The Support System Decision the Determination of Poor Community Welfare with the Methods Web-Based SMARTER: Case Studies Regency Lebak the Province of Banten

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Abstract. In this country, population problem is not a problem that new again. One of the problems of population that often discussed is a matter of public welfare. Welfare society can be measured from the condition the state or the ability of each family. There are some data sources can be used as reference by the government of them data from bkkbn (cooperation agency national family planning). Data collection family activities implemented since 1994 based on statute no. 10 year 1992 concerning the development of population and prosperous family development. Data and information results data this family besides used for operational needs population program, family planning and development own family has also frequently used by other development sector, particularly to identify a really poor family. In this research in a method of smarter apply them in the support system decision the determination of the level of community welfare aims to construct a model of the determination of the level of community welfare computer-based thereby increasing the accuracy and effectiveness in doing the process of determining the level of community welfare bkkbn kabupaten lebak the province of banten based on with smarter (simple multi-attribute rating technique exploiting ranks) refined.

1. Introduction
In this country, the inhabitants of the problem are not considered new again. One of the problems of population which is often discussed is a matter of public welfare. As part of its efforts not the issue of that is really interesting to political elite. But the problem of population not a matter that is easy to resolve.[1]

The data and information obtained from the results have the power of family data collecting among others is owned by the community because of cadres done the community itself, very detailed, operational is part, can be responsible and able to equip and perfected other data who has been on the RT / RW/ hamlet or other places where at the same level. Hence, data and information based on the besides being used for the purpose of this family of program operations population, family planning
and development own family has also frequently used by other development sectors, especially to identify a really poor family.[2]

Based on research in the background, it can be identified problems that arose is:

1. A system used by State Ministry for Population/National Family Planning Coordinating Board (BKKBN) of Lebak residence, Banten province is now still in the form of a system that done manually so that the process is slow and still mistakes in classifying a family into the welfare level.

2. Encountered mistakes that impact on the implementation of wisdom that not precisely to the targets.

So from the identification of the problem of over, then the problems that will be examined is a method of what can be used in determining the level of community welfare RW 03 urban village Rangkasbitung Pabuaran Lebak district in Banten province?

So that allegedly a method of smarter (multi-attribute simple technique rating exploiting ranks) can be used in the determination of poor community welfare in Lebak residence, the province of Banten. Therefore, the aim of this research is:

1. Build a model of the determination of the welfare of the community based on a computer so can increase the accuracy and effectiveness in performing process of determining the level of community welfare BKKBN Lebak residence Banten province based on ratings with SMARTER (Simple Multi-Attribute Rating Technique Exploiting Ranks) web-based.

2. Applying the methods of SMARTER (Simple Multi-Attribute Rating Technique Exploiting Ranks) in computing for the determination of poor community welfare BKKBN in Lebak residence Banten province web-based.

2. Matter And A Method Of Approach

Data collection family activities implemented since 1994 is part of a system of information and management of family planning program national; pertaining to the provision of information and data family to gain operational data in order to the implementation of national family planning programs and prosperous family development.

Community welfare is a measure to determine the level of community s ability to fulfill the needs of his life. Who referred to the needs of life here is everything that needed which includes the human food, a garment, housing, health, education, entertainment and so forth.

Decision support the system or the support system decree (DSS) defined widely as a system of computer-based who helps people to use communication by computer, data, documents, knowledge and a model to address the problem and makes decisions. DSS is a system an additional or a system of an accomplice. DSS not intended to replace the decision makers expert [3].

SMARTER (Simple Multi-Attribute Rating Technique Exploiting Ranks) is a simple version of the smart proposed by Edwards as the development of a method of Edward earlier. The method itself is a smart decision-making technique flexible. In the decision-making, we often faced with a variety of alternative consisting of a collection of attributes. To determine the value of an alternative, first we need to know the value and the weighting of attribute. Weights here describe how important he compared with other attributes. Weighing on a method of smart using range of values between 0 to 1, so to simplify calculation and a comparison of the value of each in alternative. Weighing and the provision of the rating used by a method of smart this is what will be used to assess any alternative. The value of each alternative to the method smart can be obtained with a model as follows:

\[ \sum_{j=1}^{k} w_j \mu_{ij}, i = 1 \text{ to } k \]  

