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A Study on the Infrastructure Service Satisfaction Index in Batu Bara Regency

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Abstract. This research aims to study the Infrastructure Service Satisfaction Index in Batu Bara Regency. The type of research employed in this study is qualitative research. Data collection techniques refer to the methods used to obtain the necessary data and information to achieve the research objectives. Data analysis is the process of processing data obtained from interviews, field notes, and documentation into new information, making the characteristics of the data easier to understand and useful for solving problems, particularly those related to the research. In this case, the researcher employs several data analysis techniques, namely: Data Reduction, Data Presentation, and Verification. The research results indicate that, in general, the level of public satisfaction with infrastructure development in Batu Bara Regency remains low. The community perceives that there is still an imbalance between villages in the development of road infrastructure and other village facilities, and they also feel that the performance of the Batu Bara Regency government is not optimal and is considered slow. The level of community participation in Batu Bara Regency in infrastructure development can be considered good and helps facilitate the infrastructure development process. Community participation includes providing suggestions or proposals, contributing labor such as mutual assistance, as well as donations of funds and materials. There are even some community members who participate by voicing dissatisfaction and not providing support.

Keywords: Batu Bara, Regency, Index, Infrastructure, Satisfaction.

1. INTRODUCTION

One of the key elements of development policy to support economic activities is the provision of adequate infrastructure, such as electricity, drinking water supply, telecommunications, road facilities, and more. The provision of infrastructure as a public good is the responsibility of the government. This means that the government is directly involved in supplying infrastructure as a complement to the economic system operating within a community or country. Suboptimal infrastructure management implies that districts with low-quality infrastructure will struggle to compete in attracting foreign investors compared to other districts with better-quality infrastructure. Infrastructure development is a priority on the development agenda in Batu Bara Regency, positioning the infrastructure sector as a key mission for improvement over the next five years. The objectives of infrastructure development in Batu Bara Regency include: providing basic facilities and infrastructure, opening up isolated areas, improving and enhancing the investment climate, and supplying irrigation infrastructure for agriculture and raw water.

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The Batu Bara Regency government, which has been established for nine years, has the responsibility to build infrastructure through the technical agency of the Public Works and Spatial Planning Department. This department is tasked with developing public works facilities and infrastructure, particularly roads, bridges, irrigation systems, embankments, and other structures that contribute to stimulating economic activities in Batu Bara, such as Gross Regional Domestic Product (GRDP). As a vital need for transportation, road infrastructure in Batu Bara continues to be improved. Regional development in Batu Bara is a crucial factor in efforts to enhance the local economy, which is still developing in terms of economic performance and community welfare. Development in the transportation sector aims to support the overall growth of the Batu Bara Regency.

Based on the Spatial Planning Regulation of Batu Bara Regency (RTRW) 2013-2033 regarding the Infrastructure Network System Plan, specifically the Transportation Network System Plan, it states that the transportation network system is aimed at promoting the development of physical, social, and economic aspects, achieving equitable development, and encouraging the development of the coastal areas of Batu Bara Regency that are still isolated. It also focuses on developing centers for agricultural, plantation, and fishery products, as well as realizing environmental conservation efforts through the application of environmentally sustainable regional development principles.

However, in addition to the necessary construction and improvement of the district road network throughout the coastal areas of Batu Bara, many roads in villages and sub-districts (district roads) still require serious attention to improve their surface conditions and length due to damage. This is especially true for roads leading to production centers in agriculture, forestry, plantations, and fisheries, particularly in rural areas, which are vital for supporting regional income growth (GRDP) in Batu Bara Regency.

Based on data from the Public Works and Spatial Planning Office (PUPR) of Batu Bara Regency regarding the state of road infrastructure, the total length of roads throughout Batu Bara Regency reaches 702.787 km, which consists of national roads (73.0 km), provincial roads (20.1 km), and district roads (609.687 km). For district roads, the majority of the surfaces are gravel, accounting for 40.79 percent (248.665 km), while 23.16 percent (141.217 km) are hot mix, and 16.41 percent (100.025 km) are asphalt, with rigid roads measuring 19.694 km and only 39.18 km being unpaved.

As of 2015, the condition of roads in Batu Bara Regency was predominantly at a moderate level (283.1 km), with good conditions (117.231 km), moderate damage (203.800 km), and only 5.600 km classified as severely damaged. Currently, roads are often in disrepair, buildings are not well-maintained, and bridges are damaged. This presents a very poor situation that cannot continue to persist.

