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Analysis of recommendations for recipients of COVID-19 cash social assistance financing the ministry of social affairs

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Abstract

In order to solve the problems that exist in the economic aspect due to the COVID-19 pandemic in Indonesia, the government has implemented various programs related to economic recovery. One of these programs is social cash support or well known as Bantuan Sosial Tunai (BST). During the implementation of the program in various regions, it was reported that the recipients of the program were not properly targeted. Based on the results of a survey from one of the leading universities in Indonesia, it is known that many social assistance programs related to the impact of the COVID-19 pandemic are suspected to have not been in accordance with their goals. Based on this, the research was conducted in Bandar Lampung City. The purpose of this study was to conduct an analysis for recommendations for prospective BST recipients, namely people affected by Covid-19. The method used was profile matching by taking samples in the Jagabaya village, Bandar Lampung City. The criteria used were the job of the head of the family, wife's job, home status, number of dependents and ID cards. Based on the results of an interview with one of the BST officials in Bandar Lampung City, in this study the criteria were grouped into core factors and secondary factors. The results of the research can be used by stakeholders as recommendations for prospective BST recipients in Bandar Lampung City.

Keywords: Decision Support System; Social Grants; Covid-19 Pandemic Effect; Profile Matching

Introduction

The Corona virus pandemic or Corona Virus Disease that occurs throughout the world has greatly affected a number of aspects of life, especially among the lower class. One of them is to help the government community organize programs Covid-19 Cash Social Assistanceto reduce the burden of public spending in the midst of the epidemic Covid-19. The Cash support program of Covid-19 was designed as a substitute for the increase in the cost of living during a pandemic due to Large-scale social restriction or known as PSBB and many people who do not work due to employees reductions or layoffs as a result of the Covid-19 pandemic which resulted in many people or companies being affected by losses and economic difficulties[1].

Assistance programs provided by the government during the current pandemic are Basic Food Assistance, Cash Social Assistance (BST), Village Fund, Free Electricity, Pre-Employment Cards, Employee Salary Subsidies, and unconditional cast support (BLT) for micro and small businesses. BST is one of the aids for underprivileged communities affected by Covid-19. Nationally, the BST program has been carried out to help the lives of the lower classes with the quotas set by the government in each region. The provision of this aid fund aims to help the community during the pandemic by involving 9 million families on the condition that the community does not receive any social assistance with an amount of Rp. 300,000-600,000[2].

Based on a survey conducted through interviews with the Head of the RT (neighborhood association), the process of applying for aid funds is still collecting community data in the form of KK (family record card) to be recommended to the top level, namely the Village and Social Services. The head of the RT received information about the Covid-19 aid fund to the local community that there was a grant of aid that was deemed not right on target.

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The head of the RT suspected that the problem might occur because of inaccurate data or due to displacement of people's residences and the availability of this data sometimes could not be verified and validated because the area with the number of poor families obtained was often inaccurate in terms of both the number and location of distribution.

Based on these problems, we strongly suspect that there was a problem in determining the data. Therefore, it was necessary to carry out an in-depth analysis of the data on prospective beneficiaries. This problem can be solved by statistical approach[3][4]and math[5][6]. In general, problems in decision making there are many criteria needed in the analysis[7]. Several mathematical approaches to solving decision-making problems include Simple Additive Weighting *(*SAW)[8], Analytical Hierarchy Process (AHP)[9][10], Technique for Order Preference by Similarity to Ideal Solution (TOPSIS)[11][12]and profile maching[13][14]. This article aimed to apply the profile maching method to make recommendations for data on social assistance recipients. Profile maching was chosen because it was considered easy and widely used to solve various problems related to decision-making problems[15][16]. *Profile matching* similarly to the competency GAP which was a satisfaction-taking technique by assuming the ideal level of variables that must be possessed by the recipient not only the minimum level that must be passed.[17]. The case study raised in this article was the data on Covid-19 BST recipients at RT 11 LK 1 and RT 06 LK 3, Jagabaya sub-district, Bandar Lampung City.

Method

A. Profile Matching

Profile Matching or what is commonly referred to as competency GAP analysis is a decision-making technique by assuming the ideal level of variables that must be owned by the community, not just a minimum standard that must be passed.[17].

This study determined the weight of the GAP value with aspects of the work of the head of the family, wife's occupation, home status, number of dependents, and national ID cards in the same way. From each aspect, they would be grouped into core factor and secondary factor[13].

a. Determining Criteria
Determination of the criteria to be used along with the weights per criteria obtained from the results of interviews with the BST program staff of the Bandar Lampung City Social Service.

b. Determining the Core Factor Value

$$NCF = \frac{\sum NC(pk,pi,sr,jt,kt)}{\sum IC} \quad (1)$$

c. Determining the Secondary Factor Value

$$NCS = \frac{\sum NS(\mathrm{pk,pi,sr,jt,kt})}{\sum IS} \quad (2)$$

Furthermore, to find out more clearly the value of GAP weights, it can be seen in the calculation examples for each aspect, namely aspects of the work of the head of the family, wife's work, home status, number of dependents, and national ID cards.

