

Comparison of the Analytical Hierarchy Process Method and the Simple Additive Weighting Method in the Selection of the Best Fiction Books in the 1990s

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ABSTRACT

A fiction book is a story book written based on the imagination of a writer, the story contained in a fiction book is a story that entertains readers. In the 1990s, fiction books were books that had a lot of interest in the community at that time. This study aims to determine the feasibility of a fiction book that will be categorized as the best fiction book. The problem of this research is in the assessment process which only assesses from readers' reviews, this is not effective in making the selection of fiction books, so to solve these problems will implement a decision support system with the Analytical Hierarchy Process (AHP) and Simple Additive Weighting (SAW) Method. system with multi-attribute decision making. In this study, the criteria for exemplars with a value of 35% will be the benchmark for evaluating the selection of fiction books. Then the results issued by the system using the AHP method will show the transparency of the assessment with each value and have a certain weight according to the priority and the final results of the ranking of the two AHP and SAW methods will produce the same alternative with the highest alternative value which will be recommended as a fiction book that has the right to become the best fiction book of the 1990s

Keywords:

AHP, SAW, Selection, Books, Fiction

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1. INTRODUCTION

A fiction book is a story book made based on the author's imagination not history or facts, the purpose of the creator of fiction stories is to entertain the readers. With entertaining stories, fiction books have fans not only among children but adults, this can be seen from the genres, namely, romance, horror, mystery, adventure and even history. The development of technology is happening which causes a lack of interest in reading, especially among children, to read fiction books. So they don't know about fiction books that were popular in the 1990s. The number of fiction books published in the 1990s era became one of the objectives of this research to find out the best fiction books published that year. As for the problem in choosing the fiction book, only by applying the reader's review assessment, this results in a non-objective decision. Based on this, the selection of the best fiction books requires criteria as a comparison for every fiction book published in the 1990s.

The problems contained in this study will be made a solution to overcome the existing problems. This stage of completion becomes a reference as a rationale in choosing the best fiction book. The solution that will be applied to this research is to implement a decision support system (DSS).

The system in this study is a computer-based system designed to make decisions by having the advantage of analyzing problems in determining the best fiction book by utilizing the data that has been obtained to solve various problems that exist in this study.

Decision making is one of the processes of selecting alternative actions to achieve certain goals or objectives. Decision making determines by taking a systematic approach to problems through the process of collecting data into information and adding to the factors that need to be considered in decision making. the process of selecting alternatives that have actions to achieve a particular goal or goal. Currently, in building a decision-making system, there are several methods that can be used to assist the decision-making process.



The decision-making process can be done by applying two methods, namely, the Analytical Hierarchy Process (AHP) and Simple Additive Weighting (SAW) methods. The Analytical Hierarchy Process (AHP) method is a method with the aim of solving a broad and unstructured problem into a model that is flexible and easy to understand, while the weakness of the AHP method is the dependence of the AHP model on its main input. and the Simple Additive Weighting (SAW) method is used in the study because it can determine the weight value of each criterion, then it will be continued by selecting the best alternative from all the alternatives in fiction book selection research. Assessment in this method will produce a higher value. in accordance with existing data because it is based on the criterion value of the preference weight of each criterion that has been determined by the case researcher.

The SAW method uses predetermined criteria for the selection of fiction books, which are only limited to the criteria for book prices, book series, copies, reader ratings and book content. And the data used for this research is only based on the classification of fiction books published in the 1990s from trusted sources.

The purpose of this research will be to help in selecting the best fiction book and determine the quality of a book in a more structured, fast and effective manner. With the determination of the criteria that have been set, by making a weight on the criteria of 35% copies which is the highest weight in this study as a determination of the assessment on the selection of the fiction book.

In the Analytical Hierarchy Process (AHP) method, a problem-solving hierarchy will be created using human judgment as a determinant. With this hierarchy, it is possible to solve unstructured problems into structured ones by knowing the existing problems, then arrange them into a structure by forming a hierarchy.

The use of the AHP method has been carried out in research on the selection of two-wheeled vehicles. Case study: PT SINAR SENTOSA Muara Burlian, by selecting vehicles that match the criteria from consumers with the criteria of motorbike price, motorbike tank capacity and cylinder volume by producing a motorbike with the type of moped as the motorbike of choice best [1].

