

The Employee Performance Evaluation by using the Hybrid Multi-Criteria Decision-Making Approach

Afrin Fauzya Rizana^{1*)}; Firdah Dipi Juni Kurniawati²⁾; Augustina Asih Rumanti³⁾

¹⁾ afrinfauzya@telkomuniversity.ac.id, Telkom University, Bandung, Indonesia*

²⁾ firdahdipijk@student.telkomuniversity.ac.id, Telkom University, Bandung, Indonesia

³⁾ augustinaaar@telkomuniversity.ac.id, Telkom University, Bandung, Indonesia

*) Corresponding Author

ABSTRACT

Objectives: This study is aimed to develop a multi-criteria decision-making model for evaluating employee performance and provide organizations with a guideline on how to quantify employee performance.

Methodology: A hybrid approach of AHP and WSM was used in the development of the employee performance model. The AHP approach was employed to obtain the weight of each criterion. The obtained weight value is then used to calculate the performance score.

Finding: Based on the literature review and interviews, nine criteria were used, namely the achievement of work targets, job knowledge, initiative, work discipline, responsibility, teamwork, integrity, communication, and cleanliness. Based on weight calculations, it was found that achievement of the work target has the highest importance weight, followed by job knowledge, initiative, work discipline, responsibility, teamwork, integrity, communication, and cleanliness.

Conclusion: This study developed a multi-criteria decision-making model and a scoring guideline for evaluating employee performance. According to the results of the performance score, the assessed employee would fall into five categories i.e. unacceptable performance, performance is slightly under the minimum expectation, performance meets the standard and expectation, performance exceeds the standard and expectation, and extraordinary performance. The model can be used to help managers to make decisions regarding compensation which is to be given to employees by linking the employee performance category with compensation criteria.

Keywords: employee performance evaluation, multi-criteria decision-making, performance appraisal, AHP, WSM

Submitted:

2023-01-09

Revised:

2023-05-26

Accepted:

2023-06-20

Article Doi:

http://dx.doi.org/10.22441/jurnal_mix.2023.v13i2.008

INTRODUCTION

Employees are considered as the backbone of the organization. Competitive employees play a major role in the success of the organization in achieving the expected performance targets, as well as the vision, mission, and objectives of an organization (Insan et al., 2023; Jeffrey & Prasetya, 2019; Nanda et al., 2020; Suswati, 2020). The success or failure experienced by an organization is dependent on the performance of its employees (Murali et al., 2017; Rodriguez & Walters, 2017). It is very apparent that employees are viewed as valuable assets in every organization (Jeffrey & Prasetya, 2019).

Evaluating employee performance is important for organizations (Fekete & Rozenberg, 2014; Saratian et al., 2022). Performance evaluation is a process of observing and obtaining information regarding employees' individual job performance and effectiveness (Murphy, 2020). Performance evaluation is essential in order to align the employee's activities in the path of achieving the set goals. Thus, employee performance can be evaluated through the employee's ability to increase their contribution in achieving an organization's vision and mission, as well as the goals and objectives that have been set (Asda & Nilasari, 2022; Sabuhari et al., 2022). In addition to that, performance evaluation is also viewed as a tool to facilitate decisions related to human resource management, such as salary increases, training, or poor performance separation (Ahmed et al., 2013; Murphy, 2020).

Measuring performance is a complex problem and not an easy task. The performance of an employee is considered as the level of success of an employee in meeting work standards, targets, or any specified criteria in carrying out tasks (Qurotalain et al., 2022). Many aspects must be taken into account in evaluating employee performance. It requires the consideration of a well-defined set of criteria (Islam & Rasad, 2005). The determination of the method, criteria, and instrument used in the performance appraisal system is crucial since the performance score will heavily depend on the criteria used. Ahmed, et.al. (2013) stated that a performance appraisal system would be more accurate in representing employee performance when applying a quantitative technique. However, the barrier often faced by an organization is that a lot of the information related to performance evaluation presented in expressions or words is not precise. Therefore, it becomes difficult to quantify (Ahmed et al., 2013).

