Implementation Method of Weighted Product (WP) Determining The Amount of Distribution Zakat Funds to Mustahik

1st Imam Subchi [1], 2nd M. Tabah Rosyadi[2], 3rd Denis Oktavianto[2], 4th Siti Ummi Masruroh[2], 5th Tien Rohmatin[3], 6th Anggraeni Endah K[4]
{Imam.subchi@uinjkt.ac.id[1], tabah.rosyadi@uinjkt.ac.id[2], denis.oktavianto@gmail.com[2], ummi.masruroh@uinjkt.ac.id[2], tien.rahmatin@uinjkt.ac.id[3], anggraeniwijayanto@unsa.ac.id[4]}

UIN Syarif Hidayatullah, Faculty of Adab and Humanities, Jakarta, Indonesia[1], UIN Syarif Hidayatullah, Department of Informatics, Jakarta, Indonesia[2], UIN Syarif Hidayatullah, Faculty of Ushulludin, Jakarta, Indonesia[3], University of Surakarta, Faculty of Law, Indonesia[4]

Abstract. Zakat is one of the obligations that must be met as a Muslim. Recipient of zakat in Islam is called a Mustahik. Baitul Maal Hidayatullah as one of the zakat institution in Indonesia is calling for a zakat funds to Mustahik right. In the process of distribution of zakat, BMH sometimes have little trouble memporsikan nominal amount of the distribution of zakat funds to Mustahik. The distribution of zakat funds were good and fair is an obligation for BMH in giving zakat funds to Mustahik, according to the background of each Mustahik. Background factors could be considered fair in the distribution of zakat funds to Mustahik, so there is no jealousy between Mustahik. BMH to facilitate the channeling zakat, then takes a decision support system. Implementation Method of Determining the Amount of Weighted Product In Against Mustahik Zakat Disbursement will allow BMH in calculating zakat funds will be received in accordance Mustahik their background. This decision support system was developed using the programming language PHP and using MySQL to manage the database. Calculation method for determining the amount of the distribution of zakat funds to Mustahik using Weighted Product (WP). This method will do the calculations based on the criteria that have been determined and taking into account the values of alternatives based on these criteria. The end result of this decision-making system, BMH can determine the amount of nominal distribution and charity towards each Mustahik.

Keywords: Decision Support Systems, Distribution of Zakat Fund, Mustahik, WP

1 Introduction

According to the language, the word "zakat" means growing, growing, lush or growing. In the Al-Quran and hadith mentioned, "God destroyed the usury and fertilize the charity" (QS. Al-Baqarah [2]: 276); "Take alms of their wealth, the charity that you cleanse and purify them" (QS. At-Tawbah [9]: 103); "Dole will not reduce property" (HR. Tirmizi). The distribution of zakat funds is one way to create income generation and reduce the gap between the poor by the rich, so as to create a prosperous life as aspired Islam.

ICONQUHAS 2018, October 02-04, Bandung, Indonesia

DOI 10.4108/eai.2-10-2018.2295535

In channeling zakat funds Amilin less attention to the background of Mustahik, although they are included in class 8 Mustahik. Background based on such, income level, the level of consumption, or ability level can form the basis for determining the amount of the distribution of zakat funds to Mustahik. Zakat is actually not just to meet the needs of consumer goods that character for a moment, but give the sufficiency and prosperity on them, in a way to eliminate or minimize the causes of their lives for the poor and suffering.

As one of the zakat, Baitul Maal Hidayatullah (BMH) has helped many Mustahik with one of the economic program to help a previously existed as Mustahik could be a Muzakki. With some Mustahik criteria predetermined by BMH in distributing zakat funds to Mustahik, BMH sometimes have to estimate how much zakat funds will be channeled to Mustahik for the right target.

To help this, known as Decision Support Systems (DSS). This system helps to facilitate decision-making based variables are appropriate and necessary to produce a useful information. This system is used to help make decisions in situations of semi-structured and unstructured situations, where no one knows for sure how the decision should be made.

