Analysis of Serang City Infrastructure Service Satisfaction Index (ISSI) and Direction of Utilization of Village Funds

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Abstract. Research on infrastructure service satisfaction index, the direction of infrastructure development at the village level, and utilization of villages funds is still very minimal. The direction for the utilization of villages funds, in general, has been regulated in legislation, but there is no reference yet regarding the type of infrastructure that needs to be built in the villages, even though the process of infrastructure development planning is included in the development accountability assessment. The focus of this research is to analyze the direction of urban infrastructure development using village funds through analysis of the infrastructure service satisfaction index, community proposals, and the results of development evaluations. The research method used is qualitative through content analysis and interviews with village officials and planning officials in Serang City. The results showed that the acquisition of the infrastructure service satisfaction index value for each sub-district became a reference in determining the development of urban infrastructure, paying attention to the proposals of community priorities submitted at the meeting of urban residents, increasing the capacity of the apparatus and improving the development planning application system.

Keywords: service satisfaction, development proposals, infrastructure

1. Introduction
Good infrastructure in an urban setting is shaped by the resilience of infrastructure at lower levels. The availability of infrastructure will affect the social system and economic system of the community in a region [1]. One of the goals of the government to provide village funds is to accelerate infrastructure development in the village so that the community can improve their welfare. The need for infrastructure services in the village is very large, so there needs to be planning and priorities regarding the type of infrastructure to be built. Infrastructure development planning and priorities must be clear and require basic references, to achieve development accountability. The implementation of the use of village funds must be following planning theory because if it is not appropriate, it could be that it does not have an effective impact on development [2]

The purpose of this paper is to analyze the direction of village infrastructure development using village funds through an analysis of the infrastructure service satisfaction index, community proposals, and the results of an evaluation of development. This article tries to find answers regarding the direction of the type of infrastructure development that will be carried out in a village, by taking into account the value of the infrastructure satisfaction index, proposals from the community, and the results of evaluations of previous developments. Disbursement of new village funds is carried out in the fiscal year 2019, and the development of village infrastructure is determined based on community proposals in the village development planning consultations. The infrastructure service satisfaction index has not
been taken into consideration, even though this index is a measure of feedback from the public regarding the satisfaction of infrastructure conditions in a region. Previous studies were still very minimal discussing the direction of the type of infrastructure development based on the infrastructure service satisfaction index. Likewise, research on directives for the use of village funds for the type of infrastructure that needs to be built.

Serang City is the capital of Banten Province, Indonesia, bordering Serang Regency in the south, east, and west, and bordering Banten Bay in the north. Serang City has an area of 266.74 km², with a population of 642,586 people, spread in 6 (six) districts, and 67 villages.

![Serang City, capital of Banten Province](image)

**Figure 1.** Serang City, capital of Banten Province

2. **Research Methods**

This paper focuses on the determination or direction of the type of infrastructure development in the villages that utilizes villages funds. So far, the infrastructure development plan only refers to the community's proposal in the village development planning meeting. The existence of the infrastructure service satisfaction index can be a new reference in determining the type of infrastructure that needs to be built in an area.

This study uses qualitative methods through content analysis of several documents (Infrastructure Service Satisfaction Index, proposed development plans from the village community, and the results of the evaluation of the previous period's development), as well as interviews with several village officials and planning officials in Serang City. Primary data were obtained through interviews with village officials and planning officials in Serang City. Interviews with village officials contain views on village fund policies, difficulties encountered, references taken in infrastructure development, and suggestions on the results of evaluating the implementation of the policy. While interviews with the planning apparatus were conducted to echelon 4 officials at the Serang City Regional Development Planning Agency in charge of planning, related to the development planning process that utilizes the village funds, the amount of the budget and related regulations.

