



## Examining Rural Transformation in Gisting, Tanggamus Regency, Lampung Province

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### Abstract

Rural transformation is often triggered by urbanization, which is marked by changes in the economic structure, land use, and population dynamics. This transformation can lead to both development opportunities and challenges, including agricultural decline, land-use conflicts, and environmental degradation. This study examines rural transformation in the Gisting Subdistrict, Tanggamus Regency, Lampung Province, which has experienced a shift from a predominantly agricultural area to a more urbanized setting. Between 2000 and 2010, five villages in Gisting, changed status from rural to urban, as classified by BPS (2010). This research aims to measure the degree of rural transformation and identify the key internal and external factors influencing the process. Using a quantitative approach, the degree of transformation was assessed using indicators of population, land use, and industry. Regression analysis was used to determine the most influential factors. Internal factors include economic, social, and resource variables, while external factors are based on the transformation levels of nearby sub-districts. Data sources include household surveys and secondary data from the BPS and various government agencies. The findings indicate that Gisting experienced a high degree of rural transformation in 2010, 2015, and 2020. The most influential internal factors were per capita GRDP and water availability. Externally, the transformation processes in Kota Agung and Talang Padang significantly impact Gisting. These results offer insight into the formulation of sustainable rural development strategies in the region.

**Keywords:** degree of transformation; external factor; internal factor; rural transformation

### 1. Introduction

Rural urbanization has emerged as a phenomenon in various parts of the world, where rural areas undergo urbanization processes rather than experiencing out-migration of rural populations to cities (Mughal, 2019). Rural urbanization refers to the process by which rural areas acquire urban characteristics, thus gradually transforming into urban-like environments (Ofori-Amoah, 2017). Rural urbanization generally takes two forms: planned and unplanned. Planned urbanization occurs as a direct result of interventions by the government or private entities aimed at converting rural areas into urban ones. In contrast, unplanned urbanization results from the spontaneous behaviors of individuals or groups that lead to rural transformation (Ofori-Amoah, 2017). In other words, urbanization has driven rural transformations.

Rural transformation has become a primary form of rural development, driven by rapid industrialization and urbanization (J. Li et al., 2017). Rural transformation development aims to bring about changes in traditional rural industries, work methods, consumption patterns, and to restructure the social fabric that historically separated urban and rural areas, moving toward greater integration. Rural transformation development refers to the shift from one state to another within a system, encompassing

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structural improvement, structural transformation, and structural development (J. Li et al., 2018). In Indonesia, development through rural transformation has been institutionalized through Law Number 6 of 2014 on Villages. The Village Law incorporates transformation across various aspects, including village governance, development acceleration, social institutionalization, and community empowerment (Agusta, 2014).

Although rural transformation is considered essential for advancing rural areas, it is often accompanied by a range of issues, such as the decline of agriculture, environmental pollution, rural depopulation due to outward migration, and the reduction of agricultural land. These problems are largely attributed to the lack of coordination in rural development efforts. Coordination plays a critical role in rural transformation and serves as a key criterion for assessing whether rural development is sustainable (J. Li et al., 2017).

Research on rural development has been extensively conducted worldwide, in countries such as Germany, the United Kingdom, the United States, and Japan, resulting in the emergence of several influential theories, including location theory, stages of rural development theory, and dual structure theory (J. Li et al., 2018). In contrast, studies on rural transformation in Indonesia are limited. However, according to Li et al. (2018), examining the degree of rural transformation is essential for understanding the transformation process as a basis for developing scientific frameworks for regional development and promoting urban–rural integration. The findings of such research can assist policymakers in formulating more sustainable spatial planning strategies.

This study selected Gisting Subdistrict in Tanggamus Regency, Lampung Province as the research location. Initially, Gisting was a rural area where agriculture served as the primary economic activity. The region's fertile natural conditions supported the growth of agricultural activities and made it an attractive destination for migrants from various regions. As the population increased, economic activities diversified, leading to urbanization within the area. According to the classification by Statistics Indonesia (BPS) in 2000, the six villages that now comprise Gisting Subdistrict were originally classified as rural villages. At that time, Gisting had not yet been established as a separate subdistrict, and those villages were administratively part of Talang Padang Subdistrict. In 2005, Gisting was officially separated from Talang Padang and restructured into eight villages. Based on the BPS classification in 2010, five out of these eight villages were reclassified as urban villages. This indicates that a significant transformation occurred within a span of just ten years.