In the Decision Support System (DSS) itself, there is one method that is used in the search for decision support that method Weight Product (WP). Product Weight method is one method of settlement on MADM problems. This method evaluates several alternatives to a set of attributes or criteria, where each attribute each independently of one another.

The method of Weighted Product use multiplication techniques to connect rating attributes, where each attribute rating should be raised to advance with the corresponding attribute weights. This process is similar to the process of normalization

2 Research Methods

2.1 Data Collection Method

In compiling this thesis the writer will use the data collection method as follows:

a) Interviews

This method is done by conducting interviews to parts and Utilization Program Baitul Maal Hidayatullah, Mr Ade Syariful Allam regarding related problems. This is done in order to obtain complete information - details about the distribution of zakat funds terhdap Mustahik in Baitul Maal Hidayatullah as acauan in conducting this research. In this interview there are some questions about the assessment process for the selection of Mustahik ongoing and expected solution. The timing of the interviews were conducted at :

Place	: Baitul Maal Hidayatullah
Day	: Tuesday
Date	: 5 April 2016
Addressed	: Bapak Ade Syariful Allam
Title	: Director of Programs and Reforms

b) Study Library

Researchers to study literature by reading and studying books related to the analysis and design of Decision Support Systems (DSS), web programming as well as books that support the method of Weighted Product and waterfall system development methods discussed in the preparation of this thesis. There are several books that may be referenced in this thesis sunan turtles and for a list of books - books can be seen on the bibliography.

2.2 System Development Method

System development method used in this study is a Waterfall. The stages in Waterfall method are: requirements analysis and definition, system and software design, implementation and unit testing, integration and system testing, and operation and maintenance.

3 Implementation

3.1 Analysis of Current System

Analysis of walking needed to assess how the existing system in BMH..

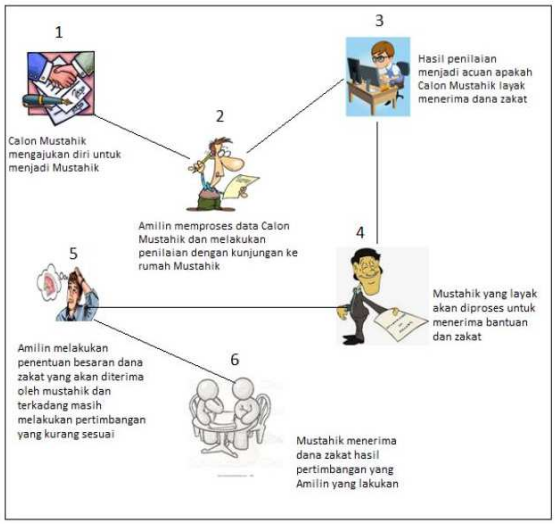


Figure 1. Analysis of Current System

This is an explanation of the analysis contained in the system is running BMH:

1. Candidates Mustahik volunteered to be a Mustahik at BMH by handing over personal data to be processed by Amilin.
2. Amilin do Mustahik candidate data processing and assessment by conducting home visits Mustahik candidate.
3. The results of these assessments become a reference in the feasibility mentukan Mustahik whether the candidate eligible to receive zakat funds.
4. After assessment by Amilin based on specified criteria, will be processed Mustahik eligible to receive aid and charity.
5. Determination of the amount of charity funds that will be channeled into consideration Mustahik remains to be done manually so that sometimes the nominal amount received less in accordance with the results of assessment between Mustahik with each other Mustahik.
6. Mustahik receive zakat according to the results of the consideration Amilin who served as a charity fund managers based on the assessment, by the time of survey.

3.2 Supplementary Analysis System

Based on the analysis of system running research, the writer makes an analysis of follow-up with the aim to improve the existing system.