Secondary data were obtained from the Infrastructure Services Satisfaction Index (ISSI) document, a list of community proposals, and the results of the evaluation of the previous period. The Serang City infrastructure service satisfaction index consists of the satisfaction index values of each sub-district, where the value is an aggregate of the assessment of 30 components in it. At the beginning of each year, all elements of the village community attend village development planning meetings, discussing the development plans desired by residents, whether in the form of infrastructure development, or...
community empowerment. While the development evaluation is carried out at the end of each year to find out things related to the implementation of development, both in terms of success or failure.

Analysis of the ISSI document takes into account the value of each element, and the acquisition of low scores indicates the type of infrastructure that needs to be improved. The acquisition value of each district will be different because the conditions and needs of the people of each district must be different. The value of the elements of each sub-district is then taken into consideration in determining the type of infrastructure to be built because infrastructure whose services are still perceived to be lacking by the community must be immediately followed up.

At the beginning of each year, the village community attends a village development planning meeting held by the local village authority. In the deliberations discussed development plans that the community wants to carry out in the next fiscal year (N + 1), either in the form of infrastructure development plans or community empowerment. Community proposals are often overwhelming, but due to budget constraints, village officials ask the community to set their priorities. Infrastructure development will be prioritized at locations that have been severely or severely damaged. The list of priority proposals is then juxtaposed with the ISSI acquisition value for each district.

At the end of the fiscal year, an evaluation of the results of development achievements, including development carried out in the village, utilizes the village funds. Evaluation data obtained through interviews with village officials, things that need to be improved, improved again and suggestions for input to the city and central government regarding the policy of this village fund. The results of this evaluation must also be taken into consideration in the planning of village infrastructure development in the following year.

3. Literature Review

Literature that discusses the index of infrastructure service satisfaction, as well as village funds is still very limited because both are new things in infrastructure development, especially in the City of Serang. Previous research has focused more on village funds (which are different from village funds), and the satisfaction index for just one type of infrastructure.

3.1. Village Fund

The central government issued a policy of granting additional general allocation funds for villages throughout Indonesia. This policy began to be implemented in 2019, which is regulated in Minister of Finance Regulation No. 187 / PMK.07 / 2018 and Minister of Home Affairs Regulation No. 130 of 2018. Regulations state that the amount of additional general allocation funds given to villages is divided into 3 (three) district/city category: 352,941,000 rupiahs for villages in the district/city with a good category, 370,138,000 rupiahs for villages in the district/city in the category need to be increased, and 384,000,000 rupiahs for villages in the district/city in a category that needs to be improved. In 2019, Serang City is included in the category of need to be improved [9-4].

Regulation of the Minister of Finance No. 187 / PMK.07 / 2018 states that there are conditions that must be met by regencies/cities in order to obtain this additional general allocation fund. One of the conditions is that the district/city government is required to provide a special budget for the village of 5% x (the regional budget revenue minus the special allocation fund) [9-6]. Even though not all villages in Indonesia have provided the budget. This has become one of the difficulties faced by village officials in implementing this policy. The combination of additional general allocation funds and a special budget of 5% x (regional revenue and expenditure budget minus the special allocation fund) hereinafter referred to as the village funds.

Another difficulty is the limited human resources in the village, both in terms of quantity and quality. Before this policy came down, the villages never received a direct budget, because all the activity programs in the villages were carried out by the sub-district as an organization of the regional apparatus. With the existence of the villages' fund policy, the village officials suddenly received a very large amount of funds but had never experienced it before. This is certainly very risky because it involves accountability of the state budget. Research conducted in Rempoa Urban Village, South Tangerang City shows that in 2019, Rempoa Urban Village has not managed the Urban Village Fund independently, so
that it is still managed by East Ciputat Sub-district. This is because the village officials have not been adequate in receiving and managing the village's funds. [3-13]

The implementation of infrastructure development still has to go through the development planning process, and to date, it still requires improvements in each region, both village funds carried out in the district administration area, or village funds carried out in the city administration area. The search results show more research on the Village Fund, which is a budget allocation for rural development within the district administration area. Research in Mukai Mudik Village, Siulak District, Kerinci Regency shows that the average realization of the Village Fund Allocation from 2010 to 2017 reached 90.2% so that it was effective, but still not optimal so it still needed improvement [4-164]. Research in Jatiroto Village, Kayen Subdistrict, Pati Regency, Central Java Province shows that the results of the evaluation of the implementation of infrastructure activities using village funds have not paid attention to the planning aspects and it turns out that the activity program has not been optimal and is not being felt by the community itself [2-55].

