Poverty Management Information System Application and Implementation

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Abstract. This paper discusses the design of poverty management information system in Padang city. The system has 3 functions, the output of the first function is the overall number of aggregate or per group of deciles and area based distribution (districts and sub districts) needed to stage the analysis of socio-economic conditions as well as the list of household names and addresses or/and individual to the targets of the program. The second function add the recipients programs and program data from either the central or regional data into households or/and individual. The output of the third function is household or/and individual who become the recipient of the program to have a historical data of program that has been received and the function to update the data of household variables or/and individual. The Regional Development Planning Board (Bappeda) Padang city can carry out the application that will furthermore optimize the management of the database of poverty in an innovative and integrated way. The method used in this research is a qualitative descriptive analysis, while the software development method used is Software Development Life Cycle with Waterfall model.

1. Introduction
Thinking about poverty changed in line with the passage of time, but basically related to the inability to meet basic needs [1]. According to the UNDP, "Information and communications technology (ICT) has become an indispensable tool in the fight against world poverty. ICT provides developing nations with an unprecedented opportunity to meet vital development goals such as poverty reduction, basic health care, and education far more effectively than before. Those nations that succeed in harnessing the potential of ICT can look forward to greatly expand economic growth, dramatically improved human welfare, and stronger forms of democratic government [2]. Poverty is one of the development challenges faced by almost all areas in Indonesia and became the main concern of national and Regional development. This is in line with the vision and mission of RPJMD Padang City Year 2014-2019 i.e. embodies the Padang city became a city of education, trade and tourism, a prosperous religious and Cultured [3]. With the efforts of pushing an increase in the well-being of the poor population in order to enjoy economic growth of increasingly qualified, then poverty reduction into national development priority [4]. Poverty in Indonesia and also in the world happens hereditary. When a parent from the poor family has a son or daughter, they also will live in poverty, just like their parents [5]. In order for the poverty reduction program and objectives can be implemented effectively, the use of technology in an effort to improve services for the poor population in Padang city, an integrated poverty data is needed, through the development of poverty management information systems (SIM) Padang City area. Poverty Management information system was built in order to simplify and expedite the processing of data as well as data on poverty programs/activities and budget poverty reduction programs/social protection. The system that is created can help the Regional Work Unit (SKPD) in Padang City Government to be able to view the historical data of the family/soul who has got a poverty reduction program in order to be used as a reference if the family/soul apply the program's poverty reduction can be validated if the
given program has been given or not. This research hope for the government to make an accurate targeting mechanism so that poverty alleviation programs in Indonesia does not suffered from serious under coverage and leakage. More importantly, the problem on targeting mechanism struck the programs on social protection that were by definition very important in sustaining the poor’s life

Research conducted by Nkwede Joseph O (2014) on the Approaches for Poverty Alleviation and Sustainable Development in Nigeria: A Study of Ebonyi State Community Based Poverty Reduction Agency (EB-CPRA). The results showed that all government policies and programmes directed at alleviating poverty should be comprehensive enough so as to adequately articulate the most efficient and effective ways by which various indices of poverty can be holistically addressed [6]. Research conducted by Md. Mahi uddin, Mustafa Manir Chowdhury & Afzal Ahmad (2015). The result indicates that the RDP, housing and agriculture, health and education, significantly improved the poverty situation among poor people through economic capabilities, human capabilities, protective capabilities, and political capabilities of sample households [7]. Research conducted by Taiwo J N and Agwu M E (2016) stated that the implementation of poverty alleviation programmes agencies have been wrongly identified and as such roles and functions have been wrongly allocated [8]. Research conducted by Tien Yustini (2018). The results stated that there needs to be consistency between programs/activities with budget allocations; determine the target group [9]. Research conducted by Nursini (2018) emphasized that not all activities in each poverty alleviation program are not directed directly by the poor [10].

Based on previous literature review it can be said that the allocation of poverty reduction programs is often not on target which should be intended for the poor. Therefore, this research wants to know how can the poverty reduction program be given to the right poor.

2. Method

The methods used in this research is a descriptive analysis and methodology of the implementation of the development system is basically which is primarily based on the goals, objectives, scope of work, as well as the application system as well as the data. Data retrieval in the form of an interview of the entire SKPD under direction of The Regional Development Planning Board (Bappeda) in connection with poverty reduction program that has been given to the poor. Secondary data used is the poverty reduction Program of Padang city in 2018, the Fund's budget comes from the Regional Revenue and Expenditure Budget (APBD), Provincial Regional Budget (APBD) or the State Budget (APBN) and data from an integrated Data Base (BDT), which is the poor family master data in Social Service management.

The study was conducted with the following steps:

2.1. Preparation.
The establishment and mobilization of personnel executing employment location, mapping and designing applications, the formulation of a work methodology.

2.2. Initial analysis.
System requirements analysis, analysis of input and output, secondary data Inventory, early Observation, identification and inventory of existing location data in the field.

2.3. Processing and Data analysis.
The data is sourced from BDT is master data management in of poor family in Social Service. The data menu which includes statistical data macro, micro poverty data (data that is already in the BDT verification and validation of the final version), data on poverty reduction programs.

2.4. System Construction.
Displays the results of the processing of data which may be used by BDT SKPD related, presents complete information, the design of the database, migration and integration BDT data (final version), the data will be processed in this BDT application then sorted according to budget program needs data use poverty reduction Program form Data, household Data/KK, the design of the application (data can be developed) and data integration.
2.5. **System Implementation.**
Presenting and providing training to the operators of the inductee, system development is done by making a prototype that corresponds with the system design, dissemination to provide training and knowledge so that the system can be understood and utilized optimally by SKPD poverty reduction program manager.

