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System Election Decision Support Member the Best Women Farmers Group in Bumi Arum Village Using the *Simple Additive Weighting* Method

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Abstract

Group (KWT) is a receptacle for accommodate a number of Woman For to form a same plan and goal. Bumiarum Village has a KWT consisting of from women farmers who play a role active in matter help field agriculture. Application This made with SAW (Simple Additive Weighting) method of searching summation weighted from the performance rating on each alternative to all attributes. The SAW method can help in taking decision a case, will but calculation with use This SAW method only those that produce mark the biggest one that will be selected as the best alternative. Calculation will in accordance with method This if selected alternative fulfil criteria that have been determined. With Use system Supporter decision election member group woman farmer best in the village arum earth uses method Simple Additive Weigtihng (SAW). helping Bumiarum Village For know ranking KWT members from results weight criteria that have been determined, so give information addition moment will determine A options. System Supporter decision This made website based with Language PHP programming and MSQL database for data storage.

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INTRODUCTION

Entering the era of globalization and increasingly increasing awareness and equality chance try, then role or emancipation woman for own dignity and honor with man Keep going increases, so that at first as Mother House stairs, start change and participate in a way direct as well as help sufficient need life family. Increase productivity power Work woman farmer own strategic role and potential in support improvement and acquisition income House ladder rural agriculture.

Group woman farmer or abbreviated with KWT is group of women farmers who are in one village. usually group woman farmer This contains wives from farmers who want have other activities besides farming. The Women Farmers Group (KWT) is a receptacle for accommodate a number of Woman For to form a same plan and goals. The Women Farmers Group (KWT) which is gathering from a number of Woman professional adults as farmer and mother House

ladder as well as status as wife from a farmers who have same goal as well as those in Bumiarum Village Subdistrict Pringsewu Regency Pringsewu.

(Fitriyana & Muslihudin, 2022; Puastuti, Anggraeni, Muslihudin, & Jatiningrum, 2020) with title Role Member Women Farmers Group (KWT) in Realizing Sungai Langka Agrotourism Village Subdistrict The building Arrangement Regency Offerings results study can concluded that role KWT members in planting tree mini jackfruit and making craft hand (souvenir eyes) including in classification low , role KWT members in making gallery pick vegetables, pick fruit and in SME Processing results agriculture including in classification while, while role KWT members in general general in Realizing the Sungai Langka Agrotourism Village including in classification moderate. Related factors real with role KWT members are: level motivation, and level knowledge about the program, while those who don't relate real that is age and level formal education. With title Empowering Women Through The Women's Farmers Group in Pereng Hamlet, Sendangsari Village, Pengasih, Kulon Progo, Special Region of Yogyakarta produces Stage awareness with give motivation to member with open mind. Stage awareness This done with method give motivation in a way right on time meeting held by KWT, Stage transformation with give training in the form of skills through activity processing material food local . Processing in stage This including processing purple sweet potato, cassava, breadfruit, banana, taro and arrowroot. Stage This aiming for increase *life skills* from every KWT Melati members, next through matter the KWT Melati members can have a sense of trust self

The results of calculation application determination Recipient Seedling Assistance Grant Palm Oil and Fertilizer is priority needed as material considerations of the Plantation Service in determine Farmer groups who are entitled accept grant help Seeds Palm Oil and Fertilizer. Research This will give solution in the form of system Supporter decision in election member The best Women Farmers Group (KWT) in Bumiarum Village With take Sample data from the Women Farmers Group (KWT) in Bumiarum Village Pringsewu, and research This expected can help in choose member Best Women Farmers Group (KWT) with hope increase performance every member Women Farmers Group (KWT) in Bumiarum Village.

RESEARCH METHODS

3.1 Data Collection

Compilation study This use method study applied . Research methods applied is directed research for get information that can used for solve problem with objective implement, test, and evaluate practical problems. Suliyanto, 2006:17 Research methods This Then shared to in two techniques that is technique data collection and techniques development system, there is a number of stages carried out. Data Collection Techniques Methodology used in the process of data collection and research This is as following :

1. Observation
   Observation is a the way taken in do observation in a way direct.
2. Interview
   It is a activity ask answer with mentor or a person who has credibility in give answer about related things with object report.
3. Literature review
   This technique used for collect data with material reference from books, documents, related direct with ongoing problem discussed.
4. Documentation

Data collection techniques with collect and analyze documents Good document written, pictures, and electronics.