Based on the calculations that have been done, the total value would be calculated based on the core and secondary factors that affect the total value of[13].

d. Determining Total Value

$$\mathrm{N\ (pk, pi, sr, jt, kt)\ =\ (x)\ \%\ NCF(pk, pi, sr, jt, kt)\ +\ (x)\ \%\ NSF(pk, pi, sr, jt, kt)} \quad (3)$$

On total, this value was determined by the value of the core and secondary factor, namely the core factor of 60% and the secondary factor of 40%. And it would be then calculated based on the sum according to the aspects of the work of the head of the family, wife's work, home status, number of dependents, and ID cards.

Next, determine the final result or ranking process for receiving aid funds with the formula, namely

e. Determining the Final Result(Rank)

$$\mathrm{Ha\ =\ (x)\%Npk\ +\ (x)\%Npi +\ (x)\%Nst\ +\ (x)\%Njt +\ (x)\%Nkt} \quad (4)$$

The following is a description of the determination of the GAP Value Weight can be seen in **Table 1**

Table 1 Determination of Gap . Value Weights

Difference	Weight	Information
0	5	There is no difference or as needed
1	4.5	Individual competence excess 1 level
-1	4	Lack of 1 level of individual competence
2	3.5	Individual competence excess 2 levels
-2	3	Competence of individuals lacking 2 levels
3	2.5	Individual competence excess 3 levels
-3	2	Individual competencies lack 3 levels
4	1.5	Individual competence excess 4 levels
-4	1	Individual competence lacks 4 levels

B. Sampling

The solving method is a formula calculation method to determine a sample of respondents from an unknown population[18].Researchers took samples using the technique of distributing questionnaires to the public. The first stage of sampling was the selection of part of the population that meets the criteria (purposive sampling), where the criteria used as samples must have been implemented. The second stage was determining the sample of respondents who were system users. The minimum number of sample communities would be calculated using **Equation 5**.

$$n = \frac{N}{1+Ne^2} \quad (5)$$

This calculation used a margin of error tolerance of 10%, from the sample population (total population/respondents) in RT 11 LK1 as many as 166 families and RT 06 LK3 as many as 97 families so that a total of 263 families can be taken, the minimum number of samples that can be taken is:

$$n = \frac{263}{1+263\ x\ 0.10^2}$$

$$n = \frac{263}{3.63}$$

$$n = 72.45$$

The minimum sample uses 72.45 respondents. The research data or data processing which was then taken in this study were 73 respondents for distributing questionnaires to the people of RT 11 LK 1 and RT 06 LK 3.

C. Measurement Scale

Measurement Scale or what is called the Likert scale is a scale based on the sum of each respondent who responds to the measured variable[19].

D. Stages of Profile Matching

The stages of research in the recommendation model for recipients of Covid-19 cash social assistance for financing the Ministry of Social Affairs are presented in **Figure 1**:

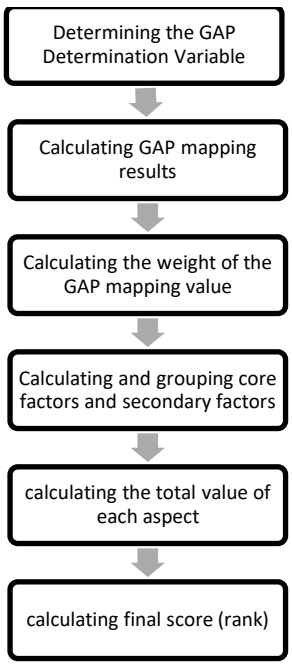

Figure 1 Stages in the Profile Matching Method

Before carrying out the process of determining the provision of community assistance funds by applying the profile matching method, the following stages must be clear:

1. Determining the aspect of the criteria along with the weights according to the criteria.
   This stage determined the assessment aspects of the criteria to be used along with the weights per criteria. This was obtained from the results of interviews with the BST program staff of social service officials of Bandar Lampung City. The following are the aspects of the assessment, the criteria, and the weights per criteria.
   a. Aspects of the Occupational Status of the Head of the Family was the work of the head of the family with a percentage of 30%
   b. Aspects of Wife's Employment Status was the wife's work with a percentage of 30%
   c. Aspect of House Status was the state of the house with a percentage of 10%
   d. Aspect Number of Dependents was the number of family dependents with a percentage of 20%
   e. The KTP aspect was the identity card with a percentage of 10%.
2. After determining the aspects of the assessment and the criteria to be used in the assessment, the next step was to provide an assessment rating for each criterion. In this case the rating used a value of 1 to 5. A value of 5 was the highest value which describes the community meeting the criteria of 90 to 100%, while the value of 1 was the lowest value describing the community meeting where the criteria was less than 60%.
3. Performing calculations on the assessment of grants and mapping of competency gaps. In this calculation, the results of community assessment were based on predetermined aspects and criteria.
4. Perform calculations and grouping into two groups, namely Core factor with a percentage of 60% and Seconcary Factor with a percentage of 40%

In this calculation, the core factor was determined with a percentage of 60% and the secondary factor with a percentage of 40%. The following was the questionnaire given and the results of the questionnaire assessment conducted by the RT presented in **Table 2**.

Table 2. Questionnaire

No	Question
Head of Family Job	
A1	Permanent Jobs (Labourers, Farmers, Civil Servants, Employees, and Entrepreneurs)
A2	Side Job (Shop, Rental, etc.)
Wife's Job	
B1	Housewife
B2	Permanent Jobs (Labourers, Farmers, Civil Servants, Employees, and Entrepreneurs)
B3	Side Job (Shop, Rental, etc.)
Home Status	
C1	Riding/Living With Parents

No	Question
C2	My own house
C3	Contract
The number of dependents	
D1	Only Dependents of Children
D2	Family Dependents (Parents or Siblings)
ID card	
E1	Domicile
E2	Transfer

Then processed the data based on the alternatives presented in **Table 3**

Table 3. Alternative Data (Weighting)

No.	Name	RT	A1	A2	B1	B2	B3	C1	C2	C3	D1	D2	E1	E2
1	Ridwan Nurfariki	11	4	0	5	0	0	3	0	0	0	2	2	0
2	Suprapti	11	4	0	5	0	0	0	1	0	1	0	2	0
3	Khairul Anwar	11	3	0	5	0	0	0	1	0	1	0	2	0
…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
71	Velisia	06	5	0	0	0	0	0	1	0	1	0	2	0
72	Riyadi Sapon	06	3	0	5	0	0	0	1	0	1	2	2	0
73	Hj. Suparni	06	5	0	0	0	0	0	1	0	1	0	2	0

Then carry out an assessment using the criteria and weights determined in accordance with **Table 4**.

Table 4. Ideal Value Limit

Criteria	Ideal Profile	Weight
The occupation of Family's Head	5	30%
Wife's Job	5	30%
Home Status	3	10%
The number of dependents	2	20%
ID card	2	10%

Results and Discussion

The results of the discussion carried out were calculated using the profile matching method, the following is thev calculations carried out according to the weight of the provisions in Table 1, the following is the results of the calculation and weighting as seen in **Table 5**

Table 5. Results of the Work Aspects of the Head of the Family

No	Name	1	2	1	2	3	1	2	3	1	2	1	2
1	Ridwan Nurfariki	4	0	4	0	0	3	0	0	0	2	2	0
2	Suprapti	4	0	4	0	0	0	1	0	1	0	2	0
Ideal Profile		4	4	4	4	4	3	3	3	2	2	2	2
1	Ridwan Nurfariki	0	-4	0	-4	-4	0	-3	-3	-2	0	0	-2
2	Suprapti	0	-4	0	-4	-4	-3	-2	-3	-1	-2	0	-2
Weighting Results													
1	Ridwan Nurfariki	5	1	5	1	1	5	2	2	3	5	5	3
2	Suprapti	5	1	5	1	1	2	3	2	4	3	5	3

Information :

Core Factor

Secondary Factor

The next stage was calculating the value of each aspectas as grouping core and secondary factors as shown in **Table 6**.

Table 6. Calculation of Core Factor and Secondary Factor

No	Name	Family Head Job		Wife's Job		Home Status		The number of dependents		ID card	
		CF	*SF*	*CF*	*SF*	*CF*	*SF*	*CF*	*SF*	*CF*	*SF*
1	Ridwan Nurfariki	$\frac{5}{1}$= 5	$\frac{1}{1}$= 1	$\frac{5+1}{2}$= 3	$\frac{1}{1}$= 1	$\frac{5+2}{2}$= 3.5	$\frac{2}{1}$= 2	$\frac{3}{1}$= 3	$\frac{5}{1}$= 5	$\frac{5}{1}$= 5	$\frac{3}{1}$= 3
2	Suprapti	$\frac{5}{1}$= 5	$\frac{1}{1}$= 1	$\frac{5+1}{2}$= 3	$\frac{1}{1}$= 1	$\frac{2+3}{2}$= 2.5	$\frac{2}{1}$= 2	$\frac{4}{1}$= 4	$\frac{3}{1}$= 3	$\frac{5}{1}$= 5	$\frac{3}{1}$= 3

Based on **Table 6**, the core factor value would be calculated with a percentage of 60% and secondary factor with a percentage of 40%, the following is the calculations carried out in **Table 7**.

