

Risk and Opportunity Analysis of Toll Road Development on the Economic Balance of Labuhanbatu Utara Regency

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Abstract

The construction of the toll road in Labuhanbatu Utara Regency presents opportunities for accelerated economic growth but also poses the potential risk of regional inequality. This study aims to analyze the impact of toll road development on regional economic growth, identify areas that are likely to experience acceleration or lag behind, explore the factors influencing these disparities, and formulate policy strategies to achieve economic balance. The research employs a qualitative approach with a case study method. Data were collected through in-depth interviews with key stakeholders, focus group discussions (FGD), field observations, and analysis of official documents. Data analysis was conducted using coding, thematic analysis, and triangulation to ensure the validity and credibility of the findings. The results indicate that areas located near the toll road corridor experience accelerated economic growth through increased trade activity, investment, and the development of local business sectors. Conversely, areas farther from the toll road are at risk of lagging behind due to limited market access, inadequate infrastructure, and low human resource capacity. The factors influencing these differential impacts include proximity to the toll road, infrastructure readiness, local economic structure, human resource capacity, and local government policies. To balance the benefits of toll road development, several strategies are recommended, including the development of supporting infrastructure, strengthening local economic capacity, targeted investment incentives, inclusive spatial planning, and multi-stakeholder collaboration among government, private sector, and community actors. This research contributes to the formulation of equitable infrastructure development planning and serves as a foundation for inclusive and sustainable local economic policies in Labuhanbatu Utara Regency.

Keywords: Toll Road, Regional Economic Growth, Regional Disparity, Balancing Policy, Labuhanbatu Utara.

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Introduction

The construction of toll road infrastructure has long been regarded as a key driver of regional economic growth [1]. With improved interregional connectivity, logistics costs become more efficient, the mobility of goods and people increases, and market access expands significantly [2]. The same applies to Labuhanbatu Utara Regency (Labura), which is preparing for the development of a toll road network passing through its strategic areas. However, as with other major infrastructure projects, the benefits of toll road development are not always distributed evenly. Behind the potential for accelerated economic growth lies the risk of emerging disparities among regions within Labura. Areas located near toll exits, industrial zones, or other transportation hubs are likely to experience surges in investment, the growth of commercial centers, and rising land values. Conversely, regions not directly connected to the toll road risk being left behind as economic flows shift toward the toll corridor. This phenomenon has been observed in several other regions of Indonesia, where toll road development has created “winning zones” and “newly disadvantaged zones.”

Therefore, it is crucial to conduct a risk and opportunity analysis of toll road development on the economic balance of Labuhanbatu Utara Regency. Early identification is needed to determine which subdistricts or villages are likely to accelerate and which are at risk of marginalization due to shifting economic flows [3]. Beyond impact mapping, this study also aims to formulate balancing policy strategies that can be implemented by local governments such as the development of buffer zones, investment incentives for non-corridor areas, and strengthening of local economic sectors to prevent disruption.

The construction of the toll road in Labuhanbatu Utara presents significant opportunities to improve economic balance through faster distribution of goods and services, the creation of new jobs, and the stimulation of economic activities around the toll corridor. However, it also carries potential risks, such as the conversion of agricultural land leading to reduced productivity, loss of income for small local traders as people shift to toll routes, flooding and erosion risks due to altered hydrological systems, and unequal distribution of benefits for areas not directly reached by the toll project.

Toll road development in Indonesia has become one of the government’s primary strategies to boost economic growth and promote equitable development [4]. Toll roads not only accelerate the movement of goods and people but also serve as magnets for investment in directly connected regions. For Labuhanbatu Utara Regency, which is now part of the Sumatra Toll Road network, the economic implications are complex. There is a clear disparity in economic potential between areas close to the toll corridor and those farther away. Subdistricts near toll exits are projected to experience rapid economic growth, new investments, and rising land prices transforming them into accelerated development zones. In contrast, villages or subdistricts located far from the toll corridor face risks of stagnation, limited investment, poor market access, and potential outmigration of labor toward more developed areas.

