

Geospatial Dynamics of The Tasikmalaya-Pangandaran Road Via Singkup its Relationship With Socio-Economics of the Bojongkondang Village Community

Tega Rahma Anugrah¹ (Universitas Siliwangi, Indonesia)

Universitas Siliwangi, Indonesia² (Universitas Siliwangi, Indonesia)

Iman Hilman³ (Universitas Siliwangi, Indonesia)

Insan Wastuwidya Mahardiani⁴ (University Negeri Surabaya, Indonesia)

Koni Dwi Prasetya⁵ (National Central University, Taiwan)

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Abstract

This research is based on the dynamics of the condition of the Tasikmalaya-Pangandaran road via Singkup, especially the quality of the road which is increasingly decreasing seen from pre-road dynamics to post-road dynamics. The dynamics of road conditions have an impact on other aspects, especially on aspects in society, especially social and economic aspects, especially in terms of work, experiencing social mobility and in terms of income, resulting in conditions of increase and decrease. The aim of the research is to identify the geospatial dynamics of roads and analyze their relationship to the socio-economic conditions of the community. The research method uses a descriptive qualitative approach; the analysis technique uses an income theory formula with the results of income curve modeling. The results of the research show that there are geospatial dynamics on the Tasikmalaya-Pangandaran road via Singkup at 5 points, namely the Cule incline block, the nutmeg plantation block, the Kopeng 1 incline block, the Kopeng 2 incline block, and the flat portal block which is characterized by changes in width, depth and length and classification of damage. Analysis of the relationship between the geospatial dynamics of roads and the social conditions of society shows that there is social mobility in society with horizontal, vertical upward, vertical downward and permanent lateral types. Analysis of the economic conditions of the community shows that there is a decline in income, especially from the pre-road dynamics period to the post-road dynamics period, a decline of -12.50% to -60.00%.

Keywords: Problem Based Learning, Critical Thinking, Gender

1. INTRODUCTION

The Tasikmalaya-Pangandaran Road via Singkup is a vital transportation infrastructure that plays a crucial role in enhancing connectivity between two key regions in West Java, namely Tasikmalaya and Pangandaran. The existence of this road not only improves accessibility but also impacts the socio-economic dynamics of the surrounding communities, particularly in Bojongkondang Village, which is located along the route. This village, which was once isolated due to limited transportation access, has experienced significant changes in various aspects of life, following the development of the road.

The construction and maintenance of this road have had a profound effect on the movement of goods and people, which, in turn, has the potential to improve the village's economic conditions by enhancing market access, local product distribution, and creating new business opportunities (Qin et al., 2020; Zhou, 2022). However, the impact extends beyond the economic sphere, also influencing social changes such as migration patterns, education, and

Corresponding Author: E-mail: ega.ranugrah08@gmail.com

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overall quality of life (Ratha et al., 2011). Roads are a determinant in the smoothness of traffic, it could even be said to be the lifeblood of land traffic, the smoothness of traffic will greatly determine the development of social and economic conditions from one area to another (Mubarak, 2021). The function of the road is to support all the needs of the community, both in terms of social and economic aspects (Tzonevska, 2023). However, it is important to note that events may often deviate from theoretical predictions due to the inherent variability in the data and the possibility of unanticipated events. As with the conditions along the Tasikmalaya-Pangandaran alternative road via Singkup, which exhibit variability and have implications for the socioeconomic status of the local population, which also undergoes fluctuations.

Based on the time period, from 2015 to 2024 the Tasikmalaya-Pangandaran alternative road via Singkup experienced several types of changes or dynamics in the road conditions which were accompanied by dynamics or changes in the socio-economic conditions of the people of Bojongkondang Village, Langkaplancar District, Pangandaran Regency. In the context of dynamics, two types of possibilities to be considered: those that are beneficial and those that are detrimental.

The present situation is based on the 2015 period, namely the development of the road, which was officially completed and officially operational in 2019 until now, namely 2024, there have been many changes in the condition of the Tasikmalaya-Pangandaran alternative road via Singkup, starting in terms of road quality and so on. However, of course the changes that have occurred on the Tasikmalaya-Pangandaran alternative road via Singkup have also brought about changes in the social and economic aspects of the community. Of course, based on the status of the region which is in Pangandaran Regency, which is generally considered a tourism area, of course in terms of income from tourism it has great potential, not only in terms of regional income but also in terms of community income, it has great potential.

