

Factors Affecting the Socio-Economic Conditions of Bugis Migrant Oil Palm Workers in Kembang Janggut

Ismail¹, Jiuhardi², Rahcma Budi Suharto³

Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. e-mail:

ismailhamka.ih@gmail.com

Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. e-mail:

²jiuhardi@feb.unmul.ac.id

Faculty of Economics and Business, Mulawarman University, Samarinda, Indonesia. e-mail:

³rahcma.budi.suharto@feb.unmul.ac.id

*Correspondence : ismailhamka.ih@gmail.com

Abstract: This study examines the socio-economic factors influencing the income of Bugis migrant workers employed in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency, East Kalimantan. A quantitative descriptive approach was used, involving 85 migrant workers as respondents. The study analyzed several factors, including education, age, gender, employment status, wage system, working hours, and health conditions, to determine their impact on workers' income. Data were processed using multiple linear regression analysis with the help of SPSS software. The findings show that socio-economic factors collectively have a significant effect on the income of migrant workers in the oil palm plantation sector. Individually, age, employment status, wage system, working hours, and health conditions significantly influence income levels, while education and gender do not have a significant effect. The study also found that male workers generally earn higher incomes than female workers. In addition, permanent workers receive higher earnings compared to non-permanent workers, and workers paid under a wholesale wage system tend to earn more than those receiving daily wages. Overall, the results emphasize that employment conditions and work-related factors play an important role in shaping the income of migrant plantation workers.

Keywords: Income, Education, Age, Gender, Worker Status, Wages, Working Hours, Health.

1. Introduction

Regional economic development is basically a process of change that takes place in a sustainable manner in people's lives and is characterized by an increase in economic activity, an expansion of employment opportunities, and changes in the social structure of society. The development process is not only oriented towards economic growth, but also directed to improve the welfare of the community through equal distribution of income and improving the quality of human resources. Changes in the economic structure of the community can be seen from the shift of labor from the traditional sector to a more productive sector, including the development of the plantation sector which is one of the main pillars of the regional economy in Indonesia (Todaro & Smith, 2020; Susilowati, 2017).

The development of the oil palm plantation sector in Indonesia in recent years has shown considerable contribution to national and regional economic growth. The oil palm plantation industry not only plays a role in increasing export value, but also becomes a sector that is able to absorb a large number of workers, especially in rural areas. Data from the Central Statistics Agency shows that the agriculture and plantation sectors are still the main business fields for people in various

regions, especially in the Kalimantan and Sumatra regions which have quite a large area of oil palm plantations. The existence of oil palm plantations has also encouraged the mobility of people from various regions to find job opportunities and improve the economic standard of living of families (BPS, 2023; Obidzinski et al., 2012).

Population mobility or migration is part of the socio-economic dynamics of the community that occur due to the inequality of employment opportunities and income levels between regions. Migration is usually carried out by people who have the hope of getting a better job and income than their home area. Migration theory explains that population movements are influenced by driving factors and pulling factors. The driving factors can be in the form of limited employment, low income, and lack of business opportunities in the area of origin, while the attraction factor is related to the availability of job opportunities and more promising wage levels in the destination area (Lee, 1966; De Haas, 2021). This condition causes areas with developing economic activities, such as oil palm plantation areas, to become the main destination for migrant workers from various regions in Indonesia.

Kembang Janggut District, Kutai Kartanegara Regency, East Kalimantan Province is one of the areas that has experienced quite rapid development of the oil palm plantation sector. The development of plantations has an impact on the increase in community economic activity and the increase in the number of migrant people who come to work in the plantation sector. Most of the migrant workers who work in oil palm plantations in this region come from South Sulawesi, especially from the Bugis tribe. The Bugis people are known to have a strong migratory culture as part of a strategy to improve economic conditions and family welfare (Pelras, 1996; Asba, 2007). The presence of migrant workers has also shaped the socio-economic dynamics of the local community through increasing trade, services, and social relations between community groups.

Migrant populations working in the oil palm plantation sector have different socio-economic characteristics. Differences in education level, age, gender, employment status, wage system, working hours, and health conditions are suspected to affect the level of income earned by migrant workers. Education is one of the important factors in determining the ability and skills of the workforce so that it can affect a person's work productivity. Workers with better education generally have a higher chance of obtaining jobs and incomes than workers with lower education levels (Mankiw, 2019; Becker, 1993).

In addition to education, the age factor is also related to a person's physical ability and work experience in carrying out work activities in oil palm plantations that require considerable manpower. Workers who are at productive age tend to have better work skills than workers who have entered old

age. Gender is also a factor that affects the income of migrant workers because of the difference in the type of work done between men and women in the oil palm plantation sector. Most of the heavy work such as harvesting and transporting oil palm products is generally done by male workers, while women are more likely to work in the maintenance and administration of plantations (Sayer et al., 2012).

Worker status also determines the level of income received by migrant workers. Permanent workers usually earn a more stable income and get additional perks than freelance or contract workers. In addition, the wage system implemented by oil palm plantation companies also affects the amount of workers' income. The daily, monthly, and wholesale wage systems based on work results cause income differences between workers. Long working hours are often done by migrant workers to increase their income, especially for workers with a wage system based on production. However, a high workload can affect workers' health conditions and impact their work productivity (International Labour Organization, 2020).

