

DECISION SUPPORT SYSTEM FOR GIVING "JOINT DEGREE PROGRAM" SCHOOL OF BHAYANGKARA SURABAYA UNIVERSITY USING ANALYTICAL HIERARCHY PROCESS (AHP) METHOD

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ABSTRACT

The granting of scholarships to students is carried out by universities based on their achievements. In awarding scholarships, universities often have difficulty in determining prospective scholarship recipients, so it is found that the distribution of scholarships is not precisely due to a manual system for determining scholarships. Decision support system is an information system intended to assist the University in solving the problem of awarding Academic Achievement Scholarships. One method that can be used in a decision support system is Fuzzy Analytical Hierarchy Process (F-AHP) with the Chang model approach (1996). The criteria used are GPA, Achievement, Parents' Work, Parental Dependents and Semesters. From the results of experiments conducted the results of calculations from the application and manual checking from the ubhara get 100% presentation in determining the recipient of the scholarship. Resulting in the ranking of student grades, ten students with the highest grades in each faculty will receive an Academic Achievement Improvement scholarship.

Keywords : Scholarship, College student, Fuzzy (AHP), Decision Support System.

1. INTRODUCTION

According to the big Indonesian dictionary, scholarship is allowances given to students or studentas tuition assistance assistance (KBBI, 2008). At present many scholarships are offered to underprivileged and outstanding students. To get Quality education requires no small cost. The awarding of scholarships is a work program that is available at every university or college. The granting of scholarships to students is done selectively according to the type of scholarship being held. University Bhayangkara provides a scholarship program Enhancement Achievement Academic (PPA). In determining the prospective recipient of the scholarship, the campus has several criteria that must be met by the prospective recipient in accordance with the scholarship that the prospective recipient wishes to take. The selection process for receiving scholarships manually that is with inputting student data one by one and then selecting student data often causes several problems, while others require a long time and high accuracy. In addition, transparency and unclear methods used in the process of computing scholarship receipts are also one of the problems, so we need a system that can help in the decision making process for students who are recommended to receive scholarships based on predetermined criteria quickly and accurately target

2. BASIC THEORY

The awarding of scholarships is a work program that is available at every university or college. Scholarships are given to students selectively according to the type of scholarship held. Bhayangkara University provides a scholarship program, which is an Academic Achievement Improvement scholarship (PPA). In determining the prospective recipient of the scholarship, the campus has several criteria that must be met by the prospective recipient in accordance with the scholarship that the prospective recipient wishes to take. By using support system decisions especially with methods Fuzzy Analytical Hierarchy Process (F-AHP) was made a the design of a decision support system application for the scholarship of the University of Bhayangkara Surabaya in accordance with the criteria namely GPA, Achievement, Parents 'Work, Parents' Dependents and Semesters. With this application it is expected that the University can be utilized to determine and provide scholarships with the best qualifications in accordance with predetermined criteria

2.1 Fuzzy AHP

F-AHP is a combination of AHP method and fuzzy concept approach. F-AHP cover weaknesses found in AHP, namely the problem of criteria that have more subjective nature. The uncertainty of numbers is represented by a sequence of scales. For Determine level membership in the F-AHP, used rules of functions in the form of triangular or fuzzy numbers *Triangular Fuzzy Number* (TFN) that arranged based on linguistic set. So, the number at level intensity interest in AHP transformed into a TFN scale set. Here is a triangular fuzzy scale table:

Table 2.1 Scale Linguistic (Chang, 1996)

Intensitas Kepentingan AHP	Himpunan Linguistik	Triangular Fuzzy Number (TFN)	Reciprocal (Kebalikan)
1	Sama Penting	(1, 1, 1)	(1, 1, 1)
2	Pertengahan Sama Penting	(1/2, 1, 3/2)	(2/3, 1, 2)
3	Elemen satu cukup penting	(1, 3/2, 2)	(1/2, 2/3, 1)
4	Pertengahan lebih cukup penting	(3/2, 2, 5/2)	(2/5, 1/2, 2/3)
5	kuat pentingnya dari yang lain	(2, 5/2, 3)	(1/3, 2/5, 1/2)
6	Pertengahan lebih kuat pentingnya	(5/2, 3, 7/2)	(2/7, 1/3, 2/5)
7	mutlak lebih penting	(3, 7/2, 4)	(1/4, 2/7, 1/3)
8	Pertengahan mutlak lebih penting	(7/2, 4, 9/2)	(2/9, 1/4, 2/7)
9	mutlak lebih penting	(4, 9/2, 9/2)	(2/9, 2/9, 1/4)

