poverty. When effective demand declines because of a high rate of DR, not all of the goods in the market will be sold out. The amount of aggregate supply will be higher than the aggregate demand thus pushing down the price in the market. With that, we can say that DR has a negative relation to inflation. The higher the DR, the lower the inflation rate will be.

The research problem that this study will be discussing are:

- 1) Does DR have a relationship with poverty?
- 2) Does DR correlate with GE?
- 3) Does DR correlate with inflation?

- 4) Does inflation have a relationship with poverty?
- 5) Does inflation correlate GE?
- 6) Does GR have a relationship with poverty?
- 7) Does GR correlate with GE?
- 8) Does GE have a relationship with poverty?
- 9) Does GR correlate with inflation?
- 10) Is GE able to mediate the correlation between DR and poverty?
- 11) Is GE able to mediate the correlation between inflation and poverty?
- 12) Is GE able to mediate the correlation between GR and poverty?
- 13) Do DR, inflation, GR and GE simultaneously have a relationship with poverty?
- 14) Do DR and GR simultaneously correlate with poverty?
- 15) Do DR, inflation, GR, GE, FIX1X4, FIX2X4 and FIX3X4 simultaneously have a relationship with poverty?

The purpose of this research is to find out about:

- 1) The correlation between DR and poverty
- 2) The relationship between DR and GE
- 3) The relationship between DR and inflation
- 4) The correlation between inflation and poverty
- 5) The correlation between inflation and GE
- 6) The correlation between GR and poverty
- 7) The relationship between GR and GE
- 8) The correlation between GR and inflation
- 9) The relationship between GE and poverty
- 10) GE's ability to mediating the relationship between DR and poverty
- 11) GE's ability to mediating the correlation between inflation and poverty
- 12) GE's ability to mediating the relationship between GR and poverty
- 13) The simultaneous relationship that DR and GR have with inflation
- 14) The simultaneous correlation that DR, inflation and GR have with GE
- 15) The simultaneous relationship that DR, inflation, GR, GE, FIX1X4, FIX2X4, and FIX3X4 have with poverty

2. DATA AND METHOD

This study uses the secondary data which is the time series from the Central Bureau of Statistics(BPS) in Indonesia. This time series comprises of Intercensal Population Survey(SUPAS) and National Labour Force Survey (Susenas) from the year 1970 to 2018. The variable studied for this research were DR, inflation, GR, GE and poverty. The first 4(four) variables mentioned were used as independent variables(X), while poverty was used as a dependent variable (Y). The first 3(three) variables written above can have a direct as well as indirect relationship with poverty(Y). Variable GE acted as an intermediate variable connecting the variable of DR, inflation and GR to poverty(Y). The path analysis is the most effective tool to use, to discover the direct and indirect correlation between

each of the independent variable(X) to each of the dependent variable(Y).

The modelling can be parted into two models:

a) Informal Model

The informal model is being presented in a figure form. This is an attempt to explain the theoretical relationship between research variables, this attempt is called a research paradigm. Every line is equipped with symbols that represent the proportion of the path coefficient of each research variable (a figure of the informal model).

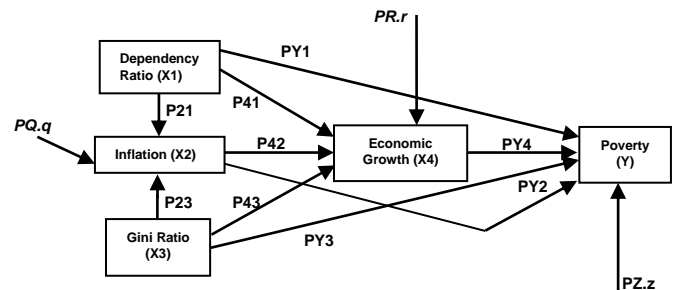


Figure 1.4 Informal Model/ Research Paradigm

b) Formal(Equation) Model

The formal model is a recap of the symbols or the path coefficient between the variable into the equation below:

- $X2 = P21X1 + P23X3 + PQ.q$
- $X4 = P41X1 + P42X2 + P43X3 + PR.r$
- $Y = PY1X1 + PY2X2 + PY3X3 + PY4X4 + FIX1X4 + FIX2X4v + FIX3X4 + PZ.z$

Description:

- X = Independent variables
- X2, X4 = Also acted as dependent variables
- Y = Dependent variables
- P = The proportion value of dependent variables is determined by the independent variables
- FI = Interaction factor to know the level of influence in the relationship between each variable and was used to mediate the correlation of certain independent variables(X).