In different cases, the problem solving stage is carried out using two methods, namely the AHP method and the SAW method which are applied to the selection of the best employees, in that case, the chosen alternative must meet the terms and conditions for selecting the best employee with employee performance loyalty criteria as the determining weight for employee selection by weighted 30% in the study [2].

The SAW method is applied to select education, in this study using six criteria, namely, academic achievement, master's lecturers, extracurriculars, accreditation status, facilities and scholarships and the results of this research are recommendations to users at the university by obtaining results from prioritized criteria. namely accreditation [3].

The AHP method is also applied in ArcGIS VBA macro development, this is done to obtain the weight of the criteria with an analytical hierarchical process and which allows mapping the results of land use assessments by adding weighted from GIS raster data sets. A dynamic link library for calculating eigenvalues and eigenvectors from square matrices is provided[4].

In the research, the provision of book assistance for the library combines the Analytical Hierarchy Process (AHP) method and the Simple Additive Weighting (SAW) method. These two different methods are applied to the decision making recommendation for the feasibility of the library to get book assistance that is in accordance with the needs of the existing library in the district of west bandung [5].

In another study, two different methods were combined, namely, the Analytical Hierarchy Process (AHP) method and the Simple Additive Weighting (SAW) method. for the selection of study programs at universities using predetermined criteria.

2. RESEARCH METHODOLOGY

In this study, there is a flow chart of a decision support system for choosing a fiction book. From the chart, at the completion stage using a different method in a research method used in this research, namely, the Analytical Hierarchy Process (AHP) and Simple Additive Weighting (SAW) methods are more structured by obtaining consistent results and ranking alternatives. in accordance with predetermined data 9 which because of the use of the objective function provides a framework for a new approach to sensitivity analysis that does not involve changes in weights or changes in the value of alternative criteria. 1990's era.

The following is a picture of the flow chart of the AHP and SAW method of selecting fiction books.