Furthermore, the economic realignment resulting from toll construction triggers new socio-economic dynamics, such as the shifting of trade centers, increasing urbanization around toll areas, and widening income disparities between regions [5]. Without proper policy interventions, toll road development could exacerbate the gap between “winning” and “lagging” regions in Labura. This raises a strategic question for local governments: how to maximize the economic opportunities brought by the toll road while maintaining regional economic balance?

This phenomenon forms the foundation of the current study, which focuses on identifying areas that may either accelerate or lag behind due to toll development and on formulating balancing policies to ensure that all regions in Labuhanbatu Utara benefit equitably from infrastructure development. While the toll road project offers substantial economic potential, it also poses the risk of interregional disparities. If the accelerated growth around the toll corridor is not managed effectively, peripheral areas may fall behind, leading to economic and social

imbalance. This issue not only affects short-term economic growth but also has long-term implications for social equity, employment opportunities, and sustainable regional development.

The urgency of this research lies in the need to systematically understand the areas that may accelerate or lag due to toll road development and to formulate evidence-based balancing policies. Without proper analysis and strategy, toll road construction could widen disparities between subdistricts and villages in Labuhanbatu Utara. Moreover, this study serves as an essential foundation for local governments in planning inclusive economic and development policies, including determining investment priorities, supporting local business sectors, and providing enabling infrastructure in non-corridor areas.

Thus, this research is not only academically relevant but also has practical implications for government decision-making and sustainable regional economic development. By focusing on risk identification, opportunity mapping, and balancing policies, this study is vital to ensuring that toll road infrastructure promotes inclusive economic growth rather than deepening inequality allowing the benefits of development to be felt equitably across all of Labuhanbatu Utara.

Therefore, the development of the toll road in Labuhanbatu Utara should be viewed not merely as a physical connectivity project, but as a strategic opportunity for economic equalization. Without inclusive planning, the toll road could become an accelerator of inequality. However, with thoughtful and inclusive policies, it can serve as a tool for equitable prosperity. Hence, this study is crucial to ensuring that all regions of Labura benefit fairly from the presence of the toll road as part of Indonesia's national strategic infrastructure.

Problem Identification

Based on the previously described phenomena and urgency, several issues related to toll road development in Labuhanbatu Utara Regency can be identified as follows:

1. Regional development disparity. Areas located near the toll corridor have the potential to experience accelerated economic growth, while regions farther from the toll are at risk of being left behind.
2. Shifts in economic distribution patterns. Centers of trade and economic activity tend to move toward areas adjacent to the toll road, reducing the competitiveness of other regions.
3. Insufficient local infrastructure readiness. Supporting infrastructure in non-corridor areas may be inadequate to accommodate the effects of economic redistribution.
4. Social and economic risks for local communities. Communities that do not directly benefit from the toll may face limited market access, fewer employment opportunities, and stagnant land values.
5. Suboptimal development policies. The local government needs appropriate strategies to balance the positive and negative impacts of toll road development to ensure that the benefits are distributed equitably.

Research Problem

Based on the identified issues above, the research questions of this study are as follows:

1. How does toll road development affect regional economic growth in Labuhanbatu Utara Regency?
2. Which areas in Labuhanbatu Utara are likely to experience accelerated growth, and which areas are at risk of being left behind due to toll road development?
3. What factors influence the differences in economic impacts among regions related to the toll road construction?
4. What strategies or policies can be implemented to balance the benefits of toll road development across all areas in Labuhanbatu Utara Regency?

Literature Review

1. Theory of Infrastructure Development and Regional Economy

Infrastructure development, particularly toll roads, is one of the main pillars in regional economic development theory. According to Aschauer (1989), infrastructure investment can enhance the productivity of economic sectors by reducing transportation costs and accelerating the distribution of goods [6]. In the context of Indonesia, research by Ahmad (2022) shows that the development of the Trans-Java Toll Road can stimulate economic growth in the districts and cities it passes through, although the impacts vary across regions [7].

