Performance Appraisal of Managerial Civil Servants Using the ANP Method and Rating Scale at the Human Resource Development Agency

Nur Atikah[*1]; R. Filia. Sari[2]; R. Syafitri Lubis[3]
[1,2,3] Universitas Islam Negeri Sumatera Utara Medan, Indonesia
Email: Atikah2111197@gmail.com[1], rinafiliasari@uinsu.ac.id[2], riri_iain@yahoo.com[3]

Abstract

Employee performance appraisal is very necessary to know the skills or abilities of each employee. Employee performance appraisal carried out at the Human Resources Development Agency still require employee performance evaluations for the performance of each employee. The purpose of this study was to determine the performance of employee using *the Analytic Netwoek Process* and *Rating Scale* methods, where the ANP was used to weight each criteria and sub-criteria with the result of the weighting ofthe criteria namely: service orientation, Integrity, commitment, discipline, cooperation and for the weight of each sub-criterion, being friendly, completing work quickly and prcisely, working properly, honestly and regularly, working well even though not supervised by the leadership, have goog characte, have loyalty, have responsibility, do not delay work, never go absent without clear reasons, are able to work togather with colleagues, like to help colleagues who are in trouble, able to communicate well. While using the Rating Scale methods has different values, employees with the highnest to lowest performance is Rosniari, M. Arbi Suroso, Muksin, Hj. Rohayati, Syafruddin, Dame Hasibuan, Ilham Fadly and Masdalifah.

Keywords: *Employee Performance; Analytic Network Process (ANP); Rating Scale.*

Abstrak

Penilaian kinerja pegawai sangat diperlukan untuk mengetahui skill atau kemampuan dari masing-masing pegawai. Penilaian kinerja pegawai yang dilakukan di Badan Pengembangan Sumber Daya Manusia terlebih dibagian manajerial masih memerlukan evaluasi kinerja pegawai guna untuk mengetahui kinerja dari masing-masing pegawai. Tujuan dari penelitian ini adalah untuk mengetahui kemampuan/kinerja pegawai menggunakan metode Analytic Network Process (ANP) dan Rating Scale, dimana ANP digunakan untuk membobotkan setiap kriteria dan subkriteria dengan hasil pembobotan kriteria yaitu orientasi pelayanan, integritas, komitmen, disiplin, kerjasama dan subkriteria adalah bersikap ramah, menyelesaikan pekerjaan dengan cepat dan tepat, bekerja dengan benar, jujur dan teratur, bekerja dengan baik walau tidak diawasi oleh pimpinan mempunyai akhlak yang baik, memiliki loyalitas, mempunyai tanggung jawab, tidak menunda-nunda pekerjaan, tidak pernah absen tanpa alasan yang jelas, mampu bekerja sama dengan rekan kerja, suka

*Correspondence:
Email: Atikah2111197@gmail.com

membantu rekan kerja yang kesulitan, mampu berkomunikasi dengan baik. Sedangkan menggunakan metode Rating Scale memiliki nilai yang berbeda, pegawai dengan urutan nilai tertinggi sampai terendah adalah Rosniari, M. Arbi Suroso, Muksin, Hj. Rohayati, Syafruddin, Dame Hasibuan, Ilham Fadly, Masdalifah.

Kata Kunci: Penilaian Kinerja; Analityc Network Process (ANP); Rating Scale.

INTRODUCTION

Human resources are one of the most important factors that cannot even be separated from a company or agency. In the current era of globalization, human resources are a control factor that can determine the sustainability of a company (Mursidi, 2009). While the quality of human resources (HR) is a factor to increase the productivity of an agency's performance. Therefore, human resources are needed who have high competence (Prind, 2013) and have good performance.

Employee performance appraisal is very necessary in order to determine the skills or abilities of each employee. Employee performance appraisal conducted at the Human Resources Development Agency, especially in the managerial section, still requires employee performance evaluation, by determining employees who have high performance. In the Human Resources Development Agency in the Managerial section, there is no category of the best employees or those with high performance, there is only an assessment of superiors on their subordinates. Employee performance appraisal is not only a formality of giving grades, but determining the best or high-performing employees needs to be done to encourage employees to be more active and be an encouragement to other employees in carrying out their duties.

In the managerial section, almost all of the employees are civil servants, 8 employees are considered civil servants. In the performance appraisal process, several aspects of the assessment will be used based on the aspects of work behavior assessment in government regulation number 46 of 2011 namely: 1) Service Orientation, 2) Integrity, 3) Cooperation, 4) Commitment, 5) Discipline.