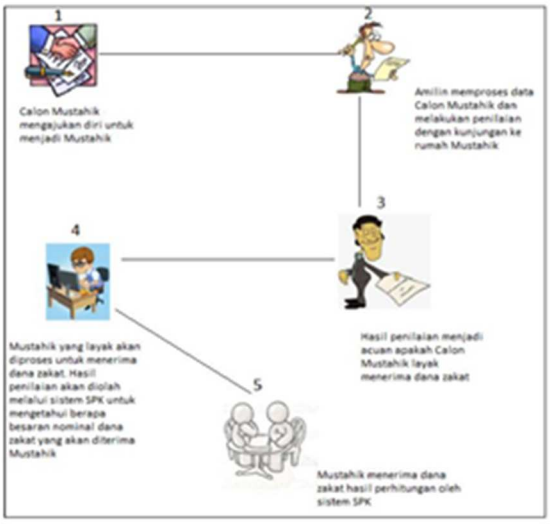


Figure 2. Supplementary Analysis System

Here's an explanation of subsequent system analysis, as follows:

1. Candidates Mustahik volunteered to be a Mustahik at BMH by handing over personal data to be processed by Amilin.
2. Amilin do Mustahik candidate data processing and assessment by conducting home visits Mustahik candidate
3. The results of these assessments become a reference in the feasibility mentukan Mustahik whether the candidate eligible to receive zakat funds
4. After assessment by Amilin based on specified criteria, will be processed Mustahik eligible to receive aid and charity. Results of the assessment will be processed through a CMS system to find out how the amount of nominal zakat funds to be received Mustahik.
5. Mustahik receive zakat according to the results of calculations performed by the CMS system determining the nominal amount of the distribution of zakat funds to Mustahik.

3.3 Perhitungan Manual WP

Implementation methods Weighted Product (WP) in the application decision support system for determining the nominal amount of zakat fund distribution will be explained in the manual calculation method :

Table 1. Eight Assessment Criteria

No.	Assesment Criteria	Symbols Criteria	Status Criteria	Eeight Criteria
1	Age	C1	Benefit	1
2	Status Of	C2	Benefit	4

	Residence			
3	Income	C3	Cost	5
4	Debts and Receiveables	C4	Benefit	4
5	Daily Spendings	C5	Benefit	4
6	Smoke	C6	Cost	4
7	Monthly ASSchool Fee	C7	Benefit	2
8	Electricity School Fee	C8	Benefit	2

Table 2. Assesment Mustahik

Criteria	Oki	Roni	Adih
Age	25	24	24
Status Of Residence	3	1	2
Income	1000000	1000000	2000000
Debts And Receiveables	300000	250000	500000
Daily Spendings	50000	45000	60000
Smoke	2	1	2
Monthly Asschool Fee	100000	50000	100000
Electricity School Fee	70000	80000	120000

The next step was to make the weight criteria, the following calculations:

$$\mathbf{Wj} = \frac{Wj}{\sum Wi}$$

Where :
W = Weight of criteria j = Criteria

a. Age Criteria (C1)
$W_1 = \frac{1}{1+4+5+4+4+4+2+2}$
$W_1 = 0.04$

b. Status Of Residence Criteria (C2)
$W_2 = \frac{4}{1+4+5+4+4+4+2+2}$
$W_2 = 0.15$

c. Income Criteria (C3)
$W3 = \frac{5}{1+4+5+4+4+4+2+2}$
$W3 = 0.2$

Table 3. Improvement Weight

Repair Criteria Height

1	0.04
2	0.15
3	-0.2
4	0.15
5	0.15
6	-0.15
7	0.08
8	0.08

The next step is to calculate the vector S, where the data will be multiplied, but reappointment previously done with weights

$$S = (Wij^{Awj}. w) . (Win^{Awn}. w)$$

Where :
W = Weight of criteria / sub-criteria
J = Criteria
S = Preference alternative analogy as vector S

a. S1 (Oki)

