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DETERMINANTS OF POVERTY STATUS IN WEST SUMATERA: HOUSEHOLD CHARACTERISTICS ANALYSIS

UNDERGRADUATE THESIS

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DEPARTMENT OF ECONOMICS

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by

Wiwi Handini Handia Putri
1910513016

Submitted to the Department of Economics as partial fulfillment of the requirements for the degree of

Bachelor of Economics

at

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ABSTRACT

This study is a quantitative research that aims to identify the determinants of poverty in West Sumatra by analyzing household data from a cross-section in 2019. The study uses microdata analysis at the individual level to categorize households into three poverty levels: non-poor, poor, and very poor. The analytical method used in this study is the Ordered Logit Regression Analysis method, and the data processing tool is Stata. The results show that the gender, education level, marital status, and age of the household head have a significant influence on the poverty rate, while the occupation of the household head does not have a significant influence.

Keywords: Poverty status, household characteristics, West Sumatra, SUSENAS data, ordered logistic regression, gender, education, occupation, marital status, age.

Thesis Advisor; Hadi Rahadian, SE, M.Si.

DECLARATION OF ANTI-PLAGIARISM

I hereby declare that this thesis entitled "Determinants of Poverty status in West Sumatera: Household characteristics analysis" is written by myself, and that has no part contains the phrase, idea, or opinion from another source without acknowledging the original authors. I have acknowledged all parts sourced from other people's work according to the norms, ethics, and rules of scientific writing. If anyone finds plagiarism in this thesis, I am willing to accept the sanction of revocation of academic degrees that I have gained.

Padang, 28 August 2023

Wiwi Handini Handia Putri

19103016

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Closing this preface, the writer is of course aware that there are still many shortcomings in writing this thesis. Therefore, the authors are very open to receiving various forms of constructive criticism and suggestions for the improvement of this thesis and for the authors themselves in the future. Hopefully this thesis can be useful for the development of science and all readers, thankyou.

UNIVERSITAS ANDALAS
UNTUK KEDJAJAAN BANGSA

TABLE OF CONTENTS

UNIVERSITAS ANDALAS
UNTUK KEDJAJAAN BANGSA

LIST OF FIGURE

UNIVERSITAS ANDALAS
UNTUK KEDJAJAAN BANGSA

LIST OF TABLE

UNIVERSITAS ANDALAS
UNTUK KEDJAJAAN BANGSA

CHAPTER I

INTRODUCTION

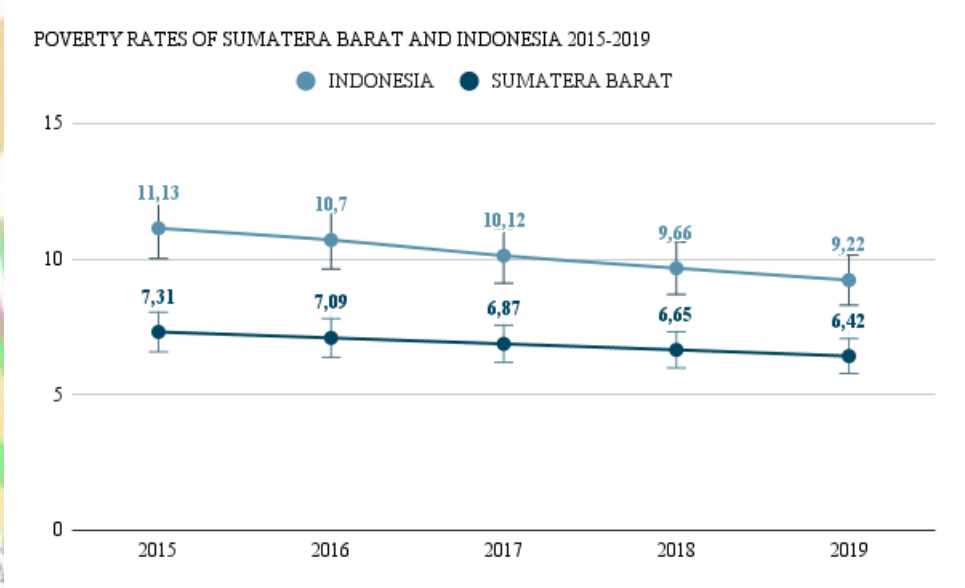
1.1 Problem Identification

Accurate poverty data is an important instrument for finding effective poverty reduction strategies. People are considered prosperous if they can fulfill their needs based on a comparison between per capita income or consumption and a set poverty standard (Haughton&Khandker, 2012). The World Bank defines poverty as a "lack of well-being" and is seen in the inability of people to achieve their most basic needs, and is measured as the number of people living on less than $1.90 per day. According to the Central Bureau of Statistics (BPS) definition, the poor are those who have an average monthly per capita expenditure below the relative poverty line (Ardi Adji et al., 2020).

Poverty remains a significant challenge worldwide, uneven growth and income disparity are still issues in developing nations. While many developing nations see rapid economic growth, the poor do not receive enough advantages from this progress (Todaro & Smith, 2006, p.231; Kuncoro, 2003, p. 101). According to Remi & Tjiptoherijanto (2002, p. 2), the success of programs to reduce poverty, depends on the identification of target populations and places, such as who is poor and where they live. Todaro & Smith (2006, p. 269) cite the fact that "deeper understanding of who belongs to the poor and what their economic features are is necessary before we can create successful programs and policies to fight poverty. Policies that are right on target in overcoming poverty require accurate information through a comprehensive poverty profile based on the characteristics of the causes of poverty, including regional, community, household, and individual characteristics (Haughton and Khandker, 2012). Furthermore, the poverty reduction strategy is carried out by identifying the causes of poverty so that it can accept changes through implemented policies (Geda et al., 2001).

Ideally, according to Warr (2000), Ravallion & Chen (2003), and Dollar & Kraay (2012), high economic growth is an effective way to reduce poverty. However, this is not the case in West Sumatra. High economic growth does not ensure an improvement in the well-being of its citizens since it is simply a required and not sufficient condition. Poverty reduction efforts cannot be seen at a macro level from the aggregate level of poverty in a region when the trend of economic growth is increasing because the trend of poverty rates still fluctuates and even tends to be static. Therefore, it is necessary to examine micro conditions by looking at the causes of household poverty. The following is a figure of the poverty rate in West Sumatra and National 2015-2019.

Figure 1. Poverty Rates of West Sumatra Province and Indonesia, 2015-2019

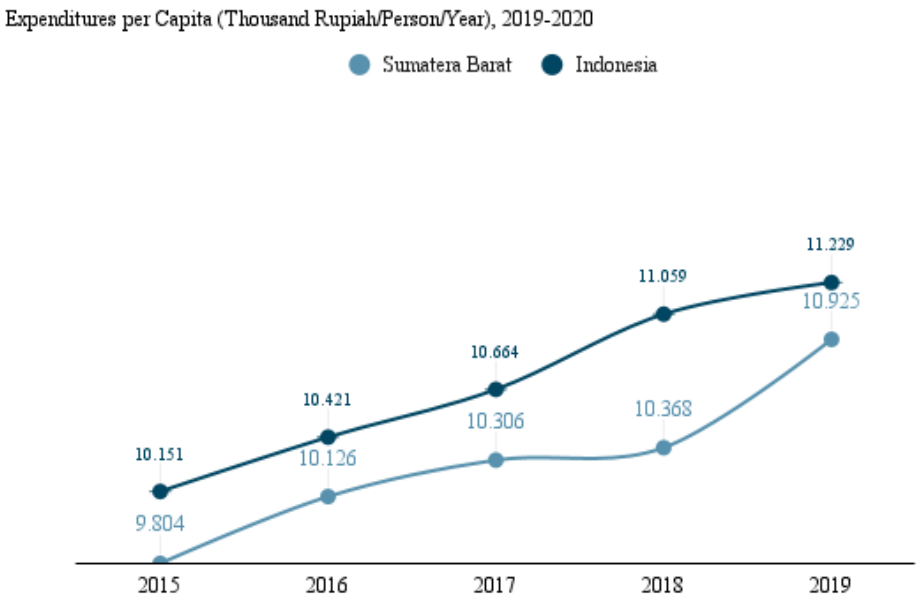


Source: BPS Sumatera Province (2023)

In the figure above, it can be seen the poverty rate of the population of West Sumatra Province (Sumbar) as of March 2019 was 6.42 percent. The Central Bureau of Statistics (BPS) observed that the percentage was lower than the national average, which showed that 9.22% of Indonesians were considered to be poor. Historically, the aggregate poverty rate in West Sumatra has decreased and

has always been below the national poverty rate. However, the disparity among the population is still wide as shown by the Gini index which has consistently been around 0.4 since 2016 (BPS 2019). The next following is a figure of the expenditure per capita in West Sumatra and National 2015-2019.

Figure 2. Expenditure per capita (Thousand Rupiah/Person/Year), Province and National, 2015-2019



Source: BPS West Sumatera Province (2023)

In aggregate, it can be seen that the population of West Sumatra has increased from 9,804 million in 2015 to 10,925 million in 2019. This shows population growth in West Sumatra during this time period. Likewise, Indonesia's population has also increased from 10,151 million in 2015 to 11,229 million in 2019. This represents significant national population growth over the same time period. In aggregate, this table provides an overview of population growth both in West Sumatra and throughout Indonesia during the five-year period based on the figure.

While the poverty rate in West Sumatra has decreased and per capita expenditure has increased, there may still be inequality in income distribution. The decline in the poverty rate and the increase in per capita expenditure indicate

an improvement in economic conditions and welfare in West Sumatra. However, this does not necessarily mean that all individuals or households in the region experienced a proportional increase in welfare.

According to Sumitro (1994), poverty mostly occurs in households, this is shown by the head of the family who cannot fulfill the needs of clothing, food, and shelter for his family members. However, demographic factors, such as marital status, age, gender, education, family amount, and location, are important determinants of poverty. In West Sumatera, poverty is more prevalent in female-headed households, households with large families, and households with low levels of education. The factors that affect poverty are frequently identified as the determinants of poverty; these include individual characteristics like the level of education of family members as well as household characteristics like the age, gender, marital status, and amount of family members. A study in the United States, (Adam 2010) shows that married individuals have lower poverty rates than those who are not married. In addition, married couples also have a higher average income compared to unmarried individuals. Education level can affect poverty; people with higher education tend to have better access to more skilled and well-paid jobs. People who are still in their productive age (18-65 years tend to have a better chance of getting a job and earning enough income. The female gender is often discriminated against in accessing good education and employment opportunities, which can lead to poverty.

