

# Group Decision Support System for Employee Rotation with Profile Matching Method

Agus Qomaruddin Munir<sup>1,\*</sup>, Moh Alif Hidayat Sofyan<sup>2</sup>, Priyanto<sup>1</sup>

<sup>1</sup> Department of Electronics and Informatics Engineering Education, Information Technology, Faculty of Engineering, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

<sup>2</sup> Vocational Faculty, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

## ARTICLE INFO

### Article history:

Received 7 February 2025

Received in revised form 24 March 2025

Accepted 14 July 2025

Available online 25 July 2025

### Keywords:

Employee Rotation; Group Decision Support System; Profile Matching;

## ABSTRACT

Employee rotation policies have emerged as a pivotal aspect of organizational frameworks, enabling systematic movement of employees across roles, departments, and locations. These policies aim to enhance employee development, foster cross-functional collaboration, and drive organizational agility. Despite their strategic importance, many organizations face challenges in implementing such policies effectively, including skill obsolescence, talent retention issues, and resistance to change. Organizations often struggle to align employee aspirations with organizational goals while maintaining adaptability in a dynamic business landscape. This misalignment can lead to talent underutilization, reduced employee engagement, and increased turnover, ultimately hindering overall performance and competitiveness. The paper seeks to explore the design, implementation, and impact of employee rotation policies on talent management and organizational performance. The primary goal is to identify best practices that foster continuous learning, innovation, and leadership development. The study adopts a mixed-methods approach, combining qualitative analysis of organizational case studies with quantitative assessments of performance metrics. This dual approach ensures a comprehensive understanding of the policy's effectiveness and challenges. The findings highlight that well-structured employee rotation policies promote knowledge transfer, skill enhancement, and leadership development, fostering a culture of inclusivity and adaptability. Organizations that implement such policies strategically gain a competitive edge by cultivating resilient and versatile workforces aligned with long-term business goals.

## 1. Introduction

An employee rotation policy overview is a comprehensive and meticulously crafted organizational framework designed to strategically manage and optimize the movement of employees across various roles, departments, projects, and geographical locations within an organization, with the overarching goal of enhancing employee development, knowledge transfer,

\* Corresponding author.

E-mail address: [agusqomaruddin@uny.ac.id](mailto:agusqomaruddin@uny.ac.id)

<https://doi.org/10.37934/ard.139.1.187200>

cross-functional collaboration, organizational agility, and overall business performance [6,13]. This multifaceted policy delineates a structured set of guidelines, principles, procedures, and objectives governing the systematic rotation of personnel, emphasizing the critical importance of continuous learning, skill enhancement, career advancement, and talent retention in driving sustained organizational growth and competitiveness amidst evolving market dynamics, technological disruptions, and competitive pressures [25]. At its core, an effective employee rotation policy serves as a cornerstone of talent management and organizational development strategies, fostering a culture of adaptability, innovation, inclusivity, and employee engagement while mitigating the risks associated with skill obsolescence, employee turnover, and organizational stagnation [12]. By proactively facilitating the equitable distribution of opportunities for professional growth and exposure to diverse experiences, perspectives, and challenges, this policy enables organizations to harness the full potential of their workforce, cultivate a pipeline of versatile and resilient leaders, and maintain a competitive edge in an increasingly complex and dynamic business environment. Through strategic workforce planning, talent mobility initiatives, performance evaluation mechanisms, and robust communication channels, organizations can leverage employee rotation as a strategic lever to optimize resource allocation, align individual aspirations with organizational goals, foster a culture of continuous improvement and innovation, and drive sustainable business success in the long term [26].

Eligibility criteria for employee rotation typically include a proven track record of performance, adaptability to new roles and challenges, a willingness to learn, good communication skills, and the ability to work collaboratively [7]. It may also consider tenure, to ensure employees have a foundational understanding of the organization's operations and culture. The objectives of implementing employee rotation are multifaceted and strategic, designed to cultivate a more versatile, engaged, and skilled workforce [25]. By systematically moving employees through a variety of roles or departments, organizations aim to broaden their skill sets, promoting a deeper understanding of the business. This practice not only enhances job satisfaction by providing new challenges and reducing monotony but also facilitates innovation by bringing fresh perspectives to different areas of the business. Additionally, employee rotation is a proactive measure against burnout, as it keeps the work environment dynamic and stimulating. It also prepares employees for higher responsibilities by giving them a holistic view of the organization [26], making it easier to identify and groom potential leaders. Moreover, this strategy enhances flexibility and adaptability among staff, enabling the organization to respond more effectively to change and unforeseen challenges.

The role of decision support systems in developing human resources has developed towards group decision support systems. The system has advantages because decision-making is based on several decision-makers, and it is hoped that the results of these decisions will be more optimal in research conducted by Soleman [20] on a web-based Decision Support System that uses the Analytic Hierarchy Process (AHP) and Profile Matching (PM) methods to increase the efficiency and accuracy of prospective employee selection [20]. Other research develops a Group Decision Support System using the Simple Additive Weighting method to streamline and enhance the objectivity of job promotion decisions at university [8]. Apart from that there is also research conducted by Abidin and Suhaimi [1], using rule-based decision support system techniques to identify the rules of this system, design a system using rule-based techniques and develop a system to diagnose cellphone failures.