In performance appraisal, there are many ways of calculating that can be done, one of which is by creating a system that can help provide decisions or what

is often called a Decision Support System (DSS) or Decision Support System (DSS). DSS has many methods that can be applied in solving the problem, one of which is the Analytic Network Process (ANP).

In the process of using the ANP method, it is necessary to have a weighting that will produce weighted performance appraisal criteria and use pairwise comparisons between the same elements. Then the employee performance appraisal process is carried out using the Rating Scale method with a value of 1-5. The data obtained by the Rating Scale method are quantitative data (numbers) which are then interpreted in a qualitative sense (Djaali and Pudji: 2008).

RESEARCH METHODS

This research was conducted at the Human Resources Development Agency (BPSDM) Jalan Ngalengko No1. Medan. Starting from February 2020 to completion. Based on the results to be achieved, this type of research is an applied research with a quantitative approach, namely taking or collecting secondary data needed and analyzing it using the Analytic Network Process (ANP) and Rating Scale methods. Sugiyono (2013) states that the research variables are basically all something that is determined by the researcher to be studied so that information is obtained about it, then conclusions are drawn.

Data Types and Data Sources

The data source is where the data subject is obtained from. There are two types of data sources, namely primary data sources and secondary data sources (Zuldafrial, 2012). There are two types of data sources in this study, namely primary data and secondary data. 1. Primary Data Primary data was obtained from the results of a semi-open questionnaire given to respondents who were at the Human Resources Development Agency (BPSDM) Jalan Ngalengko No.1 Medan 2. Secondary Data Secondary data was obtained from a review of documents such as lists of names, the number of employees of the appraisal system at the Human Resources Development Agency (BPSDM) Jalan Ngalengko No.1 Medan.

The steps taken in this research are:

1. Conduct studies from journals, articles from the internet related to the Analytic Network Process (ANP) method and Rating Scale
2. Field studies, namely through direct observation (observation) and questionnaires given to the respondents.
3. Data Collection:

   Through Questionnaire: This data was obtained through the distribution of questionnaires to respondents to determine the weight value of the criteria and sub-criteria in order of priority to other criteria and sub-criteria. The criteria used are based on aspects of work behavior assessment in government regulation number 46 of 2011 and sub-criteria based on the results of the respondents. Table of Criteria and Sub-criteria.
4. Data Processing
   a. The criteria used are based on aspects of work behavior assessment in government regulation number 46 of 2011 and the sub-criteria are based on the results of the respondents.

Table 1. Criteria and Sub-Criteria

Criteria	Sub-criteria
Service Orientation	1. Be friendly 2. Get the job done quickly and accurately
Integrity	1. Work properly, honestly and regularly 2. Work well even if not supervisid by the leader 3. Have good morals
Commitment	1. Have loyalty 2. Have a responsibility
Discipline	1. Don’t procrastinate 2. Never absent for apperent reason
Cooperation	1. Able to work together with co-workers 2. Likes to help co-workers who are in trouble 3. Able to communicate well

   b. Make a pairwise comparison questionnaire to give weight to each criterion and sub-criteria so that it can be seen which alternative has the highest criterion weight. This questionnaire has three parts, namely pairwise

comparisons between criteria clusters, pairwise comparisons between sub-criteria.

Table 2. Paired Comparison Scale

Intensity of Interest	Description
1	Both elements are equally important
3	One element is slightly more important than the other elements
5	One elements is more important than the other
7	One elements is clearly more absolutely important than the other elements
9	One elements is absolutely important than the other elements
2,4,6,8	The velues between two values of adjacent conside rations

Tabel 3. Pairwise Comparisons Between Criteria

Criteria A	Evaluation																	Criteria B
Discipline	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Integrity
Discipline	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Cooperation
Discipline	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Commitment
Discipline	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Orientation
Integrity	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Cooperation
Integrity	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Commitment
Integrity	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Orientation
Cooperation	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Commitment
Cooperation	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Orientation
Commitment	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Service Orientation

c. Calculate the weight of each criterion and sub-criteria using the ANP method. To get the weight of each criterion and sub-criteria using the steps of completion of the ANP method, namely:

1) Calculate the weighted average by calculating the geometric mean. The geometric meancan be calculated by the formula: GM=$\sqrt[n]{\boldsymbol{X_1 X_2 \ldots X_n}}$

2) Each column element is devided by the number of the respective column. Calculation normalization matrix and the partial weight of the criteria.

