

Gross Regional Domestic Product, Unemployment, Human Development Index, and Population in influencing poverty in Yogyakarta.

A THESIS

**Presented as Partial Fulfillment of the Requirements
to obtain the Bachelor Degree in Economic Development Program**



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**UNDERGRADUATE INTERNATIONAL PROGRAM IN ECONOMIC
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DECLARATION OF AUTHENTICITY

Herein I declare the originality of the thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented anyone else's words, ideas, or expression without acknowledgment. All quotations are cited and listed in the bibliography of the thesis.

If in the future this statement is proven to be false, I am willing to accept any sanction complying with the determined regulation or its consequence.

Yogyakarta, 13 February 2024



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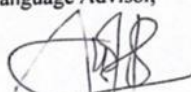
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MOTTO

“For indeed after hardship there is ease. Indeed, after hardship there is ease.”

(Al-Inshirah Verses 5-6)

" What is passed over me will never be my destiny, and what is destined for me
will never pass me by."

(Umar Bin Al-Khattab)

“Allah SWT does not look at your appearance and wealth, but he looks at your
heart and deeds.”

(Prophet Muhammad Saw)

“Sometimes, the person with the darkest past will create the brightest future.”

(Umar Bin Al-Khattab)

DEDICATION

The author dedicated this thesis to:

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ABSTRACT

It is proven to be challenging for the local administration in one area, the Special Region of Yogyakarta, to raise the Poverty Rate (POV), one of the metrics used to assess the degree of welfare of the people living there. Actions have been done by the government to raise the level of living for the populace. One of them is by providing extra resources, such the Human Development Index. The purpose of this study is to ascertain the impact of Yogyakarta Special Region's Gross Regional Domestic Product (GRDP) on poverty between 2017 and 2022. The dependent variable is poverty, while the independent variables are the population, the human development index (HDI), unemployment (UNP), and the gross regional domestic product (GRDP). The were obtained by the Regional Development Planning Agency (BAPPEDA) and the Central Bureau of Statistics of Indonesia (BPS). Panel regression analysis is the research used in this study. Furthermore, STATA-16 was used to process the data. The study's findings demonstrate that unemployment rate (UNP), and gross regional product (GRDP) growth rates do not significantly impact the value of poverty in the Yogyakarta Special Region. It demonstrates that conversely, the Human Development Index (HDI), and the population, is significantly impacted by the Poverty Value of the Yogyakarta Special Region.

Keywords: *Growth rate of Gross Regional Domestic Product (GRDP), Human Development Index, Population Growth rate, poverty in Yogyakarta Special Region, Population Growth rate, poverty rate, unemployment, and Unemployment rate.*

ABSTRACT

Pemerintah Daerah Istimewa Yogyakarta (DIY) terbukti mengalami kesulitan dalam meningkatkan Angka Kemiskinan, salah satu ukuran yang digunakan untuk menilai tingkat kesejahteraan masyarakat. Berbagai cara telah dilakukan oleh pemerintah untuk meningkatkan taraf hidup masyarakat. Salah satunya adalah dengan menyediakan sumber daya tambahan, seperti Indeks Pembangunan Manusia. Tujuan dari penelitian ini adalah untuk mengetahui dampak Laju Pertumbuhan Produk Domestik Regional Bruto (PDRB) Daerah Istimewa Yogyakarta terhadap kemiskinan pada tahun 2017 sampai dengan tahun 2022. Variabel dependennya adalah kemiskinan, sedangkan variabel independennya adalah laju pertumbuhan penduduk (LPP), indeks pembangunan manusia (IPM), tingkat pengangguran terbuka (TPT), dan laju pertumbuhan produk domestik regional bruto (PDRB). Data tersebut diperoleh dari Badan Perencanaan Pembangunan Daerah (BAPPEDA) dan Badan Pusat Statistik (BPS). Analisis regresi panel merupakan metode yang digunakan dalam penelitian ini. Selanjutnya, STATA-16 digunakan untuk mengolah data. Temuan studi ini menunjukkan bahwa tingkat pengangguran, dan produk domestik regional bruto (PDRB) tidak berpengaruh signifikan terhadap tingkat kemiskinan di Daerah Istimewa Yogyakarta. Hal ini menunjukkan bahwa sebaliknya, Indeks Pembangunan Manusia (IPM), and total penduduk secara signifikan mempengaruhi nilai kemiskinan di Daerah Istimewa Yogyakarta.

Kata Kunci: *Laju Pertumbuhan Produk Domestik Regional Bruto (PDRB), Indeks Pembangunan Manusia, Laju Pertumbuhan Penduduk, Kemiskinan di Daerah Istimewa Yogyakarta, Laju Pertumbuhan Penduduk, Tingkat Kemiskinan, Pengangguran dan Tingkat Pengangguran Terbuka.*

CHAPTER 1

INTRODUCTION

1.1 Background of the Problem

It appears that almost all developing countries struggle with poverty (BPS), yet over the past six years (2017–2022), the country's rate of poverty in Indonesia is unstable. The central statistics bureau of Indonesia (BPS) reports currently the poverty rate in Indonesia is at 9.54% in 2022. According to Faisal (2023), income subsidies are primary cause of the decline in the number of impoverished individuals. He claims that this assistance contributes to the inclusion of those who fall below the poverty line in the statistics on the number of impoverished individuals.

Furthermore, it indicates that the average income or spending of the impoverished fluctuates significantly below the poverty threshold. This is inextricably linked to the issue of poverty that exists in Indonesia's regions, particularly in the Special Region of Yogyakarta. Poverty remains a major issue in Yogyakarta Special Region.

The five regencies/city that make up Yogyakarta Special Region are Kulonprogo Regency, Bantul Regency, Gunung Kidul Regency, Sleman Regency, and Yogyakarta City. The Yogyakarta Central Bureau of Statistics (BPS) estimates that 488.53 thousand, or 13.02% of the entire population, lived in poverty in the Yogyakarta Special Region in 2017. The Yogyakarta Central Bureau of Statistics (BPS) estimates that 463.63 thousand individuals, or 11.49 percent of the entire population, were impoverished in 2022.

Table 1.1 Number of Poor People by Regency / City in DIY in 2017 - 2022

Regency/ city	Number of Poor People by Regency / City (Percent)					
	2017	2018	2019	2020	2021	2022
KulonProgo	20.03	18.30	17.39	18.01	18.38	16.39
Bantul	14.07	13.43	12.92	13.50	14.04	12.27
Gunungkidul	18.65	17.12	16.61	17.07	17.69	15.86
Sleman	8.13	7.65	7.41	7.27	8.64	7.74
Yogyakarta	7.64	6.98	6.84	7.27	7.64	6.62

table 1. 1 Number of Poor People by Regency/City in DIY in 2017-2022

Based on Table 1.1 The total poor population of Yogyakarta has experienced a decline from 2017-2019. However, when the covid 19 pandemic happened, the poverty rate in most countries was affected. This triggered an increase in poverty in 2020-2021 in general. The poverty rate in 5 districts / cities of Yogyakarta has experienced a stable decline over 2017-2019. Yet, in 2020-2021 5 districts / cities in the Special Region of Yogyakarta experienced an increase in poverty for 2 years except for Sleman Regency which only experienced an increase in poverty in 2021 due to the co-19 pandemic. Moreover, by 2022 the poverty rate has started to fall in each region.

Until September 2021, the local government performed several actions to reduce poverty in Yogyakarta, such as: Social Assistance Program in which the Yogyakarta government usually organizes social assistance programs such as the Prosperous Family Card (KKS); Family Hope Program (PKH); and basic food assistance to underprivileged families. These programs aim to help poor families meet their basic needs. Furthermore, government also established Economic Empowerment of the Poor as a way to reduce poverty by economically empowering the poor. This can be done through skills training, small business capital assistance, and programs that help the poor earn additional income.

One way to overcome poverty is to increase the growth of Gross Regional Domestic Product (GRDP), which is one of the most important economic indicators

for poverty reduction because it provides a deep understanding of the economic well-being of a region or region. The growth rate of the Gross Regional Domestic Product (GRDP) indicates the extent of the economic activity of the community in each period. If the economic activity goes well, it should reduce the poverty rate of the Yogyakarta Special Region, while the high poverty rate of DIY Province indicates that the GRDP is not maximized.

Table 1.2 Gross Regional Domestic Product (GRDP) of Yogyakarta Special Region

Regency/ city	Gross Regional Domestic Product (GRDP) of Yogyakarta Special Region (Percent)					
	2017	2018	2019	2020	2021	2022
KulonProgo	9060460.00	10312524.00	11995771.00	116543.19	124430.63	143153.80
Bantul	226117.06	244501.19	263109.72	261370.15	281261.68	311825.92
Gunungkidul	161998.41	175277.16	188447.36	189361.71	204305.18	227488.34
Sleman	400478.64	437790.44	474679.78	456547.20	494032.42	547024.63
Yogyakarta	313090.45	337875.81	364926.40	357240.46	385406.49	426281.82

table 1. 2 Gross Regional Domestic Product (GRDP) of Yogyakarta Special Region

Based on Table 1.2, the value of the Gross Regional Domestic Product (GRDP) of the Yogyakarta Special Region has always increased, except in 2020, when the decline in GDP in all sectors was due to the global crisis caused by the COVID-19 pandemic, which caused the stagnation in many economic sectors.

