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THE SUSTAINABILITY OF AGRARIAN REFORM IN A MACRO PERSPECTIVE (COMPARATIVE STUDY BETWEEN TARGET AREAS OF COMPLETE SYSTEMATIC LAND REGISTRATION PROGRAM)

KEBERLANJUTAN REFORMA AGRARIA DALAM PERSPEKTIF MAKRO (STUDI PERBANDINGAN ANTARWILAYAH PROGRAM PENDAFTARAN TANAH SISTEMATIS LENGKAP)

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ABSTRACT

Agrarian reform emerges as a continuous process of restructuring the tenure, ownership, and utilization of agrarian resources to ensure legal certainty and protection and achieve justice and people's welfare. One of the activities in agrarian reform is the complete systematic land registration (PTSL), a simultaneous land registration of all land in Indonesian territory at a village level. This study aims to identify and analyze macroeconomic variables associated with geographical or regional aspects, where each region has characteristics including layout, differences in natural and human resources, customs and culture, and local wisdom. Based on the results of the study, it was obtained that the macroeconomic variables population, gini index, natural resource potential, and Human development index did not have a significant effect on the realization of PTSL in Kerinci Regency and Sarolangun Regency in Jambi Province. There are economic factors that are thought to have a significant influence on the realization of PTSL including customs or culture, regional administration, community participation, migrant communities, and vulnerability to disasters.

Keywords : agrarian reforms, macroeconomics, the complete systematic land registration

ABSTRAK

Reforma agraria hadir sebagai suatu proses berkesinambungan dalam penataan kembali penguasaan, pemilikan, dan pemanfaatan sumberdaya agraria untuk tercapainya kepastian dan perlindungan hukum serta keadilan dan kemakmuran bagi seluruh rakyat. Salah satu kegiatan dalam reforma agraria adalah program pendaftaran tanah sistematis lengkap (PTSL) yang merupakan kegiatan pendaftaran tanah dilakukan secara bersama dan serentak bagi semua objek pendaftaran tanah di seluruh wilayah Indonesia dalam satu wilayah desa atau kelurahan. Penelitian ini bertujuan untuk mengidentifikasi dan menganalisis variabel makro ekonomi yang dikaitkan dengan aspek nonekonomi seperti geografis atau wilayah, dimana tiap-tiap wilayah memiliki karakteristik meliputi tata letak, perbedaan sumberdaya alam dan sumberdaya manusia, adat istiadat dan budaya, serta kearifan lokal. Metode yang digunakan adalah analisis kualitatif dan kuantitatif. Berdasarkan hasil penelitian diperoleh variabel makro ekonomi jumlah penduduk (JP), indeks gini (GI), potensi sumberdaya alam (PSD), dan indeks pembangunan manusia (IPM) tidak berpengaruh signifikan terhadap realisasi PTSL di Kabupaten Kerinci dan Kabupaten Sarolangun di Provinsi Jambi. Terdapat faktor nonekonomi yang diduga berpengaruh signifikan terhadap realisasi PTSL diantaranya adat istiadat atau budaya, administrasi wilayah, partisipatif masyarakat, masyarakat pendatang serta kerentanan terhadap bencana.

Kata kunci : *reforma agraria, makroekonomi, program pendaftaran tanah sistematis*

I. INTRODUCTION

Land has an important role in Indonesian national life. As an agrarian country, most Indonesian people's activities need and involve land. As a potential and crucial economic factor, land has become one of the main sources of human economic activities, and the needs for land continue to increase every year. To ensure sustainable land utilization and tenure, reforma agrarian serves as a continuous process of restructuring the tenure, ownership, and utilization of agrarian resources to ensure legal certainty and protection, in addition to achieving justice and people's welfare.

One of the activities in agrarian reform is the complete systematic land registration (*Pendaftaran Tanah Sistematis Lengkap*/PTSL), a simultaneous land registration of all land in Indonesian territory at a village level. Of 126 million fields targeted by the government in 2025, only 25.86 million fields have not been registered (Bappenas, 2019). PTSL makes it easier for people to get land certificates for free. Certificates are quite important for landowners, the purpose of PTSL is to avoid disputes. The final product of PTSL is the land certificate – a legal product that guarantees legal certainty of an individual's rights to land, which brings socioeconomic impacts. Social impact refers to the effect of a phenomenon on the community (Fardani, 2012). In this regard, the Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency (ATR/ BPN) works together with the World Bank to organize a community participation-based PTSL (PTSL-PM) in seven Indonesian provinces: East Kalimantan, South Kalimantan, Central Kalimantan, West Kalimantan, Riau, Jambi, and South Sumatera. This program was proven to enhance the community's active participation and allow physical and legal data collection simultaneously through a group called *Puldatan*. According to reports on the agrarian reform acceleration program (PPRA), especially on PTSL-PM activities in 2019-2021 in the previous seven provinces of the PPRA region, many landowners were found outside the administrative area where the land was located. Therefore, it is difficult to complete the juridical data, in this case, the basis of the rights and landowners' identity cards. As a result, the land could not be registered. In addition, the fragmentation of agricultural land is still a source of problems in the future, due to numerous landowners possessing small areas that cannot be used as a source of livelihood properly. Other hindrances should be tackled in some regions. Several factors are known to become hindrances in this agrarian reform at the regional level, including (i) leadership problems, (ii) institutional problems, (iii) regulation, and (iv) the land for reforma agrarian object.