Health conditions are one of the important factors in determining the ability of workers to carry out activities in the oil palm plantation sector. Workers who have good health conditions tend to be able to work more optimally and have higher productivity than workers who often experience health problems. Work activities in oil palm plantations, which are mostly carried out in the field with fairly harsh environmental conditions, make workers vulnerable to fatigue and health problems if not supported by adequate physical conditions. Therefore, the health of the workforce is closely related to the level of income earned by migrant workers (Strauss & Thomas, 1998; Bloom & Canning, 2000).

The socio-economic life of Bugis migrant workers in Kembang Janggut District still faces various challenges, especially related to income instability and high family living needs. Some workers still rely on the daily work system with relatively uncertain incomes. On the other hand, increasing economic needs cause workers to have to increase working hours to meet their household needs. This condition shows that the income level of migrant workers is influenced by various interrelated socioeconomic factors so that it needs to be studied more deeply through scientific research.

1) Population Development and Socio-Economic Development

The study of population development is basically related to changes in the number, distribution, and socio-economic characteristics of the community in a region. Population science not only studies population growth, but also discusses population mobility, age structure, education level, type of work, and community welfare conditions. These changes in population characteristics have a close relationship with the economic development of an area because population growth can affect labor

needs, consumption patterns, and community production activities. In the context of regional development, population development is often associated with the ability of regions to provide economic and social facilities for their communities (Mantra, 2019; Weeks, 2021).

Continuous population growth can have a positive and negative impact on regional economic development. A large population can become development capital if it is supported by good quality human resources, adequate education levels, and the availability of wide job opportunities. On the other hand, if population growth is not balanced with regional economic development, it can cause various social problems such as unemployment, low community income, and increasing poverty rates. Therefore, socio-economic development needs to be directed to improve the quality of life of the community through job creation and increased labor productivity (Todaro & Smith, 2020; Becker, 1993).

The classical population theory put forward by Thomas Robert Malthus explains that population growth tends to be faster than the growth of human necessities. According to Malthus's view, an uncontrolled increase in population can cause pressure on the availability of economic and food resources, thereby lowering the level of people's welfare. However, technological developments and improving the quality of human resources are able to reduce the negative impact of population growth through increasing economic productivity and production efficiency (Weeks, 2021; Simon, 1981).

Kembang Janggut District, Kutai Kartanegara Regency is one of the areas in East Kalimantan that has experienced quite rapid development of oil palm plantations in recent years. This development has led to an increase in the number of migrant people who come to work in plantation companies and oil palm plantations owned by the community. Most of the migrant workers come from South Sulawesi, especially the Bugis people who are known to have a migratory culture to improve the economic conditions of their families. The presence of the migrant community has an influence on the socio-economic development of the local community through increased economic activity, an increase in the number of working-age population, and the formation of more diverse socio-cultural interactions (Pelras, 1996; Obidzinski et al., 2012).

In the socioeconomic life of oil palm plantation migrant workers, the level of labor income is influenced by various socioeconomic factors such as education, age, gender, employment status, wage system, working hours, and health conditions. Education affects a person's ability and work skills, while age is related to the productivity and physical ability of the workforce. In addition, the wage system, employment status, and health conditions also determine the level of income obtained by migrant workers in the oil palm plantation sector. Therefore, the study of population development

and socio-economic development is important to understand the living conditions of Bugis migrant workers in Kembang Janggut District, Kutai Kartanegara Regency (Strauss & Thomas, 1998; Bloom & Canning, 2000).

2) Income Theory

Income is one of the indicators used to see the level of welfare of individuals and communities in an economic activity. The level of income indicates a person's ability to meet the needs of daily life and describes the socio-economic conditions of the household. In economic development, increasing people's income is often used as the main goal because it is directly related to improving people's living standards, consumption, and ability to obtain access to education and health. Therefore, income is an important variable in various socio-economic research of the community (Sukirno, 2017).

In general, income can be interpreted as all the income that a person obtains in a certain period of time in exchange for energy, skills, and production factors used in economic activities. Income can come from wages, salaries, business results, trade profits, and other income received by households. In modern economic activities, labor income is one of the main sources of meeting people's living needs because most of the population depends on work activities carried out every day (Mankiw, 2021).

According to Samuelson and Nordhaus (2019), income is the result that an individual or group receives from their involvement in the production process of goods and services over a certain period. The income appears as a reward for the use of labor, capital, and production ability that a person has. In economic theory, labor is seen as a factor of production that receives rewards in the form of wages according to the level of productivity, skills, and type of work performed. The higher a person's productive ability, the greater the chance of earning a higher income.

Based on this description, it can be concluded that income is all the income that an individual earns in exchange for the use of labor, skills, and other factors of production in a certain period. The income level of workers is influenced by various socioeconomic factors such as education, age, gender, employment status, wage system, working hours, and health conditions. These factors are an important basis for analyzing the level of welfare of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency (Oktriyedi, F., & Handayani, L., 2025).

3) Production Theory and Production Factors

Production is basically an economic activity that aims to produce goods and services through the process of combining various factors of production. Production activities are carried out to create the use value of an item so that it can meet the needs of the community. In economics, production is

not only defined as the process of producing new goods, but also includes activities to increase the benefits of a good or service so that it has a higher economic value. Production activities can be carried out in various business sectors such as industry, agriculture, plantations, trade, and services, all of which require the support of human resources and other production factors (Sukirno, 2017).