The hypothesis that will be tested in this study are:

- 1) The significant correlation between DR and poverty
- 2) The significant correlation between DR and GE
- 3) The significant relationship between DR and inflation
- 4) The significant correlation between inflation and poverty
- 5) The significant relationship between inflation and GE
- 6) The significant relationship between GR and poverty
- 7) The significant relationship between GR and GE
- 8) The significant relationship between GR and inflation
- 9) The significant correlation between GE and poverty

- 10) To find out how significant GE's ability to mediate the correlation between DR and poverty
- 11) To find out how significant GE's ability to mediate the relationship between inflation and poverty
- 12) To find out how significant GE's ability to mediate the relationship between GR and poverty
- 13) The simultaneous significant relationship between DR, GR and inflation
- 14) The simultaneous significant correlation between DR, inflation and GR with GE
- 15) The simultaneous significant relationship between DR, inflation, GR, GE, FIX1X4, FIX2X4, and FIX3X4 with poverty

	Y	X1	X2	X3	X4	X1X4	X2X4	X3X4
Y	1,000	0.819	0.194	-0.356	0.279	0.591	0.408	0.199
X1		1,000	0.108	-0.429	0.534	0.833	0.607	0.417
X2			1,000	-0.348	-0.424	-0,213	-0,041	-0,469
X3				1,000	0,092	-0,135	-0,278	0,326
X4					1,000	0,908	0,730	0,970
X1X4						1,000	0,776	0,835
X2X4							1,000	0,622
X3X4								1,000

Correlation Matrix

• Assumptions Test

In order to use parametric analysis tool, the variables of the research data have to meet the classical assumptions. There are 4(four) classical assumption tests, there are linearity, normality, multicollinearity and homoscedasticity test. From the test results below, it proves that the data from all of the 4(four) research variables meet every requirement (Table 1 – Table 4).

Table 1. Homoscedasticity test result

Variable relationship	Sig.	Alpha	Condition	Conclusion
X1 - AX1	0,632	0,005	Sig.>Alpha	Homoscedas.
X2 - AX2	0,512	0,005	Sig.>Alpha	Homoscedas.
X3 - AX3	0,214	0,005	Sig.>Alpha	Homoscedas.
X4 - AX4	0,255	0,005	Sig.>Alpha	Homoscedas.

Table 2. Normality test result

Variable	Sign. Deviation From Linearity	Alpha	Condition
Poverty*DR	0,321	0,005	Linearity
Poverty*Inflation	0,432	0,005	Linearity
Poverty*GR	0,445	0,005	Linearity
Poverty*GE	0,620	0,005	Linearity

Table 3. Linearity test result

Variable	Asymp. Sig. (2-tailed)	Alpha	Condition
DR(X1)	0,768	0,005	Normal
Inflation(X2)	0,667	0,005	Normal
GR(X3)	0,727	0,005	Normal
GE(X4)	0,631	0,005	Normal

Table 4. Multicollinearity test result

Variable	Sign.	Alpha	Status
DR*Inflation	0,090	0,005	Free Multicoll.
DR*GR	0,060	0,005	Free Multicoll.
GR*GE	0,074	0,005	Free Multicoll.
Inflation*GR	0,072	0,005	Free Multicoll.
Inflation*GE	0,626	0,005	Free Multicoll.
DR*GE	0,994	0,005	Free Multicoll.

3. RESULT OF ANALYSIS AND DISCUSSION

3.1. Result of Analysis

The submission of statistical analysis results is adjusted to the analysis model of analysis is:

a. Informal Model

The result of the analysis included in Figure 1.5 (informal model), is the value of the path coefficient relationship between research variables, both direct and indirect relationship with poverty (Table 5).