Simple Additive Weighting (SAW) Method

(Anggraeni, 2017; Kusumadewi, Hartati, Harjoko, & Retanto Wardoyo, 2013; Muslihudin & Arumita, 2016) Simple Additive Waighting Method also often known as term method summation weighted. Concept base method SAW is look for summation weighted from the performance rating on each alternative to all attributes. The SAW method requires a normalization process. (Muhamad Muslihudin, 2016; Muslihudin & Sutini, 2016; Widaningrum, 2013) matrix decision (X) to a scale that can compared with all existing alternative ratings.

$$r_{ij} = \begin{cases} \frac{x_{ij}}{Max\, x_{ij}} & \text{jika j adalah atribut keberuntungan (}benefit\text{)} \\ \frac{Min\, x_{ij}}{x_{ij}} & \text{jika j adalah atribut biaya (}cost\text{)} \end{cases}$$

Where rij is a performance rating normalized from Ai alternative on attributes Cj ; i = 1,2,... ,m and j= 1,2,... ,n. Preference values For each alternative (Vi) is given as :

$$V_i = \sum_{j=1}^{n} w_j r_{ij}$$

Higher Vi values big indicates that Ai alternative more selected .

DISCUSSION

SAW Method Calculation

With Criteria research and weight Determining the Best KWT is :

Table 1 Level of Importance

Level of Interest	Weight
Very Important (SP)	5
Important (P)	4
Quite Important (CP)	3
Less Important (KP)	2
Not Important (TP)	1

Table 2 Criteria and weights evaluation

Code	Attribut	Weight	W
C1	benefits	20%	0.20
C2	benefits	15%	0.15
C3	benefits	20%	0.20
C4	benefits	20%	0.20
C5	benefits	25%	0.25

Values criteria from each alternative:

Table 3 Table of Values of Each Alternative

Alternative	Criteria				
	C1	C2	C3	C4	C5
A1	3	3	5	1	3

A2	5	3	5	1	5
A3	2	4	4	3	2
A4	1	3	3	1	1
A5	1	5	4	5	2

factor benefit criteria used summary

$R_{ii} = (X_{ij} / \max\{X_{ij}\})$

$R_{11} = 3/5 = 0,60$ $R_{12} = 3/5 = 0,60$ $R_{13} = 5/5 = 1,00$

$R_{21} = 5/5 = 1,00$ $R_{22} = 3/5 = 0,60$ $R_{23} = 5/5 = 1,00$

$R_{31} = 2/5 = 0,40$ $R_{32} = 4/5 = 0,80$ $R_{33} = 4/5 = 0,80$

$R_{41} = 1/5 = 0,20$ $R_{42} = 3/5 = 0,60$ $R_{43} = 3/5 = 0,60$

$R_{51} = 1/5 = 0,20$ $R_{52} = 5/5 = 1,00$ $R_{53} = 4/5 = 0,80$

$R_{14} = 1/5 = 0,20$ $R_{15} = 3/5 = 0,60$

$R_{24} = 1/5 = 0,20$ $R_{25} = 5/5 = 1,00$

$R_{34} = 3/5 = 0,60$ $R_{35} = 2/5 = 0,40$

$R_{44} = 1/5 = 0,20$ $R_{45} = 1/5 = 0,20$

$R_{54} = 5/5 = 1,00$ $R_{55} = 2/5 = 0,40$

Tabel 4. Normalisasi

Alternatif	**Kriteria**				
	C1	C2	C3	C4	C5
A1	0,60	0,60	1,00	0,20	0,60

A2	1,00	0,60	1,00	0,20	1,00
A3	0,40	0,80	0,80	0,60	0,40
A4	0,20	0,60	0,60	0,20	0,20
A5	0,20	1,00	0,80	1,00	0,40

Tabel 4.11 Bobot criteria

Kriteria	W
C1	0,20
C2	0,15
C3	0,20
C4	0,20
C5	0,25

V1 = (0,60 * 0,20)+(1,00 * 0,15)+(0,40 * 0,20)+(0,20 * 0,20)+(0,20 * 0,25) = 0,60
V2 = (0,60 * 0,20)+(0,60 * 0,15)+(0,80 * 0,20)+(0,60 * 0,20)+(1,00 * 0,25) = 0,78
V3 = (1,00,60 * 0,20)+(1,00 * 0,15)+(0,80 * 0,20)+(0,60 * 0,20)+(0,80 * 0,25) = 0,58
V4 = (0.20 * 0.20) +(0.20 * 0.15)+(0.60 * 0.20)+(0.20 * 0.20)+(1.00 * 0.25) = 0.30
V5 = (0.60 * 0.20) +(1.00 * 0.15)+(0.40 * 0 .20)+(0.20 * 0.20)+(0.40 * 0.25) = 0.65

Implants

The Admin Input View is input display used by admin to add or change password. Form website admin input view This is as following:

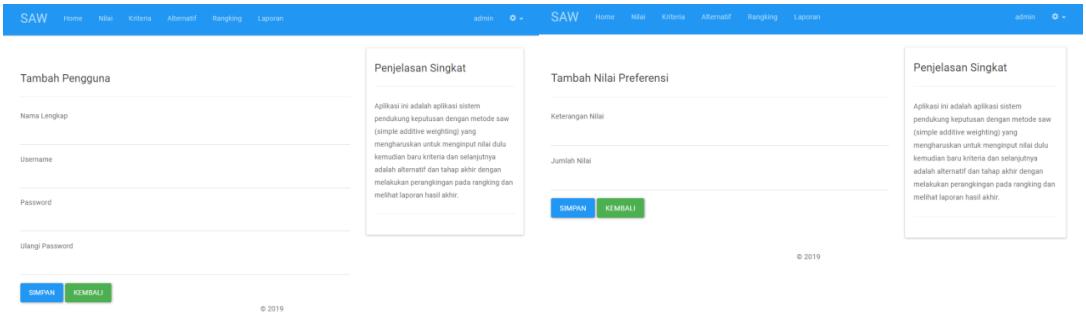

Figure 1. Admin Input View

Value category input display is input display used by admin to add category new value. Form category input view value on website This is as following

CONCLUSION

With method enter criteria that is Loyalty, Teamwork, Responsibility, Work Hard and Passionate Work. In progress application system Supporter decision This website based with use Language PHP programming and MYSQL database. And Implementation SAW method in system Supporter decision election member Women Farmers Group (KWT) of Bumiarum Village with enter alternative value of each criteria with results end is to obtain member group woman farmer based on ranking use SAW method. From the results calculations that have been done mark the biggest is an alternative A2 with the name Ratna Antia with value 0.78 and the smallest alternative is A4 with the name Wijia Astuti with value 0.34. After do evaluation making application system Supporter decision election member the best Women Farmers Group

(KWT) in the village Bumiarum, writer hope journal This can developed more carry on with the suggestion that from aspect appearance design made to be more interesting again and add features from appearance application this.and apply other methods such as AHP, Topsis WP.

REFERENCES

Anggraeni, E. Y. (2017). Penerapan Metode Fuzzy Simple Additive Waighting (FSAW) Dalam Penentuan Perankingan Sekolah Menengah Kejuruan (SMK) Di Kabupaten Pringsewu. *SEMNASTEKNOMEDIA*, *5*(1), 31–37.

Fitriyana, D., & Muslihudin, M. (2022). Mobile Commerce Pemasaran Produk Olahan Kelompok Wanita Tani (KWT) Flamboyan Berbasis Android Di Desa Kalirejo. *JTKSI (Jurnal Teknologi Komputer Dan Sistem Informasi)*, *5*(2), 121–133.

Kusumadewi, S., Hartati, S., Harjoko, A., & Retanto Wardoyo. (2013). *Fuzzy Multi-Attribute Decision Making (Fuzzy MADM)*. Yogyakarta: Graha Ilmu.

Muhamad Muslihudin, L. (2016). Implementasi Fuzzy Multiple Attribute Decision Making Menggunakan Metode Simple Additive Weighting Untuk Diagnosa Awal Gangguan Pada Masa Kehamilan. In *KNSI 2016* (pp. 11–13).

Muslihudin, M., & Arumita, A. W. (2016). Pembuatan Model Penilaian Proses Belajar Mengajar Perguruan Tinggi Menggunakan Fuzzy Simple Additive Weighting (SAW) (Sudi : STMIK Pringsewu). In *SEMANASTEKNOMEDIA* (Vol. 4, pp. 4.11-31).

Muslihudin, M., & Sutini. (2016). Kualitas Batu Bata Terbaik Di Wilayah Kabupaten Pringsewu Menggunakan Metode Simple Additive Weighting (SAW). *Proseding Senapati*, *1*(1), 98–103.

Puastuti, D., Anggraeni, N., Muslihudin, M., & Jatiningrum, C. (2020). Pemasaran Menggunakan Media Sosial Facebook pada Usaha Home Industry Beras Siger Pekon Bumi Ratu. *Jurnal PkM Pemberdayaan Masyarakat*, *1*(4), 129–139.

Widaningrum, I. (2013). Evaluasi Kinerja Dosen Menggunakan Metode Fuzzy Multi-Attribute Decision Making (FMADM) Dengan Pengembangan (Studi Kasus: Universitas Muhammadiyah Ponorogo). *SEMNASTEKNOMEDIA*, *1*(2), 61–66.