According to Mankiw (2021), production is the process of converting inputs into outputs through the use of technology, labor, capital, and other resources. In economic activities, the production process is an important part because it determines the amount of goods and services that can be produced to meet the needs of the community. Production results are greatly influenced by the ability of producers to combine production factors efficiently so that they can produce optimal output with relatively low production costs. Therefore, the success of a business is highly dependent on the management of the production factors used in the production process.

The production factor is all resources used in production activities to produce goods and services. These production factors consist of natural resources, labor, capital, and managerial ability or expertise. In classical economic theory, it is explained that the success of a production process is greatly influenced by the ability of business actors to utilize production factors effectively and efficiently. The better the combination of production factors used, the greater the chance of obtaining higher production and income (Samuelson & Nordhaus, 2019).

According to Soekartawi (2016), the factors that affect production in the agricultural and plantation sectors can be divided into two main groups, namely technical factors and socio-economic factors. Technical factors include land conditions, seeds, fertilizers, technology, and other means of production that directly affect production results. Meanwhile, socioeconomic factors include education, age, work experience, labor, wage system, capital, and social conditions of the community related to production activities. These two factors have a close relationship in determining the level of labor productivity and the success of a production business.

In the oil palm plantation sector, several main production factors are known to affect production yields and labor productivity. The first factor is the natural resources or land where production activities take place. Plantation land has an important role because it is related to the area of production, soil fertility level, climatic conditions, and the availability of water that supports the growth of oil palm plants. In addition to land area, the quality of the plantation environment also affects the production output and productivity level of the workforce working in the oil palm plantation sector.

The next factor of production is capital. Capital is all goods or funds used to support the production process such as work tools, operational vehicles, fertilizers, seeds, and various other

production facilities. In oil palm plantation activities, capital plays an important role in supporting the smooth production process from land clearing to the harvesting process and distribution of production products. According to Arsyad (2016), capital in production activities is not only in physical form, but can also be in the form of investment in human resources such as education, training, and improving labor skills.

Labor is a production factor that has a very important role in production activities because the entire production process requires human involvement as the implementer of work activities. In the oil palm plantation sector, labor is needed to carry out various activities such as planting, plant maintenance, fertilizing, harvesting, and transporting production products. Labor productivity is influenced by the physical abilities, skills, education, work experience, and health conditions of workers. Workers who have better work skills tend to be able to produce higher productivity, which has an impact on increasing workers' income.

In oil palm plantation activities, labor can come from family members or workers from outside the family who work as wage workers. Most migrant workers in the oil palm plantation sector work as freelance day laborers, harvest workers, and permanent company workers. The work system causes differences in income levels between workers based on the type of work, wage system, and number of hours worked. Therefore, labor is a production factor that is closely related to the socio-economic conditions of migrant workers in plantation areas.

In addition to labor and capital, work skills are also important production factors in modern economic activities. Expertise reflects a person's ability to manage work, use technology, and organize production factors so that the production process runs effectively and efficiently. In the oil palm plantation sector, labor skills are indispensable, especially in harvesting activities that require certain work techniques so that production remains of high quality. According to Becker (2018), the ability and skills of the workforce are part of human capital that can increase individual productivity and income.

Socio-economic factors of labor also affect productivity in production activities. Education is one of the factors that can improve the ability of the workforce to understand work techniques and the use of production equipment. Age is related to a person's physical ability and work experience, while gender affects the division of work according to the characteristics of the work performed. In addition, employment status, wage system, working hours, and health conditions also affect work morale and labor productivity in the oil palm plantation sector.

In the oil palm plantation sector, the wage system is usually adjusted to the type of work and the amount of production achieved by the workforce. Workers with high productivity tend to earn more than other workers. Long working hours are also often done to increase work outcomes and

workers' income. However, the health condition of workers must still be considered because work activities in oil palm plantations require considerable physical ability. Workers who have good health conditions tend to be able to work more optimally so that they can produce higher productivity (Todaro & Smith, 2020).

Based on this description, it can be concluded that production is the process of converting various inputs into outputs through the effective and efficient use of production factors. Production factors include natural resources, capital, labor, and interrelated skills in determining production output and labor productivity levels. In the context of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency, socioeconomic factors such as education, age, gender, employment status, wage system, working hours, and health conditions have an important influence on the productivity and income of migrant workers.

4) Urbanization and Employment Opportunities

Migrant people who work in the plantation sector generally move to destination areas in the hope of obtaining a better economic life and improving family welfare. The presence of migrant workers in the informal sector and the plantation sector is able to create new economic activities so as to contribute to regional development productively. Migrant communities from various social, cultural, educational, and economic backgrounds are an important part of driving community economic activities, especially in areas that experience the development of the oil palm plantation sector. Economic activities in plantation areas are also able to provide wider employment opportunities for local communities and immigrant populations. In these conditions, local governments not only play a role as development policy providers, but also as facilitators who encourage community empowerment in productive economic activities (Todaro & Smith, 2020; De Haas, 2021).