Jambi is one of the Indonesian provinces situated in a strategic location, i.e., the triangle area between Indonesia, Malaysia, and Singapore, and is close to Malacca Strait (Zevaya et al., 2022). A previous study in this province investigated social inequality amid the efforts to accelerate the agrarian reform program, particularly regarding the community participation-based complete systematic land registration (hereafter, PTSL-PM). Four aspects including socioeconomic, cultural, community, and institutional aspects were identified in three regencies and a municipality in this province, i.e., Kerinci Regency, Sungai Penuh City, Sarolangun Regency, and Tanjung Jabung Barat Regency (Zulgani et al., 2022). However, several aspects have not been examined comprehensively from a geographic aspect by including macroeconomic variables.

According to the previous studies, they only analyzed PTSL based on one region by qualitative method. For instance, Cahyadhi & Rining, (2022) analyzed PTSL in Sememi Village in Surabaya City to examine the effectiveness of the PTSL program from law aspect. In the meantime, Melvin et al., (2021) analyzed the form of PTSL in customary land, North Toraja Regency. Therefore, the present study aimed to identify and analyze macroeconomic variables associated with geographic aspects, where each region has its characteristics, natural and human resources, culture, and local wisdom. To this end, quantitative and qualitative approaches were applied. The quantitative approach was applied to analyze the macroeconomic variables that may significantly affect the agrarian reform program through panel data regression analysis. Meanwhile, the qualitative approach was applied to depict the field phenomena using the existing theories.

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II. RESEARCH METHOD

A. Types and Sources of Data

This study used secondary data, i.e., data collected indirectly from other studies (Indriantoro & Supomo, 2013). These data were collected from journal articles, Indonesia Statistics' publication, ATR/BPN's report for the PTSL program, previous studies, and other relevant data. The secondary data examined in this study included

1. PTSL realization,
2. population,
3. gini ratio,
4. natural resource potentials,
5. human development index,
6. geographic condition, and
7. customs/ culture/ local wisdom.

B. Location

This study was conducted in two regencies in Jambi Province: Kerinci and Sarolangun Regencies. Several considerations were made before selecting these two regencies, including

1. the region is considered as a rural area,
2. native-migrant ratio,
3. PTSL success, viewed from the number of land certificate applicants,
4. cultural effects, and
5. regional economic growth condition.

C. Data Analysis Method

This study applied qualitative and quantitative analysis methods. Qualitative analysis was made to examine the reliability and trustworthiness of data based on its credibility, transferability, dependability, and confirmability, which indicate that the data were not related to the conceptual framework and represented findings or field phenomena (Riijali, 2018). Meanwhile, quantitative analysis was made to collect data to support the conclusion. The analysis was not only related to numbers but also critical thinking when analyzing data (Albers, 2017).

The qualitative data used in this study are primary and secondary data. Primary data is data obtained from the first source, be it individuals or individuals, such as the results of interviews or the results of filling out questionnaires conducted by researchers. In this research, researchers communicated and conducted interviews and distributed questionnaires to the public or selected respondents regarding the implementation of PTSL. The quantitative data used in this research comes from the office database, in two locations Sarolangun and Kerinci, where PTSL was carried out during the last two years 2021-2023. This quantitative data includes information on names, areas, coordinates (longitude and latitude), and other numeric spatial data.

The qualitative analysis in this study depicted economic and non-economic variables and presented them as valuable information to support the study result. The quantitative analysis was made using a panel data regression model. The panel data regression was done using least square estimation in the regression analysis with ordinary least square (OLS). The panel data regression is the combination of cross-sectional and time series data. The former refers to the same unit measured in different periods. In other words, the panel data represent data from the same individual data observed in certain periods (Zulfikar, 2018). Quantitative analysis is used to describe some macroeconomic variables affecting the PTSL program, such as the number of populations, gini ratio, resource potency, and human development index.

The panel data regression estimation was done using three approaches presented in the following sections.

1. Common Effect Model or Pooled Least Square

   A panel data model is used to analyze section data. Because time and individual dimensions are not taken into account in this model. It is to estimate the panel data model. It is assumed that the behavior of corporate data will be estimated using the Ordinary Least Square (OLS) approach as the Least Square Technique. The panel data regression equation has the same form as the ordinary least square equation:

$$y_{it} = \alpha + \beta^t X_{it} + \varepsilon_{it} \quad (1)$$

   For i = 1, 2, …., N and t = 1, 2, ….., T.

   Where N is the number of persons or cross-sections, and T is the number of time periods. This model can simply create NxT equations,

which are equal to T equations of cross and as many N equations of coherent time or time series.

The hypothesis regression panel data Model Common Effects

a. R Square: the magnitude of the influence or ability of predictor variables to describe the response variable simultaneously. If the value is greater than 0.5, the predictor variable's ability to explain the response variable is strong. In contrast, if the value is less than 0.5, the predictor variable's ability to explain the response variable is weak. The R Square value in this panel data regression example is 0.9579, indicating that the predictor variable is very strong in explaining the response variable.

b. Adjusted R Square: the magnitude of the influence or ability of predictor variables to explain the response variable simultaneously by observing the standard error. R Square has the same explanation.

c. F-Statistics is the result of Test F, which is a panel data regression simultaneous test. This F value indicates the level of significance of the predictor variable influence on a response variable. This F value must be used in conjunction with the F Table. However, the value of Prob can be seen directly (F- Statistics).

d. Prob (F-Statistics): The p-value of the F test, which is the significance level of the F value, is used to determine whether the simultaneous influence of the predictor variable on the response variable is statistically significant. If the value of p is less than the critical limit, then for example, if H1 is accepted at 0.05, it means that the simultaneous influence of the predictor variable on the response variable was statistically significant. If the value of p is greater than the critical limit, accept H0, which means the simultaneous influence of predictor variables and response variables has not been proven statistically significant.

