IMPLEMENTATION OF PROFILE MATCHING METHOD FOR THE BEST EMPLOYEE SELECTION SYSTEM PT. JENDELA DIGITAL INDONESIA

Donni Prabowo

Sistem Informasi
Universitas AMIKOM Yogyakarta
www.amikom.ac.id
donniprabowo@amikom.ac.id

Abstract— The profile matching method in selecting the best employees at PT Jendela Digital Indonesia aims to assist managers in making decisions with the correct calculations and criteria. Employees are one of the factors that play an essential role in advancing the company. Employee performance affects the company in obtaining profits. To spur employee performance, the company selects the best employees every period by giving appreciation and bonuses to selected employees. This selection system uses three criteria, namely aspects of cooperation, work performance, and personality. These criteria will be used for calculations using the Profile Matching method. Five employees will be submitted to select the best employees in this company. All criteria are given a GAP value and then will provide a ranking. The largest final score will be at the top of the ranking, followed by a smaller final score. This research shows that this method can provide results that assist managers in making decisions about the best employees according to the criteria desired by the company.

Keywords: Profile Matching, Decision Support System, Best Employee.

Abstrak— Penerapan metode profile matching pada seleksi karyawan terbaik di PT Jendela Digital Indonesia bertujuan untuk membantu pihak manajer dalam mengambil keputusan dengan perhitungan dan kriteria yang tepat. Karyawan adalah faktor penting untuk menjadikan perusahaan atau organisasi menjadi lebih maju. Kinerja karyawan mempengaruhi perusahaan dalam memperoleh keuntungan. Untuk memacu kinerja karyawan, maka perusahaan melakukan seleksi karyawan terbaik setiap periodenya dengan memberikan apresiasi dan bonus kepada karyawan yang terpilih.
Sistem seleksi ini menggunakan tiga kriteria, yakni aspek kerjasama, performa kerja, dan kepribadian. Kriteria tersebut akan digunakan untuk perhitungan menggunakan metode Profile Matching. Terdapat lima karyawan yang akan diajukan pada seleksi karyawan terbaik di perusahaan ini. Semua kriteria diberikan nilai GAP lalu akan memberikan suatu perankingan. Nilai akhir yang terbesar akan berada pada ranking teratas, dilanjutkan dengan nilai akhir yang lebih kecil. Hasil dari penelitian ini menunjukkan bahwa metode ini dapat memberikan hasil yang membantu manajer dalam pengambilan keputusan terhadap karyawan terbaik sesuai denga kriteria yang diinginkan perusahaan.

***Kata Kunci**: Profile Matching, Sistem Pendukung Keputusan, Karyawan Terbaik*

INTRODUCTION

Human resources are the main assets of the organization, who are planners and active actors in every organizational activity (Larasati, 2018). Human resources are a determining factor in achieving a goal (Mathis & Jackson, 2019). A company needs work motivation to ensure sustainability. To reach the company's goal, every employee must have motivation. One stakeholder in the company should identify the motivating factors that affect the employees (Rahaman et al., 2020). Jendela Digital Indonesia is a software house company that needs to make a selection for the best employee. A decision support system can be an alternative solution to help the manager get an accurate result. Hence, this extends the decision makers' capacity to process much information involved in making a decision (George M. Marakas, 2003). DSS systems can also help identify, solve problems, and make decisions to find the best alternative (Syafrinal & Aldo, 2020). Decision support system application is nonroutine, as needed (Turban et al., 2005). Decision support systems can help decision makers with data information that has been processed by relevant and necessary to make decisions about a problem more quickly and accurately (Angelin & Astuti, 2018; Pami, 2017; Sofiah & Septiana, 2017). By selecting the best employees, at the same time, evaluate employee performance (Nicolas et al., 2021).
Research shows that the profile matching method is better than another similar method, i.e., the SMARTER method (Natalia Ambarwati, 2019). The purpose of applying this profile matching method is to get assistance from the main and supporting factors that the reviewer will determine in each

PILAR Nusa Mandiri: Journal of Computing and Information System
Vol. 18, No. 2 September 2022 | DOI: 10.33480/pilar.v18i1.2464

selection. Calculation using the profile matching method gives different weights to each criterion, so the requirements have weights according to the type or standard of interest (Astari, 2019). In profile matching, the identification of groups is carried out or skipped. In profile matching, identification of good and bad alternative groups is carried out. Alternatives in the group were measured using several assessment criteria. If good implementers get a different score from bad implementers or a characteristic, then the variable is useful for choosing good implementers. Once some of the variables that differentiate between good and bad implementers have been identified, an ideal profile of successful alternatives can be created. (Kusrini, 2007)