(1)
In general, if $K$ is the number of attributes, the weight of an attribute $k$ is:

$$\left(\frac{1}{K}\sum_{i=1}^{K} \frac{1}{i}\right)$$

(2)

Figure 1. Framework thought to this research:

3. Results And Discussion
Data performed to obtain data and information obtained connected with the research. For collecting data and information this the method of collecting data as follows:

1. This method used to get primary data, namely by conducting direct interview and observation field with parties department agency BKKBN Lebak residence and in part a disposition to KS later in disposition back to Rangkasbitung PLKB sub-district.
2. Secondary data was collected by observing data, read, studies and quoting from books literature, as well as sources closely related to this study.

Data analysis technique using quantitative data in the form of mathematical norms on numbers or numerical. Analysis of the data carried out through indicators each family use testing to the method SMARTER (Simple Multi-Attribute Rating Technique Exploiting Ranks). The result of this method then is used in determining of the family welfare.
From the survey data in the form of manual obtained data with a stuffing a sign checklist (√) to indicators are being fulfilled and minus (-) to an indicator that are not being met. Next a sign checklist (√) converted into the value 1 and the telltale minus (-) converted be of value 0. Next to rank done and the determination of the weightings of criteria. The determination of the family welfare with the methods smarter using 4 criteria and done rank based on the level of interest upon each criteria.

The weightings of the process of criteria:

\[ w_1 = \frac{(1+1/2+1/3+\ldots+1/k)}{k} \]  
\[ w_2 = \frac{(0+1/2+1/3+\ldots+1/k)}{k} \]  
\[ w_k = \frac{(0+0+1/3+\ldots+1/k)}{k} \]

The results of weighting criteria because of equal value in the determination of the family welfare all the criteria of the level of interests considered to have the same.

After the determination of the ranking and the determination of the weighting on the criteria then done the determination of ranking and the determination of sub criteria weights to . In the process of the determination of the welfare of the family uses 10 sub criteria that is part of each of the criteria .

\[ w_1 = \frac{(1+1/2+1/3+\ldots+1/k)}{k} \]  
\[ w_2 = \frac{(0+1/2+1/3+\ldots+1/k)}{k} \]  
\[ w_k = \frac{(0+0+1/3+\ldots+1/k)}{k} \]

**Table 1. Criteria**

| No | Criteria                  | Ranking | Weight |
|----|---------------------------|---------|--------|
| 1  | Physical                  | 1       | 0.25   |
| 2  | Spiritual                 | 1       | 0.25   |
| 3  | Active role of in society | 1       | 0.25   |
| 4  | ease of facilities        | 1       | 0.25   |

The weightings subcriteria process of criteria active role in society

**Table 2. Weights subcriteria table**

| No | Criteria       | Subcriteria       | Ranking | Weight |
|----|----------------|-------------------|---------|--------|
| 1  | Physical       | Food              | 1       | 0.456  |
| 2  |                | Clothing          | 2       | 0.256  |
| 3  |                | The house         | 3       | 0.156  |
| 4  |                | Health            | 4       | 0.09   |
| 5  |                | Savings           | 5       | 0.04   |
| 6  | Spiritual      | Religion          | 1       | 0.75   |
| 7  |                | Education         | 2       | 0.25   |
| 8  | ease of facilities | Information   | 1       | 0.75   |
| 9  |                | family planning   | 2       | 0.25   |
| 10 | Active role of in society | The role of in society | 1 | 1 |

The determination of the family welfare have 21 (twenty one ) input variables and one variable output. At this stage the assessors (kaders of family data collecting) assign a value to each each family indicators with scales the score 0 and 1. The provision of a score this must be based on the note the results of observations and monitoring dilapangan collected during the process of family data collecting. The rules of the provision of scores for every indicator is:

- The score 0 said indicators are not being met
- The score 1 said indicators have been met