2. Fixed Effect Model

This model assumes that individual differences can be accommodated by using different intercepts. Different intercepts can occur due to differences in work, managerial, and incentive cultures when estimating Fixed Effects model panel data using a dummy variable technique to capture the differences between intercept companies. Nonetheless, the intercept is the same across companies. This estimation model is also known as the Least Squares Dummy Variable technique (LSDV). The Fixed Effect Model differs from the Common effect model, but it still employs the Least Squares Principle. The modeling assumption that produces a constant intercept for each cross-section and time is thought to be less realistic, so more models are required to capture the difference. Fixed effects assume that individual differences (cross-section) can be accommodated by different intercepts. The dummy variable technique is used to estimate the Fixed Effects Model with different intercepts between individuals. The Least Squares Dummy Variable technique, abbreviated LSDV, is commonly used to describe such estimation models.

The fixed effects model panel data regression equation is as follows:

$$y_{it} = \alpha_i + \beta^t X_{it} + \varepsilon_{it} \quad (2)$$

For i = 1,2, …., N and t = 1, 2,…., T.

Where N denotes the number of individuals or cross-sections, and T denotes the number of time periods.

3. Random Effect Model

This model will estimate panel data where interference variables may be linked across time and individuals. The error terms of each company accommodate the difference between intercepts in the Random Effect model. The Random Effect model has the advantage of eliminating heteroscedasticity. The Error Component Model (ECM) or the Generalized Least Squares (GLS) technique is another name for this model. The Random Effect Model differs from the common effect and fixed effect models in that it employs the principle of maximum likelihood or general least squares rather than the principle of ordinary least squares. In the random effect model, residuals can be linked across time as well as between individuals or cross-sections. As a result, this model assumes each individual has

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a different intercept, and that the intercept is a random variable. As a result, there are two residual components in the random effect model. The first is the residual as a whole, which is a cross-section and time series combination. The second residual is an individual residual that is a random characteristic of the i-th unit observation and is constant. The panel data regression equation for the random effects model is as follows:

$$y_{it} = \alpha + \beta^t X_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

For i = 1, 2, …, N and t = 1, 2, ..., T,

Where:

N = number of people or cross-section

T is the number of time intervals.

ε_{it} = the total residual, where the residual is a combination of cross-section and time series.

μ_i = is the individual residual, which is the random characteristic of the i-th and at all times.

4. Selection Method of Data Panel Regression

Many such tests can be performed to select the most appropriate model, such as:

a. Chow Test

Chow test is a test to determine the model of whether Common Effect (CE) or Fixed Effect (FE) is most appropriately used in estimating panel data If Results:

H0 : Select CE (p> 0.05)

H1 : Select FE (p <0.05)

b. Hausman Test

The Hausman test is a statistical test to select whether the most appropriate Fixed Effect or Random Effect model is used. If Result:

H0 : Select RE (p> 0.05)

H1 : Select FE (p <0.05)

c. Test Lagrange Multiplier (LM)

LM is a test to determine whether the Random Effect model is better than the Common Effect (PLS) method used. If Result:

H0 : Select CE (p> 0.05)

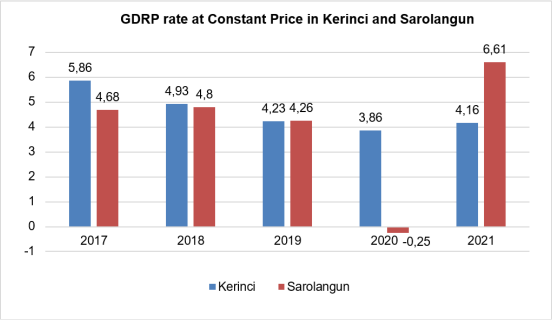
H1 : Select RE (p <0.05

III. RESULT AND DISCUSSION

A. Descriptive Analysis of Economic, Social, Cultural, and Geographic Aspects

1. Economic Aspect

Economic growth is a major indicator to measure a region's economic performance, particularly the result of its development. Economic growth refers to a long-term increased output, where the real income in a year is higher than the previous year. Such an increase may be accounted for by production quality or quantity improvement and is expected to increase the people's income. Economic growth may have a positive impact on a region by increasing the local community's income in a certain period. In other words, a region showing continuous improvement implies that it is economically strong (Sukirno, 2016). Economic growth is estimated based on the increase in goods and service output produced in a certain year (gross regional domestic product at year n), which is subtracted by goods and services outputs in the previous year (gross regional domestic product as year n-1.) Figure 1 presents the gross domestic regional product of the Kerinci and Sarolangun Regencies.



Source: Own work, 2023

Figure 1 Gross domestic regional product (GDRP) at Constant Price in 2017-2021 in Kerinci and Sarolangun Regencies

As shown in the table, Sarolangun Regency exhibits fluctuating growth from 2017 to 2021. The highest growth was noticed in 2021 (i.e., 6.61%), which significantly increased from the previous year (i.e., - 0.25%). Sarolangun Regency reported its lowest economic growth in 2020, i.e., -0.25%, which was accounted

for by the COVID-19 pandemic and the drop of the regency's leading export commodity, i.e., coal. An economic condition that heavily relies on natural resources is prone to global market shock, considering that prices and demands can move to the lowest point and cause the Dutch Disease condition. The Dutch Disease is an economic phenomenon that stems from natural resource abundance. An economy that relies on natural resources tends to exhibit deceleration once the windfall profit phenomenon has passed (Priyati, 2009).