The transformation occurring in Gisting Subdistrict can be observed through both physical and non-physical aspects. The physical changes are evident in the extensive land use conversion. In 2000, the total area of rice fields in the villages that now constitute Gisting Subdistrict was 488.2 hectares. By 2010, the rice field area had declined to 422.25 hectares. This reduction in agricultural land was accompanied by the expansion of built-up areas, both for residential purposes and infrastructure development. The extent of built-up land in Gisting Subdistrict increased from 897 hectares in 2000 to 958 hectares in 2010. From a non-physical perspective, there was a noticeable shift in the dominant economic sector, as reflected in the declining proportion of agricultural households. In 2000, approximately 90% of households in the area were engaged in agriculture. By 2010, this proportion had dropped to around 55%, indicating a significant economic transition.

Despite the progress in rural development, several challenges have emerged in Gisting Subdistrict. The conversion of agricultural land to non-agricultural uses has led to a decline in agricultural productivity. A significant number of residents have sold their farmland, resulting in job loss and forcing many to shift from landowners or cultivators to agricultural laborers. The majority of farmers in the area are classified as smallholders, owning less than 0.5 hectares of land. As a result, many farming households fall into the category of low-income or disadvantaged families (Hasanuddin et al., 2009). Moreover, the rapid pace of land-use change has contributed to development activities that conflict with the established spatial planning regulations. Mahyeda & Buchori (2020) reported that approximately 4,703 square meters of land in Gisting Subdistrict were being utilized in ways that did not comply with zoning laws.

These ongoing transformations in Gisting highlight the need for focused attention and further investigation. This study seeks to examine the nature of rural transformation in Gisting by assessing the degree of transformation to determine the scale of change and to identify the contributing factors. The findings are expected to inform the development of more sustainable regional planning strategies.

## **2. Literature**

Rural transformation refers to a comprehensive societal shift, characterized by increasing economic diversification and a structural transition from agriculture-based livelihoods to non-agricultural sectors (Berdegue et al., 2014). This process is closely linked to agrarian transition, which is evident in the declining share of the agricultural workforce, greater agricultural diversification, a shift in economic structure toward non-agricultural sectors, expanded employment plurality, enhanced social and spatial mobility, growing market dependence, and the deepening integration between rural and urban areas (Rigg, 2014). Rural transformation has evolved through various stages influenced by factors such as production, consumption, globalization, and the multifunctionality of rural spaces (Wang et al., 2022). These changes in rural areas are often driven by population mobility and a rising aspiration to attain a better quality of life (Preston & Ngah, 2012).

Rural transformation is viewed as a set of diverse responses to previously dominant modernization models. It is a complex process that unfolds across multiple levels, involves a wide range of actors, and gives rise to new practices within social and economic networks (Preston & Ngah, 2012). Changes in rural

areas often occur in response to increased population mobility and a growing awareness of the need to achieve a higher quality of life. The manifestations of rural development transformation include post-productivism, deagrarianization, and new rural development paradigm. These forms of transformation are closely related to the evolving role of agriculture in rural livelihoods (Preston & Ngah, 2012).

The post-productivist paradigm refers to agricultural practices that shift toward less intensive methods, reduced chemical inputs, and the cultivation of fewer crop varieties. This approach stands in contrast to the productivist model, which typically relies on high-yield crop varieties and chemical inputs to maximize agricultural output. Post-productivist farming reflects a diminished capacity to sustain household economies, often aligning with subsistence-level agriculture and limited labor involvement. This shift away from maximizing agricultural productivity enables some rural household members to engage in non-agricultural activities, marking a transition toward the concept of deagrarianization. Deagrarianization refers to the movement away from agriculture as the primary livelihood among rural populations. It leads to greater diversification of employment, alters rural-urban interactions, and increases the significance of migration and remittances.

The decline in agricultural engagement and the rise of non-agricultural household activities are seen as factors that reinforce the structure of rural households. Rigg (2014) describes this phenomenon as part of the agrarian transition, which is closely tied to rural transformation.