To increase housing marketing, the developer must choose the right location for housing development. It will affect company profit if there is a lack of observance. The seven criteria are certificate age, type of land payment, and road access to location, then mentioned as specific aspects. The kind of entryway, distance to hospital, distance to mall or market, and distance to school or campus will then be mentioned as general aspects. Using Profile Matching, calculation with six locations gives the result of 4.92% for LK001. That is the highest result among all areas and chosen as the best decision. (Efendi, 2019)

Registration for poor scholarships is now open through Student Affairs at SMA Masehi 2 PSAK Semarang. All this time, the scholarship is determined by a manual calculation that gives the discrepancy result. Student grade scoring, parent's income, KIP card scoring, extracurricular scoring, and award scoring will mention as criteria used in this calculation. The profile matching method produces a final analysis with a different value but has the same results for students who deserve the scholarship. So that this decision support system with profile matching is relevant to obtaining a decision result in determining scholarships at SMA Masehi 2 PSAK Semarang. (Setiyowati et al., 2020)

Three criteria that will be used are cooperation criteria, performance criteria, and personality criteria. Each criterion has its sub-criteria. Cooperation criteria with teamwork, contribution, and activeness. Performance criteria with work target, punctuality, and work result. Personality criteria with discipline, responsibility, and attitude.

MATERIALS AND METHODS

The Profile Matching method has some processes that implemented in this research. The seven steps in a general decision process model are to define the problem, decide who should decide, collect information, identify and evaluate alternatives, decide, implement, and follow-up assessment (Power, 2002). Each step is summarized in the flowchart shown in figure 1.

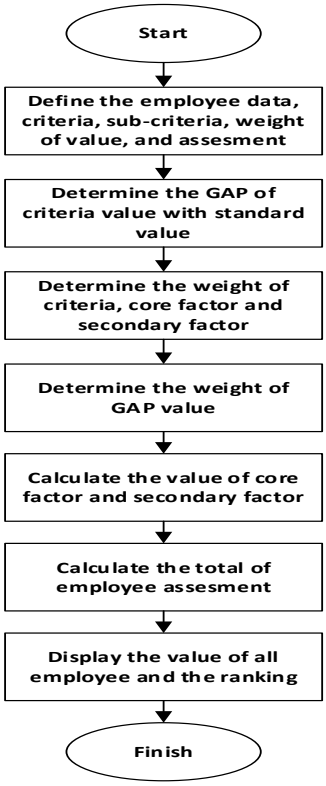

Figure 1. Profile Matching Method Process

The processes below are the explanation of each step.

1. Identify criteria that will be used and define the standard value of each criterion.

Table 1. Criteria Identification

Criteria	Sub Criteria	Standard Value
Cooperation	Contribution	4
	Teamwork	3
	Activeness	3
Performance	Work Target	3
	Punctuality	3
	Work Result	2
Personality	Discipline	3
	Responsibility	4
	Attitude	4

Table 2. Sub Criteria Value Scale

Scale	Value
Excellent	5
Very Good	4
Good	3
Average	2
Bad	1

2. Determine the core and secondary factors based on the profile needs of the best prospective employees who are prioritized. Then define the percentage of each element depending on the sub-criteria. Core and secondary factors will be calculated to determine the total number and ranking.

Table 3. Core and Secondary Factors

Criteria	Sub Criteria	Factor
Cooperation	Contribution	Core
	Teamwork	Secondary
	Activeness	Secondary
Performance	Work Target	Core
	Punctuality	Core
	Work Result	Secondary
Personality	Discipline	Core
	Responsibility	Core
	Attitude	Secondary

Table 4. Criteria and Factor Weight Percentage

Criteria	Weight	Factor	Weight
Cooperation	50%	Core	60%
		Secondary	40%
Performance	30%	Core	60%
		Secondary	40%
Personality	20%	Core	60%
		Secondary	40%

3. It establishes how much of the weighted GAP value is between the required profile and the subject profile. The gap is the difference between each attribute's or aspect's value and the desired value. It is demonstrated in equation formula 1.