The conditions that exist in the Pangandaran Regency area, especially after the expansion, should produce a good and sustainable impact both in terms of infrastructure and social and economic aspects if the regional planning is good and ideal, but of course things are very possible if things happen outside of planning because not all planning is in accordance with the rules. which exists. So, with the development in 2015 of the Tasikmalaya-Pangandaran alternative road via Singkup, it is hoped that it can support existing potentials, especially in areas that have the potential to become tourist attractions to support the social economy of the community. Another hope is to widen the accessibility network after the expansion into Pangandaran Regency. However, of course existing expectations do not match the conditions and facts on the ground, things that are detrimental and contrary to development hopes and objectives are very likely to occur, especially if planning is not accompanied by development efforts.

The following is a detailed account of the events that transpired on the Tasikmalaya-Pangandaran alternative road via Singkup. During the course of 2015, this route has yielded substantial advantages for the region and its inhabitants, manifesting in the utilization of its tourism potential, the enhancement of social aspects and the augmentation of community income. Consequently, numerous communities have endeavored to emulate these advancements by establishing commercial enterprises and tourist attractions. However, it doesn't last long, because the condition of the road is getting worse, especially from 2021 and road users are switching to better roads even though they are longer in duration and distance

from the alternative Tasikmalaya-Pangandaran road via Singkup, thus causing losses to the community which are already ongoing open company land in the area. This deterioration in road conditions can indeed occur anywhere, but if it is well maintained then this is not so problematic, whereas on the Tasikmalaya-Pangandaran alternative road via Singkup there is meager maintenance from the authorities. The condition of the road network is what makes the level of accessibility and mobility of the community high, because of the ease and absence of obstacles in carrying out activities (Evans, 2009).

Therefore, there is a need for planning in road development. Planning or in scientific terms is often referred to as planning with the study of science. Planology is one of the very important management functions. A plan will greatly influence the success or failure of a job. Therefore, good work is what is planned and we should do the work according to what has been planned. Planning must be 1) planning is an action that will be carried out to achieve a goal, which is a desired status and action is an activity or behavior towards an object that is rationally known to bring closer to the desired status, 2) a way of thinking that is oriented towards the future with a prescriptive nature using rational methods and systematics, 3) planning is the application of scientific methods in making public policies, 4) planning is an effort to link scientific and technical knowledge with actions in the public domain, and 5) planning is a conscious effort to solve problems and controlling a series of future events through foresight, systematic thinking, investigation and assessment of value options in choosing various alternative steps of action (Fitriha, 2017). Without planning, the consequences are likely to be difficult to predict that is difficult to predict, the type of damage can be seen in the Pavement Condition Index, namely the level of condition on the asphalt surface and its size which can be viewed from the usability function which refers to the condition of damage to the asphalt surface (Hardiyatmo, 2015). The types of damage are Deformation, Cracks, Texture Damage, Hole Damage, Edge Damage.

The type of damage at the five points on the Tasikmalaya-Pangandaran alternative road via Singkup is of the Potholes type. So that this type of damage to this road reduces the interest of road users on this road so that the number of small businesses and tourism managers on this road decreases drastically and this directly affects the socio-economic conditions of the community. The problem formulation used in this research is identifying the type of damage, analyzing the relationship between road dynamics and the social conditions of the community, and analyzing the relationship between road dynamics and the economic conditions of the community. This research will also be presented in the form of a table analyzing road damage and the increase/decrease in community income.

This study aims to delve deeper into the geospatial dynamics of the Tasikmalaya-Pangandaran Road via Singkup and its reciprocal relationship with the socio-economic conditions of the Bojongkondang Village community. One of the key aspects to be explored is how this road has affected land use patterns, changes in local economic structures, and the opportunities and challenges faced by the community in adapting to the ongoing infrastructural developments.

2. METHOD

This research employs a descriptive method with a qualitative approach. Research with a qualitative approach is research using the basis of interpretive philosophy or post positivism which is useful for examining the condition of a pure object. In research with a qualitative

approach a researcher positions himself as the key instrument (Sugiyono, 2016). Qualitative method is research that is structured in a series of research which is based on assumptions, ideological views, philosophical views, as well as several things that will arise (Sukmadinata, 2015). Presented in descriptive form, research using descriptive aims to provide an overview of a society or a particular group of people or a description of a symptom or the relationship between two or more symptoms (Soehartono, 2000).

