The Very Suitable Methods of Profile Matching and Analytical Hierarchy Process for Major Selection (Case Study: SMK Global Tangerang)

Arif Nurrochman[1)]; Agung Budi Susanto[2)] and Taswanda Taryo[3)]

Pamulang University, Indonesia

E-mail: [a)]arifnurrochman10@gmail.com; [c)]dosen02234@unpam.ac.id

Abstract: Problems in choosing majors at SMK Tangerang Global make students less careful in choosing majors. The problem in choosing a major is the incompatibility of the concentration of the chosen major with academic values, interests, skills and abilities, and following the advice of friends or parents. The purpose of this research is for prospective students who will register as new students at the Tangerang Global Vocational School which will make students focus on their talents and expertise. Decision making regarding the selection of majors must be appropriate so that students are able to develop talents, understand the material, and are not burdened in learning activities at school. This study uses the Profile Matching method and the Analytical Hierarchy Process method to help provide recommendations to students in choosing majors so that decision making becomes more effective and accurate. This research is for prospective students who will register as new students and grade X students in Odd Semesters. Determination of criteria including science test scores, math test scores, Indonesian test scores, English test scores, TPA test scores, interview test scores and interest test scores. This study makes a comparison which is more effective between the two methods. The Analytic Hierarchy Process (AHP) and Profile Matching methods are suitable because they are alternatives for students who will take more effective majors and the decisions obtained are not only subjective, but can be more objective. The results of testing the system that was built will determine students according to their choice of majors and the criteria that have been set so that they are not wrong in choosing the concentration of majors at SMK Tangerang Global so that students can get the best grades and achieve more.

Keywords: Major Selection , Profile Matching, Analytical Hierarchy Proses

INTRODUCTION

Tangerang Global Vocational High School (SMK) Tangerang City is a vocational high school domiciled in the Karawaci District, Tangerang City. Academic activities at the Tangerang Global Vocational School have three Vocational Programs, namely the Multimedia Vocational Program, the Office Administration Automation Vocational Program (OTKP) and the Accounting and Financial Institutions Vocational Program (AKL). Mistakes in choosing majors are usually caused by prestige, capacity, freshness and parenting advice. Hasty selection will result in a late realization that the majors taken are not in accordance with their personality.

Research that uses a group decision support system to help students choose the concentration of majors by using Profile Matching and Analytical Hierarchy Process comparisons will reduce subjective assessments and the resulting recommendations are more objective. The limitations or scope of the problem are used to avoid expanding the problem, limited knowledge and to be more focused on achieving research objectives, the following are the limitations of the research, including recommendations for choosing a study concentration for each student based on the majors in SMK Tangerang Global, Tangerang City. Determination of alternative values obtained through calculations with Profile Matching and Analytical Hierarchy Process methods.

The results obtained are in the form of recommendations in the selection of study concentrations based on majors at the Tangerang Global Vocational School, Tangerang City. The problem formulation carried out includes the application of the Profile Matching method and the Analytical Hierarchy Process method in the selection of majors at SMK Tangerang Global? And then determine the majors effectively and efficiently objectively? And how the system can support the school in determining majors for students according to their interests and talents using the profile matching method and the Analytical Hierarchy Process method? The purpose of this scientific work, based on the background of the problems above, aims to produce a group decision support system in the selection of study concentrations for students at the Tangerang Global Vocational School, Tangerang City in order to provide a sequence in the selection of concentrations so as not to choose the wrong concentration of study by making procedures and grades standards regarding the assessment of criteria and sub-criteria.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT
Study of Literature
In writing research on the topic of this decision support system, the researcher uses various kinds of literature review references related to the topic. However, the extent to which this research develops requires a review of studies of previous studies that raise the topic of decision support systems. Conduct a study review to learn about the methods, data, and models that have been used in previous research. Based on the review of journals [1-20], it can be concluded that the researcher chose the Analytical Hierarchy Process (AHP) and Profile Matching methods to get a decision that was taken effectively and systematically. Starting from collecting data to decide on a value of criteria and alternatives which finally get the results of an effective decision and serve as a guide for decision making through a calculation of a method that has been chosen and the researcher creates or develops the method to a place of research that has not previously been used. Exists or already exists, but is developed from the beginning.

