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Interaction model of sustainable urban and hinterland growth in KTM Telang Banyuasin District, Indonesia

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Abstract. The objective of the study was to formulate a sustainable growth model of city center interaction and hinterland KTM Telang. This research was carried out at KTM Telang which its area was determined based on Banyuasin Regency Regulation Number 22 Year 2008 about Formation of Area of KTM covering three districts namely Tanjung Lago Subdistrict, Muara Telang Subdistrict, and Sumber Marga Telang Subdistrict, and SK of Bupati Number 341 Year 2008 dated 17 July 2008 on Stipulation of Location of Center KTM Telang Mulya Sari Village. The research was conducted in Mulya Sari Village as the Center of KTM and 6 (six) other selected villages representing the hinterland of KTM Telang. Data collection techniques in this study include structured interviews, indepth interview, observation, and focus group discussion. The analysis was done by using SEM (Structural Equation Modeling) method. The result of the research shows both of infrastructure development and economic growth in the center of KTM Telang have no effect on economic growth in hinterland. But for social conditions in the center of KTM Telang affected the economic growth in hinterland.

1. Introduction

Regional development basically means increasing the value of regional benefits for the community. This value is in the form of the ability to accommodate more residents with a good level of welfare, show more facilities and infrastructure, available goods and services and community business activities that increase in type, intensity, quality and service [1].

The hinterland of KTM Telang is a transmigration area in Banyuasin District South Sumatra. The transmigration program aims to distribute millions of people from the densely populated islands to the island which are rarely inhabited so as to allow for equal distribution of the population. The transmigration program aims to reduce poverty by providing land and employment opportunities and increasing the use of land resources [2].

Hinterland is the back area that serves to supply and meet the needs of the central region. Hinterland is area that can be administratively separated from the central region. Hinterland has different characteristics and oriented to life of the agricultural community. Generally, hinterland is defined as a port area which is the distribution center for business activities [3].

KTM Telang and hinterland have relevance in several aspects as mentioned by Gore and Fothergil [4] that cities and rural areas have a good relationship between economic, social, cultural and political aspects with varied governance arrangements. Each region has the potential to become a city. However, it must be noted that in addition to the physical development of the city, its social,



economic, and cultural must also be considered by dividing the active interrelation relationship with several surrounding areas as the closest areas that can be reached and have a mutually influential relationship between the central region and the back area [5].

The construction of KTM is a program issued by the Ministry of Manpower and Transmigration (Kemenakertrans). One of the objectives is to accelerate rural economic growth in the agricultural and plantation sectors so that transmigrant communities and local communities can improve their welfare. KTM Telang is one of the urban concepts and new growth in the transmigration area through sustainable management of natural resources. Therefore, the purpose of the construction of the KTM Telang is to accelerate rural economic growth.

Development of various infrastructures will be a driver for regional economic growth, increasing access to health services, education and other basic services. Various researchers have found a close relationship between infrastructure investment and regional economic development [6].

Furthermore [7] argues that among various types of infrastructure, transportation infrastructure is considered to be one of the most important by policy makers because transportation costs are very important in determining the choice of location for the company. Therefore, the development of economic area is strongly influenced by the development of transportation infrastructure. Feedback occurs where the development of transportation infrastructure will encourage economic development.

2. Methodology

The method used in this study is a combined method of qualitative research and quantitative research (Mixed Methods) with a Concurrent Triangulation model combination (balanced mixture) which is a balanced mixed research method between qualitative and quantitative methods used to answer similar problem formulations. This research was carried out in 3 (three) stages, The first stage described the existing condition of the KTM Telang area which was carried out with quantitative descriptive analysis. The second stage formulated a sustainable urban center growth model and hinterland interaction with SEM analysis. The third stage formulated a growth interaction strategy the city center and hinterland are sustainable with SWOT analysis.

2.1. Research Time and Location

The research has been carried out at KTM Telang in accordance with the Regional Regulation Number: Banyuasin District Regulation Number 22 of 2008 concerning the Formation of KTM Areas and Regent Decree Number 341 of 2008 dated July 17, 2008 concerning Determination of the KTM Telang Central Location Mulya Sari Village Tanjung Lago District which stipulates the lower KTM Telang, which includes three sub-districts, Tanjung Lago Subdistrict, Muara Telang Subdistrict, and Sumber Marga Telang Subdistrict.