Several studies have proposed a quantitative approach to performing employee performance evaluations. The study from Islam & Rasad (2005) used an analytical hierarchy process (AHP) to evaluate employee performance. The study considered six factors i.e. quantity/quality of the work, planning/organization, initiative/commitment, teamwork/cooperation, communication, and external factors. AHP technique used pairwise-comparison to obtain a score for each employee. This means that the employee's performance in each criterion will be compared to another employee's. This will result in the employee appraisal process being complicated with companies having many employees to evaluate. The study from Safrizal, et.al. (2019) used a profile-matching approach to evaluate employee performance by considering ten criteria i.e. work discipline, administration discipline, reliability, maturity & personal integrity, spirit at work, communication, firmness & working principle, quantity of work, quality of work, and concern for organization. In this study, there are no specific techniques applied in determining the weight of importance of each criterion. The study from Nursari & Murtako (2020) used the Promethee method in developing a decision support system for evaluating employee performance by considering seven criteria i.e. diligence, teamwork, job integrity, skills, initiative, independently, and attendance.

Organizations often have an unclear and inefficient way to evaluate the performance of their employees. There are no standard rules and often involve subjective judgement in the performance appraisal. Organizations also use several criteria in the evaluation process that might possess different levels of importance and it makes the evaluation process very complicated. It is important to eliminate subjectivity and provide accurate results in evaluating employee performance. This paper attempts to fill up the gap, especially the methodological gap in the field of employee performance evaluation. Therefore, this study is important to reduce subjectivity in performance evaluation since there are many employee performance practices only based on someone's judgement and managers often find it difficult to quantify employee performance. This study aims to provide a comprehensive criterion and means to evaluate employee performance by developing a multi-criteria approach for evaluating employee performance and providing organizations with a guideline on how to quantify employee performance. The result of this study is expected to provide a clear guideline for organizations, especially for food and beverages service companies in performing performance evaluations for its employee.

LITERATURE REVIEW

According to Lidinska & Jablonsky (2018), performance is determined by skills (knowledge and other abilities) and motivation (a measure of willingness to deliver performance), so performance encompasses not only what people achieve but also how they achieve it. Many approaches and algorithms are mentioned in the literature for performance evaluation, one of them is the analytical hierarchy process. The Analytical Hierarchy Process (AHP) is first developed by Thomas Al-Saati and is considered as one of the most popular multi-criteria decision-making techniques (Rahmati & Noorbehbahani, 2018). This method creates a decision matrix by breaking down the qualitative opinions of experts into smaller portions. This method analyzes complex problems based on interactions, simplifies them, and resolves them (Rahmati & Noorbehbahani, 2018). This technique decomposes the decision-making process based on a hierarchical structure consisting of criteria, sub-criteria, and alternatives (Hoang et al., 2018). The results of AHP are a set of weights reflecting the relative importance of the alternatives. AHP enables the conversion of qualitative judgment into a numerical value (Hoang et al., 2018). Although AHP is one of the popular techniques in multi-criteria decision-making, there have been a number of studies that showed the application of AHP in evaluating individual performance in an organization. The study from Islam & Rasad (2005) developed a case study of employee performance at the operational level using AHP in a maintenance and cleaning service company. They argued that the use of AHP can improve objectivity in evaluating employee performance. The study found that the current appraisal system was performed informally and not well documented. There are six criteria used in the study of Islam & Rasad (2005) i.e. quality/ quantity of work, planning/ organization, initiative, teamwork, communication, and external factors. Lidinska & Jablonsky (2018) constructed an AHP model to evaluate employee performance in a consulting company. In the study, they used the following criteria: money and award, team, risk for low performance, and potential. Both the study of Islam & Rasad (2005) and Lidinska & Jablonsky (2018) highlight the fairness and accuracy improvement in the employee performance evaluation using AHP. However, due to the potentially high number of employees, it is not possible to apply the AHP with relative measurement. AHP was utilized in this study to identify the weight of the criteria in accordance with the opinions of experts. It is important because the criteria selected in this study might have varying effects on employee performance evaluation. After the weight of the criteria was

identified, this study employed another multi-criteria decision-making technique i.e., the weighted sum model. The weighted Sum Model (WSM) is the general model often used for many decision-making problems that involve several criteria. In WSM, the overall value for each decision-making alternative is calculated by adding the scores of attributes multiplied by their respective weights (Yan et al., 2017). The hybrid method of AHP-WSM is employed in this study to make the decision-making process between alternatives easier to be adopted by managers. These two methods can complement each other. Since the WSM method doesn't have the ability to calculate the weight of each criterion while AHP has it. Moreover, the decision-making in AHP is quite complex when we face a lot of alternatives because we need to compare the performance of each alternative to another alternative for each criterion. In WSM, the calculation is much simpler since we just need to multiply the weight of criteria with the score of the alternative in each criterion, then sum it. Moreover, the conceptual framework of this study is presented in Figure 1.