Theoretical Basis
Decision Support System (DSS) is a system built to solve various problems of a managerial or organizational nature designed to develop the effectiveness and productivity of managers to solve problems with the help of computer technology. The Profile Matching method is a process of comparing individual competencies into job competencies so that differences in competence (also called gaps) can be seen. The smaller the resulting gap, the greater the value weight, which means it has a greater chance to match its major and can be seen in full in Table 1.

Table 1. Weight Value

Number	Gap	Weight Value	Note
1	0	5	No Gap
2	1	4.5	1 level excess individual competence
3	-1	4	Individual competence less than 1 level

4	2	3.5	Individual competence excess 2 levels
5	-2	3	Individual competence less than 2 levels
6	3	2.5	Individual competence excess 3 levels
7	-3	2	Individual competence less than 3 levels
8	4	1.5	Individual competence excess 4 levels
9	-4	1	Individual competence less than 4 levels
10	5	0	Individual competence excess 5 levels

Source : Data search 2022

To calculate the core factor used the formula:

$$NRC = \frac{\sum NC}{\sum IC} \qquad \text{dan} \qquad NRF = \frac{\sum NS}{\sum IS} \qquad (1)$$

The calculation of the total value can be shown in the formula below:

NT = (x)% X NCF + (x)% X NSF   ….   (2)

Determination refers to the ranking in the results of calculations aimed at the formula

Rangk = (x) % Nb + (x) % Nr   (3)

The Analytical Hierarchy Process (AHP) method is one method to help develop a priority from various options using various criteria. Due to its multi-criteria nature, the Analytical Hierarchy Process (AHP) method is quite widely used in setting priorities.

Table 2. Couple comparison rating scale

Intensity Interest	Information
1	Both elements are equally important
3	One element is slightly more important than the other.
5	One element is more important than the other elements.
7	One element is absolutely important than the other elements.
9	One element is absolutely more important than the other elements.
2,4,6,8	The values between two adjacent consideration values.
9	If for activity i get one number compared to activity j, then j has the opposite value compared to i.

Source : Data search 2022

METHODS

The author applies several methods to solve problems, the research methods carried out are as shown in Figure 1. This questionnaire was distributed to the object of research to be filled out and returned to the researcher who will be used as a data source in the selection of majors in the concentration of majors at SMK Tangerang Global. Respondents to this questionnaire are students of prospective new students and students of SMK Tangerang Global Tangerang and the population of the questionnaire is 150.
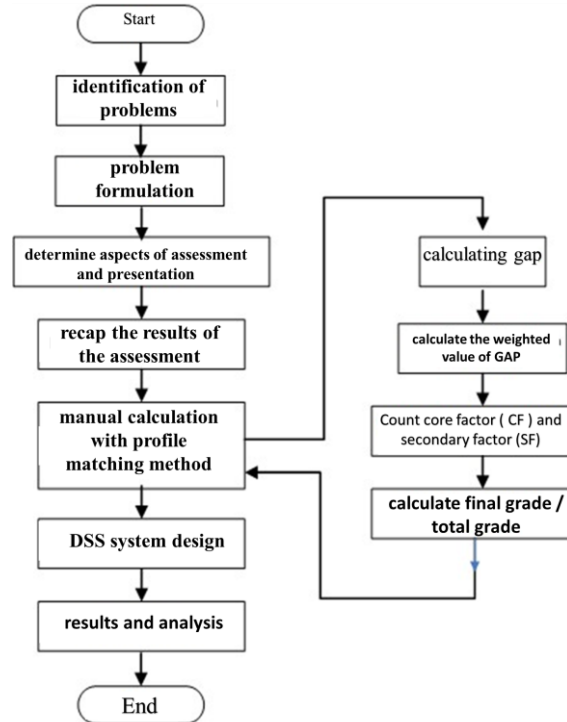
Profile Matching Research Design

The design steps carried out in this study are described as follows:

Stage 1: This research begins with identifying the problems that occur in SMK XYZ and obtaining data through interviews with the vice principal of the curriculum section.

Stage 2: Identifying problem solutions and formulating problems based on the results of theoretical studies and literature studies to determine the criteria and alternative data taken to perform a calculation.