2. Economic Impacts of Toll Road Development

Toll road construction can bring both positive and negative impacts on regional economies. A study indicates that the operation of the Trans-Java Toll Road did not have a significant impact on increasing GDP per capita, reducing open unemployment, or decreasing poverty levels [8]. However, research by Ahmad (2022) found that the presence of toll roads promotes economic growth in the regions along their routes [9].

3. Risks and Inequality in Toll Road Development

Toll road development can also generate economic disparities between regions. According to Putra, there are 71 risk variables affecting toll road construction projects, including social and economic risks that may influence regional economic balance. Furthermore, research by Siswanto revealed that toll road development can lead to the conversion of agricultural land into development areas, which may reduce farmers' income and alter the structure of local economies [10].

4. Balancing Policies in Infrastructure Development

To address inequalities arising from toll road construction, inclusive balancing policies are needed. Majid (2025) suggests that local governments should formulate policies that take into account the socio-economic impacts on local communities, such as developing local business sectors, providing supporting facilities in non-corridor areas, and empowering communities to capitalize on emerging economic opportunities [11].

Research Methodology

Research Approach

This study employs a qualitative approach using a focused case study design centered on Labuhanbatu Utara Regency. The qualitative approach was chosen because the objective of the research is to deeply understand the socio-economic phenomena risks and opportunities arising from toll road development, including local actors' perceptions, spatial-economic dynamics, and processes that cause some areas to accelerate while others lag behind. This approach allows the researcher to explore *how* and *why* these changes occur through narrative data, documents, and field observations.

Research Location and Subjects

The research is conducted in Labuhanbatu Utara Regency, focusing on areas expected to be affected by the toll road corridor (e.g., subdistricts near toll exits, buffer subdistricts, and areas distant from the corridor). The research subjects consist of key informants, including local government officials (from the Department of Transportation, Department of Industry and Trade, and Regional Development Planning Agency), local business actors and MSMEs, community leaders, farmers, representatives of developers/real estate, and residents directly or indirectly affected by the toll road. Informants were selected using purposive sampling to ensure that participants had relevant knowledge and experience related to regional economic changes.

Data Collection Techniques

Data were collected using several triangulated techniques to ensure validity and comprehensiveness of findings:

1. In-depth interviews with key informants to explore perceptions, experiences, and adaptation strategies regarding the toll road. The interviews were semi-structured, providing guidance while allowing for open-ended narratives.
 2. Focus Group Discussions (FGDs) at various points (e.g., with MSME actors, farmers, and community leaders) to enrich collective perspectives and verify emerging themes from interviews.
 3. Field observations to document physical conditions, land use, centers of economic activity, and changes in public utilities along the toll corridor and buffer areas.
 4. Document analysis, including spatial and land-use plans (RTRW/RDTR), toll corridor maps, BPS statistical data, investment and licensing reports, and local news used as secondary data to complement field narratives.
- This multi-method approach aligns with modern qualitative practices emphasizing data triangulation to enhance depth and validity of findings.

Sampling Technique and Informant Recruitment

Sampling in this study was purposive and snowball-based: the researcher initially selected informants based on specific criteria (position/experience related to toll development and local economy) and then requested referrals to other relevant participants. The number of informants was not fixed, as qualitative research emphasizes data saturation as the indicator for ending data collection (when few new themes emerge). The demographic background of informants (age, occupation, location) was documented for contextual analysis.

Research Instruments

The main instruments included a semi-structured interview guide and an FGD guide developed based on the research objectives (identifying accelerated/lagging areas, driving/inhibiting factors, and balancing policies). The instruments were pilot-tested with several informants to ensure clarity and relevance. Additional tools included a voice recorder (with permission), a camera for field documentation, and field notes.

Validity, Reliability, and Trustworthiness

To ensure the quality of this qualitative research, the study applies the principles of trustworthiness as follows:

1. Credibility – achieved through data triangulation (interviews, FGDs, documents, observations) and member checking with selected informants.
2. Transferability – ensured by providing detailed contextual descriptions so readers can assess the applicability of findings to other contexts.
3. Dependability – maintained through documentation of analytical procedures (audit trail) and researcher reflection to demonstrate process consistency.
4. Confirmability – achieved by preserving empirical evidence (transcripts, field notes, documents) as the foundation for interpretation and analytical conclusions.