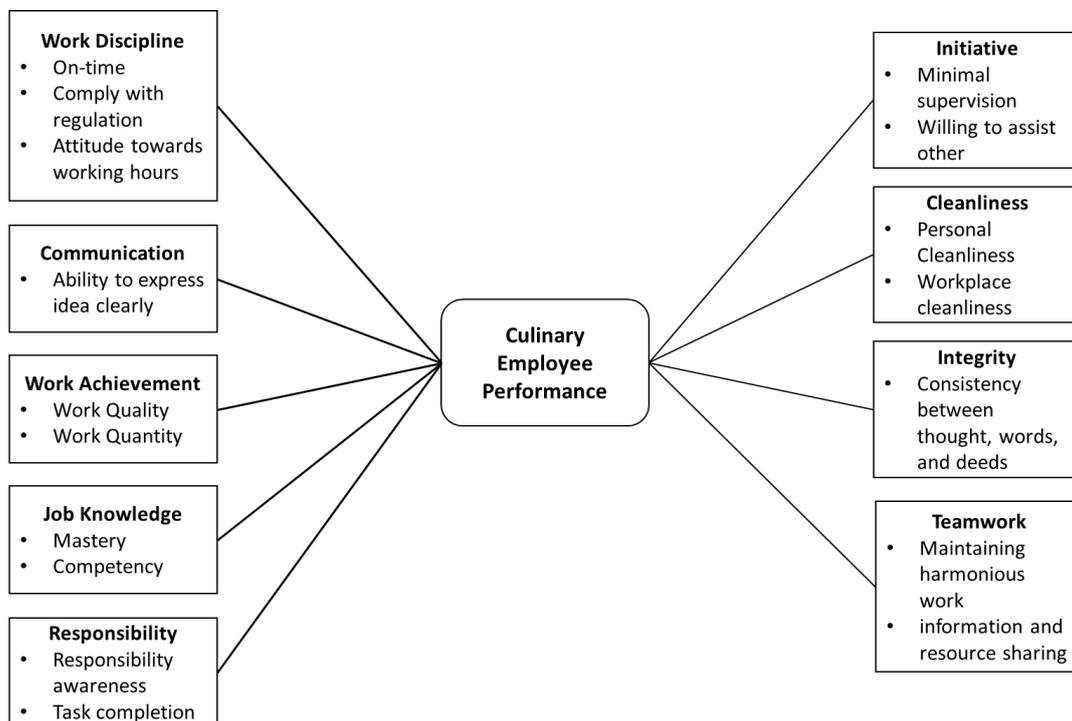


Figure 1 Conceptual Framework

Based on the conceptual framework, there are eight criteria for evaluating employee performance, especially in the culinary business. The criteria used in this study are based on previous studies. The first criteria are work discipline. Work discipline is described as the awareness and willingness that employees have to comply with regulations and social norms that apply in the company (Sitopu et al., 2021). Discipline possessed by employees is one of the important aspects in the operational function of human resource management because the better the discipline of employees, the higher the work performance achieved by employees

(Prabowo et al., 2023; Putri et al., 2019). The next criterion is communication. According to previous studies, this criterion concerns how effectively employees can convey information and ideas clearly, both orally and in writing (Islam & Rasad, 2005; Safrizal et al., 2019). Another criterion that is considered for employee performance is the employee's achievement of work targets. This criterion focuses on the employee's ability to complete work in a thorough, accurate, and timely manner to achieve the desired results. Employee performance on this criterion can be seen from the quality and quantity of work between what is produced and what is targeted. In determining performance, managers should also evaluate employees' knowledge of the job (Ahmed et al., 2013). Job knowledge is related to how well employees master the working principle of their job and how the competencies possessed by employees support the completion of work. In addition, in evaluating employee performance, an aspect that also needs to be considered is responsibility. Responsibility behavior is shown by how employees are aware of and carry out the responsibilities given to them. Responsible employees always try to complete their work properly and in accordance with the specified criteria