Many studies have been carried out by experts to understand how household features affect poverty status; however, not all studies produce the same findings. Studies on poverty by de Silva (2008), Majeed & Malik (2015), Teka et al. (2019),Nguyen et al. (2013), and Biyase & Zwane (2018) similarly use household-based microdata. Individual-based microdata was utilized as well by Hyder & Sadiq (2015),Vijaya et al (2014), Espinoza-Delgado & Klasen (2017), and others (2010). Moreover Epo (2011), Cho & Kim (2017) and Geda et al (2001), analyzing the factors that contribute to household poverty status in three different levels of poverty—very poor, poor, and non-poor—Mok et al (2007)

and Sekhampu (2013) analyzed those same factors in two different levels of poverty—poor and non-poor

According to studies by (Ennin et al., 2011; Sekhampu, 2013), the age of household heads has a substantial impact on poverty. However, according to Mok et al. (2007), the result is not significant. According to research by Sekhampu (2013); Geda et al. (2001), and Mok et al. (2007) education head of the household did not significantly lower the risk of being poor. Geda et al. (2001) and Sekhampu (2013) claim that there is no relationship between poverty and the gender of the household head. Male family heads often had lower incomes. The number of household heads has a positive effect on poverty, according to research by Ennin et al. (2011), Sekhampu (2013), Geda et al. (2011), Chaudhry & Malik (2009), Andersson et al. (2006), and Khalid et al. (2005).

There has been a lack of research on the factors that influence poverty status in households in Indonesia. Compared to previous studies with this research, there are several differences, particularly in the data used to categorize poverty status, variables, and locations. In this study, using West Sumatra SUSENAS data in 2019, using household head characteristics like the gender of household head, education of household head, occupation of household head, marital status of household head and age of household head variables and choosing West Sumatra as the research location. The analysis of microdata at the individual level is used in this study to categorize three poverty levels: Not poor, poor, and very poor. By examining the factors that influence the poverty status in West Sumatra at household levels, this study will contribute to a more comprehensive poverty profile at the micro level. The poverty research gap in West Sumatra can be closed by focusing on household characteristics elements, using ordered logit regression models, and quantitative analysis techniques. While there have been many studies on poverty, the effectiveness of government initiatives to alleviate it is still uneven. This study, *"Determinants Of Poverty Status In West Sumatera: Household Characteristics Analysis"*, will examine how household characteristics may affect the state of poverty in West Sumatra.

1.2 Problem Statement

The fact that the head of the household is unable to provide the clothing, food and shelter that his or her family members need shows how prevalent poverty is within the household, (Faharuddin 2022). This study aims to analyze how the characteristics of household heads can affect poverty status in West Sumatra. Previous research has identified the characteristics of household heads as an important factor in determining poverty levels in the region. By examining these factors, this study seeks to provide a more comprehensive understanding of poverty at the household level in West Sumatra. In summary, the problem formulation in this study is how the characteristics of the household head can affect poverty status in West Sumatra. This study aims to investigate the impact of factors such as gender, education level, occupation, age marital status on poverty status in West Sumatra. This research will contribute to a more comprehensive understanding of poverty at the household level in West Sumatra and provide input for the development of poverty reduction policies and programs.

1.3 General Research Objectives

This research aims to determine how household head characteristics affect the likelihood of household poverty based on the problem's formulation. In addition, understanding at the micro level and the factors that cause poverty is quite necessary because it will contribute and can provide more effective strategies for the government to eradicate poverty to achieve the core SDGs.

1.4 Benefit of Research

The benefits of this research are expected to be able to contribute to the parties considered interested as follows:

1. Improve understanding of the elements affecting poverty status in West Sumatra.
2. Provide the government and associated organizations with the information they may use to create policies and initiatives to fight poverty in West Sumatra.
3. Increasing literature and understanding regarding poverty in Indonesia, especially in the West Sumatra region.
4. As a resource for other academics interested in carrying out related research or carrying out this research using a different strategy or methodology.

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CHAPTER II

THEORETICAL FRAMEWORK

2.1 GRAND THEORY

2.1.1 The Theory of Poverty

1. Definition of Poverty

According to Todaro & Smith (2006), poverty is when all residents cannot get sufficient resources to meet basic needs. Poverty is an individual who cannot fulfill his needs from food, clothing, and shelter. Poverty, in the opinion of (Franata et al., 2017), is the inability to provide for one's basic requirements, such as not being able to meet basic needs, namely food, clothing, housing, education, and recognition of position in society. Poverty has a very broad and varied meaning according to one's perspective. But in general, a person is said to be poor if he cannot fulfill the basic needs of life, namely food, clothing, and housing.

According to Statistics Indonesia (BPS), people are categorized as poor if their average monthly per capita expenditure is below the poverty line (PL). PL is the rupiah value of the minimum expenditure used to meet the basic needs of life for a month, be it food or non-food needs. There are two types of PL, namely the Food Poverty Line (FPL) and the Non-Food Poverty Line (NFPL). The way to measure the poverty line is to add the food poverty line to the non-food poverty line.

To measure poverty, the central statistics agency (BPS) uses the concept of the ability to meet basic needs (Basic Needs Approach), including:

a. The total of the Food Poverty Line (FPL) and the Non-Food Poverty Limit is the Poverty Line (PL). Poor residents are those with average per capita expenditure below the national poverty line.

b. The Food Poverty Line (FPL) is the cost of meeting a person's daily minimum calorie requirement of 2100 kilocalories. 52 different commodity kinds make up the commodity bundle for essential dietary requirements (grains, tubers, meat, fish, eggs and milk, vegetables, nuts, fruits, oils, fats, and others)

c. The Non-Food Poverty Line (NFPL) is the point at which someone must drink in order to afford housing, clothes, education, and health. There are 47 categories of commodities in rural regions and 51 types in urban areas that make up the commodity bundle of non-food basic requirements.

According to Prathama and Mandala (1999), the Minimum Physical Needs (MPN),this represents the 2,100 calories per person per day that must be consumed from the available calories, is the idea used to assess the poverty line in Indonesia. Based on some of the opinions above, it can be concluded that what is meant by poverty is not just a condition that is described as a lack of income to meet basic life needs so that it experiences unrest, misery, or squalor in every step of life. It is the ability people or families possess to carry out and develop their living standards for the future. Basic needs can be defined as a package of goods and services required by every individual to live a humane life. This package consists of adequate food composition and nutritional value. Their ability to sustain a standard of living can be characterized by an unlimited amount of space to absorb sectors that allow them to develop their business. Another development problem is poverty, which results from the widening of incomes resulting from imbalanced economic expansion.

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2. Poverty Classification

Conceptually, poverty can be divided into two categories, namely relative poverty and absolute poverty, where the difference lies in the standard of assessment. The relative poverty assessment standard is a condition of life that is determined and determined subjectively by the local community and is local in nature and those who are below the assessment standard are categorized as relatively poor. While absolute poverty is the minimum living condition necessary to meet essential needs, such as food, clothing, health and education needed to be able to work. Minimum basic needs are translated as financial measures in the form of money. Where the minimum basic needs are referred to as the poverty line.

Based on Todaro & Smith (2006), poverty can be classified based on its nature, namely:

a. Absolute poverty

Those who live below the poverty line and have minimal incomes that are utilized to cover necessities like food, clothes, and shelter are said to be in absolute poverty. Therefore, how to measure absolute poverty can be seen from the comparison of the level of income earned and the level of expenditure spent to meet the needs of life.

b. Relative poverty

Relative poverty is where people's living conditions are already at a level of income above the minimum, so they can meet basic needs but are still much lower than the surrounding community. Relative poverty is seen from social inequality, the higher the inequality between the income of the upper class and the income of the lower class, the greater the community is categorized as poor. Therefore, relative poverty has a relationship with income.

3. The Vicious Circle of Poverty

According to (Franata et al., 2017) cited by Nurkse Theory, the vicious circle of poverty is an activity that is related to one another that forms a circle and

interacts with each other so that poor countries will remain in poverty. The "Circle of Poverty" typically encircles the poor. Nurkse defines the poverty cycle as a cyclical network of causes that interact with one another and work to keep the poor in a condition of destitution. The impoverished continue to live in squalor. For instance, a person who is poor may not have enough food; as a result, their health suffers; as a result of physical weakness, their capacity for work is reduced; as a result, their income is reduced; and as a result, they are poor. As a result, he is poor and will soon run out of food, among others. A statement made by Nurkse, "a poor country is poor because it is poor," which means that the country becomes poor because the country is poor, can be used to summarize the situation if it is connected to the state of the country or region.Nurkse suggests that poverty is both a cause and a consequence in this situation. Developing countries are always in a vicious cycle of poverty. Basically, the vicious circle stems from the very declining productivity of developing countries and far from developed countries due to lack of capital, low economies, and imperfect markets.

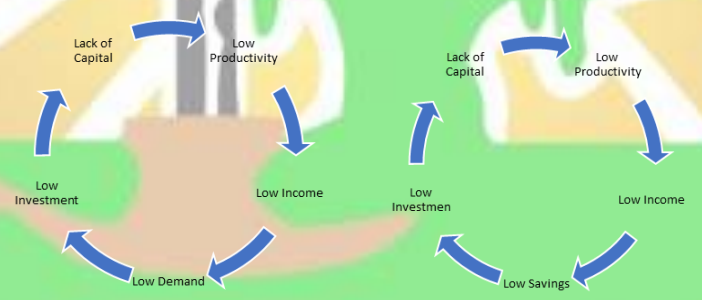

Figure 3. The Vicious Circle of Poverty

On a regional scale, the poverty cycle stems from the fact that total productivity in poor areas is very low as a result of a lack of capital, imperfect markets and economic backwardness. The poverty cycle, when viewed from the point of view of demand, can be explained as follows: low levels of income lead to low levels of demand, which in turn leads to low levels of investment. Low investment levels again lead to a lack of capital and low productivity. Low productivity is reflected in low income. Meanwhile, when viewed from the supply side, low income means that the savings rate is also low, leading to a low level of

investment and limited capital availability. In turn, these conditions lead to low productivity, resulting in low income. And so it goes on and on. The possibility of an alternating relationship between poverty and the factors that influence it in this study could have occurred. can happen. This can be explained from (the theory of the vicious circle of poverty).

