Social Service Applications in Overcoming Poverty: Application of the Social Welfare Information System Next Generation (SIKS-NG) in Indonesia

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Abstract. The problem of poverty is something that is felt by almost all countries in the world. This study aims to analyze poverty alleviation in Indonesia with various programs using a database using the SIKS-NG technology system. This study uses a qualitative research method. This research was conducted in Indonesia, especially in the Makassar City area of South Sulawesi Province. Data collection techniques in this study were observation, interviews and document studies relevant to the research being conducted. Nvivo was also used in the analysis stage of the results of observations, interviews and document studies. The results of this study indicate that the implementation of the SISK-NG system in Makassar City indicates a very important innovation to overcome the problem of poverty. Using this system provides good data management, transparency in recruitment and budget distribution, and facilitates communication between implementing agencies. However, the challenges faced are related to the lack of infrastructure and data security issues.

Keywords: Digital Innovation, Information Technology, Poverty, Social Welfare.

1. INTRODUCTION

Poverty is a condition in which individuals or groups do not have adequate access to economic resources, such as food, shelter, education, and health services (Fathurohman et al., 2022; Liu et al., 2020; Robiansyah, n.d.; Rusliadi & Aina, 2024; Sedlmayr et al., 2020). The factors that contribute to poverty can be very diverse, including low levels of education, limited employment opportunities, inequities in wealth distribution, and economic policies that do not favour the poor (Andari, 2021; Bahri et al., 2021; Shan & Yang, 2019). In many countries, poverty is often structural, where the existing economic and social systems tend to maintain inequality, making it difficult for people born into poverty to break out of the cycle.

The impact of poverty is not only limited to the individuals who experience it, but also extends throughout society (Rusliadi, Widianingsih, et al., 2024). Poverty can lead to increased crime rates, poor public health, and social instability (Najmi, 2019). In addition, poverty also has a negative impact on children's development, as they often do not have adequate access to education and good nutrition, which ultimately hinders their potential to thrive. Therefore, efforts to overcome poverty must be comprehensive and involve various sectors, ranging from economic policies, education, to social protection, to create a more just and prosperous society. In fact, one of the strategic steps in the effort to overcome and record the poor is already using information technology.

The use of information technology in data collection of the poor plays a crucial role in poverty reduction efforts (Rusliadi, Wahid, et al., 2024). With information technology, the government and related institutions can collect, store, and analyse data more quickly and accurately (Ribeiro-Navarrete et al., 2021). Digital data collection systems allow real-time recording of demographic, economic and social information, making it easier to identify people in need of assistance (Budd et al., 2020). In addition, this technology also enables the integration of data from various agencies, which in turn helps in the formulation of more targeted and effective policies (Malodia et al., 2021).

The use of information technology also supports transparency and accountability in the distribution of social assistance (Sofyani et al., 2020). With a centralised and open database, the risk of data duplication, fraud, or non-targeted assistance can be minimised (Prajapati & Shah, 2022). Technology-based systems such as mobile applications or online platforms also facilitate people's participation in self-reporting their conditions, which improves data accuracy and the government's response to the needs of the poor (Anderson et al., 2022). Overall, the integration of information technology in data collection helps to create a more efficient, responsive, and equitable system in poverty alleviation efforts.

One of the innovations in Indonesia in addressing poverty is using SIKS-NG (Social Welfare Information System-Next Generation) (Muji et al., 2022). SIKS-NG is a digital system developed by the Ministry of Social Affairs of the Republic of Indonesia to manage social welfare data, including data on the poor and other vulnerable groups (Purwanti, 2023). SIKS-NG is a developed version of the previous system, with various improvements in terms of technology, security, and data processing speed. The system functions as an integrated database that includes information on poor individuals and families, as well as other social assistance recipients in Indonesia.

With SIKS-NG, the government can verify and validate data more accurately and quickly, so that the distribution of social assistance can be better targeted (Andriani et al., 2023). The system also allows for the

integration of data from various agencies, creating better coordination between the central and local governments in the provision of social welfare assistance and programmes. In addition, SIKS-NG supports transparency as the data generated can be accessed by various stakeholders, including local governments and communities, to ensure that social assistance is channelled to those who truly need it.

Various studies related to SIKS-NG have actually been researched in Indonesia, proving that the topic is very influential and able to attract the interest of academics to discuss. However, after we searched the Scopus database the topic of SIKS-NG is very few, as we only found 3 documents. The documents discuss the obstacles in the use of technology in collecting poverty data in social assistance programs such as the lack of user readiness (Fikri et al., 2023). Then research from Karniawati & Andiani (2023) that the presence of SISK-NG is one of the solutions in the integrated management of poverty chests so that it is right on target and has a real impact on society. Meanwhile, research from Kardeti et al. (2021) stated that the existence of SISK-NG can integrate and accelerate data distribution from the regions to the centre. Therefore, from the 3 documents that we found in the Scopus database, it shows that how important SISK-NG is in efforts to overcome poverty problems in society. However, very little research related to the topic of SIKN-NG was found in the Scopus database.