To assess the extent to which rural transformation has taken place, it can be analyzed through the lens of changes within the urban-rural system (Yang et al., 2018). This system comprises three interrelated elements: population, land, and industry (Li et al., 2014). These components must adapt to and coordinate with one another to support balanced development (Ma et al., 2019). Population represents the core of the urban-rural system, possessing the capacity to reshape it in interaction with other elements (Li et al., 2018). Population transformation refers to the migration of labor from the agricultural sector to non-agricultural employment (Li et al., 2017). Land functions as the physical foundation of the system, providing space for human activities and supporting industrial development (Li et al., 2018). Land transformation involves the conversion of agricultural land into built-up areas (Li et al., 2017). Meanwhile, industry acts as a resource generator, enhancing residents' quality of life and enabling the system to progress to a higher level (Li et al., 2018). Industrial transformation is marked by the economic shift from the primary sector to the secondary and tertiary sectors (Li et al., 2017). From this perspective, rural transformation can be evaluated through changes in the proportion of urban population, urban land use, and non-agricultural industry. The transformation degree is then defined as a composite value derived from the aggregation of these three indicators (Li et al., 2018).

The driving forces behind rural transformation can be understood through the lens of the Push and Pull Theory, which explains the dynamics of change as influenced by both internal and external factors. Push factors originate from within the rural system itself, propelling development from the inside out. In contrast, pull factors stem from external sources, typically neighboring regions, which exert influence on the transformation process. (Li et al., 2018). This theory serves as the foundation for analyzing the developmental pathways of rural transformation. To operationalize this framework, researchers have employed Euclidean metrics and the gravity model (Xu et al., 2013). In one hand, the euclidean metric is utilized to quantify the distance between two points in a multidimensional space, which in this context represents the conceptual distance between rural transformation and its influencing factors. On the other hand, the gravity model is applied to evaluate the interaction force between two entities. According to the law of gravity, the interaction force is directly proportional to the mass of the objects and inversely proportional to the distance between them. In this study, adjacent rural systems are treated as homogeneous units, each composed of a unified system of population, land, and industry. The developmental trajectory of rural transformation is thus modeled based on these gravitational and spatial interaction principles, as illustrated in the following diagram.

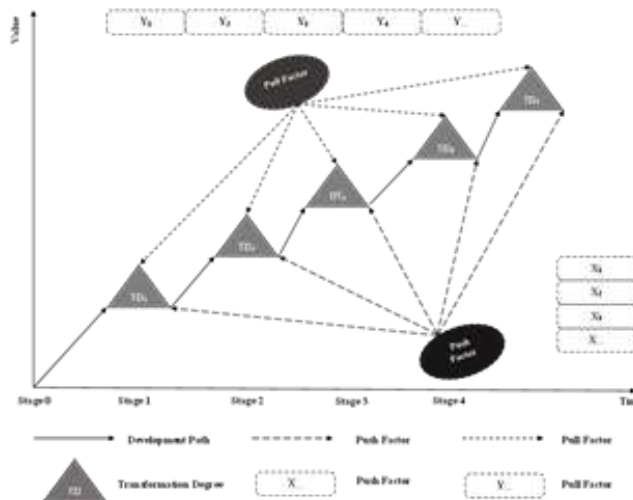


Figure 1. Model of Rural Transformation Development Path (Li et al, 2018)

Rural transformation can be represented using a triangular model, in which each side of the triangle corresponds to one of the transformation systems: population, land, and industry. The area of the triangle symbolizes the degree of transformation, with a larger area indicating a higher level of transformation. This degree is influenced by push and pull factors, in accordance with the Push and Pull Theory. Push forces stem from internal elements within the rural system such as social conditions, policy interventions, economic structures, and natural resources, that drive rural areas toward accelerated development. The length of the vector (or line) in the model reflects the strength of these internal driving forces. Meanwhile, pull forces originate from external regions surrounding the area of study. These neighboring urban or more developed regions exert influence on the transformation of the rural system. This model is designed to assess rural transformation within a single area, under the assumption that urban characteristics and development exert a significant influence on the rural transformation process.