Table 7. Total Calculation

No	Community Name	N1	N2	N3	N4	N5
1	Ridwan Nurfariki	(60% x 5) + (40% x 1) = 3.4	(60% x 3) + (40% x 1) = 2.2	(60% x 3.5) + (40% x 2) = 2.9	(60% x 3) + (40% x 5) = 3.8	(60% x 5) + (40% x 3) = 4.2
2	Suprapti	(60% x 5) + (40% x 1) = 3.4	(60% x 3) + (40% x 1) = 2.2	(60% x 2.5) + (40% x 2) = 2.3	(60% x 4) + (40% x 3) = 3.6	(60% x 5) + (40% x 3) = 4.2

After the calculation phase was completed, the result value of the maching profile would be calculated. Based on the calculation of the final results of the profile matching ranking process, the most appropriate recipients can be ranked according to the highest value, in this ranking a recommendation would be made on the results of calculations against the views of the Ministry of Social Affairs 2020 and RT. According to the largest criteria score, 4, the standard of assessment obtained was based on interviews conducted with the RT, the people who were entitled were those whose score at least 2.5. If the value obtained was below 2.5, then it is not recommended because it is counted as a wealthy group of people, it can be seen in **Table 8**.

Table 8. Ranking

List of BST Recipients with Profile Matching Method	RT	Na	Recommended
Ridwan Nurfariki	11	3.15	Yes
Komara	11	3.15	Yes
Sardi 2	11	3.15	Yes
Solihin	11	3.14	Yes
Muslim	11	3.14	Yes
…		…	
Sugiarno	11	2.4	Not
Zulkarnaen	06	2.33	Not
Nila Andriyani	11	2.28	Not
Suntoro	11	2.24	Not
Hi. Sofwan. AR.	11	2.24	Not

Based on the original data, there were 73 people data recommended to receive the Covid-19 BST aid funds in RT 11 area 1 and RT 06 area 3 and based on calculation analysis data using profile matching BST Covid-19 in RT 11 neighborhood 1 and RT 06 Environment 3 as much as 69 residents who matched the statement of the results of the RT recommendations, as well as calculation analysis data using the BST Covid-19 profile matching as many as 23 residents with the statement of the results of the Ministry of Social's 2020 recommendation so that the percentage can be calculated as follows:

$RT = \frac{69}{73} x\ 100\%$= 94.52%

$Kemensos\ 2020 = \frac{23}{73} x\ 100\%$= 31.50%

So it can be concluded that the original data and the calculation results of the recipients of the recommendation assistance funds from RT was 94.52% and the similarity of data from the Ministry of Social Affairs 2020 was 31.50%. In this study, the criteria for the work of the head of the family, wife's work, home status, number of dependents, and place of residence according to the national ID card were used in determining the receipt of Covid-19 social assistance funds. *Profile matching* method can be used to provide recommendations for receiving social assistance in Bandar Lampung City because this calculation can make comparisons between one community and another according to the criteria possessed so that it can produce which community has the most appropriate matching value (yes-yes) according to RT and the Ministry of Social Affairs 2020 In receiving assistance, based on table 8, there were several people who were judged to be unmatched (no-yes or yes-no) it can be concluded that the community was still qualified enough to get aid funds.

Based on the ranking table recommended by RT and the Ministry of Social Affairs 2020, there was 63.02% gap difference, it can be concluded that the data obtained from the Ministry of Social Affairs may have criteria that were not known or updated to the RT such as marital status (married, single, widowed, and widowed). and residents' income (high, medium, and low).

Conclusion

In order to overcome government problems related to aid programs that were not given to the right people, it is necessary to have a good decision analysis. In this case, it is conducted by applying the profile matching method. The results showed that there was a gap between BST recipient data and profile matching recommendation data. The level of similarity between the profile maching calculation data and the opinion of the RT (neighborhood administration) head reached 94.52%, while the results of the profile maching calculation with the data for the 2020 Ministry of Social assistance recipients only scored 31.50%. The profile matching method can be used for problems related to other decisions such as Basic Food Assistance, Village Fund BLT, Free Electricity, Pre-Employment Cards, Employee Salary Subsidies, and BLT for micro and small businesses.

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