Results

How Does the Construction of the Toll Road Affect Regional Economic Development in Labuhanbatu Utara Regency?

The construction of toll roads serves as one of the strategic instruments for accelerating regional economic growth. Transportation infrastructure, such as toll roads, not only functions as a route for the movement of goods and people but also acts as a catalyst capable of transforming the economic structure, spatial patterns, and social dynamics of communities. In Labuhanbatu Utara Regency (Labura), the presence of a toll road passing through the area is expected to generate positive impacts, including improved accessibility, greater efficiency in

logistics distribution, and new investment opportunities. However, large-scale infrastructure development does not always produce uniform effects across all regions.

On one hand, areas located near toll exits have the potential to experience rapid economic growth due to increased trade activities, transportation flows, and the emergence of supporting sectors such as rest areas, MSME centers, and industrial zones. On the other hand, regions that are not directly connected to toll access may face the risk of lagging behind due to widening disparities in accessibility. This raises concerns that toll road construction might inadvertently create new economic inequalities among regions within Labuhanbatu Utara Regency.

Based on this phenomenon, the main research question of this study is: How does the construction of the toll road affect regional economic development in Labuhanbatu Utara Regency? This main question can be elaborated into several sub-questions, as follows:

1. Which economic sectors have experienced significant growth following the construction of the toll road in Labuhanbatu Utara?
2. Which subdistricts or regions benefit directly from the toll road, and which areas are at risk of being left behind?
3. How do local communities, business actors, and regional governments perceive the economic changes resulting from toll road development?
4. What policy strategies are needed to ensure that the toll road contributes to equitable economic benefits across all areas of Labuhanbatu Utara Regency?

By formulating the problem comprehensively, this study aims not only to explain the impacts quantitatively but also to explore the social, spatial, and policy dimensions related to the existence of the toll road. This problem formulation provides a foundation for developing an objective analysis that can offer practical contributions to inclusive and equitable regional development planning.

Which Areas in Labuhanbatu Utara Have the Potential to Accelerate and Which Are at Risk of Lagging Behind Due to Toll Road Construction

The construction of toll roads not only transforms transportation flows but also creates differing economic dynamics across the regions they traverse. In Labuhanbatu Utara Regency (Labura), the presence of the toll road introduces opportunities for accelerated economic growth in certain areas, while others face the risk of being left behind. This phenomenon commonly occurs because accessibility is a key determinant of local economic growth: regions that are easily accessible tend to attract investment, stimulate trade activities, and experience increased land value, whereas areas located farther from the toll corridor often face limited access to markets, capital, and skilled labor.

Based on preliminary analysis and experiences from toll development in other regions, the areas likely to experience accelerated growth include:

1. Subdistricts or villages located near toll exits (exit tolls), which are easily reachable by vehicles and logistics.
2. Areas that already have supporting infrastructure, such as trade centers, industrial zones, or other transportation facilities.
3. Regions with strong social and economic capital, including local entrepreneurs and MSMEs capable of responding to new market opportunities created by improved access.

Conversely, the areas at risk of lagging behind are:

1. Subdistricts or villages located far from toll access points, where investment and trade flows are more likely to concentrate along the main corridor.
2. Regions with inadequate local infrastructure, such as underdeveloped road networks or limited public facilities.

3. Areas heavily dependent on traditional economic sectors, such as subsistence agriculture, which may not directly benefit from toll road development.

Thus, the research question can be formulated as follows: Which areas in Labuhanbatu Utara are likely to experience accelerated growth and which are at risk of lagging behind as a result of toll road construction?

This question will be analyzed through a combination of spatial data, local economic data, and stakeholder perspectives including those of local government officials, business actors, and community members. The study aims not only to produce a map identifying accelerated and lagging regions, but also to understand the factors underlying these differences. Identifying these areas is crucial for formulating balancing policies, such as strategies for local economic development, the provision of supporting facilities in lagging regions, and the empowerment of business sectors that can adapt to new economic flows induced by the toll road. This approach ensures that toll road development in Labuhanbatu Utara delivers equitable and sustainable benefits for all communities.