The level of job opportunities and the incidence of poverty greatly influence the poverty factor of a region. It is also driven using technology, human resources, and existing employment. Among all the factors mentioned above, the unemployment rate in Yogyakarta Special Region decreases as people and incomes

increase. Sukirno (2004) explained that people's income decreases because they do not have a job, which in turn reduces the wealth that a person can achieve.

Table 1.3 Total Unemployment by Regency/City (percent)

Regency/ city	Total Unemployment by Regency/City (percent)					
	2017	2018	2019	2020	2021	2022
KulonProgo	4,873	3,873	4,710	10,005	9,920	7,824
Bantul	17,466	16,188	18,080	24,783	24,075	24,875
Gunungkidul	7,085	9,606	8,972	8,591	10,315	9,623
Sleman	23,173	30,294	27,508	35,843	38,199	33.395
Yogyakarta	11,422	15,071	12,212	22,624	23,923	19,228

table 1. 3 Total Unemployment by Regency/City (percent)

Based on Table 1.3, the total number of unemployed in Yogyakarta Special Region from 2017 to 2022 experienced the rising and falling phases. The number of unemployed in Yogyakarta Special Region in 6 years has not yet found the right solution. According to the above data from the Yogyakarta Statistics Central Bureau of Statistics (BPS), the number of unemployed in the administrative municipalities/cities of the Yogyakarta Special Region has been unstable.

Furthermore, the Human Development Index (HDI), which gauges accomplishments in human development using several fundamental aspects of quality of life, is the next factor affecting the poverty rate Maulana, et al (2021). The HDI, which is a measure of life quality, is built in three dimensions. These aspects include knowledge, living a long and healthy life, and leading a life with dignity. These three dimensions are connected to many other factors, which gives them a vast significance (BPS). The measure of health is the life expectancy at birth. The knowledge component is then measured using a combination of average years of schooling and literacy indices. The average spending per resident serves as an income method that represents the achievement of development for a decent life. Simultaneously, the purchasing power indicator of the community is employed for

numerous fundamental necessities in order to quantify the dimension of a decent life.

Table 1.4 Human Development Index Value (HDI)

Regency/ city	Human Development Index Value (HDI)					
	2017	2018	2019	2020	2021	2022
KulonProgo	73.23	73.76	74.44	74.46	74.71	75.46
Bantul	78.67	79.45	80.01	80.01	80.28	80.69
Gunungkidul	68.73	69.24	69.96	69.98	70.16	70.96
Sleman	82.85	83.42	83.85	83.84	84	84.31
Yogyakarta	85.49	86.11	86.65	86.61	87.18	87.69

table 1. 4 Human Development Index Value in Special Region Yogyakarta

Based on Table 1.4, the Human Development Index (HDI) shows that the increase of the Human Development Index (HDI) every year in each state/city of Yogyakarta Special Administrative Region is due to several factors that continue to increase, including education sector, GRDP, and poverty line.

Furthermore, the Yogyakarta Special Region Government defines population as the percentage of population increase over time. The term "population growth" was described as the increase in the number of people residing in a specific area over time, and it is a product of migration, birth rate, and death rate (Said, 2012). The population is defined as all individuals who have resided in the Republic of Indonesia's geographic area for at least six months, as well as those who have lived there for less time but want to settle, according to the Central Bureau of Statistics of Indonesia (2018). The population consists of all those who have resided in the Republic of Indonesia's geographic area for six months or longer, as well as those who have not yet settled but intend to do so (Kuncoro, 2013)

Table 1.5 Population by Regency/City in D.I. Yogyakarta (Thousand)

Regency/ city	Population by Regency/City in D.I. Yogyakarta (Thousand)					
	2017	2018	2019	2020	2021	2022
KulonProgo	421,500	426,767	432,058	437,373	442,724	448,131
Bantul	995,639	1,009,171	1,022,788	1,036,489	1,050,308	1,064,286
Gunungkidul	731,170	740,181	749,229	758,316	767,464	776,705
Sleman	1,197,563	1,214,346	1,231,246	1,248,258	1,265,429	1,282,804
Yogyakarta	422,363	427,801	433,267	438,761	444,295	449,890

table 1. 5 Population by Regency/City in D.I. Yogyakarta

Based on the table above from the Yogyakarta Regional Development Planning Agency (BAPPEDA) above Indonesia from 2017 to 2022, the Population in Yogyakarta has increased every year, this is due to the increasing birth rate, death rate and the population (migration) who have settled in Indonesia.

From the explanation above, it is important to carry out study on how the population, unemployment (UNP), human development index (HDI), and gross regional product (GRDP) affect the rate of poverty in the Yogyakarta Special Region. The title of the study is " Gross Regional Domestic Product, Human Development Index, and Population in influencing poverty in Yogyakarta."

1.2 Problem Formulation

Based on the description of the background of the problem, the core of the problem is:

1. Is the poverty in the Special Region of Yogyakarta affected by the Gross Regional Domestic Product (GRDP)?
2. Does Yogyakarta Special Region's Unemployment (UNP) impact Poverty?
3. Is there a relationship between the Human Development Index (HDI) and the Poverty in Yogyakarta Special Region?
4. In Yogyakarta's Special Region, does the Population have an impact on the Poverty?

1.3 Research Objectives

For this research to serve as a standard or reference for future studies, it outlines the goals and advantages that will be attained. The following are the goals of this study on the impact of the Human Development Index (HDI), Population Unemployment (UNP), and Gross Regional Domestic Product (GRDP) on Yogyakarta Special Region's poverty:

1. To examine how the Gross Regional Domestic Product (GRDP) variable affects Yogyakarta Special Region's poverty from 2017 and 2022.
2. To examine the impact of the variable rate of unemployment (UNP) on Yogyakarta Special Region poverty from 2017 to 2022.
3. To analyse the impact of the Yogyakarta Special Region's Poverty from 2017 to 2022 on the Human Development Index (HDI) variable.
4. To examine how the Yogyakarta Special Region's poverty is affected by the Population variable from 2017 and 2022.

1.4 Research Benefits

The following are some advantages of this research:

1. The findings of this study can be used by the Yogyakarta Special Region government as a resource for reducing poverty in that region.
2. The findings of this study can be used by the author's understanding to apply previously acquired theories.
3. The findings of this study can be used or may serve as a viewpoint and source of knowledge for all Indonesians.
4. The findings of this study can be used for students at the Islamic University of Indonesia's Faculty of Business and Economics.

CHAPTER II

LITERATURE REVIEW

2.1 Literature Review

In this literature review there are various previous studies and several problems that have also been studied by several other researchers, studies that have been conducted by previous researchers include:

A study conducted by Siswoyo, et al (2019) examines the analysis of unemployment and poverty in Jambi province, the material used in this study is descriptive qualitative and quantitative using literature and secondary data from agencies involved in the study. The results showed that between 2000 and 2015 unemployment increased by an average of 8.53 percent, while the number of poor people decreased by 2.64 percent, and there was a negative correlation between the increase in unemployment and the increase in the number of the poor.

Rahmah (2016) conducted a study that looks at the poverty rate in DKI Jakarta. This kind of research makes use of quantitative data. Secondary data were employed in this investigation. This study used an EViews 8 panel data regression model to meet its research goals and test its hypotheses. The following findings are derived from the study's data: Poverty is significantly and negatively impacted by both the DKI and the GRDP. The Jakarta administration is increasing output while decreasing public consumption; this is unrelated to the DKI Jakarta Regency/City's GRDP growth. It is hoped that the government of DKI Jakarta will enhance the standard of physical facilities, enhance the Caliber of teachers, and lower the cost of education so that the underprivileged can benefit from education, which has a positive and insignificant effect on the reduction of poverty in DKI Jakarta Regency / City. Poverty is adversely affected by unemployment, however to address the issue, the government is expected to establish workforce training facilities and increase employment by establishing new industries.