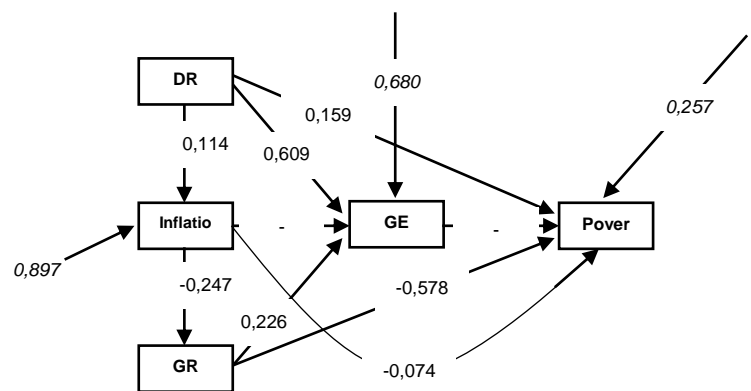


Figure 1.5 Path Coefficient in Informal Model

Table 5. Value proposition between a Direct Relationship (HL), and Indirect Relationship (HTL) with each of the Independent Variable (X) and Dependent Variable (Y).

Variable	The type of each of Variable X to Variable Y		
	HL	HTL	Total
DR(X1)	0,159	-2,306	-2,147
Inflation(X2)	-0,074	-4,176	-4,250
GR(X3)	-0,578	-3,651	-4,139
GE(X4)	-3,787	--	-3,787

Description: Variable X1, X2 and X3 have a direct and indirect relationship with poverty(Y), while variable X4 (GE) only has a direct relationship with poverty variable

b. Formal Model

Model I

$$X2 = P21X1 + P23X3 + PQ.q$$

$$X2 = 0.114X1 - 0.247X3 + 0.897$$

$$(0.491) \quad (0.138)$$

$$r = 0.321 \quad \text{F.test} = 2.650$$

$$R^2 = 0.103 \quad \text{Sign.} = 0.081$$

$$R\text{-Adjusted} = 0.064$$

Model II

$$X4 = P41X1 + P42X2 + P43X3 + PR.r$$

$$X4 = 0.609X1 - 0.299X2 + 0.266X3 + 0.680$$

$$(0.000) \quad (0.026) \quad (0.133)$$

$$r = 0.566 \quad \text{F.test} = 7.072$$

$$R^2 = 0.320 \quad \text{Sign.} = 0.001$$

$$R\text{-Adjusted} = 0.275$$

Model III

$$Y = PY1X1 + PY2X2 + PY3X3 + PY4X4 + FIX1X4 + FIX2X4 + FIX3X4 + PZ.z$$

$$Y = 0.159X1 - 0.074X2 - 0.578X3 - 3.787X4 + 1.577X1X4 +$$

$$(0.827) \quad (0.609) \quad (0.316) \quad (0.109) \quad (0.278)$$

$$0.071X2X4 + 2.598X3X4 + 0.257$$

$$(0.722) \quad (0.250)$$

$$r = 0.862 \quad \text{F.test} = 9.914$$

$$R^2 = 0.743 \quad \text{Sign.} = 0.000$$

$$R\text{-Adjusted} = 0.668$$

3.2. Discussion

As a means to avoid a repeated explanation on a certain research variable, the discussion in this section will not refer to the formal modelling.

3.2.1. The Relationship Between Dependency Ratio (DR), with Poverty, Economic Growth (GE), and Inflation

Dependency ratio (DR), is the total burden of dependents of people of the unproductive age (0-14, and 65+) to the people of the productive age (15-64). DR can be divided into 2(two): 1) DR of young population, 2) DR of the older population.

$$DR = \frac{P(0-14) + P(65+)}{P(15-64)thn} \times 100$$

$$DR_{um} = \frac{P(0-14)}{P(15-64)thn} \times 100$$

$$DR_{ut} = \frac{P(65+)}{P(15-64)thn} \times 100$$

People age 0 -14 and those age 65 or older are not productive, however, at the same time they need food, clothing, and shelter to maintain their existence as humans. These age groups are depending on the working-age population (15-64) to fulfil their daily needs. Therefore, the income earned by the productive population is not only used to meet their personal/family's needs but also used to cover the needs of those unproductive population. The higher the DR rate the more money is needed to meet the needs of consumption (C), thus reducing savings (S) which ultimately will lower the investment (I). In addition to that, it can also reduce employment and increase unemployment and poverty rate. The value of the path coefficient of the relationship between DR and poverty is 0.159, meaning that if the number of dependents (DR) increases, the number of poverty will increase to 0.159. That being said, this relationship is not significant because the sign value of 0.827 is greater than the alpha, therefore, hypothesis-1 (**H-1**) is rejected.