### 3. Research Method

#### 3.1. Transformation Degree

This study measures the transformation degree using three key indicators: population, land, and industry. The population indicator is represented by the proportion of the population employed in non-agricultural sectors. The land indicator is measured by the proportion of land used for non-agricultural purposes. The industry indicator is based on the share of agricultural output value within the GDP structure.

To ensure comparability across different units and eliminate dimensional disparities among variables, all data were normalized to values ranging from 0 to 1. This facilitates standardized calculations. Each indicator is then assigned a weight, which is derived from the standard deviation of the respective indicator values, allowing for a more representative composite measure. The analysis uses cross-sectional data—i.e., data for a single year—and the unit of analysis is at the subdistrict level. The rural transformation index for each unit is calculated as the weighted sum of the three indicators.

The resulting transformation index is then classified into three levels:

- Low transformation: 0.00-0.30
- Medium transformation: 0.30-0.45
- High transformation: 0.45-1.00

The following equation presents the model used for measuring the rural transformation index:

$$TD = \alpha \times P + \beta \times I + \gamma \times L$$

TD = Transformation degree  
 α = Population indicator weight  
 P = Population indicator  
 β = Industry indicator weight  
 I = Industry indicator  
 γ = Land indicator weight  
 L = Land indicator

#### 3.2. Internal and External Factor Analysis

The internal driving factors of rural transformation consist of three main components: economic factors, social factors, and resource factors. Each of these factors includes the following variables:

Table 1: Variable of Internal Factor that Influence Rural Transformation

Internal Factor (Push Factor)	Variable	
<b>Economic</b>	Per capita GDP	x1
	Per capita consumption	x2
	Fixed asset ownership	x3
	Per capita household savings	x4
	Industrial output value	x5
<b>Social</b>	Bed occupancy per 10.000 people	x6
	Phone per 100 people	x7
	Density of population	x8
	Urbanization rate	x9
<b>Resource</b>	Per capita agricultural land area	x10
	Mobility index	x11
	Per capita water resource	x12
	Forest area	x13

Source: Li et al, 2018

To determine the most influential factor in rural transformation in Gisting Subdistrict, a linear regression analysis was conducted, using the rural transformation degree as the dependent variable (y) and ten internal factor variables as independent variables (x). The results of the regression analysis indicate which internal factor variables have the most significant influence on rural transformation. These variables

are identified based on the multiple linear regression table, specifically those with a coefficient value greater than zero.

The external factors attracting rural transformation originate from the transformation conditions in surrounding areas. The degree of rural transformation in Gisting Subdistrict is compared with the transformation degrees of other subdistricts within Tanggamus Regency. An area is considered to have an influence on rural transformation in Gisting Subdistrict if its transformation degree is higher than that of Gisting.

**3.3. Data Source**

The data used in this study consist of primary and secondary data. The primary data were obtained from a survey conducted on 100 households in Gisting Subdistrict. The sample size of 100 households was determined using Slovin's formula based on the total population of households in Gisting. The variables derived from the primary survey data include per capita income, per capita savings, asset ownership, and mobile phone ownership.

Meanwhile, the secondary data consist of two types: data from government publications and proxy-calculated data. The government documents provide data on the number of healthcare facility beds, population density, urbanization rate, agricultural land per capita, mobility index, water availability index, and forest area. Since the Central Statistics Agency (BPS) does not release Gross Regional Domestic Product (GRDP) data at the subdistrict level, a proxy approach is used to estimate it. According to Fajar (2014), GRDP calculation at the subdistrict level can be conducted using household consumption and workforce approaches. To obtain GRDP values based on business sectors at the subdistrict level, the Iterative Proportional Fitting (IPF) method is applied, using the distribution of the working population aged 15 and above across sectors in each subdistrict.

**4. Result and Discussion**

**4.1. Rural Transformation Degree**

The degree of rural transformation acts as a tool to assess the extent of change in a specific area. As previously mentioned, this measurement is based on three indicators: population, land, and industry. The values of these indicators in Gisting District are displayed in the following table.