Zhang's [26] research explores how social context and performance management, influenced by organizational culture, psychological safety, collectivism, and power distance, can mediate and improve organizational innovation performance. Findings show these factors' positive and negative impacts on innovation [26]. Another study discusses the overwhelmingly positive impact of job

rotation on employee performance in Syria. The results show that job rotation significantly increases employee motivation, job satisfaction and overall performance, reassuring the need for a method for making the right decisions regarding the rotation carried out. Research recommends implementing a job rotation policy to maximize performance [3]. Research conducted by Hodgson [12] examined the impact of job rotation on organizational loyalty in the Municipality of Amman. The method used is descriptive-analytical; this research reveals a high level of job rotation and organizational commitment among employees, as well as the significant influence of job rotation on their loyalty [12]. Another research development had a sample of 560 family companies and analyzed the relationship between family business performance and employee development practices for effective employee rotation. The techniques used were confirmatory factor analysis and structural equation modelling [13].

Methods for making decisions are carried out in various fields, for example MCDM (Multi-criteria decision making), Multi-Objective Optimization by Ratio Analysis (MOORA) with user preferences, and Entropy Weight Method (EWM) with automatic weight allocation, used to determine the ranking of alternative solutions [2]. Application of the Group Decision Making (GDM) method in Shipping Industry 4.0, analyzing literature using bibliometrics, as well as exploring general GDM procedures such as preference representation, consensus measures, and alternative selection [24]. Development of another method, namely the Group Decision Support System (GDSS) to determine employee promotions by reducing subjectivity through assessment by three teams: general manager, HRD 1, and HRD 2. The GAP Profile Matching method is used to assess work attitude and intellectual capacity criteria, helping to select employees with the most suitable profile for promotion [14, 23]. Another study developed an objective decision-making system using the AHP method to select the best employees in the company. By reviewing the literature, this study found problems related to impartial decision-making. The results show the best employees with the highest absolute scores, which cannot be changed [11]. Another study investigated the relationship between employee development, time and workspace flexibility and job satisfaction in sustainable HR management in Romania, this study highlights the importance of work flexibility in increasing employee satisfaction, performance and motivation, especially through flexible workspaces which are increasingly in demand [9]. Other research developed a group decision support system using the AHP, TOPSIS, and BORDA methods to determine the eligibility of cooperative members to receive loans, helping to increase objectivity and efficiency in the decision-making process in organizations [21]. Research conducted by Aziz [4] reduces subjectivity in performance assessment at PT. Krakatau Osaka Steel used a Group Decision Support System based on the Simple Additive Weighting and Borda methods, from 59 employees; this system selected the three best employees based on several criteria [4,5,10]. Another research developed a Group Decision Support System at Serang Raya University using the Simple Additive Weighting (SAW) method to simplify and speed up the selection of employees who are worthy of promotion. This system helps determine employee rankings based on personnel policy criteria, involving the dean, head of civil service and chancellor [8]. In research conducted by Soleman [20] on a web-based Decision Support System that uses the Analytic Hierarchy Process (AHP) and Profile Matching (PM) methods to increase the efficiency and accuracy of prospective employee selection [20,22].

Other Research related to modifying equations in decision support system models has also been carried out but at a different scope so that it will have different paths and procedures; for example, Research conducted by Qiyas et al. in 2022 [15,19], namely carrying out average operator aggregation for a rough set of fuzzy orthopedics. Complex q-rung, examine its properties and integrate modified EDAS (evaluation based on distance from average solution) methods to solve multicriteria decision-making problems [15,18] and colleagues developed aggregation operators for CT-SFS in the same

year, offering a more accurate multicriteria decision-making approach. Through case studies and comparative analysis, this method shows superiority in handling complex uncertainties and producing optimal decisions[18].

Furthermore, the same researcher conducted research on developing a CFOF2TL (complex fractional orthotriple fuzzy 2-tuple linguistic) based MAGDM (multi attribute group decision making) method to handle the economic crisis during COVID-19 with an innovative linguistic approach; this method includes new aggregation operators, such as CFOF2TLMsM (CFOF2TL Maclaurin's symmetric mean), to convey fuzzy information, ensuring effectiveness and reliability through empirical and comparative studies [16]. Development continued in 2024 by Qiyas et al [19], introducing BCFCs (bipolar complex fuzzy credibility set ) based aggregation operators for multicriteria group decision making. Through case studies of hospital selection and comparative analysis, this method proves its rationality, efficiency, and applicability in dealing with complex and uncertain situations [19].