Stage 3: Determine the aspects of the assessment and the percentage of each assessment criteria that has been obtained from the results of the formulation of the problem based on theoretical studies and literature studies.

Stage 4: Recap the results of the assessment using the Ms. Excel.

Stage 5: Perform manual calculations using the Profile Matching method.

Stage 6: Perform analysis and calculations by inputting criteria and alternative values to generate rankings.

Stage 7: Determining the results and analyzing the research results to get the right decision.

The process in the AHP method flow chart:

1. Make a pairwise comparison matrix of criteria. And make the matrix normalization and priority criteria, the calculation formula is as follows:
   a. new column row value = old column row value / sum of each row column.
   b. Priority = Number of columns / n (Number of Criteria)
2. Calculating lamda max
   New column row value = Number of old columns * Criteria priority. The result of the addition is called Λ.
3. Calculating the value of CI (Consistency Index) the calculation formula is
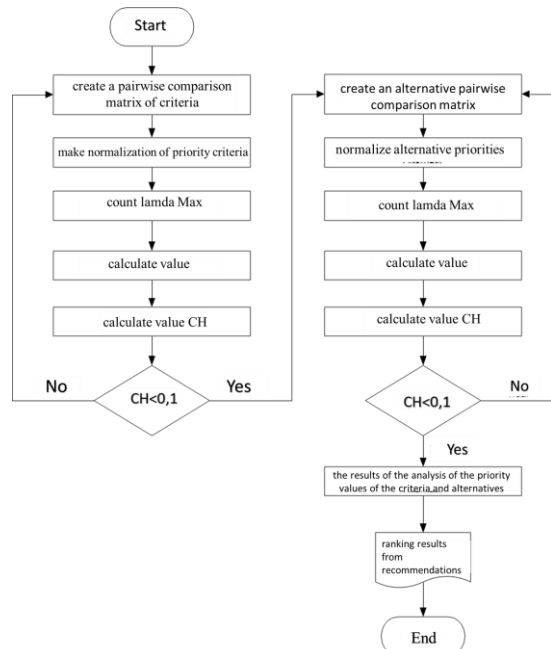 $CI = (\Lambda_m - n)/(n - 1)$ and the number of criteria.

Source : Data Research 2022

Figure 1. *Flowchart Profile Matching*

Analytical Hierarchy Process Research Design

The following is a flow chart using the AHP method (*Analytical Hierarchy Process*) :

Source : Data Research 2022

Figure 2. *Flowchart Analytical Hierarchy Process*

4. Create a pairwise comparison matrix of criteria. And make a normalization of the matrix and the priority of the criteria, the calculation formula is as follows:
   a. New column row value = old column row value / sum of each row column.
   b. Priority = Number of columns / n (Number of Criteria)
5. Calculating lambda max

New column row value = Number of old columns * Criteria priority. The result of this sum is called λ.

6. Calculating the value of CI (Consistency Index) the calculation formula is
   $CI = (\lambda_m - n)/(n - 1)$ and the number of criteria.

7. Calculating CR (Consistency Rasio) the calculation formula is

   $$C = \frac{C}{R}$$

   Ket. RI = Random Index.

8. Checking the CR value, if CR < 0.1 then the calculation will be completed, but if not then you have to make a comparison matrix again.

9. Create an alternative pairwise comparison matrix.

10. Make matrix normalization and alternative priorities, the calculation formula is as follows:
    a. New column row value = old column row value / sum of each old column.
    b. Priority = Number of columns / n (Number of Alternatives)

11. Calculating lamda max
    New column row value = Number of old columns * Criteria priority. The result of this sum is called λ.

12. Calculating the value of CI (Consistency Index) the calculation formula is
    $CI = (\lambda_m - n)/(n - 1)$.
    Ket. n = Number of alternatives

13. Calculating CR (Consistency Rasio) the calculation formula is

    $$C = \frac{C}{R}$$

    Ket. RI = Random Index.

14. The results of the analysis are used to calculate the multiplication of the priority criteria with alternative priorities. And the results of rankings and recommendations are the final score results from the calculation of criteria and alternatives.

RESULT AND DISCUSSION

The results of the recommendations in the selection of majors will be more objective. The number of students selected based on the majors taken in this calculation amounts to 123 students of class X odd semester with the following details:

Analytical Hierachy Process (AHP) Calculation Method

Next, what is done is to find the priority of the section by compiling the relevant criteria as a pair comparison matrix.