3.2. Infrastructure Service Satisfaction Index (ISSI)
The infrastructure service satisfaction index is a measure of feedback to find out community satisfaction regarding infrastructure development in the region and is also expected to be the basis for determining policies on infrastructure development [8-19]. The satisfaction index calculation is based on the results of a questionnaire consisting of 30 questions related to infrastructure. The acquisition of the value of each element becomes a reference in determining the infrastructure that needs to be built.

Previous research has focused more on satisfaction or customer satisfaction surveys of one form of infrastructure, not on overall regional infrastructure. The index of community satisfaction with the construction of environmental roads in Dwikora Sub-District, Medan Helvetia Sub-District, Medan City is 3.03, which means it is categorized as good [5-20]. Medan's Kualanamu Airport customer satisfaction index reached 73.6%, which is quite satisfactory [6-418]. The customer satisfaction survey of the ABC toll road managed by PT. XYZ shows that there is still a need for socialization regarding E-payment, GTO utilization, communication centers, and free crane services. In addition to that, training on tollgate officers is needed, adding patrol frequency, checking infrastructure regularly, and adding PJU [7-29].

4. Discussion
The ISSI Serang City document contains the value of 30 infrastructure components in 6 (six) districts, namely Serang, Cipocok Jaya, Taktakan, Walantaka, Kasemen, and Curug Districts. The level of community satisfaction in each district is different, indicating the condition of the region's infrastructure. A low level of satisfaction must be paid more attention to the next development period, while the type of infrastructure with a high level of satisfaction must be maintained. The next discussion will focus on the acquisition of low elemental value, as a reference in infrastructure development plans that utilize village funds.

| Name of Districts | Point | Service Quality | Service Performance |
|-------------------|-------|----------------|---------------------|
| Serang            | 58.75 | C+             | Quite satisfied     |
| Taktakan          | 42.27 | C              | Not satisfied       |
| Cipocok Jaya      | 59.93 | C+             | Quite satisfied     |
| Walantaka         | 53.20 | C+             | Quite satisfied     |
| Kasemen           | 55.65 | C+             | Quite satisfied     |
| Curug             | 55.27 | C+             | Quite satisfied     |
| **KOTA SERANG**   | **57.71** | **C+**       | **Quite satisfied** |

*Source: ISSI Serang City Document, 2019*
Table 1 shows that there is 1 (one) district with the achievement of ISSI "not satisfied", namely Taktakan District. This dissatisfaction can be seen from the service element with the lowest satisfaction value (table 2), namely P27 (available sludge treatment plant), P28 (dam available), and P30 (City Clean Water Company/CCWC available). For service element P28, Taktakan Sub-district has been included in the planned construction site of one of the reservoirs of Sindangheula Dam in 2020. For the record, Sindangheula Dam is one of the leading infrastructure programs of the Government of Banten Province. The improvement of the P30 service element will be related to reservoir development because PDAB will get additional raw water supply from the Sindangheula Dam so that the Taktakan District area will get a clean water distribution connection.

