JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. IX No 2, Maret 2023, hlm. 289 - 294 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v9i2.2207
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

SELECTION BEST ELEMENTARY SCHOOL IN SEI DADAP USING SAW METHOD

Putri Vina Bancin[1*], Iqbal Kamil Siregar[1] , Cecep Maulana[1]
[1]Sistem Informasi, STMIK Royal Kisaran
email : putrivinabancin@gmail.com

Abstract: One of the main aspects of education, such as elementary school education, the initial stage for children to continue to the next level of education. Elementary school for the first level of education plays an important role in developing students' attitudes, skills, and interests and talents. Every new academic year, students and parents will choose the best school according to their wishes. There are many choices of schools with a variety of different offerings provided. That way, many parents of students are confused by the many choices of types of schools for their children. This study aims to provide recommendations for the best elementary schools in the Sei Dadap sub-district based on the criteria desired by prospective students by applying the Simple Addictive Weighting (SAW) method to a system The SAW method helps in solving simple unstructured problems so that by applying the SAW method a more effective decision-making process can be carried out. The data used as alternative data are elementary schools in the Sei Dadap sub-district. The criteria used in decision making include accreditation, facilities, extracurricular activities, number of classrooms, number of students, and distance between schools.

Keywords: Decision Support System; Elementary school; Simple Addictive Weighting

Abstrak: Salah satu aspek pendidikan utama seperti pendidikan sekolah dasar yang tahap awal bagi anak untuk melanjutkan ke jenjang pendidikan berikutnya. Sekolah Dasar jenjang pendidikan pertama memegang peranan penting dalam mengembangkan sikap, keterampilan, serta minat dan bakat siswa. Setiap tahun ajaran baru, siswa dan orang tua akan memilih sekolah terbaik sesuai dengan keinginan mereka. Ada banyak pilihan sekolah dengan beragam penawaran berbeda yang disediakan. Dengan begitu, banyak orang tua siswa yang bingung dengan banyaknya pilihan jenis sekolah untuk anaknya. Penelitian ini bertujuan untuk memberikan rekomendasi sekolah dasar terbaik di kecamatan Sei Dadap berdasarkan kriteria yang diinginkan oleh calon siswa dengan menerapkan metode Simple Addictive Weighting (SAW) pada suatu sistem. Metode SAW membantu dalam menyelesaikan masalah sederhana yang tidak terstruktur sehingga dengan menerapkan metode SAW dapat dilakukan proses pengambilan keputusan yang lebih efektif. Data yang digunakan sebagai data alternatif adalah sekolah dasar yang ada di kecamatan Sei Dadap. Kriteria yang digunakan dalam pengambilan keputusan meliputi akreditasi, fasilitas, kegiatan ekstrakurikuler, jumlah ruang kelas, jumlah siswa, dan jarak antar sekolah.

Kata kunci: Sistem Pendukung Keputusan; *Simple Addictive Weighting*; Sekolah Dasar

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. IX No 2, Maret 2023, hlm. 289 - 294 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v9i2.2207
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

INTRODUCTION

Elementary Schools are the first level of education in developing attitudes, skills and interests and talents of students, besides that Basic Schools also have a very important contribution in organizing education, this is because One of the Roles of Base Schools is to form mindsets as well as student creativity. then the School Base Of course is required to be able to develop the potential of students properly and optimally [1] .

The problem, choosing a school is still a big problem for parents, because many schools have many bases offering different offers for each prospective student, and many consider criteria in making decisions slowly in school selection, so an application is needed in determining the selection of the best school base [2] .

Selection of elementary schools currently still done manually in determining the best primary schools, this takes a lot of time. At school, selection still depends on the evaluation of each jury member, which takes a lot of time to make a decision. Solutions that can help with the problems above the author creates a Decision Support system to help the community and even students' parents in making decisions to facilitate the decision-making process.

decision support system the system used to make decisions in making choices aims to get the best decision, decisions obtained from existing systems are computerized based on predetermined criteria, this decision support system uses computerization as a tool that can assist in making choices [3] .

The method used in making this decision uses the Simple Addictive Weighting (SAW) method called weighted summation, the SAW method can determine the sign weight of each attribute, the SAW method requires a process of normalizing the decision matrix (X) on a certain scale. the process of calculating the SAW method to continue the ranking process, namely selecting each of the best data alternatives from a number of other alternatives [4] , Then proceed with selecting the ranking of each of the best data alternatives from a number of other alternative alternatives [5]. This method also the easiest to implement. In addition to its own ability to compare criteria, SAW method one of the right methods to be applied in making decisions from alternative choices [6]. The SAW method, the method used in decision making, has many attributes [7] .

On study previously from journal entitled “System Supporters Decision Election School Intermediate First Private Use Method *Simple Additive Weighting* (Study Yogyakarta case)” research This make system supporters decision selection of private junior high schools in the city of Yogyakarta with use SAW method . accuracy from calculation SAW method implemented in system supporters decision research This reach level 75% accuracy with testing of 32 respondents [8] .

Study with title “System Supporters Decision Election School Clean School Level Base Use Method *Simple Addictive Weighting* ” results on research using SAW method for evaluation cleanliness school base the result well , from results testing This so test appropriateness study This quite optimal [9] .