The AHP fuzzy completion method is as follows:

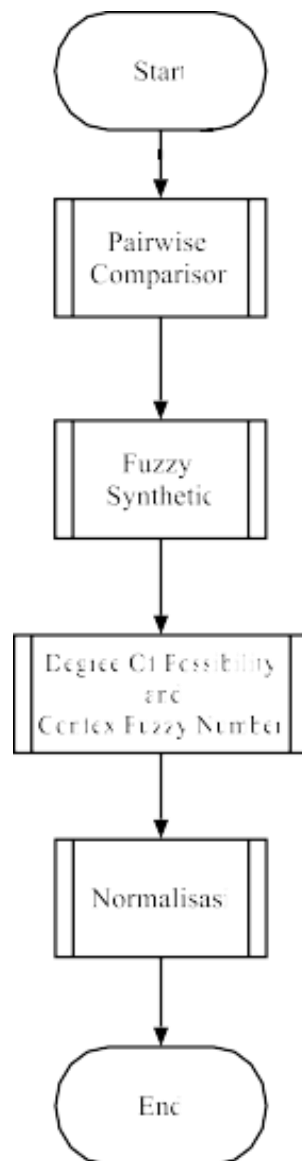


Figure 2.1.1 Fuzzy AHP Flowchart

- a. Determine problem and purpose in hierarchical structure form.
- b. Establish priorities by determining pairwise matrix comparisons between elements in a hierarchical structure with a linguistic scale.
- c. Determine sintetisfuzzy (Si) priority, can be defined by the following formula:

$$S_i = \sum_{j=1}^m M_{gi}^1 \cdot \left(\sum_{j=1}^m \sum_{j=1}^m M_{gi}^1 \right)^{-1}$$

$$\sum_{j=1}^m M_{gi}^i = \left(\sum_{j=1}^m li, \sum_{j=1}^m mi, \sum_{j=1}^m ui \right)_m$$

$$\sum_i^n = \left[\sum_{j=1}^n M_{gi}^j \right]^{-1} = \left(\frac{1}{\sum_{j=1}^n li}, \frac{1}{\sum_{j=1}^n mi}, \frac{1}{\sum_{j=1}^n ui} \right)$$

d. Determine Vector Value (V) or “Degree of Possibility” by using formula

$$M2 = (l2, m2, u2) \geq M1 = (l1, m1, u1)$$

Weight A = Alternative weight of each sub-criterion Weight SK Weight = Weight of each sub-criteria

$$V = \begin{cases} 1, & \text{if } m2 \geq m1 \\ \frac{l2 - u2}{(m2 - u2) - (m2 - l2)}, & \text{if } l1 \geq u2 \end{cases}$$

Where d is the ordinate of the slice point the highest, to be compared both values are required from $V (M1 \geq M2)$ and $V (M2 \geq M1)$.

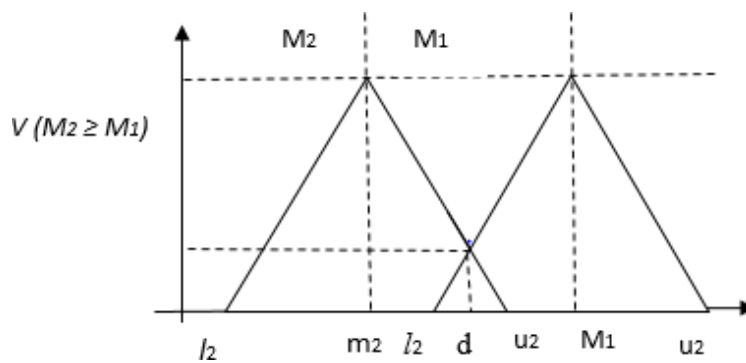


Figure 2.1.2 Slices between M1 and M2

e. Determine score ordinal defuzzyfication (d') / *Confex fuzzy number*, defined by the formula: Defuzzyfication ordinate (*confex fuzzy number*) more greater than k *confex fuzzy number* for

