Jurnal 8

by Siti Aisyah

Submission date: 21-Feb-2023 05:45PM (UTC+0700)
Submission ID: 2019543187
File name: Jurnal_8.pdf (461.21K)
Word count: 2601
Character count: 13180

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

Implementation of Profile Matching Method to Determine the Performance Evaluation of the Best Information Systems Lecturer at Prima Indonesia University

Muhardi Saputra[1], Siti Aisyah[2], Muhammad Syahputra Novelan[3], Jacky Lius[4]

[1,2,4]Fakultas Teknologi dan Ilmu Komputer,
[3]Sistem Komputer, Fakultas Sains dan Teknologi
[1,2,4]Universitas Prima Indonesia, Jl. Sekip Jl. Sikambing No. Simpang, Sei Putih Tim. I, Kec. Medan Petisah, Kota Medan
[3]Universitas Pembangunan Panca Budi Medan Jl. Jenderal Gatot Subroto, KM 4,5 Sei Sikambing 20122 Medan.

Email: [1]muhardisaputra@unprimdn.ac.id, [2]siti_aisyah@unprimdn.ac.id [3]putranovelan@dosen.pancabudi.ac.id, [4]liusjackysi@gmail.com

ARTICLE INFO

Article history:
Received: 04/14/2020
Revised: 04/28/2020
Accepted: 05/01/2020

Keywords:
Profile Matching Method, Spk, Performance Of Lecturers.

ABSTRACT

For each agency, the quality of human resources is one of the main needs that determines the progress and success of the agency. To determine the quality of its human resources, agency conducts a performance appraisal process. Problems that occur in the process of evaluating the performance of lecturers at the university are still carried out conventionally, the number of evaluation criteria and the need for a long time to complete the performance evaluation of the lecturer. Based on the above problems, the writer tries to provide a solution by designing a decision support system in evaluating lecturer performance using the profile matching method. In this SPK, lecturer performance evaluation is based on five criteria as a reference in decision making. The final result of this study is the value of evaluating the performance of lecturers in carrying out their duties based on assessment for 2 years.

1. Introduction

Performance is a picture of the level of achievement of the implementation of an activity in realizing its goals, vision and mission. Performance measurement is a method used to assess the achievement of the implementation of activities based on a predetermined plan or goal. Educators or educational staff in higher education specifically appointed with the main task of teaching are lecturers. Lecturers play a role in determining the success of the educational process, because the lecturers who provide knowledge to students. Lecturers are an important part of being at a university. The presence, experience, and way of teaching lecturers are factors that influence student achievement. Universitas Prima Indonesia is one of the private universities in North Sumatra. At this time, the University of Prima Indonesia has not implemented a computerized system so that it often experiences obstacles such as evaluating lecturer performance. Performance appraisal of lecturers who have not used a computerized system makes the head of the university experience obstacles and difficul in producing a quick and accurate assessment. To design SPK, an appropriate method is needed a in accordance with the objectives to be achieved. One method at can be used to design DSS is the profile matching method. Profile Matching (PM) is a method that assumes that there is an ideal level of predictor variables tha ust be met by the subjects studied, rather than the minimum level that must be met or passed [4]. The Profile Matching Process outline is the process of comparing the actual data values of a profile to be assessed with the expected profile values so that differences in competencies (gap values) can be identified. The smaller the gap produced, the greater the weight value. This means, lecturers who will have the smallest gap value are

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

lecturers who have a great opportunity to be recommended as favorite lecturers. From the description above, the researchers designed a decision support system for evaluating questionnaires to determine favorite lecturers using the Profile Matching method. Through the design of this system, it is expected to help the campus management in determining the favorite lecturers chosen by students, especially in the Information Systems Study Program.

2. Research Method

2.1 Research Stages

a. Preparation Stage

At this stage the problem identification is carried out, a literature study of the problems raised, data collection by interviewing the University of Prima Indonesia

b. Data Processing Stage

Data processing is performed by profile matching method.

c. Results Analysis Phase

At this stage an analysis of the data is carried out in which the data in the form of the amount of research and devotion conducted by permanent lecturers at the University of Prima Indonesia.

d. Conclusion Stage

At this stage is the stage of drawing conclusions on the results of processing all performance data lecturers in the field of research and the dedication of permanent lecturers at the University of Prima Indonesia.