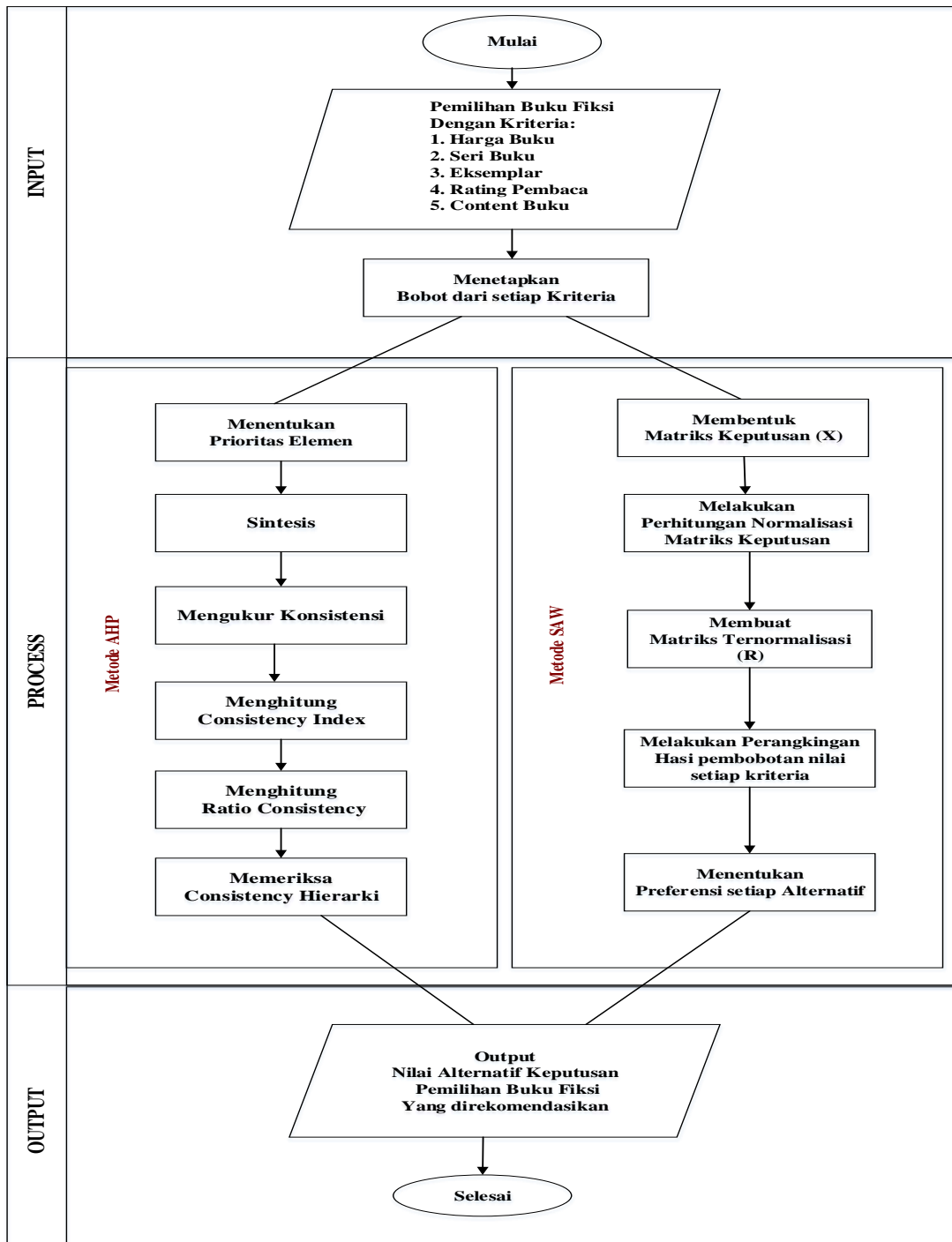


Figure 1. Flow chart of the AHP & SAW system of fiction book selection

2.1. Analytical Hierarchy Process (AHP)

The Analytical Hierarchy Process (AHP) method is a method that is able to solve a problem in a structured manner by making it into a structured settlement hierarchy and providing an accurate assessment in determining comparisons so that it will get results from calculations that make these results into priority assessments in the selection of fiction books. . Therefore, assuming consistency of evaluation by decision-making.

The AHP method has important weaknesses, this method requires a very large number of comparisons to make a decision. These weaknesses have several advantages, including the AHP method having a structured hierarchy that is right down to the deepest criteria, by calculating the predetermined value to the results that are the determining reference in this study. The provisions contained in this method are:

- a. By making a hierarchy with the problems contained in this fiction book selection research until it is resolved by making a determining element, namely, by using criteria and alternatives that will be made into a problem hierarchy.
- b. By making an assessment on the elements of determining the assessment, namely, the criteria and alternatives are formed into a pairwise comparison matrix between criteria.

The AHP method has procedures or steps for solving problems, namely:

- 1) By identifying a problem and determining the solution steps to be taken, then compiling a hierarchy of existing problems

The formation of a hierarchy is one of the advantages that a person has for knowing an object and an idea, by identifying and applying it. The hierarchy is structured to explain the stages that are passed in problem solving. It can be seen in the description that the first level is the level of the intended goal that is the goal to be achieved in a system. While the second and third levels are supporting to achieve the goal or the first level. Below is a picture of the hierarchy in the selection of the best fiction books:

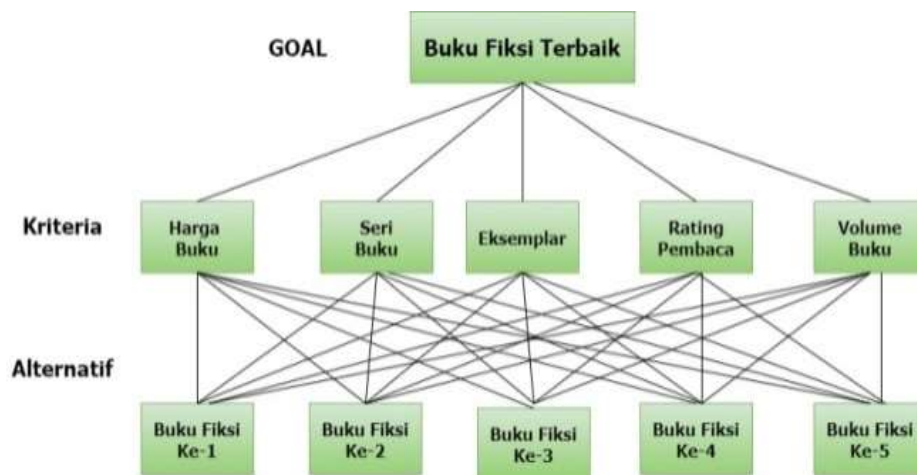


Figure 2 Hierarchy in fiction book selection

- 2) Seek priority
 - a. At this stage, that is by looking for priority values by comparing the values of each predetermined criterion.
 - b. In this step, create a pairwise comparison matrix by filling in a value representing a more important assessment with another value.
- 3) Synthesis