Table 2. Infrastructure service elements with the lowest and highest satisfaction scores in 6 (six) sub-districts

| Name of Sub-districts | Number of respondents | Infrastructure service elements with the lowest satisfaction value | Infrastructure service elements with the highest satisfaction value |
|-----------------------|-----------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| Serang                | 128                   | P4, P21, P27, P28                                            | P1, P2, P26, P29, P30                                         |
| Taktakan              | 86                    | P27, P28, P30                                                 | P25                                                           |
| Cipocok Jaya          | 86                    | P30, P28, P27                                                 | P1, P4, P9, P22, P23, P26                                     |
| Walantaka             | 104                   | P30, P27, P26                                                 | P2, P25                                                       |
| Kasemen               | 40                    | P4, P27, P28, P30                                             | P1                                                            |
| Curug                 | 75                    | P27, P30                                                      | P1, P25                                                       |
| SERANG CITY           | 500                   | **P27, P30**                                                  | **P1, P25**                                                   |

Source of data: ISSI Serang City Document 2019 with modifications

Table 3. The Element of Infrastructure Services

| Code | The element of infrastructure services                  | Code | The element of infrastructure services                  |
|------|---------------------------------------------------------|------|---------------------------------------------------------|
| P1   | Road network available for various land activities      | P16  | Good residential road conditions                        |
| P2   | Checking land transportation modes regularly            | P17  | Housing drainage conditions are well                     |
| P3   | There is drainage on both sides of the road             | P18  | Residential street lighting well                         |
| P4   | Availability of passenger or freight terminals          | P19  | Complete road markings and signs according to applicable standards |
| P5   | Availability of a connecting bridge                     | P20  | Road conditions that are not slippery                    |
| P6   | Availability of drinking water treatment systems        | P21  | Checking land transportation modes periodically          |
| P7   | Road conditions are good and not narrow to be traversed for on the move | P22  | The lighting system at night is good                     |
| P8   | Travel time is not too long                             | P23  | There is attention from the government for road repairs and broken drainage |
| P9   | Waiting time for transportation at the terminal on schedule | P24  | No flooding or standing water                           |
| P10  | Good road drainage conditions                           | P25  | There was no landslide                                   |
| P11  | The condition of the passenger/goods terminal and its facilities are good | P26  | Available trash facilities                               |
| P12  | Good bridge condition                                  | P27  | Management installation available stool sludge           |
The element of infrastructure services

| Code | The element of infrastructure services                          | Code | The element of infrastructure services                          |
|------|------------------------------------------------------------------|------|------------------------------------------------------------------|
| P13  | Mode conditions that are suitable for operation                  | P28  | Dams available                                                   |
| P14  | Mode loading factor according to service standards               | P29  | Irrigation for agriculture is available and raw water           |
| P15  | Good environmental road conditions                                | P30  | City Clean Water Company (CCWC) available                       |

Source: ISSI Document, 2019

Table 4. Directions for infrastructure development that need to be prioritized in the next period

| Name of Sub-districts | Infrastructure service elements with the lowest satisfaction value | Directions for infrastructure development that need to be prioritized in the next period |
|-----------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Serang                | P4, P21, P27, P28                                                   | • Providing goods loading and unloading infrastructure                               |
|                       |                                                                    | • Conduct regular vehicle feasibility tests                                          |
|                       |                                                                    | • Constructing a sludge treatment plant                                             |
|                       |                                                                    | • Build dams or water reservoirs                                                    |
| Taktakan              | P27, P28, P30                                                       | • Constructing a sludge treatment plant                                             |
|                       |                                                                    | • Build dams or water reservoirs                                                    |
|                       |                                                                    | • Building CCWC distribution pipes                                                 |
| Cipocok Jaya          | P30, P28, P27                                                      | • Build dams or water reservoirs                                                    |
|                       |                                                                    | • Building CCWC distribution pipes                                                 |
|                       |                                                                    | • Constructing a sludge treatment plant                                             |
| Walantaka             | P30, P27, P26                                                       | • Building CCWC distribution pipes                                                 |
|                       |                                                                    | • Building a sewage treatment plant                                                 |
|                       |                                                                    | • Providing waste facilities                                                        |
| Kasemen               | P4, P27, P28, P30                                                  | • Providing goods loading and unloading infrastructure                               |
|                       |                                                                    | • Constructing a sludge treatment plant                                             |
|                       |                                                                    | • Building dams or water reservoirs                                                 |
|                       |                                                                    | • Building CCWC distribution pipes                                                 |
| Curug                 | P27, P30                                                           | • Constructing a sludge treatment plant                                             |
|                       |                                                                    | • Building CCWC distribution pipes                                                 |

Source: Analysis Result, 2020

Table 3 above shows the elements of infrastructure services with low satisfaction levels, so it needs to be prioritized in the next development period. It can be seen that the elements with low satisfaction value are almost the same in all districts, namely P4, P21, P26, P27, P28, and P30. The element in all districts is P27, which is a sewage treatment plant. The construction of a sludge treatment plant in the city of Serang has been planned for a long time, but is constrained by land and opposition from the community.