Table 2: Population, Land, and Industry Indicator Values in Gisting Subdistrict

Indicator	Year		
	2010	2015	2020
Population (Proportion of Non-Agricultural Sector Workforce)	0,442	0,532	0,543
Land (Proportion of Non-Agricultural Landuse)	0,276	0,326	0,332
Industry (Proportion of Non-Agricultural Sector Output in GRDP)	0,753	0,786	0,807

Over the years, all three indicators have shown an upward trend. Notably, the industry indicator reveals that output from the non-agricultural sector surpasses that of the agricultural sector. Similarly, the population indicator shows that since 2015, the workforce in the non-agricultural sector has exceeded that in the agricultural sector. This shift highlights a transformation in Gisting District, where the agricultural sector is no longer the primary economic activity. Furthermore, the values of these indicators suggest that non-agricultural economic activities significantly influence urbanization patterns in Gisting District.

The sum of the three indicators of population, land, and industry, with weighting on each indicator using standard deviation, produces the value of the degree of transformation. The value of the degree of transformation of the Gisting District is shown in the following figure.

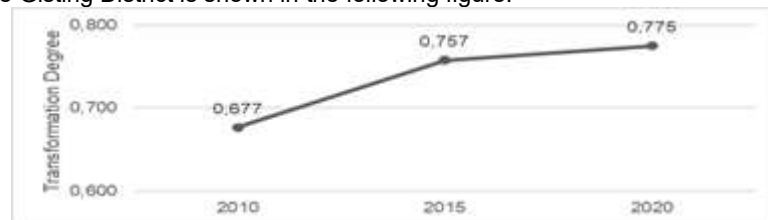


Figure 2. Transformation Degree of Gisting Subdistrict

The degree of transformation of Gisting District increased from year to year, in line with the increase in the three indicators of population, land, and industry. According to Li et al. (2018), the degree of transformation value is grouped into three levels: low if the value is between 0 and 0.3, medium if the value is between 0.3 and 0.45, and high if the value is between 0.45 and 1. Based on this categorisation, since 2010, Gisting District has had a relatively high degree of transformation with a value above 0.45. The degree of transformation of Gisting District increased significantly in the 2010-2015 period with an increase of 0.08. The increase in the degree of transformation value decreased in the 2015-2020 period with an increase of only 0.018. The high degree of rural transformation in Gisting District shows that this area has undergone a significant change. It can be said that this area has changed its face from rural to urban. The changes are

reflected in the shift that occurs in the proportion of the GRDP value which is no longer dominated by the agricultural sector. Similarly, the proportion of the population working is higher in the non-agricultural sector than in the agricultural sector. Even so, the proportion of land use in the Gisting District is still dominated by non-built land.

#### 4.2. Internal Factor

Internal factors originate from within the region and become the driving force of the transformation. These factors are analysed quantitatively to determine which factors have the most influence on transformation. The value of each variable for these internal factors is shown in the table

Table 3: Variabel Value of Internal Factor that Influence Rural Transformation

Internal Factor (Push Factor)	Variabel		2010	2015	2020
<b>Economic</b>	Per capita GDP (IDR)	x1	1.203.612,00	1.544.597,00	1.667.556,00
	Per capita consumption (IDR)	x2	523.114	573.892	684.426
	Fixed asset ownership	x3	0,43	0,49	0,72
	Per capita household savings (IDR)	x4	318.450,26	321.160,23	305.503,51
	Industrial output value (Milion IDR)	x5	1.205.958,43	1.575.587,20	1.526.401,52
<b>Social</b>	Bed occupancy per 10.000 people	x6	21,385	21,358	20,210
	Phone per 100 people	x7	38,89	69,81	87,12
	Density of population	x8	1106,86	1194,65	1323,36
	Urbanization rate	x9	0,759	0,722	0,714
<b>Resource</b>	Per capita agricultural land area (Ha)	x10	0,07	0,05	0,03
	Mobility index	x11	1,386	1,375	1,309
	Per capita water resource (m <sup>3</sup> /year/capita)	x12	5343,16	6847,03	3578,95
	Forest area (Ha)	x13	483,6	470,6	461,6