Consider a paired matrix in the synthesis in order to get the existing priority values. Below are the steps for the solution as follows;

 - a. By adding up the values in all the columns of the matrix
 - b. Divide the result of the values from the column and then add them to get the value.
 - c. Adding the values in a row and dividing by adding up the values to find the result.
- 4) Consistency Measurement

With this consistency measurement we know the results of the consistency of these values.

 - a. By multiplying all values in the column with the priority value.
 - b. Doing addition on rows
 - c. After the result of the sum is obtained, it is added with the priority value.
 - d. Add up these results and add above to the number of elements present, the result is called max.
- 5) Calculation of Consistency Index (Consistency Index)

Using the formula:

$$CI = \frac{\lambda Maks - n}{(n-1)} \quad (1)$$

6) Calculation of the Consistency Ratio (Consistency Ratio)

Using the formula:

$$CI = \frac{(CI)}{(IR)} \tag{2}$$

7) Do a consistency check

If the value is more than 0.1 then the result is inconsistent and must make improvements, but if the value is less than 0.1 then the result is consistent and the calculation is correct.

2.2. Simple Additive Weighting (SAW)

The Simple Additive Weighting (SAW) method is one of the most popular methods, by completing the solution using criteria as an evaluator of the assessment.

The SAW method has a concept by looking for the value of the alternative on each of the existing criteria.

Below are the steps contained in this method, namely:

- 1) Determination of alternatives in this research
- 2) Determining the criteria for research in this study
- 3) Provide alternative rating values contained in the criteria
- 4) Determination of the weight of each criterion
- 5) Making alternative rating tables contained in all criteria
- 6) In each Making a decision matrix table from the alternative rating table contained in all the criteria

$$X = \begin{bmatrix} r_{11} & r_{12} & r_{13} & \dots & r_{1j} \\ r_{21} & r_{22} & r_{23} & \dots & r_{2j} \\ r_{31} & r_{32} & r_{33} & \dots & r_{3j} \\ \dots & \dots & \dots & \dots & \dots \\ r_{i1} & r_{i2} & r_{i3} & \dots & r_{ij} \end{bmatrix} \tag{3}$$

7) Create a normalization matrix, which is to calculate the alternative rating values contained in all criteria

$$r_{ij} \begin{cases} \frac{x_{ij}}{\max_i x_{ij}} \Rightarrow \text{If } j \text{ is a cost attribute} \\ \frac{x_{ij}}{\min_i x_{ij}} \Rightarrow \text{If } j \text{ is a benefit attribute} \end{cases} \tag{4}$$

8) The results obtained from the normalized rating will be formed a normalized matrix

9) Then the final result will be on the preference value by adding and transferring the values from the matrix with the adjusted weights

$$v_i = \sum_{j=1}^n w_j R_{ij} \tag{5}$$

Then it can be seen that the highest score will be the alternative chosen to be the best fiction book in the 1990s era

3. RESEARCH RESULT

3.1. Analysis of the system to be built

The decision support system for selecting the best fiction book in the 1990's uses two methods, namely the Simple Additive Weighting method, which is a method of ranking each alternative by determining the weights. Below are the criteria for selecting the best fiction book, namely:

Table 1. Criteria used

Criteria	Description
C1	Book Price
C2	Book Series
C3	Copy
C4	Reader Rating
C5	Book Content

Below is an explanation of the criteria for selecting the best fiction book as follows.