The direction of infrastructure development based on ISSI has been obtained, so then pay attention to the list of community proposals submitted at the development planning meeting in the village. The list of proposals will be focused only on infrastructure development proposals, not taking into account community empowerment proposals. Proposals will be ranked according to the priority needs of the community.

The activity budget for all proposed priorities will be divided into 2 (two), namely from the regional income and expenditure budget (RIEB) and the village funds. Activities using the RIEB budget will be carried out by relevant regional apparatus organizations, namely the Public Works Agency, and the
Public Housing and Settlement Area Agency. While the activities carried out with the village funds will be carried out independently with the community. Following are examples of infrastructure development directions in Taktakan District based on ISSI and a list of priority proposals.

Table 5. Infrastructure Development Directive based on ISSI and a list of priority proposals

| Name of Sub-districts | Directions for infrastructure development that need to be prioritized in the next period | Proposed priorities from community | Order of development priorities |
|-----------------------|---------------------------------------------------------------------------------------|-----------------------------------|--------------------------------|
| Taktakan              | • Constructing a sludge treatment plant                                               | • Tersier road                    | 1. Constructing a sludge treatment plant include providing drainage, water tunnel, and sanitary |
|                       | • Build dams or water reservoirs                                                      | • Paving block                    | 2. Build dams or water reservoirs Building CCWC distribution pipes |
|                       | • Building CCWC distribution pipes                                                   | • Drainage                        | 3. Tersier road |
|                       |                                                                                      | • Water tunnel                    | 4. Paving block |
|                       |                                                                                      | • Sanitary                        |                  |
| Blue : 1st priority   |                                                                                      |                                   |                  |
| Red : 2nd priority    |                                                                                      |                                   |                  |
| Green : 3rd priority  |                                                                                      |                                   |                  |

Source: Analysis results, 2020

The direction of infrastructure development based on ISSI and the list of priority proposals from the community can produce a sequence of infrastructure development priorities in the village, as shown in table 5. However, this does not apply rigidly, so everything needs to be communicated to the community. The community must first be given an understanding of the existence of infrastructure service satisfaction index data, and know the infrastructure elements with the lowest level of satisfaction, so these elements need to be prioritized in infrastructure development in their area. If the community agrees, then the order can be determined. Conditions in the field are also very decisive because, for various reasons, changes in infrastructure conditions are very dynamic.

After the final agreement is obtained, the next step is to input the priority order list into the development planning application system. The application system needs to be refined so that it can produce output in the form of a priority list so that the planning process can then be taken into consideration for implementing the program or activity. Besides, the application system must be able to differentiate the use of the budget for the program, which utilizes the village fund or pure regional income and expenditure budget.
5. Conclusion
The infrastructure service satisfaction index for each sub-district needs to be considered in determining the budget allocation for infrastructure development, especially infrastructure development in the villages. Village funds is very useful in realizing the availability and feasibility of the village's infrastructure expected by the community. Consideration about the elements of service infrastructure also needed to determine proposed of activity from village development planning meeting, so the community could get the benefit from this development activity.

6. Recommendation
The government of Serang City needs to increase the capacity of urban and sub-district infrastructure in the utilization of village funds because the results are needed by the community. Improvements to the application of the Budgeting and Reporting Planning Information System so that proposals can simultaneously compile a list of priority of urban infrastructure development that has been obtained based on ISSI considerations and a list of priority proposals.

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