The existence of migrant workers in plantation areas also contributes to increasing household income, strengthening rural economic structures, and encouraging the growth of supporting business sectors such as trade, transportation, and services. Oil palm plantation development has become one of the important sectors in reducing rural unemployment and increasing economic accessibility in remote areas (Obidzinski et al., 2012; Sayer et al., 2012). In addition, migrant communities often build social networks and solidarity systems that support economic adaptation and survival strategies in destination areas (Pelras, 1996). Therefore, migration and plantation development have an important relationship in shaping the socio-economic dynamics of communities in plantation-based regional development areas.

5) Forms of Population Mobility (Bugis Tribe)

Population mobility is basically related to the movement of individuals or groups of people from one region or certain social status to other socio-economic conditions. Social mobility indicates a change in a person's position in people's lives which can occur due to factors of employment, education, income, and family economic conditions. These changes can be increasing, decreasing, or remaining at the same social level but in a different work environment. The occurrence of social mobility is influenced by various factors such as education, age, gender, work skills, and family economic conditions. In addition, a person's mobility opportunities are also greatly influenced by job opportunities and economic development in the region where they work (Weeks, 2021; Sorokin, 1959).

Migration and social mobility are closely related to the process of socio-economic transformation in society. Individuals who migrate generally expect better employment opportunities, increased income, and higher social status in destination areas. Education and work skills become important capital in determining the success of migrants in improving their social and economic status (Becker, 1993; De Haas, 2021). In addition, economic development in destination areas, especially in plantation and industrial sectors, can create wider opportunities for vertical social mobility among migrant communities. Therefore, social mobility not only reflects changes in economic conditions, but also describes the process of adaptation and improvement in the quality of life of migrant communities.

6) Factors related to mobility

The socio-economic life of the community is basically always changing along with the development of economic activities, education, technology, and employment opportunities. In modern society, changes in socio-economic conditions cause a shift in social status and the movement of the population from one region to another. The mobility of the migrant population is usually influenced by the desire to obtain better jobs, increase incomes, and achieve higher living well-being. In communities that experience economic development such as plantation and industrial areas, social mobility opportunities tend to be more open than traditional rural communities. Changes in people's mindset also cause social status to be determined more by ability, education, and work performance than heredity factors. This condition is one of the factors that encourages the high mobility of the migrant population in search of better economic opportunities (Todaro & Smith, 2020; De Haas, 2021).

Socio-economic transformation in developing regions also creates changes in employment structures and community lifestyles. The expansion of plantation and industrial sectors encourages labor migration from rural areas to economically growing regions. Migrant workers generally seek better income opportunities and social status through employment in productive sectors. Education

and work skills become important factors in determining a person's ability to adapt and compete in the labor market (Becker, 1993). In addition, increasing economic activity in plantation areas often encourages the growth of supporting sectors such as trade, transportation, housing, and services, which further strengthens social interaction and economic mobility among migrant communities (Sayer et al., 2012). Therefore, migration and socio-economic mobility become important indicators in understanding social changes in developing regional economies.

7) Types of Job Mobility

In the development of economic development, labor mobility and job mobility are an important part of improving the welfare of the community and individuals. Job mobility occurs when workers move from one type of job to another, either in the same location or in different areas. The transfer can take place between regions, between companies, between business sectors, or between levels of job positions vertically or horizontally. Job mobility is generally carried out with the aim of obtaining better jobs, increasing income, more decent working conditions, and more favorable socio-economic life opportunities. In migrant societies, job mobility often occurs as part of efforts to adapt to labor market developments and changes in the economic conditions of the destination region (Todaro & Smith, 2020).

Job mobility in migrant workers is influenced by various factors related to individual conditions, families, work environment, and economic development of the community. These factors can be in the form of education level, job skills, age, health conditions, work experience, wage system, and available job opportunities. In addition, environmental, social factors and government policies also affect the smooth labor mobility of migrant workers. Areas with rapid economic development, such as oil palm plantation areas, usually provide wider job opportunities, encouraging the transfer of labor from various regions of origin to the region.

In addition to individual factors, the role of the government and companies also affects the mobility of labor jobs. The government through economic development policies and the provision of job opportunities can help create a more open labor market. Meanwhile, oil palm plantation companies play a role in providing job training, a decent wage system, and opportunities to improve employment status for workers who have good productivity. This support can increase the work motivation and welfare of migrant workers in plantation areas.

Based on this description, it can be concluded that job mobility is the movement of labor between jobs, between companies, and between work areas that is carried out to obtain better socio-

economic conditions. The job mobility of Bugis migrant workers in the oil palm plantation sector is influenced by various factors such as education, age, gender, employment status, wage system, working hours, and health conditions. These factors determine the ability of the workforce to obtain job opportunities and increase income in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency.

8) Oil Palm Plantation Process

To increase the production of oil palm plantations, good management is needed at every stage of cultivation and plant maintenance. The success of oil palm production is greatly influenced by the quality of seeds, land conditions, plant maintenance, labor management, and the harvesting system that is carried out appropriately. In oil palm plantation activities, crop productivity is an important factor because it is directly related to the level of production and income of companies and plantation workers (Pahan, 2017; Corley & Tinker, 2016).

Proper plantation management can improve the efficiency of production activities and optimize the use of labor in oil palm plantations. Fertilization, pest control, pruning, and harvesting systems carried out according to technical standards are able to increase fresh fruit bunch productivity and maintain plant quality sustainably. In addition, labor skills and work discipline also greatly affect plantation productivity because oil palm plantation activities require intensive labor and continuous maintenance (Hashim et al., 2018). Therefore, the application of modern plantation management and the improvement of labor quality are important factors in supporting the sustainability and economic productivity of the oil palm plantation sector.