Therefore, this research is very important to be one of the sources of knowledge in overcoming poverty problems through the SISK-NG Programme. Of course, this research is also different from the previously described research related to SISK-NG. Because this research will look more at how the implementation of SIKS-NG in Makassar City has never been studied by previous researchers. Then, the second difference, this research will also discuss the obstacles or obstacles experienced by the organiser in implementing SISK-NG in Makassar City. So, the research questions are:

1. How is the SISK-NG Programme implemented in managing poverty data?
2. What are the obstacles and appropriate solutions in the implementation of the SISK-NG Programme in Makassar City?

Through this research, it can certainly contribute greatly to the Indonesian government and globally in the utilisation of information technology in overcoming poverty problems. In addition, this research can also be an evaluation material for the government to see what are the inhibiting factors in the implementation of the SISK-NG Programme so that it can be improved as soon as possible.

2. MATERIALS AND METHODS

This research was conducted in one of the major cities in Indonesia, namely Makassar City, South Sulawesi Province. The reason for choosing this research location is because Makassar is one of the cities that is the centre of the economy in Indonesia and is the capital of South Sulawesi Province. Thus, we are interested in seeing how the dynamics of poverty alleviation through the SISK-NG Programme. Overall, this research seeks to analyse the implementation process of the SISK-NG Program in managing poverty data in Indonesia, as well as identify what are the obstacles in its implementation. Thus, it can facilitate the implementation of programmes and policies needed to address poverty. This research contributes to complementing various practical approaches in urban planning to address poverty in the Makassar city area, Indonesia.

A qualitative method was used in this research Moleong (2010), to see how the implementation of the SISK-NG Programme in managing poverty data. The data collection techniques carried out in this study began with making observations in the environment of the Makassar City Social Service, Rappicini Village Area in Rappocini District, Tamalate District. Then observations were also made by accessing SIKS-NG data with social service officers. Then interview data collection was also carried out in this study, to further sharpen data related to government and community responses in implementing the SISK-NG Programme in Makassar City. This is so that we can directly identify what are the obstacles and challenges felt by programme implementers. In addition, we also collected various document data both in the form of scientific articles, recapitulation of integrated data on social welfare in Makassar City. This technique is used to facilitate researchers and further enrich the repertoire of analyses to obtain accurate data accuracy. To make it more interesting to interpret and analyse, this research uses Nvivo 12 Pro by using the Project map, mind map, and concept map features (Woolf & Silver, 2018). Referring to what was stated by Miles, Huberman (2014), regarding interactive analysis, through research data collection, data identification, research data reduction, presentation of data related to research topics, then drawing research conclusions. drawing research conclusions The stages of data analysis can be seen in Figure 1.

Figure 1: Research method via Nvivo 12 Pro.

The stages of analysis in this study used Nvivo 12 Pro, namely data obtained by researchers through (a) observation results (The results of field notes obtained from visits from several locations in Makassar City); (b) Interviews, (The results of interviews conducted with several communities, government elements at the Makassar City Social Service, (c) Then data from journal documents and data from the government such as integrated social welfare data. Then in the initial stage, researchers identified factual data obtained from observations and interviews as well as documents obtained. The data were then processed and processed using Nvivo 12 Pro to categorise data or information. The data from the observations and interviews were then analysed using the project map and mind map features in Nvivo 12 Pro. In addition, the concept map and wordcloud features are also used to facilitate and give accuracy to the data that has been collected. In addition, the articles we obtained were also studied regarding the obstacles experienced in implementing the SIKS-NG programme in Makassar City.

3. RESULTS AND DISCUSSION
3.1. Implementation of SISK-NG Based Social Service Application in Makassar City
The Social Welfare Information System Next Generation (SIKS-NG) application programme is a management application of the Ministry of Social Affairs of the Republic of Indonesia to propose new data and improve the integrated database of the poor. The Ministry of Social Affairs of the Republic of Indonesia implements a national integrated data system in the distribution of social assistance for Beneficiaries and Social Welfare Institutions (LKS) through the Next Generation Social Welfare Information System, hereinafter abbreviated as SIKS-NG so that social assistance is right on target. SIKS-NG is an information system that supports the Integrated Social Welfare Data (DTKS) management process. SIKS NG is one of the social welfare information systems created by the Ministry of Social Affairs since 2017 with Offline modules that are not as sophisticated as they are now. SIKS-NG is a sophisticated information system designed to manage and update data related to social welfare beneficiaries throughout Indonesia. It replaces the old system, SIKS, which was less efficient and often resulted in data inaccuracies. SIKS-NG facilitates real-time data management, allowing social service providers to access and update beneficiary information immediately. This capability is important to ensure that social assistance programmes are responsive to current community needs.