A study by Triwahyuningtyas, et al (2022) examines the analysis of the poverty factor in specific regions/cities. This study uses secondary data indirectly obtained and published by other parties in data collection and data collection types. which the Yogyakarta Central Statistical Office is looking into. These are the research findings that were attained: Because of the high rate of population expansion and the high birth rate of the locals, Yogyakarta city's particular area is affected by the overall population when it comes to poverty. Although the government has made every effort to enhance welfare, population growth is faster than anticipated. There is no relationship between poverty and the Human Development Index in the Yogyakarta Special Region. A high HDI does not automatically equate to poverty because the agricultural industry, which employs most of the labor force in the Special Region of Yogyakarta, does not usually require highly skilled workers. In addition, many old people are unproductive and live in low-income settings. in Yogyakarta. Poverty in Yogyakarta Special Region governments and cities is impacted by minimum wage. We can deduce that Yogyakarta districts and cities with higher minimum wages have lower rates of poverty. This minimum wage policy was established to guarantee workers a respectable income, which will boost worker productivity, enhance welfare, and keep workers out of the poverty trap. The Yogyakarta Special Region's municipalities and cities' poverty is impacted by labor recruiting. We may conclude that in Yogyakarta's districts and cities, poverty decreases with increasing labor absorption. The agricultural industry dominates self-employment since it is simple to find work that does not require special qualifications.

Research by Chisti (2018) examined the primary factors contributing to high rates of poverty between 2007 and 2013 In six regions on Java Island. The provincial minimum wage, economic growth, open unemployment rate, and human development index are the variables that need to be examined. To ascertain the impact of the independent variable on the dependent variable, multiple regression analysis on panel data with EViews 9 is the data analysis technique employed. The Chow and Hausman tests must be performed to identify the model that is being utilized because panel data is used. Additionally, traditional assumption testing

must be done. According to the study's hypothesis, three variables have an indirect effect while four have a substantial effect. The poverty rate in the six provinces of Java Island is directly impacted by the human development index, which is negative, and is indirectly influenced by the open unemployment rate, which is also negative, positive economic growth, and the provincial minimum wage, which is positive. These findings are based on calculations made using the Fixed Effect Model (FEM) method. This is brought about by the unequal distribution of income and the fact that only the formal sector uses minimum salaries.

A study by Niswat (2014) discusses about factors affecting poverty in Jogjakarta Special Region 2003-2011. Secondary data were employed in this research. The following are the research's findings: In five districts/cities in Yogyakarta province, the average number of years of schooling has no bearing on poverty. This is since Yogyakarta province's main sectors include trade, hospitality and restaurant, and agriculture, none of which demand highly skilled workers. Poverty is negatively impacted by health, as indicated by life expectancy, in five districts/cities within Yogyakarta province. This is due to the comparatively high life expectancy in the DIY province. The DIY province's high level of health is substantially supported by adequate infrastructure and resources. In five of Yogyakarta province's districts and cities, labor productivity has a negative impact on poverty. This is so because increased labor productivity raises both the community's and the government's income levels. High incomes enable people to overcome poverty by covering their basic needs. In five of Yogyakarta province's districts and cities, poverty is unaffected by inflation. This is since Yogyakarta province's inflation rate increased less than the minimum wage increases each year between 2003 and 2011, meaning the inflation increase had no appreciable effect. In five of Yogyakarta province's districts and municipalities, MSEs reduce poverty. The agriculture sector in Gunungkidul and Kulon Progo is the main industry in Yogyakarta province, which explains why. Even if the minimum pays rises in a DIY area where the agriculture industry predominates, poverty will not change because the regional minimum wage is typically employed as the industrial minimum wage.

2.2 Theoretical Foundation

2.2.1 Poverty

According to Niemietz (2011) and Maipita (2014) poverty is the inability to buy necessities such as food, clothing, housing, and medicine. At the same time, the definition of poverty, according to Gilin (1921), is a situation where a person cannot maintain a high standard of living to ensure physical and mental ability to work, a function that allows him or his family to function properly and accordingly with the community, either because of insufficient income or because of unreasonable expenditure.

According to Bappenas, poverty measurement has three indicators, namely:

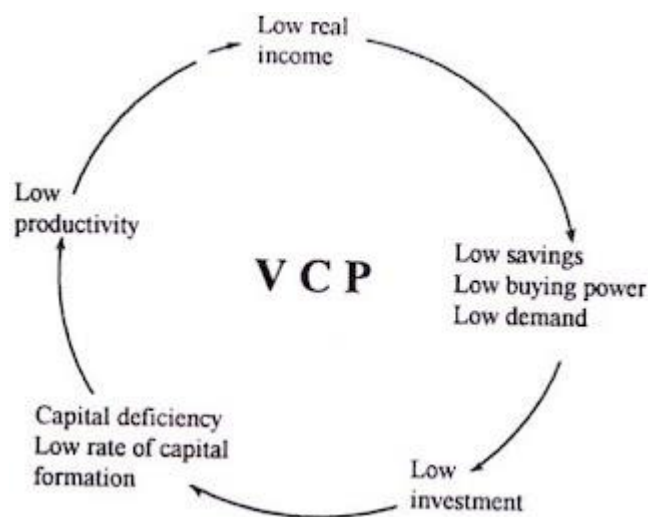
- | | |
|---------------------|---|
| Poverty Rate (P0): | The percentage of people living below the poverty line in terms of per capita income. |
| Poverty Depth (P1): | The typical disparity in per capita income between the underprivileged and the wealthy. Because per capita expenditure is farther away from the poverty line, the poorer the population, the higher the P1 number. |
| Poverty Level (P2): | P2 is a way of measuring poverty. It looks at the average difference between how much money poor people spend and the amount of money needed to be above the poverty line. P2 gives more importance to the difference in spending per person, and the poorest population has the lowest P2. |

2.2.2 Causes of Poverty

Prayoga et al. (2021) argue that poverty is caused by several factors, such as insufficient minimum wages, poor living standards, and increasing unemployment without additional job opportunities. At the same time, according to Kuncoro (1997) production methods are still traditional, because they depend on the subsystem of the agricultural sector, often accompanied by apathy towards the environment.

2.2.3 Theories of the causes of poverty

According to Nurkse (1971), poverty comes from the vicious circle theory of poverty. The vicious circle theory of poverty states that low productivity is caused by market imperfections, underdevelopment and backwardness, and lack of capital. In principle, low productivity means low income. Then, low-income results in low savings rates. Then, low savings lead to low investment. Since investment is an important component of capital, low investment leads to a lack of capital which implies market imperfections, and underdevelopment. This process continues to cycle according to the theory in Picture 1.1.



Picture 1. 1 vicious circle theory of poverty

2.2.4 Type of Poverty

According to Ali Khomsan et al (2015) in a book entitled Poverty Indicators and Misclassification of the Poor, there are several types of poverty that need to be known, namely:

1. Absolute Poverty

Absolute poverty is poverty that describes people whose income level falls below the poverty line set by the state. It can also be defined as the condition of a person whose income is not sufficient to meet basic needs.

2. Relative Poverty

Relative poverty is poverty that results from unequal development policies that do not reach all people. As a result, there are still people in some areas who experience income inequality. Even if the status of a resident is above the poverty line, they still appear poor because the average income of residents in the area is higher. Therefore, this type of poverty is called relative poverty. Relative poverty can also be defined as poverty resulting from the comparison of the population and its environment. This relative poverty can form a stigma that person A is relatively poorer than person B because B's income is higher.

3. Cultural Poverty

Cultural poverty is poverty that is formed because of the habits of the community that have become a culture, both from the values that are promoted, thoughts, and ways of working. Examples of cultural poverty that often occur in society are as follows:

- a. Laziness
- b. Low work ethic
- c. Giving up easily
- d. A culture that Favors corruption, collusion, and nepotism
- e. Rejecting scientific and technological progress

f. Relying on the help of others, including the government

4. Structural poverty

Structural poverty is poverty that stems from the social structure inherent in certain groups of people and allows for conditions where they cannot use the resources available to them.

2.2.5 Poverty Criteria

Categories or Criteria of the Poor According to the Minister of Social Indonesia Affairs Al-Jufri (2013) of the Minister of Social Affairs decree, those registered as poor and persons with disabilities are households that have the following criteria:

1. Do not have a source of livelihood and/or have a source of livelihood but do not have the ability to fulfil basic needs.
2. Having expenditure mostly used to fulfil basic food consumption is very simple.
3. Unable or experiencing difficulties to seek medical treatment, except for Health center or those subsidized by the Government.

2.3 Gross Regional Domestic Product (GRDP)

The region's economic growth from year t-1 to year t is represented by the gross regional domestic product (GRDP). The Gross Regional Domestic Product (GRDP) growth rate indicates the level of prosperity and progress in the area during a specific period. Growth signifies an increase in both product and service production in the region.

One way to assess a region's economic worth over time is to look at its Gross Regional Domestic Product (GRDP) growth rate. Without considering an entity's ownership, the GRDP shows the total value of all the goods and services produced by all entities operating within the region.

GRDP is the sum of the values of all goods and services produced by all economic sectors in a region, including government consumption, investment, exports, and imports. (Jhingan, 2013).