Table 3. Pairwise Comparison Matrix

	K001	K002	K003	K004	K005	K006	K007
K001	1	1	1	1	3	2	5
K002	1	1	1	1	3	2	5
K003	1	1	1	1	3	2	5
K004	1	1	1	1	3	2	5
K005	0,33	0,33	0,33	0,33	1	3	3
K006	0,5	0,5	0,5	0,5	0,33	1	2
K007	0,2	0,2	0,2	0,2	0,33	0,5	1
Jumlah	**5,03**	**5,03**	**5,03**	**5,03**	**13,6**	**12,5**	**26**

Source : Data Research 2022

The next step is to calculate the value of the criteria column elements. The value for each criterion is obtained by dividing each value from the column by the total column in question. Then add up the values of each row and divide by the number of elements to get the average value (priority weight). The calculation results can be seen in Table 3.

Table 4. Normalized Criteria Value Matrix

	K001 Science	K002 Math	K003 English	K004 Indon.	K005 TPA	K006 Interview	K007 Interest	Amount	Priority	Eigin Value
K001	0,199	0,199	0,199	0,199	0,220	0,160	0,192	1,367	**0,195**	0,982
K002	0,199	0,199	0,199	0,199	0,220	0,160	0,192	1,3672	0,1953	0,982
K003	0,199	0,199	0,199	0,199	0,220	0,160	0,192	1,3672	0,1953	0,982
K004	0,199	0,199	0,199	0,199	0,220	0,160	0,192	1,3672	0,1953	0,982
K005	0,066	0,066	0,066	0,066	0,073	0,240	0,115	0,6910	0,0987	1,348
K006	0,099	0,099	0,099	0,099	0,024	0,080	0,077	0,5787	0,0827	1,033
K007	0,040	0,040	0,040	0,040	0,024	0,040	0,038	0,2617	0,0374	0,972
Amount	1,00	1,00	1,00	1,00	1,00	1,00	1,00	7,00	1,00	7,28

Source : Data Research 2022

From table 9 it can be seen that the criteria have the highest priority with a weight of 0.195, thus the CI is 0.0472 and the CR is 0.0357. If the CR value <= 0.1, then the matrix is said to be consistent so that it can be concluded that the CR value of 0.0357 is said to be consistent. From the results of the calculation table above shows that the most dominant score criteria on the test for prospective students who want to register at SMK Tangerang Global are:

a. IPA test scores with a weighted value of 0.1953 or 19.53%,
b. Math test scores with a weighted value of 0.1953 or 19.53%,
c. English test scores with a weighted value of 0.1953 or 19.53%,
d. Indonesian Language Test Score with a weighted value of 0.1953 or 19.53%,
e. TPA test scores with a weighted value of 0.0987 or 9.87 %,
f. Interview test scores with a weighted value of 0.0827 or 8.27%,
g. While for interest with a weight value of 0.0374 or 3.74%.

Decision Matrix Calculation

Pairwise comparisons for the Science Test Score criteria (K001) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL Department, the OTKP Department. Table 5 is the evaluation factor matrix for the simplified and normalized value criteria. The eigenvector value is generated from the average relative weight value for each row and the CR is 0.01 and because CR <=0.1 then the matrix is said to be consistent.

Table 5. Evaluation Factor with IPA test score criteria

	Simplification of IPA test scores			Normalization of IPA test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	Vector Eigen (4.13)
AKL	1,00	0,20	5,00	0,161	0,048	0,790	1,55
OTKP	5,00	1,00	0,33	0,806	0,238	0,052	1,15
MM	0,20	3,00	1,00	0,032	0,714	0,158	1,43

Source : Data Research 2022

Calculation of Evaluation Factors for Mathematics Test Score Criteria (K002)

Pairwise comparisons for the criteria for Mathematics Test Score (K002) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL major, the OTKP Department. Until the reference results are

obtained in a reciprocal matrix. Table 6 is a matrix table of evaluation factors for the simplified and normalized criteria for Mathematics Test Values (Eigenvectors). The eigenvector value is generated from the average relative weight value for each row and the CI is 0.01 and after being tested the CR is consistent.

