



# Digital Transformation of Poverty Data Collection in Non-Coastal Upstream Cities as a Climate Adaptation Instrument for Coastal Areas: A Comparative Study of Bogor and North Jakarta

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**Abstract.** Digital transformation in poverty data collection has become an important instrument in social policy management amid increasing climate change risks. This study analyzes the role of digitalization of poverty data collection as an instrument of climate adaptation through a comparative study between Bogor City (non-coastal upstream area) and North Jakarta (coastal area). The study uses a qualitative approach with data collection techniques in the form of documentation studies and interviews, as well as thematic analysis. The results show that the implementation of digital systems such as SIKS-Next Generation (SIKS-NG) has improved data administration efficiency, but still faces obstacles in terms of interoperability, data standardization, and low community participation. In North Jakarta, poverty data has begun to be utilized in climate adaptation policies, especially in determining vulnerable groups in areas prone to tidal flooding, while in Bogor, data utilization is still administrative in nature. The study concludes that there is a gap between the actual and ideal conditions in poverty data governance. Therefore, it is necessary to strengthen system integration, increase transparency, and develop digital data collection models that are adaptive to climate risks, especially for coastal areas.

**Keywords:** digital transformation, poverty data collection, climate adaptation, coastal areas, data governance.

## 1 Introduction

Digital transformation in poverty data collection is increasingly becoming a strategic necessity in modern governance amid the growing complexity of social issues caused by climate change. Through the use of platforms such as SIKS-NG, big data integration, and updates to socioeconomic databases, the government is striving to produce accurate, transparent, and quickly accessible data [1].

Without the support of a robust digital system, the identification of poor families is prone to being inaccurate and has the potential to reduce the quality of policy interventions, especially for vulnerable groups facing socio-ecological pressures [2]. The city of Bogor, as a non-coastal upstream area, and North Jakarta, as a coastal area, exhibit very different but interrelated social conditions in the context of poverty alleviation.

Bogor faces issues of urbanization, inequality in public services, and household economic pressures. Meanwhile, North Jakarta bears the double burden of high poverty rates and climate risks such as tidal flooding, sea level rise, and land subsidence. In this situation, poverty data serves not only as the basis for social assistance but also as the foundation for climate adaptation strategies in coastal areas.

At the empirical level, digital poverty data collection in both regions still presents a picture of Dasein, or the status quo, which shows that the system is not yet working optimally. Dasein is evident in the persistence of data inaccuracy, inconsistent updates, and differences in data collection standards between agencies, which cause information overlap. The fragmentation of existing digital platforms hinders interoperability, so that data flow between levels of government is not always synchronized and can delay policy responses, especially in climate crisis situations.

Dasein is also reflected in the issue of public trust in the data collection system [3]. Many citizens feel that the verification and validation processes are not fully transparent, leading to doubts about the data collection results and government decisions regarding the status of aid eligibility. When trust weakens, public participation in the digital data collection process also declines. This condition illustrates that digital transformation faces not only technical challenges, but also social challenges that greatly affect the quality of the data produced.

Normatively, poverty data collection should move towards a more ideal condition, namely *Dassollen*, which is a system of *what should* happen in modern, accurate, and inclusive data governance. In the horizon of *Dassollen*, ideal poverty data collection should be able to update data in real time, integrate data between agencies through strong interoperability and uniform standards, and open up space for community participation to verify and ensure the accuracy of their own data. With this mechanism, poverty data is not only valid but also trusted, and better able to support climate adaptation policies that are responsive to coastal areas.

The gap between the actual conditions (*Dasein*) and the ideal conditions (*Dassollen*) highlights the need for a comparative study between Bogor and North Jakarta. This study can reveal how social, geographical, and local governance structures influence the success and obstacles of the digital transformation of poverty data collection.

The comparison can also explain the factors that strengthen or weaken data validity, public trust, and information system interoperability in two different regional contexts [4]. This research is expected to formulate a digital transformation model for poverty data collection that is more adaptive to climate change, especially for coastal areas that have a high level of vulnerability [5].

The resulting model will not only be useful for Bogor and North Jakarta, but can also be applied to other coastal areas in Indonesia. By strengthening data governance, increasing public trust, and improving inter-agency interoperability, poverty data collection can function optimally as a strategic instrument in realizing inclusive and climate-resilient social development.

This study uses a qualitative approach with a comparative study design to analyze the digital transformation of poverty data collection in the cities of Bogor and North Jakarta as an instrument of climate adaptation. Data collection techniques were carried out through a documentation study of central and regional policies, government performance reports, and relevant scientific publications, as well as semi-structured interviews with village officials, social data collection system operators, and local stakeholders. The data obtained was analyzed using qualitative thematic analysis through the stages of open coding, categorization, and thematic pattern extraction to identify gaps between factual conditions (*Dasein*) and ideal conditions (*Dassollen*), evaluate system interoperability, and interpret the relationship between poverty data quality and climate adaptation capacity in upstream and coastal areas.