On the other hand, DR has a positive correlation with economic growth (GE), the path coefficient is 0.609, with a sign value of 0.000, for this reason, hypothesis-2 (**H-2**) is **accepted**. This positive correlation indicates that a growing number of dependents encourages the productive age population to work harder, resulting in more output to finance the unproductive age population. The more output that is being produced, the bigger the potential to boost economic growth. The results of this study also prove that DR tends to increase the inflation, although this relationship is not a significant one (**H-3**) because it produces a significant level of 0.491, which is greater than the alpha level of 0.005. Nevertheless, the path coefficient is 0.114, which means that if DR increases, inflation will also go up by 0.114.

The simultaneous correlation between DR, GR with inflation is also significant, due to the sign level of 0.081, that is higher than 0.005. The regression coefficient (r) value was only 0.321, including the medium category, while the simultaneous contribution of both variables to inflation was only 10 per cent ($R^2=0.103$), whereas the other 90 per cent was contributed by other variables outside the model. Table 4.8 shows that out of the 10 per cent that was mentioned, the largest contribution came from GR with 7.56 per cent, while DR accounted for only 2.77 per cent.

Table 4.8 Effective Contribution of DR&GR to Inflation

Variable	Coefficient Correlation PM	Coeff. Beta standardized	Effective Contribution (SE)
DR	0,243	0,114	0,027702
GR	-0,306	-0,247	0,075582
Total			0,103284

3.2.2. The Correlation Between Inflation with Poverty, and Economic Growth (GE)

Dependency Ratio (DR) tends to increase the number of goods consumed, as a result, if it's not followed by an increase in produced output, then the price in the market will crawl up causing inflation. Inflation will result in low-income population unable to afford products to meet their basic needs. People on a low income have fewer choices in terms of quality goods and services. In terms of food, the quality of the food could be an irrelevant factor when they're making a purchase, the goal is simply to get rid of the hunger. Moreover, they also have limited access to proper education and health care. These people fall under the poverty umbrella. Another thing that this study proves is that inflation has a negative relationship with poverty, though it is not significant, therefore **H-4**: health care and education factors that do not get the appropriate attention because of inflation, will cause the population to be unproductive.

If the amount of output of goods and services produced diminished, it could reduce the Gross Regional Domestic Product, that will eventually decrease the economic growth (GE). This study proves that for the hypothesis-5 (**H-5**), there is a significant correlation between inflation and economic growth, making the hypothesis **is accepted**. The path coefficient value is -0.299, however, the significant level is 0.026, which is smaller than the alpha 0.050. The path coefficient value explains that if inflation increases by one unit then economic growth will decrease by 0.299. Excess money overconsumption can create savings. Community savings and Government savings can create investment. Investment is not only influenced by savings but also by the Bank's interest (i) factor, security factor, infrastructure factor and it also affected by the expected rate of profit. This is called the Marginal Efficiency of Capital

(MEC). It is assumed that when investment increases it will produce more jobs and absorbs the workforce better, thus providing income to those in the working-age group while boosting the purchasing power of output generated by the economy, that will potentially lower the population poverty. This study also landed on the conclusion that the Growth of Economic (GE) can reduce the poverty rate. The value of the path coefficient between economic growth and poverty is -3.787. This means that, when economic growth increases, the poverty rate decreased by 3.787. This founding is the same as those found by Chen, et al (2014). Although statistically, the nature of the relationship is insignificant, since the significant level of 0.109 is higher than alpha level of 0.005. With that being said, the hypothesis-9 (**H-9**) **is otherwise rejected**.