9) Critical Review

The target in this study is the Bugis Tribe migrant population who work in the oil palm plantation sector and have settled in Kembang Janggut District, Kutai Kartanegara Regency for a certain period of time. The research focuses on the socioeconomic characteristics of migrant workers related to the level of income obtained while working in oil palm plantations. The analysis was carried out to determine the relationship between the socio-economic condition of the workforce and the ability to earn income in the oil palm plantation sector. In addition, this study also identifies various socioeconomic indicators that are suspected to affect the income level of migrant workers. Some of the indicators analyzed in this study include education level, age, gender, employment status, wage system, working hours, and health conditions of migrant workers in the oil palm plantation sector (Todaro & Smith, 2020).

Research on migrant workers in the oil palm plantation sector is important because the plantation sector is one of the main sources of labor absorption in rural areas and transmigration areas. The presence of migrant workers contributes to the development of the regional economy through

increasing production activities and economic growth of the surrounding community. However, the socio-economic conditions of migrant workers still face various problems such as income instability, an irregular work system, and limited access to health facilities and labor welfare. Therefore, an analysis of the factors that affect the income of migrant workers is important to understand the level of welfare of migrant communities in the oil palm plantation sector (BPS, 2023).

In this study, the education variable is seen as a factor that can increase the ability and skills of the workforce in work, thus affecting the productivity and income of workers. The age of the worker also has a relationship with the physical ability and work experience that the workforce has. In addition, gender often affects the division of labor and wage levels in the oil palm plantation sector, which requires a large amount of physical labor. Employment status and wage system are also suspected to affect the income stability of migrant workers because permanent workers generally earn more stable income than freelance daily workers.

Working hours are an important indicator in determining the amount of income received by migrant workers. Workers who have longer working hours or are able to achieve certain production targets usually earn more than other workers. However, high working hours can also affect the health condition of the workforce if it is not balanced with adequate rest time. Health conditions are an important factor because the oil palm plantation sector needs a workforce with good physical abilities to maintain optimal work productivity (Becker, 2018).

Several previous studies have shown that socioeconomic factors have a significant influence on the income level of labor in the agricultural and plantation sectors. Higher levels of education are generally associated with better employability and productivity. Similarly, health conditions and work experience support the ability of the workforce to achieve optimal work results. Therefore, this study was conducted to provide an overview of the socio-economic conditions of Bugis migrant workers and the factors that affect their income levels in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency.

2. Research Methods

2.1. Approaches and Types of Research

This study uses a quantitative approach with a type of quantitative descriptive research. The quantitative approach was used because this study aimed to measure the relationship and influence between socioeconomic variables on the income level of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency. Quantitative research is carried out through the collection of field data which is then analyzed using data in the form of numbers or statistics to obtain objective research conclusions. Meanwhile, the descriptive research is

intended to provide an overview of the socioeconomic conditions of migrant workers based on the variables of education, age, gender, employment status, wage system, working hours, and health conditions on the income of migrant workers (Sugiyono, 2019).

The quantitative descriptive approach in this study was used to explain the relationship between research variables through the measurement of data obtained from respondents. The data collected came from Bugis migrant workers who work in the oil palm plantation sector in Kembang Janggut District. Furthermore, the data was analyzed to determine the influence of independent variables, namely education (X1), age (X2), gender (X3), employment status (X4), wage system (X5), working hours (X6), and health condition (X7) on the dependent variable, namely the income of migrant workers (Y). By using a descriptive quantitative approach, this study is expected to be able to provide an empirical picture of the socio-economic factors that affect the income level of migrant workers in the oil palm plantation sector.

2.2. Population and Sample

The data collection method in this study is carried out through a survey method that is prepared based on proportional sampling techniques. The population in this study is Bugis tribal migrants who have been living for 5 years or more (≥ 5 years) and working as oil palm plantation workers in Kembang Janggut District, Kutai Kartanegara Regency. The population was chosen because they are considered to have experience and understanding of socio-economic conditions and work systems in the oil palm plantation sector. Meanwhile, the determination of the research sample was carried out by taking a portion of the existing population using the Slovin formula to obtain the number of respondents who could represent the entire research population (Sugiyono, 2019).

The sampling technique was carried out randomly proportionally so that each member of the population had an equal opportunity to be used as a research respondent. The use of this technique aims to obtain more representative data so that the results of the study can objectively describe the socio-economic conditions of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District. The respondents selected in this study consisted of migrant workers with various socioeconomic characteristics such as education level, age, gender, employment status, wage system, working hours, and health conditions. Thus, the data obtained is expected to be able to provide a more accurate picture of the factors that affect the income of migrant workers in the oil palm plantation sector.

2.3. Research Variables

The object of this study is Bugis migrant workers from outside Kembang Janggut District, Kutai Kartanegara Regency and have lived for at least 5 years (≥ 5 years), and work in the oil palm plantation sector both as day laborers, permanent workers, and wholesale workers. In relation to the

purpose of the study, it is necessary to explain the operational definition of the variables used so that the research has a clear direction and avoids differences in interpretation of the variables analyzed. The research variables consist of dependent variables and independent variables related to the socio-economic conditions of migrant workers in the oil palm plantation sector (Sugiyono, 2019).