In practice, we often encounter challenges, particularly in physical construction projects. For instance, those involved in the construction process frequently overlook environmental issues, leading to environmental damage during both planning and operational phases. This oversight occurs because stakeholders involved in development prioritize the outcomes or products of the construction itself, while the environmental impacts are neglected. Moreover, funds that should be allocated for road and bridge construction are sometimes misused by irresponsible individuals for personal gain. On the other hand, road infrastructure development also has significant potential to create environmental impacts that will affect the health levels of the local community.

The development of road infrastructure will lead to the establishment of main roads, the construction of drainage systems, and the branching of roads to demarcate land. This will be very important for the local environment, allowing community activities, especially in rural areas, to proceed smoothly and free from disease outbreaks. Similarly, students traveling to educational centers in the subdistrict or the district capital will experience improved mobility, which will enhance their learning processes.

The goal of economic development is to create a self-reliant and robust economy characterized by a strong and advanced industry, resilient agriculture, a thriving trade sector, and optimal utilization of natural resources to improve the equitable welfare of the people. Development priorities in the agriculture and industry sectors will continue to be enhanced to ensure sufficient production of food and raw materials to meet the needs of the population and to sustain the industrialization process (MPR Decree No. II of 2002 on the National Development Program). Therefore, to achieve the economic development objectives, one crucial sector that must be addressed is the development of infrastructure, including roads, bridges, irrigation, and other transportation facilities.

The Infrastructure Service Satisfaction Index (IKLI) is a feedback measure designed to assess the level of public satisfaction with infrastructure development by the Batu Bara Regency Government. In addition to measuring public satisfaction, it will also inventory the

desires and expectations of the community regarding infrastructure development in Batu Bara. IKLI is formulated as a basis for measuring the achievement of goals in the third phase of the Regional Medium-Term Development Plan (RPJMD), based on the direct feedback from users of infrastructure products. This index is also expected to serve as a tool that provides an objective, comprehensive, and credible overview of both physical development and its benefits (outcomes).

The measurement will be conducted in an aggregate manner for each type of infrastructure, allowing for the identification of both weaknesses and strengths of specific programs or activities. This will certainly aid in providing input and solutions in the policy-making process for infrastructure development. Infrastructure development is one of the priority agendas in Batu Bara Regency, placing the infrastructure sector as a key mission for improvement over the next five years. The objectives of infrastructure development in Batu Bara include: providing basic facilities and infrastructure, opening up isolated areas, improving and enhancing the investment climate, and providing irrigation infrastructure for agriculture and raw water supply.

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The challenges of infrastructure development and provision faced by local governments are significant, alongside the high public expectations for quality infrastructure services. Therefore, one of the efforts that must be undertaken is to conduct performance evaluations

based on the perceptions of the community using the infrastructure. This evaluation is essential for improving infrastructure services in Batu Bara Regency.

2. THEORETICAL BASIS

Infrastructure

Infrastructure refers to the physical systems that provide transportation, irrigation, drainage, buildings, and other public facilities necessary to meet basic human needs within social and economic contexts (Grig, as cited by Kodoatie, 2015). The infrastructure system is a primary support for the functions of social systems and economic systems in the daily lives of communities. Regarding physical development or infrastructure, Bachtiar Effendi (2022) emphasizes the importance of infrastructure as a support for adequate development, including the availability of public service facilities such as roads, clean water, electricity, bridges, educational facilities, healthcare facilities, places of worship, transportation, irrigation, technology, and communication. These services aim to enable communities to operate more dynamically and facilitate economic activities. The infrastructure system serves as a fundamental support for the functions of social systems and economic systems in the lives of society.

Infrastructure Service Satisfaction Index

According to Tse and Wilton (as cited in Tjiptono, 2014), customer satisfaction or dissatisfaction is the response of customers to the evaluation of the perceived discrepancy between their previous expectations and the actual performance of the product after its use. Customer satisfaction is a function of expectations and performance. Infrastructure is an activity that creates or enhances utility. The utilities created by infrastructure activities include place utility and time utility. The success of infrastructure development is determined by whether the benefit indicators (outcomes) or impacts can be achieved. This means that the development should provide direct benefits to the community, such as easier and faster access to transportation. Furthermore, the impact of the development should simplify and enhance the environment (Kenastri, 2017).

3. RESEARCH METHOD(S)

The type of research used in this study is qualitative research. Qualitative research is a type of research that presents findings not through numbers but in the form of sentences, words, schemes, images, and so on, in accordance with the facts on the ground (Budi Trianto, 2016 in Aris et al, 2024). Additionally, it is mentioned that qualitative research is usually descriptive and generally employs analysis with an inductive approach, conducted in natural situations, and the data collected is qualitative in nature (Azhari Akmal Tarigan, 2011).