Population and Sample

Qualitative research has different targets like other research, in this research population can mean two types of existence in the form of objects and subjects with certain characteristics and conditions that the researcher wants to then study, analyze and conclude (Sukmadinata, 2015). The object of this research is the Tasikmalaya-Pangandaran alternative road section via Singkup which is located in Bojongkondang Village Hamlet, Langakaplancar District, Pangandaran Regency, covering the area or environment of Singkup, Gunung Engang, Datar Jeruk, Warung Sabeulah, and part of the area of Tasikmalaya Regency, namely the Tanjakan Kopeng. The subjects in this research were stall entrepreneurs (8 peoples), tourism managers (2 peoples), and the people of Bojongkondang Village (35 people), especially in the Village Hamlet, namely in RT 008, 009, and 029.

Method of Collecting Data

Several data collection methods used in this research are as follows:

a. Questionnaire

Through the questionnaire technique the author can obtain data on a smaller scale, this questionnaire takes the form of written questions addressed to respondents in order to obtain data that refers to the questions that have been written on the questionnaire.

b. Triangulation

The triangulation technique is a way to obtain data whose validity is truly tested by utilizing something other than the data itself, for the purposes of comparing that data. This data triangulation technique is used to combine and compare data obtained from interviews, observations and existing documentation.

Data Analysis

The analysis technique used in this research is using Income Theory to see the percentage increase and decrease in income in the community's economy, the formula is:

$$(\%) = \frac{y - x}{x} \times 100 \%$$

% : Percentage Increase/Decrease

x : Initial income

y : Final income

100 : Ideal Percentage

Subsequently the data is presented in the form of an income curve in order to know how and how people's income increases and decreases. and will also be presented in table form on how income increases or decreases according to existing respondents.

3. RESULT AND DISCUSSION

Road Damage Analysis

The Tasikmalaya-Pangandaran alternative road via Singkup has a length of 5 kilometers starting from the Tanjakan Cule Block to Warung Sabeulah. This road has 5 damage points

with characteristics and details, includes the length of the road damage, the width of the road damage, the slope of the road, the depth of the damage, and the type of damage. For more details, see the table below regarding the condition of the damage and the following table regarding the description of the damage and its causes:

Table 1. Characteristics and Details of 5 Points of Road Damage on The Tasikmalaya-Pangandaran Alternative Road via Singkup

No	Name of Location	Length of the road damage (M)	Width of the road damage (M)	Slope of the road damage	Depth of the road damage (Cm)	Type damage
1	the cule incline	10	5	15°	7-10	Hole Damage (Potholes)
2	the nutmeg plantation	13,93	2,8	13°	6	Hole Damage (Potholes)
3	the Kopeng 1 incline	47	4,98-5	29°	14	Hole Damage (Potholes)
4	the Kopeng 2 incline	19	4,10	27°	10	Hole Damage (Potholes)
5	the flat portal block	4	3	15°	2	Hole Damage (Potholes)

Source: Observation, 2024

Based on the table above, it can be seen that in terms of condition the damage to the road has the longest length, namely 47 meters and the shortest, namely 4 meters, with the widest damage width being 5 meters and the narrowest being 3 meters, and the slope of the road being the steepest, namely 29° and the most sloping, namely 13°, with each road damage varying in depth, but there are locations with the most severe depth, namely 10 cm, and all locations have the same type of damage, namely hole damage with the Portholes type. The Portholes type can be caused by several things and several conditions among them:

- low asphalt content
- asphalt weathering
- use of dirty or bad aggregate
- the mixture temperature does not meet the requirements
- poor drainage system

Apart from the causes of damage above, there are also causes caused by the use of roads for traffic purposes, especially when used by vehicles that are not intended for them, resulting in this type of damage. to make it easier to identify the form of damage, so you can find out what the damage looks like, below is a picture of the damage at the Kopeng 1 incline.



Figure 1. The damage at the Kopeng 1 incline (2024). Resource: Author, 2024

Based on the field observation a massive damage at this location that it is very valid to be classified as a damaged road (Figure 1). In fact, the condition of damage to the road always increases from year to year, so that the longer the road goes, the more seriously damaged it will be, therefore, a comparison is made on the visual form of the image. Apart from that, there is also a comparison of road conditions based on the pre-road dynamic period and the post-road dynamic period, namely between 2021 and 2023, which comes from *Google Streetview* in the image below:



Figure 2. Condition the Kopeng 1 incline at 2021. Resource: Google Streetview, 2021



Figure 2. Condition the Kopeng 1 incline at 2023. Resource: Google Streetview, 2023

Based on the comparison of images downloaded from Google Streetview above, it can be ascertained that there are geospatial dynamics on the Tasikmalaya-Pangandaran Alternative road via Singkup.