Despite the extensive research on employee rotation policies, several gaps remain in the practical implementation and strategic alignment of these policies within diverse organizational contexts. Prior studies predominantly focus on the benefits of job rotation, such as skill enhancement, career development, and organizational agility. Yet, they offer limited insights into the challenges of tailoring these policies to align with unique organizational cultures, technological advancements, and competitive pressures. Moreover, while decision support systems (DSS) have been explored to facilitate objective decision-making, integrating advanced methods such as Group Decision Support Systems (GDSS) with real-time analytics for optimizing employee rotation remains underexplored. Existing research has not sufficiently addressed the role of emerging technologies, such as AI and machine learning, in automating and enhancing rotation strategies. Additionally, the interplay between employee satisfaction, organizational loyalty, and long-term performance outcomes in the context of rotation policies warrants further investigation to ensure sustainable implementation. The contributions of this research are 1) Modification of the group decision support system equation using the profile matching method to obtain the proper analysis, 2) Implementation of employee rotation with several variables so that additional aspects of information become more accurate, and 3) As a tool to facilitate decision making when there are 2 different opinions.

## **2. Methodology**

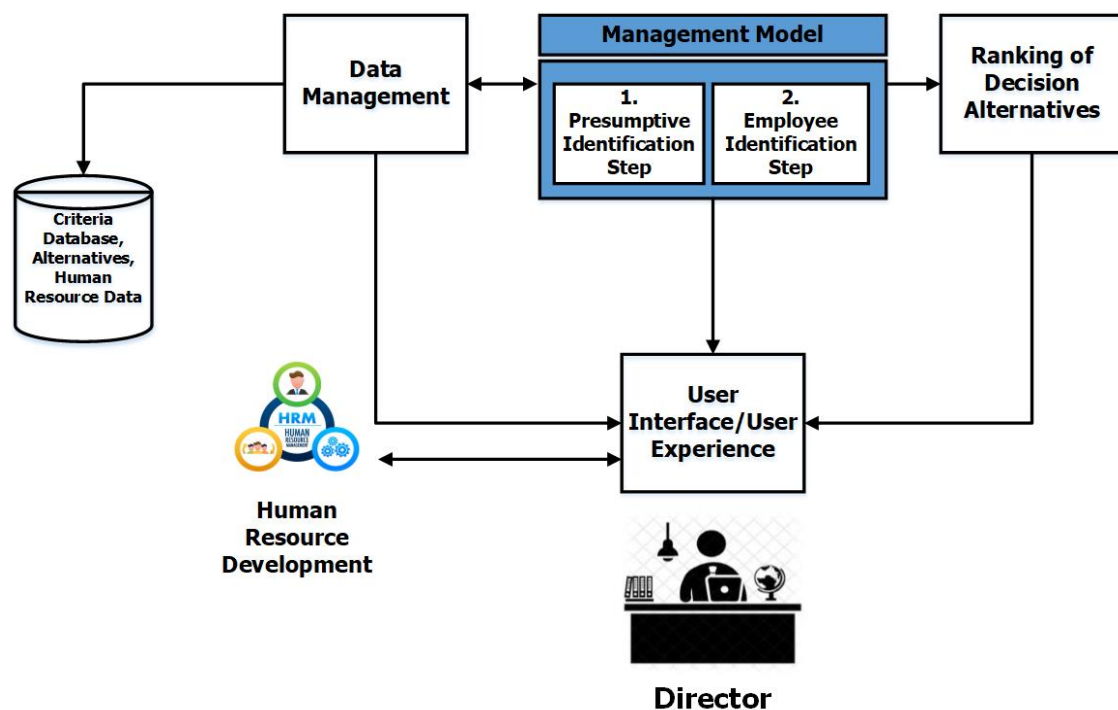
### **2.1 Proposed Model**

Model development is carried out by describing it in the form of a process flow. In the comprehensive human resources screening process, experienced HR professionals initially utilize Case-Based Reasoning (CBR) to identify potential candidates effectively. By analyzing data records from previous years, CBR leverages past experiences to address new problems, enhancing decision-making in the critical identification stage. This method not only mimics human problem-solving capabilities but also progressively enriches its database, ensuring continuous improvement in HR operations. In Figure 1, the model development process consists of two crucial stages:

1. The essential identification stage in the screening process is carried out by experienced HR professionals. It is imperative to utilize Case-Based Reasoning (CBR) to complete this stage. CBR effectively solves problems by comparing new cases with past experiences. The input for the initial identification stage is in the form of data records from previous years. The resulting output provides vital information for the initial identification, serving as the basis for decision-making. CBR fundamentally imitates human problem-solving abilities by leveraging past experiences to address new problems. Knowledge is represented as cases, each containing both problems and

solutions, resembling patterns. CBR effectively works by comparing new cases with old ones. If a similarity is found, CBR assertively provides solutions based on past cases. If no match is found, CBR adapts by adding the new case to a case-based database, thus enhancing its knowledge indirectly.

- Figure 1 in subpart II shows that after carrying out the presumptive identification stage in screening using Case-Based Reasoning (CBR), the following process is the work diagnosis stage, which refers to Figure 1, the work diagnosis stage carried out by Professional HRD such as the Head of Personnel, Head HRD or HR Director, HRD Professional provides an assessment of employees based on their respective expertise so that it becomes a joint decision. Therefore, it is necessary to solve it using SPKK because SPKK in resolving a problem is based on an assessment of the expertise of each expert in the field of human resources. The input process is obtained from presumptive identification data in the form of experience, knowledge, need, work performance, and responsibility data. From the presumptive identification data, HRD professionals assess the symptoms experienced by the patient, and the output is in the form of an alternative ranking of performance information from these five elements. The process that HRD professionals go through in managing employees, apart from requiring knowledge, also requires skills that are not only identification skills; these skills are HRD professionals in making decisions related to patient care, such as deciding or determining the character of employees or deciding on the placement of employees in departments certain conditions [4].