Table 6. Evaluation Factor with Maths Test Score

	Simplifying of maths test scores			Normalization of maths test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.01)*
AKL	1,00	3,00	2,00	0,546	0,500	0,571	0,99
OTKP	0,33	1,00	0,50	0,180	0,167	0,143	0,98
MM	0,50	2,00	1,00	0,273	0,333	0,286	1,04

Source : Data Research 2022

Calculation of Evaluation Factors for Criteria for English Test Scores (K003)
Calculation of Evaluation Factors for Criteria for English Test Scores (K003)

Pairwise comparisons for the English Language Test Score criteria (K003) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL Department, the OTKP Department until the reference results are obtained in the reciprocal matrix Table 7. The eigenvalues are obtained and, as previously, CR is obtained equal to 0.05, it is therefore guaranteed to be coherent.

Table 7. Evaluation Factor with English Test Score

	Simplifying of english test scores			Normalization of english test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.06)*
AKL	1,00	0,50	0,50	0,200	0,250	0,143	0,99
OTKP	2,00	1,00	2,00	0,400	0,500	0,571	0,98
MM	2,00	0,50	1,00	0,400	0,250	0,286	1,09

Source : Data Research 2022

Calculation of Evaluation Factors for Indonesian Language Test Score Criteria (K004)

Pairwise comparisons for the Indonesian Language Test Score criteria (K004) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL Department, the OTKP Department until the reference results are obtained in a reciprocal matrix and with Table 8, the CI/RI = CR value is obtained 0.05 and guaranteed consistency.

Table 8. Evaluation Factor with Indonesian Language Test Score

	Simplifying science Indonesian test scores			Normalization of indonesian test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.00)*
AKL	1,00	0,20	0,50	0,125	0,131	0,111	0,98
OTKP	5,00	1,00	3,00	0,625	0,654	0,667	0,99
MM	2,00	0,33	1,00	0,250	0,216	0,222	1,03

Source : Data Research 2022

Calculation of Evaluation Factors for TPA Test Score Criteria (K005)

Pairwise comparisons for the criteria for the TPA Test Score (K005) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the TKJ Department and the AKL Department, OTKP Department, and TBSM Department. Until the reference results are obtained in the reciprocal matrix and Table 9 Evaluation Factors for TPA Test Values. Finally, the value of CR <= 0.1 then the matrix is said to be consistent.

Table 9. Evaluation Factor with TPA Test Score

	Simplifying science TPA test scores			Normalization of TPA test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.01)*
AKL	1,00	7,00	2,00	0,610	0,538	0,625	1,08
OTKP	0,14	1,00	0,20	0,085	0,077	0,063	1,01
MM	0,50	5,00	1,00	0,305	0,385	0,313	0,92

Source : Data Research 2022

Calculation of Evaluation Factors for Interview Test Score Criteria (K006)

Pairwise comparisons for the Interview Test Score criteria (K006) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL Department, the OTKP Department. Until the reference results are obtained in the reciprocal matrix and Table 10 Evaluation Factors for the criteria for normalized Interview Test Values. The eigenvector values are generated from the average relative weight values for each row and the CR is 0.01 and is consistent.

Table 10. Evaluation Factors for Interview Test Score criteria

	Simplifying science interview test scores			Normalization of interview test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.01)*
AKL	1,00	0,33	0,50	0,167	0,180	0,143	0,98
OTKP	3,00	1,00	2,00	0,500	0,546	0,571	0,99
MM	2,00	0,50	1,00	0,333	0,273	0,286	1,04

Source : Data Research 2022

Calculation of Evaluation Factors for Student Interest Criteria (K007)

Pairwise comparisons for the criteria for Interest Test Scores (K007) in 3 types of majors at SMK Tangerang Global, namely pairwise comparisons between the MM Department and the AKL major, the OTKP Department. Until the reference results are obtained in the reciprocal matrix and Table 11. Evaluation Factor Matrix for Interest Test Score criteria. The eigenvector values are generated from the average of the relative weight values for each row. The calculation results show that CR = 0.05, and <= 0.1, then the matrix is said to be consistent.

Table 11. Evaluation Factors for Interest Test Score criteria.