The next criterion considered in a prior study related to employee performance is initiative. This criterion aims to evaluate the initiatives possessed by employees while working. In this criterion, employees are expected to be able to demonstrate the ability to offer assistance to co-workers and be able to complete work with minimal supervision, and meet superior expectations. (Islam & Rasad, 2005). The study from Ahmed et al. (2013) and Safrizal et al. (2019), proposes integrity as one of the factors that need to be considered in assessing employee performance. Integrity is described as a behavior that shows consistency between an employee's thoughts, words, and deeds (Safrizal et al., 2019). Because this study will focus on employee performance in a culinary company, one of the most important factors to consider is cleanliness. Employees that work in a culinary company must have the ability to maintain cleanliness both personal cleanliness and workplace cleanliness. The next criterion that is often considered is teamwork. The ability of employees to work together in teams can be seen in how employees can maintain harmonious and effective working relationships with co-workers. In addition, it is said that employees who are able to cooperate well with their colleagues can be seen from how employees are willing to share information and resources with others to encourage a positive and collaborative work environment (Islam & Rasad, 2005).

METHOD

Research Design

The study procedure for the employee performance evaluation was divided into four phases i.e. literature study, weight criteria determination, performance evaluation model development, and employee performance examination. The procedure of this study is presented in Figure 1. In phase 1, namely the literature study, identification is carried out related to the criteria commonly used in evaluating employee performance in the previous literature. In phase 2, namely the stage of determining the weight of the criteria, paired comparison data collection was carried out on each criterion. After the data is obtained, the next step is to calculate the weights using the analytical hierarchy process (AHP) approach. After calculating the weight of the criteria, a consistency test is carried out to ensure that the resulting weight value is obtained from a consistent assessment. In phase 3, namely the evaluation model development, the weighted sum model approach was carried out. Other than that, a scoring guide will also be developed that will facilitate interested stakeholders in conducting evaluations. In phase 4, namely employee

performance examination, the model that was already developed in the previous phase will be used and the assessment of five employees will be performed.

Criteria Identification

The criteria used in this study were elaborated from the study of Ahmed et al. (2013), Islam & Rasad (2005), Safrizal et al. (2019), and the interview with stakeholders in the company. Based on a previous study, there are 8 criteria identified and used in this study i.e. work discipline, communication, achievement of work target, job knowledge, responsibility, initiative, integrity, and teamwork. In addition, since this study used a food and beverages company as the case study, the manager added cleanliness behavior as an important criterion in the performance evaluation. Moreover, Table 1 presents the criteria and indicators used in this study.