2.2. Analysis

Table 1.
Explanation of Gap Weight Weights (Puspitasari, 2013)

No	Value of GAP	Weight	Declaration
1	0	5	competence according to need
2	1	4,5	individual competency 1 level excess
3	-1	4	less than 1 level of individual competence
4	2	3,5	individual competency 2 level excess
5	-2	3	less than 2 level of individual competence
6	3	2,5	individual competency 3 level excess
7	-3	2	less than 3 level of individual competence
8	4	1,5	individual competency 4 level excess
9	-4	1	less than 4 level of individual competence

The grouping of Core factors and Secondary factors, After determining the weight of the required gap value criteria, then each criterion is grouped again into two groups namely core factor and secondary factor.

a. Core factor

Core factor is the aspect (competency) that stands out / is most needed by a position. To calculate the core factor, the formula is used (Kusnadi et al, 2015):

$$\mathbf{NCF} = \frac{\sum \mathbf{NC_s}}{\sum \mathbf{IC}} \quad \text{.....(1)}$$

Information :
NCF = Average value of core factor
NC = Total number of core factor values
IC = Number of core factor items

b. Secondary factor (supporting factor)

Secondary factors are items other than aspects that exist in the core factor. To calculate the secondary factor a formula is used (Kusnadi et al, 2015):

$$\mathbf{NSF} = \frac{\sum \mathbf{NS_s}}{\mathbf{IS}} \quad \text{.....(2)}$$

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

Information :
NSF = The average value of the secondary factor
NS = Total number of secondary factor values
IS = Number of secondary factor items

The above formula is a formula for calculating core factors and secondary factors from aspects of intellectual capacity. The above formula is also used to calculate core factors and secondary factors from aspects of work attitude and behavior.

c. Calculation of Total Value

From the calculation of core factors and secondary factors of each aspect, then the total value of each aspect is calculated which is estimated to affect the performance of each profile. To calculate the total value of each aspect, a formula is used (Kusnadi et al, 2015):

$$\mathbf{N = (X)\% \, NCF + (X)\% \, NSF} \quad \ldots\ldots(3)$$

Information :
N = Total value of each aspect
NCF = Average value of core factor
NSF = The average value of the secondary factor
(X)% = The percentage value entered

d. Ranking

The final result of the profile matching process is the ranking of candidates submitted to fill a certain position / position. Determination refers to ranking on the calculation results shown by the formula (Kusnadi et al, 2015):

$$\mathbf{Ranking = (X) \% NMD + (X) \% NSD} \quad \ldots\ldots(4)$$

Information :
NMD = Total Core Factor Value of the Lecturer
NSD = Total Secondary factor score of the Lecturer

Basically, performance appraisal is a measure of the contribution of each individual in each agency made to the organization (Hamazah et al, 2010).

3. Results and Discussion

The following criteria for the results and discussion:

a. Criteria 1 is a published journal that has been made by a lecturer.
b. Criteria 2 is the last education of lecturers.
c. Criteria 3 is the length of service of a lecturer.
d. Criterion 4 is community service.
e. Criteria 5 is a companion certificate owned by a lecturer.

The results obtained from the data that has been obtained are as follows.

a. Lecturer Assessment Table obtained from data obtained from interviews.

Table 2.
Lecturer Assessment Table

NIDN	CF			SF	
	1	2	3	4	5
110108540	4	4	4	3	3
110108561	5	4	5	4	3
110104971	3	4	3	3	4
110104292	5	3	3	4	4
110109821	3	2	3	3	2

b. Calculation of Gap Value for each value obtained.
The following calculation of the value of the Gap obtained from the difference between the value of the lecturer and the ideal value.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

Table 3.
Gap Value Calculation Tables

NIDN	CF			SF	
	1	2	3	4	5
110108540	4	4	4	3	3
110108561	5	4	5	4	3
110104971	3	4	3	3	4
110104292	5	3	3	4	4
110109821	3	2	3	3	2
Ideal Value	4	4	4	4	4
110108540	0	0	0	-1	-1
110108561	1	0	1	0	-1
110104971	-1	0	-1	-1	0
110104292	1	-1	-1	0	0
110109821	-1	-2	-1	-1	-2

c. Weighting
After the Gap value is obtained from each alternative, each alternative will be weighted according to the provisions of the gap value table.

Table 4.
Weight Value Calculation Table

NIDN	CF			SF		Information
	1	2	3	4	5	
110108540	0	0	0	-1	-1	Gap Value
	5	5	5	4	4	Value Weight
110108561	1	0	1	0	-1	Gap Value
	4,5	5	4,5	5	4	Value Weight
110104971	-1	0	-1	-1	0	Gap Value
	4	5	4	4	5	Value Weight
110104292	1	-1	-1	0	0	Gap Value
	4,5	4	4	5	5	Value Weight
110104292	-1	-2	-1	-1	-2	Gap Value
	4	3	4	4	3	Value Weight