**Fig. 1.** Architecture for Developing an Employee Rotation System Model Based on GDSS and Profile Matching

Decision-making problems are often faced in various fields, including human resources (HRD). Decision-making is selecting several alternative courses of action aimed at achieving specific goals. The decision-making process must be distinct from the support of several factors, such as human factors, resources, and decision-making procedures. According to Mendoca (2004), CGDSS or SPKK is a computer program designed to assist experts in making decisions. The aim

is to help professionals analyze data and make decisions based on aspects of information assessment. Building an SPKK requires criteria and alternatives so several employee performance assessments can be used as criteria. Tables 1 and 2 below show a list of alternatives and criteria.

**Table 1**

Employee Job Rotation Alternative

No	Code	Alternative
1	A1	Employee A
2	A2	Employee B
3	A3	Employee C
4	A4	Employee D

**Table 2**

Employee Job Rotation Criteria

No	Criteria	Information	Data Type
1	C1	Experience	Numerical (year)
2	C2	Knowledge	Qualitative (very less, not enough, enough, good, very good)
3	C3	Need	Qualitative (very less, not enough, enough, good, very good)
4	C4	Work performance	Qualitative (very less, not enough, enough, good, very good)
5	C5	Responsibility	Qualitative (very less, not enough, enough, good, very good)
6	C6	Length of work	Numerical (year)
7	C7	Rank	Qualitative (junior, intermediate, senior, supervisor, manager)
8	C8	Group	Qualitative (A, B, C, D, E)

In the process of completing the SPKK, it is necessary to build a performance rating matrix n is the number of criteria totaling 8. Table 3 shows the performance rating matrix for the criteria against alternatives.

**Table 3**

Employee Job Rotation Criteria

Alternative	Criteria			
	(C <sub>1</sub> )	(C <sub>2</sub> )	...	(C <sub>8</sub> )
A <sub>1</sub>	X <sub>11</sub>	X <sub>12</sub>	...	X <sub>18</sub>
A <sub>2</sub>	X <sub>21</sub>	X <sub>22</sub>		X <sub>28</sub>

Based on tables 1, 2 and 3, an HR director will provide a criteria assessment of alternatives (assessment) in the performance rating matrix (Table 3). The Director of HR as a decision maker plays a role in providing a criteria value for alternatives, for example: A Director of HR as DM<sub>1</sub> and the Unit Leader as DM<sub>2</sub> provide an assessment of an employee using several criteria.

## 2.2 Process of Rotational Assignment

Translating the process of rotational assignments into a mathematical formula or model involves abstracting key elements of the process into variables and steps that can be quantified. Here's a simplified version:

Let  $R$  be the rotation process, defined by the function  $R = (E, P, T, S) \rightarrow A$  (1)

where:

- $E$  = is the set of employees eligible for rotation,  $E = \{e_1, e_2, \dots, e_n\}$
- $P$  = is the set of positions or departments available for rotation,  $P = \{p_1, p_2, \dots, p_m\}$
- $T$  = represents the time period or tenure required before an employee is eligible for the next rotation.
- $S$  = is the skill match or compatibility score between an employee and a potential new position, calculated based on skills required by the position and the employee's skills.
- $A$  = represents the assignments of employees to new positions.

The process  $R$  can be further detailed as follows:

1. *Eligibility check*, for each employee  $e_i \in E$ , check if the tenure  $t_i$  in the current position meets or exceeds  $T$ .
2. *Skill matching*, for each eligible employee, calculate the skill match score  $s_{ij}$  for each position  $p_j \in P$  they have not yet held.
3. *Assignment*, assign employee  $e_i$  to position  $p_j$  where  $s_{ij}$  is the highest among all unoccupied  $p_j$ , subject to the constraint that each  $p_j$  can only be filled by one  $e_i$  at a time.
4. *Rotation Schedule*, determine a schedule for these assignments that optimizes for organizational needs and employee growth opportunities, potentially adding constraints or objectives to balance workload, ensure diversity of experience, or meet specific developmental goals.

In mathematical terms, the assignment part might involve solving an optimization problem, typically a variant of the assignment problem, which can be represented and solved using techniques such as linear programming.

$$\text{Maximize} = \sum_{i=1}^n \sum_{j=1}^m s_{ij} x_{ij} \quad (2)$$

Subject to:

$$\begin{aligned} x_{ij} &\in \{0, 1\} && \text{for all } i, j \text{ indicating whether employee } e_i \text{ is assigned to position } p_j (1) \text{ or not } (0) \\ \sum_{j=1}^m x_{ij} &\leq 1 && \text{for all } i, \text{ ensuring each employee is assigned to at most position} \\ \sum_{i=1}^n x_{ij} &= 1 && \text{for all } j, \text{ ensuring each position is filled by exactly one employee} \end{aligned}$$

This model simplifies the real complexities involved in rotational assignments but provides a structured way to think about matching employees to positions in a way that optimizes for skill development and organizational needs.