Furthermore, the values of these variables are normalised to conduct regression analysis to determine the most influential factors on rural transformation in the Gisting sub-district. Based on the results of the multiple linear regression analysis, the following equations were obtained:

$$y = 0,73636 + 0,043852x_1 + 0,004006x_{12}$$

The regression results show that there are two factors that have the most influence on rural transformation in Gisting District, namely GRDP per capita (X1) which represents economic factors, and water availability per capita (X12) which represents resource factors. Both variables have a positive relationship with the degree of transformation in the Gisting District. This means that increasing GRDP per capita will have a positive effect on transformation. Likewise, with water availability, the higher the water availability index in Gisting District, the higher the degree of rural transformation in Gisting District. The R<sup>2</sup> value of this regression equation is 1, and the residual value is 0 or less than 0.1. This means that the regression results can be said to be valid, and the selected variables can explain the transformation process that occurs by 100%. However, there are weaknesses in the regression results. Data normalisation based on the division method with standard deviation causes a multicollinearity effect, so that many variables have a regression coefficient of 0. This makes it difficult to identify the extent to which other variables influence the transformation in the Gisting District.

The GRDP per capita describes the condition of the regional economy. An increasing GRDP per capita indicates that economic growth is also increasing. GRDP value is the gross added value of each economic sector in a certain period. The GRDP per capita shows the GRDP value obtained by each resident. The GRDP per capita of the Gisting District increased along with the increase in the GRDP value of the district. This increase indicates an increase in the population income in each economic sector. The GRDP value of each sector in the Gisting District increased with different variations in. This shows that there is growth in each economic sector, even though the growth rate is different. The value of each sector in the GRDP of the Gisting District is shown in Figure 4.21. Based on the analysis, it is also known that in 2010 and 2015, the agricultural sector was the largest contributor to the economic structure in Gisting District. In 2020, the agricultural sector, as the largest contributor to the GRDP of Gisting District, was shifted by the service sector. The GRDP of Gisting District is a guarantee for rural development and functions as a financial support for the sustainability of transformation.

Meanwhile, the availability of water, representing the resource aspect, is the basic material for rural development. The availability of water is crucial for economic and daily activities of the population. The

Gisting District itself is known as a fertile area with various superior agricultural commodities. Water availability guarantees existing agricultural activities. This is similar to the industrial activities that require water. The availability of sufficient water encourages investment in the agricultural and industrial sectors in Gisting District while ensuring the survival of the population. The gisting is the upstream area of the Sekampung Watershed and has a number of springs that are widely used by the community for agricultural and daily needs. This is supported by the existence of irrigation channels and the construction of PAM lines.

### 4.3. External Factor

External factors that influence rural transformation in the Gisting District can be seen in the transformation conditions of other districts in the Tanggamus Regency territorial system. Each district was calculated for its degree of transformation to compare the transformation conditions in each district. A region is said to influence transformation in Gisting District if its degree of transformation is higher than that of Gisting District. Better rural development in these districts also has an impact on development in the Gisting District. A comparison of the degree of transformation of other districts with the Gisting District is shown in Figure.