Sarolangun government is expected to make gradual breakthroughs to substitute the role of coal to get out of the Dutch Disease. In addition to promoting economic growth in the industrial sector, the Sarolangun government is expected to prioritize human resource development to stimulate a shift from a natural resource-based economy to a human resource-based economy. Human resources are the pivotal factor in economic growth, as quality human resources will likely catalyze economic performance. Although a high export rate leverages the economy, such a condition should not let one off guard.

Kerinci Regency reported a relatively declining growth trend between 2017 and 2021. The highest economic growth in this regency was reported in 2017 (5.86%), whereas the lowest growth was reported in 2020 (3.86%). After experiencing an economic contraction in 2020, Kerinci Regency reported a sharp increase in 2021 by 4.16%. This regency reported an economic slowdown in 2020 due to the COVID-19 pandemic, causing changes in people's economic behavior and activities. Such a condition has led to deeper and more severe poverty issues, in which the gap between the average expense of the poor citizen and the poverty line becomes broader, causing increasingly unequal expense distribution. Although the impact of the COVID-19 pandemic is global, people below the poverty line are known to suffer greater damages due to larger inequality (Tarigan et al., 2020).

Based on the Indonesia Statistics Bureau report, Kerinci Regency suffered from a high Gini ratio of 0.28% in 2020, indicating high-income inequality. Such a condition was accounted for by the high unemployment rate (2.43%) in August 2020, in which approximately 3,167,000 people were unemployed. It also indicated unequal economic development in Kerinci Regency, leading to poor economic development and an increased poor population, which is responsible for the unequal income distribution.

In this regard, Todaro and Smith (2015) assert that high economic growth would not decrease the poverty rate when the income distribution is still unequal. However, even equal income distribution may still lead to a higher poverty rate when the economic growth rate is low. In the same vein, Muthia (2019) suggests that poverty alleviation could only be effective when growth occurs together with equal income distribution. Income distribution is also affected by the asset increase, particularly land price, where increased land price will give people more income from land sales or rent, which eventually affects the income of people with lower-middle income (Mardiana et al., 2016). In the same vein, De Soto, as cited in Mardiana et al. (2016), explains that asset improvement through a certification program will increase the asset value, as certified land will likely allow easier transactions. Gross domestic regional product (GDRP) appears to significantly affect the land value. It represents the total goods and service production of a region in a certain period. An increase in GRDP may increase demand for land, as it reflects good economic growth and better purchasing power. In such a condition, people will likely have more money to buy land, and the government will have more funds to build infrastructure that requires land. The increased GRDP may also draw foreign parties to make investments and further develop the economy, which increases the development of new companies and projects, thus increasing the demands for land and land values.

The good economic condition also opens better access to loans, making it easier for them to buy land. Land value may also increase when it is

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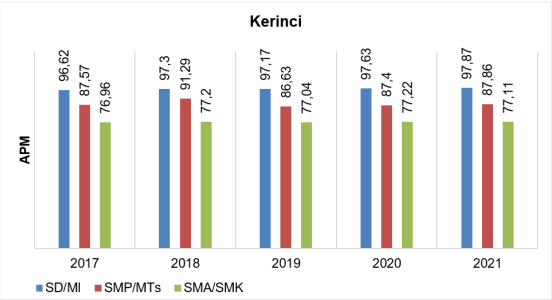
in a strategic location with good accessibility. For instance, lands near public transportation, health facilities, or schools may have higher values than those far from these facilities. In general, GRDP significantly affects land value. When GRDP increases, the demands for land and the land value tend to increase.

2. Social Analysis

Human resources are a nonmaterial asset that contributes to the existence of a business organization (Sukarjati et al., 2016). According to Amhas (2018), quality human resources are those with leading competencies in terms of physical or intellectual aspects. Human resource quality is reflected by the education level. It is an individual's stage were obtaining knowledge using learning techniques and methods in an educational institution for a certain period (Mandang et al., 2017).

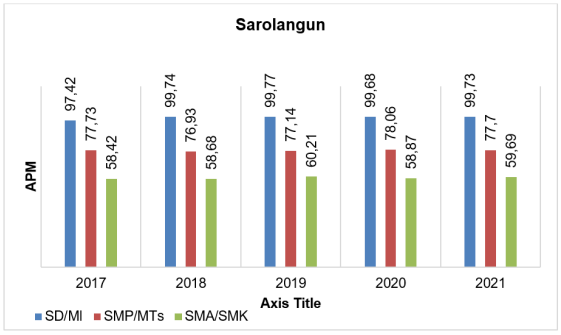
A pure participation rate is usually used to see how many school-aged citizens attend schools. The pure participation rate was estimated using percent, where a PPR of 100% means that school-aged children receive timely education, while a PPR of less than 100% indicates that some children do not attend school. Using this description, the PPR score is always presented as lower than 100% or equal to 100% (Statistics Indonesia, 2020). Figure 2 presents the Pure Participation Rate (APM) in 2017-2021 in Kerinci Regencies.