$M_i (i = 1, 2, \dots, \dots k)$

can be defined as: $V (M \geq M1.M2 \dots, Mk) -$

$V [(M \geq M1) \text{ and } (M \geq M2) \dots, \text{ and } (M \geq M k)] = \min$

$V (M \geq M1)$

3 Implementation and Testing

3.1 Implementation

The display starts from the user input the weight value of the criteria and sub-criteria and then input the student data, according to the data obtained from UBHARA after that, the ranking process is calculated to get the best alternative for students in each faculty. Examples of system implementation are as follows:

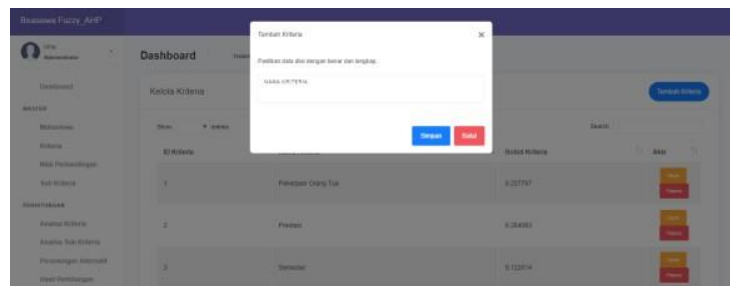


Figure 3.1 input criteria

Where $i = 1, 2, 3, \dots, k$ is assumed $d'(A_i) = \min V(S_i \geq S_k)$, For $k = 1, 2, n; k \neq I$ Where is A_i ($i = 1, 2, n$) is n element.

3.2 Normalization of vector weight values

fuzzy (w), defined by formulas $W = (d(A_1), d(A_2), \dots, d(A_n))^T$ Where W is a number *non fuzzy* which gives priority to an attribute or alternative with other or alternative attributes.

3.3 Ranking Ranking

Is the final process in determining rank weight alternatively, the formula ang is used as follows:
 Weight $K \times \sum i = 1 n$ (Weight $A \times$ Weight SK) Note: Weight $K =$ Weight of each criterion