- 1) Book price
From the available alternative data, the price of fiction books that are in great demand by readers is relatively moderate, therefore the cheaper the selling price of fiction books, the more enthusiasts will buy the fiction book.
- 2) Book series
The more the interest of readers of fiction books, the author of the book will issue a new series of books.
- 3) Copy
The number of readers' interest in fiction books increases the marketability of the market, therefore it can be seen by the large number of prints of fiction books sold in the market, we can see that the fiction book has a lot of demand.
- 4) Reader rating
With the large number of books being traded in the market, the interest of readers is getting higher, therefore it can be determined the level of reader rating on the fiction book.
- 5) Book content
Many fiction books have both positive and negative content. And the reader's interest is more dominant in reading fiction books with positive content in the 90's era.

Below are the alternatives found in the selection of the best fiction books with the alternative, namely, fiction books published in the 1990s which were chosen as alternatives in this study.

Table 2. Alternatives used

Alternatif	Keterangan
A1	Sapta Siaga
A2	Harry Potter
A3	Goosebump
A4	Pilih Sendiri Petualanganmu
A5	Chicken Soup The Soul
A6	A song Of Ice And Fire
A7	Captain Underpants
A8	Jack Reacher
A9	jembatan Madison County
A10	The Name Of The Rose
A11	Guess How Much I love You
A12	Dunia Sophie
A13	Rich Dad Poor Dad
A14	Who Moved My Cheese?
A15	Matilda

3.2. Application of Analytic Hierarchy Process Method and Simple Additive Weighting Method on WEB

The application of the AHP and SAW methods is applied to the web with process stages that have been adapted to the completion steps of the two methods. In the calculation the system will calculate systematically using an algorithm that has been adjusted.

3.2.1. Analytic Hierarchy Process Method

1. Criteria Comparison Matrix

Comparing the value of each form of the criteria comparison matrix table according to the value of the level of importance. Analytical Hierarchy Process (AHP).

	C1	C2	C3	C4	C5
C1 - Harga Buku	1	2	7	3	2
C2 - Isi Buku	2	1	7	2	1
C3 - Jumlah	1/2	1/7	1	1	1
C4 - Kualitas	1/3	1/7	1	1	1
C5 - Cover Buku	1/2	1/7	1	1	1
Totalkan	2402	4407	17	9	9

Figure 3. Criteria comparison matrix

The following is an explanation of the value of the weight of the criteria in Figure 2, as follows:

- 1) Comparing the price of a book with a book series worth 2, it can be seen that the book series is close to more important than the price of the book
- 2) Comparison of the price of a book with a copy of 7, it can be seen that the copy is very important from the price of the book
- 3) Comparing the price of a book with a reader rating of 3, it can be seen that the reader rating is a little more important
- 4) Comparing the price of the book with the book content is worth 2, it can be seen that the book content of the two considerations is close to
- 5) Comparison of book series with copies worth 7, it can be seen that copies are very important from book series
- 6) Comparing the book series with a reader rating of 2, it can be seen that the reader rating of the two considerations is close to
- 7) Comparison of book series with book content is worth 1, it can be seen that book series is as important as book content
- 8) Comparison of copies with a reader rating of 1, it can be seen that copies are as important as reader ratings
- 9) Comparison of copies with book content is worth 1, it can be seen that copies are as important as book content.

2. Criteria Priority Weight Matrix

To get the results of the weighting of the criteria matrix. By dividing the contents of the matrix by the number of columns and then adding up the values in each row, after adding them, it is divided by the number of existing criteria.

	C1	C2	C3	C4	C5	Bobot Prioritas
C1	0.4031	0.4036	0.4118	0.375	0.3333	0.397
C2	0.2019	0.2764	0.4118	0.25	0.1667	0.248
C3	0.2577	0.3008	0.2538	0.25	0.1667	0.208
C4	0.1346	0.1877	0.2538	0.25	0.1667	0.118
C5	0.2019	0.2764	0.2538	0.25	0.1667	0.154

Figure 4. Criteria priority weight matrix

3. Criteria Consistency Matrix

Before testing the consistency of the criteria, what must be done is as follows:

a. Finding Lambda (λ) Maximum . Value

To get the lamda value, that is, do the sum of the results of dividing the number of rows by weight (W).

b. Finding the Index Consistency Value

To get the consistency index value with the provisions of lamda Max, subtract the number of criteria divided by the number of criteria minus 1.

c. Finding the Ratio Consistency Value

The last stage is to find the consistency ratio value, by testing the consistency by looking at the random consistency index table that contains the AHP method, knowing the number of criteria in this study. There are 5 criteria in this study, so the value of the random index is 1.12.