Matrix Normalization: $\frac{column\ values}{Total}$

Partial Weight: $\frac{Normalized\ matriks\ column\ values}{Number\ of\ column}$

3) Calculating consistency ratio

(The geometric meancalculation matrix) x (Weightvector per row)

4) Calculating consistency vektor

(Consistency ratio devided by the weight vector of each roe)

5) Calculate the average of entries (λ_{max})

$$\lambda_{max} = \frac{\sum_{i-1}^{n} Konsistensi\ Rasio}{n}$$

6) Calculate index consistency (CI)

$$CI = \frac{\lambda_{maks} - n}{n-1}$$

7) Calculate ratio consistency (CR)

$$CR = \frac{Cl}{Random\ Consistency\ Index}$$

Table 4. Random Index Velues

Matrix Size(N)	IR Velue	λmax
1	0,0	1
2	0,0	2
3	0,58	3,104
4	0,90	4,267
5	1,12	5,444
6	1,24	6,781
7	1,32	7,81
8	1,41	8,98
9	1,45	10,16
10	1,49	11,341

8) Testing is consistent, if the obtained CR < 0.1, then the respondent's answer is consistent. If it is above 10%then the assessment and calculation of the data is corrected again.

9) Create an unweighted supermatrix from the priority of each element, the weighted supermatrix and the limitting supermatrix using Super Decision Software version 2.10. The result of limitting supermatrix which will be the global weight (final velue).

d. Calculating employee performance appraisal scores using the Rating Scale method. The weighted of each criterion andsubcriterionthat has been obtained from the calculation of the ANP then the next step is to evaluate the work behavior of employees using the Rating Scale. The Rating Scale is an assessment tecnique, namelythe evaquator assessment employes by using a scale in performance appraisal based on work behavior with rating scale which can be see in Table 5.

Tabel 5. Performance Appraisal Scale

No.	Scale Velue	Category	Velue Interval
1	A	Very high performance	$4{,}20 < n \leq 5{,}00$
2	B	High performance	$3{,}40 < n \leq 4{,}20$
3	C	Standart perforrmance	$2{,}60 < n \leq 3{,}40$
4	D	Low performance	$1{,}80 < n \leq 2{,}60$
5	E	Innefective perforrmance	$1 \leq n \leq 1{,}80$

The weight of the criterion obtained willbe multiplied by the value of criterio. The calculation to get a score from each competency criterion ia as follows:

Score = Weight X Score

Furthermore,the value of employee performance achievements with the formula :

Performance Achivements Value = Z Score

Description: $\sum Score = Score\ for\ each\ subcriterion.$ After obtaining the achivements value of the employee performance, it willbe known how high the performance of outstanding employee is based on the Rating Scale method. After knowing the value scale in the raing scale, the next step is to assess performance based on the work behavior of civil servants. Scoring is corried out in the managerial field, and 8 employess will be assesse, to find out which employss in the managerial field have achieved from the weight of the criteria and subcriterion. Assessment of each criteria and subcriterion cannot be separated from the value of work behavior based on the source of the State Personal Agency Number 1 of 2001.