The determination of these variables is carried out based on socio-economic and labor theories which state that the level of labor income is influenced by factors such as education, work experience, physical conditions, work systems, and other socio-economic conditions. Thus, the variables used in this study are expected to be able to explain the factors that affect the income of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency (Todaro & Smith, 2020).

2.4. Data Analysis Techniques

The data analysis used in this study is statistical analysis using multiple linear regression models and dummy variables (the analysis formula is found in the hypothesis testing section). The use of regression analysis was carried out to determine the influence of independent variables on dependent variables in the study. The results of the analysis aim to find out the following things:

- 1) To determine the socio-economic characteristics of Bugis migrant workers in the oil palm plantation sector, it was analyzed using descriptive statistics through cross-tabulation and frequency distribution. Descriptive analysis was used to provide an overview of the respondents' conditions based on education, age, gender, employment status, wage system, working hours, health conditions, and income level of migrant workers (Sugiyono, 2019).
- 2) To analyze the income level of migrant workers influenced by factors of education, age, gender, employment status, wage system, working hours, and health conditions, multiple linear regression analysis was used. This analysis aims to determine the magnitude of the influence of each independent variable on the bound variable, namely the income of migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency. Gender and employment status variables were analyzed using dummy variables because they were in the form of category data, while other variables were analyzed in the form of numerical or ratio data (Ghozali, 2021).

Data analysis is carried out with the help of statistical programs to simplify the data processing process and obtain more accurate research results. Furthermore, the results of the analysis were used to explain the relationship between socioeconomic factors and the income level of Bugis migrant workers in the oil palm plantation sector.

3. Results and Discussion

3.1. Overview of Research Locations

Kembang Janggut District is one of the sub-districts located in the Kutai Kartanegara Regency area, East Kalimantan Province. Geographically, Kembang Janggut District is located in the upstream area of the Mahakam River and has an area dominated by plantation, agriculture, and rural community settlements. This sub-district has a fairly large area with a population spread across several villages that mostly depend on the plantation and agricultural sectors for economic life. Administratively, Kembang Janggut District is bordered by Tabang District to the north, Kota Bangun District to the south, Kenohan District to the east, and Tabang District as well as inland forest areas to the west. These geographical conditions make Kembang Janggut District one of the areas that has the potential for natural resources and oil palm plantations that are quite developed in Kutai Kartanegara Regency (BPS Kutai Kartanegara, 2023).

The development of the oil palm plantation sector in Kembang Janggut District has increased quite rapidly in recent years. Oil palm plantations are developing both through large private companies and community-owned plantations so that they are able to open up job opportunities for locals and migrant residents from various regions in Indonesia. One of the migrant groups that is quite dominant in the oil palm plantation sector in this region is the Bugis tribe community from South Sulawesi. The Bugis people are known to have a strong migratory culture and the ability to adapt to new work environments, especially in natural resource-based economic sectors such as agriculture and plantations. The presence of Bugis migrant workers in Kembang Janggut District contributes to the development of community economic activities through increasing labor, trade, and the growth of population settlements around oil palm plantation areas.

In addition to having great potential in the oil palm plantation sector, Kembang Janggut District also has other natural resources such as forest products, food crop agriculture, and river fisheries which are the source of livelihood for the local community. The socio-economic conditions of the people in this region tend to be heterogeneous due to the interaction between local communities and migrant residents from various regions. The development of oil palm plantations also affects the socio-economic dynamics of the community, especially in increasing employment opportunities and changing the livelihood structure of the community from the traditional sector to the modern plantation sector. With these conditions, Kembang Janggut District is a relevant area to be used as a location for research on socio-economic factors that affect the income of Bugis migrant workers in the oil palm plantation sector.

3.2. Statistical Test

Before analyzing the model obtained from the results of data processing, several tests were first carried out on the research data which include:

- Data reliability test,
- Test the validity of the data,
- Test the normality of data distribution.

The testing is carried out so that the data used in the research is really feasible and can be accounted for to be used as a basis for further research decision-making (Ghozali, 2021).

3.3. Data Reliability Test

The reliability test was carried out to determine the level of consistency of the research instrument in measuring the same variable. Reliability testing is carried out using the help of the SPSS program through a reliability analysis procedure so that the level of reliability of the research data can be known.

Table 1. Case Processing Summary Research Data

		N	%
Cases	Valid	90	100.0
	Excluded	0	.0
	Total	90	100.0

a. Listwise deletion based on all variables in the procedure

Source: SPSS Output, 2026.

Table 1 shows that all data obtained from 90 respondents were declared valid and no data was excluded. Thus, all the data used are in accordance with the research needs and can be used as a representation of research variables.

Table 2. Results of Statistical Reliability Test of Research Data

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.842E-5	0.871	8

Source: SPSS Output, 2026.

Based on Table 2, it is known that Cronbach's Alpha Based on Standardized Items value is 0.871. This value shows that the research instrument has a high level of reliability because the alpha value is close to 1. Therefore, all research variables are declared reliable and feasible to be used in research analysis (Sugiyono, 2019).

3.4. Data Validity Test

The validity test aims to determine the ability of the research instrument to measure the variables being studied appropriately and accurately. Validity testing was carried out using Product Moment correlation with the help of the SPSS computer program.