4. Factors Causes of Poverty

Poverty according to the World Bank is a condition where an individual or group does not have choices or opportunities to improve their standard of living in order to live a healthy and better life according to living standards, have self-esteem and be respected by their peers. The standard poverty rate set by the World Bank is $2/day or around IDR 27,000.00/day. According to (World Bank, 2010) the main determining factors of poverty include:

a. Regional characteristics including vulnerability to floods, typhoons or other natural disasters, remoteness, quality of governance.

b. Characteristics of the community include the availability of infrastructure (roads, water, electricity) and services (health, education), proximity to markets, and social relations.

c. Household and individual characteristics, among which the most important are:

   1) Demographics, such as the number of household members, age structure, dependency ratio, and gender of the head of the household;

   2) Economic factors include employment position, length of employment, and property ownership.

   3) Social factors include housing, education, and factors relating to health and nutrition.

And according to Sharp, et.al in Kuncoro (1997: 107) the causes of poverty are:

1. On a macro level, poverty arises due to the unequal pattern of resource ownership which results in an unequal distribution of income. Poor people only have resources in limited quantities and low quality.

2. Poverty that arises from differences in the quality of resources,low quality of human resources means low productivity, which in turn means low wages. The low quality of human resources is due to low education, disadvantaged fate, discrimination, or heredity.

3. Poverty arises from differential access to capital, those who have different levels of access to capital such as money, property, or other assets, are unable to invest in themselves or their communities which leads to poverty. Cycles of poverty where people or communities are unable to change their economic circumstances can occur due to lack of investment. Structural problems of society that limit employment opportunities and chances can also contribute to poverty.

According to the Maxwell School at Syracuse University (Utomo, A. P., & Rahani, R., 2013), there are two main categories of causes of poverty. These are as follows:

1. Structural causes: These are the external factors that contribute to poverty, such as economic policies, labor market conditions, and social welfare programs. Structural causes are often rooted in systemic issues like racial segregation and disinvestment in certain neighborhoods.
2. Individual causes: These are the personal characteristics and circumstances of individuals that can contribute to poverty, such as low levels of education, limited skills and experience, poor health, and discrimination based on factors like age, gender, or ethnicity these are traits of poor people that will affect their productivity, prevent them from earning as much money as possible, and ultimately cause them to become poor.

According to the National Planning and Development Agency (Bappenas), poverty is a state in which both men and women fail to exercise their fundamental legal entitlements to a decent standard of living. Basic rights consist of rights that are understood by the poor as their right to be able to enjoy a quality life and rights that are recognized in laws and regulations. Basic rights that are generally recognized include the fulfillment of food, health, education, employment, housing, clean water, land, natural resources and the environment, and security from treatment or threats of violence (Bappenas, 2004).

To realize the basic rights of the poor, Bappenas uses the following main approaches:

a. System approach

   This approach emphasizes more on the limitations of aspects of geography, ecology, technology, and demography. Poverty conditions caused by these factors are considered to put more pressure on residents living in rural or in land areas.

b. Decision-Making

   This approach emphasizes the community's need for knowledge, skills, and expertise in responding to economic resources. In other words, poverty is caused by people's lack of innovation in entrepreneurship, so they only rely on jobs provided by others and the government without any effort to create their own jobs.

c. Structural Approach

   This approach sees that poverty occurs because there is an inequality in the ownership of production factors, such as land, technology, productivity, and other forms of capital. This is reflected in the existence of a small group of people who control the capital and economy of the community more dominantly, such as entrepreneurs and others.

From these approaches, Bappenas outlines indicators of the causes of poverty such as:

1. Limited food sufficiency and quality, can be seen from limited food stocks, low caloric intake of the poor and the poor nutritional status of baby, toddler and mothers.

2. The lack of access to basic health services can result in various negative outcomes, including: Limited access to health services, poor quality of health services, lack of understanding of the quality of basic health services, difficulty in understanding healthy living behaviors and long distances to health facilities, these outcomes can have significant impacts on individuals and communities, leading to poorer health outcomes and reduced quality of life. It is important to address barriers to accessing basic health services in order to improve health outcomes and promote healthy living behaviors.

3. The low quality of education services and limited access to these services are caused by disparities in education costs, lack of funding for education.

4. Limited employment and business opportunities can be seen from wage differences, especially for child and female workers, and weak protection of labor business assets..

5. The poor who live in fishing areas, forest fringes and dry land farms find it difficult to obtain healthy and decent housing and residential environments.

6. Low availability of clean water,lack of control over water sources and a decline in the quality of water sources are the primary contributors to the difficulty in getting clean water.

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7. Inequality in the structure of land tenure and ownership, as well as uncertainty in the management and ownership of agricultural land, are problems that must be faced by the poor.

8. Deteriorating environmental conditions, natural resources, and limited community access to natural resources.

9. Low participation, the low involvement of the poor in the creation of policy is also a result of their lack of knowledge about the policies that need to be developed as well as the process that involves them.

5. Poverty at the Household Level

The perspective of poverty can be both macro and micro. In macro-economic terms, poverty is viewed globally and globally, while in microeconomic terms, poverty is viewed from more specific dimensions such as health, education, income and households. A deeper review is also needed to find out the conditions of poverty, such as who is poor and what their characteristics are. This is also called the micro approach (Robert 2008). According to Khandker & Haughton (2009, p.157), the main causes, or at least those related to poverty, include four characteristics: regional, community, household and individual characteristics. Regional characteristics for example, vulnerability to typhoons or floods, remoteness, level of authority. Among community characteristics are the availability of infrastructure (roads, water, electricity) and services (health, education), accessibility to markets, and social relations. In addition, demographic factors, economic factors, and social factors can be used to determine household and individual characteristics. Demographics include the number of family members, the age distribution and the gender of the head of household. Economic factors include employment status, hours of work and land ownership (e.g., health and nutrition status, education and housing).

2.1.2 Definition of Variable

1. **Household Head's Gender**

Gender of household head refers to whether the head of the household is male or female. A study by Ramaprasad (2009) found female-headed households are poorer than their male-headed. According to Waheed et.al (2020 the effect of gender of the household head on nutritional outcomes of children was also analyzed using an ordered probit model. This variable is an important variable in the study of poverty as gender can affect income and job opportunities, which can affect the probability of being in poverty. In the ordered logit model, gender of household head is one of the independent variables that is used to estimate the probability of being in a certain category of poverty status in West Sumatera based on the values of the independent variables.

2. **Household Head Education**

According to Boniface (2010) household head education refers to the level of education attained by the head of the household. This variable can be measured in years of schooling or educational attainment (e.g. primary, secondary, tertiary education). It is an important variable in the study of poverty as education is often associated with higher income and better job opportunities, which can lead to a lower probability of being in poverty. In the ordered logit model, household head education is one of the independent variables that is used to estimate the probability of being in a certain category of poverty status in West Sumatera based on the values of the independent variables.

3. Household Head Occupation

Research by Waheed et. al (2022) defines household head occupation refers to the type of job or work done by the head of the household. It is an important variable in the study of poverty as occupation is often associated with income and job security, which can affect the probability of being in poverty. In the ordered logit model, household head occupation is one of the independent variables that is used to estimate the probability of being in a certain category of poverty status in West Sumatera based on the values of the independent variables. A study analyzed the effect of gender and occupation of the household head on nutritional outcomes of children using an ordered probit model, Cho&kim (2017).

4. Household Head's Marital Status

Compared to women who are partnered or divorced, women who are divorced or widowed are more likely to be poor. According to research conducted by Nisak & Sugiharti, (2020) Women with a divorced or widowed marital status will become the head of the family who will finance their own family needs, the study also indicated that divorced women are more likely to be poor, compared to women who are in a couple or who are married, the risk of being poor is higher.

5. Household Head's Age

According to Boniface (2010), the age of the household head refers to the age of the person who is the head of the household. This variable can be measured in years and is an important variable in the study of poverty as age can affect income and job opportunities, which can affect the probability of being in poverty. In the ordered logit model, age of household head is one of the independent variables that is used to estimate the probability of being in a certain category of poverty status in West Sumatera based on the values of the independent variables. A study from (Erna 2022) found that the average age of the head of low-socioeconomic status households was 47 years. It is important to note that the term "head of

household" has been replaced by "householder" in recent years by the BPS, as the term "head" has become increasingly inappropriate in the analysis of household and family data due to changes in social norms and household responsibilities.

2.2 Previous Research

According to several studies, poverty is influenced by a variety of variables, including human capital, demography, geography, physical assets, and work status. Rozanti, Yennie Dwi, et al.'s journal "Determinants of Household Poverty Status in Kediri City" (2021). The age of the household head, age squared, education and occupation of household members, gender of the household head (female), asset ownership, access to good sanitation, internet access and access to financial credit are factors that reduce the likelihood of households falling into the poor category. This study's findings demonstrated that a household's output level, which is influenced by the family head's characteristics and supported by infrastructure access, can contribute to its wellbeing.

The Determinants of Poverty Rates in Papua Province in 2011-2019 study by Erna Andriaswati and Sri Utami (2022) in the province of Papua demonstrates that economic expansion has a favorable but negligible impact on the poverty rate. Poverty rates are negatively impacted by the balancing of money. The capital outlay and lifespan both have a favorable but negligible impact on the poverty rate. The length of schooling, nevertheless, has a negative and considerable impact on the poverty rate.