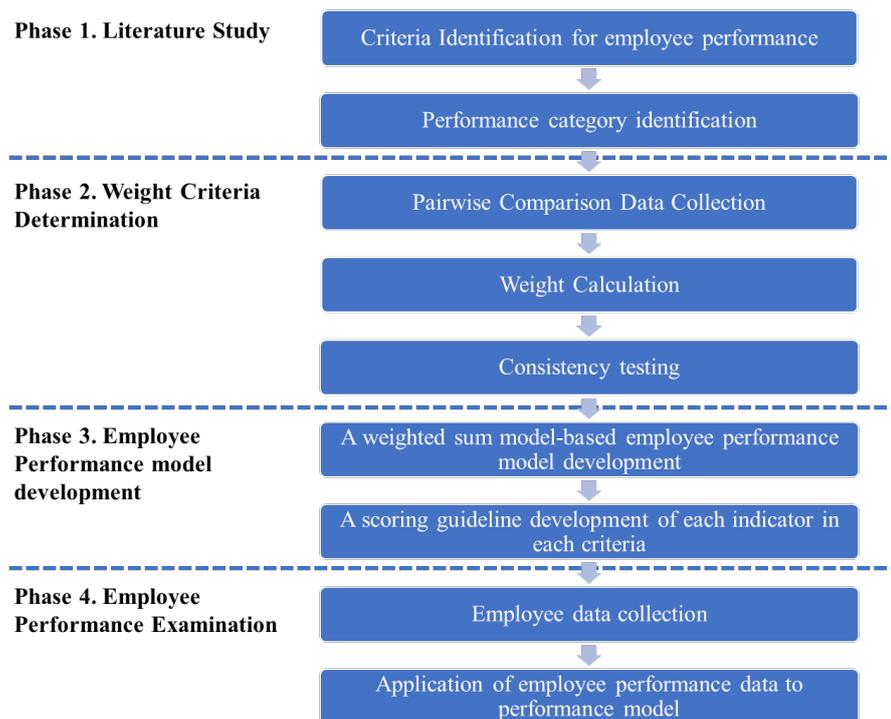


Figure 2. Study Procedure

Table 1 Criteria and Indicators of employee performance evaluation

Criteria	Indicator
Work discipline	<ul style="list-style-type: none"> Always arrive on-time Ability to Comply with applicable regulations Attitude towards working hours
Communication	<ul style="list-style-type: none"> Ability to express ideas in the clear form
Achievement of work target	<ul style="list-style-type: none"> Work Quality Work Quantity
Job Knowledge	<ul style="list-style-type: none"> Mastery regarding the principle of his/her job Competency in his work
Responsibility	<ul style="list-style-type: none"> Aware of his/her duties and responsibility Task completion
Initiative	<ul style="list-style-type: none"> Minimal supervision

Criteria	Indicator
Cleanliness	• Willing to provide assistance to others
	• Personal Cleanliness
	• Workplace cleanliness
Integrity	• Consistency between thought, words, and deeds
Teamwork	• Ability maintaining harmonious work relationships with co-workers
	• Willingness to share information and resources with others

RESULTS AND DISCUSSION

The result and discussion are essential sections of the research article. This section presents the results and discussion of the finding based on the research methods performed by the author.

Weight Criteria Determination

The calculation of the weight of the criteria is carried out using the analytical hierarchy process (AHP) approach. The data used in determining the weight of the criteria were obtained from interviews with the owner and manager of a food and beverage company. Respondents were asked for their opinion on the importance of each criterion when compared to other criteria. The opinions given by the respondents were then translated into a pairwise comparison judgment metric (PCJM) scale. Table 2 presents the judgment matrix obtained from the expert opinion.

Table 2. Criteria pairwise comparison matrix

	C1	C2	C3	C4	C5	C6	C7	C8	C9
C1	1.00	3.00	3.00	3.00	3.00	7.00	3.00	5.00	5.00
C2		1.00	3.00	3.00	3.00	7.00	5.00	3.00	5.00
C3			1.00	3.00	3.00	5.00	3.00	3.00	5.00
C4				1.00	3.00	5.00	3.00	3.00	5.00
C5					1.00	3.00	0.33	0.33	3.00
C6						1.00	0.33	0.33	0.33
C7							1.00	3.00	3.00
C8								1.00	3.00
C9									1.00

Table 3 shows the weight scores of each criterion. Achievement of work target has the highest weight (0.26), followed by job knowledge (0.21), initiative (0.15), work discipline (0.12), responsibility (0.08), teamwork (0.07), integrity (0.06), communication (0.03), and cleanliness (0.02), which indicates that, to a certain extent, the ability of employee to achieve the given target, knowledge regarding their job, and initiative behavior are considered as the most important aspect in reflecting employee's performance.

Table 3. Weight of Criteria

Code	Criteria	Weight Criteria (W _j)	Rank
C1	Work Discipline	0,12	4
C2	Communication	0,03	8
C3	Achievement of Work Target	0,26	1
C4	Job Knowledge of Tasks/Jobs	0,21	2
C5	Responsibility	0,08	5

C6	Initiative	0,15	3
C7	Cleanliness	0,02	9
C8	Integrity	0,06	7
C9	Teamwork	0,07	6

To ensure the level of consistency of the assessment given by the respondents, a consistency calculation is carried out. An assessment can be said to be consistent if it has a consistency ratio (CR) value of less than or equal to 0.1. Based on the calculation results, it was found that the consistency index value was 0.129 and the consistency ratio (CR) value from the assessment given by the respondents was 0.084. This value indicates that the assessment given by the respondent is consistent and can be used.

Employee Performance Evaluation Model Development

Once the weighted values of the criteria are obtained, in order to measure the performance of employees, this study designed a scoring guideline of employee performance for each criterion. Each criterion will be measured by one or more indicators. Each indicator will be given a score in the range of 1 to 5. The determination of the score for each indicator follows the scoring guideline presented in Table 4. According to the scoring guideline, the performance score of each criterion of each employee is the average score of all indicator scores. Thus, it can be calculated using the following formula:

$$EP_{ij} = \frac{\sum_{k=1}^n SI_{ijk}}{n \times 5} \quad (2)$$

Finally, the total performance score of each employee is calculated with the aid of the formula below:

$$EP_i = \sum_{j=1}^{n=9} EP_{ij} \times W_j \quad (3)$$

Where SI_{ijk} is the score of indicator-k of the criteria-j of the employee-i that is derived from Table x; EP_{ij} is the score of criterion-j of the employee-i (alternative i); EP_i is the total score of employee performance-i; W_j is the weighted score of the criterion-j. The score of W_j is obtained from AHP and presented in Table 2.