### 2.3 Process of Rotational Assignment

A Group Decision Support System (GDSS) is a collaborative technology designed to facilitate decision-making processes within groups or teams. GDSS integrates various decision-making tools and techniques to help members analyse problems, generate alternatives, and select the best course of action collectively. Profile Matching and Simple Additive Weighting (SAW) are two essential components of GDSS that enhance decision-making processes: 1) Profile Matching involves comparing individual preferences or qualifications against predefined criteria or profiles. Each member's characteristics, expertise, preferences, or constraints are matched against the requirements of the decision-making task. This approach allows for the identification of individuals whose attributes align closely with the desired outcomes, thus assisting in selecting the most suitable participants or solutions. 2) Simple Additive Weighting (SAW) is a multi-criteria decision-making method used to evaluate and rank alternatives based on weighted criteria. In SAW, each criterion is assigned a weight representing its relative importance. The alternatives are then evaluated based on these criteria, and their scores are aggregated to determine the overall ranking. SAW provides a structured approach for comparing diverse alternatives and systematically evaluating their strengths and weaknesses. Profile Matching and SAW contribute to the effectiveness of GDSS by facilitating informed group decisions, promoting consensus-building, and maximizing the utilization of group members' expertise and preferences. These tools empower groups to make well-informed decisions that align with organizational objectives and stakeholder interests.

Creating mathematical formulas for the Group Decision Support System (GDSS) and Profile Matching requires an understanding of the processes and goals of both systems. The following is an example of a mathematical formula that can represent these two concepts:

1. **GDSS:** GDSS is often used to achieve consensus in group decision making. A simple formula that can be used is a preference aggregation model:

$$B(i) = \sum_{j=1}^n (N - R_j(i)) \quad (3)$$

where  $B(i)$  is the Borda score for alternative  $(i)$ ,  $(N)$  is the total number of alternatives,  $(R_j(i))$  is the rating given by participant  $(j)$  for alternative  $(i)$ , and  $(n)$  is the number of participants.

2. **Profile Matching:** Profile Matching is often used in the recruitment process to match candidates with job profiles. A simple formula that can be used is a suitability score based on certain criteria:

$$S_k = \sum_{i=1}^m w_i (P_{ki} - J_i)^2 \quad (4)$$

where  $(S_k)$  is the suitability score for candidate  $(k)$ ,  $(w_i)$  is the weight for criterion  $(i)$ ,  $(P_{ki})$  is the value of candidate  $(k)$  on criterion  $(i)$ ,  $(J_i)$  is the ideal value for criteria  $(i)$ , and  $(m)$  is the number of criteria.

These two formulas are simple examples and in practice, the mathematical models for GDSS and Profile Matching can be more complex and tailored to the specific needs of the problem at hand.

The steps in the GAP Profile Matching method are:



1. The steps in the GAP Profile Matching method are:  
GAP calculation process.  
The gap is the difference between the job profile and the employee profile, with the following formula:

$$AP = Profile\_Karyawan - Profile\_Jabatan \quad (5)$$

2. After obtaining the GAP for each profile, it is given a weighted value using the GA value weighting table as a benchmark in Table 4.

**Table 4**  
GAP Difference and Value Weight

GAP Difference	Value Weight	Information
0	6,0	No GAP (Competency as required)
1	5,5	Individual Competency is 1 level excess
-1	5,0	Individual Competency is less than 1 level
2	4,5	Individual Competency is 2 level excess
-2	4,0	Individual Competency is less than 2 level
3	3,5	Individual Competency is 3 level excess
-3	3,0	Individual Competency is less than 3 level
4	2,5	Individual Competency is 4 level excess
-4	2,0	Individual Competency is less than 4 level
5	2,5	Individual Competency is 5 level excess
-5	1,0	Individual Competency is less than 5 level

3. Calculation and grouping of core factors and secondary factors. Core factors or main factors are aspects of competency that are most needed by a position which are expected to produce optimal performance, while secondary factors or supporting factors are items other than the aspects contained in the core factors. Core factor calculations can use a formula:

$$NCI = \frac{\sum NC}{IC} \quad (5)$$

Where:

NCI = Average core factor value  
NC = Total number of core factor values  
IC = Number of core factor items

4. Calculation of the Total Value of Each Aspect. From the calculation results for each aspect above, the total value is then calculated based on the percentage of core factors and secondary factors that are estimated to influence the performance of each profile. Examples of calculations can be seen in the formula,
5. Ranking calculation. The final result of the profile matching process is a ranking of the candidates submitted to fill a particular position.

The following is an example of a comparison table and analysis of GAP profile matching for two employees based on the criteria of Experience, Knowledge, Need, Work performance, Responsibility, Length of work, Rank, and Group presented in table 5, table 6 and table 7.