Meanwhile, Indonesia's Central Bureau of Statistics (BPS) defines Gross Regional Domestic Product (GRDP) the value of all final goods and services produced within the geographical boundaries of a region in a given period of time, measured in constant prices. GRDP is the growth of value-added production generated by various sectors or business fields that conduct business activities in a region or region without selecting the factors of production (Arsyad, 1992).

According to macroeconomic theory, the calculation of GRDP can be done through three approaches BPS (2021), namely:

- 1) production/provision approach (GRDP by business field/industry),
- 2) expenditure / final demand approach (GRDP by Expenditure) and
- 3) income approach (GRDP by income/income). The three calculation approaches will theoretically produce the same GRDP figures.

2.3.1 The Relationship between Gross Regional Domestic Product to Poverty Levels

There is a strong correlation between GRDP to poverty, which measures the economic expansion of the region, and the poverty rate and robust economic expansion, which boosts locals' wages and creates many work opportunities. However, a slower rate of increase in the GRDP or a permanent drop in it reduces job prospects because of sluggish economic growth, which can lead to business failure and layoffs in many companies. Reductions in the GRDP growth rate make it harder to escape poverty and unemployment.

2.4 Unemployment

Nanga (2001) defines unemployment as the state in which a member of the working class is neither employed nor actively seeking one. On the other hand, the number of workers in the economy who are actively searching for work but have not yet found it is what Sukirno (2004) defines as unemployment. Sukirno (1994) defined unemployment as a state in which an individual in the labor force wishes to obtain employment but has not yet been hired. Unemployment does not apply to someone who is not working but is not actively seeking employment.

According to BPS (2017), unemployment can be categorized into four categories:

- 1) Full/open unemployment

People who are in the labor force but are not working and not looking for work.

- 2) Forced underemployment.

People who work less than 35 hours per week for reasons beyond their will because they have not been able to find a job even though they are looking for and willing to accept a job with lower wages than expected.

3) Voluntary underemployment

People who choose to be unemployed rather than accept a job that they feel is not in accordance with their education or a lower wage than expected.

4) People who work less than what they can do with their education/skills.

2.4.1 Relationship between Unemployment and Poverty

According to Sukirno (2010), income is one of the most important factors affecting the well-being of society. Income can be maximized when full employment can be achieved. Unemployment reduces people and incomes; this can lower the level of well-being they achieve. According to Sukirno (2004), the negative effect of unemployment on poverty is the decrease of people and their incomes because they do not have a job, which in turn lowers the attainable well-being of a person. A deterioration in people's well-being due to unemployment certainly increases their chances of falling into a poverty trap because they have no income. Based on the above opinions of experts, it can be interpreted that the increase in the response rate has a negative impact on society, because many reactions weaken the economy of the region and increase the possibility of people being poor.

2.5 Human Development Index (HDI)

Development that uses people as the primary actors and prioritizes them as the end objective might serve as a sign of human progress, according to Azhari (2000). The Indonesian government defines human development as a process that is carried out by the people, for the people, and with the people. This process aims to uplift the oppressed order of society. Several important factors contribute to the human growth process, such as health, education, morale, purchasing power, and faith.

By and large, the World Bank has set people's well-being as the most objective of advancement; advancement ought to accomplish people's well-being through making strides wellbeing, nourishment, and education frameworks to the

leading guidelines and quality. Within the advancement handle, the World Bank has set three targets for nations to realize: financial change, social advancement, and natural enhancement. These three targets have procedures that are exceptionally closely related to human improvement, such as lessening newborn child mortality, actualizing obligatory essential instruction, wellbeing, and moving forward the quality of sustenance, and not overlooking the significance of economic improvement. Accomplishing comprehensive development over Indonesia, particularly in slacking districts, requires progressed administrations at the nearby level and expanded value. (World Bank, 2017)

Human improvement requires solid human assets and human asset advancement must agree. If the advancement of community framework does not go in line with by the advancement of human assets, the competitiveness of Indonesia's human assets will decay. In this case, human assets must proceed to progress fundamental needs and capabilities to contribute to destitution mitigation in Indonesia.

According to the Central Bureau of Statistics Indonesia (BPS), there are 4 components of the Human Development Index:

a. Life Expectancy Rate

Life expectancy at birth is an average estimate of how many years a person can live.

b. Literacy Rate

Literacy rate is the percentage of people aged 15 and over who know how to read and write Latin letters and/or other letters.

c. Average Years of Schooling

Average years of schooling indicates the number of years spent in formal education for people aged 15 and over.

d. Adjusted Real Expenditure per Capita.

Adjusted real per capita expenditure measures a decent standard of living using adjusted real gross domestic product (GDP), while the BPS uses Atkinson-adjusted average real expenditure to calculate a decent standard of living per capita.

2.5.1 The Relationship between Human Development Index (HDI) and Poverty

The Human Development Index (HDI) tells whether a region/country is prosperous enough or not because the HDI combines a number of factors affecting the well-being of the region, such as health, education and income, to give an overall picture/Information about the quality of human life. If the Human Development Index is high enough, it is certain that the availability of quality education, life expectancy and infant mortality, gross domestic product per inhabitant will certainly increase. On the other hand, if the value of the Human Development Index indicator is low, it is certain that the inhabitants of the region lack sufficient opportunities, such as poorer education, low life expectancy, and a much lower GDP per capita. According to Central Bureau of Statistics of Indonesia (BPS), the Human Development Index (HDI) is an important indicator used to measure the success of improving the quality of life of people (society/population).

2.6 Population

According to the Yogyakarta Regional Government, the population growth is a number that shows the percentage of population growth over a period. Additionally, according to the Central Bureau of Statistics of Indonesia (BPS), residents are all people who live in the geographic area of the Republic of Indonesia for at least six months and/or people who live for less than 6 months but try to settle down. Meanwhile, according to Mantra (2009), residents are individuals with social status as individuals, members of families, communities, citizens, and a set of quantities that reside somewhere within certain territorial boundaries.

There are 3 factors affecting population growth according to Mantra (2012) in his book entitled 'General Demography':

1. Birth (Fertility) Fertility is the release of a baby from a woman's womb with signs of life. It also states that if the baby born does not survive, it is not counted as a birth.
2. Mortality or death is characterized by the loss of signs of life in a person. Mantra (2012) explains that the high mortality rate of the population can also be an indicator of health quality.
3. Population Migration Population migration includes the exit and entry of people. It is explained that migration is the geographical residence of population mobility which includes all population movements that cross certain territorial boundaries within a certain period.

2.6.1 Relationship between Population and Poverty

The annual population can also greatly affect the existing poverty rate because population leads to intense competition in the job search, and this is also facilitated by jobs, which are still very few, as shown e.g. According to the author of Central Statistics Agency (BPS), the number of unemployed in the Yogyakarta special region is still unstable, it also affects economic growth, which is consistent with the statement of Muyadi (2003: 16) that high population growth in developing countries is such. because Indonesia can hinder the development process.

2.7 Hypothesis

1. the Gross Regional Domestic Product (GRDP) positively affects the poverty of Yogyakarta Special Region
2. Unemployment (UNP) has a positive effect on the poverty of Yogyakarta Special Region.
3. Human Development Index (HDI) has a positive effect on poverty in Yogyakarta Special Region.
4. Population positively affects poverty in Yogyakarta Special Region.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Types and Methods of Data Collection

The Central Bureau of Statistics and regional basic data are just two of the sources of financial data used in this study. Through the media, researchers might indirectly get secondary data—information that has been documented and acquired by other parties— Indrianto and Supomo, (2013) The author used panel data regression analysis to examine the secondary data. Panel data is created by combining time series and cross-sectional data. Time series data are collections of observations of one or more variables made in a single observation unit over a predetermined period, according to Basuki and Prawoto (2017).

The data is collected through literature research, Close Reading of books, journals, and other research-related sources to provide a theoretical basis for the factors affecting Poverty in a special region of Yogyakarta. Using STATA 16 as a tool of analysis about The influencing factors in this study are Gross Regional Domestic Product (GRDP), Total Unemployment (UNP), Human Development Index (HDI), and Population while the influencing factor is the Poverty Level in Yogyakarta Special Region.

3.2 Operational Definition of Variables

This study analyses several variables that are interrelated, the variables consist of two types, namely:

3.2.1 Variables Dependent

- Poverty

It is common to refer to dependent variables as criteria, outcomes, effects, or dependent variables. According to Sugiyono (2012), the dependent variable is the one that is affected by or the outcome of the independent variable. The study uses the percentage (%) as the unit of measurement for Variable Y, which is the

poverty in the Yogyakarta Special Region from 2017 to 2022. The Indonesian Central Bureau of Statistics is the source of the information. "The inability from the economic side to meet the basic needs of food and non-food as measured in terms of expenditure" (BPS) is the definition of poverty level.