The Relationship between Road Damage and Community Social Conditions

Several pictures and condition data above show that there is indeed quite massive damage to the Tasikmalaya-Pangandaran Alternative Road via Singkup. then, what is the correlation

between the geospatial dynamics of the Tasikmalaya-Pangandaran Alternative Road via Singkup which will be discussed in this section.

Before 2015 the majority of the population had jobs as farmers, then from 2015 to 2019 road development was carried out on the Tasikmalaya-Pangandaran Alternative Road via Singkup which had a good influence on the social conditions of the community so that they carried out social mobility, especially in terms of work.

So that the development of this road has proven that regional development and development is very useful for the condition of society. because development is a method that is formed based on planning with the aim of the welfare of the community, nation and state (Noor, 2017). Apart from that, regional development and development, especially in facilities and infrastructure, can increase national income which results in impacts in the form of equal distribution among the population, business sectors and regions (Gunardo, 2014).

So that the development of this road produces a new condition in society, namely the creation of Social Mobility, Social mobility is a change or change in social circumstances or social position including individuals, families and groups within society (Pattinasarany, 2016; Bottero, 2013). Types of social mobility include:

- horizontally
- vertical
- lateral
- intergenerational
- intragenerational

Based on the several types of social mobility above, several types have occurred among respondents caused by road development, namely:

- horizontal (1 tourism manager, 10 communities)
- vertical rise (6 stall entrepreneurs, 10 communities)
- vertical down (1 tourism manager, 1 stall entrepreneur)
- permanent lateral (1 stall entrepreneur)

The Relationship between Road Damage and Community Economic Conditions

Regarding the dynamics of the Tasikmalaya-Pangandaran Alternative Road via Singkup on the economic conditions of the community, especially income, divided into 2 time periods, namely pre-road dynamics or after road development (2019) and post-road dynamics (2024) or at present. in this section the only respondents who manage tourism and are stall entrepreneurs, because only these two respondents carry out direct economic activities on this road. The discussion in the article contains: (1) Answers to the formulation of the problem and research questions; (2) the findings obtained during the research; (3) interpretation of the findings; (4) The findings are associated with existing knowledge. The interpretation of the findings is related to existing theories.

Respondents were 8 stall entrepreneurs (7 women and 1 man) and 2 men as tourism managers from the Singkup hill tourist attraction and the Manci hill tourist attraction. For more details on knowing the income conditions of the respondents based on the time period mentioned, you can see the table below and the figure of curve below:

Table 2. Income Conditions of Stall Entrepreneurs and Tourism Managers on The Tasikmalaya-Pangandaran Alternative Road Section via Singkup

No	Respondents	Type of Respondents	Income 2019	Income 2024	%	category (increasing or decreasing)
1	Herlin	Tourism Manager	800.000	400.000	- 50,00	Decreasing
2	Maman	Tourism Manager	2.400.000	1.500.000	- 37,50	Decreasing
3	Armilah	Stall Entrepreneur	1.500.000	600.000	- 60,00	Decreasing
4	Cicih	Stall Entrepreneur	700.000	300.000	- 57,14	Decreasing
5	Depi	Stall Entrepreneur	800.000	450.000	- 43,75	Decreasing
6	Gina	Stall Entrepreneur	not yet operational	400.000	-	-
7	Hadis	Stall Entrepreneur	600.000	500.000	- 16,67	Decreasing
8	Nina	Stall Entrepreneur	700.000	450.000	- 35,71	Decreasing
9	Nurul	Stall Entrepreneur	1.000.000	500.000	- 50,00	Decreasing
10	Yayah	Stall Entrepreneur	800.000	700.000	- 12,50	Decreasing