Source: Own work, 2023

Figure 2 The Pure Participation Rate (APM) in 2017-2021 in Kerinci Regencies

As shown in the data above, the highest elementary school PPR in Kerinci Regency between 2017 and 2021 was noticed in 2021 (97.87%), while the lowest PPR was found in 2017. In other words, the PPR of the regency indicates a relatively positive trend from 2017 to 2021. At the junior high school level, Kerinci Regency reported the highest PPR in 2018 (91.29), while the lowest PPR was in 2019 (86.63%), implying a relatively fluctuating PPR at the junior high school level in 2017-2021. Regarding the senior high school PPR, the highest PPR was reported in 2020, while the lowest was in 2017. Figure 3 presents the pure participation rate (APM) in 2017-2021 in Sarolangun Regencies.



Source: Own work, 2023

Figure 3 The Pure Participation Rate (APM) in 2017-2021 in Sarolangun Regencies

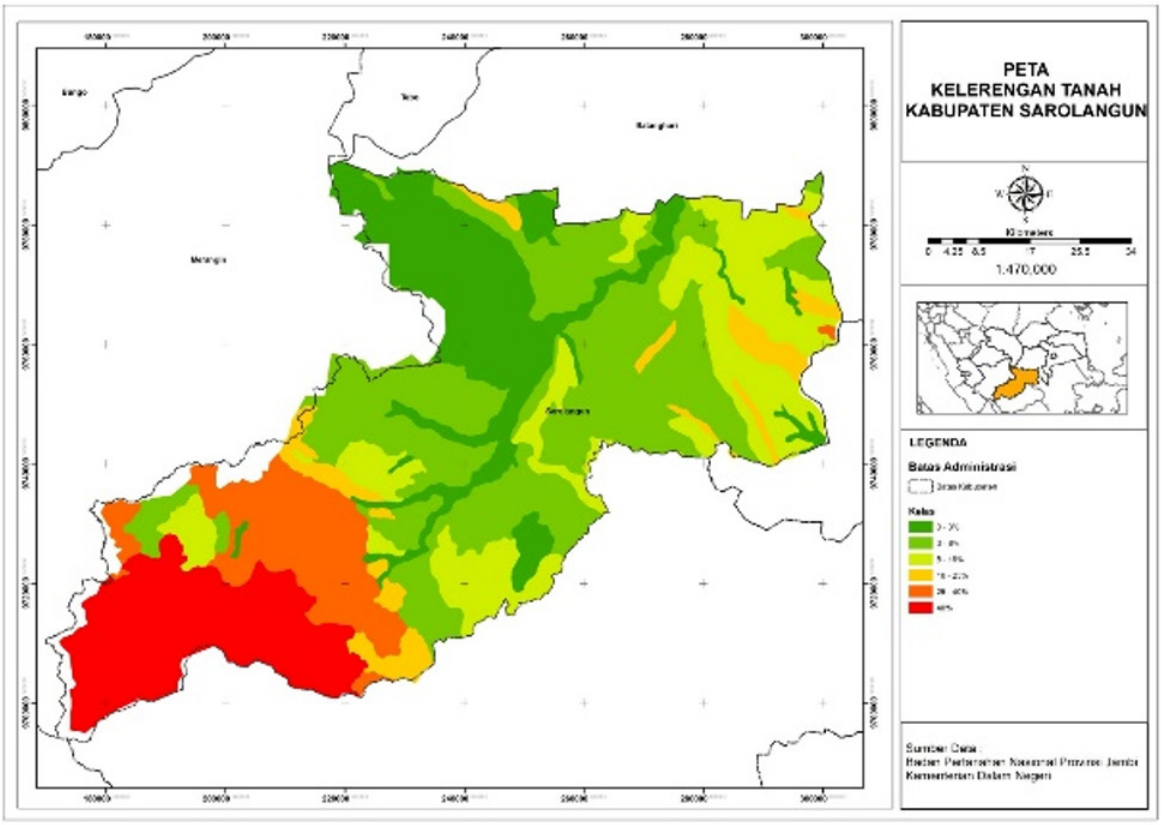
As shown in the data above, the highest elementary school PPR of Sarolangun Regency was reported in 2019 (99.77), which was higher than the PPR of Kerinci Regency. The lowest elementary school PPR in Sarolangun Regency was reported in 2017 (97.94) and continued to increase in the subsequent years. However, the junior and senior high school PPRs in Sarolangun were lower than those in Kerinci Regency. Sarolangun Regency reported the highest PPR at the junior and senior high school levels in 2020 of 78.06 and 60.21%, respectively, which is far lower than those of Kerinci Regency, i.e., 91.29 and 71.22%, respectively.

This difference may result in human resource differences between Kerinci and Sarolangun Regencies, which would likely affect the economic development of these regencies. In the economic development context, Faisal et al. (2020) view education as a pillar of human capital development, which serves as a long-term investment that will improve the citizen's quality and productivity, which are the driver of

people's welfare and economic development. Education that aims to improve individuals' abilities and skills will eventually improve productivity. In other words, education will produce a useful human resource in a region's development (Widiansyah, 2017). Individuals with higher educational backgrounds are expected to have broader legal insight, understanding, attitude, behavior, and better awareness of land rights certifications.

3. Geographic Analysis

The topography of the Sarolangun Regency varies, from flat areas, and undulating land to hilly areas. The northern region is generally flat to undulating, the eastern region is flat and undulating and the southern region is hilly, while the western region is undulating flat. The topography of the Sarolangun Regency area consists of plains (0-2 percent) covering an area of 167,891 hectares, undulating (3-15 percent) covering an area of 272,412 hectares, steep (16-40 percent) covering an area of 78,090 hectares and very steep (40 percent) covering an area of 99,090 hectares. Figure 4 presents the Sarolangun Regency's soil and slope map, and Figure 5 presents the land registration distribution (PTSL) map in Sarolangun Regency between 2017 -2021.