3.2.2 Variables Independent

Sugiyono (2019:61) states that independent variables (X) Independent variables are those that have an impact on the dependent variable or dependent variable. In this study, the Poverty Rate in the Special Region of Yogyakarta from 2017 to 2022 is influenced by four independent factors, which are as follows:

1. Gross Regional Domestic Product (GRDP)

The BPS states that the gross domestic product (GDP) is the total added value of the goods and services generated inside the nation's borders by different production units during a specific period, usually a year. (Jhingan, 2013) states that the GDP is the total of all product value increases. products and services generated by all economic sectors operating in the area, including imports, exports, government consumption, and investment. The Yogyakarta Central Bureau of Statistics provided the data on the Gross Regional Domestic Product from 2017 to 2022. The data is expressed in Millon.

2. Unemployment (UNP)

Sukirno (1994) defined unemployment as a state in which an individual who is part of the labor force wishes to obtain employment but has not yet done so. Unemployment does not apply to someone who is not actively seeking employment but is not working. The Central Bureau of Statistics provided the Yogyakarta Special Region with unemployment data from 2017 to 2022. The data is expressed as a People (Thousand).

3. Human Development Index (HDI)

The Human Development Index (HDI), according to the BPS, describes how a population gets access to development outcomes like income, health, and education. Five Regencies/Cities in the Special Region of Yogyakarta have been assigned a Human Development Index (HDI) for the years 2017–2022. According to UNDP standards, there are three categories that make up the human development index: HDI point >80 means very high class, HDI point 70-79 means high class, and HDI 60-79 means medium class.

4. Population

The Population is a figure that indicates the proportion of population growth during a given period, according to the Yogyakarta Special Region Local Government. The persons who live in the Republic of Indonesia's geographical region for six months or more, or those who dwell there for less time but intend to settle permanently, are considered residents, according to the Central Bureau of Statistics of Indonesia (BPS). Data on the Population, given as a people (Thousand), for the years 2017–2022 was obtained from the Yogyakarta Regional Development Planning Agency (BAPPEDA).

3.3 Research Analysis Methods

In this study the author analysed economic data or economic behaviour, namely the Poverty Rate in the Special Region of Yogyakarta, so it is necessary to use a suitable regression analysis method because it not only observes economic behaviour at the same time but also observes economic behaviour at various time periods. Thus, the regression suitable for regression analysis of such data is regression with panel data because panel data at the same time can "explain two kinds of information at once, namely information between units (cross section) on differences between subjects and information between time (time series) reflecting changes in the subject of time" (Sriyana, 2014).

Panel data is a combination of time series data with cross section data Basuki and Prawoto (2017: 275). In processing the panel data, the author uses the STATA 16 program, the processed data is a combination of time series data for six years from 2017 - 2022 and uses cross section data in the Special Region of Yogyakarta.

The economic model used to determine the Poverty Rate in Yogyakarta Special Region can be written as follows:

$$\text{LVL_POVERTY} = f(\text{GDRP, UNP, IPM, POP})$$

The regression model is in log linear form as follows (Widarjono, 2017):

$$\ln\text{LVL_POVERTY}_{it} = \beta_0 + \beta_1 \ln\text{GRDP}_{it} + \beta_2 \ln\text{UNP}_{it} + \beta_3 \ln\text{HDI}_{it} + \beta_4 \text{Population}_{it} + \varepsilon_{it}$$

Description:

LVL_POVERTY	= Poverty in Special Region of Yogyakarta (%)
GRDP	= Gross Regional Domestic Product (Million)
UNP	= Unemployment (Thousand)
HDI	= Human Development Index (%)
Population	= Population (Thousand)
β_0	= Constanta
ln	= Coefficient
i	= Regency/City
t	= Year (period 2017 – 2022)

Based on the regression model above, the dependent variable (LVL_POVERTY) is influenced by several independent variables (GRDP, UNP, HDI, Population).

In conducting panel data regression analysis, it can be done with several estimation approach models, namely Common Effect Models, fixed effect Models, and random effect models (Widarjono, 2017). This approach can be explained as follows.

3.3.1 Common Effect Model

The common effect model is the simplest model because it assumes that the object under study has the same characteristics in the individual and time dimensions. However, the objects studied are different. The easiest method to estimate panel data is to combine time series and cross-section data without paying attention to differences between time and individuals. The use of Ordinary Least Squares (OLS) in this approach produces a Common Effect Model (CEM), which assumes the existence of general or constant effects that affect all units or individuals in the population. This approach does not consider significant individual or time variations and is appropriate when it is assumed that these general effects are the main factor in explaining the variation in panel data.

3.3.2 Fixed Effect Model

This study used the fixed effect method as its methodology. To capture differences, the approach makes use of dummy variables. According to this approach, the intercept is time invariant—it changes over time but is constant across firms—while the regression coefficient, or slope, is assumed to be constant. Nevertheless, this approach has the drawback of decreasing the degrees of freedom, which consequently lowers the parameter's efficiency.

3.3.3 Random Effect Model

The random effects method uses the addition of disturbance variables (error terms) that can appear in the relationship between time and regions/cities. The OLS method cannot be used to obtain an effective estimate, so it is more appropriate to use the GLS (Generalized Least Square) method.

3.4 Estimation Method

For the model determining the test estimate that can be done is by using the Chow Tets, Lagrange Multiplier Test, and Hausman test.

3.4.1 Chow Test

This is a test used to select the appropriate regression results from the Common Effect Model and Fixed Effect Model, also known as the Chow Test. The Chow Test decision is as follows:

H_0 : The Common Effect Model

H_a : The Fixed Effect Model

The decision to reject or not reject the null hypothesis H_0 , with an alpha significance level of 0.05 ($\alpha = 5\%$) is as follows:

- a. If the Chi-square probability value $>$ alpha, then H_0 is not rejected and the model used is the Common Model Effect.
- b. If the Chi-square probability value $<$ alpha, then H_0 is rejected and the model used is the Fixed Effect Model

3.4.2 Lagrange Multiplier

The Lagrange Multiplier test, developed by Breusch-Godfrey, is a general method for detecting autocorrelation problems. The LM test ensures appropriate model selection, especially when the test results for the fixed and random models are inconsistent. For example, the Chow test may be suitable for a fixed effects model, but the Hausman test may be suitable for a random model. In situations like this, the LM test is used to decide which model is more appropriate.

H_0 : reject h_0 if the probability is smaller than 5% alpha which means the random effects model.

H_0 : accept h_0 if the probability is greater than alpha 5% which means the Common effect model.

3.4.3 Hausman Test

The Random Effect Model is the basis for choosing the best model between the Random Effect Model and the Fixed Effect Model. The steps are as follows:

1. Regress each model from the Fixed Effect Model and Random Effect Model.
2. Formulate H_a alternative hypothesis and H_0 null hypothesis, as follows:
 - H_0 : Random Effect Model
 - H_a : Fixed Effect Model
3. Determine the critical limit at which a hypothesis should be rejected or not.
4. The decision to reject or accept H_0 is as follows:
 - a. If the Cross Section Random probability value $<$ alpha, then H_0 is rejected and the model used is a fixed effect.
 - b. If the Cross Section Random probability value $>$ alpha, then H_0 is accepted and the model used is a random effect.

3.5 Statistical Test

The R^2 test, the F test, the partial regression coefficient test (T test), and the coefficient of determination test (R^2) are the statistical tests utilized in this investigation.

3.5.1 Coefficient of Determination Test (R^2)

The coefficient of affirmation (R^2) test is performed to choose and predict how sweeping or essential the combined effect of the free variables is on the subordinate variable. The coefficient of affirmation is between zero and one. On the off chance that the regard of R^2 is little, the capacity of the free components to clarify the assortment inside the subordinate variable is outstandingly compelled. A regard close to one suggests that the free variables grant about all the information required to foresee the assortment inside the subordinate variable. A deficiency of the coefficient of affirmation is that it is impacted by the number of independent components included inside the backslide demonstrate, whereby the extension of

each free variable and number of recognitions inside the appear increases the R^2 regard, in fact within the occasion that the included variables do not have basic effect on the subordinate variable.

3.5.2 Regression Coefficient Test together (F Test)

The F test is used to ascertain whether the independent variable significantly affects the dependent variable. Explanation of the F test uses analysis of variance = ANOVA. To ascertain whether the regression coefficient $\beta_1, \beta_2, \beta_3$ and β_4 simultaneously has an impact on the dependent variable. The F test method and 5% alpha decision-making criteria are explained as follows (Widarjono, 2013: 65):

1. Create the null hypothesis H_0 and alternative hypothesis
 - $H_0 : \beta_1 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0.$
 - $H_a : \beta_1 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0.$
2. Determine the important limits that influence the decision to accept or reject a hypothesis H_0 , where the F-table value = $F_{\alpha;df1;df2}$. The basic esteem is decided by the alpha level of 5%, df1 is decided by the numerator (k-1) df2 is the denominator (n-k), and the k esteem, which is the subordinate variable, is the number of demonstrate parameters decided.

c

3.5.3 Partial Regression Coefficient Test (T Test)

To find out how much influence the independent variables in influencing the non-independent variable, at a certain level of significance, t-test is used. The following is the decision-making process:

1. If t-count < t-table, rejected. In other words, each independent variable affects the dependent variable on its own.
2. If t-count > t-table, Accepted. Stated differently, the dependent variable is unaffected by individual independent factors.