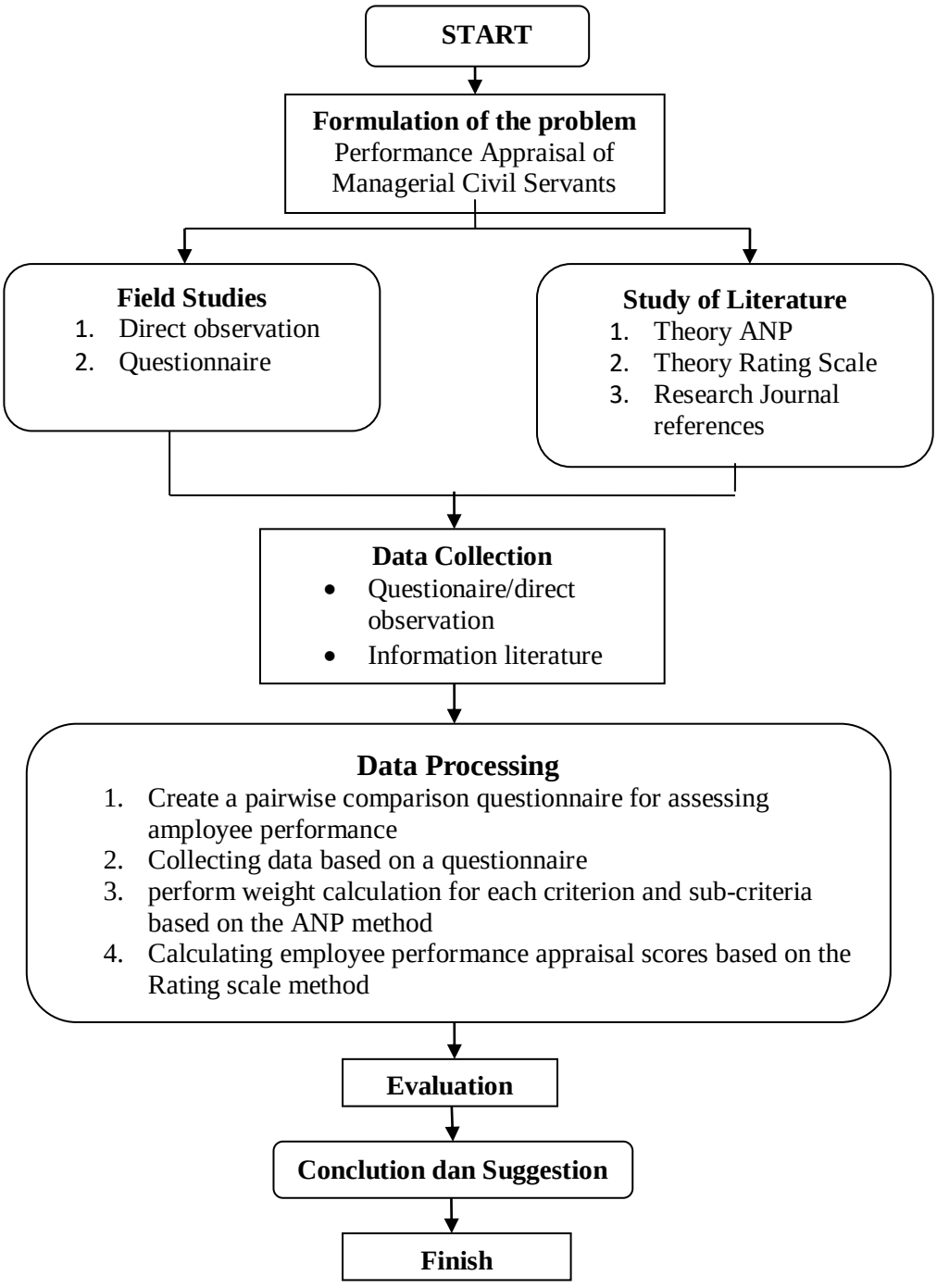

Figure 1. Research flow Chart

RESULTS AND DISCUSSION

Determination of Relationships Between Subriteria and Network Structure

Based on the results of questionnaires that have been distributed to respondents, it can be identified whether or not there is a relationship between

criteria and sub-criteria. The relationship can be seen from the number of respondents who choose, both inner dependence and outer dependence, where inner dependence is the relationship between sub-criteria within the same criteria while outer dependence is the relationship between sub-criteria and other sub-criteria on different criteria. The data from the determination between these sub-criteria can be used to create an ANP model.

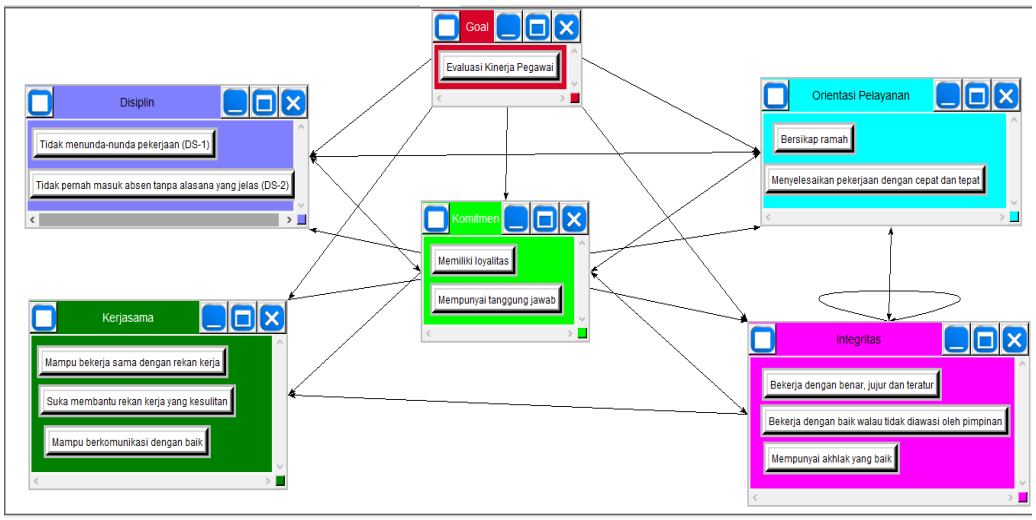

Figure 2. Structure Network Employee Performanc Eappraisal

ANP Processing

1. Create a pairwise comparison matrix
2. Calculate the geometric mean

Table 6. Geometric Mean Calculation for Pairwise Comparison matrix Between Discipline Clusters