Calculation and grouping of Core and Secondary factors After the weight of 24 Gap value is determined, the value in each aspect will be divided into two groups namely: "Core factor" and "Secondary Factor".
Calculation of core factors and secondary factors on the work attitude aspects of each alternative:
Lecturer 1

$$NCF = \frac{\sum NC_s}{\sum IC} = \frac{5+5+5}{3} = \frac{15}{3} = 5$$

$$NSF = \frac{\sum NS_s}{\sum IS} = \frac{4+4}{2} = \frac{8}{2} = 4$$

Lecturer 2

$$NCF = \frac{\sum NC_s}{\sum IC} = \frac{4{,}5+5+4{,}5}{3} = \frac{14}{3} = 4{,}66$$

$$NSF = \frac{\sum NS_s}{\sum IS} = \frac{5+4}{2} = \frac{9}{2} = 4{,}5$$

Lecturer 3

$$NCF = \frac{\sum NC_s}{\sum IC} = \frac{4+5+4}{3} = \frac{13}{3} = 4{,}33$$

$$NSF = \frac{\sum NS_s}{\sum IS} = \frac{4+5}{2} = \frac{9}{2} = 4{,}5$$

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

Lecturer 4

$$NCF = \frac{\sum NC_s}{\sum IC} = \frac{4,5+4+4}{3} = \frac{12,5}{3} = 4,16$$

$$NSF = \frac{\sum NS_s}{\sum IS} = \frac{5+5}{2} = \frac{10}{2} = 5$$

Lecturer 5

$$NCF = \frac{\sum NC_s}{\sum IC} = \frac{4+3+4}{3} = \frac{11}{3} = 3,66$$

$$NSF = \frac{\sum NS_s}{\sum IS} = \frac{4+3}{2} = \frac{7}{2} = 3,5$$

Table 5.
Table of Results of Lecturer Performance Calculation

NIDN	CF			SF		NCF	NSF
	1	2	3	4	5		
110108540	5	5	5	4	4	5	4
110108561	4,5	5	4,5	5	4	4,66	4,5
110104971	4	5	4	4	5	4,33	4,5
110104292	4,5	4	4	5	5	4,16	5
110109821	4	3	4	4	3	3,66	3,5

d. Calculation of total value
After the above calculations are completed, then the total percentage of core factors and secondary factors that will affect the performance of each teacher will be calculated.

Lecturer 1

$$N = (60\% \times 5) + (40\% \times 4) = 4,6$$

Lecturer 2

$$N = (60\% \times 4,66) + (40\% \times 4,5) = 4,596$$

Lecturer 3

$$N = (60\% \times 4,33) + (40\% \times 4,5) = 4,398$$

Lecturer 4

$$N = (60\% \times 4,16) + (40\% \times 5) = 4,496$$

Lecturer 5

$$N = (60\% \times 3,66) + (40\% \times 3,5) = 3,596$$

e. Ranking
After calculating the percentage value is completed, the last step is to determine ranking. Following ranking:

Table 6.
Ranking Table Performance Appraisal Lecturer

NIDN	Value	Ranking
110108540	4.6	1
110108561	4,596	2
110104971	4,398	4
110104292	4,496	3
110109821	3,596	5

From the table above, it can be seen that the highest ranking was achieved by lecturers with NIDN 110108540 with the acquisition of 4.6.

4. Conclusion

Based on the results of data processing of lecturers that have been assessed by lecturers' performance, it can be seen that the performance competencies of lecturers at the University of Prima Indonesia With

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal Mantik
Volume 4 Number 1 May 2020, pp. 283-288 E-ISSN 2685-4236
https://iocscience.org/ejournal/index.php/mantik/index

the system, the calculation of the performance of lecturers at the University of Prima Indonesia will be more efficient.

5. References

[1] Artika, Rini, 2013. Penerapan Metode Analitycal Hierarchy Process (AHP) dalam Pendukung Keputusan Penilaian Kinerja Guru Pada SD Negeri 095224, Program Studi Teknik Informatika, STMIK Budidarma Medan.

[2] Ginting, N., & Afrianto, Y. (2019). 360 DEGREES AND K-NEAREST NEIGHBOUR METHODS FOR LECTURER PERFORMANCE APPRAISAL SYSTEMS. Jurnal Mantik, 3(1,Juni), 183-189. Retrieved from https://iocscience.org/ejournal/index.php/mantik/article/view/127

[3] Ginting, Rosnani, 2014. Sistem Pendukung Keputusan. Penerbit : Usupress

[4] Kusnadi., Martha Deny., Saputra Aji, 2015. Penerapan Metode Profile Matching Untuk Penilaian Kenaikan Jabatan Karyawan (Studi Kasus : PT. Ilham Bangun Mandiri).

[5] Kusrini, Konsep dan Aplikasi Sistem Pendukung Keputusan. Yogyakarta: Andi, 2007.