In the picture, it can be seen that the consistency ratio value with a value of 0.086 means that the value is consistent. Below is a picture of the consistency criteria matrix on the system.

Matriks Bobot Prioritas Kriteria

Setelah terbentuk matrik perbandingan maka dilihat bobot prioritas untuk perbandingan kriteria. Dengan cara membagi isi matrik perbandingan dengan jumlah kolom yang bersesuaian, kemudian menjumlahkan pedas setelah itu hasil pengurangan dibagi dengan banyaknya kriteria sehingga ditemukan bobot prioritas seperti terlihat pada berikut.

	C1	C2	C3	C4	C5	Bobot Prioritas
C1	0.458	0.400	0.410	0.271	0.333	0.381
C2	0.239	0.254	0.410	0.25	0.167	0.249
C3	0.227	0.200	0.286	0.121	0.167	0.200
C4	0.136	0.127	0.258	0.121	0.167	0.118
C5	0.239	0.254	0.286	0.121	0.167	0.154

Figure 5. Criteria consistency matrix

4. Final Eigen Results Criteria and Alternatives

In this final result is the result of ranking alternatives from rank 1 to 15. To get the final result of the eigenvalues of the criteria and alternatives, it is necessary to multiply the weight of each criterion with the alternative weight, then add it to each row. below is a picture of the final results of the criteria and alternatives.

Hasil Akhir
EIGEN KRITERIA DAN ALTERNATIF

Setelah menggunakan bobot dari masing-masing kriteria terhadap faktor yang sudah diidentifikasi oleh pihak perusahaan, berikut selanjutnya adalah rangkaiannya bobot dan masing-masing kriteria sebagai berikut dari masing-masing bobot, kemudian hasil penjumlahan tersebut dijumlahkan persama, sehingga didapatkan hasil prioritas global seperti pada tabel berikut.

Alternatif	C1	C2	C3	C4	C5	Nilai	Rank
Nilai Eigen	0.432	0.254	0.402	0.127	0.148		
A01 - Sampta Siaga	0.171	0.117	0.082	0.076	0.067	0.094	1
A02 - Harry Potter	0.1	0.083	0.079	0.076	0.066	0.083	2
A03 - IronMania	0.088	0.074	0.076	0.072	0.076	0.068	3
A04 - PBN Jember Petalingemas	0.077	0.064	0.072	0.072	0.07	0.06	7
A05 - Chicken Kumpu The Gula	0.078	0.062	0.076	0.06	0.068	0.075	5
A06 - A Long CF An And Fish	0.083	0.067	0.068	0.076	0.067	0.064	6
A07 - Captain Underpants	0.083	0.074	0.071	0.07	0.069	0.06	8
A08 - Jack Reacher	0.079	0.064	0.066	0.069	0.068	0.063	10
A09 - Umbak Umbak County	0.078	0.067	0.065	0.062	0.064	0.064	11
A10 - The Man of The Now	0.072	0.068	0.062	0.066	0.063	0.05	9
A11 - Egan HanaMati Egan Hana	0.071	0.067	0.061	0.064	0.064	0.061	8
A12 - Frank Nubble	0.071	0.068	0.06	0.062	0.061	0.058	10
A13 - My Dad How Cool	0.072	0.068	0.064	0.072	0.062	0.061	11
A14 - Why Should My Class?	0.074	0.072	0.071	0.071	0.06	0.069	10
A15 - Mada	0.079	0.068	0.076	0.074	0.061	0.077	16

Figure 6. The final results of the criteria and alternatives eigen

From the picture, we can find out who got the highest score and who got ranked 1 to 3 in this method, namely: A01 Sampta Siaga ranked 1 with a value of 0.094, A02 Harry Potter ranked 2 with a value of 0.083 and A05

Chicken soup the soul ranked 3 with a value of 0.075 , with the ranking and the highest score on this method, it can be seen which books are recommended as the best fiction books.

4.2.2. Simple Additive Weighting Method

1. Criteria

The Simple Additive Weighting (SAW) method has 2 types of criteria, namely the benefits (profits) and costs (costs) needed to be used as the basis for calculations in this method. In this study using 5 criteria with 4 criteria being the type of criteria of benefit (profit) and 1 criterion being the type of criteria of cost (cost). The following is an image of a list of criteria on the system.