CHAPTER IV

RESULTS AND DISCUSSION

This analysis and discussion will describe the results of research on the effect of Gross Regional Domestic Product, Total Unemployment, Human Development Index, and Population Growth Rate on the poverty rate in the Special Region of Yogyakarta from 2017 to 2022. In this study, the analysis was conducted using panel data, namely as many as 5 districts / cities in the Special Region of Yogyakarta in the period 2017 to 2022. The analysis was carried out by selecting the right method, namely Fixed Effect and Random Effect. Among the two panel data analysis methods, one method will be chosen which will then be used for the statistical test stage. The estimation testing is done with the help of STATA 16.0 software.

4.1 Result of Operational Definition of Variables

This sub-chapter explains the result variables used in the research, which is processed through STATA 16 software. The data used in this study are secondary data obtained from the Central Bureau of Statistics of Indonesia (BPS) & the Regional Development Planning Agency (BAPPEDA) of the Regency and City of Yogyakarta Special Region. The data includes poverty rate, Gross Regional Domestic Product (GRDP), Total Unemployment (UNP), Human Development Index (HDI), and Population. The following is the result of the operational definition of each research variable.

Table 1.6 Results of Descriptive Statistics of Research Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Poverty	30	12.722	4.703511	6.62	146.98
GRDP	30	1316111	3124998	11.654.319	12.000.000
Unemployment	30	16013.15	9731.322	33.395	38.199
HDI	30	78.87333	6.248018	68.73	87.69
Population	30	778877.4	326076.1	421500	1282804

table 1. 6 Results of Descriptive Statistics of Research Variables

In Table 1.6 present the descriptive statistics data of all variables

A. Mean

Based on table 1.6, it can be inferred that:

- 1) Poverty variable (Y) has an average value of 12.722% in the 5 districts/cities in Yogyakarta Special Region.
- 2) Variable (X1) Gross Regional Domestic Product (GRDP) has an average value of 1.316.111 in 5 regencies/cities in Yogyakarta Special Region.
- 3) Variable (X2) Unemployment (UNP) has an average value of 16.013 across the 5 districts/cities in Yogyakarta Special Region.

- 4) Variable (X3) Human Development Index (HDI) has an average value of 78.873% in 5 regencies/cities in Yogyakarta Special Region.
- 5) Variable (X4) Population has an average value of 778.877 in 5 regencies/cities in Yogyakarta Special Region.

B. Standard. Deviation

Furthermore, related to the standard deviation value, statistically it is stated that the larger the average size compared to the sample St. Deviation is expected to provide better results (BINUS University) based on the table above the value of all standard variables from each variable gets a value greater than the mean value in each variable, it shows the results of data that is close to accurate.

C. Minimum/Maximum

Related data about min and max from the data above can be concluded that the value of

1. The minimum value of variable poverty in the 5 districts/cities in Yogyakarta Special Region in 2017-2022 is 6.62% while the maximum value of poverty in 2017-2022 is 20.03%,
2. The value of the Gross Regional Domestic Product (GRDP) variable in 5 districts / cities in the Special Region of Yogyakarta in 2017-2022 has a minimum value of 11.654.319 and the maximum Gross Regional Domestic Product Growth Rate value in 2017-2022 is at 12.000.000.
3. The value of Variable Unemployment (UNP) in 5 districts/cities in Yogyakarta Special Region in 2017-2022 is 33.395 while the maximum unemployment value in 2017-2022 is 38.199.
4. The value of the Variable Human Development Index (HDI) in the 5 Districts / Cities in the Special Region of Yogyakarta in 2017-2022 drank at 68.73% while the maximum Human Development Index (HDI) value in 2017-2022 was 87.69%.

5. The value of the Variable Population in the 5 Districts / Cities in the Special Region of Yogyakarta in 2017-2022 drinking is at 421.500 while the maximum Population value in 2017-2022 is at 1.282.804.

4.2 Panel Regression Model Test Results

4.2.1 Data Models Used in Panel Data Regression

Panel data regression itself has three models, including:

- A. Common Effect Models The simplest model combination involves the use of time series and cross-section data; this data combination can show the actual conditions. If all objects always exist and data are combined with the OLS method to estimate the model, the regression analysis results are considered valid (Winarno, 2009: 9.11).
- B. Fixed Effect Models is a method that considers differences in intercepts between districts/cities and over time. The method assumes that the slope is fixed, but the intercept differs across time and districts/cities.
- C. Random Effect Models is a method that assumes that there are differences in intercepts and constants caused by residual errors because of differences between time and districts.

The following are the estimation results of the 3 models:

Table 1.7 Selected Estimation Results of Common Effect Models

Variable	Coefficient	St. Err.	t-Statistic	Prob
C	67.07088	4.572365	14.67	0.000
GRDP	2.09e-07	1.03e-07	2.03	0.053
Unemployment	0.0000203	0.0000459	0.44	0.662
HDI	-0.6797832	0.0594367	-11.44	0.000
Population	-1.71e-06	1.13e-06	-1.51	0.144
Cross Section Fixed				
R-square		0.9037		
F-Statistic		58.64		
Prob F		0.0000		

table 1. 7 Selected Estimation Results of Common Effect Models

From the results of the panel data regression processing above, the coefficient of determination (R-squared) from the estimation results is 0.9037, which shows that the independent variables can explain 90.37% of the dependent variable, while the rest is explained outside the model.

Tabel 1.8 Selected Estimation Results of Fixed Effect Model

Variable	Coefficient	St. Err.	t-Statistic	Prob
C	97.33818	13.01988	5.92	0.000
GRDP	0.173897	0.0318709	-0.21	0.837
Unemployment	0.3462174	0.1347878	1.28	0.215
HDI	-1.104438	0.1696117	-4.81	0.000
Population	0.8945873	0.3585733	2.68	0.014
Cross Section Fixed				
R-square		0.2557		
F-Statistic		10.90		
Prob F		0.0001		

table 1. 8 Selected Estimation Results of Fixed Effect Model

From the results of the panel data regression processing above, the coefficient of determination (R-squared) from the estimation results is 0.2557, which shows that the independent variables can explain 25.57% of the dependent variable, while the rest is explained outside the model.

Tabel 1.9 Random Effect Selected Estimation Results

Variable	Coefficient	St. Err.	t-Statistic	Prob
C	66.01007	6.81745	14.67	0.000
GRDP	2.09e-07	1.03e-07	2.03	0.042
Unemployment	0.0000203	0.0000459	0.44	0.658
HDI	-0.6797832	0.0594367	-11.44	0.000
Population	-1.71e-06	1.13e-06	-1.51	0.132
Cross Section Fixed				
R-square	0.9037			
Prob > chi2	0.0000			

table 1. 9 Random Effect Selected Estimation Results

From the results of the panel data regression processing above, the coefficient of determination (R-squared) from the estimation results is 0.9037, which shows that the independent variables can explain 90.37% of the dependent variable, while the rest is explained outside the model.

4.3 Model Selection

Three models were used in this study: Common Effect Model, random effect model, and fixed effect model. The model chosen for this study must be appropriate to prevent bias during testing. The chow test is a step taken in choosing between fixed effect model and common effect model, Lagrange Multiplier test is a step taken in choosing between Common Effect Models and Random Effect Models, and Hausman test is a step taken in choosing between the Fixed Effect model and the Random Effect Model.

4.3.1 Chow Test

This is a test used to select the appropriate regression results from the Common Effect Model and Fixed Effect Model, also known as the Chow Test. The Chow Test decision is as follows:

H_0 : The Common Effect Model

H_a : The Fixed Effect Model

The decision to reject or not reject the null hypothesis H_0 , with an alpha significance level of 0.05 ($\alpha = 5\%$) is as follows:

- a. If the Chi-square probability value $>$ alpha, then H_0 is not rejected and the model used is the Common Model Effect.
- b. If the Chi-square probability value $<$ alpha, then H_0 is rejected and the model used is the Fixed Effect Model.

Table 1.10 Chow Test Estimation Result

Prob Chi	0.000
----------	-------

table 1.10 Chow test Result

The Chi-square Cross-Section probability results were 0.0000 based on the Chow Test results and the alpha significance level was set at 5%, it can be deduced that the probability of 0.0000 for the Chi-square Cross-Section is less than the alpha significance level., which is 0.05 ($\alpha = 5\%$). Therefore, the best model to use is the Fixed Effect Model.