Table 4. Scoring Guideline for Each Criterion

Criteria	Indicator	Scoring Guideline				
		1	2	3	4	5
Work Discipline	Always arrive on time	Always arrive late / leave early	Often arrive late / leave early	Sometimes arrive late / leave early	Rarely arrive late/ leave early	Never arrive late/ leave early
	Ability to Comply with applicable regulations	Not willing to comply with company regulations	Difficult to comply company regulations	Willing to Comply to mostly applicable regulations	Willing to Comply with applicable regulations	Always Comply with applicable regulations
	Attitude towards working hours	Mostly looking relaxed during working hours	During working hours, more often looking relaxed	Rarely use work hours for other things during working hours	Never use work hours for other things outside his/her work	Fully utilize his/her working hour for useful thing for the company

		Scoring Guideline				
Criteria	Indicator	1	2	3	4	5
Communication	Ability to express ideas in the clear form	Never wanted conveying information or ideas to other	Sometimes having trouble conveying information or ideas	Quite good in conveying information and ideas both orally and in writing	Good in conveying information and ideas both orally and in writing	Excellent in conveying information and ideas both orally and in writing
	Achievement of work target	The quality of his/her work is poor	The quality of the work quite satisfying	The quality of his work is satisfying	The quality of his work is good	The quality of his work is excellent
	Work Quantity	The quantity of his/her work never reach the expected target	The quantity of his/her work rarely achieve the expected targets	The quantity of his/her work mostly achieve the expected targets	The quantity of his/her work always achieve the expected target	The quantity of his/her work always exceed the expected target
Job knowledge	Mastery regarding the principle of his/her job	Not mastered the principles of the job	Less mastered the principle of the job	Quite mastered his field of job	Mastered almost all the principle of the job	Mastered all the principles of his job
	Competency in his work	incompetent in their field of work	In some cases, incompetent in their field of work	Quite competent in their field of work	Competent in his field of work	Very competent in his field of work
Responsibilities	Aware of his/her duties and responsibility	Do not know the duties and responsibilities	Know a little about duties and responsibilities	Know mostly duties and responsibilities	Know the duties and responsibilities	Understand the duties and responsibilities
	Task completion	The task is always not finished/retreat from plans	The completion of tasks often retreats from plans	The completion of task is mostly on time	The completion of the task is always on time	The completion of the task is always early than planned
Initiative	Minimal supervision	Always need maximum supervision in performing job	Often need supervision in performing job	Sometimes need supervision in performing job	Rarely need supervision in performing job	No need supervision in performing job
	Willing to provide assistance to others	Rarely want to provide assistance to other	Willing to provide assistance to other only in free time	Willing to provide assistance to other	Often offer assistance to other	Always offer assistance to other
Cleanliness	Personal Cleanliness	Does not aware about personal hygiene attitude	Have a little concern of personal hygiene attitude	Have a concern of personal hygiene attitude	Implement good personal hygiene practice most of the time	Always implement good personal hygiene practice
	Workplace Cleanliness	Does not have a concern regarding the	Have a little concern of cleanliness in	Fairly concern regarding cleanliness in	Have a concern of cleanliness in	Always maintain cleanliness in the workplace

Criteria	Indicator	Scoring Guideline				
		1	2	3	4	5
		cleanliness of the workplace	the workplace	the workplace	the workplace	
Integrity	Consistency between thought, words, and deeds	Often inconsistent between our thoughts, words and deeds	Sometimes inconsistent between our thoughts, words and deeds	Fairly consistent between our thoughts, words and deeds	Mostly consistent between our thoughts, words and deeds	Always consistent between our thoughts, words and deeds
Teamwork	Ability maintaining harmonious work relationships with co-workers	Unable to maintain harmonious work relationship with co-worker	Difficult to maintain harmonious work relationship with co-worker	Maintain harmonious work relationship with some co-worker	Maintain harmonious work relationship with almost all co-worker	Always maintain harmonious work relationship with all co-worker
	Willingness to share information and resources with others	Always keep information and resource for himself/herself	Rarely want to share information and resource with co-worker	Willing to share information and resource when asked	Willing to share information and resource with co-worker most of the time	Always willing to share information and resource with co-worker

In this study, the performance value generated by the model is mapped into five performance categories where the performance value obtained by employees will be in the range of 20 to 100 (20 minimum, 100 maximum). The categorization of employee performance values was adapted based on research conducted by Fekete & Rozenberg (2014) and can be seen in Table 5.