	Simplifying science interest test scores			Normalization of interest test scores			
	AKL	OTKP	MM	AKL	OTKP	MM	*Vector Eigen (3.06)*
AKL	1,00	0,50	0,50	0,200	0,143	0,250	0,99
OTKP	2,00	1,00	0,50	0,400	0,286	0,250	1,09
MM	2,00	2,00	1,00	0,400	0,571	0,500	0,98

Source : Data Research 2022

Global Ranking/Priority Total Calculation
A. Total Evaluation Factor and Rank

Of all the evaluations carried out on the 7 criteria, namely Science Test Scores, Mathematics Test Scores, English Test Scores, Indonesian Language Test Scores, TPA Test Scores, Interview Test Scores, Interest Test Scores which are then multiplied by a priority vector. Thus we obtain a table of relationships between criteria and alternatives.

Table 12. Relationship matrix between criteria and alternatives

	Relationship matrix between criteria and alternatives							Rank AHP	
	K001	K002	K003	K004	K005	K006	K007	Nilai	Ranking
AKL	0,122	0,539	0,198	0,122	0,591	0,163	0,198	0.2709	3
OTKP	0,229	0,163	0,490	0,648	0,075	0,539	0,312	0.3627	2
MM	0,648	0,297	0,312	0,229	0,334	0,297	0,490	0.3663	1

Source : Data Research 2022

Table 12 connects the criteria with alternatives, namely the comparison between the criteria and the available majors. To find the total ranking for each department at SMK Tangerang Global is to multiply the evaluation factor of each alternative by the weight factor. Based on the calculation results, the following results are obtained:

2. Profile Matching Calculation Method

Ideal Profile Criteria

The Core Factor is in accordance with the real conditions at the Tangerang Global Vocational School majoring by considering three subject values, namely Science Values, Mathematics Values, English Values, Indonesian Language Values and TPA Scores, while for the Secondary Factors Interview Values and Interest Values are used. First, we determine the ideal profile value.

Table 13. Criteria Data and Value

	Criteria Data			Criteria Value		
No	Criteria Code	Criteria	Value	Range	Great value	Information
1	K001	IPA Test Score	2	< 64	1	Very less
2	K002	Maths Test Score	3	65-74	2	Less
3	K003	English Test Score	3	75-84	3	Enough
4	K004	Indonesian Test Score	4	85-94	4	Good
5	K005	TPA Test Score	3	95-100	5	Very good
6	K006	Interview Test Score	3			
7	K007	Interest Test Score	4			

Source: (Author, 2022)

For each of these criteria will be determined the weights to get these variables must be made on an ordinal scale. For more clarity, it can be seen in table 2 below. After the value that has been obtained will be converted into the weight of the value that has been determined in the Profile Matching method.

Tabel 14. Intelligence Aspect Attribute Value

ALTERNATIF	IPA	Maths	English	Indonesia	TPA	Interview	Interest
AKL	3	4	2	3	3	3	2
OTKP	3	1	4	4	3	4	3
MM	1	3	3	3	4	3	4

Source: (Author, 2022)

Competency GAP Mapping

The table for calculating the intelligence aspect of GAP with a target value of 2,3,3,4,3,3,4.

Tabel 15. The difference between the attribute value and the target value in the aspect of intelligence

ALTERNATIF	IPA	Maths	English	Indonesia	TPA	Interview	Interest
AKL	3-2=1	4-3=1	2-3=-1	3-4=-1	3-3=0	3-3=0	2-4=-2
OTKP	3-2=1	1-3=-2	4-3=1	4-4=0	3-3=0	4-3=1	3-4=-1
MM	1-2=-1	3-3=0	3-3=0	3-4=-1	4-3=1	3-3=0	4-4=0

Source : Data Research 2022

After the value that has been obtained will be converted into the weight of the value that has been determined in the Profile Matching method.