Jorge Garza-Rodriguez et al study's Determinants of Poverty in Mexico: A Quantile Regression Analysis, found that the majority of studies on the determinants of poverty do not take into account that the relative importance of each of these determinants may change depending on the degree of poverty experienced by each group of poor people (2021). The study conducted so far for

the example of Mexico has not taken this method into consideration, despite the fact that the rates of poverty among various segments of the poor vary greatly. In developing better strategies to combat it, it is crucial to take into account how each of the several types of people who experience poverty differently is impacted. The reasons of poverty for Mexican households are looked into in this article. In order to investigate how the causes of poverty differ throughout the poverty spectrum, the study estimates a probit model and a quantile regression model using data from the 2018 Mexico National Household Income and Expenditure Survey (ENIGH). The probit model's findings indicate that households with more members, female heads, or members who speak their native tongue are more likely to be poor. In particular for families in extreme poverty but also for other income groups analyzed for some of the explanatory variables used in the model, the results of quantile regression demonstrated a significant difference from those of the basic ordinary most small squares model. The southern regions and houses where the family head is elderly or speaks the local language are the most affected. It has been demonstrated that persons who are struggling with poverty generally earn more when they have more education.

The study "Condition & Causes of Poverty and Income Inequality in Pastoral and Agro Pastoral Communities," conducted by the Afar Regional Agency in Ethiopia by Araya M. Teka et al. examined poverty, its causes, and economic disparities in several regions of Ethiopia. The logistic regression, the Gini coefficient, and the FGT index were used to survey and analyze 2,029.5 households in regions one and two of the Afar area. Based on the poverty severity grade of 0.092 and also the national poverty value of 0.178, 47.6% of households are considered to be poor. A monthly income disparity of birr results in over 33.7% of people living in food poverty. Pastoral villages had a higher rate of food insecurity (35.6%) than agro-pastoral communities (29.8%). 32% of PSNPs took part, while 35.6% abstained. In both categories, these families made up 32% of the total. The family size, mobility, head of the household's gender, market distance, participation in safety net programs, local institutions, and remittances all have an impact on the area's poverty levels. Income inequality is relatively

high in the study area (0.592). Widower households in the Koreba region earned the highest ratings and the lowest Gini index (0.433). (0.616). It is advised that local institutions be updated, microfinance services' accessibility be improved, and specific measures for women and young people be implemented to address this issue.

The Determinants of Poverty Dynamics in Indonesia: Evidence from Panel Data, by Teguh Dartanto and Nurkholis (2013), found that 28% of poor families were classed as chronically poor (i.e., remained poor for two periods), whereas 7% of non-poor households were at risk of briefly becoming poor (–).Our calculations show that factors such as household size, physical assets, employment status, health shocks, microcredit programs, availability to electricity, changes in the employment landscape, employment status, and education level are important predictors of poverty dynamics in Indonesia. Additionally, we discovered that compared to homes outside of Java-Bali, Java-Bali households were more vulnerable to negative shocks.

The Determinants of Poverty in a South African Township study by Tshediso Joseph Sekhampu (2013) in South Africa reveals that household size, age, and the work status of the head of household strongly explain changes in the chance of being poor. The likelihood of being impoverished is decreased by the head of the household's age and employment situation. Contrarily, the likelihood of falling into poverty rises with household size. The job status of the household head is the best indicator of poverty status.

According to C.C. Ennin et al(2010) .'s study in Ghana, Trend Analysis of Determinants of Poverty in Ghana: Logit Approach, poorer households were those with larger families, heads who were illiterate, and heads who worked mostly in agriculture. Moreover, savanna zones and rural areas have poorer households. Also, it is clear that, whereas households with big populations and people who work mostly in agriculture have seen an improvement in their standard of living

over time, homes with illiterate heads of household and people who live in the savanna region have seen a decline.

According to studies, education attainment (school years), which lowers the likelihood of being chronically poor and improves households' ability to respond to temporary shocks, is one indicator of the rise in human capital (Adam & Jane, 1995; Alisjahbana & Yusuf, 2003). Jalan and Ravallion (1998) further assert that demographic changes, such as an increase in household size, are connected to enduring poverty. According to McCulloch and Calandrino's 2003 study in Sichuan, China, chronic poverty is pervasive in rural (very distant) regions.

According to Fields et al(2003) .this study, urban households have a higher chance moving out of poverty. Chronic poverty is frequently accompanied by a lack of material possessions (Adam & Jane, 1995), and work status can assist in determining household poverty status. Self-employed agricultural households in Uganda were more likely to be chronically poor, according to Okidi and Kempaka's 2002 research. According to Kedir and McKay's (2005) research, households in Ethiopia with heads who earn salaries can rise above poverty.

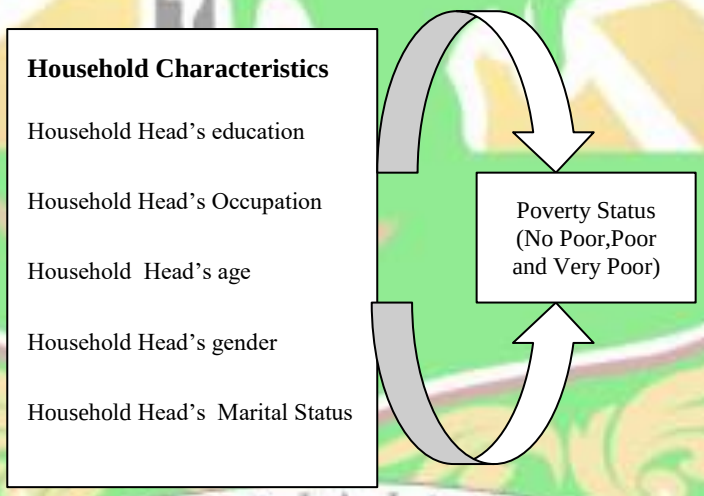
Grab and Grimm's (2007) study used the Indonesia Family Life Survey (IFLS) dataset to compare two time periods of chronic and sporadic poverty in order to quantify poverty dynamics. They discovered that between 1993–1997 and 1997–2000, chronic poverty was dramatically reduced by absolute comparisons. The significant fall in poverty in rural Indonesia is the main cause of the decline in both chronic and sporadic poverty. Using the 1993 and 1997 IFLS panel data sets, Fields et al. (2003) discovered that the location of the household, the age of the head of the household, the employment status of the head, the change in the sex of the head, the change in the employment status of the head, and the change in the number of children in the household were the determinants of household income dynamics in those days. Using IFLS data sets from 1993 and 1997, Alisjahbana (2011) and Yusuf (2003) found that 11.6 percentage points of those who weren't poor in 1993 had become poor in 1997, compared to 84.8 percentage points in

1993. 7.8 percent of the 15.2 percent of the poor in 1993 were still in poverty, while the other 7.4 percent had left it.

2.3 Research Framework

The characteristics observed include several aspects, namely the demographic aspect Indicators of household size and structure in the demographic aspect are essential because they can show the correct correlation between poverty and household structure quoted from research (Khandker & Haughton, 2009, p.161). This study framework is intended to describe the investigation's variables. According to the given description, the following research framework can be used to establish the variables involved in this study:

Figure 4. Research Framework



Source: Processed by Author,2023

The figure above provides an explanation of the independent and dependent variables used in this study. The independent variables used in this study are gender, education, occupation, marital status and age of the household head and

the dependent variable used in this study is poverty status with 3 categories, namely not poor, poor and very poor.

2.4 Research hypothesis

A hypothesis is a temporary, unknown assumption that significantly affects poverty. The truth will be revealed after doing some research. Based on the discussion that has been discussed previously, the hypothesis in this study can be put forward, namely

H1= There is a significant effect of Gender of Household head on poverty status in West Sumatra.

H2= There is a significant effect of Education of Household Head on poverty status in West Sumatra.

H3= There is a significant effect of Occupation of Household Head on poverty status in West Sumatra

H4= There is a significant effect of Marital Status of Household Head on poverty status in West Sumatra

H5= There is a significant effect Age of Household head on poverty status in West Sumatra

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CHAPTER III

RESEARCH METHODOLOGY

3.1 Operational Research Objective

The operational objective of this quantitative research is to measure and understand phenomena through numerical data collection and statistical analysis. Sample data from the National Socio-Economic Survey (Susenas) of the Central Statistics Agency (BPS) will be used in this methodology. To examine the relationship between these factors that affect poverty, determine the influence of each of them, and answer the problem statement, the data collected will be analyzed using statistical techniques such as Ordered logistic regression. In addition, the relationship between the variables of gender of household head,education level household heads, occupation of household heads, marital status of household heads and age of household heads to the poverty rate in West Sumatra will be evaluated. The more specific operational objectives of the study are as follows:

1. Collecting variable data on household characteristics that affect the poverty rate in West Sumatra.
2. Analyzing the relationship household characteristics that can affect the poverty rate in West Sumatra.Determine the factors that most influence the poverty rate in West Sumatra.

Furthermore, this study provides recommendations for appropriate policies to reduce the poverty rate in West Sumatra, especially those related to the factors found in this study. The results of this analysis will help understand the determinants of poverty in West Sumatra and provide information for interested parties in making appropriate policies to address poverty issues.

3.2 Data Types and Sources

The type of data is quantitative and using cross-sectional secondary data from the March 2019 household-based National Socio-Economic Survey (Susenas) data organized by the Central Statistics Agency (BPS) with a sample size of 10,742 household heads and in this research only use household heads. West Sumatra, which represents the population in Indonesia with the lowest 20% welfare level, BPS (2020). The classification of poverty levels refers to the definition of poverty, specifically the ability to meet basic needs (basic needs approach) for food and non-food measured in terms of expenditure set by BPS, where "poor" refers to persons whose average monthly per capita expenditure is below the Poverty Level (GK). The average per capita expenditure in West Sumatra in 2019 was IDR 503,652/month.