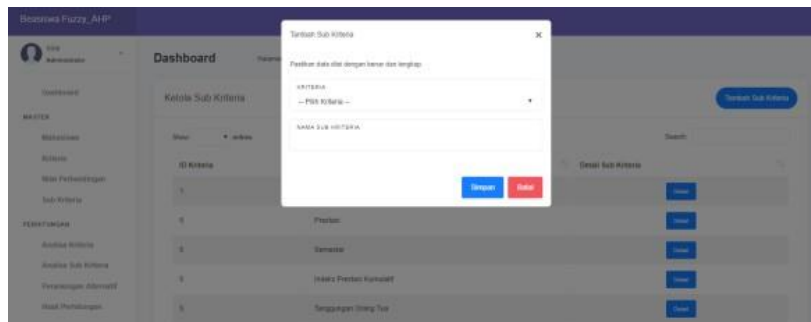


Figure 3.3.1 input sub-criteria

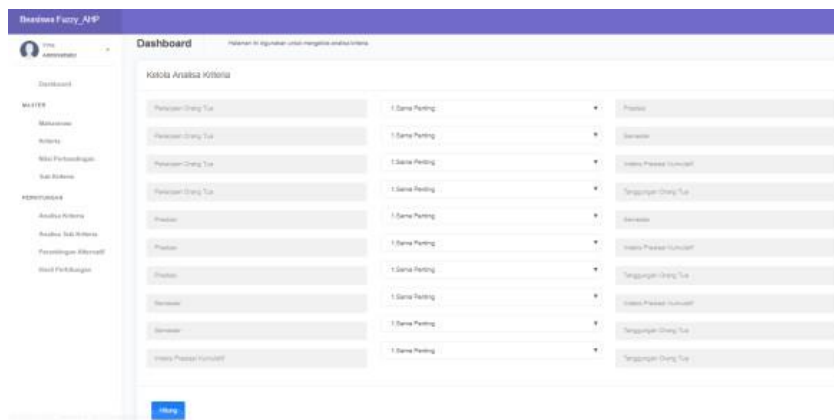


Figure 3.3.2 weighting process

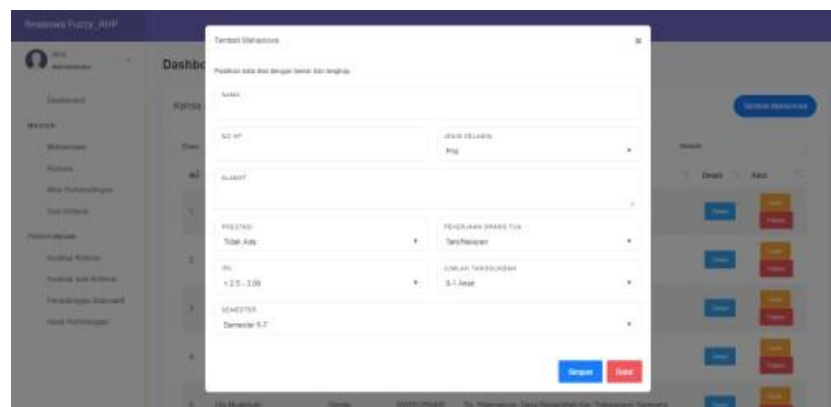


Figure 3.3.3 input of student data

3.4 TRIAL TEST RESULTS

Trials were conducted on 20 alternative students in the engineering faculty

Table 3.4.1 Data of Engineering Faculty Students

NO	NPM	NAMA MHS	JK	SMT	IPK	PEKERJAAN	JML_TANGGUNGAN	PRESTASI	STATUS
1	1614111012	Pangki Dwi Pradana	L	5	3.28	Peg. Swasta	3	Juara harapan 1 lomba Karya Ilmiah Memperingati Hari 17 Agustus	L
2	1614111008	Dysan Anggy Pratama	L	5	3.39	Peg.Swasta	2	Juara 3 Kejuaraan Voli Antar SMA	L
3	1714111010	Aurianto Ramandhan	L	3	2.29	PNS/ PEGAWAI NEGARA	1		T
4	1714111066	Angga T	L	3	2.60	Wiraswasta	1		T
5	1714111064	Haeqal Fiki	L	3	2.55	Pegawai Swasta	2		T
6	1614111017	Fina Fairus	P	5	3.49	Petani/Nelayan	4	Juara Harapan 3 volly Ball SMA	L
7	1614211005	Anif Maulana	L	5	3.22	Wiraswasta	2	Juara Harapan 2 Catur Sekampung Acara 17 Agustus	L
8	1614211012	Mira Andika Indrawati Diningsih	P	5	3.48	Peg.Swasta	3	Piagam Juara 3 Peserta Senam Bersama	L
9	1614211005	Diky Arista Aditya	L	5	2.33	Anggota TNI/POLRI	1		T
10	1614211054	Anif Fathul Barizi	L	5	2.58	Wiraswasta	2		T
11	1514311037	Muhammad Hafiz Amri Rosyadi	L	7	3.25	Lainnya	3	juara 3 lomba membaca Al-Qur'an kecamatan buduran	L
12	1514311037	Majid Dani Setyaputra	L	7	3.19	Petani/Nelayan	4	Juara Harapan 1 Lomba Qiroah PonPes An Nur	L
13	1714311077	R Dwyky Rachmanto	L	3	3.00	Anggota TNI/POLRI	1		T
14	1614311009	Muhammad Alfian	L	5	2.94	Pegawai Swasta	2		T
15	1614311023	Reyvaldi Yustika	L	5	3.02	Peg.Swasta	3	piagam peserta drumb band sma se diorejo	L
16	1614311079	Haris Prasetya	L	5	2.70	Pegawai Swasta	2		T
17	1614311026	Dicky Ramadan	L	5	3.37	Lainnya	2	piagam prestasi akademik sma	L
18	1614311080	Andre Alfian Sesar	L	5	2.95	Pegawai Swasta	2		T
19	1614311020	Ricky Eka Kurnia Susprasetya	L	5	3.54	Wiraswasta	3	Juara Harapan 3 Lomba Sandi Sempore Smp Bina Taruna	L
20	1714311045	Mochamad Farid	L	3	2.98	Anggota TNI/POLRI	1		T