Tabel 16. Intelligence aspect score

ALTERNATIF	IPA	Maths	English	Indonesia	TPA	Interview	Interest
AKL	4,5	4,5	4	4	5	5	3
OTKP	4,5	3	4,5	5	5	4,5	4
MM	4	5	5	4	4,5	5	5

Source : Data Research 2022

Calculation of Core and Secondary Factor (NCF and NSF)

For the calculation of the core factor, first take several criteria from each of the most important aspects and later will be used as a core factor for the rest to be used as a secondary factor. The main factors are based on 4 criteria, namely science, mathematics, English and Indonesian. Meanwhile, the secondary factors are taken from 3 criteria, namely TPA, Interview and Interest. Then the core factor and secondary factor values are added up and the ranking results can be seen in the following table. By using the data [in Table 17 and using the formula N (Aspect), it is obtained NCF and NSF as well as their ranking.

Tabel 17. NCF and NSF Nilai Values

ALTERNATIF	NCF	NSF	Total Value (Intelligence 100%)	Ranking
AKL	4,25	4,33	4,28	3
OTKP	4,25	4,5	4,35	2
MM	4,5	4,83	4,63	1

Source : Data Research 2022

Furthermore, the calculation of the total value is based on the percentage of core factor and secondary factor, each percentage is divided into 60% for the core factor and 40% for the secondary factor.

N (Aspek) = (x)% * NCF (IPA, MTK, BING, BIND) + (x)% * NSF (TPA, W, M)

Where NCF and NSF: The average value of the core and secondary factor.

Comparison Results of AHP and Profile Matching Methods

Based on the AHP and Profile Matching methods, the following results are obtained:

Tabel 18. Comparison of AHP and Profile Matching methods

NO	JURUSAN	AHP	PROFILE MATCHING	AHP (%)	FM (%)
1	AKL	0,36633	4,63	36,63	46,3
2	OTKP	0,36275	4,35	36,28	43,5
3	MM	0,27092	4,28	27,09	42,8

Source : Data Research 2022

The result of the comparison of the two methods above is that the largest value is in the profile matching method. So, the most effective method is the profile matching method.

CONCLUSION

From the research conducted, it is concluded that at the analysis and design stage of the prediction model in the study of the selection of majors at the Tangerang Global Vocational School which is applied using group DSS with the Analytic Hierarchy Process (AHP) and Profile Matching models, it is suitable because it is an alternative for students who will take majors objectively. Then, the selection of study concentrations applied with a combination of AHP and Profile Matching models can help students/agencies in providing recommendations for the major concentration so that students graduate on time and have the expertise and understanding of the concentration taken. Finally, based on the AHP and Profile Matching methods, the results of the comparison of the two methods were obtained and the larger value was obtained using the profile matching method and the most effective method was the profile matching method with AKL values 46,3%, OTKP 43,5%, MM 43,8%.

ACKNOWLEDGEMENT

REFERENCE

Agustina, Friska, Andi Tenri Sumpala, and Arysespajayadi Arysespajayadi. 2021. "SPK Pemilihan Jurusan Siswa Baru Menggunakan Metode AHP Dan MOORA Pada SMKN 1 Kolaka." *Jurnal Sains Dan Informatika* 7 (1): 87–96. https://doi.org/10.34128/jsi.v7i1.292.

Amin, M Miftakul, and Ervi Cofriyanti. 2017. *Sistem Rekomendasi Pemilihan Kandidat Calon Tenaga Kerja Menggunakan Model Profile Matching*.

Apriyani, Dwi Dani. 2021. "Sistem Pendukung Keputusan Pemilihan Siswa Berprestasi Menggunakan Metode *Profile Matching.*" *Faktor Exacta* 14 (1): 44. https://doi.org/10.30998/faktorexacta.v14i1.9057.

Fatullah, Rizki, Huswatun Hasanah, Dwi Rizky, and Universitas Banten Jaya. 2022. "Sistem Pendukung Keputusan Pemilihan Jurusan Kuliah Dengan Metode Analytical Hierarchy Process (AHP) Berbasis Web Pada SMAN 1 Kramatwatu" 11 (1).

Febri Nurul Qorik, Moh, and Priza Pandunata. 2018. "Sistem Pendukung Keputusan Seleksi Beasiswa Situbondo Unggul Menggunakan Metode Simple Additive Weighting Dan Profile Matching." Vol. 3.

Hotman, Rikardo, Siahaan Mona, and Juwita Gurusinga. 2020. "Perancangan Perangkat Lunak Sistem Pendukung Keputusan Dalam Menentukan Pilihan Produk Mobil Menggunakan Metode *Profile Matching.*" *Jurnal Sains Dan Teknologi ISTP*. Vol. 13.