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. IX No 2, Maret 2023, hlm. 289 - 294 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v9i2.2207
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

The objectives of this research are: **First** to build a decision support system that can assist in selecting the best elementary school.

The second, to apply the Simple Additive Weighting (SAW) method on the SPK website to determine elementary school selection.

Third, it can make it easier for the community to make decisions in selecting elementary schools.

METHODS

Some of the things that were done in collecting the data used in the research process for selecting the best SD in the District of Sei Dadap had :

Observation

Conducted direct observations at the research location to find out what was in the school, with a total of 21 elementary schools.

Interview

In the process of this research, interviewed SD to find information and collect the necessary data.

Literature Review

Conduct library research to find references to previous research through journals and books.

Method in research This use method quantitative inside the process use Lots number start from the process of collecting data to interpretation. Obtained data in study This obtained direct from observation And interview to agency service education as well as to schools in the district sei dadap , specified criteria in determine school base best is Accreditation, Facilities, Lots room class, Lots amount students, and Distance school. Method used in choice school base best This that is use method *Simple Addictive Weighting* (SAW). Steps SAW calculation [10] :

Step first : determine criteria to be made as reject measuring in taking decision .

Step second : Defines a match rating on every alternative .

Step third : Make matrix decision based on criteria , then do normalization . Step fourth : Results Ranking every alternative.

Formula calculation SAW :

$$r^{ij} = \begin{cases} \dfrac{x^{ij}}{\text{Max } x^{ij}} & \text{Benefit……} \\ \dfrac{\text{Min } x^{ij}}{x^{ij}} & \text{Cost……} \end{cases} \qquad (1)$$

Description :

Rij – = performance ratings normalized

Max ^{ij} = value maximum from every line And column

Minx ^{ij} = minimum value of every line And column

Xij = row – And column from matrix

With r ^{ij} is a performance rating normalized from alternative A $_i$ on attribute :

C $_j$: i = 1,2,…m and j = 1,2,.. n

Mark preference For every alternative (v_i) is given as :

$$v^i = \sum_j^n = 1\, w^j\, r^{ij} \qquad (2)$$

Description :

V $_i$ = value end alternative

W $_j$ = weight that has been determined

N $_j$ = normalization matrix

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. IX No 2, Maret 2023, hlm. 289 - 294 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v9i2.2207
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

RESULTS AND DISCUSSION

Calculation process on election school base best need criteria And calculated subcriteria based on weight criteria And the sub-criteria that has been determined .

Table 1. Criteria

Criteria	Code	Weight	type
Accreditation	C1	2	Benefits
Facility	C2	2	Benefits
extracurricular	C3	1	Benefits
Lots room class	C4	3	Benefits
Many amount student	C5	2	Benefits
Distance school	C6	3	Cost

Table 2. Value Data School Base

Code	C1	C2	C3	C4	C5	C6
A1	2	1	2	3	3	3
A2	2	1	1	2	3	1
A3	2	1	2	2	3	3
A4	2	1	1	3	3	2
A5	2	1	1	2	3	2
A6	2	2	1	2	3	2
A7	2	2	1	2	2	3
A8	2	1	1	3	3	2
A9	2	1	2	2	3	2
A10	3	2	1	2	3	1

Description :
Code A1- 5 = Alternative (school)
C1-6 = Criteria
W = Weight
X = Matrix
Taking decision give weight preference
W = { 3 2 2 2 3 3 1 }

Table 3. Data Normalization Results

Code	C1	C2	C3	C4	C5	C6
A1	0.6	0.5	1	1	1	0.3
A2	0.6	0.5	0.5	0.6	1	1
A3	0.6	0.5	1	0.6	1	0.3
A4	0.6	0.5	0.5	0.6	1	0.5
A5	0.6	0.5	0.5	0.6	1	0.5
A6	0.6	1	0.5	0.6	1	0.5
A7	0.6	1	0.5	0.6	0.6	0.3
A8	0.6	0.5	0.5	1	1	0.3
A9	0.6	0.5	1	0.6	1	0.5
A10	1	1	0.5	0.6	1	1

From the results calculation on can showing ranking solidtable following this :

Table 4. Result Data Ranking

Alternative	Mark	Rank
A1	0.7096	6
A2	0.7496	2
A3	0.6346	9
A4	0.7105	5
A5	0.6346	10
A6	0.7114	3
A7	0.6355	8
A8	0.7105	4
A9	0.6746	7
A10	0.8741	**1**

Implementation On System

On application System Supporters Decision Election School Base Best in the District Sei Dadap This own a number of page namely : main menu page , admin login page , admin menu page , admin page which includes some intermediate menus other namely criteria menu , alternative menu , and calculation menu where can admin input , edit , and delete criteria data as well as alternative data .