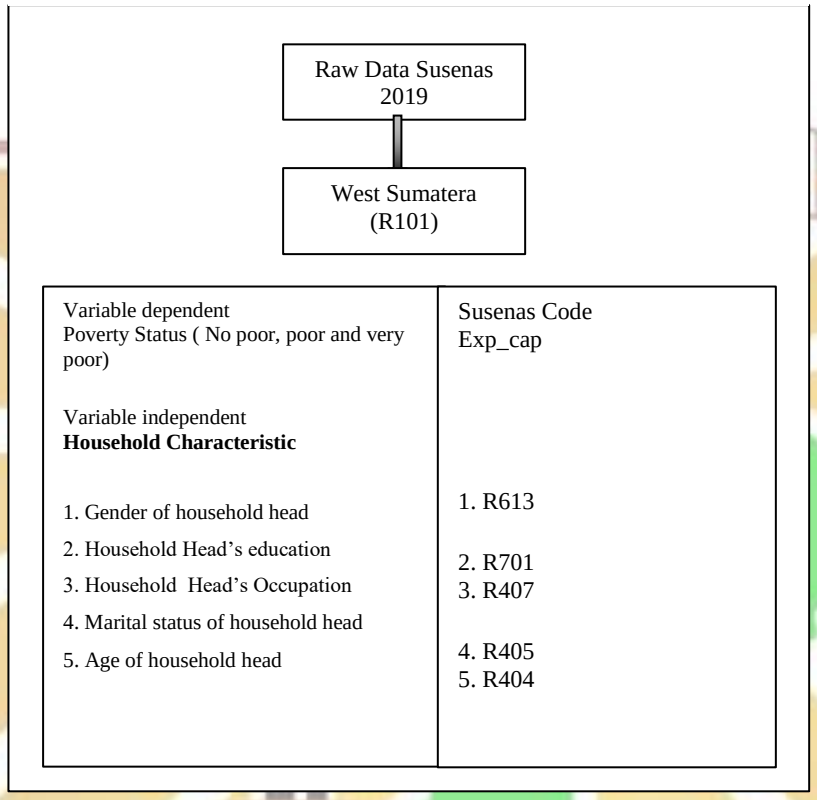
3.3 Data and Data Reduction Process

Data collection techniques are indispensable in research. It aims to obtain results in this study. The data collection technique in this research is the data reduction process. This research used secondary data from the National Socio Economic Survey (Susenas) data conducted by the Central Statistics Agency (BPS).

Data reduction is a choice process, focusing on simplifying, abstracting, and transforming raw data generated in the field in written notes (Rijali, 2019). Data reduction methods, according to (Rijali, 2019), namely:

1. Select data
2. Summarize the data that has been collected
3. Group data into broad pattern.

Figure 5. Data Reduction Process



Source: Processed by Author,2023

3.3.1 Description of Variables

Furthermore, poverty status is determined based on data per capita expenditure in SUSENAS data. The variable (Y) is poverty status and the predictor variables (X) are household characteristics, as defined in table 1.

Table 1. Description of Variables

Variable	Definition
Variable Y: Poverty Status	
1 = Not poor	Not poor Households with per capita expenditure of greater than poverty line(>IDR 503.652) fall into not poor category.
2= Poor	Poor Household head/individual with per capita expenditures below the poverty line: these households have per capita expenditures between 100%-75%(IDR 503.652-377,739 per month) and fall into the rather poor category.
3 = Very poor	Very poor Households with per capita expenditures between< 75% poverty line: these households have per capita expenditures between 377,739 – 0 per month and fall into the very poor category of poverty.
Variable X Household Characteristic	
Gender of Household head	Household head gender 0 = male 1= female
Household head's education	0= low education 1=higher education

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	*Low education(Paket A-Senior High School) *Higher education(D1-S3)
Household head's Occupation	Household head work during the week 0=work 1=not work
Marital status of Household head	Household head marital status 0= married 1= otherwise
Age Household head	Household head's age(numeric)

Source: Processed by Author, (2023)

3.4 Analytical Techniques

In this study The model chosen was the Ordered Logit Regression as used by Geda et al (2001), Epo (2011), Dartanto & Nurkholis (2013), Cho & Kim (2017) and Dwi Rozanti & friends(2021). Ordered logit regression (also known as ordinal logistic regression) is a statistical technique used to model the relationship between a set of predictor variables and an ordinal outcome variable, which has three or more ordered categories. It is a type of logistic regression model used when the outcome variable is not continuous but falls into different, ordered categories.

According to Richard (2021) the ordered logit model is a type of regression model used for ordinal dependent variables. It is also known as the proportional odds model. The model is used to estimate the relationship between the dependent variable and one or more independent variables. The dependent variable is ordinal, meaning it has more than two categories that have a natural ordering. The model estimates the probability of being in a certain category of the dependent variable based on the values of the independent variables. The ordered logit model can be derived from a latent-variable model, similar to the one from which binary logistic regression can be derived. According to Agresti, A. (1996) the model is commonly used in social sciences to analyze survey data and investigate the determinants of poverty. In the ordered logit model, there is an observed ordinal variable, Y, which is a function of another variable, Y*, that is not measured. The

model assumes that the relationship between Y and Y* is linear and that the coefficients of the independent variables are the same across all categories of the dependent variable.

According to Torres-Reyna, O. (2012) the values of the predictor variables, the response variable in ordered logit regression is supposed to follow a cumulative de distribution that depicts the likelihood of falling into each category. The link between the predictor variables and the category probabilities is described by a set of regression coefficients that the model calculates. Maximum likelihood estimation is the technique most frequently employed to estimate the ordered logit regression model's parameters. The estimated regression coefficients, corresponding p-values and odds ratios for each predictive variable are included in the orderly logit regression production. STATA 17 was the statistical software that was used.

1. Model formulation

In this study The model chosen was the Ordered Logit Regression as used by, Cho & Kim (2017), Dartanto & Nurkholis (2013), Epo (2011), Geda et al (2001)and Dwi Rozanti & friends(2021) with the formulation the model:

$$Poverty\ Status = \beta 0 + \beta 1 Gender + \beta 2 Education + \beta 3 Occupation + \beta 4 Maritalstatus + \beta 5 Age + \varepsilon$$

Poverty Status = Not poor,poor and very poor

$\beta 0$ = Coefficient

$\beta 1$ = Gender of Household head

$\beta 2$ = Education of Household head

$\beta 3$ = Occupation of Household head

$\beta 4$ = Marital Status of Household head

$\beta 5$ = Age of Household head

2. Estimation Result Test

a. Using Coefficients

According to Marcelo(2019) an ordered logit model is a statistical model used to analyze the relationship between a categorical dependent variable with ordered categories and one or more independent variables. The coefficients in the model represent the effect of the independent variables on the log-odds of the dependent variable being in a higher category.

b. Using Marginal Effect

The marginal effect, on the other hand, represents the change in the probability of the dependent variable being in a higher category due to a one-unit change in the independent variable, holding all other variables constant Marcelo(2019). According to Rozanti(2021) the results of the marginal effect calculation showed the role of independent variables in increasing household poverty status.

c. Predicted probabilities

According Torres-Reyna, O. (2012) Using *prvalue* after running an ordinal logit regression can be used to estimate the probability of an outcome falling into a specific category based on the values of the independent variables. This can be useful for understanding the relationship between the independent variables and the dependent variable, and for making predictions about the probability of certain outcomes.

Predicted probabilities are estimated as:

P(poverty status="Not Poor") = $P(Y + u \leq \_cut1)$

P(poverty status="Poor") = $P(\_cut1 < Y + u \leq \_cut2)$

P(poverty status="Very Poor") = $P(\_cut2 < Y + u)$

In this study, we utilize the STATA 17 software to estimate probabilities for an ordinal logistic regression model. The ologit command was used to fit the model

and the predict command was used to obtain the predicted probabilities for each category of the dependent variable, Torres-Reyna O. (2012). To calculate predicted probabilities using *prvalue*, the independent variables must be specified along with the values for which the predicted probabilities are to be calculated. Xu, J., & Long, J. S. (2005). The probabilities for each category of the ordinal dependent variable will be calculated by the *prvalue* command. The predict command may be used to record the predicted probabilities as a new variable. Overall, predicted probabilities using *prvalue* can be a useful tool for analyzing the results of an ordinal logit regression and for making predictions about the probability of certain outcomes based on the values of the independent variables.

3.4.1 Model Specification Test

According to Jonathan (2014), it is very important to test the feasibility of the model first before carrying out logistical analysis. To test the feasibility of the regression model, this study uses Hosmer and Lemeshow's hypothesis test (Goodness of Fit Test). This test uses the Hosmer Lemeshow test which is measured by the Chi Square approach. The hypotheses used for Hosmer and Lemeshow's test are:

a) If the test value is equal to or less than 0.05 H0 is rejected, it means that the model does not match the observed data.

b) If the test value is greater than 0.05 H0 is accepted, it means that the model is in accordance with the observational data.

3.4.2 Assumption of the Model

According Jerome (2021),the ordered logistic model has several assumptions that must be met to ensure the validity of the model. The assumptions of the ordered logit model are as follows:

1. As the independent and dependent variables have a monotonic connection, changes in the independent variables always cause changes in the dependent variable to move in the same direction.

2. There is no multicollinearity between the independent variables.

The assumption of no multicollinearity between independent variables in a linear regression model refers to a condition where there is no perfect or strong linear relationship between independent variables. Multicollinearity occurs when there is a high correlation between some or all of the independent variables in a regression model.

3. There is no linear relationship between the independent variables

The condition where independent variables are not completely or highly connected with one another is referred to as the assumption of no linear connection between independent variables in a linear regression model. This assumption is important to ensure that the linear regression model meets the BLUE (Best Linear Unbiased Estimator) requirement, which guarantees better and more stable estimates. If this assumption is fulfilled, the regression model will be easier to interpret and the regression coefficients will become more stable. In addition, a regression model that is not impacted by multicollinearity will have smaller standard errors, which will increase the reliability of the analysis results. To test this assumption, it's possible to examine the correlation coefficient between the independent variables. The assumption that there is no linear relationship between the independent variables is met if the correlation coefficient is low.

3.4.3 Hypotheses Testing

a. Wald test

To test the hypothesis, this study uses the Wald Test from Abrigo&Love(2015). The wald test tests the coefficients for the hypothesis H_0: $\beta_j = 0$. The hypothesis used in the Wald Test is as follows:

H_0: $\beta_j = 0$, then β_j is not included in the model

H_0: $\beta_j \neq 0$, then β_j is included in the model.

CHAPTER IV

RESULT AND DISCUSSION

4.1 Variable Description

To test the variables in research using Stata, it's important to first describe each research variable. The objective is to give a clear picture of the variables to be examined. The research data that becomes the dependent variable (Y) is poverty status (household head per capita expenditure/month) indicate by no poor, poor very poor while the independent variables that are household heads characteristics are the gender of the household head, education of household head, an occupation household head, marital status of household head and age of household head.