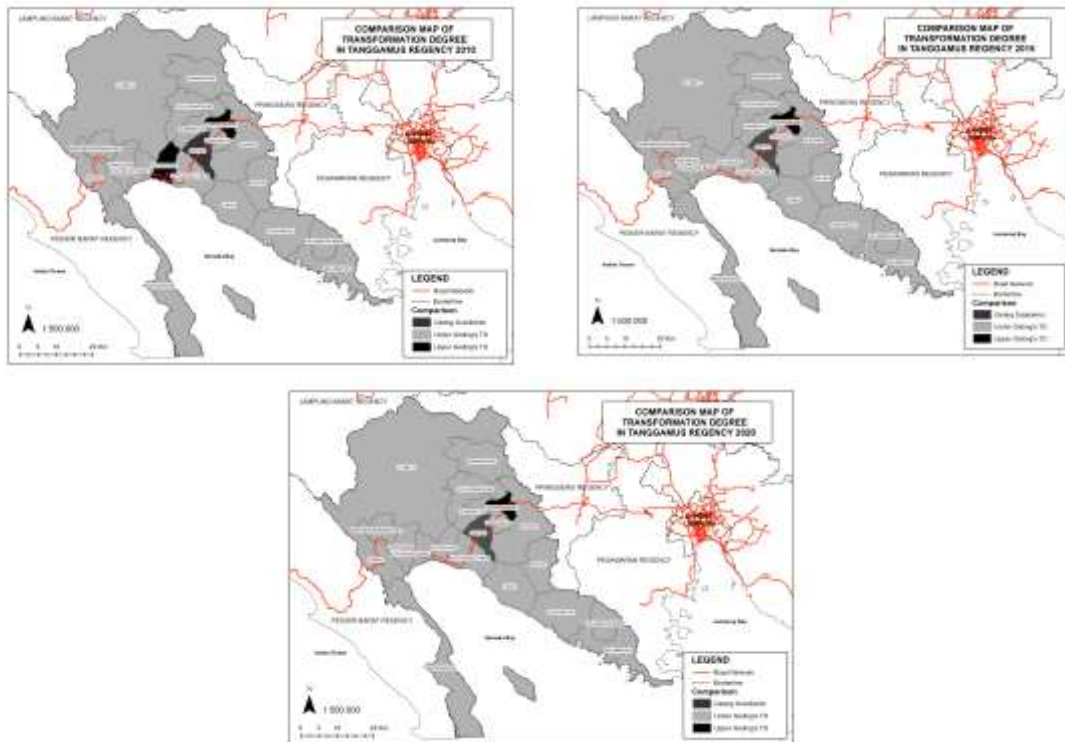


Figure 3. Comparison Map of Transformation Degree in Tanggamus Regency

In 2010, there were two sub-districts with a higher degree of transformation than the Gisting Sub-district: Kota Agung Sub-district and Talang Padang Sub-district. This means that the transformation in the Gisting Sub-district was influenced by the transformation that occurred in the Kota Agung Sub-district and Talang Padang Sub-district. Geographically, the Gisting Sub-district is located between the two sub-districts. The three sub-districts are located on the western highway connecting Bandar Lampung City with Bengkulu Province. All three are urban centres in Tanggamus Regency, where Kota Agung is the district capital. Better development in the two sub-districts also influenced changes in the Gisting Sub-district. A comparison of the degree of transformation of the three sub-districts is shown in the following graph.

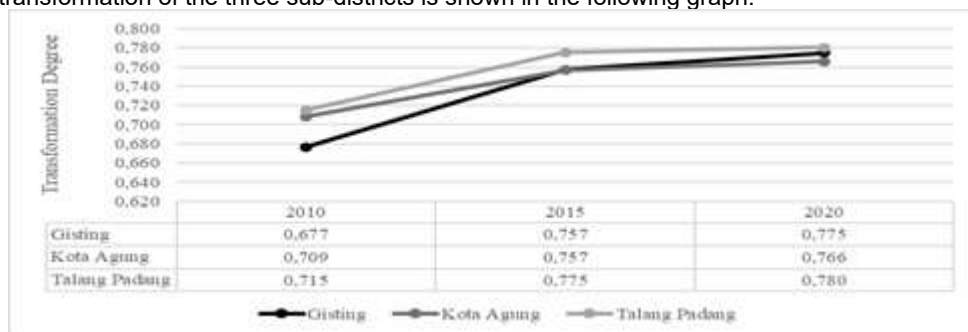


Figure 4. Comparison of Transformation Degree Between Gisting, Kota Agung and Talang Padang

In 2015, the degree of transformation of Kota Agung District was the same as that of Gisting District. Even in 2020, the degree of transformation of Gisting District reached a higher degree than the degree of transformation of Kota Agung District. This means that in 2015 and 2020, the transformation in Kota Agung District experienced a slowdown and was influenced by the transformation that occurred in Gisting District. This is because the growth of population, land, and industry indicators in Gisting District is faster than that in Kota Agung District.

The Gisting District is the most densely populated district in Tanggamus Regency, with high growth in built-up land use. Meanwhile, Kota Agung District still has wider non-built-up land. Even so, the population and industry indicator values of Kota Agung District are still higher than those of Gisting District, although the growth is not as significant as in Gisting District.

In 2015 and 2020, the transformation in Gisting District was influenced only by Talang Padang District. Development in Talang Padang District is still considered to influence development in Gisting District. Judging from the population and industry indicators, Talang Padang District has a higher value. This means that the percentage of non-agricultural sector workers and non-agricultural output in Talang Padang District is higher than that in Gisting District. However, when viewed from the land indicator perspective, the Gisting District still has a higher value. This means that the percentage of built-up land use in Gisting District is higher than that in Talang Padang District.