Gap = VA – VT ……..(1)
Description :
Gap: The difference between the value of each attribute with the target value
A: The profile value of the best prospective employee
VT: The ideal profile value targeted by the use

Table 5. GAP Weight

GAP Value	Weight	Description
0	5	No Gap
1	4,5	Individual competency excess 1 level
-1	4	Individual competence less 1 level
2	3,5	Individual competence excess two levels
-2	3	Individual competence less Two levels
3	2,5	Individual competency excess three levels
-3	2	Individual competence less Three levels
4	1,5	Individual competency excess four levels
-4	1	Individual competence less Four levels
5	0	Individual Competencies Pros 5 levels

Source: (Wahyudin et al., 2020)

4. The value of the primary and secondary criteria for each employee is determined.
The formula for core factor calculation is shown in formula 2.

$$NCF = \frac{\Sigma NC}{\Sigma IC} \quad \text{..... (2)}$$

Source : (Kusrini, 2007)

Description:
NCF : The average of the core factor
∑NC : The total number of a core factor value
∑IC : The total number of the core factor item value

The formula for secondary factor calculation shown in formula 3.

$$NSF = \frac{\Sigma NS}{\Sigma IS} \quad \text{..... (3)}$$

Source : (Kusrini, 2007)

Description:
NSF : The average of a secondary factor
∑NS : The total number of a secondary factor value
∑IS : The total number of secondary factor item value

5. Calculate the total value from the percentage of core and secondary factor. The formula for total value calculation shown in formula 4.
Nt = X% NCF + X% NSF ……..(4)
Source : (Kusrini, 2007)

Description:
Nt : The total value
X% : The percentage value inputted
NCF : The average of the core factor
NSF : The standard is a secondary factor

6. Define the ranking—rank obtained by sorting the total value from highest to lowest. The first rank employee with the highest total score means the employee has the best performance.

PILAR Nusa Mandiri: Journal of Computing and Information System
Vol. 18, No. 2 September 2022 | DOI: 10.33480/pilar.v18i1.2464

RESULT AND DISCUSSION

The number of employees in PT Jendela Digital Indonesia is 20 employees. This research will use five (5) data as alternative data for profile matching calculation.

Table 6. Alternatives GAP Mapping

Alternative	Sub Criteria	Criteria Value	Standard Value	GAP
Arif	Contribution	4	4	0
	Teamwork	4	3	1
	Activeness	3	3	0
	Work Target	5	3	2
	Punctuality	4	3	1
	Work Result	2	2	0
	Discipline	5	3	2
	Responsibility	3	4	-1
	Attitude	5	4	1
Imam	Contribution	5	4	1
	Teamwork	3	3	0
	Activeness	4	3	1
	Work Target	3	3	0
	Punctuality	3	3	0
	Work Result	1	2	-1
	Discipline	5	3	2
	Responsibility	5	4	1
	Attitude	4	4	0
Ovi	Contribution	3	4	-1
	Teamwork	3	3	0
	Activeness	4	3	1
	Work Target	5	3	2
	Punctuality	4	3	1
	Work Result	1	2	-1
	Discipline	4	3	1
	Responsibility	5	4	1
	Attitude	3	4	-1
Resa	Contribution	3	4	-1
	Teamwork	4	3	1
	Activeness	5	3	2
	Work Target	5	3	2
	Punctuality	2	3	-1
	Work Result	2	2	0
	Discipline	4	3	1
	Responsibility	4	4	0
	Attitude	5	4	1
Laude	Contribution	4	4	0
	Teamwork	2	3	-1
	Activeness	2	3	-1
	Work Target	3	3	0
	Punctuality	3	3	0
	Work Result	3	2	1
	Discipline	4	3	1
	Responsibility	4	4	0
	Attitude	3	4	-1

After completing the competency gap mapping calculation and obtaining the Gap values, the second step is weighting the gap values based on the existing aspects.

Table 7. GAP Value Weight Result

Alternative	Sub Criteria	GAP	Value Weight	Factor
Arif	Contribution	0	5	CF
	Teamwork	1	4,5	SF
	Activeness	0	5	SF
	Work Target	2	3,5	CF
	Punctuality	1	4,5	CF
	Work Result	0	5	SF
	Discipline	2	3,5	CF
	Responsibility	-1	4	CF
	Attitude	1	4,5	SF
Imam	Contribution	1	4,5	CF
	Teamwork	0	5	SF
	Activeness	1	4,5	SF
	Work Target	0	5	CF
	Punctuality	0	5	CF
	Work Result	-1	4	SF
	Discipline	2	3,5	CF
	Responsibility	1	4,5	CF
	Attitude	0	5	SF
Ovi	Contribution	-1	4	CF
	Teamwork	0	5	SF
	Activeness	1	4,5	SF
	Work Target	2	3,5	CF
	Punctuality	1	4,5	CF
	Work Result	-1	4	SF
	Discipline	1	4,5	CF
	Responsibility	1	4,5	CF
	Attitude	-1	4	SF
Resa	Contribution	-1	4	CF
	Teamwork	1	4,5	SF
	Activeness	2	3,5	SF
	Work Target	2	3,5	CF
	Punctuality	-1	4	CF
	Work Result	0	5	SF
	Discipline	1	4,5	CF
	Responsibility	0	5	CF
	Attitude	1	4,5	SF
Laude	Contribution	0	5	CF
	Teamwork	-1	4	SF
	Activeness	-1	4	SF
	Work Target	0	5	CF
	Punctuality	0	5	CF
	Work Result	1	4,5	SF
	Discipline	1	4,5	CF
	Responsibility	0	5	CF
	Attitude	-1	4	SF