Table 5. Performance Category

Category	Performance Score (EP)	Evaluation Criteria
1	Less than 40	Performance is unacceptable
2	40-60	Performance is slightly under the minimum level of standards and expectations
3	61-80	Performance meets the standards of the company and manager's expectation
4	81-90	Performance exceeds the standards and Expectations
5	More than 90	Extraordinary performance

Employee Performance Examination

To judge the model just developed, data from five employees coded "GAP", "DW" "DY", "MAB", and "BIF" have been applied to the model. Five selected employees contain 2 baristas and 3 cooks. The input data for these five employees are shown in Table 5 and results obtained from the performance model are shown in Table 6.

Table 6 Data of five employees

Criteria	C1	C2	C3	C4	C5	C6	C7	C8	C9
----------	----	----	----	----	----	----	----	----	----

	C ₁₁	C ₁₂	C ₁₃	C ₂₁	C ₃₁	C ₃₂	C ₄₁	C ₄₂	C ₅₁	C ₅₂	C ₆₁	C ₆₂	C ₇₁	C ₇₂	C ₈₁	C ₉₁	C ₉₂
GAP	3	4	3	4	4	4	4	4	3	3	4	4	5	4	4	3	3
DW	4	4	4	4	4	3	3	4	3	3	3	3	4	4	2	2	2
DY	3	2	3	3	2	3	3	3	3	2	4	4	4	4	4	4	5
MAB	3	3	3	3	3	3	5	4	3	2	3	3	3	3	4	5	4
BIF	4	4	5	3	5	4	5	5	4	4	4	4	4	4	3	4	3

Table 7. The result obtained from the developed model

Employee	Performance Score	Category	Evaluation Criteria
GAP	0.85	4	Performance exceeds the standards and Expectations
DW	0.74	3	Performance meets the standards of the company and manager's expectation
DY	0.71	3	Performance meets the standards of the company and manager's expectation
MAB	0.75	3	Performance meets the standards of the company and manager's expectation
BIF	0.93	5	Extraordinary performance

Employee performance evaluation can be used as the basis for compensation decisions (Fekete & Rozenberg, 2014). For example, the performance category can be connected to salary grade, where category 1 is associated with low-grade salary and category 5 is associated with high-grade salary. Moreover, Fekete & Rozenberg (2014) propose several decisions that can be taken by managers from linking the employee performance category.

CONCLUSION

This study aimed to develop a multi-criteria model of performance evaluation for employees in food and beverage companies and filled the methodological gap in the study of performance evaluation. The model consists of nine criteria i.e. work discipline, communication, target achievement, job knowledge, responsibilities, initiative, cleanliness, integrity, and teamwork. Overall, the model adopts a weighted sum method for calculating the employee performance score. The performance of an employee in each criterion is assessed and will be given a score in the range of 1 to 5. The score in each criterion is then multiplied by the weight of each criterion. Different weights were allocated to the criteria that are based on the AHP calculation. According to the results of the performance score, the assessed employee would fall into five categories i.e. unacceptable performance ($EP < 40$), performance is slightly under the minimum expectation ($40 \leq EP \leq 60$), performance meets the standard, and expectation ($60 \leq EP \leq 80$), performance exceeds the standard and expectation ($80 \leq EP \leq 90$), and extraordinary performance ($EP > 90$). The model can be used to help managers in making decisions regarding the following things i.e. deciding compensation to be given to employees by linking the employee performance category with compensation criteria, for example, for those employees that has extraordinary performance, a bonus is given. Moreover, the result of this study also helps the manager to determine the employee that needs to be given training, the result of the calculation can provide manager the with information about the aspect that should be improved by the employee. In this study, the indicators for each criterion are treated as if they have the same effect in compiling employee performance. Future studies can run a multi-level AHP

where each indicator will be treated as a sub-criterion so that the level of importance of each indicator can be known against the criteria.