Figure 7. List of criteria

2. Alternative data

In this alternative data is data from each alternative from each criterion that has been obtained from reliable sources. The following is an image of alternative data.

Alternative	Kriteria				
	Harga Buku	Seri Buku	Eksemplar	Rating Pembaca	Content Buku
Sapta Siaga	35	15	600	5	3
Harry Potter	55	13	500	5	3
Goosebump	155	235	400	5	3
Pilih Sendiri Petualanganmu	35	184	250	5	3
Chicken Soup The Soul	55	21	130	5	3
A Song Of Ice And Fire	155	6	90	5	3
Captain Underpants	35	12	80	5	3
Jack Reacher	55	25	60	5	3
Jembatan Madison County	35	10	60	5	3
The Name Of The Rose	55	20	50	4	3
Guess How Much I Love You	55	4	43	4	3
Dunia Sophie	35	23	40	4	3
Rich Dad Poor Dad	55	15	32	4	3
Who Moved My Cheese?	55	11	26	5	3
Matilda	55	18	17	4	1

Figure 8. Alternative data

3. Weight preference (W)

Determine the weight of each criterion. By making the decision to give weight (W). Below is a picture of the weight of each criterion in the system:

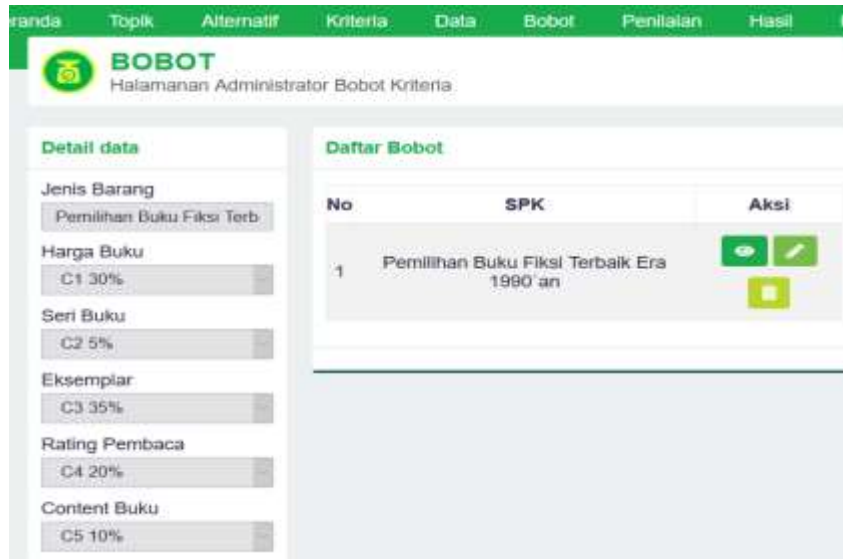


Figure 9. The weight of each criterion

In the picture above we can find out the weight of each criterion, the criteria for the price of the book (30%), book series (5%), copies (35%), reader rating (20%) and book content (10%) which are used to determine the selection assessment. best fiction book.

4. Match rating

The suitability rating value is obtained from the weighting of each alternative on each criterion, after obtaining this value it will be made into a match rating table.

Below is a table of match ratings.

Table 3. Match rating

Alternative	Criteria				
	C1	C2	C3	C4	C5
A1	2	5	5	5	3
A2	3	2	5	5	3
A3	4	5	5	5	3
A4	2	2	5	5	3
A5	3	3	5	5	3

5. Decision Matrix

This matrix is known from the alternative rating process on each criterion. Below is the decision matrix X.

$$X = \begin{bmatrix} 2 & 5 & 5 & 5 & 3 \\ 3 & 2 & 5 & 5 & 3 \\ 4 & 5 & 5 & 5 & 3 \\ 2 & 2 & 5 & 5 & 3 \\ 3 & 3 & 5 & 5 & 3 \end{bmatrix}$$

6. Normalization of Decision Matrix (x)

To get the results of the alternative values, normalization of the decision matrix will be carried out by calculating the normalized value of the alternatives for each criterion. Below is an image of the normalization of the decision matrix on the system.