S1 =

$$25^{0.04} * 3^{0.15} * 1.000.000^{-0.2} * 300.000^{0.15} * 50.000^{0.15} * 2^{-0.15} * 100.000^{0.08} * 70.000^{0.08}$$

S1 = 1,13 * 1,17 * 0,06 * 6,63 * 5,06 * 0,98 * 2,51 * 2,44
S1 = 17,77

b. S2 (Roni)

S2 = 1,13 * 1 * 0,06 * 6,45 * 4.98 * 1 * 2,37 * 2,46

$$24^{0.04} * 1^{0.15} * 1.000.000^{-0.2} * 250.000^{0.15} * 45.000^{0.15} * 1^{-0.15} * 50.000^{0.08} * 80.000^{0.08}$$

S2 = 15,28

c. S3 (Adih)

S3 =

$$24^{0.04} * 2^{0.15} * 2.000.000^{-0.2} * 500.000^{0.15} * 60.000^{0.15} * 2^{-0.15} * 100.000^{0.08} * 120.000^{0.08}$$

S3 = 1,13 * 1,10 * 0,05 * 7,15 * 5,20 * 1,10 * 2,51 * 2,54
S3 = 16,97

After doing the calculations to get the value of each vector S Mustahik, then after that the authors calculated to determine the value of vector V, the following calculation to find the value of each vector V :

$$V_{jn} = \frac{Si}{\sum Si}$$

V1 (Oki)

V1 $= \frac{17,77}{50.02} = 0,35$

b. V2 (Roni)

V2 $= \frac{15,28}{50,02} = 0,31$

c. V3 (Adih)

V3 $= \frac{16,97}{50,02} = 0,34$

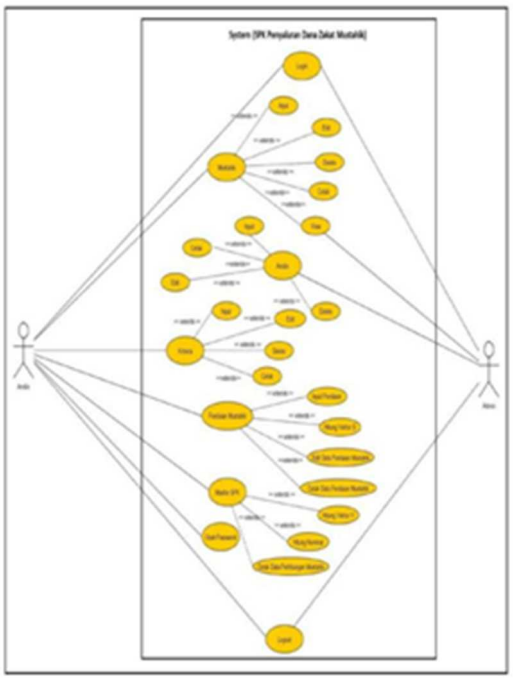
Value Vector V which is owned by each Mustahik, will then be multiplied by the nominal zakat funds will be channeled by BMH to the Mustahik. Nominal Zakat funds would be channeled Rp. 1,000,000. Here's the end result :

Table 4. Mustahiq Nominal Zakat

Mustahik Name	Nominal Distribution
Oki	Rp. 330.000
Roni	Rp. 310.000
Adih	Rp. 340.000

3.4 Use Case Diagram

Use case diagram is a description of the functionality of a system, so that the customer or system users know and understand about the usefulness of the system to be built. Use case diagram is a system from the perspective of the system user (user), thus making the use case is more emphasis on the existing functionality in the system, not based on the flow or sequence of events.



The figure 3 is the use case diagram in making a decision support system that I did. In making the use case diagram, there are two actors who have their respective functions.

Amilin is the zakat institution that will be using this system. Amilin which will take a decision in assessing the Mustahik in calculating the nominal amount of the distribution of zakat funds. Admin is the zakat institution that will use this CMS system to manage data Amilin in zakat institution.