Based on the data in table 3.4.1 above, it can be calculated ranking of the weight vector value on the criteria, the sub-criteria according to the inputted by the user and also from the alternatives. Here are the results recommendation students from the ranking process: you can done calculation of the ranking of the weight value vector on criteria, sub-criteria as inputted by the user and also from the alternatives. Following are the results of student recommendations as from the ranking process.

Ranking	Nama	Status
1	Ricky Eka Kurnia Susprasetya	Lulus
2	Ricky Eka Kurnia Susprasetya	Lulus
3	Mochamad Farid	Lulus
4	Ricky Eka Kurnia Susprasetya	Lulus
5	Ricky Eka Kurnia Susprasetya	Lulus
6	Ricky Eka Kurnia Susprasetya	Lulus
7	Ricky Eka Kurnia Susprasetya	Lulus
8	Ricky Eka Kurnia Susprasetya	Lulus
9	Ricky Eka Kurnia Susprasetya	Lulus
10	Ricky Eka Kurnia Susprasetya	Lulus
11	Ricky Eka Kurnia Susprasetya	Lulus
12	Ricky Eka Kurnia Susprasetya	Lulus
13	Ricky Eka Kurnia Susprasetya	Lulus
14	Ricky Eka Kurnia Susprasetya	Lulus
15	Ricky Eka Kurnia Susprasetya	Lulus
16	Ricky Eka Kurnia Susprasetya	Lulus
17	Ricky Eka Kurnia Susprasetya	Lulus
18	Ricky Eka Kurnia Susprasetya	Lulus
19	Ricky Eka Kurnia Susprasetya	Lulus
20	Ricky Eka Kurnia Susprasetya	Lulus

Figure 3.4.1 Ranking Result Engineering Faculty

Test try to do on 20 alternative students in the faculty of economics: Pangki Dwi Pradana, Dysan Anggy Pratama, Fina Fairus, Arif Maulana, Mira Andika Indrawati Diningsih, Muhammad Hafiz Amri Rosyadi, Majid Dani Setyaputra, Reyvaldi Yustika, Dicky Ramadan, Ricky Eka Kurnia Susprasetya.

Trials were conducted on 20 alternative students in the faculty of FISIP

Table 3.4.2 Data of FISIP Faculty Students

NO	NPM	NAMA_MHS	JK	SMT	IPK	PEKERJAAN	JML_TANGGUNGAN	PRESTASI	STATUS
1	1613211033	Ayu Kurnia Septianingsih	P	5	3.82	PEGAWAI SWASTA	3	juara 2 lomba Poster tema perjuangan acara 17 agustus	L
2	1513211053	Siti Mariyatul Kiftiyah	P	7	3.82	Pegawai Swasta	4	Piagam Peserta Gerak Jalan	L
3	1713211053	Fardan M	L	3	2.99	Anggota TNI/POLRI	1		T
4	1613211012	Gita yana Florentina	P	5	3.63	Wiraswasta	2	Juara 1 baca puisi smp trisila	L
5	1613211024	Ula Mualliyah	P	5	3.5	Petani / Nelayan	2	Juara Harapan 1 Lomba Kewirausahaan Tingkat Univ.	L
6	1613211077	Deva Mahendar	L	5	2.75	Pegawai Swasta	1		T
7	1613211037	Dita Silfia Angraini	P	5	3.31	Lainnya	2	juara harapan 2 dance sma	L
8	1613211019	AzrulHisyam Azahri	L	5	3.56	Pegawai Swasta	4	Peringkat 3 Perolehan Nilai UNAS Tingkat SMK Negeri 3 Blitar 2011	L
9	1713211121	Lulu Anulah	P	3	3.00	Pegawai Swasta	1		T
10	1613221032	Muhammad Tegar Bayu Adji	L	5	3.41	Pegawai Swasta	2	piagam penghargaan peringkat 1 ujian akhir siswa kelas 10	L
11	1713211107	Nayla Sinta Ayu	P	3	3.00	WIRASWASTA	1		T
12	1613211044	Meyrinika Siti Aisha	P	5	2.98	ANGGOTA TNI/POLRI	1		T
13	1714111055	Tirta Ndaru Sakti	L	3	2.99	Anggota TNI/POLRI	1		T
14	1613111014	Astri Lili Rahmawati	P	5	3.59	Lainnya	3	harapan 3 lomba mengaji tpq al-furqon	L
15	1613111013	Dinda Nirmala Ika Sari	P	5	3.46	Lainnya	3	juara 3 Lomba mengaji tpq darulhilm	L
16	1713111156	Nara Syafitri Putri	P	3	3.00	PNS/ PEGAWAI NEGARA	1		T
17	1613111100	Ayu Anisa Azzahra	P	5	2.50	Pegawai Swasta	1		T
18	1713111098	Lailatul Fitriah	P	3	2.90	PNS/ PEGAWAI NEGARA	1		T
19	1713111111	Dewi Safitri	P	3	2.80	Pegawai Swasta	2		T
20	1613111021	Mutiara Wika Pramesti	P	5	3.53	Wiraswasta	4	piagam peserta pramuka tingkat kecamatan	L