The assessment of the determination of the family welfare:
1. The determination of the value of an indicator of each.
   a. Sub criteria indicators to number 1.2 and 3 included in food Sub criteria then done to indicators summation 3 these indicators.
   b. To number indicators 4 and 5 included in clothing sub criteria then done the number of indicators 2 these indicators.
   c. 6 and 7 to number indicators included in sub criteria board then done the number of indicators 2 these indicators.
   d. To number 8 and 9 indicators included in health sub criteria then done the number of indicators 2 these indicators.
   e. To number 10 and 11 indicators included in sub criteria savings then done the number of indicators 2 these indicators.
   f. To number of indicators 12 and 13 sub criteria including in education and carried out the number of 2 to an indicator of the indicators.
   g. Indicators to number 14 and 15 sub criteria including in religion and do the number of 2 to an indicator of the indicators.
   h. Indicators to number 16 and 17 included in family planning sub criteria then done the number of 2 to an indicator of the indicators.
   i. To number 18 indicators included in information.
   j. Sub criteria number of indicators to 19 and 21 sub criteria included in the role in society then done to the number of indicators 3 these indicators.

2. The determination of the value of utility of sub criteria.
   Next be a assessment of utility to each sub criteria
   \[ v(x) = \sum_{i=1}^{n} w_i v_i(x) \] (6)

   The value of utility subkriteria is the sum of total their respective indicators of criteria with weights multiplied each subcriteria the.
1. The determination of the value of utility of the criteria
   Next be a assessment of each utility to criteria .Utility value criteria is the sum of total sub criteria of each criteria multiplied with weights each of the criteria.

Table. 3 Table an example the process of determining the level of family welfare

| No | INDICATORS | THE VALUE OF INDICATORS | INDICATORS PER SUBKRICITERA VALUE | THE VALUE OF UTILITY SUBKRICITERA | UTILITY VALUE OF CRITIERA |
|----|------------|-------------------------|----------------------------------|---------------------------------|--------------------------|
| 1  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 2  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 3  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 4  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 5  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 6  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 7  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 8  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 9  | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 10 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 11 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 12 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 13 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 14 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 15 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 16 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 17 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 18 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 19 | 1          | 1                       | 1.00                             | 1.00                            | 1.00                     |
| 20 | 0          | 0                       | 0.00                             | 0.00                            | 0.00                     |
| 21 | 0          | 0                       | 0.00                             | 0.00                            | 0.00                     |
|    |            |                         | THE TOTAL VALUE                  | 1.00                            | 1.00                     |
The determination of the level of community welfare determined range based on value had been determined.

**Table. 4** The range of the value of the family welfare

| VALUE  | GROUPING NAME |
|--------|---------------|
| 0 - 0.46 | PREPROSPEROUS |
| 0.47 - 0.92 | PROSPEROUS I |
| 0.93 - 1.38 | PROSPEROUS II |
| 1.39 - 1.84 | PROSPEROUS III |
| 1.85 - 2.30 | PROSPEROUS PLUS |

The result of reckoning the trial including PROSPEROUS III. For reckoning subsequent data, then built a prototype of the support system decision the determination of the level of community welfare with the methods SMARTER web-based capable of being handled data processing in great numbers.

**Figure 2.** Research measures

In steps the above can be described as follows:
1. Testing data collected was then test in with the methods smarter to obtain the value of each this method.
2. The result of this method validation of conformity the value of each family
3. Elected algorithm applied to the manufacture of graphic a user interface (GUI) to the result of it is better used.

The author of make the interpretation of the results of research that is the determination of family welfare calculation manual already calculated beforehand by the data collection (cadres) with the wear the system has been made. The comparison in the calculation of manually with the results of the prototype system proposed is as follows:

**Table. 5** Comparison manually and SPK system
The results of the table above is a comparison of the results of the calculation of data manually 2014 data collection by the data collection with the results of a prototype of a system of decision-making the determination of the welfare of the community with a method of web-based smarter, that is happened the revision of the determination of the results of the determination of the group of the family of prosperous as many as 68 percent.[5]

4. Conclusion
By using the support system level the decision of the determination of community welfare method SMARTER with web-based produce accurate decision in the determination of the family welfare can and can be applied to determine the level of community welfare in kabupaten lebak particularly sub-district village pabuarian rangkasbitung rw 03.

5. References
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