3.2.3. The Relationship between Gini Ratio (GR), Economic Growth (GE), and Inflation with Poverty

Gini Ratio (GR) is one of the 3(three) tools to determine the disparity of income distribution to the community. The other 2(two) tools are 1) World Bank's criteria, 2) Lorenz curves. According to World Bank, there are three classifications of people based on the amount of income the earned, there are: 1) 20 per cent of a high-income group, 2) 40 per cent of a middle-class group, and 3) 40 per cent of the lowest income people. As for The Lorenz Curve approach, it is done by comparing the Lorenz line/curve with the diagonal line. The closer the Lorenz curve gets to the diagonal line, the more even the income distribution is going to be. However, if the Lorenz curve is further away from the diagonal line, the income is not going to be evenly distributed. Meanwhile, the Gini Ratio's coefficient shows an imbalance of the income distribution, this can be seen by looking at the value of the coefficient. GR value ranges from 0 – 1. If the value is closer to 1(one), this implies that the value of income inequality distribution is increasingly uneven, but if the GR level is close to 0(zero), this implies that the income is more evenly distributed.

Quality economic growth is the one that is accompanied by a more equitable distribution of income to the community. Statistically, it is known that between GR and economic growth there is a negative correlation, implying that the higher the GE the lower GR gets, this is a sign that income is evenly distributed. Though the relationship is not significant, because of the sign level of 0.133 that is greater than the alpha level of 0.005. Unfortunately, this means that the hypothesis-7 (**H-7**) **is rejected/unacceptable**. The path coefficient value between GR and GE is 0.226, with this we can say that if GR increases by one unit then GE will increase by 0.266, though this correlation is not significant. An improved income distribution is accompanied by a decrease in GR. When GR's value is close to 0(zero), this will provide income to the community thus creating effective demand, which potentially reducing the poverty of the population. Through this study, we can say that GR has a positive relationship with poverty. The result of the analysis generates a path coefficient of 0.578 which means that when the GR increases by 0.578, the poverty rate will also

increase by 0.578. This relationship is also insignificant, so the **hypothesis (H-6) is not accepted (rejected)**.

In this study, we discovered that there is a negative correlation between GR and inflation, that resulted in a path coefficient of -0.247, however, it is not significant, therefore, the hypothesis-8 (**H-8**), **otherwise rejected**. Even though the hypothesis is rejected, that does not mean that there is no relationship between those 2(two) variables. The path coefficient between GR and inflation means that if GR increases by one unit the inflation will decrease by 0.27. Although partially, the variables of DR, inflation, and GR do not have a significant correlation, however, simultaneously these 3(three) are significantly related to GE. The sign value of 0.001 is smaller than the alpha value that is 0.005, that being said, hypothesis-14 (**H-14**) **is acceptable**. The regression coefficient (r) is 0.566, while the contribution of the 3(three) variables is 32 per cent (0.320) while the remaining 68 per cent is from other variables that are not included in the model.

Table 4.9 shows that out of that 32 per cent, DR gives the highest Effective Contribution (SE) of 25 per cent, followed by inflation and DR with 6.58 per cent each. On the other hand, inflation and GR contributed 32 per cent to poverty, while GR only accounted for 0.023 per cent (Table 4.9)

Table 4.9 Effective Contribution from DR, Inflation, and GR to Economic Growth (GE)

Variable	Coefficient Correlation PM	Coeff. Beta standardized	Effective Contribution (EC)
DR	0,419	0,609	0,255171
Inflation	-0,220	-0,299	0,06578
GR	-0,001	0,226	-0,000226
Total			0,320725

3.2.4. The Interaction Factor (FI)

Based on formal and informal models, we can see that the variables of DR (X2), Inflation (X2), and GR (X3) have 2(two) types of relationship with the dependent variable (Y), which are direct relationship and indirect relationship. Indirect relationship means that DR, Inflation, and GR do not directly affect poverty (Y), however, they can have a direct relationship if we were using economic growth variable (X4) as a mediation variable. To determine the ability of the mediating variable of GE (X4) in connecting DR (X1), Inflation (X2), and GR (X3) variables with poverty (Y) is done by testing the significance of the path coefficient of the interaction factor in question. If the test result is Significant then it is concluded that the mediation variable plays a significant role in connecting the independent variable(X) to the dependent variable (Y). The value of the interaction factor coefficient that's being tested is obtained from the multiplication of 2(two) independent variables (X). The results of the analysis in the comprehensive model (the

third model) shows that economic growth variable (X4) is unable to play a significant role as a bridge (mediation) to connect the variables DR (X1), Inflation (X2), and GR (X3) variables to poverty as a dependent variable (Y).