Based on table 3.4.2 above, the calculation process using the method fuzzy AHP then the recommended students to get scholarships are Ayu Kurnia Septianingsih, Siti Mariyatul Kiftiyah, Gita yana Florentina, Ula Mualliyah, Dita Silfia Angraini, Azrul Hisyam Azahri, Muhammad Tegar Bayu Adji, Astri Lili Rahmawati, Dinda Nirmala Ika Sari, Mutiara Wika Pramesti.

Table 3.4.3 data from students of the faculty of economics

NO	NPM	NAMA_MHS	JK	SMT	IPK	PEKERJAAN	JML_TANGGUNGAN	PRESTASI	STATUS
1	1512111140	Nancy Mei Diana	P	7	3.64	Pegawai Swasta	3	Juara 3 Lomba Lari Peringatan Hari OlahRaga	L
2	1612111043	Mayrine Aulia Fustin	P	5	3.77	Lainnya	2	piagam lomba buhu tangkis antar kampus	L
3	1712111117	Zane Risdyansah	L	3	2.95	ANGGOTA TNI/POLRI	1		T
4	1612111006	Gusti Novis	L	5	2.50	Pegawai Swasta	1		T
5	1612111124	Anis Erika	P	5	3.64	Lainnya	3	Peringkat 3 Lomba voli Tingkat SMK	L
6	1712111008	Taufik Firmansyah	L	3	2.98	Wiraswasta	1		T
7	1512311108	Ardita Febrianti	P	7	3.52	Pegawai Swasta	3	Anggota Paskibraka Kab.Gresik Tahun 2014	L
8	1612311053	Emma Dyah Safira	P	5	3.73	Wiraswasta	4	Piagam Peserta DrumBand	L
9	1712311079	Rosenagawa	L	3	2.50	ANGGOTA TNI/POLRI	1		T
10	1512321021	Ahmad Nur Kholik	L	7	3.64	Pegawai Swasta	2	Juara 2 Karya Ilmiah Peringatan Hari Pendidikan	L
11	1612311068	Lisa Alda Pudjiasih	P	5	3.53	Pegawai Swasta	4	juara 2 Lomba mengaji tpq al-muhajirin	L
12	1612311121	Novia Ardiana	P	5	2.99	Pegawai Swasta	1		T
13	1612211020	Elma Lazuardiah	P	5	3.62	Pegawai Swasta	2	piagam peserta cerdas cermat sma antartika	L
14	1712211061	Mila Syafila	P	3	2.60	PNS/ PEGAWAI NEGARA	1		T
15	1512211023	Qusnul Lili Nurqorih	P	7	3.58	Pegawai Swasta	3	Piagam Peserta lomba basket tingkat smp sidoarjo	L
16	1512211261	Rr. Indah Permata Sari	P	7	3.45	Wiraswasta	3	piagam peserta drum band sma se diorejo	L
17	1612211153	Mahendra Dwi Pamuji	L	5	2.30	PNS/ PEGAWAI NEGARA	1		T
18	1712211119	Syakila Binar Cantika	P	3	2.34	Wiraswasta	1		T
19	1512211016	Adinda Berlina Putri	P	7	3.57	Wiraswasta	2	Piagam Nilai Rapor Terbaik Ujian Uas	L
20	1712211089	Mirandi Fradika Putra	L	3	2.50	Pegawai Swasta	1		T