Normalisasi Matriks Keputusan

Alternative	Kriteria				
	Harga Buku	Seri Buku	Eksemplar	Rating Pembaca	Content Buku
Sapta Siaga	1	0.064	1	1	1
Harry Potter	0.636	0.055	0.833	1	1
Goosebump	0.226	1	0.667	1	1
Pilih Sendiri Petualanganmu	1	0.783	0.417	1	1
Chicken Soup The Soul	0.636	0.089	0.217	1	1
A Song Of Ice And Fire	0.226	0.026	0.15	1	1
Captain Underpants	1	0.051	0.133	1	1
Jack Reacher	0.636	0.106	0.1	1	1
Jembatan Madison County	1	0.043	0.1	1	1
The Name Of The Rose	0.636	0.085	0.083	0.8	1
Guess How Much I Love You	0.636	0.017	0.072	0.8	1
Dunia Sophie	1	0.098	0.067	0.8	1
Rich Dad Poor Dad	0.636	0.064	0.053	0.8	1
Who Moved My Cheese?	0.636	0.047	0.043	1	1
Matilda	0.636	0.077	0.028	0.8	0.333

Figure 10. Normalization of the decision matrix

7. Ranking

The ranking process is carried out after getting the value from the normalization of the decision matrix. To perform the ranking must use the value that has been set. Below is a picture of the normalization of the decision matrix on the system.

Perangkingan

Alternative	Kriteria					Hasil
	Harga Buku	Seri Buku	Eksemplar	Rating Pembaca	Content Buku	
Sapta Siaga	0.3	0.0032	0.35	0.2	0.1	0.9532
Harry Potter	0.1908	0.00275	0.29155	0.2	0.1	0.7851
Goosebump	0.0678	0.05	0.23345	0.2	0.1	0.65125
Pilih Sendiri Petualanganmu	0.3	0.03915	0.14595	0.2	0.1	0.7851
Chicken Soup The Soul	0.1908	0.00445	0.07595	0.2	0.1	0.5712
A Song Of Ice And Fire	0.0678	0.0013	0.0525	0.2	0.1	0.4216
Captain Underpants	0.3	0.00255	0.04655	0.2	0.1	0.6491
Jack Reacher	0.1908	0.0053	0.035	0.2	0.1	0.5311
Jembatan Madison County	0.3	0.00215	0.035	0.2	0.1	0.63715
The Name Of The Rose	0.1908	0.00425	0.02905	0.16	0.1	0.4841
Guess How Much I Love You	0.1908	0.00085	0.0252	0.16	0.1	0.47685
Dunia Sophie	0.3	0.0049	0.02345	0.16	0.1	0.58635
Rich Dad Poor Dad	0.1908	0.0032	0.01855	0.16	0.1	0.47255
Who Moved My Cheese?	0.1908	0.00235	0.01505	0.2	0.1	0.5062
Matilda	0.1908	0.00385	0.0098	0.16	0.0333	0.39775

Figure 11. ranking

From the picture, we can find out who got the highest score and who got ranked 1 to 3 in the SAW method, namely, Alternative Sapta Siaga ranked 1 with a value of 0.963, Alternative Harry Pooter ranked 2 with a value of 0.0785 and Alternative Chicken soup the soul ranked 3 with a value of 0.0784 .

4. CONCLUSION

After doing this research, we can conclude that by implementing a decision support system using the AHP method and the SAW method using 15 sample fiction book data, we get the final results that are in accordance with the calculation process of the two methods.

In this system, the AHP method is used to measure the consistency of the criteria with the results of a consistency ratio of 0.086 which can be seen that the value is <0.1 , then the value is considered consistent. Comparing the final results of the alternative eigenvalues on each criterion in the AHP and SAW methods, we get the same ranking results. In the AHP method, the first highest score is A01 Sapta Siaga with a value of 0.095, the second highest value is A02 Harry Potter 0.083 and the third highest value is A05 with a value of 0.075, while the SAW method system is used to rank alternatives with the final result Sapta Siaga obtaining the highest score with a score of 0.953 with a ranking of 1st, Harry Potter with a value of 0.0785 ranked 2nd and Chicken soup the soul with a value of 0.0784 ranked 3rd

The application of the AHP method as a weighting criterion and SAW as a ranking process has proven that both methods have fulfilled and assisted in the selection of the best fiction books in the 1990s era..

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