Evaluation of slum potential settlement data collection system toward Surabaya smart government (case study: Keputih Sub District)

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Abstract. The existence of slum areas is one of the main problems that occur in the city of Surabaya. The Surabaya City Government continues to make efforts to renew the slum area data collection system in order to provide appropriate and targeted treatment. This research was conducted to evaluate the existence of the data collection system, the process and quality, also the sustainability of the slum settlement data collection system through a Likert scale assessment. The results of this study show that the existence of data collection and involvement aspects (score: 4.44) has a better performance in Keputih Sub District compared to other aspects, which are process and quality aspects (score: 4.11) and sustainability aspects (score: 4.33). Based on the evaluation results on the criteria of each aspect shows the need for improvement in the following matters: 1) potential slum settlement data collection program (score: 3.33) in the aspect of data collection and involvement; 2) the data collection process (score: 2.67) in the process and quality aspects in the data collection system; 3) improving the quality of human resources involved in data collection (score: 2.67) in the aspects of process and quality in the data collection system; 4) data recapitulation process (score: 2.67) in the sustainability aspect of data collection.

Keyword: evaluation, slum, data collection system, smart government

1. Introduction

Slum settlements are defined as uninhabitable settlements due to high levels of building density, building irregularities, high population density, low living standards of the population, and the lack of availability of housing facilities and infrastructure [1, 2]. Slum settlements develop due to the urbanization flow into the city but are not balanced by the existence of affordable residential land, so many people live on non-legal lands or under-habitable housing environments [3]. The existence of slums itself will lead to a bad paradigm of governance, especially in terms of regulating the lives of its citizens, besides that the existence of slums will lead to social inequality and a decline in the quality of life of the community [4].

The city of Surabaya itself has been committed in handling slums since 1968 through the existence of environmental improvement programs in low-income areas in Indonesia or better known as the Kampung Improvement Project (KIP) [5]. KIP itself is the first program that is successful and globally recognized, and is the largest improvement program in several countries for more than three decades [6]
The main component of KIP itself is by integrating the role of government and society in improving the village environment and reducing poverty in urban areas [5].

As for data collection on slums, the City Government of Surabaya through the Social Agency is conducting a data collection on Persons with Social Welfare Issues (PMKS) and the Potential of Social Welfare Resources (PSKS) with one of the data collection observations that are uninhabitable houses. The observations aspects in data collection of uninhabitable houses include the building ownership, space density, availability of health facilities (defecation facilities, fecal disposal sites, sources of drinking water, main lighting sources, availability of kitchens, and types of fuel for cooking a day), as well as the condition of the house in the form of floor walls and roof.

This study was conducted to evaluate the extent of the slum data collection system, the process and quality of the data produced, and how the sustainability of the data collection program that was seen from the point of view of stakeholders at the District and Sub District levels with a case study on Keputih Sub District. In Keputih Sub District, there were still several slum locations scattered among others in RW 01, RW 02, RW 03, and RW 08 [8]. By knowing the result of the evaluation, it is expected to be an input for the Surabaya City Government for implementing a more effective and efficient data collection program in the future.

2. Research methods

The research method was used in this study is a qualitative method with a descriptive approach. This method was used with the aim to be able to produce a final formula more systematically, factually, and accurately about the properties of the research object to be used [9]. This study focuses on slum areas in Kelurahan Sub District. The data collection method used is structured interviews with the Keputih Sub District and Sukolilo District. Then the data analysis method used is to assess the answers of the respondents with a Likert scale.

The evaluation of potentially slum settlement data collection systems is based on 3 aspects, namely: 1) the existence of data collection and involvement; 2) aspects of data processing and quality; 3) aspects of sustainability. Each of the three aspects has their own criteria and indicators. The scoring system of the questionnaire asked the respondents is shown in Table 1.

| No | Questions                                                                 | Score | Information                                                                 |
|----|---------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|
| 1. | Is there a slum area data collection program in your area?                 | Good 5| There is a special slum data collection program                              |
|    |                                                                           | Moderate 3| There is a data collection program where there is one point about slums |
|    |                                                                           | Bad 1| There is no data collection program                                          |
| 2. | How the involvement of the Government in the slum data collection process? | Good 5| There is an active involvement of the Government                           |
|    |                                                                           | Moderate 3| The government is passively involved                                       |
|    |                                                                           | Bad 1| The government is not involved                                              |
| 3. | How is the involvement of the community in the data collection process?   | Good 5| The community is actively involved                                           |
|    |                                                                           | Moderate 3| The community is passively involved                                        |
|    |                                                                           | Bad 1| The community is not involved                                               |
| 4. | How is the entire survey process carried out in your area?                | Good 5| Integrated with a system                                                   |
|    |                                                                           | Moderate 3| Semi manual                                                              |
|    |                                                                           | Bad 1| Manual                                                                      |
| 5. | Are there guidelines in carrying out the survey?                          | Good 5| There are technical guidelines with measurable criteria                     |
|    |                                                                           | Moderate 3| There are guidelines                                                        |
|    |                                                                           | Bad 1| There is no guidelines                                                      |
| 6. | How the human resource needs in the data collection process?             | Good 5| <10 HR involvement in data collection process                              |
|    |                                                                           | Moderate 3| Involvement of 10-20 HR in data collection process                        |
|    |                                                                           | Bad 1| >20 HR involvement in data collection process                              |
3. Result

Evaluation of the potential slum settlement data collection system in Keputih Sub District was conducted through questionnaire interviews on the parties involved. Respondents from Keputih Sub District was 3 people and from Sukolilo District was 3 people. Respondents in the evaluation of the data collection system for potentially slum settlements in Keputih Sub District are shown in Table 2.