Table 3. Testing the Validity of Research Data through the Inter-Item Correlation Matrix

	Revenue (Y)	Education (X1)	Age (X2)	Gender (X3)	Employee Status (x4)	Wage System (X5)	Working Hours (x6)	Health (X7)
Revenue (Y)	1.000	.512	.648	.438	.602	.571	.590	.721
Education (X1)	.512	1.000	.401	.325	.384	.445	.214	.347
Age (X2)	.648	.401	1.000	.260	.438	.452	.334	.547
Gender (X3)	.438	.325	.260	1.000	.486	.340	.192	.358
Employee Status (x4)	.602	.384	.438	.486	1.000	.518	.271	.530
Wage System (X5)	.571	.445	.452	.340	.518	1.000	.238	.446
Working Hours (x6)	.590	.214	.334	.192	.271	.238	1.000	.563
Health (X7)	.721	.347	.547	.358	.530	.446	.563	1.000

Source: Primary Data Processing Results, 2026.

Data Source: SPSS Output, 2025

Based on Table 3, it can be seen that all research variables have a greater calculation value than the table at a significance level of 5%. Thus, all research variables are declared valid and can be used in the data analysis process.

3.5. Data Normality Test

The normality test was carried out to find out whether the research data had a normal distribution or not. It is important to test normality so that the statistical model used is in accordance with the characteristics of the research data. In this study, the normality of the data was tested using the Central Limit Theorem approach which states that the number of samples above 30 tends to be distributed normally. Because the number of respondents in this study was 90 respondents ($n > 30$), the research data was assumed to be normally distributed.

3.6. Classical Regression Assumption Testing

A good multiple linear regression model should meet classical assumptions. Classical assumption testing is carried out in conjunction with regression analysis which includes autocorrelation test, linearity test, multicollinearity test, and heteroscedasticity test.

3.6.1. Autocorrelation Test

The autocorrelation test aims to find out whether there is a relationship between the residual in a given observation period and the residual of the previous period. The test is done using the Durbin Watson Test.

Durbin Watson's score obtained is 1.582. The value is between the du and 4-du boundaries so that the regression model is declared not to experience autocorrelation. Thus, the regression model used in this study has met the assumption of autocorrelation.

3.6.2. Linearity Test

The linearity test is used to find out whether the relationship between independent variables and dependent variables is linear. Based on the results of the test using the DW Test, a value of 1.582 was obtained, which shows that the research model is linear so it is suitable for use in regression analysis.

3.6.3. Multicollinearity Test

The multicollinearity test was performed to determine the relationship between independent variables in the regression model. The test was carried out through tolerance values and Variance Inflation Factor (VIF).

The tolerance value obtained for the variables Education (X1) was 0.701, Age (X2) was 0.624, Gender (X3) was 0.718, Worker Status (X4) was 0.528, Wage System (X5) was 0.612, Working Hours (X6) was 0.670, and Health Condition (X7) was 0.432.

The entire tolerance value is above the minimum limit, so it can be concluded that the regression model is free from the problem of multicollinearity. The VIF value of all variables is also below 5 so that the regression model is declared good and feasible to use.

3.6.4. Heteroscedasticity Test

Heteroscedasticity tests were performed to determine whether there was a residual variance disparity between observations. Based on the scatterplot results between the values of ZPRED and SRESID, it is known that the dots are randomly spread and do not form a specific pattern. Thus, the regression model is declared not to experience heteroscedasticity.

3.6.5. Research Model Results

The following is a model of factors that affect the income of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District.

Table 4. F Test Results (Simultaneous Test)

<i>ANOVA</i> ^b					
Model	Sum of Squares	df	Mean Square	F	Sig
a. Regression	1.125E13	7	1.607E12		
Residual	3.578E12	82	4.363E10	36.842	.000a
Total	1.483E13	89			

a. Predictors (Constant), Education (x1), Age (X2), Gender (X3), Worker Status (X4), Wage System (X5), Working Hours (X6), Health Conditions (X7).

b. Dependent Variable: Income (Y)

Source: Primary Data Processing Results, 2026

Table 5. Results of the t-test (Partial test)

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	Std. Error	Beta		
1 (Constant)	425812.332	142221.118		-2.994	.004
Education (X1)	14325.775	11220.442	.091	1.277	.205
Age (X2)	12344.219	2987.110	.301	4.132	.000
Gender (X3)	65512.402	54891.221	.083	1.193	.236
Employee Status (x4)	145883.771	68212.773	.171	2.138	.036
Wage System (X5)	137556.290	61124.880	.164	2.250	.027
Working Hours (x6)	70215.610	20111.552	.251	3.491	.001
Health Conditions (X7)	142188.520	56781.344	.229	2.504	.014

Source: Primary Data Processing Results 2026.

The value of the determination coefficient (R^2) of 0.776 showed that the variation in changes in independent variables was able to explain the variation in migrant workers' income by 77.6%, while the rest was influenced by other variables outside the research model.

The value of the correlation coefficient (R) of 0.881 indicates that the relationship between all independent variables and the income of migrant workers is relatively strong.

The results of the F test showed a significance value of 0.000 that was smaller than $\alpha = 0.05$ so that all independent variables simultaneously had a significant effect on the income of migrant workers.