Data collection techniques are the methods used to obtain the data and information needed to achieve the research objectives (Sugiono, 2017). The data collection techniques used in this study are as follows: direct observation at the research site to ascertain the objectivity of the existing reality in the field (Groat & Wang in Aziizah et al, 2024) Interviews are intended to gather information that cannot be obtained through observation (Moleong 2004 in Nuraini et al, 2023). This is because the researcher cannot observe everything. Not all data can be obtained through observation; therefore, the researcher must ask questions to informants (Moleong, 2004 in Nuraini, 2024; Nuraini, 2019).

Data analysis is the process or effort of processing data obtained from interviews, field notes, and documentation into new information so that the characteristics of the data become easier to understand and useful for solving a particular problem, especially those related to the research. This process also involves drawing conclusions that are easily understood by both the researcher and others (Sutrisno Hadi, 2018).

In this regard, the researcher employs several data analysis techniques, as follows (Moleong, 2004 in Nuraini, 2024 and Pohan, et al, 2024):

1. Data Reduction

   Data reduction can be defined as the process of summarizing, focusing on simplification, abstraction, selecting essential elements, and discarding unnecessary data that emerges from written field notes.

2. Data Presentation

   Data presentation can be done in the form of tables, graphs, and similar formats. In this writing, the researcher focuses more on presenting data using narrative text.

3. Verification

The initial conclusions presented at this stage are still provisional and will change if no strong evidence is found to support them in the subsequent data collection phase.

4. FINDINGS AND DUSCUSSION

Community Satisfaction Levels in Infrastructure Development in Batu Bara Regency

In terms of improving service quality to the community, one of the efforts made is the enhancement of village infrastructure. Infrastructure development in Batu Bara Regency focuses on the construction of new roads. The creation of new roads is one of the local government's efforts to facilitate the community in carrying out their work activities. However, the lack of community satisfaction and participation in the development activities has resulted in a slow construction process, and development policies have not been effectively realized.

In connection with the infrastructure development in Batu Bara Regency, the success of a project can be measured by the level of community satisfaction regarding the benefits of that development. Overall, the level of community satisfaction with infrastructure development in Batu Bara Regency still does not receive a positive response from the public. This is indicated by the majority of responses from the community, which state that the infrastructure development process in Batu Bara Regency is poorly executed and appears slow. For instance, access to clean water is difficult to obtain because the drainage systems for household and agricultural waste are clogged or not functioning properly. The ditches along the roads have also yet to be constructed or paved, leading to erosion of the road surface and causing flooding in residents' homes during rainfall.

Based on the results of the observations, the reasons the community does not yet feel satisfied with the infrastructure development in Batu Bara Regency are that the community believes the quality of the Batu Bara Regency government's performance is not optimal, and the benefits received by the community are not evenly distributed. As a result, the development of roads and other facilities continues to receive criticism and dissatisfaction from the public. Community satisfaction is a response to the perceived performance of public organizations. The level of satisfaction is a function of the difference between perceived performance and the community's expectations, which can experience one of three common levels of satisfaction. If performance falls below expectations, the community will be dissatisfied. If performance meets expectations, the community will be satisfied. If performance exceeds expectations, the

community will be very satisfied, happy, or pleased. The government agencies of Batu Bara Regency must be able to provide satisfaction to the community. If the community is dissatisfied with government services, it will lead to a lack of trust in the government, making improvements and the implementation of development difficult to achieve.

Based on the principles of service as established in the Minister of Administrative and Bureaucratic Reform's Decree Number: 63/KEP/M.PAN/7/2003 regarding General Guidelines for Public Service Implementation, which was later developed into 14 relevant, valid, and reliable elements that can serve as minimum indicators for measuring the Public Satisfaction Index, they are as follows:

1. Service Procedures: The ease of service stages provided to the community, viewed from the simplicity of the service flow.
2. Service Requirements: The technical and administrative requirements needed to obtain services according to the type of service provided.
3. Clarity of Service Personnel: The presence and certainty of the personnel providing the service (name, position, as well as their authority and responsibilities).
4. Discipline of Service Personnel: The commitment of personnel in delivering services, especially regarding the consistency of working hours according to applicable regulations.
5. Responsibility of Service Personnel: The clarity of authority and responsibilities of personnel in the organization and resolution of services.
6. Ability of Service Personnel: The level of expertise and skills possessed by personnel in delivering or completing services for the community.
7. Speed of Service: The target time within which the service can be completed, as determined by the service unit.
8. Equity in Receiving Services: The implementation of services without discrimination based on social class or status of the individuals being served.
9. Politeness and Friendliness of Personnel: The attitude and behavior of personnel in providing services to the community in a courteous and friendly manner, while respecting and valuing one another.
10. Fairness of Service Costs: The affordability of the service costs established by the service unit for the community.