After determining the weight value, the third step calculates the value based on the Core Factor (CF) and Secondary Factor (SF).
For sub-criteria of cooperation, criteria will be defined as C1 for contribution, C2 for teamwork, and C3 for activeness. The GAP weight value of cooperation criteria is shown in table 8.

Table 8. The GAP weight value of the Cooperation criteria

Alt.	C1	C2	C3	CF	SF
Arif	5	4,5	5	**5,00**	**4,75**
Imam	4,5	5	4,5	**4,50**	**4,75**
Ovi	4	5	4,5	**4,00**	**4,75**
Resa	4	4,5	3,5	**4,00**	**4,00**
Laude	5	4	4	**5,00**	**4,00**

For the sub-criteria of performance, criteria will be defined as P1 for work target, P2 for punctuality, and P3 for work result. The GAP weight value of performance criteria is shown in table 9.

Table 9. The GAP weight value of Performance criteria

Alt.	P1	P2	P3	CF	SF
Arif	3,5	4,5	5	**4,00**	**5,00**
Imam	5	5	4	**5,00**	**4,00**
Ovi	3,5	4,5	4	**4,00**	**4,00**
Resa	3,5	4	5	**3,75**	**5,00**
Laude	5	5	4,5	**5,00**	**4,50**

For the sub-criteria of personality, criteria will be defined as S1 for discipline, S2 for responsibility, and S3 for attitude. The GAP weight value of personality criteria is shown in table 10.

Table 9. The GAP weight value of Performance criteria

Alt.	S1	S2	S3	CF	SF
Arif	3,5	4	4,5	**3,75**	**4,50**
Imam	3,5	4,5	5	**4,00**	**5,00**
Ovi	4,5	4,5	4	**4,50**	**4,00**
Resa	4,5	5	4,5	**4,75**	**4,50**
Laude	4,5	5	4	**4,75**	**4,00**

After calculating the value based on the Core Factor and Secondary Factor, the fourth step is calculating the total value of each criterion. The total value of cooperation criteria is shown in table 10.

Table 10. The total value of the Cooperation criteria

Alternative	CF (60%)	SF (40%)	N*i*
Arif	5,00	4,75	**4,90**
Imam	4,50	4,75	**4,60**
Ovi	4,00	4,75	**4,30**
Resa	4,00	4,00	**4,00**
Laude	5,00	4,00	**4,60**

The total value of performance criteria is shown in table 11.

Table 11. The total value of the Performance criteria

Alternative	CF (60%)	SF (40%)	N*s*
Arif	4,00	5,00	**4,40**
Imam	5,00	4,00	**4,60**
Ovi	4,00	4,00	**4,00**
Resa	3,75	5,00	**4,25**
Laude	5,00	4,50	**4,80**

The total value of personality criteria is shown in table 12.

Table 12. The total value of Personality criteria

Alternative	CF (60%)	SF (40%)	N*p*
Arif	3,75	4,50	**4,15**
Imam	4,00	5,00	**4,40**
Ovi	4,50	4,00	**4,30**
Resa	4,75	4,50	**4,65**
Laude	4,75	4,00	**4,45**

The fifth step is calculating the total value with formula 4.

N = (50% x N*i*) + (30% x N*s*) + (20% x N*p*) .....(4)

Table 13 shows the total value of all criteria calculations.

Table 13. Total value

Alt.	N*i*	Ns	N*p*	Total Value
Arif	4,90	4,40	4,15	**4,600**
Imam	4,60	4,60	4,40	**4,560**
Ovi	4,30	4,00	4,30	**4,210**
Resa	4,00	4,25	4,65	**4,205**
Laude	4,60	4,80	4,45	**4,630**

Ranking Result

After knowing the total value of each employee, the last step in ranking is by sorting the largest absolute value into the smallest total value. Table 14 shows the ranking.