Based on the data in table 3.4.3 above, the calculation of the weight vector value of the criteria, the sub-criteria can be calculated according to the inputted by the user and also from the alternatives. Here are the results recommendation students from the ranking process :

Ranking	NAMA	STATUS
1	SUSI HARIYANTI	Kuliah
2	DINDA FEBRIYANTI	Kuliah
3	SISWANDY	Kuliah
4	ACHMAD KUSAIRI	Kuliah
5	AGITA WAHYU PUSPITASARI	Kuliah
6	IRFAN AZIS BAHARSYA	Kuliah
7	ARI CARISKY NAVABELLA	Kuliah
8	DEDI DORES	Kuliah
9	MOCHAMMAD ALVIN SOFIANDY	Kuliah
10	RAMADHANI RAHAYU SANTOSO	Kuliah
11	IRFAN AZIS BAHARSYA	Kuliah
12	ARI CARISKY NAVABELLA	Kuliah
13	DEDI DORES	Kuliah
14	MOCHAMMAD ALVIN SOFIANDY	Kuliah
15	RAMADHANI RAHAYU SANTOSO	Kuliah
16	IRFAN AZIS BAHARSYA	Kuliah
17	ARI CARISKY NAVABELLA	Kuliah
18	DEDI DORES	Kuliah
19	MOCHAMMAD ALVIN SOFIANDY	Kuliah
20	RAMADHANI RAHAYU SANTOSO	Kuliah

Figure 3.4.2 Ranking Results Faculty of Economics

Based on the calculation process using the AHP fuzzy method, students are recommended recommending getting scholarships are Susi Hariyanti, Dinda Febriyanti, Siswandy, Achmad Kusairi, Agita Wahyu Puspitasari, Irfan Azis Baharsya, Ari Carisky Navabella, Dedi Dores, Mochammad Alvin Sofiandy, Ramadhani Rahayu Santoso. From the comparison above, we get a 100% similarity presentation between the calculation from the application and the calculation from Bhayangkara University. got scholarships are Nancy Mei Diana, Mayrine Aulia Fustin, Anis Erika, Ardita Febrianti, Ahmad Nur Kholik, Lisa Alda Pudjiasih, Elma Lazuardiah, Rr. Indah Permata Sari, Adinda Berlina Putri . Trials were conducted on 20 alternative students in the engineering faculty