JURTEKSI (Jurnal Teknologi dan Sistem Informasi) ISSN 2407-1811 (Print)
Vol. IX No 2, Maret 2023, hlm. 289 - 294 ISSN 2550-0201 (Online)
DOI: https://doi.org/10.33330/jurteksi.v9i2.2207
Available online at http://jurnal.stmikroyal.ac.id/index.php/jurteksi

Following a number of implementation from system supporters decision election school base best in the district sei dadap

Main Menu Page

Image 1. Main Menu Page

On main menu page This displays information _ _ about school the base is in the district sei dadap such as school status , accreditation , and distance school .

Calculation Set Menu

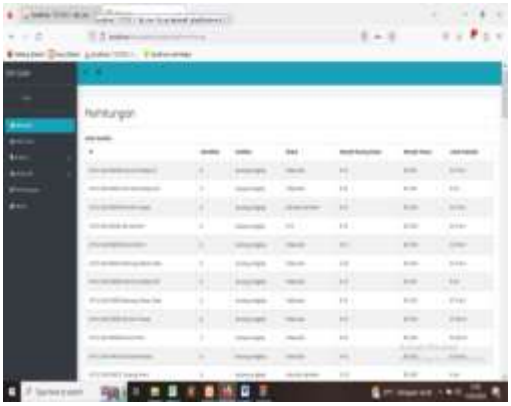

Image 2. Calculation Set Menu

On this menu admin only manage calculation from respectively _ _ criteria to alternative , which is useful For determine weight criteria from the input data .

Results Menu Ranking

Image 3. Results menu Ranking

Page This displays results from calculation with use deep SAW method election school base the best in the district sei dadap .

CONCLUSION

Method This *Simple Addictive Weighting* (SAW) can solve problem on study Election School Base Best in the District Sei Dadap with six criteria that is Accreditation, Facilities, Extra curriculars, Many room class, a lot amount students, distance school. Results from application system supporters decision This is his election alternative A10 as the best Because passed selection in a manner sorted in accordance ranking.

BIBLIOGRAPHY

[1] M. Y. Fathoni, D. Darmansah, and D. Januarita, “Sistem Pendukung Keputusan Pemilihan Siswa

Teladan Menggunakan Metode Simple Additive Weighting (SAW) Pada SMK Telkom Purwokerto," *J. Sisfokom (Sistem Inf. dan Komputer)*, vol. 10, no. 3, pp. 346–353, 2021, doi: 10.32736/sisfokom.v10i3.1202.

[2] R. Bangun, A. Pemilihan, and S. Terbaik, "Rancang Bangun Aplikasi Pemilihan Sekolah Terbaik … (," pp. 31–36, 2010.

[3] J. Hutahaean and M. Badaruddin, "Sistem Pendukung Keputusan Pemilihan Sekolah SMK Swasta Penerima Dana Bantuan Menerapkan Metode Simple Additive Weighting (SAW)," *J. Media Inform. Budidarma*, vol. 4, no. 2, p. 466, 2020, doi: 10.30865/mib.v4i2.2109.

[4] H. A. Pradana, F. Fitriyani, and M. Marisa, "Pengambilan Keputusan Pemilihan Sekolah Dasar Islam Menggunakan Metode SAW dan FMADM di Pangkalpinang," *J. Sisfokom (Sistem Inf. dan Komputer)*, vol. 9, no. 1, pp. 132–137, 2020, doi: 10.32736/sisfokom.v9i1.840.

[5] S. Pendukung Keputusan Pemilihan Jurusan Di Sma Muhammadiyah, K. Bengkulu Menggunakan Metode SAW, and E. Ranisa, "Sistem Pendukung Keputusan Pemilihan Jurusan Di Sma Muhammadiyah 4 Kota Bengkulu Menggunakan Metode Saw," *J. Media Infotama*, vol. 18, no. 1, p. 23, 2022.

[6] P. Guru and S. M. P. Quraniah, "Implementation of the Saw Method on the Teacher Admission," *Teknomatika*, vol. 11, no. 02, pp. 153–162, 2021.

[7] J. P. S. Adi and W. Windarto, "Pendukung Keputusan Pemilihan Siswa Terbaik Pada Sma Cenderawasih 2 Dengan Menggunakan Metode Simple Additive Weighting Berbasis Web," *Sebatik*, vol. 23, no. 2, pp. 534–540, 2019, doi: 10.46984/sebatik.v23i2.826.

[8] U. Mercu, B. Yogyakarta, U. Mercu, B. Yogyakarta, and P. Korespondensi, "5hfhlyhg 2fwrehu fhswhg 1ryhpehu sxeolvkhg)heuxdu\ !" #!".

[9] Desy Ika Puspitasari, Al Fath Riza Kholdani, and Nur Arminarahmah, "Sistem Penunjang Keputusan Pemilihan Atlet Panjat Tebing Menggunakan Metode Simple Additive Weighting," *J. Teknol. Inf. Univ. Lambung Mangkurat*, vol. 3, no. 1, pp. 1–12, 2018, doi: 10.20527/jtiulm.v3i1.22.

[10] S. Nurlela, A. Akmaludin, S. Hadianti, and L. Yusuf, "Penyeleksian Jurusan Terfavorit Pada Smk Sirajul Falah Dengan Metode Saw," *J. Pilar Nusa Mandiri*, vol. 15, no. 1, pp. 1–6, 2019, doi: 10.33480/pilar.v15i1.1.