Source: Own work, 2023

Figure 4 Sarolangun Regency's Soil and Slope Map

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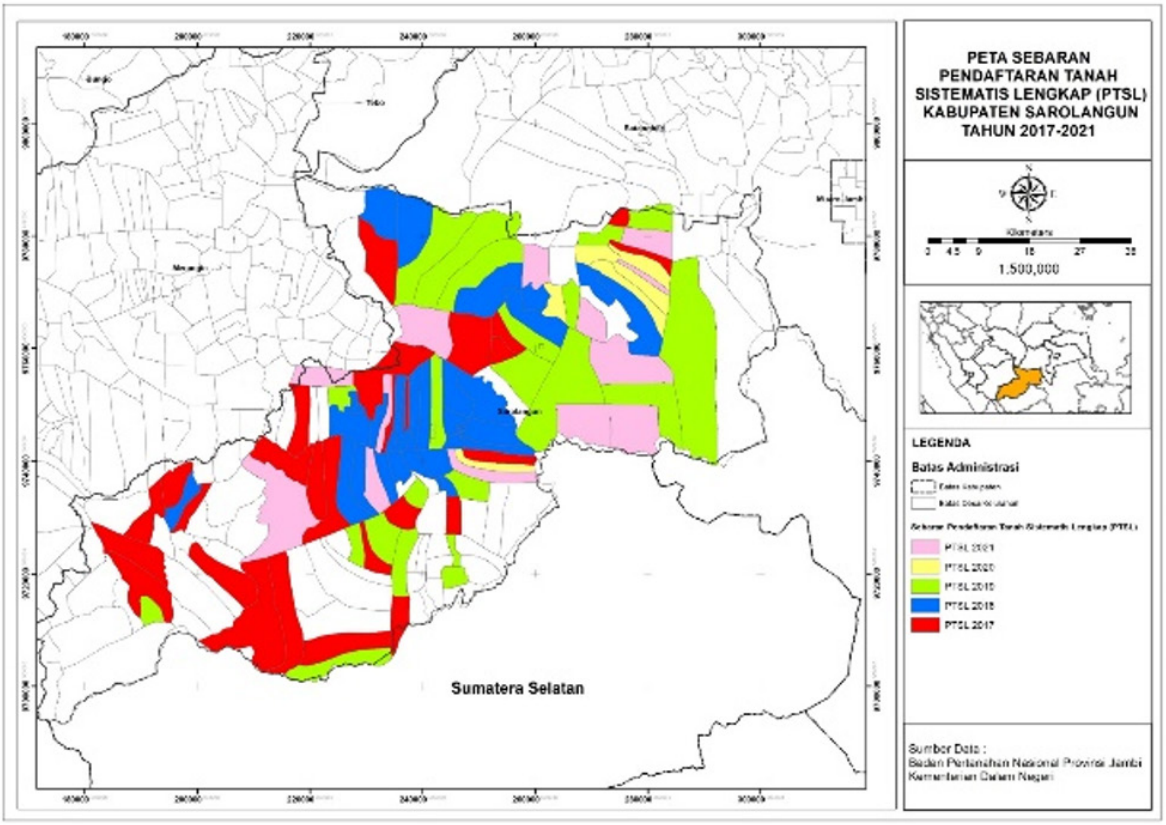
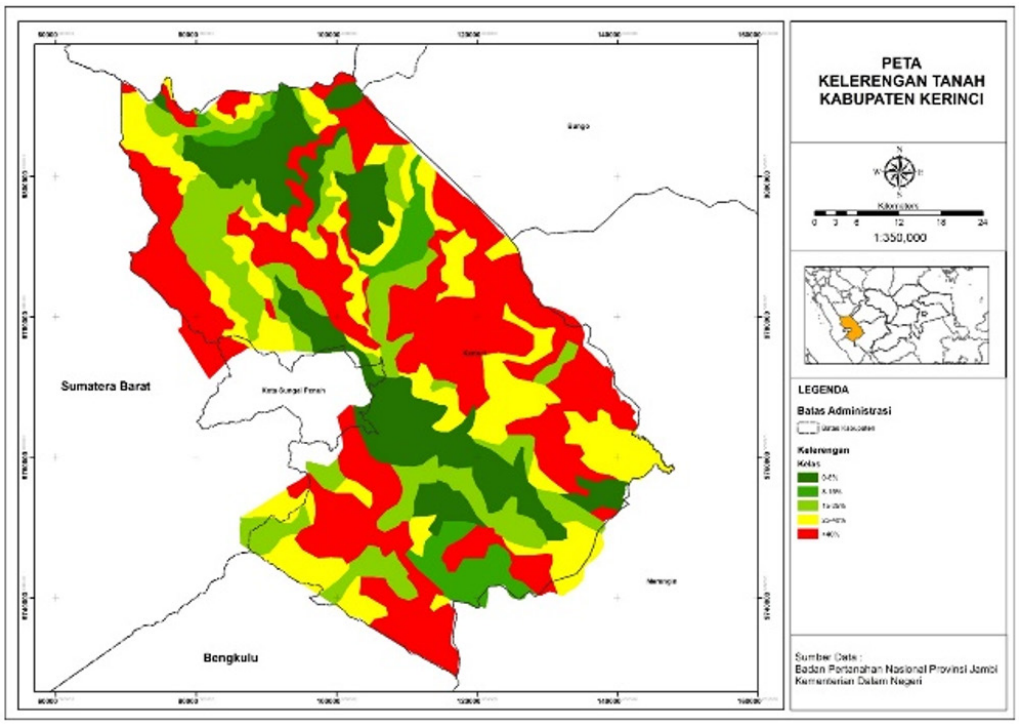