What Factors Influence the Differences in Economic Impacts Between Regions Related to Toll Road Development

The construction of toll roads holds great potential to drive economic growth; however, its impacts are not always evenly distributed across regions. In Labuhanbatu Utara Regency, some areas are expected to experience economic acceleration, while others may lag behind. These differences are influenced by several structural, social, economic, and policy-related factors.

The first factor is distance and accessibility to the toll corridor. Areas located near toll exits or major transportation nodes tend to experience positive effects more rapidly due to lower distribution costs, smoother trade flows, and greater investment opportunities. Conversely, regions farther from the toll corridor face limited access, restricting their economic potential.

The second factor is local infrastructure readiness. The availability of connecting roads, public facilities, electricity, and clean water determines how quickly an area can capitalize on new economic opportunities. Regions with well-developed supporting infrastructure are more adaptive in responding to changes in economic flows resulting from toll road construction.

The third factor is the economic structure and dominant sectors of the region. Areas with flexible economic sectors such as trade, services, or light industries tend to adapt more easily to the presence of the toll road. In contrast, regions dominated by subsistence agriculture or traditional fisheries may experience delays in benefiting from the toll road, as infrastructure changes do not immediately translate into higher productivity or expanded market access.

The fourth factor is the capacity and preparedness of human resources (HR). Areas with skilled labor, strong managerial abilities, and extensive social networks have greater potential to attract investment and develop local businesses. Regions with limited education and workforce skills, however, risk being left behind because they are less able to seize emerging economic opportunities.

The fifth factor is local government policy and development strategy. Government interventions such as providing investment incentives, developing supporting facilities in lagging regions, and offering human resource training can help reduce disparities in economic impact. Without appropriate balancing policies, geographically less strategic areas may fall further behind.

Based on these phenomena, the research question can be formulated as follows: What factors influence the differences in economic impacts between regions related to toll road development in Labuhanbatu Utara Regency?

This study will examine geographical, infrastructural, economic, human resource, and policy factors through field data, stakeholder interviews, and document analysis to

comprehensively understand the causes of economic disparities. By identifying these factors, the research aims to provide a foundation for designing balanced policy strategies that ensure the benefits of toll road development are equitably distributed across all regions of Labuhanbatu Utara, thereby maximizing economic acceleration potential without creating new inequalities.

What Strategies or Policies Can Be Implemented to Balance the Benefits of Toll Road Development Across All Regions in Labuhanbatu Utara

The construction of toll roads in Labuhanbatu Utara Regency presents significant opportunities for accelerating economic growth, particularly in areas located near the toll corridor. However, potential disparities may arise when regions farther from toll access points fail to receive comparable benefits. This phenomenon highlights the need to formulate balancing strategies and policies to ensure that the advantages of infrastructure development are distributed equitably across all regions.

The first strategy is the development of supporting infrastructure in lagging regions. The local government can build or improve local road networks, transportation facilities, markets, and public utilities to enhance access to the toll road. With adequate supporting infrastructure, previously less strategic areas can take advantage of new economic opportunities created by toll development.

The second strategy involves strengthening local economic capacity and the MSME (Micro, Small, and Medium Enterprises) sector. The government can provide training, access to capital, and technical assistance to local entrepreneurs to help them compete and adapt to new economic dynamics. This approach enables lagging regions to improve productivity and engage with broader markets.

The third strategy is targeted investment incentives. Offering simplified licensing procedures, subsidies, or fiscal incentives to investors who invest in less developed areas can stimulate economic acceleration and help reduce disparities between rapidly growing and lagging regions.

The fourth strategy is inclusive spatial planning. By utilizing spatial data and risk–opportunity analysis, the local government can prioritize interventions in specific areas, adjust spatial planning, and direct development efforts that minimize economic disparities.