11. Certainty of Service Costs: The alignment between the fees paid and the costs that have been set.
12. Certainty of Service Schedule: The implementation of service times according to the established provisions.
13. Comfort of the Environment: The condition of service facilities and infrastructure that are clean, tidy, and organized, thereby providing comfort to the service recipients.
14. Service Security: The assurance of safety levels in the environment of the service unit or the facilities used, so that the community feels secure in receiving services and is protected from risks arising from the service delivery.

The Batu Bara Regency Government must strive to ensure that the quality of development meets service requirements, which is a demand that must be fulfilled. This includes the process of service delivery and development in accordance with legal regulations, systems and procedures, mechanisms, timelines for completion, costs/tariffs, specifications of service types, competency of implementers, behavior of implementers, handling of complaints, suggestions and feedback, as well as facilities and infrastructure.

Factors Affecting Community Satisfaction and Participation in Infrastructure Development in Batu Bara Regency

The development of Batu Bara Regency plays a crucial role in national and regional development, encompassing elements of equitable development and its outcomes, including the fulfillment of the needs of rural communities to enhance their welfare. Effective development requires early and meaningful involvement (participation) from all stakeholders in the planning of activities that will impact them. When the participating community feels that their involvement is important, the quality, effectiveness, and efficiency of development will improve.

The main reasons for the importance of involving community participation in planning are as follows: First, it serves as a preliminary step to prepare the community for participation and is a means to foster a sense of ownership and responsibility among local residents towards the development programs being implemented. Second, it acts as a tool to gather information about the needs, conditions, and attitudes of the local community. Third, the community has the right to contribute to determining the development programs that are being executed.

Regarding the forms of community participation, there are four types: Participation in Decision-Making, Participation in the Implementation of Development, Participation in Monitoring and Evaluation of Development, and Participation in Utilizing the Results of Development. The forms of community participation refer to the manifestations of the community's contribution to its involvement. The nature of the contribution from community participation undoubtedly depends on the stages of program implementation, as the form of contribution will vary at each stage.

In the planning process, the community in Batu Bara Regency can play a role and participate in its formulation. The platform for community participation in the planning of Batu Bara Regency is through development planning deliberations. The government must be observant and quick to respond to any existing issues, particularly those concerning the interests of the public, as road facilities are an essential instrument that must be fulfilled to create comfort for the community in receiving services.

As is well known, development is not solely the effort of the government or the community; rather, it is a collective activity aimed at providing prosperity and welfare for all layers of society. The success of development in Batu Bara Regency reflects the success of national development, as the focus of national development is placed on the development of Batu Bara Regency. However, the community's participation in the development process is influenced by many factors, including both inhibiting and supporting factors.

The implementation of development is a manifestation of behaviors driven by key supporting factors, one of which is motivation. The motivation within the community is what truly encourages individuals to engage in development activities, especially when those activities meet their needs and priorities as local residents. Thus, they are motivated to participate in these development initiatives.

The following are some supporting factors for community satisfaction and participation in infrastructure development in Batu Bara Regency:

1. Community Contributions and Support

   In efforts to drive development programs, funding is one of the main drivers that determines the organization of development. The reality on the ground shows that development without sufficient funding will result in a flawed process, a phenomenon commonly experienced in every region, including Batu Bara Regency. To foster the spirit of participation or involvement of the community in development activities, not only is

financial contribution needed, but strong support from both the community and the government is also essential. Therefore, all these elements must be directly involved in achieving the goals and existence of the development itself.

2. Awareness and Willingness Factors

   Participation in a development process does not arise spontaneously; it requires something to encourage that participation. One of these is the factor of community awareness itself. The development process in Batu Bara Regency not only requires a shared sense of responsibility but also necessitates the willingness to actively contribute to the ongoing development efforts.

In addition to the supporting factors, there are also inhibiting factors that can affect the level of satisfaction and community participation in infrastructure development in Batu Bara Regency. Based on observations and interviews regarding the challenges faced, the following points can be noted:

1. Suboptimal Systems, Mechanisms, and Procedures: This is caused by the low level of human resources, a lack of understanding of the established Standard Operating Procedures (SOP) as guidelines for carrying out tasks, and the limited budget available to village governments.
2. Delays in Project Completion: These delays stem from the inadequate human resources of the development implementers and their low commitment to the work.
3. Low Competence of Implementers: This issue arises from the low qualifications of the human resources involved and their limited experience, which makes it difficult for them to understand the established SOP.
4. Insufficient Attitude of Implementers: This is due to the generally low attitude and willingness of the implementers to carry out their work for the benefit of the community.
5. Inadequate Facilities and Infrastructure: This results from the limited budget resources available to village governments to provide comprehensive and adequate facilities.