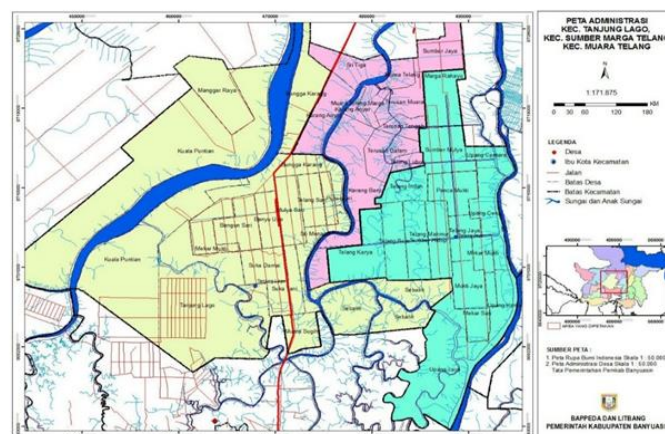


Figure 1. Map of research location

The study has been conducted in the village of Mulya Sari as the center of KTM and 6 (six) other selected villages that were representatives of the KTM Telang hinterland. The selection of the six villages was carried out based on the criteria of availability of infrastructure, superior commodities, mode of transportation and market activities. The research will be carried out for 6 (six) months from March 2018 to August 2018.

2.2. Types and Data Sources

The type of data used are primary and secondary data. Primary data were obtained from the results of direct observation and in-depth interviews with parties related to this research such as farmers, business people, communities and government around KTM Telang. Whereas secondary data was obtained from related agencies or agencies such as sub-district offices, Banyuasin District Agriculture Service, BAPPEDA and R & D of Banyuasin Regency, BPS Banyuasin Regency, KTM Banyuasin Working Group (Pokja) and other related literature.

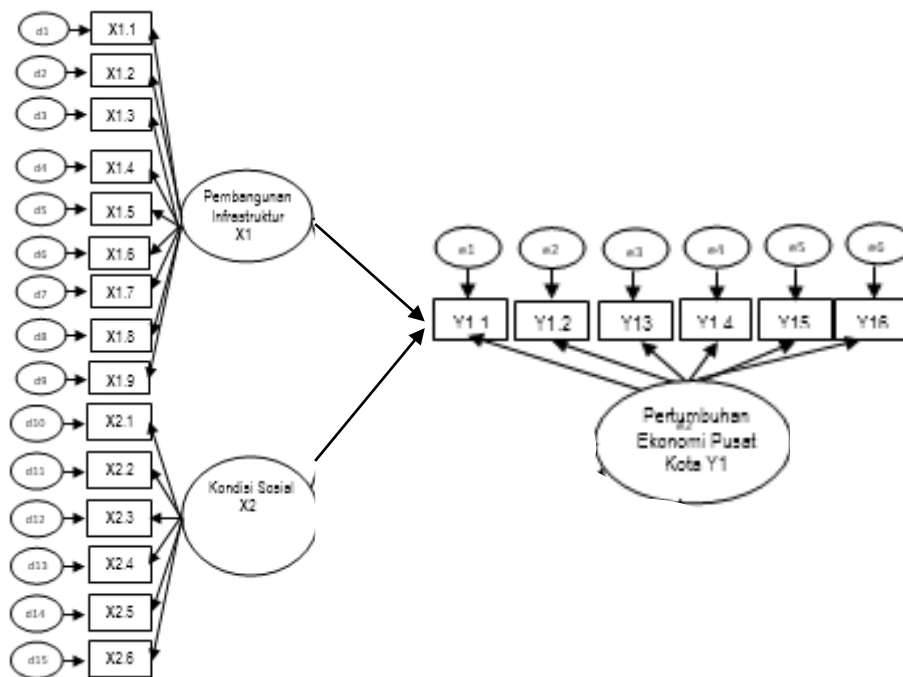


Figure 2. Initial model of SEM analysis

Note:

- | | |
|--|-------------------------------------|
| X1.1 = TAA Port development | Y1.1 = Increased income |
| X1.2 = Development of KEK | Y1.2 = Increased production |
| X1.3 = Development of KI Gasing | Y1.3 = Increased access to services |
| X1.4 = Intermodal development | Y1.4 = Economic diversification |
| X1.5 = Road development | Y1.5 = Increased connectivity |
| X1.6 = Market infrastructure development | Y1.6 = Increase banking access |
| X1.7 = Irrigation infrastructure development | X2.1 = Education |
| X1.8 = Telecommunications infra. dev. | X2.2 = Poverty |
| X1.9 = Agri. product process infra. dev | X2.3 = Human resources |
| d = error measuring exogenous indic. | X2.4 = Unemployment rate |
| e = error measurement endogenous indic. | X2.5 = Institutional |
| z = error structural | X2.6 = Association |

2.3. Data collection method

Data collection techniques in this study consist of a combination of various methods which are summarized into unity. These methods include:

- Structured Interview

This method has been used to obtain data related to the main variables namely Economic Growth (Y1), Environment (Y2), Infrastructure Development (X1) and Community Social Conditions (X2) based on public perception. To obtain the data, a structured interview method was used in the form of a questionnaire. The questionnaire method was carried out based on the Self Report or at least on the respondent's personal knowledge and beliefs related to the KTM Telang.

- Indepth Interview

This method has been used to determine qualitative data about the conditions and problems faced by rural communities in the research location that cannot be captured by the interview guide method. With this method, it is expected to capture a variety of specific data and information that will be examined in more detail.

- Observation

Observation has been intended to see firsthand the general conditions, facilities and infrastructure that exist in locations that have the potential to be carried out in the area of agricultural development.

- Focus Group Discussion (FGD)

This method has been carried out by forming focus group discussions related to the development of the KTM Telang area and the problems faced. The purpose of the FGD is to get a complete picture of the problems faced by all relevant stakeholders and input for the solution strategy.

2.4. Data processing

The sustainable model of the KTM Telang city center growth based on infrastructure development and social conditions of the community was analyzed using SEM (Structural Equation Modeling) analysis. SEM is used to determine models of several variables, the SEM modeling process requires the existence of sample size, data normality, absence of outliers and no problems in multicollinearity and singularity. In this case SEM is used to analyze the model of city center growth. Based on the influence of infrastructure development factors and social conditions of the community.

3. Results and Discussion

The test results on the interaction model of the influence of infrastructure development and social conditions of the KTM Telang central community towards hinterland economic growth consisting of 12 (twelve) observed variables (indicators) are presented below.

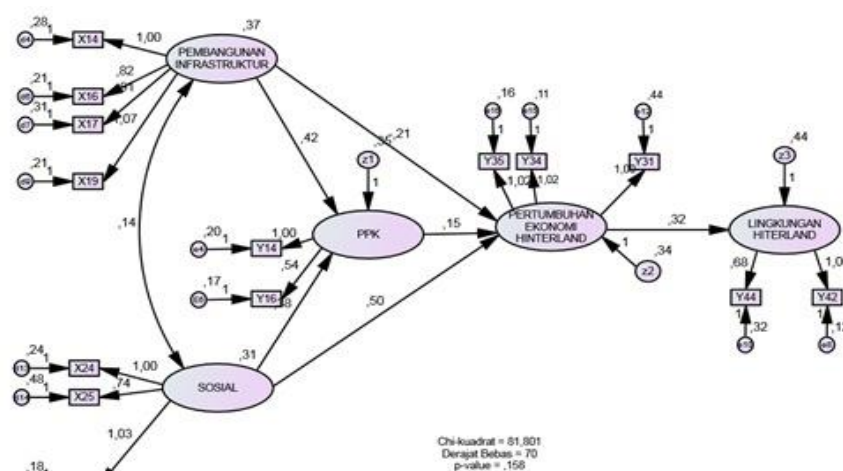


Figure 3. Interaction model of KTM Telang - Hinterland

Figure 3 is a fit model of the interaction model between the center of KTM Telang and hinterland which shows that infrastructure development at the center of KTM Telang has no effect on economic growth in hinterland. Likewise with its economic growth, economic growth at the center of the KTM Telang also has no effect on economic growth in hinterland. However, social conditions at the center of KTM Telang affect economic growth in the hinterland.