**Table 5**

GAP Score Weight 8 Criteria

Experience		Knowledge		Need		Work Performance	
Range Period	Weight	Rate	Weight	Rate	Weight	Rate	Weight
0-2 Year	1	Very less	1	Very less	1	Very less	1
3-5 Year	2	Not enough	2	Not enough	2	Not enough	2
6-8 Year	3	Enough	3	Enough	3	Enough	3
9-11 Year	4	Good	4	Good	4	Good	4
>12 Year	5	Very good	5	Very good	5	Very good	5

**Table 6**

GAP Score Weight 8 Criteria [continues]

Responsibility		Length of Work		Rank		Group	
Rate	Weight	Range Period	Weight	Rate	Weight	Rate	Weight
Very less	1	0-2 Year	1	Junior	1	A	1
Not enough	2	3-5 Year	2	Intermediate	2	B	2
Enough	3	6-8 Year	3	Senior	3	C	3
Good	4	9-11 Year	4	Supervisor	4	D	4
Very good	5	>12 Year	5	Manager	5	E	5

**Table 7**

Example of GAP Comparison and Analysis

Criteria	Standard	Employee A	Score A	GAP A	Employee B	Score B	GAP B
Experience	5	6 Year	3	2	10 Year	4	1
Knowledge	5	Good	4	1	Very Good	5	0
Need	5	Enough	3	2	Good	4	1
Work Performance	5	Good	4	1	Very Good	5	0
Responsibility	5	Enough	3	2	Good	4	1
Length of Work	5	7 Year	3	2	10 Year	4	1
Rank	5	Senior	3	2	Supervisor	4	1
Group	5	B	3	2	A	4	1
<b>Total</b>	<b>40</b>	<b>Total</b>	<b>26</b>	<b>14</b>	<b>Total</b>	<b>34</b>	<b>6</b>

From the table above, it can be concluded that Employee B is more in line with the established standards than Employee A, because he has a smaller total GAP. Employee A has a total score of 26 with a total GAP of 14 and Employee B has a total score of 34 with a total GAP of 6.

### 3. Results

There are three stages to complete the SPKK process in this research: 1). Weighting stages using the Eckenrode method; 2). Stages of ranking decision alternatives; and 3). Voting stages using the BoostVote method. These stages will be described as follows.

#### 3.1 Alternative Ranking Results with Weighting Stages Eckenrode Method.

The weighting method used in this research is the Eckenrode method. The Eckenrode method calculates the degree of importance/weight of each criterion determined in decision-making. Several studies on weighting using the Eckenrode method in decision-making have used the weights to determine the degree of importance of each criterion determined in decision-making using the

Eckenrode method. The Eckenrode method used in this research is to obtain weights that reflect the accommodation of the weights given by the DM. This process is carried out to get the best weight values used in the decision alternative ranking stage. Based on Table 6, there are eight criteria: C1 is Experience, C2 is Knowledge, C3 is Need, C4 is Work Performance, C6 is Length of Work, C7 is Ranking, and C8 is Group. The eight criteria are given a weight value based on the level of importance of the requirements. For example, in this case, criterion C1 is Experience, which is a criterion that is considered very important, so DM1 gives a score of 3 (very influential). Criterion C2 is Knowledge, a criterion considered very important, so DM1 gives a score of 3 (very influential). Criterion C3 in Need is a criterion that is regarded as important, so DM1 gives a score of 2 (influential), in the same way as giving weight values to other criteria. The steps in the process of calculating weight values using the Eckenrode method are as follows:

1. Create a table of criteria weight values each decision maker (DM) gives. The weight value of the criteria given in Table 8.
- 2.

**Table 8**

Weigh Value of The Criteria

	Exp	Kno	Nee	WP	Resp	LoW	Rank	Group
Exp	1,00	3,00	2,00	4,00	3,00	5,00	4,00	2,00
Kno	0,33	1,00	0,33	2,00	1,50	3,00	2,00	1,00
Need	0,50	1,50	1,00	3,00	2,00	4,00	3,00	2,00
WP	0,25	0,50	0,33	1,00	0,67	1,50	1,00	0,67
Resp	0,33	0,67	0,50	1,50	1,00	2,00	1,50	1,00
LoW	0,20	0,33	0,25	0,67	0,50	1,00	1,00	0,50
Rank	0,25	0,50	0,33	1,00	0,67	1,00	1,00	0,67
Group	0,50	1,00	0,50	1,50	1,00	2,00	1,50	1,00

Information:

- |                          |                          |
|--------------------------|--------------------------|
| 1. Exp = Experience      | 5. Resp = Responsibility |
| 2. Kno = Knowledge       | 6. LoW = Length of Work  |
| 3. Nee = Need            | 7. Rank = Ranking        |
| 4. WP = Work Performance | 8. Group = Group         |

2. Based on Table 9 of the performance rating matrix, an HR Director as DM will assess the criteria against (alternatives) from the value of the performance rating matrix, and then a decision alternative ranking process is carried out. In the process of ranking decision alternatives, the solution is to use the TOPSIS method, which is integrated with the calculation of the criteria weight values using the Eckenrode method with the following results:

**Table 9**

Alternative Decision Results for Each DM

Rank	DM1	DM2
1	0.5462	0.5600
2	0.0000	0.0000

3. Stages of Voting using the BoostVote Method. If a Head of the Human Resources Bureau is in an organization, he will work in a team to produce appropriate reasons for employees or, in other words, play a role in determining decision-making based on the results of the criteria applied to employees. An HR team will work together to make joint decisions by voting. The voting process is needed to determine

decisions that can be recommended as alternative group decisions. In this process, the head of the HR bureau, who plays the role of decision maker (DM) in making decisions, is the head of the HR bureau (DM1) and the director (DM2). The results of the process using the BoostVote method are as follows in Table 10:

**Table 10**  
Decision Alternative Ranking Results

A1	A2
0.5278	0.2929

The final calculation results from the BoostVote method show that alternative A1 has the highest value (0.5278 for knowledge). Therefore, the group decision recommends A1 as a decision that will be taken by the Head of the HR Bureau to determine the criteria for employees with high knowledge who will be placed in the appropriate unit.

#### 4. Conclusions

In the calculation model carried out using profile matching and a group decision support system, with the steps of the Profile Matching and Simple Additive Weighting (SAW) method, two essential components of GDSS enhance decision-making processes and carrying out a weighting model using three steps 1). Weighting stages using the Eckenrode method; 2). Stages of ranking decision alternatives; and 3). Voting stages using the BoostVote method have proven that this method can provide an alternative assessment of employee rotation criteria from leaders with different opinions on the decisions taken. Employee Rotation Policy is a vital strategic tool that empowers organizations to navigate the complexities of the modern business landscape. It ensures the dynamic distribution of talent across various sectors of the company, fostering a robust culture of learning and growth. This policy is instrumental in developing a versatile and agile workforce, capable of leading with resilience and adaptability. By aligning individual career goals with the organization's objectives, it not only enhances employee satisfaction and retention but also propels the organization towards sustained growth and a formidable competitive stance. Ultimately, the Employee Rotation Policy is more than a set of guidelines; it is a commitment to continuous evolution and excellence within the workforce, essential for thriving in today's ever-changing global market. Further research can carry out in-depth analysis with additional assessment variables in the decision-making process and develop methods with additional fuzzy method algorithms.

#### Acknowledgement

This research was funded by a grant from Universitas Negeri Yogyakarta.

#### References

- [1] Abidin, S. A. Z., & Suhaimi, N. S. (2019). Decision Support System for Diagnosing Mobile Phone Failure using Rule-Based Technique. *International Journal of Advanced in Computing and Application*, 11(1), 14–19. <https://doi.org/10.31838/ijpr/2019.11.01.090>
- [2] Akdağ, M., Pedersen, T. A., Fossen, T. I., & Johansen, T. A. (2024). A decision support system for autonomous ship trajectory planning. *Ocean Engineering*, 292(December 2023), 116562. <https://doi.org/10.1016/j.oceaneng.2023.116562>
- [3] Alafraq, S., Aloqab, A., & Al-Dakhli, A. (2024). The Influence of Job Rotation on Employee Performance in the Syrian Nour Foundation. *CARC Research in Social Sciences*, 3(1), 49–55. <https://doi.org/10.58329/criss.v3i1.94>