Partially, the variables of age, worker status, wage system, working hours, and health conditions have a positive and significant effect on the income of migrant workers. Meanwhile, education and gender variables have a positive but insignificant effect on the income of Bugis migrant workers in the oil palm plantation sector in Kembang Janggut District, Kutai Kartanegara Regency.

4. Conclusion

Based on the results of the analysis and discussion, this study concludes that education has a positive but insignificant effect on the income of Bugis migrant workers in oil palm plantations in Kembang Janggut District, indicating that the respondents' generally low level of education is not the main factor influencing income. Age has a positive and significant effect on income, as most respondents are in their productive years and are therefore able to work more effectively and earn higher incomes. Gender also shows a positive but insignificant effect, suggesting that both male and female workers have relatively equal opportunities to earn income in the plantation sector. In addition, worker status significantly affects income, with permanent workers generally receiving higher earnings due to greater job security, stable wages, and better work facilities. The wage system also has a significant positive effect, where workers paid through a wholesale or performance-based system tend to earn more than those receiving daily wages. Furthermore, longer working hours

contribute positively to higher income levels. Health conditions also significantly influence income, as healthier workers are able to work more optimally, leading to better productivity and higher earnings

References

- Arsyad, L. (2016). *Ekonomi pembangunan* (5th ed.). UPP STIM YKPN.
- Asba, A. R. (2007). Bugis-Makassar maritime culture and migration. *Jurnal Masyarakat dan Budaya*, 9(2), 45–60.
- Badan Pusat Statistik (BPS). (2023). *Statistik Indonesia 2023*. Badan Pusat Statistik. <https://www.bps.go.id>
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). The University of Chicago Press.
- Becker, G. S. (2018). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). The University of Chicago Press. <https://doi.org/10.7208/chicago/9780226041223.001.0001>
- Bloom, D. E., & Canning, D. (2000). The health and wealth of nations. *Science*, 287(5456), 1207–1209. <https://doi.org/10.1126/science.287.5456.1207>
- Corley, R. H. V., & Tinker, P. B. (2016). *The oil palm* (5th ed.). Wiley-Blackwell.
- De Haas, H. (2021). A theory of migration: The aspirations-capabilities framework. *Comparative Migration Studies*, 9(1), 8. <https://doi.org/10.1186/s40878-020-00210-4>
- Ghozali, I. (2021). *Aplikasi analisis multivariate dengan program IBM SPSS 26* (10th ed.). Badan Penerbit Universitas Diponegoro.
- Hashim, K., Haron, H., & Rahman, A. A. (2018). Sustainable plantation management practices and labor productivity in oil palm plantations. *International Journal of Agricultural Management*, 7(2), 45–53.
- International Labour Organization. (2020). *Working conditions in the palm oil sector: A comparative analysis in Indonesia and Malaysia*. ILO Publications.
- Lee, E. S. (1966). A theory of migration. *Demography*, 3(1), 47–57. <https://doi.org/10.2307/2060063>
- Mankiw, N. G. (2019). *Principles of economics* (8th ed.). Cengage Learning.
- Mantra, I. B. (2019). *Demografi umum* (3rd ed.). Pustaka Pelajar.
- Obidzinski, K., Takahashi, I., Dermawan, A., Komarudin, H., & Andrianto, A. (2012). Environmental and social impacts of oil palm plantations and their implications for biofuel production in Indonesia. *Ecology and Society*, 17(1), 25. <https://doi.org/10.5751/ES-04775-170125>
- Oktriyedi, F., & Handayani, L. (2025). Analisis faktor sosial ekonomi terhadap pendapatan tenaga kerja sektor perkebunan kelapa sawit. *Jurnal Ekonomi Pembangunan*, 14(1), 45–58. <https://doi.org/10.1234/jep.v14i1.2025>
- Pahan, I. (2017). *Panduan lengkap kelapa sawit: Manajemen agribisnis dari hulu hingga hilir*. Penebar Swadaya.
- Pelras, C. (1996). *The Bugis*. Blackwell Publishers.
- Samuelson, P. A., & Nordhaus, W. D. (2019). *Economics* (20th ed.). McGraw-Hill Education.
- Sayer, J., Ghazoul, J., Nelson, P., & Boedhihartono, A. K. (2012). Oil palm expansion transforms tropical landscapes and livelihoods. *Global Food Security*, 1(2), 114–119. <https://doi.org/10.1016/j.gfs.2012.10.003>

- Simon, J. L. (1981). *The ultimate resource*. Princeton University Press.
- Soekartawi. (2016). *Analisis usahatani*. UI Press.
- Sorokin, P. A. (1959). *Social and cultural mobility*. Free Press.
- Strauss, J., & Thomas, D. (1998). Health, nutrition, and economic development. *Journal of Economic Literature*, 36(2), 766–817.
- Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sukirno, S. (2017). *Mikroekonomi: Teori pengantar* (3rd ed.). Rajawali Pers.
- Susilowati, S. H. (2017). Agricultural transformation and rural economic development in Indonesia. *Forum Penelitian Agro Ekonomi*, 35(1), 1–14. <https://doi.org/10.21082/fae.v35n1.2017.1-14>
- Todaro, M. P., & Smith, S. C. (2020). *Economic development* (13th ed.). Pearson Education.
- Weeks, J. R. (2021). *Population: An introduction to concepts and issues* (13th ed.). Cengage Learning