3. **Result and Discussion**
3.1. **The required functions:**
3.1.1. **Master data:** poor master data, sub master data, village master data, government programs poverty (Central and regional) master data, government poverty (Central and regional activities) master data, regional work unit (SKPD) master data, poverty reduction activities (SKPD) master data.
3.1.2. **Editing Data/Update Data (the data help to the poor):** Aid data (money, rice, etc.), training data, community development efforts, aid recipient who are not poor anymore data updates.
3.1.3. **Reports/information (lists/reports data periodically):** the number of poor population per village, the number of poor population per village which accept aid, the poverty reduction program has been given.
3.1.4. **Recapitulation / Statistics (presenting graphical / statistical display):** comparison of the number of poor people with beneficiaries, recapitulation of poor population based on age / occupation / gender.
3.1.5. **Utility / Tool:** import / export data, backup / restore, user management, user log, change password, application settings.

The poverty information system application stored on a server located on Diskominfo will be accessible to 13 SKPDs (regional general hospitals, Social Service, Public Welfare Service, Health Office, Manpower Office, Agriculture Service, Food Service, Marine and Fisheries Service, Cooperative and UMKM Office, DP3AP2KB and DPRKPP) who can update data on poverty reduction programs / activities from their respective SKPD. Bappeda will finally be able to monitor all poverty reduction programs/activities for evaluation of activities carried out by each SKPD.

3.2. **System Design**
In order to give a clear picture to the client about how the system will run, a use case model is made as can be seen in the following Figure 1:
3.3. Poverty information system application interface

The application of poverty management information system is a Web application that is connected to a local network computer or the internet and only requires a browser to be able to run it. The procedure for using this application can be seen in Figure 2, it begins with the appearance of the opening screen with a Login page menu consisting of "User Name" and "Password" as authentication.

![Figure 2. User Authentication Page](image)

After the user logs in, the Dashboard menu will appear, in the form of grouping Household Data - Welfare Conditions (Decil <= 40%), Number of Households in each district. Click on the sub-district, to see the Welfare Condition data for each village (see Figure 3).
Dashboard, serves to display the homepage of SIM for poverty, Individual assistance, serves to record poor citizens who have or have not received assistance in poverty alleviation programs, household assistance, serves to record poor citizens per head of household who have or have not received assistance in poverty reduction programs, RT assistance it serves to record Poor Citizens per Household who have or have not received poverty reduction assistance. Figure 4 shows Number of Households in each village in Kuranji Subdistrict with Welfare Conditions (Decile <= 40%).

In Figure 5 will be displayed, Districts and Sub-Districts targets of poverty reduction programs, Regional Work Units (Examples: Social Service) and Funding Sources of poverty reduction programs (City Regional Revenue and Expenditure Budget (APBD), Provincial Regional Budget (APBD) or the State Budget (APBN), poverty reduction programs and sub programs that will be realized, also Target - Allocation – Realization (Number of individuals who have received assistance in poverty reduction programs (to be realized)) - Program Location - Target (Individuals who get assistance from poverty reduction programs) – Selected (The number of selected individuals that will be realized).
Data search methods Individuals who get assistance programs can be done by searching for data based on NIK, NO. KK or NAME in the Search Textbox (See Figure 6 and 7).

Figure 5. Individual Assistance Menu

Figure 6. Data search

Figure 7. Poverty reduction assistance program data that has been realized report
To make it easier for users to know the poverty reduction program that has been realized by each SKPD, a report for BAPPEDA is needed so that it can be further implemented and coordinated with other SKPD regarding the work plan of the poverty reduction program for each priority SKPD for the next year (Figure 7). The validation process is seen from the results of reports issued by the system in the form of displaying data on poor people who are entitled to receive assistance for each program. From these results, it is a reference to obtain the ideal data of the poor population to get assistance in poverty reduction programs.

The results of this study reinforce previous research that programmes directed at alleviating poverty should be comprehensive enough [6], the poverty alleviation program significantly improved the poverty situation among poor people [7] and poverty alleviation program may have been wrongly allocated [8-10].

This research hope for the government to make an accurate targeting mechanism so that poverty alleviation programs in Indonesia does not suffered from serious under coverage and leakage. More importantly, the problem on targeting mechanism struck the programs on social protection that were by definition very important in sustaining the poor’s life [11]. Poor households in rural area in Padang can also get the benefit of receiving the program, because poverty rate in rural and urban has decreased gradually but the depth of poverty tends to increase in rural areas. This means that living standard of poor household in rural areas became further from the poverty line [12].

4. Conclusion
The Poverty Management Information System will optimize the management of the poverty database in an innovative and integrated manner and can be operated by users especially the regional work units in the city of Padang in a simple and user-friendly manner. Development of the Regional Poverty Management Information System (SIM) of the City of Padang was built web-based (web-based) so that it can be accessed through the internet network. Supervisor of the poverty reduction program, in this case Bappeda can carry out supervision easily so that any poverty reduction program that has been given by the regional work unit in accordance with its work plan can be given to the right individual / head of the family. This research creates a system that can be used by each SKPD in making a coordinated poverty reduction program plan policy, which can help policy makers in making decisions and recipients of more appropriate programs.

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