4.3.2 Lagrange Multiplier Test

The Lagrange Multiplier test, developed by Breusch-Godfrey, is a general method for detecting autocorrelation problems. The LM test ensures appropriate model selection, especially when the test results for the fixed and random models are inconsistent. For example, the Chow test may be suitable for a fixed effects model, but the Hausman test may be suitable for a random model. In situations like this, the LM test is used to decide which model is more appropriate.

H_0 : reject h_0 if the probability is smaller than 5% alpha which means the random effects model.

H_0 : accept h_0 if the probability is greater than alpha 5% which means the Common effect model.

Table 1.11 Lagrange Multiplier Test

Prob Chi	1.0000
----------	--------

table 1.11 lagrange Multiplier test estimation results

Based on Table 1.11, the chi probability value is 1.000 which is more than alpha 0.05 ($1.000 > 0.05$), so the right model is to use Common effect Model

4.3.3 Hausman Test

The Hausman Test is used to select the best model between Fixed Effect and Random Effect. As explained earlier, this test is to select a model between the Fixed Effect model and the Random Effect model, so the hypothesis is as follows:

H_0 : Choose the Random Effect model if the Chi-square value is not significant at $\alpha 5\%$.

H_a : Choose the Fixed Effect model if the Chi-square value is significant at $\alpha 5\%$.

Tabel 1.12 Hausman test estimation results

Prob Chi	0.0362
----------	--------

table 1.12 Hausman test estimation results

Based on Table 1.12, the chi probability value is 0.0362 which is less than alpha 0.05 ($0.0362 < 0.05$), so the right model is to use fixed effect model.

4.4 Hypothesis Testing

4.4.1 Panel Data Regression Results Using Fixed Effect Models

In this sub-chapter, researcher will explain the results of panel data regression estimation using the results of the Fixed effects model.

Tabel 1.13 Panel Data Regression Estimation Results Using Fixed Effects

Variable	Coefficient	St. Err.	t-Statistic	Prob
C	105.0818	17.76526	5.92	0.000
GRDP	-9.93e-09	4.75e-08	-0.21	0.837
Unemployment	0.000219	0.000171	1.28	0.215
HDI	-1.432838	0,2981395	-4.81	0.000
Population	0.0000261	9.73e-06	2.68	0.014
Cross Section Fixed				
R-square	0.2557			

Prob > chi2	0.0006
-------------	--------

table 1. 13 Panel Data Regression Estimation Results Using Fixed Effects

This hypothesis test aims to determine whether there is an influence of the Gross Regional Domestic Product, Unemployment Rate, Human Development Index, and Population variables partially on the poverty rate in the Special Region of Yogyakarta. By comparing (Prob> |t|) with an alpha value of 0.05, it can be known whether HO should be rejected or not rejected.

Estimation Results Covering Significance and coefficients basically show how far the influence of one independent variable individually in explaining the dependent variables. The test results can be shown in the fixed Effect Model table above. This hypothesis test aims to determine whether there is an effect of the Gross Regional Domestic Product, Unemployment Rate, Human Development Index, and Population variables partially on the poverty rate in the Special Region of Yogyakarta. By comparing the probability of t with an alpha value of 0.05, it can be known whether to reject or accept the hypothesis.

1. The coefficient value of Gross Regional Domestic Product on Poverty Rate is -0.00000000993 while the probability is $0.837 > \alpha$ 5% (0.05) which means that GRDP data statistically does not have a significant effect on the poverty rate in the 5 districts/cities of Yogyakarta Special Region.
2. The coefficient value for unemployment is 0.000219 while the probability is $0.215 > \alpha$ 5%, which means that statistically unemployment does not have a significant effect on the poverty rate in the 5 districts/cities of Yogyakarta Special Region.
3. The coefficient value for HDI is -1.432838 while the probability is $0.000 < \alpha$ 5%, which means that HDI data statistically significantly affects the poverty rate in the 5 districts/cities of Yogyakarta Special Region.

4. The coefficient value for Population on Poverty Level is 0.0000261 while the probability is $0.014 < \alpha 5\%$, which means that statistically the Population data does have a significant effect on the poverty rate in the 5 districts/cities of Yogyakarta Special Region.

Tabel 1.14 F Test Results

Prob>f	0.000
--------	-------

table 1. 14 F Test Results

The decision from the regression result is that the prob value (0.00) < α (0.05) means rejecting H0. This means that all independent variables (Gross Regional Domestic Product (GRDP), Unemployment, Human Development Index, and Population have a significant effect on Poverty in Yogyakarta Province.

4.4.2 Analysis of the Determination Coefficient (R²)

Table 1.15 Determination Coefficient (R²)

Variable	Coefficient	St. Err.	t-Statistic	Prob
C	105.0818	17.76526	5.92	0.000
GRDP	-9.93e-09	4.75e-08	-0.21	0.837
Unemployment	0.0000219	0.0000171	1.28	0.215
HDI	-1.432838	0.2981395	-4.81	0.000
Population	0.0000261	9.73-06	2.68	0.014
Cross Section Fixed				
R-square		0.2557		

Prob>f	0.0006
--------	--------

table 1. 15 Determination Coefficient

R² (Coefficient of Determination) shows how much the independent variables GRDP, Unemployment, HDI, and Population affect the dependent variable poverty rate in the Special Region of Yogyakarta, the results of the R² test can be shown in the Fixed Effect Model table above. Based on the table above, R Square is 0.2557, this can be interpreted that 25.57% of the dependent variable can be explained by the independent variable. The remaining 74.43% is explained by other variables that influence the poverty rate in Yogyakarta Special Region.

4.5 Discussion

The coefficient value of GRDP is -0.00000000993 while the probability is $0.837 > \alpha 5\%$ (0.05) which statistically GRDP data has no significant effect on the poverty rate. and a positive effect on reducing the poverty rate in the 5 districts/cities of Yogyakarta Special Region. The results of GRDP obtained are different from previous research conducted by Putra (2019) which shows that Gross Regional Domestic Product (GRDP) has a significant and positive effect on the poverty rate in the Special Region of Yogyakarta. According to my analysis, this is due to the high economic gap in the Special Region of Yogyakarta. As the data provided by BPS where the Special Region of Yogyakarta ranks first with the highest inequality in Indonesia which uses the Gini ratio calculation, it was recorded that during the 2017-2022 period the Gini ratio in Yogyakarta still touched a number above 0.400 points. this is in accordance with what Tambunan (2011: 67) said that the inequality that occurs in a region can result in economic growth being unable to influence in reducing the poverty rate.

The coefficient value for Unemployment is 0.0000219 while the probability is $0.215 > \alpha 5\%$, which means that statistically the Unemployment data has no significant effect on the poverty rate. The results of Unemployment obtained are different from previous research conducted by Sumantri,et al (2021) which shows

that unemployment has a positive and significant effect on the poverty rate in South Sumatra. according to Sukirno, (2004) reduced community income due to not having a job which ultimately reduces the level of community welfare. the deterioration of community welfare due to unemployment will certainly increase their chances of being trapped in poverty because they have no income. So, with a high level of unemployment, this will have an impact on the high level of poverty.

The coefficient value for HDI is -1.432838 while the probability is $0.000 < \alpha 5\%$, which means that statistically the HDI data has a significant effect on the poverty rate. And for the coefficient value of -1.432838, This means that when there is a 1% decrease in HDI, it will increase the poverty rate by 1.43% and negatively affect the poverty rate in the 5 districts/cities of Yogyakarta Special Region. The results of the Human Development Index (HDI) obtained are like previous research conducted by Supraba (2018) which shows the Human Development Index (HDI) has a significant effect and has a negative effect on reducing the poverty rate. According to the Central Bureau of Statistics of Indonesia (BPS), the Human Development Index (HDI) is an important indicator to measure success in efforts to build the quality of human life (society / population). This is because the three dimensions of the HDI (health, decent living, and education) have a very important influence in determining human quality. Through education, a person's knowledge will increase which is very useful for learning skills that are useful in the world of work. education is one of the main areas besides health and the economy (BPS, 2013). In addition, health is a requirement for realizing productivity. Poor health can lead to a decrease in productivity, which in turn will reduce the quality of life and create poverty (World Bank, 2002).

The Coefficient value for Population is 0.0000261 while the probability is $0.014 < \alpha 5\%$, which means that statistically the Population data have significant effect on the poverty rate. This means that when there is an increase in population by 1%, it will increase the poverty rate by 0.0000261 and has a positive effect on the increase in poverty rates in the 5 districts/cities of Yogyakarta Special Region. The results of the population obtained from this data have same results from previous research conducted by Nasrun, et al (2020), and Sudiana, et al (2019) which shows population data has a significant effect and has a positive effect on reducing the poverty rate Furthermore, the population growth rate has an influence on poverty. According to Putri, et al (2020), the increasing population will reduce natural resources, causing poverty. According to Solihin (2018) An increase in population can hinder the economic development process of a country or region. Thus, it causes a low regional per capita opinion which ultimately results in an increase in the number of poor people.