Table 3.4.4 Data from the Faculty of Law students

NO	NPM	NAMA MHS	JK	SMT	IPK	PEKERJAAN	JML TANGGUNGAN	PRESTASI	STATUS
1	1511111101	Susi Hariyanti	P	7	3.73	Pegawai Swasta	5	Juara Harapan 2 Lomba Puisi Acara Peringatan Hari Pendidikan	L
2	1511111043	Dinda Febriyanti	P	7	3.63	Lainnya	3	Piagam Peserta Paskibraka	L
3	1711111124	Nurhayati Intan	P	3	2.99	Pegawai Swasta	1		T
4	1611111084	Siswandy	L	5	2.50	Pegawai Swasta	2		T
5	1711111045	Fitrah Bayu Aji	L	3	3.03	NS/ PEGAWAI NEGAR	1		T
6	1611111002	Achmad Kusairi	L	5	3.72	Lainnya	3	Juara 3 Lomba Sepak Bola Peringatan Hari Olah Raga	L
7	1611111094	Agita Wahyu Puspitasari	P	5	3.54	Pegawai Swasta	2	Piagam Peserta DrumBand	L
8	17111110061	Febri Anata Putra	L	3	2.70	NS/ PEGAWAI NEGAR	1		T
9	1611111028	Miftahul Rohmah	L	5	2.95	Anggota TNI/POLRI	1		T
10	1611111072	Andika Pratama	L	5	2.78	Pegawai Swasta	2		T
11	1611111087	Irfan Azis Baharsya	L	5	3.59	Pegawai Swasta	3	Peringkat 3 Lomba voli Tingkat SMK	L
12	1611111072	Ari Carisky Navabella	L	5	3.52	Pegawai Swasta	2	Juara 2 Karya Ilmiah Peringatan Hari Pendidikan	L
13	1511111156	Dedi Dores	L	7	3.7	Pegawai Swasta	3	Piagam Peserta Wajib Latih Terbaik	L
14	1712211030	Hanifah Dmi	P	3	2.98	Anggota TNI/POLRI	1		T
15	1712211031	Yuniar Puspita Sari	P	3	2.50	NS/ PEGAWAI NEGAR	1		T
16	1612211028	Fatihah Nara Cefi	P	5	2.55	Pegawai Swasta	1		T
17	1711121049	Mochammad Alvin Sofiandy	L	3	3.34	Petani/ Nelayan	4	Juara 2 PMR Sekaresidanaan Bojonegoro Tahun 2011	L
18	1711111100	Serly Puspa Melati	P	3	2.50	NS/ PEGAWAI NEGAR	2		T
19	1611111033	Evi Hidayati	P	5	2.98	Pegawai Swasta	1		T
20	1611111015	Ramadhani Rahayu Santoso	P	5	3.77	Petani/ Nelayan	3	Juara 2 Lomba mading 3D tahun 2014 Semadura	L

Based on the data in table 3.4.4 above, we Can done calculation of the ranking of the weight value vector on criteria, sub-criteria as inputted by the user and also from the alternatives. Following are the results of student recommendations from the ranking process:

Ranking	NIM	Nama	Status
1	01900000004	Mochammad Alvin Sofiandy	Calon
2	51700000000	Shadi Pradigun	Calon
3	01700000000	Refikah Sauci	Calon
4	01700000000	Siti Nurrohmah	Calon
5	51000000000	Irfan Azis Baharsya	Calon
6	01900000000	Dedi Dores	Calon
7	01900000000	Susi Hariyanti	Calon
8	51000000000	Ari Carisky Navabella	Calon
9	01700000000	Ramadhani Rahayu Santoso	Calon
10	01900000000	John	Calon
11	51000000000	Ryandhy	Tidak Lolos
12	01700000000	Rahma Fadhila	Tidak Lolos
13	01900000000	Wahana Rizki	Tidak Lolos
14	51000000000	Fitri Nur Rizki	Tidak Lolos
15	01700000000	Devi Nur Rizki	Tidak Lolos
16	01900000000	Yusuf Nur Rizki	Tidak Lolos
17	51000000000	Melani Nur Rizki	Tidak Lolos
18	01700000000	Amalia Nur Rizki	Tidak Lolos
19	01900000000	Yusuf Nur Rizki	Tidak Lolos
20	51000000000	Rizki Nur Rizki	Tidak Lolos

Picture 3.4.3 Ranking results Faculty of Law

Based on process calculation by using fuzzy AHP method the student in recommend getting a scholarship is Susi Hariyanti, John, Arita, Irfan Azis Baharsya, Ari Carisky Navabella, Dedi Dores, Mochammad Alvin Sofiandy, Ramadhani Rahayu Santoso. From the above comparison, obtained Presentation of equations 100% equal between Calculation of applications and calculations of The University of Bhayangkara.

4. CONCLUSION

Based on the application that has been made regarding the choice of food types in kidney patients using the Fuzzy AHP method, several conclusions can be obtained as follows:

- a. This research has been successful, yielded an application system for awarding scholarships at Bhayangkara University in Surabaya.
- b. Based on the results of experiments on four Faculty at Bhayangkara University Surabaya by applying the F-AHP method calculation, the results obtained rank the students in each department. Thus, the output of this application is that ten students with the highest grades will receive the scholarship.

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