4.2 Poverty Status (per capita expenditure/month)

The study used data from the March 2019 household-based National Socio-Economic Survey (Susenas) data organized by the Central Statistics Agency (BPS) with a sample size of 10.742 household head with 8.559 observations. The following table describes the classification of poverty status,

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Table 2. Classification of Poverty

Poverty Status 1 = Not poor	Not poor Households with per capita expenditure of greater than poverty line(>IDR 503.652) fall into not poor category.
2= Poor	Poor Household head/individual with per capita expenditures below the poverty line: these households have per capita expenditures between 100%-75%(IDR 503.652-377,739 per month) and fall into the rather poor category.
3 = Very poor	Very poor Households with per capita expenditures between< 75% poverty line: these households have per capita expenditures between 377,739 – 0 per month and fall into the very poor category of poverty.

Source: Processed by Author,2023

In this study, poverty is measured at the household level based on per capita expenditure. The classification of poverty levels refers to the definition of poverty, specifically the ability to meet basic needs (basic needs approach) for food and non-food measured in terms of expenditure set by BPS, where "poor" refers to persons whose average monthly per capita is below the Poverty Level (GK). The average per capita expenditure in West Sumatra in 2019 was IDR 503,652 per month.

4.3 Household Characteristics

Poverty refers to the inability of individuals to meet essential life needs, including clothing, food, and housing. Household head characteristics refer to the demographic and socioeconomic characteristics of the person who is considered the head of the household. The head of the household is typically the person who is responsible for making decisions about the household and providing for its members. In this study there are 5 variables like gender, education, occupation, marital status and age of the household head.

4.3.1 Gender of Household Head

The gender considered in this study are male-headed households and female-headed households.

Table 3. Gender of Household Head

Poverty Status	Gender		Total
	Male	Female	
Not Poor	6,655	1,488	8,143
Poor	290	53	343
Very Poor	60	13	73
Total	7,005	1,554	8,559

Source: Processed by Author,2023

Based on the table above, there are 10,742 households, with 8,559 total observations households headed by men and women in the categories of not poor, poor and very poor. In the category no poor there are 6,655 households headed by men and 1,488 households headed by women. In the poor category with a total of 343 households, 290 of households were headed by men, and 53 were headed by

women. In the very poor category, with a total of 73 households, 60 were headed by men and 13 were headed by women. It can be concluded that men tend to head a household in West Sumatra.

4.3.2 Household Head Education

The level of education studied in this study was the last education completed by household head in West Sumatera. Categories at the education level are grouped into 2, namely lower education (*Paket A-SMA/sederajat*) and higher education (D1-S3).

Table 4. Household Head Education

Poverty Status	Education		Total
	Low Education	High Education	
Not Poor	7,264	879	8,143
Poor	342	1	343
Very Poor	73	0	73
Total	7,679	880	8,559

Source: Processed by Author,2023

Table 3 presents the distribution of education levels among household head. In the non-poor category has 8,143 people with 7,264 person had low education and 879 person achieved high education. In the poor category, there were 342 person low education and 1 person with low education. Similarly, in the very poor category, there were 73 person low education and no one with higher education. These findings indicate that although the majority of the non-poor population has a low level of education, and only a few pursue higher education. On the other hand, the majority of the poor and very poor also have a low level of education, and very few pursue higher education.

4.3.3 Household head Occupation

In the member's occupation variable studied, what activities were carried out by the household head during the week of work or not work, with 3 categories not poor, poor, very poor.

Table 5. Household head Occupation

Poverty Status	Occupation		Total
	Work	Not Working	
Not Poor	4,593	3,550	8,143
Poor	191	152	343
Very Poor	41	32	73
Total	4,825	3,734	8,559

Source: Processed by Author,2023

Table 4 provides an overview of the distribution of working and non-working household heads with a total of 8,559 observations. In the non-poor category, there were 4,593 household head working and 3,550 household heads not-working. Similarly, in the poor category, there were 191 household heads working and 152 household heads not working. In the very poor category, there were 41 household heads working and 32 household heads not working. These findings indicate that the majority of household heads were engaged in work activities during the past week, highlighting the prevalence of occupation among the study population.

4.3.4 Marital Status of Household Head

The marital status considered in this study is married and other wise households.

Table 6. Marital Status of Household Head

Poverty Status	Marital Status		Total
	Married	Otherwise	
Not Poor	6,346	1,797	8,143
Poor	291	52	343
Very Poor	61	12	73
Total	6,698	1,861	8,559

Source: Processed by Author,2023

In table 8, there are 10,742 households,with 8,559 total observations and are divided into 3 categories, namely not poor, poor, very poor. In the non-poor category with a total of 8,143 household heads, 1,797 were otherwise and 6,346 were married. In the poor category, with a total of 343 household heads, 52 of household heads were otherwise and 291 of household heads were married. In the very poor category with a total of 73 household heads, there are 61 of household heads who are married and 12 of household heads who are otherwise. From this variable it can be concluded that the head of the household is dominated by married status.

4.3. 5 Age Household Head

Based on numerical data, there are 10,742 respondents who are heads of households in terms of their age. Among them, a total of 8,134 household heads fall under the non-poor category. This suggests that a significant majority of households in West Sumatra are led by person who are not categorized as poor. Furthermore, the Central Statistics Agency (BPS) provides data on the distribution of individuals by age groups within the household head category, based on the SUSENAS survey. The age groups included in this data are <15, 16-24, 25-64, and >65.

Table 7. Household head Age Group

Poverty Status	Age				Total
	<15	16-24	25-64	>65	
Not Poor	9	214	6,703	1,217	8,143
Poor	0	6	290	47	343
Very Poor	0	1	60	12	73
Total	9	221	7,053	1,276	8,559

Source: Processed by Author 2023

In the table above, non-poor category there were 8, 143 household heads aged <15 there were 9 people, in the age range 16-24 there were 214 people, 25-64 there were 6,703 people and at ages >65 there were 1,217 people. In the poor category there were 343 respondents consisting of the age range <15 there were no one person, ages 16-24 there were 6 people, ages 25-64 there were 290 people, and ages >65 there were 12 people. In the very poor category there were 73 respondents in the age range <15 there were no one people, ages 16-24 there were

1 person, ages 25-64 there were 60 people and in the age range >65 there were 12 people. In the table above, it can be concluded that the age of the head of the household is majority in the age range of 25-64 in the category of non-poor, poor and very poor.

4.4 Test Model

The ordered/ordinal logit regression model requires the Hosmer and Lemeshow's (Goodness of Fit Test) test, which includes several pseudo R-squared measures such as McFadden's, Cox and Snell's, and Nagelkerke's. This test was conducted to determine the feasibility of the model and to find out whether the independent variables, including member education, member occupation, age household head, gender household head, and marital status household head, have an effect on the dependent variable, namely poverty (no poor, poor, very poor). The overall models feasibility test was carried out using the Goodness of Fit Test, and the results are shown in the table below:

Table 8. Model Test Household Characteristics

Model	Test
Household Characteristics (Model Hosmer Lemeshow Poverty)	Number of obs = 8,559 LR chi2(2) = 110.97 Prob > chi2 = 0.0000 Pseudo R2 = 0.0299

Source: Processed by Author,2023

The results of the table 9 test show that all independent variables significantly affect the dependent variable in the model,if this number Prob>chi2 is < 0.05 then the model is fit. This is a test to see whether all the coefficients in the model are different than zero. The Hosmer and Lemeshow's (Goodness of Fit Test) results

indicate that each independent variable has different effects, requiring partial testing through the Wald test.

4.5 Ordered/ordinal Logit Regression Result

4.5.1 Estimation Result of Household Characteristics

The estimation using ordered logit regression showed that the independent variables (e.g. gender ,education, occupation, marital status and age) of household head. The directions of the influence of the independent variables on the dependent variable, which was set in sequence with a value of 1 = not poor, 2 = poor, and 3 = very poor, were shown by the coefficient value in table 10.

Table 9, Estimation Result of Household Characteristics Using Coefficients

Independent Variable	Coefficient	Std. errs.	z	p>|z|
Gender	.8174332	.2674339	3.06	0.002
Education	-3.970592	1.002189	-3.96	0.000
Occupation	.0325914	.1016589	0.32	0.749
Marital Status	-.9787139	.2699836	-3.63	0.000
Age	-.0122837	.0039357	-3.12	0.002
/cut1	2.230881	.1968171		
/cut2	4.02003	.223306		

Source: Processed by Author,2023

The gender variable has a coefficient of 0.8174332 with a probability value of 0.002. A probability value smaller than 0.05 indicates that the gender variable

significantly affects the poverty rate. The positive coefficient indicates that female household heads tend to have a higher poverty rate than male household heads. The education variable has a coefficient of -3.970592 with a probability value of 0.000. A probability value close to 0 indicates that the education variable is highly significant in influencing the poverty rate. The negative coefficient indicates that the higher the education level of household head, the lower the probability of being in a higher poverty category.

The occupation variable has a coefficient of 0.0325914 with a probability value of 0.749. A probability value greater than 0.05 indicates that the occupation variable is not significant in influencing the poverty rate. A coefficient close to 0 indicates that this variable has a very small or insignificant effect on shifting the poverty category. The marital status variable has a coefficient of -0.9787139 with a probability value of 0.000. A probability value close to 0 indicates that the marital status variable is highly significant in influencing the poverty rate. The negative coefficient indicates that otherwise, household heads tend to have a higher poverty rate than married household heads. The age variable has a coefficient of -0.0122837 with a probability value of 0.002. A probability value smaller than 0.05 indicates that the age variable significantly affects the poverty rate. The negative coefficient indicates that the older the age of the household head, the lower the probability of being in the higher poverty category.

1. Model formulation

Poverty Status = 2.230881+.8174332(Gender)- 3.970592(Education) + 0325914(Occupation)- .9787139 (MaritalStatus)-.0122837 (Age)+ ε

The Ordered logit regression equation model shows that the independent variables, including gender,education, occupation, marital status and age of household head, have different effects on the dependent variable, namely poverty (not poor, poor, and very poor).