The SIKS-NG system is particularly important in the context of social services as it integrates various data points related to social welfare recipients, including economic status, family composition, and eligibility for various forms of assistance. This integration enables more accurate targeting of social programmes, reducing the risk of resources being allocated to ineligible individuals while ensuring that those who are eligible receive the support they need.

The SIKS-NG (Social Welfare Information System - Next Generation) based social service application is a significant advancement in the management of social welfare programmes in Indonesia, particularly in Makassar City. The application, developed by the Indonesian Ministry of Social Affairs, aims to improve the efficiency, accuracy and transparency of social service provision. The implementation of SIKS-NG at the Makassar City

Social Service is an important step towards modernising the way social assistance is distributed, monitored and managed, to ensure that resources reach those most in need.

The implementation of the SIKS-NG system by the Makassar City Social Service is a manifestation of the city's commitment to improving the quality and effectiveness of social welfare programmes. As one of the largest cities in Indonesia, Makassar faces significant social challenges, such as poverty, unemployment, and social inequality. To address these issues, a robust and reliable social assistance programme management system is required. This is where SIKS-NG comes in.

The implementation process in Makassar involved extensive training for social service staff to ensure they were proficient in using the new system. This training was necessary as the transition from old manual data management methods to a fully digital system represents a significant change in the way social services are managed. The training covered various aspects of the SIKS-NG system, including data entry, verification processes, and the use of mobile devices for fieldwork. The latest SIKS-NG interface can be seen in Figure 2.

Figure 2: View of SIKS-NG.
Source: https://siks.kemensos.go.id.

One of the key features of SIKS-NG is its ability to be accessed and updated in real-time, even from remote locations. This feature is particularly beneficial for a city like Makassar, where some areas may be difficult to reach on a regular basis. Social service officers can collect and update beneficiary data directly from the field, so the information in the system is always current. This capability reduces the risk of errors and omissions, which are common in the old paper-based system. This application contains Integrated Social Welfare Data (DTKS), the following display can be seen in Figure 3.

Figure 3: DTKS Home View.

Through the SIKS-NG application, we can apply for DTKS and receive assistance according to community needs. The Integrated Social Welfare Data (DTKS) is a comprehensive database used by the government to identify and manage beneficiaries of social welfare programmes. DTKS consolidates data from various sources to ensure accurate targeting of assistance to low-income families and vulnerable populations. DTKS plays an important role in the effective distribution of social assistance, reducing errors and ensuring transparency in social service delivery. Through the SIKS-NG application, we can apply for DTKS and receive assistance according to community needs. The Integrated Social Welfare Data (DTKS) is a comprehensive database used by the government to identify and manage beneficiaries of social welfare programmes. DTKS consolidates data from various sources to ensure accurate targeting of assistance to low-income families and vulnerable populations. DTKS plays an important role in the effective distribution of social assistance, reducing errors and ensuring transparency in the delivery of social services.

3.2. SIKS-NG User Benefits and Barriers

The implementation of the SIKS-NG system has provided many benefits to the citizens of Makassar City. Firstly, the system has improved the accuracy and reliability of data on social welfare recipients. Accurate data is essential to ensure that social assistance is channelled to those who truly need it. By eliminating duplicate data and ensuring that only eligible individuals are entered into the system, SIKS-NG helps prevent resource allocation errors. Here's a recap of receipts for the last 3 Years

Secondly, the system increases transparency and accountability in social assistance disbursement. With SIKS-NG, all transactions and updates are recorded and auditable, reducing the potential for fraud and corruption. This transparency is important to maintain public trust in the social welfare system and ensure that assistance reaches the intended recipients.

Third, SIKS-NG has facilitated better coordination between various government agencies involved in social welfare. The system allows data sharing between different departments, such as health, education, and housing, leading to a more holistic approach to meeting the needs of the city's most vulnerable residents. This integrated approach helps to address the root causes of poverty and social exclusion, not just the symptoms. The recapitulation of integrated welfare data for the period 2023 in Makassar City can be seen in Table 1.

Table 1: Recapitulation of Integrated Social Welfare Data (DTKS) in 2024.

No	District	Individual	Family
1	Biringkanaya	46844	18788
2	Bontoala	19357	6579
3	Kepulauan Sangkarrang	10450	3498
4	Makassar	32985	11347
5	Mamajang	15911	5596
6	Manggala	35081	13422
7	Mariso	23417	7820
8	Panakkukang	41882	15832
9	Rappocini	32965	12321
10	Tallo	56059	19064
11	Tamalanrea	17290	7302
12	Tamalate	61727	22709
13	Ujung Pandang	5329	1897
14	Ujung Tanah	17631	5993
15	Wajo	6908	2489
	Grand Total	**423836**	**154657**

Source: Processed by researchers from data from the Makassar City Social Service, 2024.