Table 14. Ranking Result

Alternative	Final Result	Ranking
Laude	4,630	1
Arif	4,600	2
Imam	4,560	3
Ovi	4,210	4
Resa	4,205	5

Based on table 14, alternative Laude gets a predicate as the best employee with 4,630 total value.

CONCLUSION

Jendela Digital Indonesia to make a decision. The Profile Matching method can be implemented for a decision support system for selecting the best employees. This Profile Matching method has several stages, namely determining the criteria and sub-criteria, then calculating the weight of each alternative using the Gap calculation, which then calculates the final value and determines the ranking. Using three criteria with thr

ee sub-criteria for each criterion and five employee data, this method shows the result that the manager of PT can use. One of the employees, Laude, with 4,630 total value, becomes the highest value to be a candidate as the best employee in this company.

REFERENCE

Angelin, M., & Astuti, F. (2018). Sistem Pendukung Keputusan Pemilihan Karyawan Terbaik Menggunakan Metode Profile Matching. *Jurnal Ilmiah SMART*, *2*(2), 45–51.

Astari, S. R. (2019). Penerapan Profile Matching Untuk Seleksi Asisten Laboratorium. *Telematika*, *16*(1). https://doi.org/10.31315/telematika.v16i1.2987

Efendi, Z. (2019). Sistem Pendukung Keputusan Pemilihan Lokasi Perumahan Menggunakan Metode Profile Matching. *JURTEKSI (Jurnal Teknologi Dan Sistem Informasi)*, *6*(1). https://doi.org/10.33330/jurteksi.v6i1.408

George M. Marakas. (2003). *Decision Support Systems In The 21st Century, 2nd Edition* (Second). Prentice Hall.

Kusrini. (2007). *Konsep dan Aplikasi Sistem Pendukung Keputusan*. Penerbit Andi.

Larasati, S. (2018). Manajemen Sumber Daya Manusia. In *Deepublish*.

Mathis, R. L., & Jackson, J. H. (2019). Human resource management = manajemen sumber daya manusia. *Salemba Empat*.

Natalia Ambarwati. (2019). *Perbandingan Metode Profile Matching dan Smarter Dalam Sistem Pendukung Pengambilan Keputusan Pemilihan Produk Asuransi Bagi Masyarakat di Yogyakarta*. Universitas Sanata Dharma.

Pami, S. (2017). Sistem Pendukung Keputusan Pemilihan Karyawan Terbaik Dengan Metode Promethee (Studi Kasus: Pt. Karya Abadi Mandiri). *Jurnal PELITA INFORMATIKA*, *6*(1).

Power, D. J. (2002). Decision Support Systems: Concepts and Resources for Managers. In *Information Systems Management* (Vol. 20, Issue 4).

Rahaman, M. A., Ali, M. J., Wafik, H. M. A., Mamoon, Z. R., & Islam, M. M. (2020). What Factors Do Motivate Employees at the Workplace? Evidence from Service Organizations. *Journal of Asian Finance, Economics and Business*, *7*(12). https://doi.org/10.13106/JAFEB.2020.VOL7.NO12.515

Setiyowati, A., Ramadhani, L. A., & Amin, M. K. (2020). Sistem Pendukung Keputusan Menentukan Penerima Beasiswa Kurang Mampu Menggunakan Metode Profile Matching. *Jurnal Informatika Upgris*, *6*(1). https://doi.org/10.26877/jiu.v6i1.4896

Sofiah, E., & Septiana, Y. (2017). Sistem Pendukung Keputusan Feasibility Study untuk Menilai Kelayakan Sebuah Bisnis. *Jurnal Wawasan Ilmiah*, *8*(1).

Syafrinal, I., & Aldo, D. (2020). Implementasi Metode Analytical Hierarchy Process (Ahp) Untuk Penilaian Rumah Huni. *INOVTEK Polbeng - Seri Informatika*, *5*(2), 205. https://doi.org/10.35314/isi.v5i2.1263

Turban, E., Jay E., A., & Liang, T.-P. (2005). *Decision Support Systems and Intelligent Systems*. Prentice Hall.

Wahyudin, W., Saryoko, A., Aziz, A., & Nurmalia, L. (2020). Selection Of Extracurricular Activities In Smk Insan Aqilah 4 Jakarta Using Profile Matching Method. *Jurnal Pilar Nusa Mandiri*, *16*(1). https://doi.org/10.33480/pilar.v16i1.913