Table 2. List of respondents

| Instantion                | Name                | Position                          |
|---------------------------|---------------------|-----------------------------------|
| Kecamatan Sukolilo        | Gingin Ginanjar     | Head of Development Section       |
|                           | Yayuk Hestimingrum  | Staff of People's Welfare Section |
|                           | Machfud Hidayat      | General Staff                     |
| Kelurahan Keputih         | Mudita Dhira Widaksa| Head of Keputih Sub District      |
|                           | Adi Priyanto         | Head of Development Section       |
|                           | Yulianiya Setiauwati| Staff of People's Welfare Section |

The results of the evaluation of a potentially slum settlement data collection system based on 3 aspects of data collection showed in Figure 1. Out of the three aspects of the data collection evaluation, the existence of data collection and involvement (score: 4.44) had better performance in Keputih Sub District compared to other aspects, namely process and quality aspects (score: 4.11) and aspects of sustainability (score: 4.33).
In the aspect of the existence of data collection and involvement in the potential data collection system of slums in Keputih Sub District produces a dominant score on the criteria of community involvement and criteria for government involvement. Evaluations on the criteria for community involvement and criteria for government involvement in data collection on slum potential (score: 5.00) indicate that the community and the government are fully and actively involved. While the criteria for the availability of slum data collection (score: 3.33) have not specifically led to slum data collection. The existing data collection is integrated in other data collection with one of the points about slums and uninhabitable settlements. The results of the evaluation of the existence of data collection and involvement in the potential data collection system for slums in Keputih Sub District are seen in Figure 2.

![Figure 1. Evaluation score of data collection aspects](image1)

In the aspect of process and quality in the potential data collection system the slums in Keputih Sub District produce a dominant score on the criteria for the availability of technical guidelines and implementation period. Evaluation on the criteria for the availability of technical guidelines in the collection of potential slum areas (score: 5.00) indicates the availability of technical guidelines in data collection with measurable criteria from other parties, namely the Social Service. The criteria for the

![Figure 2. Evaluation score of existence of data collection and involvement aspects](image2)
period of data collection are classified as good (score: 5.00) which is less than 3 months. The criteria for human resource requirements involved are more effective (score: 4.67) less than 10 human resources in the data collection process. The data quality criteria generated from the data collection process show valid data results and can be compiled all (score: 4.67). The overall criteria for the data collection process showed a semi-manual process (score: 2.67) with a questionnaire based sheet. While the criteria for the quality of human resources involved in the data collection have medium indicators (score: 2.67). Human resources involved in the data collection do not receive special training but are directly directed during the data collection process. The results of evaluation of the process and quality aspects in the potential data collection system for slums in Keputih Sub District are seen in Figure 3.

![Figure 3. Evaluation score of process and data quality aspects](image)

In the aspect of sustainability in the potential data collection system of slums in Keputih Sub District produces a dominant score on the criteria for those responsible for data compilation and program follow-up. Evaluation on the criteria for program managers in the collection of potential slum areas (score: 5.00) shows that there are sub-districts and city governments that are responsible for the data collection process. The sustainability for the data collection program are classified as good (score: 5.00), namely that there are follow-up activities in the form of handling and assistance to residents in the slums. Data update criteria (score: 4.67) shows updates every 1 year. While the criteria for the data recapitulation process show a semi-manual process (score: 2.67) compiled in an excel sheet. The results of the evaluation of the sustainability aspects of the potential data collection system for slums in Keputih Sub District are seen in Figure 4.
Based on the three aspects of the data collection evaluation above, it is found that it is necessary to improve the quality of the criteria: 1) potential slum settlement data collection program; 2) the data collection process; 3) improving the quality of human resources involved in data collection; 4) data recapitulation process. These criteria need to be improved in accordance with their respective indicators to realize an effective and efficient data collection system to support the Surabaya Smart Government program.

4. Conclusion

Based on the results of the data collection from the respondents showed an evaluation of the data collection process of potential slum areas in Keputih Sub District. The aspect of data collection and involvement (score: 4.44) has better performance in Keputih Sub District compared to other aspects, namely process and quality aspects (score: 4.11) and aspects of sustainability (score: 4.33). The criteria in each aspect indicate the need for improvement, namely on the criteria: 1) potential slum settlement data collection program (score: 3.33) in the aspect of data collection and involvement; 2) the data collection process (score: 2.67) in the process and quality aspects in the data collection system; 3) improving the quality of human resources involved in data collection (score: 2.67) in the aspects of process and quality in the data collection system; 4) data recapitulation process (score: 2.67) in the sustainability aspect of data collection.

Following up on the results of the evaluation of the data on potential slum areas in Keputih Sub District, it needs to be integrated with the Smart City framework. In the smart city framework in terms of monitoring the condition of urban settlements which in real time requires an application to report the condition of slums. The resulting application should be used by both the community and the related SKPD so that it can facilitate the data collection and monitoring of slum areas. This implementation is realized by integrating the Smart Government concept in data collection on the potential of slums.

5. References

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