4 Result

After all the stages of making a decision support system for determining the amount of zakat fund distribution terhdap Mustahik has been completed, the results display will be explained in the picture below :

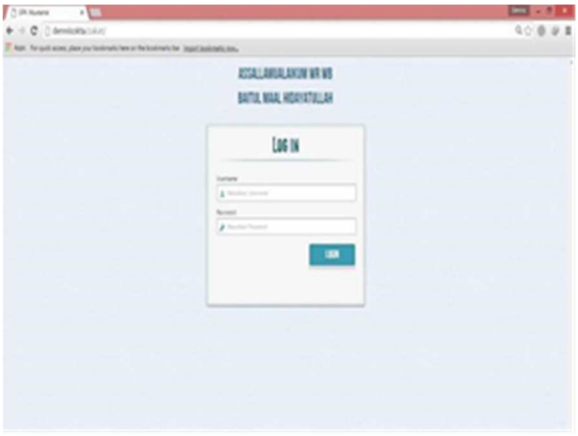


Figure 4. Login Page Views

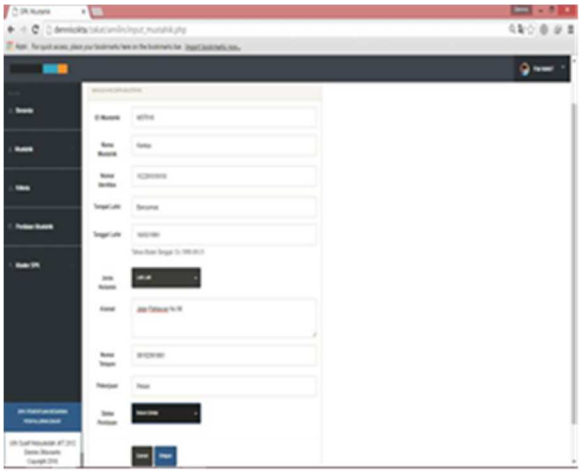


Figure 5. Input Display Mustahik

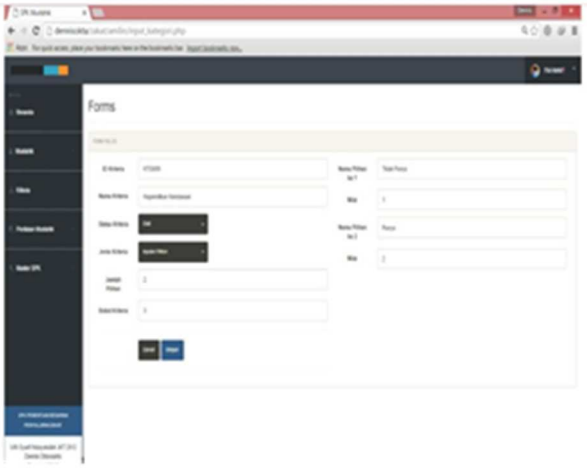


Figure 6. Input Display Criteria

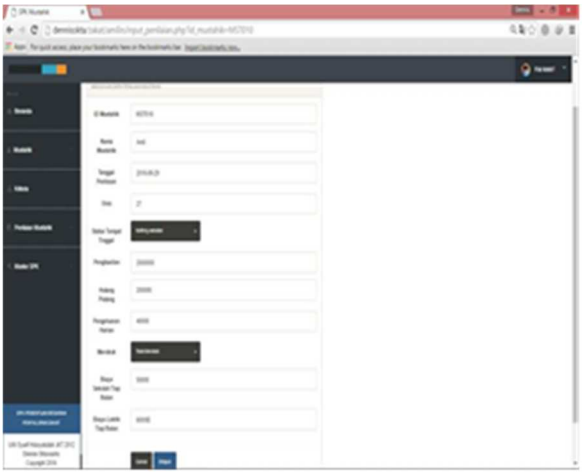


Figure 7. Page Views Input Ratings

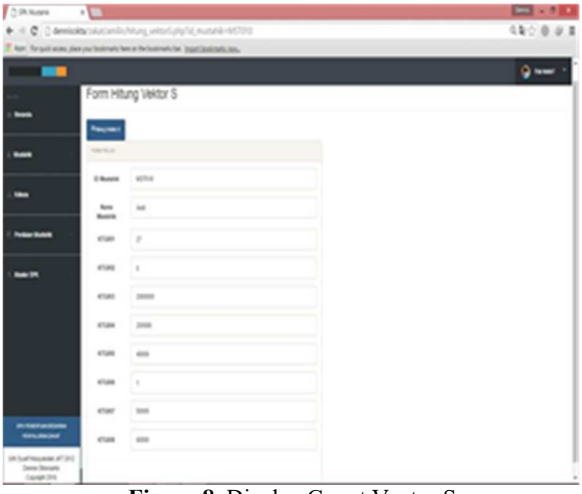


Figure 8. Display Count Vector S

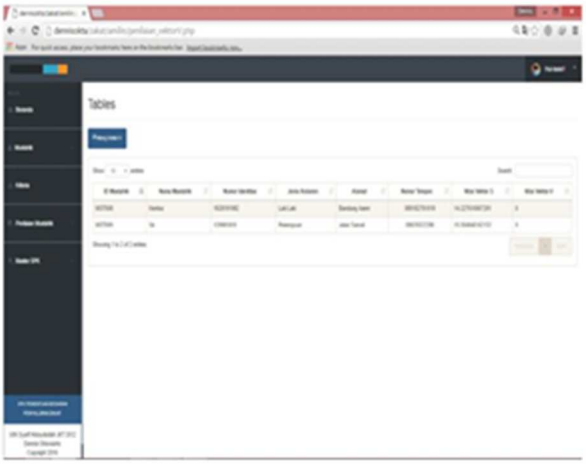


Figure 9. Display Count Vector V

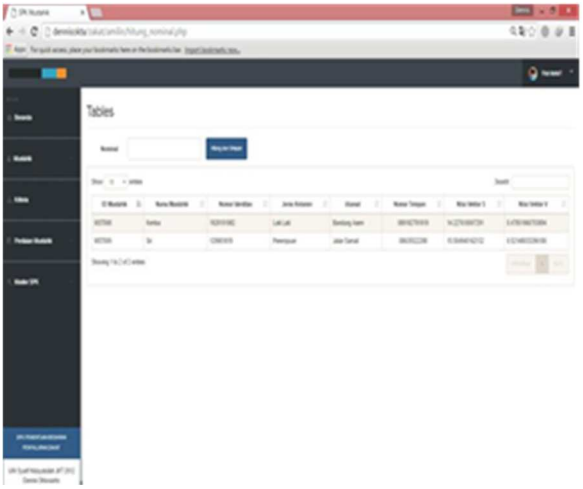


Figure 10. Display Count Nominal

5 Conclusion

Based on the results of the research that the author has explained, it can be concluded that:

1. Implementation Method of Determining the Amount of Weighted Product In Zakat Disbursement Against Mustahik (Case Study: Baitul Maal Hidayatullah) has helped Amilin in calculating the amount of the distribution and charity towards mustahik and has produced the expected output as a result of the testing Black Box.
2. Implementation Method of Determining the Amount of Weighted Product In Zakat Disbursement Against Mustahik (Case Study: Baitul Maal Hidayatullah) built using the PHP programming language and MySQL database. System development method used is Waterfall. Functional systems already produce the expected output is the nominal amount of zakat distribution of funds received by each Mustahik based on the criteria that have been determined BMH.

Acknowledgements. This work was supported by The Research-Based National Publication Program No. Un.01/Kpa/234/2018, The Center of Research and Publication, Syarif Hidayatullah State Islamic University Jakarta, Indonesia.

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