The interaction model in Figure 3 is said to be fit because the results of SEM analysis test meet the applicable conditions. Based on the results of the analysis tests that have been conducted show the results that infrastructure development at the center of the KTM Telang has no effect on economic growth in the hinterland. Economic growth that occurred at the center of the KTM Telang also did not affect economic growth in Hinterland. Whereas for social conditions factors affect economic growth. Many factors have resulted in infrastructure development as well as economic growth at the center of the KTM Telang which has no effect on economic growth in Hinterland.

Table 1. Index fit models

Test	Term	Value	Note
CHI	Expected Small	81.801	Fixed
SQAURE			
P-VALUE	$P \geq 0.005$	0.158	Fixed
GFI	≥ 0.90	0.911	Fixed
AGFI	≥ 0.90	0.867	Marginal
RMSEA	≤ 0.10	0.040	Fixed
CFI	≥ 0.90	0.978	Fixed
TLI	≥ 0.90	0.971	Fixed
NFI	≥ 0.90	0.870	Marginal

Various infrastructure developments that occur in the center of the KTM Telang include telecommunications, roads, markets, processing of agricultural products, banking and so on. Large-scale infrastructure development at the center of the KTM Telang is road infrastructure which is the main access for regional development. This is because the road becomes an access for the community to carry out various activities. At present the road in the central area of KTM Telang is good enough so as to provide convenience for the community such as economic activities, namely selling agricultural produce. The ease of access provided only to the community at the center of KTM Telang, but the infrastructure development has no effect on the hinterland area in the vicinity.

In addition to roads or access that facilitate community economic activities, there is also the development of market infrastructure and processing of agricultural products. In the KTM Telang center a large market has been built, but the market is not used by the hinterland community. Then the agricultural product processing infrastructure at the center of KTM Telang is Trans BMT. BMT Trans is an abbreviation of Baitul Maal wat Tamwil or an integrated independent business center, where the activities carried out are developing productive businesses and investments in increasing the economic activities of small entrepreneurs by encouraging and supporting their economic activities. But as with the market, the hinterland community does not use or participate in Trans BMT. Products contained in BMT Trans are agricultural product processing products from the KTM Telang community.

These products include cassava chips, taro, sweet potatoes, spinach and others. The existence of BMT Trans itself is very clear, namely as a place for the community to develop agricultural products with the aim of increasing the economic growth of the community. But unfortunately, this cannot be used by the hinterland community. So that the existence of the development of agricultural product processing infrastructure also does not affect the economic growth in Hinterland.

Furthermore, the development of banking infrastructure, banking is a financial service that offers various facilities for the community both for savings and loans. This banking is only located in the center of KTM Telang, so that only a handful of people in Hinterland utilize its services. Whereas

banking is one of the facilities that can provide loans for the capital of the community to develop or start a business to improve the economy. Currently banks have offered loan products for people with small interest rates. The lack of interest in the Hinterland community for banking services is due to road access factors, where access to roads in Hinterland is not good enough to make it difficult for Hinterland people to reach banking facilities or services at the center of KTM Telang. If the construction of road infrastructure reaches the hinterland area, it can provide access to the hinterland community to increase its economic growth.

Infrastructure developments carried out by the government are more centered on KTM Telang so that the availability and completeness of facilities will be better services. This has resulted in economic growth in the hinterland area not increasing. Easy access and availability and facilities facilities make the center of KTM Telang a choice of economic activities by the community. In line with infrastructure development, economic growth at the center of the KTM Telang also increased. This is because various infrastructure developments in the center of the KTM Telang provide convenience for the community in various activities, especially economic activities. However, the central economic growth of the KTM Telang does not affect economic growth in Hinterland. The amount of infrastructure development and government investment in the center of KTM Telang is certainly very influential on economic growth in KTM Telang but tends to be hinterland areas around KTM Telang being neglected.

4. Conclusion

Based on the results of SEM analysis tests that have been conducted, the conclusions obtained from this study are as follows:

- Infrastructure development at the center of KTM Telang does not affect economic growth in hinterland.
- Economic growth at the center of the KTM Telang also has no effect on economic growth in hinterland.
- Social conditions are the only factors that influence economic growth in the hinterland.

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