Source: Own work, 2023

Figure 5 Land Registration Distribution (PTSL) Map in Sarolangun Regency between 2017 -2021

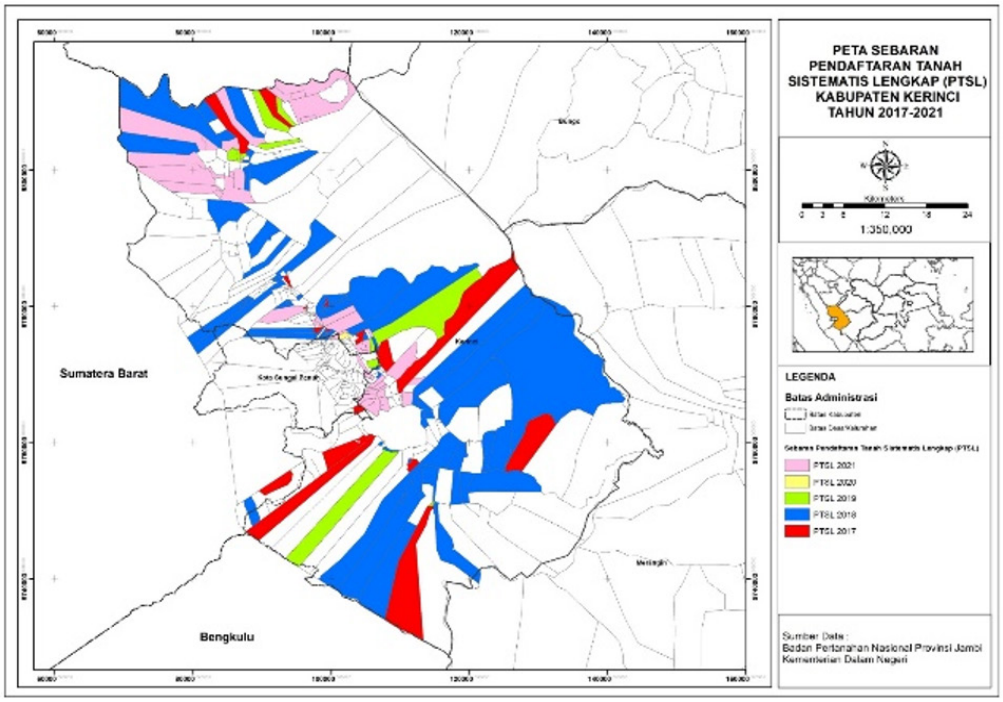
Many people in Sarolangun Regency already understand the importance of asset legality, this is in line with research conducted by Dirwana (2013) which states that land for people in Sarolangun Regency, Jambi Province, is not only as arable land for self-prosperity but also at the same time is considered a social status. A symbol of the rank and strata of the middle to upper-class family and society, many people are proud of their land ownership even though the ownership status does not yet have legal force. Based on the statement above, land for the people in Sarolangun does not only have economic value as some people think, but the existence of land also contains social, cultural, psychological, defense, and security aspects in the religious aspect, in order that solving land problems is not only focused on recognition of legal principles and norms moreover due regard to the principles of welfare, the principles of order and security, as well as the principles of humanity so that land issues do not develop into unrest that disturbs the stability of society.

The total area of Kerinci Regency is 332,807 hectares or 3,328.14 KM2. More than half of the area is the Kerinci Seblat National Park area, which is 1,990.89 KM2 (59.82 percent), and for cultivation areas and residential areas, it is 1,337.15 KM2 (40.18 percent). Kerinci Regency is located along the Bukit Barisan, among which there are mountains including Mount Kerinci which is 3,805 M high and is the highest mountain on the island of Sumatra, as well as lakes such as Lake Kerinci and Lake Gunung Tujuh, which are the highest lakes in Southeast Asia. Kerinci Regency is located at an altitude between 500 M to 1,500 M above sea level and most of the area is hilly. Figure 6 presents the Kerinci Regency's soil and slope map and Figure 7 presents the land registration distribution (PTSL) map in Kerinci Regency between 2017 -2021.



Source: Own work, 2023

Figure 6 Kerinci Regency's Soil and Slope Map



Source: Own work, 2023

Figure 7 Land Registration Distribution (PTSL) Map in Kerinci Regency between 2017 -2021

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B. Quantitative Analysis

Quantitative analysis was made to see the effect of the Total Population, Gini ratio, Resource Potential, and Human Development Index on the PTSL program in Jambi Province (Figure 8). Using the Common Effect Model, the panel data regression analysis demonstrated that the total population, gini ratio, natural resource potentials, and human development index did not significantly affect the PTSL realization in Kerinci and Sarolangun Regencies, Jambi province (p-value > 0.05). In other words, macroeconomic variables in this study did not significantly affect the PTSL realization.