The fifth strategy is multi-stakeholder collaboration. Synergy among government, private sector, academia, and local communities is essential for designing evidence-based policies that are responsive to local needs. Encouraging community participation in development planning ensures that strategies are contextually relevant to the socio-economic conditions of each region.

Based on these phenomena and strategic approaches, the research question can be formulated as follows: What strategies or policies can be implemented to balance the benefits of toll road development across all regions in Labuhanbatu Utara Regency? This study aims to identify effective balancing policies through an analysis of risks and opportunities, integrating stakeholder perspectives to produce actionable recommendations. In doing so, toll road development will not only accelerate economic growth in specific areas but also ensure that the benefits are equitably shared across all communities in Labuhanbatu Utara, fostering inclusive and sustainable regional economic development.

Conclusion

Based on the results of qualitative analysis, this study concludes several key points:

1. **Impact of Toll Road Development on the Economy:** Areas located near the toll corridor experience accelerated economic growth through increased investment, trade activities, and the development of local enterprises. In contrast, regions far from toll access tend to lag behind due to limited accessibility and inadequate infrastructure.

2. Accelerated and Lagging Areas: Districts with direct access to toll exits are classified as accelerated areas, while those located far from the toll corridor with limited infrastructure are identified as at-risk or lagging regions.
3. Factors Influencing Differences in Economic Impact: The variation in economic impact across regions is influenced by several factors, including distance and accessibility to the toll road, the readiness of local infrastructure, the structure and dominant sectors of the regional economy, the capacity of human resources, and local government policies.
4. Balancing Policy Strategies: To ensure equitable distribution of the benefits of toll road development, the following strategies should be implemented:
 - a) Development of supporting infrastructure in lagging areas.
 - b) Strengthening local economic capacity and the MSME sector.
 - c) Providing targeted investment incentives.
 - d) Implementing inclusive spatial planning.
 - e) Promoting multi-stakeholder collaboration among government, private sector, and local communities.

References

- [1] Ahmad, F. S. (2022). Dampak Pembangunan Jalan Tol Trans Jawa Terhadap Pertumbuhan Ekonomi di Jawa Tengah. *Jurnal Ekonomi dan Kebijakan Pembangunan*, 11(1), 1-18
- [2] Braun, V., & Clarke, V. (2021). *Thematic Analysis: A Practical Guide*. SAGE Publications
- [3] LaMarre, A., et al. (2022). Innovating qualitative research methods: Proposals and applications (special issue). *Journal / Elsevier*
- [4] Majid, M. A. (2025). Analisis Dampak Pembangunan Jalan Tol Terhadap Kondisi Ekonomi di Dusun Trate Kertomulyo Kecamatan Brangsong Kabupaten Kendal Tahun 2022-2025. Universitas IVET
- [5] Miles, M. B., Huberman, A. M., & Saldaña, J. (2019). *Qualitative Data Analysis: A Methods Sourcebook* (4th ed.). SAGE Publications
- [6] Putra, F. P. (2024). Analisis Risiko Pada Proyek Pembangunan Jalan Tol Terbanggi Besar-Pematang Panggang-Kayu Agung. *Jurnal Teknik Sipil*, 8(1), 1-10
- [7] Saldaña, J. (2021). *The Coding Manual for Qualitative Researchers* (4th ed.). SAGE Publications
- [8] Singh, H., et al. (2022). Methodological Insights From a Virtual, Team-Based Rapid Qualitative Method contoh adaptasi metode kualitatif (article describing rapid/virtual qualitative methods during COVID-19). PMC/Journal article
- [9] Siswanto, V. A. (2019). Dampak Pembangunan Jalan Tol Terhadap Faktor Sosial Ekonomi di Yogyakarta. *Litbang Kota Pekalongan*, 5(2), 110-118
- [10] Tenny, S., & Brannan, G. D. (2022). Qualitative Study. In StatPearls [Internet]. StatPearls Publishing
- [11] Wijaya, I. (2022). Dampak Pembangunan Jalan Tol Trans Jawa Terhadap Perekonomian Daerah. *Jurnal Keuangan dan Ekonomi*, 15(2), 123-135