The Influence of Road Infrastructure on Regional Income (GRDP) in Batu Bara Regency

The results from both regression analyses between road length and regional income (GRDP) can serve as predictions or forecasts, indicating a strong influence and relationship between the road infrastructure indicator, namely road length (both total road length and length by condition of good and fair), and the regional income indicator, GRDP. Observations

conducted at three observation points (roads) reveal improvements and enhancements in road infrastructure that support regional income growth in sectors that contribute to the GRDP. Observations from these three road segments conclude that there are three primary GRDP sectors or business fields with significant increases resulting from the improvement in both road length and road condition along these segments. The three GRDP sectors are:

1. First, in the agriculture, forestry, and fisheries sector, well-maintained and smooth road infrastructure facilitates farmers' access to essential raw materials (fertilizers and seeds) for managing their farms and eases access for selling their agricultural produce (enabling faster and more efficient distribution). Similarly, good road conditions help improve the transportation and distribution of forestry and fishery products, thereby reducing operational (transport) costs, particularly in the coastal areas of Batu Bara Regency.
2. Second, in the wholesale and retail trade, automotive repair, and motorcycle repair sectors, good road infrastructure makes it easier for farmers to sell their produce directly to mills, factories, or households (consumers) without intermediaries (agents), which in turn increases their income. There are also many motorcycle and car repair shops along these roads, which significantly contributes to the income of local communities and, more broadly, to the GRDP of Batu Bara Regency.
3. Third, in the construction sector, road infrastructure improvements clearly increase the local government budget (APBD) allocation for infrastructure, as well as encourage private sector developments, such as factory or mill construction, and community-driven projects like residential housing. Construction activities here include new work, repairs, additions, alterations, prefabricated buildings, or structures erected on project sites, as well as simpler constructions. Many new homes and residential areas are being developed along these roads, carried out by general contractors and individual builders for private use.

In general, the GRDP of Batu Bara Regency shows that the manufacturing sector continues to dominate the economic structure of Batu Bara. This is largely due to the presence of Indonesia's largest aluminum processing company, PT. INALUM, located in Batu Bara, along with numerous companies that process raw palm materials into CPO and further refine CPO into cooking oil and its derivatives, such as PT. MULTIMAS NABATI ASAHAN. This is followed by the agriculture, forestry, and fisheries sectors, encompassing sub-sectors such as farming, hunting, and agricultural services, including food crops, seasonal horticulture, seasonal plantations, perennial horticulture, perennial plantations, livestock, agricultural

services, and hunting; the forestry and logging sub-sector; and the fisheries sub-sector. This is supported by the presence of state-owned plantations like PTPN and private plantations such as PT. LONSUM, PT. SOCFINDO, and others that bolster both commercial and smallholder agriculture, which are key sources of local income.

Road improvements (both in terms of extending road length and enhancing surface conditions) must maintain high road quality, particularly resilience to vehicle overloading. Rapid road deterioration leads to multiple losses for road users, both at macro and micro levels. On a micro level, road damage causes vehicle wear, reduces vehicle speed, increases operating costs, and lengthens travel times. On a macro level, these impacts can slow down the economy by hindering trade and reducing the accessibility of goods, which in turn lowers regional income (GRDP). Therefore, maintaining good road conditions is essential to prevent these issues. This highlights the importance of road use supervision by the Batu Bara Regency Department of Transportation, especially for heavy vehicles and high-tonnage trucks, which are known to shorten road lifespans significantly.

5. CONCLUSION AND RECOMMENDATION

In general, the GRDP of Batu Bara Regency shows that the manufacturing sector continues to dominate the economic structure of Batu Bara. This is largely due to the presence of Indonesia's largest aluminum processing company, PT. INALUM, located in Batu Bara, along with numerous companies that process raw palm materials into CPO and further refine CPO into cooking oil and its derivatives, such as PT. MULTIMAS NABATI ASAHAN. This is followed by the agriculture, forestry, and fisheries sectors, encompassing sub-sectors such as farming, hunting, and agricultural services, including food crops, seasonal horticulture, seasonal plantations, perennial horticulture, perennial plantations, livestock, agricultural services, and hunting; the forestry and logging sub-sector; and the fisheries sub-sector. This is supported by the presence of state-owned plantations like PTPN and private plantations such as PT. LONSUM, PT. SOCFINDO, and others that bolster both commercial and smallholder agriculture, which are key sources of local income.

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