CHAPTER V

CONCLUSION

5.1. Conclusion

Drawing from the findings of the research, analysis, and discussion conducted to identify the Analysis of the Influence of the Growth Rate of Gross Regional Domestic Product (GRDP), the Number of Unemployed (UNP), the Human Development Index (HDI), and the Population in influencing the poverty rate in Five Districts/Cities in the Special Region of Yogyakarta 2017-2022, it is concluded that HDI, and Population has a significant effect on the poverty rate in the Special Region of Yogyakarta. When the HDI and has a negative effect on reducing the poverty rate, if a region that is getting better or higher, it will provide a higher quality of human resources so that it is able to reduce the poverty rate in that area, HDI can be measured through human development as seen from the level of education and literacy, guaranteed health and longevity, and income that is able to meet the needs of life. Meanwhile, for variable Population it has positive effect on poverty in the special region of Yogyakarta, according to Putri (2020) as the population increases, natural resources will decrease, causing poverty will increase. other variables such as Gross Regional Domestic Product (GRDP), and Unemployment (UNP) have no significant effect on poverty in the Special Region of Yogyakarta.

5.2. Suggestion

Based on the results and findings of the study, the authors make the following recommendations or suggestions:

1. To reduce the poverty rate in the Special Region of Yogyakarta, the district and city governments must continue to pay attention to improving community facilities such as health, education, and infrastructure so that the poverty rate in the region will be reduced.

2. Provincial, district, and city governments should open more jobs to provide employment opportunities for the community, which will affect the poverty rate.
3. Future researchers can use this research as reference material to conduct further research, either with the same indicators or with different indicators. As well as using various indicators so that further research can continue to be developed.

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Appendix

Appendix 1 The data from five regencies/cities of the Special Region of Yogyakarta (Poverty, Gross Regional Domestic Product Growth Rate, Unemployment, Human Development Index, Population Growth Rate)

Regency	year	Pov	GRDP	UNP	HDI	Population
KP	2017	20.13	9060460.00	4,873	73.23	421,500
KP	2018	18.3	10312524.00	3,873	73.76	426,767
KP	2019	17.39	11995771.00	4,710	74.44	432,058
KP	2020	18.01	116543.19	10,005	74.46	437,373
KP	2021	18.38	124430.63	9,920	74.71	442,724
KP	2022	16.39	143153.80	7,824	75.46	448,131
Bantul	2017	14.07	226117.06	17,466	78.67	995,639
Bantul	2018	13.43	244501.19	16,188	79.45	1,009,171
Bantul	2019	12.92	263109.72	18,080	80.01	1,022,788
Bantul	2020	13.5	261370.15	24,783	80.01	1,036,489
Bantul	2021	14.04	281261.68	24,075	80.28	1,050,308
Bantul	2022	12.27	311825.92	24,875	80.69	1,064,286
GunungKidul	2017	18.65	161998.41	7,085	68.73	731,170
GunungKidul	2018	17.12	175277.16	9,606	69.24	740,181
GunungKidul	2019	16.61	188447.36	8,972	69.96	749,229
GunungKidul	2020	17.07	189361.71	8,591	69.98	758,316
GunungKidul	2021	17.69	204305.18	10,315	70.16	767,464
GunungKidul	2022	15.86	227488.34	9,623	70.96	776,705
Sleman	2017	8.13	400478.64	23,173	82.85	1,197,563
Sleman	2018	7.65	437790.44	30,294	83.42	1,214,346
Sleman	2019	7.41	474679.78	27,508	83.85	1,231,246
Sleman	2020	7.27	456547.20	35,843	83.84	1,248,258
Sleman	2021	8.64	494032.42	38,199	84	1,265,429
Sleman	2022	7.74	547024.63	33.395	84.31	1,282,804

Yogyakarta	2017	7.64	5.24	5.08	85.49	1.19
Yogyakarta	2018	6.98	5.49	6.22	86.11	1.13
Yogyakarta	2019	6.84	5.96	4.8	86.65	1.04
Yogyakarta	2020	7.27	-2.42	9.16	86.61	0.93
Yogyakarta	2021	7.64	5.16	9.13	87.18	0.98
Yogyakarta	2022	6.62	5.12	7.18	87.69	1.26

appendix 1. 1 The data from five regencies/cities of the Special Region of Yogyakarta (Poverty, Gross Regional Domestic Product Growth Rate, Unemployment, Human Development Index, Population)

Unit Description:

Poverty (POV) = Percent

Gross Regional Domestic Product Growth Rate (GRDP) = million

Unemployment (UNP) = people (Thousand)

Human Development Index (HDI) = Percent

Population = people (thousand)

Appendix 3 Estimated Results from Random Effect Model (REM) Regression

```

*Random Effect Model (REM)

.
. xtreg Poverty GRDP Unemployment HDI Population, re

Random-effects GLS regression           Number of obs   =       30
Group variable: regency_code           Number of groups =        5

λ-sq:                                   Obs per group:
    within = 0.2934                      min =           6
    between = 0.9262                     avg =          6.0
    overall = 0.9037                     max =           6

corr(u_i, X) = 0 (assumed)              Wald chi2(4)    =     234.55
                                           Prob > chi2     =     0.0000
    
```

Poverty	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
GRDP	2.09e-07	1.03e-07	2.03	0.042	7.10e-09 4.10e-07	
Unemployment	.0000203	.0000459	0.44	0.658	-.0000696 .0001103	
HDI	-.6797832	.0594367	-11.44	0.000	-.7962777 -.5632893	
Population	-1.71e-06	1.13e-06	-1.51	0.132	-3.93e-06 5.13e-07	
_cons	67.07088	4.572365	14.67	0.000	58.10921 76.03255	
sigma_u	0					
sigma_e	.56927653					
rho	0	(fraction of variance due to u_i)				

appendix 1. 2 Estimated Results from Random Effect Model (REM) Regression

Appendices 4 Chow Test Estimation Results

```
. regress Poverty GRDP Unemployment HDI Population i.regency_code
```

Source	SS	df	MS	Number of obs	=	30
Model	634.761889	8	79.3452361	F(8, 21)	=	244.84
Residual	6.80559104	21	.324075764	Prob > F	=	0.0000
				R-squared	=	0.9894
				Adj R-squared	=	0.9854
Total	641.56748	29	22.1230166	Root MSE	=	.56928

Poverty	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
GRDP	-9.93e-09	4.75e-08	-0.21	0.837	-1.09e-07	8.89e-08
Unemployment	.0000219	.0000171	1.28	0.215	-.0000137	.0000574
HDI	-1.432838	.2981395	-4.81	0.000	-2.052854	-.8128233
Population	.0000261	9.73e-06	2.68	0.014	5.84e-06	.0000463
regency_code						
2	-12.7131	4.621488	-2.75	0.012	-22.32402	-3.102194
3	-15.80908	4.353367	-3.63	0.002	-24.8624	-6.755758
4	-18.33489	5.849298	-3.13	0.005	-30.49917	-6.170613
5	6.344153	3.563814	1.78	0.090	-1.067203	13.75551
_cons	113.1843	18.88819	5.99	0.000	73.9042	152.4645

appendix 1.3 Chow Test Estimation Results

Appendices 5 Lagrange Multiplier Test Estimation Results

```
. *uji breusch and pagan lagrangian multiplier (common vs random)
```

```
. xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

Poverty[regency_code,t] = Xb + u[regency_code] + e[regency_code,t]

Estimated results:

	Var	sd = sqrt(Var)
Poverty	22.12302	4.703511
e	.3240758	.5692765
u	0	0

Test: Var(u) = 0

chibar2(01) = 0.00
 Prob > chibar2 = 1.0000

appendix 1.5 Lagrange Multiplier Test Estimation Results

Appendices 6 Hausman Test Estimation Results

```
. hausman FEM REM
Note: the rank of the differenced variance matrix (2) does not equal the number of coefficients being tested (4); be sure this is what you
expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider
scaling your variables so that the coefficients are on a similar scale.

----- Coefficients -----
      (b)      (B)      (b-B)      sqrt(diag(V_b-V_B))
      FEM      REM      Difference      S.E.
-----+-----+-----+-----+-----
GRDP      -9.93e-09      2.09e-07      -2.18e-07      .
Unemployment      .0000219      .0000203      1.55e-06      .
HDI      -1.432838      -.6797832      -.7530553      .2921549
Population      .0000261      -1.71e-06      .0000278      9.67e-06

      b = consistent under Ho and Ha; obtained from xtreg
      B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

      chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
              =      6.64
      Prob>chi2 =      0.0362
      (V_b-V_B is not positive definite)
```

appendix 1. 6 Hausman Test Estimation Results