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4.5.2 Predicted Probabilities Household Characteristics

Predicted probabilities refer to the probabilities predicted by the model for each category or response level of the ordinal dependent variable. Following Hamilton, 2006, p.279, ologit estimates a score Y, as a linear function of the X'y:

$$Y = 0.81_{\text{Gender}} - 3.97_{\text{Education}} + 0.03_{\text{Occupation}} - 0.97_{\text{Marital Status}} - 0.01_{\text{Age}}$$

Formulas Estimates Probability:

P (poverty status = "Not Poor") $= P\,(Y + u \leq \_\text{cut1}) = P\,(Y + \text{u} \leq 2.230881)$

P (poverty status = "Poor") $= P\,(\_\text{cut1} < Y + u \leq \_\text{cut2}) = P\,(2.230881 < Y + u \leq 4.02003)$

P (poverty status = "Very Poor") $= P\,(\_\text{cut2} < Y + u) = P\,(\_4.02003 < Y + u)$

In this study use the STATA 17 software,in stata to estimate probabilities for an ordinal logistic regression model. After using the ologit command to fit the model and then using the predict command to obtain the predicted probabilities for each category of the dependent variable, Torres-Reyna O. (2012). In household characteristics, there are 5 independent variables, namely gender of household head,education of household head,occupation of household head,marital status of household head and age of household head. For gender has 0 = male 1 = female,education has 0 = low education 1= high education,occupation has 0 = work 1 = Not work,marital status has 0 = married 1= otherwise,the age is numeric.

Table 10. Predicted Probabilities Household Characteristic

Poverty Status	Probability			
	Male,low edu,work and married	Female,Low Edu,not work and married	Male,High edu,work and otherwise	Female,High Edu,not work and otherwise
Not Poor	0.9449	0.8800	0.9996	0.9990
Poor	0.0454	0.0977	0.0003	0.0008
Very Poor	0.0096	0.0223	0.0001	0.0002

Source: Processed by Author,2023

The table above shows the probability of a household poverty status based on their gender,education,occupation,marital status of household head. If the household head is a male,low education,work and he is married, the probability of not being poor is 94%, being poor is 0.4%, and being very poor is 0.009%. If the household head is a female, low education, not working, and is married, the probability of not being poor is 88%, being poor is 0.9%, and being very poor is 0.2%. If the household head is a male, with high education, work, and marital status otherwise the probability of not being poor is 99%, being poor is 0.003%, and being very poor is 0.001%. Finally, if the household head is a female, with higher education, and does not work and her marital status is otherwise, the probability of not being poor is 99%, being poor is 0.008%, and being very poor is 0.001%.

4.5.3 Estimation Result Household Characteristics using Marginal Effect

The result of the marginal effect calculation showed the role of the independent variable in increasing or decreasing poverty status.

Table 11. Resulting Household Characteristics Using Marginal Effect

Independent Variable	dy/dx	p>|z|
Gender	-. 0363287	0.002
Education	.0514784	0.000
Occupation	-. 0011194	0.749
Marital Status	.0267603	0.000
Age	.0004211	0.002

Source: Processed by Author,2023

The marginal effect for the gender variable is -0.0363287. This means that a one unit change in the gender variable will cause the absolute probability of being in a higher poverty category to decrease by 0.0363287. If the marginal effect is negative, it means that a change from "male" to "female" gender category will reduce the probability of being in a higher poverty category. The marginal effect for the education variable is 0.0514784. This means that a one-unit change in the education variable will cause the absolute probability of being in a higher poverty category to increase by 0.0514784. If the marginal effect is positive, it means that a change in a household head's education level will increase the probability of being in a higher poverty category.

The marginal effect for the occupation variable is -0.0011194. This indicates that a one unit change in the occupation variable will cause the absolute probability of being in a higher poverty category to decrease by 0.0011194. If the marginal effect is negative, it means that a change in the occupation variable will reduce the probability of being in a higher poverty category. The marginal effect for the marital status variable is 0.0267603. This means that a one-unit change in

the marital status variable will cause the absolute probability of being in a higher poverty category to increase by 0.0267603. If the marginal effect is positive, it means that a change from the marital status category "married" to "not married (otherwise)" will increase the probability of being in a higher poverty category. The marginal effect for the age variable is 0.0004211. This means that a one-unit change in the age variable will cause the absolute probability of being in a higher poverty category to increase by 0.0004211. If the marginal effect is positive, it means that a change in a household head age will increase the probability of being in a higher poverty category.

4.6 Interpretation

4.6.1 The Effect of Household Characteristics on Poverty Status

1. Gender of Household Head

Gender has a significant effect on poverty rates, with male-headed households having a lower probability of being poor than female-headed households (Todaro & Smith, 2006; Teka et al., 2019; Biyase & Zwane, 2018; Vijaya et al., 2014; Geda et al., 2001). However, some studies have found that the gender of the household head does not significantly affect poverty status (Sekhampu, 2013; Mok et al., 2007). Nonetheless, gender and poverty are important issues in development, with women more likely to live in poor households in some regions (UN Women, 2021; Gounder, 2005; Putri, 2013; Wijaya, 2014). Gender inequality is a significant factor contributing to poverty rates among women and men (UN Women, 2021; World Bank, 2017).

Women also experience higher rates of poverty than men, with the gap widening significantly for women ages 18 to 44 and again for women age 75 and older (Center for American Progress, 2020). The effects of sexism and racism on institutional structures and across society limit the employment opportunities available to women, availability of caregiving supports, access to public social assistance programs, and more (Center for American Progress, 2020). Therefore, addressing gender issues that contribute to poverty requires government

commitment to pro-poor and pro-gender development, including providing equal opportunities between women and men in accessing education and economic activities to increase their productivity (UN Women, 2021; World Bank, 2017).

2. Education of Household Head

The ordered logit results show that education level has a significant effect on poverty rate. Education is considered as one way out of poverty (Todaro, 2010), and better education increases the probability of not being poor (Dartanto & Nurkholis, 2013) by increasing the chances of getting a better job and income. The length of schooling of household heads also has a significant effect on household poverty status, with the longer a household head is in school, the lower the household poverty. In other words, the higher the education level of household heads, the greater the chance of escaping poverty.

The study of Bhaumik et al. (2011) confirms that education reduces the probability of being poor, with the contribution of education increasing as the level of education increases. Higher levels of education have a greater impact on reducing poverty (Dimova & Gang, 2007). Therefore, the government needs to prioritize investing in education to improve the quality of productive, educated, and skilled human resources, expand and equalize access to education, and improve the quality of education services for all. Education services should include formal education, non-formal education through kejar paket programs, skills training, and the development of inclusive education.

3. Occupation of Household Head

The activities undertaken by the head of the household during the week are a determining factor in the poverty status of a household. Gounder (2005) states that a working household head can help reduce the likelihood of a household becoming poorer and contribute to an increase in household income which leads to improved welfare. However, this study indicates with the coefficient results that

the occupation of the household head does not have a significant effect on poverty status in West Sumatra. This finding is in line with Sekhampu (2013) who reported that employment status has no significant effect on reducing the probability of falling into the poor category. Household heads who do not work do not reduce the probability of households becoming poorer.

4. Marital Status of Household Head

The marital status of the household head has a significant effect on household poverty, with households headed by widows and unmarried individuals having lower welfare levels, while married household heads tend to be better off Epo (2011),Geda et al (2001), Biyase & Zwane (2018). However, some studies have found that the marital status of the household head does not significantly affect household poverty status Mok et al., (2007), Sekhampu (2013), Cho & Kim (2017). The decline in household welfare due to marital status has implications for policies aimed at preventing early marriage, which can increase the risk of poverty.

5. Age of Household Head

The age of most household heads ranged from 25-64 years. This age range is the productive age for work. Generally, someone who is at a productive age is able to earn a greater income than someone who is not at a productive age. The physically productive age group has great potential to produce goods and services (Putri, 2013). A person's age correlates with his/her productivity at work; household head age is closely related to household poverty (UNDP, 2015). At productive ages, a household head can accumulate resources so that he has a greater chance of becoming not poor. However, getting older (or after retirement), a person's ability to accumulate sufficient resources or assets to become non-poor becomes lower than his at younger ages (Majeed & Malik, 2015). Household head age has a significance of 0.002 p value which means that in affecting the household poverty status in a negative direction. This means that as the household

head gets older, the level of household poverty increases and then decreases at an advanced age.

This finding contradicted Sakuhuni et al. (2011), Sekhampu (2013), Geda et al. 's (2001) and Epo (2011), opinion which stated that the increasing age of a household head will reduce his household poverty. However, it was in line with Majeed & Malik (2015) who stated that a household's probability of being poor increases with the addition of household head age until the age of 42 years because households choose to accumulate assets for old age. Household head age is seen in a non-linear relationship. Generally, someone accumulates capital more optimally at working ages since there is a greater chance to become non-poor. However, it is said that until old age/retirement, a person can accumulate sufficient assets to become non-poor in old age compared to working at a young age.

4.7 Result Hypotheses Testing

1. Partial Test (Wald Test)

Based on the Logit Regression results, it is known that the P_{value} of the Wald test (significant) of each independent variable gives different results. Variables that have a significant influence if the P_{value} of the Wald test is less than 0.05 and 0.10, which means that each independent variable influences the dependent variable. The results of the logit regression estimation in the table can be seen,

a. The gender household head variable has a significant effect on the poverty rate in West Sumatra, as shown by the Wald test with a P_{value} of 0.002, which is smaller than the significant value of 0.05. However, gender household heads have a significant effect on the poverty rate in West Sumatra.

b. The education of household head variable has a significant effect on the poverty rate in West Sumatra, as shown by the Wald test with a P_{value} of 0.000, which is smaller than the significant value of 0.05.

c. The occupation of household head variable has a partially estimated value of .325914 and no significant effect on the poverty rate in West Sumatra, as shown by the Wald test with a P_{value} of 0.749, which is greater than the significant value of 0.05.

d. The marital status household head variable has a significant effect on the poverty rate in West Sumatra, as shown by the Wald test with a P_{value} of 0.000, which is smaller than the significant value of 0.05.

e. The age household head variable has a significant effect on the poverty rate in West Sumatra, as shown by the Wald test with a P_{value} of 0.002, which is smaller than the significant value of 0.05.