Source: Observation Results, 2024

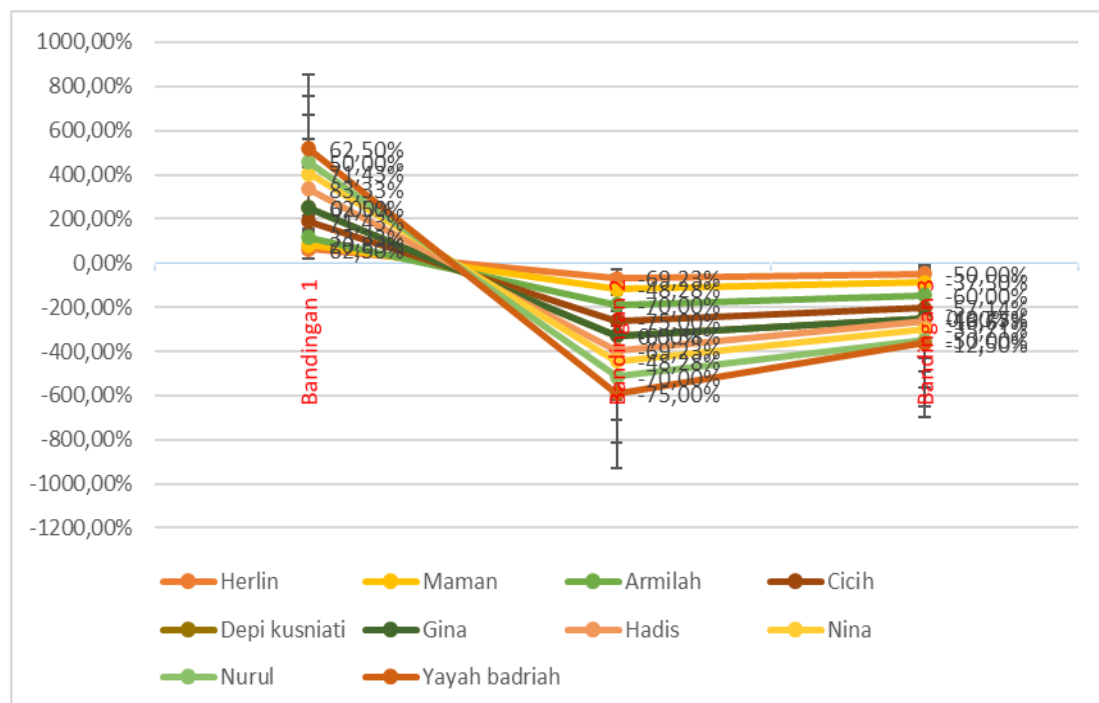


Figure 3. Comparison Curve of The Percentage of Respondent's Income. Source: Observation Results, 2024

Based on the table and income curve above, it can be seen that based on a comparison of income from the pre-road dynamics period (2019) and post-road dynamics (2024) with the middle comparison, namely 2020, there has been a fairly massive and high decline in income among the community. The decline in income felt by respondents as a result of road dynamics

was in the range of -12.50% to -60.00% with almost all types of respondents experiencing a decline in income. Looking at the income conditions above, it can be seen that the condition of a road can actually influence the economic condition of the community. In line with income, according to Adisasmita (2011) and Schabacher (2013), transportation and roads are links, as well as approaches and have an impact on mobilization and production as well as consumers.

The discussion will begin with a geospatial analysis of the Tasikmalaya-Pangandaran Road via Singkup, exploring how the road has altered transportation patterns, land use, and accessibility in Bojongkondang Village. This analysis will include changes in agricultural land, settlement expansion, and the emergence of new economic activities due to improved connectivity. It will also examine the impact on local livelihoods, focusing on how agriculture has benefited from better market access, while also exploring the rise of new businesses, particularly in trade and tourism (Flyvbjerg, 2007).

Socially, the road's development has influenced migration patterns and community mobility, providing better opportunities for education and employment (De Hass, 2007; Ratha et al, 2011; Castles, 2018). The discussion will also address the environmental challenges associated with infrastructure development and the need for sustainable planning. Lastly, it will consider the socio-economic disparities that may arise from uneven benefits, as well as the future prospects for inclusive development, offering policy recommendations to ensure that the benefits of the road extend to all members of the community.

4. CONCLUSION

Regional development and development efforts will always be carried out by policy makers; the community actually plays the role of consumers and taxpayers. All regional development and development always have the same connotation and goal, namely to equalize the population and increase accessibility with the main goal of economic and social welfare.

However, sometimes policy makers often forget that construction and development requires other components such as planning and maintenance. because, without planning and maintenance of facilities and infrastructure, sustainable goals will never be created. so that in the end it will still be the same as causing harm to society, especially for people who feel they will gain benefits from development and development, but instead experience losses because development and development are only temporarily beneficial without any maintenance.

These conditions have been proven to actually exist and their sustainability has been proven, as is the case on the Tasikmalaya-Pangandaran Alternative Road via Singkup. At the beginning of the development and construction of the road, the residents felt happy and made efforts to utilize this potential, but the potential did not last long, because the condition of the objects built did not last long and actually harmed them because the results of their efforts were not commensurate. seeing the benefits felt by the community in the form of social mobility, and seeing the losses felt by the community in the form of a decrease in their income, provides evidence that in regional development and development, especially facilities and infrastructure, really requires really careful planning accompanied by maintenance.

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