Based on the data in Table 1, it shows that the recapitulation of integrated social welfare data in 2023 has differences in each sub-district in Makassar City. In 2023, the number of aid recipients recorded was 422,836 people and 154,657 families. The sub-district with the most people recorded as beneficiaries of government assistance is Tamalate Sub-district with a total of 6,727 people and 22,709 families. Followed by Tallo Sub-district with a total of 56,059 people from 19,064 families. The sub-district with the least number of people registered as recipients of government assistance is Ujung Pandang sub-district with a total of 5,329 people from 1,897 families.

The Social Welfare Information System Next Generation (SIKS-NG) is an innovation designed to improve the efficiency and effectiveness of social services. However, the implementation of SIKS-NG in the field is often faced with various barriers, especially in terms of adoption among social service providers. This study aims to identify and analyse the main barriers to the adoption of SIKS-NG in Makassar City, as well as provide recommendations for addressing these issues.

The implementation of the Social Welfare Information System (SIKS-NG) among social service providers in Makassar City has encountered a number of obstacles. These obstacles have an impact on the effectiveness of the system and the efficiency of social welfare service delivery as a whole. The following are the obstacles:

1. Technical Challenges: One significant obstacle is the technical complexity associated with the SIKS-NG system. Many social service providers, especially those with limited technological literacy, struggle to utilise the system's features to their full potential. This lack of understanding of digital tools can result in underutilisation of the system, leading to data inaccuracies and delays in service delivery SIKS-NG has many complex features and functions. This makes it difficult for social service providers, especially those less familiar with information technology, to understand and utilise the system.

2. Inadequate Training: Another important constraint is the lack of training provided to social service providers. While the system requires specific skills to operate effectively, not all users receive adequate training. This knowledge and skills gap hinders the effective use of SIKS-NG, as users cannot navigate the system confidently and efficiently [2]. One of the main barriers is the lack of adequate training for social service providers. The training provided is often too short and does not cover all the features of SIKS-NG. As a result, many social service providers struggle to operate the system and utilise its features to their full potential.

3. Resistance to Change: Resistance to adopting new technology is another problem faced by the community as beneficiaries and social service providers. Some social service providers are accustomed to traditional data management methods and may be reluctant to switch to digital platforms. This resistance stems from fear of change, lack of trust in the new system, or skepticism about its benefits. This is because according to some people in Rappocini sub-district, there is still a lack of socialization and education about the benefits and objectives of the SIKS-NG service. Resistance from a manual system to a computer-based system often causes resistance among social service providers. They feel more comfortable with the old way of working and are worried about errors in operating the new system.

4. Infrastructure Limitations: In some areas of Makassar City, especially in the reach of sub-districts, infrastructure limitations such as inadequate internet connectivity or inadequate computer hardware are significant obstacles. These limitations can cause operators in each sub-district to be unable to access the SIKS-NG system in real-time, periodic updates of the SIKS-NG system are not optimal, this result greatly affects accurate and up-to-date data management, because sub-districts are the main gateway in data collection for underprivileged people to be included as recipients of social welfare assistance by the government which will later be integrated with the sub-district.

5. Data Security Concerns: Concerns about data security and privacy are also barriers to the implementation of SIKS-NG. Social service providers are wary of using digital systems to manage sensitive personal information, fearing potential data breaches or misuse.

6. Coordination and Commitment between stakeholders: Lack of effective synergy and coordination between the Makassar City Social Service, Rappocini Village and other related agencies, not all stakeholders have a strong commitment to supporting the implementation of SIKS-NG, as evidenced by the fact that there are still some residents who claim to have never received social welfare assistance from the government, if they do not report it themselves, which basically DTPKS can collect community data through an integrated system and is guaranteed to be more accurate.

4. CONCLUSION

The implementation of the SIKS-NG system in Makassar City marks a significant moment in the innovation of social welfare services in Makassar City. This system has resulted in significant improvements in data management, transparency, and coordination between institutions, however, several challenges must be overcome to realize the main objective of SIKS-NG, namely ensuring that social service providers are adequately trained, equipped, and supported to use the system effectively. In addition, overcoming barriers to change, improving infrastructure, and improving data security will be an equally important part of overcoming obstacles to the implementation of SISK-NG.

The limitations of this study are that it was only conducted in Makassar City, so there needs to be a comparison of research from cities in Indonesia. However, this study can have a major impact on the government's progress in utilizing technology to eradicate poverty in Indonesia.

This study contributes to various countries that are still haunted by poverty. Thus, the use of technology can make the process of distributing social assistance more effective, efficient, transparent and free from criminal acts of corruption in social assistance.

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