[6] Mardianti, R., Triayudi, A., & Sholihati, I. (2020). Application Assessment Method Using Teacher Rating Scale And Profile Matching. Jurnal Mantik, 3(4, Feb), 120-128. Retrieved from https://iocscience.org/ejournal/index.php/mantik/article/view/513

[7] Nofriansyah, Dicky, 2014. Konsep Data Mining Vs Sistem Pendukung Keputusan. Yogyakarta : Deepublish.

[8] Ongario, A., Ciam, H. W. C. B., & Saputra, M. (2019). Implementasi Metode Profile Matching Untuk Mengetahui Supplier Terbaik Pada PT. Lautan Luas Medan. Jurnal Sistem Informasi dan Ilmu Komputer Prima (JUSIKOM PRIMA), 2(1), 53-58.

[9] Puspitasari, Luckyana, 2013. Penerapan Metode Profile Matching dalam Sistem Pendukung Keputusan Penilaian Kinerja Karyawan (Studi Kasus : PT Perkebunan Nusantara III Medan), Program Studi Teknik Informatika, STMIK Budidarma Medan.

[10] Saefuddin, Sri Wahyuningsih, 2014. Sistem Pendukung Keputusan Untuk Penilaian Kinerja Pegawai Menggunakan Metode Analytical Hierarchy Process (AHP) Pada Rsud Serang, Program Studi Sistem Informasi, Uniersitas Serang Raya

[11] Y.C. Tahaka dan Fakultas, "PENERAPAN BALANCED SCORECARD SEBAGAI ALAT UKUR KINERJA PADA PT. BANK SUMUT," J.EMBA, vol. 1, no.4, ppp. 402-413,2011 F.I. Pendidikan dan U. P. Indonesia,"PEDOMAN PENILAIAN KINERJA DOSEN," 2009.

Accredited "Rank 4"(Sinta 4), DIKTI, No. 36/E/KPT/2019, December 13th 2019.

Jurnal 8

ORIGINALITY REPORT

13%	10%	8%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Leeds Beckett University Student Paper	1%
2	repository.yudharta.ac.id Internet Source	1%
3	jom.fti.budiluhur.ac.id Internet Source	1%
4	es.scribd.com Internet Source	1%
5	journal.stekom.ac.id Internet Source	1%
6	ipi.portalgaruda.org Internet Source	1%
7	journals.ums.ac.id Internet Source	1%
8	jurnal.untag-sby.ac.id Internet Source	1%
9	pubmed.ncbi.nlm.nih.gov Internet Source	1%

10	Didit Suprihanto, Retantyo Wardoyo, Khabib Mustofa. "Determination of Weighting Assessment on DREAD Model using Profile Matching", International Journal of Advanced Computer Science and Applications, 2018 Publication	1 %
11	Submitted to Trinity College Dublin Student Paper	1 %
12	repository.atmaluhur.ac.id Internet Source	1 %
13	jurnal.pancabudi.ac.id Internet Source	1 %
14	Dyna Marisa Khairina, Ramadiani, Sesi Sahamur, Addy Suyatno, Septya Maharani, Heliza Rahmania Hatta. "Assessment of Teacher Performance Using Technique For Other Preference By Similarity To Ideal Solution (TOPSIS)", 2018 Third International Conference on Informatics and Computing (ICIC), 2018 Publication	<1 %
15	July Ayu Winarsih, Syamsul Bahri. "Sistem Pendukung Keputusan Penilaian Kinerja Karyawan Untuk Kenaikan Jabatan Pada PT. SMS Cengkareng Barat Dengan Metode Profile Matching", Indonesian Journal on Software Engineering (IJSE), 2018	<1 %

Publication

16	journal.universitasbumigora.ac.id Internet Source	<1 %
17	scholar.google.com Internet Source	<1 %
18	Tri Yani Akhirina. "Komparasi Metode Simple Additive Weighting dan Profile Matching pada Pemilihan Mitra Jasa Pengiriman Barang", Jurnal Edukasi dan Penelitian Informatika (JEPIN), 2016 Publication	<1 %
19	vdocuments.mx Internet Source	<1 %
20	"Proceedings of the Second International Conference on the Future of ASEAN (ICoFA) 2017 – Volume 2", Springer Science and Business Media LLC, 2018 Publication	<1 %
21	Yuli Setiawannie, Tiara Rahmania. "Performance measurement of public hospitals through the integration of SWOT and balanced scorecard", Jurnal Sistem dan Manajemen Industri, 2019 Publication	<1 %
22	docu.tips Internet Source	<1 %

23	sjournals.com Internet Source	<1%
24	Hari Soetanto, Sri Hartati, Retyanto Wardoyo, Samekto Wibowo. "Hypertension Drug Suitability Evaluation Based On Patient Condition with Improved Profile Matching", Indonesian Journal of Electrical Engineering and Computer Science, 2018 Publication	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		