#### 4.4. Discussion

Based on the research that has been conducted, it is confirmed that Gisting District has undergone rural transformation. This can be seen from the value of population, land, and industry indicators which show a shift in the dominant economic sector, namely from the agricultural sector to the non-agricultural sector. In 2010, the proportion of the workforce working in the nonagricultural sector was 44.2%, indicating that the workforce is still dominated by the agricultural sector. In 2015, the proportion of the non-agricultural sector workforce reached 53.2%, which means that the dominance of the agricultural sector workforce had been shifted by the non-agricultural sector workforce. Then, in 2020, the proportion of the non-agricultural sector workforce increased to 54.3%. Meanwhile, when viewed from the proportion of output in the sub-district's GRDP, the output of the non-agricultural sector dominates the GRDP of the Gisting District. In 2010, the proportion of non-agricultural output reached 75.3% of the total GRDP and increased in 2015 and 2020. Changes in population and industrial structure were followed by changes in land structure. Even so, the land structure in Gisting District is still dominated by non-built land, where the value in 2020 was still 66.8%.

The research findings show that rural transformation in Gisting District is influenced by push factors in the form of economic and resource factors, as well as pull factors originating from better development conditions in the surrounding areas. These findings confirm the theory previously presented by Li et al. (2018) that rural transformation is influenced by pull factors and push factors according to the push and pull mechanism in the push and pull theory. There is a gap between this study and the study conducted by Li et al. (2018) in that there are no social factors that influence rural transformation in the Gisting District.

The form of rural transformation that occurred in Gisting District was deagrarian or the shifting of the economic sector from agrarian to non-agricultural. This is indicated by the decreasing proportion of the agricultural workforce. A shift in the proportion of the workforce can be seen in the following diagram.

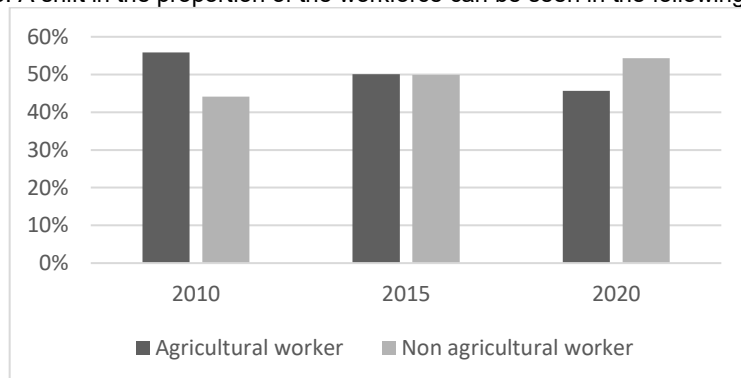


Figure 5. Diagram of Workforce Structure Change

The number of workers in the agricultural sector in 2010 was 55% and then continued to decline to reach 45% in 2020. However, the percentage of workers in the non-agricultural sector has continued to increase from 45% in 2010 to 55% in 2020. This change in the proportion of the workforce shows an increase in job differentiation which is driving an economic transition in the Gisting District Community.

#### 5. Conclusion

Gisting districts experienced high rural transformation in 2010, 2015, and 2020. The value of the degree of rural transformation in this district continues to increase with increases in population, land, and industry indicators. The rural transformation that occurs is influenced by internal and external push-and-pull factors.

The most influential driving factors in this transformation were economic factors in the form of GRDP per capita and resource factors in the form of water availability per capita. Economic factors guarantee rural development. Economic growth, represented by an increase in GRDP, is a driver in the sustainability of transformation in the Gisting District. Resource factors are the basic capital in development. Water availability is a vital requirement for economic activities and the daily lives of the population.

The pull factors that influence rural transformation in Gisting District come from the transformation conditions in Talang Padang and Kota Agung districts. Both districts have higher economic diversification than the Gisting District and have more open employment opportunities. This is indicated by the value of the proportion of non-agricultural sector output and the proportion of non-agricultural sector workers which are greater than Gisting District. Better development conditions in both areas have an accelerating effect on development in the Gisting District.

The transformation that occurred in the Gisting District shows changes in society that are increasingly dependent on non-agricultural activities. This encourages structural changes in society, the economy, and land use. With this research, policymakers need to prepare more sustainable regional planning.

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