UNTUK KEDJAJAAN BANGSA

CHAPTER V

SUMMARY CONCLUSION

5.1 Summary

Analyzing the influence of poverty characteristics at the micro household level can provide a more comprehensive figure of the poverty profile. There are differences in the influence of determining factors on three poverty groups, namely, The first is not poor, the second is poor and the third is very poor. Based on the discussion of research results that have been described in Chapter 4 previously, then research on how the influence of household characteristics on the poverty status of households in West Sumatra. The following is a brief description of the findings of this study:

a. Partially the independent variables, namely individual and household characteristics, namely gender, education, marital status, and age of household head have a significant effect on the poverty rate in West Sumatra. The independent variable consisting of household characteristics such as the occupation of the head of the household has no significant effect on the poverty rate in West Sumatra.
b. Gender variable compares women as heads of households and women as heads of households and men as heads of households. Based on the results obtained, it shows that there are differences between women as heads of households related to poverty and have a significant effect on poverty in West Sumatra.
c. Variable level of education of household heads describes the education that has been completed by household heads divided into 2 groups, namely low education (*Paket A-SMA/sederajat*), and higher education (D1-S3). The results obtained indicate that the level of education has an effect on

poverty in West Sumatra. This means that the last level of education achieved by household heads has an effect on poverty.

d. Variable of the marital status of the head of the household describes the marital status of the head of the household in West Sumatra. The results of this study found that there was an effect of the marital status of the head of the household on the poverty status of households in West Sumatra.

e. Variable age of the head of the household, describes the age of the head of the household in West Sumatra, in this study the most age range for being the head of the household is 25-64 years. The results of this study indicate that the age of the head of the household has a significant effect on household poverty in West Sumatera.

5.2 Implications

Poverty policy interventions must be tailored to the characteristics and status of poverty. Therefore, a "one-size-fits-all policy" does not apply. The practical implications are as follows:

1) To strengthen the development of human resources as the main driver of development, it is necessary to invest in education, expand access, and improve the quality of education services. In addition, it is necessary to prepare a workforce that is ready to face developments in information technology, and improve infrastructure management that is of high quality and easy to use by the whole community, especially the poor, especially in the education sector. This is in line with research findings which show that education has a significant effect on poverty rates in Indonesia (UNESCO, 2008; Kaya, 2015). In addition, it is also necessary to pay attention to the gender gap in the poverty rate, where women are more vulnerable to living in poor households (UN Women, 2021; World Bank, 2017; Smeru, 2013). Therefore, the government needs to be committed to addressing gender and education disparities, as well as strengthening access to and quality of education services to reduce poverty rates in West Sumatra.

2) To reduce the level of poverty in West Sumatra, it is necessary to implement policies that are adjusted to the poverty status of each household. For very poor households, policies are more focused on forms of social assistance, social preparation for young children (<15 years), and provision of social services for unproductive parents (>64 years). Meanwhile, for poor and non-poor households, policies are focused on empowerment through skills training, stimulus assistance for businesses, and facilitation to support productive businesses so that households are more independent and do not fall into poverty. In addition, it is also necessary to pay attention to other factors such as gender and education gaps, and strengthen access to and quality of education services to reduce poverty rates in West Sumatra.

5.3. Recommendations

This research has several limitations, so it is hoped that further researchers can make improvements to this research in the future. Some of the limitations in this study are as follows:

1. This study used data from the Central Bureau of Statistics (BPS), namely the 2019 National Socioeconomic Survey (Susenas). Therefore, it is hoped that future researchers can use other data sources such as the Integrated Social Welfare Data (DTKS) from the Ministry of Social Affairs, and for the year different ones like 2020, 2021, and so on. This can allow comparison of results from data in different years.
2. For further research, it is hoped that researchers can add other variables such as community characteristics or variables that can be used as factors causing poverty. Thus, the results obtained will have a clearer influence on poverty. In addition, it is also necessary to pay attention to other factors such as gender and education gaps, and strengthen access to and quality of education services to reduce poverty rates in West Sumatra and other regions.

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APPENDIX

I. Descriptive Variable

1. Poverty Status

```
. tab PovertyStatus
```

EXP_CAP	Freq.	Percent	Cum.
Not Poor	8,143	95.14	95.14
Poor	343	4.01	99.15
Very Poor	73	0.85	100.00
Total	8,559	100.00	

2. Gender of Household head

```
. tab PovertyStatus x1
```

	gender		
EXP_CAP	Male	Female	Total
Not Poor	6,655	1,488	8,143
Poor	290	53	343
Very Poor	60	13	73
Total	7,005	1,554	8,559

3. Education of Household head

```
. tab PovertyStatus x2
```

	R613		
EXP_CAP	Low Edu	High Edu	Total
Not Poor	7,264	879	8,143
Poor	342	1	343
Very Poor	73	0	73
Total	7,679	880	8,559

4. Occupation of Household head

```
. tab PovertyStatus x3
```

	R701		
EXP_CAP	Work	Otherwise	Total
Not Poor	4,593	3,550	8,143
Poor	191	152	343
Very Poor	41	32	73
Total	4,825	3,734	8,559

5. Marital Status of Household Head

```
. tab PovertyStatus x4
```

EXP_CAP	R404 Married	Otherwise	Total
Not Poor	6,346	1,797	8,143
Poor	291	52	343
Very Poor	61	12	73
Total	6,698	1,861	8,559

6. Age of Household head

```
. tab PovertyStatus xx
```

EXP_CAP	xx 0	1	2	3	Total
Not Poor	9	214	6,703	1,217	8,143
Poor	0	6	290	47	343
Very Poor	0	1	60	12	73
Total	9	221	7,053	1,276	8,559

7. Ordered Logistics Regression

```
. ologit PovertyStatus x1 x2 x3 x4 x5

Iteration 0:   log likelihood = -1856.9487
Iteration 1:   log likelihood = -1812.1905
Iteration 2:   log likelihood = -1802.7354
Iteration 3:   log likelihood = -1801.5263
Iteration 4:   log likelihood = -1801.4657
Iteration 5:   log likelihood = -1801.4655
Iteration 6:   log likelihood = -1801.4655

Ordered logistic regression                     Number of obs =  8,559
                                                LR chi2(5)    = 110.97
                                                Prob > chi2   = 0.0000
Log likelihood = -1801.4655                     Pseudo R2     = 0.0299
```

PovertyStatus	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
x1	.8174332	.2674339	3.06	0.002	.2932724	1.341594
x2	-3.970592	1.002189	-3.96	0.000	-5.934847	-2.006338
x3	.0325914	.1016589	0.32	0.749	-.1666565	.2318392
x4	-.9787139	.2699836	-3.63	0.000	-1.507872	-.4495557
x5	-.0122837	.0039357	-3.12	0.002	-.0199976	-.0045698
/cut1	2.230881	.1968171			1.845126	2.616635
/cut2	4.02003	.223306			3.582359	4.457702

8. Marginal Effect

```
. mfx

Marginal effects after ologit
      y  = Pr(PovertyStatus==1) (predict)
         =  .96445598
```

variable	dy/dx	Std. err.	z	P>|z|	[	95% C.I.	]	X
x1*	-.0363287	.01532	-2.37	0.018	-.066357	-.0063		.181563
x2*	.0514784	.00279	18.44	0.000	.046005	.056951		.102816
x3*	-.0011194	.0035	-0.32	0.749	-.007979	.005741		.436266
x4*	.0267603	.00635	4.21	0.000	.014313	.039207		.217432
x5	.0004211	.00014	3.02	0.003	.000148	.000694		49.7818

(*) dy/dx is for discrete change of dummy variable from 0 to 1

9. Predicteted Probability

```
. prvalue

ologit: Predictions for PovertyStatus

Confidence intervals by delta method

                              95% Conf. Interval
    Pr(y=Not_Poor|x): 0.9645  [ 0.9568,    0.9721]
    Pr(y=Poor|x):    0.0294   [ 0.0230,    0.0358]
    Pr(y=Very_Poo|x): 0.0061  [ 0.0043,    0.0080]

         x1        x2        x3        x4        x5
x=  .18156327  .10281575  .43626592  .21743194   49.78175



. prvalue , x (x1=0 x2=0 x3=0 x4=0)

ologit: Predictions for PovertyStatus

Confidence intervals by delta method

                              95% Conf. Interval
    Pr(y=Not_Poor|x): 0.9449  [ 0.9375,    0.9523]
    Pr(y=Poor|x):    0.0454   [ 0.0390,    0.0518]
    Pr(y=Very_Poo|x): 0.0096  [ 0.0072,    0.0121]

         x1        x2        x3        x4        x5
x=        0         0         0         0  49.78175



. prvalue , x (x1=1 x2=0 x3=1 x4=0)

ologit: Predictions for PovertyStatus

Confidence intervals by delta method

                              95% Conf. Interval
    Pr(y=Not_Poor|x): 0.8800  [ 0.8236,    0.9364]
    Pr(y=Poor|x):    0.0977   [ 0.0527,    0.1427]
    Pr(y=Very_Poo|x): 0.0223  [ 0.0098,    0.0347]

         x1        x2        x3        x4        x5
x=        1         0         1         0  49.78175
```

```
. prvalue , x (x1=0 x2=1 x3=0 x4=1)

ologit: Predictions for PovertyStatus

Confidence intervals by delta method

                                 95% Conf. Interval
     Pr(y=Not_Poor|x): 0.9996  [ 0.9987,    1.0004]
     Pr(y=Poor|x):    0.0003   [-0.0004,    0.0010]
     Pr(y=Very_Poo|x): 0.0001  [-0.0001,    0.0002]

          x1        x2        x3        x4        x5
x=         0         1         0         1  49.78175


. prvalue , x (x1=1 x2=1 x3=1 x4=1)

ologit: Predictions for PovertyStatus

Confidence intervals by delta method

                                 95% Conf. Interval
     Pr(y=Not_Poor|x): 0.9990  [ 0.9971,    1.0009]
     Pr(y=Poor|x):    0.0008   [-0.0008,    0.0024]
     Pr(y=Very_Poo|x): 0.0002  [-0.0002,    0.0005]

          x1        x2        x3        x4        x5
x=         1         1         1         1  49.78175
```

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