Element	Discipline	Integrity	Cooperation	Commitment	Service Orientation
Discipline	1,0000	1,5874	1,8171	1,1856	1,1856
Integrity	0,6299	1,0000	0,4367	0,5848	0,6299
Cooperation	0,5503	2, 2894	1,0000	1,2599	0,6299
Commitment	0,8434	1, 7099	0,7937	1,0000	0,4054
Service Orientation	0,8434	1,5874	1,5874	2,4662	1,0000
Total	**3,8670**	**8,1741**	**5,6385**	**6,4965**	**3,8508**

3. Matrix normalization and Partial weight

Table 7. Matrix Normalization and Partial Weight for Discipline Clusters

Element	Discipline	Integrity	Cooperation	Commitment	Service Orientation	Partial Weight
Discipline	0,2505	0,1941	0,3222	0,1824	0,3078	0,2530
Integrity	0,1628	0,1223	0,0872	0,0900	0,1635	0,1251
Cooperation	0,1423	0,2800	0,1773	0,1939	0,1635	0,1924
Commitment	0,2181	0,2091	0,1407	0,1539	0,1052	0,1654
Service Orientation	0,2181	0.1941	0,2815	0,3796	0,2596	0,2665
Total	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000

4. Calculating consistency ratio

$$\begin{bmatrix} 1,0000 & 1,5871 & 1,8171 & 1,1856 & 1,1856 \\ 0,6299 & 1,0000 & 0,4367 & 0,5848 & 0,6299 \\ 0,5503 & 2,2894 & 1,0000 & 1,2599 & 0,6299 \\ 0,8434 & 1,7099 & 0,7937 & 1,0000 & 0,4054 \\ 0,8434 & 1,5874 & 1,5874 & 2,4662 & 1,0000 \end{bmatrix} X \begin{bmatrix} 0,2530 \\ 0,1252 \\ 0,1924 \\ 0,1654 \\ 0,2665 \end{bmatrix} = \begin{bmatrix} 1,3130 \\ 0,6329 \\ 0,9941 \\ 0,8533 \\ 1,2462 \end{bmatrix}$$

5. Calculating consistency vektor

$$\begin{bmatrix} 1,3130 \\ 0,6329 \\ 0,9941 \\ 0,8533 \\ 1,2462 \end{bmatrix} : \begin{bmatrix} 0,2530 \\ 0,1252 \\ 0,1924 \\ 0,1654 \\ 0,2665 \end{bmatrix} = \begin{bmatrix} 5,1897 \\ 5,0591 \\ 5,1668 \\ 5,1590 \\ 4,6761 \end{bmatrix}$$

6. Calculate the average of entries (λ_{max})

$$\lambda_{max} = \frac{5,1897 + 50591 + 5,1668 + 5,1590 + 4,6761}{5} = 5,0501$$

7. Calculate index consistency (CI)

$$\text{Cl} = \frac{5,0501-5}{5-1} = 0,01002$$

8. Calculate ratio consistency (CR)

$$\text{CR} = \frac{0,01002}{1,12} = 0,00894$$

9. Calculate the supermatrix using the ANP method

Table 8. Global Criteria Weight

Criteria	Sub-criteria	Weight
Discipline (0,190137)	Don't procrastinate	0,129413
	Never absent for apperent reason	0,060724
Integrity (0,254363)	Work properly, honestly and regulerly	0,080407
	Work well even if not supervisid by the leader	0,132196
	Have good morals	0,041760
Cooperation (0,353354)	Able to work together with co-workers	0,043688
	Likes to help co-workers who are in trouble	0,014759
	Able to communicate well	0,036438
Commitment (0,150948)	Have loyalty	0,107260
	Have a responsibility	0,043688
Service Orientation (0,051197)	Be friendly	0,014759
	Get the job done quickly and accurately	0,036438