- [4] Aziz, T. F. A., Sulistiyono, S., Harsiti, H., Setyawan, A., Suhendar, A., & Munandar, T. A. (2020). Group decision support system for employee performance evaluation using combined simple additive weighting and Borda. *IOP Conference Series: Materials Science and Engineering*, 830(3). <https://doi.org/10.1088/1757-899X/830/3/032014>
- [5] Budhi, M. A., & Wardoyo, R. (2017). Group Decision Support System Determination Of Best Employee Using Topsis And Borda. *IJCCS (Indonesian Journal of Computing and Cybernetics Systems)*, 11(2), 165. <https://doi.org/10.22146/ijccs.22773>
- [6] Castañer, X., & Oliveira, N. (2020). Collaboration, Coordination, and Cooperation Among Organizations: Establishing the Distinctive Meanings of These Terms Through a Systematic Literature Review. *Journal of Management*, 46(6), 965–1001. <https://doi.org/10.1177/0149206320901565>
- [7] Davidescu, A. A. M., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among romanian employees-Implications for sustainable human resource management. *Sustainability (Switzerland)*, 12(15). <https://doi.org/10.3390/su12156086>
- [8] Dizani, M., & Muttaqin, Z. (2019). Group Decision Support System for Job Promotion Using the Simple Additive Weighting (SAW) Method Group Decision Support System Untuk Promosi Jabatan Menggunakan Metode Simple Additive Weighting (SAW). *Journal of Machine Learning and Soft Computing*, 01(01), 34–46.
- [9] Errida, A., & Lotfi, B. (2021). The determinants of organizational change management success: Literature review and case study. *International Journal of Engineering Business Management*, 13, 1–15. <https://doi.org/10.1177/18479790211016273>
- [10] Gunawan, A. S., Fiarni, C., & Andhika, C. (2017). Perancangan Group Decision Support System Pemilihan Karyawan dengan Kinerja Terbaik Menggunakan Metode Simple Analytic Network Process ( Studi Kasus : PT XYZ ). *Jurnal Telematika*, 11(2), 63–70. <https://journal.ithb.ac.id/telematika/article/view/137>
- [11] Hermawan, R., Habibie, M. T., Sutrisno, D., Putra, A. S., & Aisyah, N. (2022). Decision Support System For The Best Employee Selection Recommendation Using Ahp (Analytic Hierarchy Process) Method. *International Journal of Educational Research & Social Sciences*, 1218–1226. <https://ijersc.org>
- [12] Hodgson, S., Al Shehhi, M., & Al-Marzouqi, E. (2024). The Effect of Job Rotation on Employees in Organizations in the UAE. *Middle East Journal of Business*, 9(3), 35–44. <https://doi.org/10.5742/mejb.2014.92509>
- [13] Núñez-Cacho Utrilla, P. V., Grande-Torrallaja, F. A., Moreno Albarracín, A. L., & Ortega-Rodríguez, C. (2023). Advance employee development to increase performance of the family business. *Employee Relations*, 45(7), 27–45. <https://doi.org/10.1108/ER-03-2022-0151>
- [14] Prayitno, H., & Diana, D. (2022). Group Decision Support System Untuk Menentukan Kenaikan Jabatan Menerapkan Metode Gap Profile Matching. *Jurnal Ilmiah Matrik*, 23(3), 317–324. <https://doi.org/10.33557/jurnalmatrik.v23i3.1593>
- [15] Qiyas, M., Abdullah, S., Naeem, M., Khan, N., Okyere, S., & Botmart, T. (2022). Decision Support System Based on Complex q -Rung Orthopair Fuzzy Rough Hamacher Aggregation Operator through Modified EDAS Method. *Journal of Function Spaces*, 2022. <https://doi.org/10.1155/2022/5437373>
- [16] Qiyas, M., Naeem, M., Abdullah, L., Riaz, M., & Khan, N. (2023). Decision Support System Based on Complex Fractional Orthotriple Fuzzy 2-Tuple Linguistic Aggregation Operator. *Symmetry*, 15(1), 1–38. <https://doi.org/10.3390/sym15010251>
- [17] Qiyas, M., Naeem, M., Abdullah, S., & Khan, N. (2022). Decision support system based on complex T-Spherical fuzzy power aggregation operators. *AIMS Mathematics*, 7(9), 16171–16207. <https://doi.org/10.3934/math.2022884>
- [18] Qiyas, M., Naeem, M., & Khan, N. (2022). Confidence Levels Complex q-Rung Orthopair Fuzzy Aggregation Operators and Its Application in Decision Making Problem. *Symmetry*, 14(12). <https://doi.org/10.3390/sym14122638>
- [19] Qiyas, M., Naeem, M., Khan, N., Khan, S., & Khan, F. (2024). Confidence Levels Bipolar Complex Fuzzy Aggregation Operators and Their Application in Decision Making Problem. *IEEE Access*, 12(March), 6204–6214. <https://doi.org/10.1109/ACCESS.2023.3347043>
- [20] Soleman. (2019). Decision support system for employee candidate selection using AHP and PM methods. *International Journal of Advanced Computer Science and Applications*, 10(11), 220–231. <https://doi.org/10.14569/IJACSA.2019.0101130>
- [21] Sonatha, Y., Azmi, M., & Rahmayuni, I. (2021). Group Decision Support System Using AHP, Topsis and Borda Methods for Loan Determination in Cooperatives. *International Journal on Informatics Visualization*, 5(4), 372–379. <https://doi.org/10.30630/JOIV.5.4.640>
- [22] Syaukani, M., Hartati, S., Kusnanto, H., & Guritno, S. (2017). Clinical decision support system for diagnosis of acute respiratory tract infections (ARI). *Journal of Theoretical and Applied Information Technology*, 95(11), 2544–2551.
- [23] Vician, C., & Desantis, G. (2000). The Impact of Role Training in a User-driven Group Support System Environment. *Group Decision and Negotiation*, 9(4), 275–296. <https://doi.org/10.1023/A:1008775123994>

- [24] Yang, Y., Gai, T., Cao, M., Zhang, Z., Zhang, H., & Wu, J. (2023). Application of Group Decision Making in Shipping Industry 4.0: Bibliometric Analysis, Trends, and Future Directions. *Systems*, 11(2), 1–24. <https://doi.org/10.3390/systems11020069>
- [25] Zamiri, M., & Esmaeili, A. (2024). Methods and Technologies for Supporting Knowledge Sharing within Learning Communities: A Systematic Literature Review. *Administrative Sciences*, 14(1). <https://doi.org/10.3390/admsci14010017>
- [26] Zhang, W., Zeng, X., Liang, H., Xue, Y., & Cao, X. (2023). Understanding How Organizational Culture Affects Innovation Performance: A Management Context Perspective. *Sustainability (Switzerland)*, 15(8). <https://doi.org/10.3390/su15086644>