Kurniawan, Achmad Wahid, Budi Widjajanto, and Ida Farida. 2021. "Profile Matching Untuk Sistem Pendukung Keputusan Penilaian Kinerja Driver." *TRANSFORMTIKA* 19 (1): 74–83.

Kuswanto, Joko. 2020. "Penerimaan Karyawan Baru Menggunakan Metode *Profile Matching*." *Jurnal Processor* 15 (2): 85. https://doi.org/10.33998/processor.2020.15.2.831.

Hotman, Rikardo, Siahaan Mona, and Juwita Gurusinga. 2020. "Perancangan Perangkat Lunak Sistem Pendukung Keputusan Dalam Menentukan Pilihan Produk Mobil Menggunakan Metode *Profile Matching*." *Jurnal Sains Dan Teknologi ISTP*. Vol. 13.

Ina, Wenefrida T, Sarlince Manu, and Abdullah Nahdi. n.d. "Kombinasi Metode *Profile Matching* Dan Metode *Analytical Hierarchy Proses* (Ahp) Pada Pengambilan Keputusan (Studi Kasus Aplikasi Pelelangan Jabatan Pemerintah Daerah)." *Jurnal Media Elektro |* VII (1).

Indriyani, Fintri. 2019. "Penerapan Metode *Profile Matching* Sebagai Pendukung Keputusan Pemilihan Jurusan Pada Smk Al Hidayah" 1 (2).

Kurniawan, Achmad Wahid, Budi Widjajanto, and Ida Farida. 2021. "Profile Matching Untuk Sistem Pendukung Keputusan Penilaian Kinerja Driver." *TRANSFORMTIKA* 19 (1): 74–83.

Kuswanto, Joko. 2020. "Penerimaan Karyawan Baru Menggunakan Metode *Profile Matching*." *Jurnal Processor* 15 (2): 85. https://doi.org/10.33998/processor.2020.15.2.831.

Laelissiyamah, Ade. 2020. "Sistem Pendukung Keputusan Rekomendasi Penempatan Pegawai Menggunakan Metode *Profile Matching Decision Support System for Employee Placement Recommendation Using Profile Matching Method*." *Jurnal Ilmiah Intech : Information Technology Journal of UMUS* 2 (02): 15–24.

Malau, Yesni. 2020. "Sistem Pendukung Keputusan Pemilihan Kategori Promosi Produk Menggunakan Metode *Profile Matching* (Studi Kasus : Minimarket)." *MATRIK : Jurnal Manajemen, Teknik Informatika Dan Rekayasa Komputer* 19 (2): 339–46. https://doi.org/10.30812/matrik.v19i2.672.

Mareta, Ayu Datari, and Asri Wahyuni. 2021. "Pemilihan Staff Berprestasi Dengan Menggunakan Metode Profile Matching Pada 'COPPAMAGZ' (Korean Entertainment Media & Community)." *Jurnal Interkom: Jurnal Publikasi Ilmiah Bidang Teknologi Informasi Dan Komunikasi* 15 (4): 1–9. https://doi.org/10.35969/interkom.v15i4.77.

Maulizar. 2021. "Sistem Pendukung Keputusan Pemilihan Wakil Kepala Sekolah Dengan Menggunakan Metode *Profile Matching* (Study Kasus : Madrasah Aliyah Swasta Taman Pendidikan Islam)." *Nasional Teknologi Informasi Dan Komputer)* 5 (1). https://doi.org/10.30865/komik.v5i1.3734.

Nasution, Fitri Pranita. 2020. "Identifikasi Kinerja Guru Dalam Menentukan Kualitas Mengajar Menggunakan Metode *Profile Matching*." *Jurnal Teknik Informatika Kaputama (JTIK)* 4 (2).

Nisa, Khoirunnisa, Tri Puji Yuliani TPY, and Dian Natasha Putri. 2021. "Penerapan Metode Profile Matching Dalam Sistem Pendukung Keputusan Pemilihan Karyawan Terbaik Pada CV. Karya Alam." *Jurnal Ilmu Komputer* 10 (2): 73–77. https://doi.org/10.33060/jik/2021/vol10.iss2.215.