Dependent Variable: PTLS
Method: Panel Least Squares
Date: 02/03/23 Time: 21:00
Sample: 2017 2021
Periods included: 5
Cross-sections included: 2
Total panel (balanced) observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	367548.0	291754.4	1.259786	0.2633
JP	-0.022830	0.083013	-0.275011	0.7943
GI	6427.571	55348.59	0.116129	0.9121
PSD	18.44724	9.719906	1.897882	0.1162
IPM	-5874.636	4125.479	-1.423989	0.2137

R-squared	0.545761	Mean dependent var	8062.000
Adjusted R-squared	0.182370	S.D. dependent var	4373.930
S.E. of regression	3955.035	Akaike info criterion	19.71022
Sum squared resid	78211501	Schwarz criterion	19.86151
Log likelihood	-93.55110	Hannan-Quinn criter.	19.54425
F-statistic	1.501855	Durbin-Watson stat	2.441381
Prob(F-statistic)	0.328800		

Source: Own work, 2023

Figure 8 Quantitative Analysis Result

Population growth (JP) would result in fewer lands, causing greater land availability pressure. This condition causes many people to rent and only some people have land assets. At the same time, more private parties have the land. Concerning population growth, customary land ownership emerges as one of the factors that affect land assets, considering that such land is inherited from the ancestors and used for public social, religious, and economic activities (Arina & Marie, 2019). This factor was particularly noticed in Kerinci Regency, where hereditary land affects the realization of PTSL. The relationship between human and customary land is considered to have religious-magical values, meaning that the land is sacred and should be properly protected and maintained. It was believed that adhering to this value would bring welfare, whereas violating it would cause disaster (Anugrah, 2016). Jayadi et al. (2017) stated that population growth might affect the land, economy, and poverty rate of a region.

This study found that the gini ratio (GI) did not significantly affect the PTSL realization. This finding is consistent with Linda et al. (2019), who found that when income from working on land is insufficient to fulfill one's needs, one tends to sell their land. Unequal access to land tenure is responsible for the fact that more farmers did not have land, a condition potentially resulting in poverty in the long run.

Natural resource potentials (PSD) did not affect the PTSL realization. This finding could be linked to the fact that a region with abundant natural resources tends to face hindrances of 'rent-seeking' and corruption issues, which significantly hampers economic growth and people's income. Land value is also affected by its fertility and location. These two factors are believed to significantly affect productivity, which will eventually be related to issues of 'rent-seeking' (Song et al., 2020).

The human development index (IPM) did not significantly affect the PTSL realization. Although high HDI tends to draw investors' interest, their presence does not necessarily bring a positive impact on the land value, which is influenced more by the local economic condition and market. In other words, a sluggish market will likely result in low land value, despite the high Human Development Index in the region. An empirical study stated that human development is a process of enlarging people's choices (UNDP, 2022). Every human being has the right to make decisions according to his life goals. It also relates to people's decisions to register their land. Numerous factors were found in the PTSL program, for instance, they do not want to register their land to avoid family member disputes.

Based on the result above, it can be concluded that some macroeconomic variables do not have a significant effect on the PTSL program. The PTSL program is most dominant and is affected by socioeconomic conditions, culture, the nature of society, and related institutions. According to Zulgani et al., (2022) in Sarolangun, an example Bangun Jayo Village, the success of PTSL was influenced by the synergy between village institutions and the community in registering land certificates. Moreover, the majority are immigrants from Java, so they need certainty regarding the legalization of land rights. In Kerinci Regency, many land title registrations

are in the names of women as one of the vulnerable groups, in so doing the land certificates are used as a guarantee of the future. From a geographic perspective, Kerinci Regency is prone to volcanic earthquakes due to active volcanoes. Meanwhile, the Sarolangun Regency faces fewer risks of volcanic or tectonic earthquakes. This condition appears to affect the PTSL realization. In this regard, Faillafah (2020) stated that natural disaster emerges as one of the factors leading to land issues, such as the Palu earthquake. This problem is further affected by many officially unregistered lands. The earthquake and liquefaction have destroyed the boundary markers. Thus, unowned lands and loss of boundary markers cause determining land ownership to become more difficult. The government could resolve issues on land rights could be done by providing legal guarantees and protection.

IV. CONCLUSION

This study found that macroeconomic variables did not significantly affect the realization of PTSL in the Kerinci and Sarolangun Regencies. It also noticed the presence of non-economic variables that potentially have significant impacts, although they could only be explained descriptively. These variables included: 1) cultural factors, 2) administrative factors, 3) community participation, 4) migrant factors, and 5) proneness to disaster. Regarding the first variable, i.e., cultural factor, there are customary lands whose ownership and use still become a problem to date. The second variable, i.e., administrative factors, is related to the geographic location. For instance, some villages have not had a clear administrative boundary with other villages in the neighboring regency. Regarding community participation, this was proven by one of the villages in Sarolangun Regency that reported nearly 90% PTSL realization. Such an achievement stems from the support and collaboration between the community and the village officers to register their ownership through land certificates, which may affect their welfare. Regarding the migrant factor, this study found that most people were Javanese migrants, and their statuses as migrants appear to make them enthusiastic about registering their land to achieve legal certainty. At last, the proneness to disaster. From a geographic perspective, Kerinci Regency is prone to volcanic earthquakes due to active volcanoes. Meanwhile, the Sarolangun Regency faces fewer risks of volcanic or tectonic earthquakes. This condition appears to affect the PTSL realization.

This study still uses a few years of analysis because the PTSL program only started in 2017 and only consists of 2 (two) locations. The macroeconomic variables analyzed have not been extensively explored due to time constraints in obtaining data. It is hoped that further research can identify more macroeconomic variables with a larger number of regions.

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