The first Interaction Factor (FI) between DR (X1) and Economic Growth (GE), produces a path coefficient of 1.577. This has a meaning that economic growth (GE) can mediate the relationship between DR and poverty by 1,577. The significance level obtained was 0.278 which was greater than alpha 0.005, therefore, the hypothesis-10 (**H-10**) **is rejected**, making GE's ability to mediate the relationship between DR, and poverty, was insignificant. GE's ability as an intermediate variable to inflation and poverty resulted in a path coefficient value of 0.071. This relationship is not significant thus the hypothesis-11 (**H-11**), **is rejected**. The third Interaction Factor (FI), between GR(X3), economic growth(X4) resulted in a path coefficient value of 2,598. The significant value obtained was 0.250 that is greater than alpha 0.005 so the hypothesis-12 (**H-12**), **is also rejected**.

3.2.5. The Correlation between Dependency Ratio (DR), Inflation, Gini Ratio (GR), Economic Growth (GE), Interaction Factor with Poverty

The comprehensive model (Model III), includes all independent variables: DR, inflation, GR, and GE (Economic Growth) and also includes interaction factors (FI): FIX1X4, FIX2X4, and FIX3X4 to population poverty (Y). Although each independent variable is not significant to poverty, it simultaneously generates a significant value of 0.000 that is smaller than 0.005, making the hypothesis-13 (**H-13**), which states that there is a simultaneous relationship between all independent variables(X), and the interaction factor on population poverty **is otherwise accepted**. The regression coefficient value of 0.862 means that the simultaneous relationship between all independent variables, and the interaction factors with poverty is very strong. This model also produces a determinant coefficient value (R²) of 0.743. This means that 74 per cent of the population's poverty rate is affected by DR, inflation, GR, GE, and FIX1X4, FIX2X4, and FIX3X4. The remaining 26 per cent were affected by other independent variables that were not included in the analysis model.

Table 4.10 shows that out of the 74 per cent, the FIX1X4 interaction factor had the highest contribution of 93.20 per cent, following the FIX3X4 interaction factor, then followed by the GR variable contributing to 20.60 per cent (Table 4.10).

Table 4.10 Effective Contributions of each of Independent Variable to Poverty (Y).

No	Variable	Coeff. Correlation PM	Coeff. Beta Standardized	Effective Contribution(SE)
1	DR	0,819	0,159	0,130
2	Inflation	0,194	-0,079	-0,015
3	Gr	-0,356	-0,578	0,206
4	GE	0,279	-3,787	-1,057
5	FIX1X4	0,591	1,577	0,932
6	FIX2X4	0,408	0,071	0,029
7	FIX3X4	0,199	2,598	0,517
	Total			0,742

4. CONCLUSION

Based on the results of the analysis written in Chapter III, the authors have come to the conclusion that:

1. The first model explains that DR and GR have an insignificant relationship with inflation because of the regression coefficient that is (r): 0.321. The Sign value of 0.081 exceeds the alpha value of 0.005, therefore it is not significant. The contribution of DR and GR to poverty is only 10%.
2. The second model, tells us about the relationship between DR, Inflation and GR with GE. The relationship among these 4(four) variables could be consider strong ($r = 0.566$). This relation is a significant relationship that can be seen through the Sign. value of 0,001 which is smaller than 0,005. Partially, DR is the only one that has a significant relationship with poverty. DR, inflation and GR only contributed about 32 per cent to population poverty.
3. The third model was the most comprehensive because it has 3(three) interaction factors. Simultaneously, the significant value that was produced was 0,001, making the simultaneous hypothesis was accepted. The relationship between all of the independent variables and dependent variables was 0.862, which was a strong one. All of the independent variables combined contributed about 74 per cent to poverty.
4. Effective contribution in the comprehensive model (Model III), tells us that interaction factor of DR and GE gives the highest effective contribution, which was 0.932, this is followed by interaction factor between GR and GE with 0.517 and the by GR with 0.206.

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