## 2 Research Method

This study uses a qualitative approach with a comparative study design to analyze the digital transformation of poverty data collection in Bogor City and North Jakarta as an instrument of climate adaptation [6]. Data collection techniques were carried out through documentation studies of central and regional policies, government performance reports, and relevant scientific publications, as well as semi-structured interviews with village officials, social data collection system operators, and local stakeholders. The data obtained were analyzed using qualitative thematic analysis through the stages of open coding, categorization, and thematic pattern extraction to identify gaps between factual conditions (*Dasein*) and ideal conditions (*Dassollen*), evaluate system interoperability, and interpret the relationship between poverty data quality and climate adaptation capacity in upstream and coastal areas [7].

## 3 Research Results

The digital transformation of poverty data collection in Bogor City and North Jakarta shows different but interrelated dynamics. Data from the Central Statistics Agency shows that the poverty rate in Bogor City in 2023 was recorded at 6.67%, while North Jakarta reached 6.78%, confirming that although the geographical characteristics of the two regions are different, both face relatively equal levels of social vulnerability.

At the implementation level, both regions have used SIKS–Next Generation (SIKS-NG) as the main platform for poverty data collection. This system is managed by the Ministry of Social Affairs to manage Integrated Social Welfare Data (DTKS) and support the data update process at the local level. However, this study found that the use of SIKS-NG is still predominantly administrative in nature and has not been optimized as a predictive tool in climate risk mitigation, especially in coastal areas.

In Bogor City, digital data collection is carried out periodically and usually increases in intensity ahead of social assistance distribution [8]. This condition reflects the *Dasein* situation, namely the existence of a system that is already in place but does not yet function strategically in long-term planning. Statistical data shows that the percentage of poor people in Bogor City is in the range of 5.89%–6.67%, which indicates a dynamic improvement but still holds the potential for social vulnerability.

Unlike Bogor, North Jakarta faces more complex social and ecological pressures. This region not only faces poverty issues but also climate risks in the form of tidal flooding and land subsidence. BPS data shows that poverty in North Jakarta in March 2023 was at 6.78%, despite a decline from the previous year [9]. This shows that the issue of poverty in coastal areas has a more complex structural dimension than in upstream areas.

Climate vulnerability in North Jakarta further reinforces the urgency of integrating social and disaster data. Institutional reports show that tidal flooding in North Jakarta will reach around 35 cm by the end of 2025, which will directly impact poor coastal communities. These findings underscore the urgency of utilizing poverty data as the basis for climate adaptation policies.

This study also found data interoperability issues. Although the One Data Indonesia policy has been announced, practices in the regions show that data input and format standards between agencies are not yet fully uniform. The impact is data duplication and delays in the updating process, both in coastal and non-coastal areas [10].

Public trust is an important factor in the quality of digital data collection [11]. A study on the implementation of SIKS-NG shows that community involvement is still limited, mainly due to the lack of transparency in the verification process and low digital literacy. This situation has caused some communities to be reluctant to actively participate in data updates.

In terms of climate adaptation, North Jakarta has begun to utilize poverty data to determine priority zones for relocation and distribution of post-disaster assistance, although its implementation is still sectoral in nature. Meanwhile, Bogor has not fully integrated poverty data with its climate adaptation strategy, as this region is not located in a coastal zone with a high risk of sea level rise [12].

A comparison of the two regions shows that coastal areas require a more real-time and predictive data collection approach, while non-coastal areas tend to use periodic updates [13]. This confirms that the application of a uniform policy model is not always effective in the context of regions with different climate risks.

This study also reveals that limited human resource capacity at the local level has an impact on the quality of data management. Village officials still face limitations in technical training in large-scale data management, which results in delays in data updates.

Based on these findings, this study emphasizes the importance of an integrative model between poverty data and climate data [14].

Without such integration, social data will only function as an administrative instrument and will not be able to serve as a strategic instrument in climate resilience policies. Overall, the results of this study show that the digital transformation of poverty data has great potential to strengthen climate adaptation policies, especially in coastal areas. However, this potential can only be realized through strengthening data interoperability, increasing public trust, and standardizing cross-agency systems.

#### 4 Conclusion

The digital transformation of poverty data collection in Bogor City and North Jakarta has shown progress through the use of digital platforms such as SIKS–Next Generation (SIKS-NG), but it does not yet fully function as a strategic instrument for climate adaptation. Research findings indicate a gap between the actual conditions (Dasein) and the ideal conditions (Dassollen), particularly in terms of data interoperability, standardization, and inter-agency integration. The coastal area of North Jakarta has a higher urgency to integrate poverty data with disaster data due to its vulnerability to tidal flooding and sea level rise, while the city of Bogor still predominantly positions poverty data as an administrative instrument. Low public trust and limited human resource capacity at the local level also affect data quality and validity. Therefore, the digital transformation of poverty data collection needs to be directed towards strengthening system integration, increasing transparency, and expanding community participation so that social data not only serves as the basis for aid distribution but also as the foundation for inclusive and sustainable climate adaptation policies.

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