Table 9. Employee Performance (M. Arbi Suroso) Using the Rating Scale Method

Criteria	Sub-criteria	Value	Weight	Value X Weight
Service Orientation	Be friendly	4	0,129413	0,517653
	Get the job done quickly and accurately	4	0,060724	0,242896
Integrity	Work properly, honestly and regulerly	4	0,080407	0,321628
	Work well even if not supervisid by the leader	4	0,132196	0,528784
	Have good morals	5	0,041760	0,2088
Commitment	Have loyalty	5	0,175543	0,877715
	Have a responsibility	5	0,108780	0,5439
Discipline	Don't procrastinate	5	0,069031	0,345155
	Never absent for apperent reason	4	0,107260	0,42904
Cooperation	Able to work together with co-workers	5	0,043688	0,21844
	Likes to help co-workers who are in trouble	5	0,014759	0,073795
	Able to communicate well	5	0,036438	0,18219
Work behavior values				**4,708435**
Value of employee performance				**A**

Sumber: Pengolahan data

Table 10. Employee Performance (Rosniari) Using the Rating Scale Method

Criteria	Sub-criteria	Value	Weight	Value X Weight
Service Orientation	Be friendly	5	0,129413	0,647065
	Get the job done quickly and accurately	4	0,060724	0,242896
Integrity	Work properly, honestly and regulerly	5	0,080407	0,402036
	Work well even if not supervisid by the leader	5	0,132196	0,66098
	Have good morals	5	0,041760	0,2088
Commitment	Have loyalty	5	0,175543	0,877715
	Have a responsibility	5	0,108780	0,5439
Discipline	Don't procrastinate	4	0,069031	0,276124
	Never absent for apperent reason	4	0,107260	0,42904
Cooperation	Able to work together with co-workers	5	0,043688	0,21844
	Likes to help co-workers who are in trouble	5	0,014759	0,073795
	Able to communicate well	5	0,036438	0,18219
	Work behavior values			**4,762981**
	Value of employee performance			**A**

Table 11. Employee Performance (Dame Hasiholan Simamora) Using the Rating Scale Method

Criteria	Sub-criteria	Value	Weight	Value X Weight
Service Orientation	Be friendly	4	0,129413	0,517652
	Get the job done quickly and accurately	4	0,060724	0,242896
Integrity	Work properly, honestly and regulerly	4	0,080407	0,321628
	Work well even if not supervisid by the leader	5	0,132196	0,66098
	Have good morals	4	0,041760	0,16704
Commitment	Have loyalty	5	0,175543	0,877715
	Have a responsibility	4	0,108780	0,43152
Discipline	Don't procrastinate	4	0,069031	0,276052
	Never absent for apperent reason	4	0,107260	0,42904
Cooperation	Able to work together with co-workers	4	0,043688	0,174752
	Likes to help co-workers who are in trouble	4	0,014759	0,059036
	Able to communicate well	5	0,036438	0,18219
	Work behavior values			**4,340501**
	Value of employee performance			**A**

Table 12. Employee Performance Ranking Results

Name	Value	Scala Value	Description
Rosniari	4,762981	A	Very high performance
M. Arbi Suroso	4,708435	A	Very high performance
Muksin, S.Sos	4,649748	A	Very high performance
Hj. Rohayati	4,591807	A	Very high performance
Syafruddin	4,392591	A	Very high performance
Dame Hasiholan	4,340501	A	Very high performance
Ilham Fadhly	3,999996	B	High performance
Masdalifah	3,770376	B	High performance

In ANP processing there is a super matrix as the final stage, where the super matrix has three stages, namely the Unweighted Super matrix, the Weighted Super matrix and the last is the Limiting Super matrix. Unweighted Supermatrix is the result of the priority weights of each linkage weighting between clusters and nodes arranged according to their cells. The weighted supermatrix is obtained by multiplying the clusters by all the elements in the column. Meanwhile, the limit supermatrix is obtained by multiplying each element by itself continuously, so that the value of each row is the same or stable. In making supermatrices, you can use Super Decision Software version 2.10 or 3.2

CONCLUSION

From the results of the research on the Managerial Section of PNS Performance Assessment Using the ANP Method and Rating Scale, it can be concluded that the results of the weighting of criteria and sub-criteria using the ANP method, where the highest weight criterion component is cooperation (0.353354) and the lowest weight is service orientation (0.051197). . Meanwhile, the highest weight sub-criteria is having loyalty (0.175543) and the lowest weight is being able to communicate well (0.036438). Assessment of employee performance using the Rating Scale method obtained very high performance scores there are 6 people and high performance there are 2 people.

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