REFERENCES

- Ahmed, I., Sultana, I., Paul, S. K., & Azeem, A. (2013). Employee performance evaluation: A fuzzy approach. *International Journal of Productivity and Performance Management*, 62(7), 718–734. <https://doi.org/10.1108/IJPPM-01-2013-0013>
- Asda, S. R., & Nilasari, B. M. (2022). The Effect of Authentic Leadership and Work Engagement on Job Performance: Evidence from DKI Jakarta Provincial Government. *MIX: Jurnal Ilmiah Manajemen*, 12(3), 524–540.
- Fekete, M., & Rozenberg, I. (2014). the Practical Model of Employee Performance. Management, *Knowledge and Learning International Conference*, 141–149.
- Hoang, H. T. T., Truong, Q. H., Nguyen, A. T., & Hens, L. (2018). Multicriteria evaluation of tourism potential in the Central Highlands of Vietnam: Combining Geographic Information System (GIS), Analytic Hierarchy Process (AHP) and Principal Component Analysis (PCA). *Sustainability (Switzerland)*, 10(9), 1–20. <https://doi.org/10.3390/su10093097>
- Insan, A. N., Asnawar, Nur, M., & Masmarulan. (2023). Green Human Resources Management on Turnover Intentions Mediated by Work Environment Employees. *MIX: Jurnal Ilmiah Manajemen*, 13(1), 208–226.
- Islam, R., & Rasad, S. bin M. (2005). Employee Performance Evaluation By AHP: A Case Study. 11, 163–176. <https://doi.org/10.13033/isahp.y2005.028>
- Jeffrey, I., & Prasetya, A. B. (2019). the Employee Performance Assessment and Employee Training, on Employee Intension. *Jurnal Aplikasi Manajemen*, 17(1), 56–65. <https://doi.org/10.21776/ub.jam.2019.017.01.07>
- Lidinska, L., & Jablonsky, J. (2018). AHP model for performance evaluation of employees in a Czech management consulting company. *Central European Journal of Operations Research*, 26(1), 239–258. <https://doi.org/10.1007/s10100-017-0486-7>
- Murali, S., Poddar, A., & Seema, P. A. (2017). Employee Loyalty , Organizational Performance & Performance Evaluation – A Critical Survey. *IOSR Journal of Business and Management*, 19(8), 2319–7668. <https://doi.org/10.9790/487X-1908036274>
- Murphy, K. R. (2020). Performance evaluation will not die, but it should. *Human Resource Management Journal*, 30(1), 13–31. <https://doi.org/10.1111/1748-8583.12259>
- Nanda, A., Soelton, M., Luiza, S., & Saratian, E. T. P. (2020). The Effect of Psychological Work Environment and Work Loads on Turnover Interest, Work Stress as an Intervening Variable. *120(Icmeb 2019)*, 225–231. <https://doi.org/10.2991/aebmr.k.200205.040>
- Nursari, S. R. C., & Murtako, A. (2020). Decision Support System for Employee Performance Evaluation with Promethe Method. Case Study: Faculty of Engineering, Pancasila University. *Bit-Tech*, 3(3). <https://jurnal.kdi.or.id/index.php/bt/article/view/170>
- Prabowo, H., Pratomo, D. J., & Indriasari, I. (2023). The Effect of Work-Life Balance, Work Discipline, and Work Environment on Job Satisfaction with Teacher Performance as an Intervening. *MIX: Jurnal Ilmiah Manajemen*, 13(1), 176–189.

- Putri, E. M., Ekowati, V. M., & Supriyanto, A. S. (2019). the Effect of Work Environment on Employee. *Me*, 7(April), 132–140. <https://doi.org/10.5281/zenodo.2653144>
- Qurotalain, T., Sriyono, S., & Fitriyah, H. (2022). Effect of Self Efficacy, Training, Motivation, and Competence on Organizational Commitment with Employee Performance as Intervening Variables at PT Bina Utama Sakti. *Mix: Jurnal Ilmiah Manajemen*, 12(2), 189. https://doi.org/10.22441/jurnal_mix.2022.v12i2.002
- Rahmati, A., & Noorbehbahani, F. (2018). A new hybrid method based on fuzzy AHP and fuzzy TOPSIS for employee performance evaluation. *2017 IEEE 4th International Conference on Knowledge-Based Engineering and Innovation, KBEI 2017, 2018-Janua(December 2017)*, 0165–0171. <https://doi.org/10.1109/KBEI.2017.8324965>
- Rodriguez, J., & Walters, K. (2017). The Importance of Training and Development in Employee Performance and Evaluation. *International Journal Peer Reviewed Journal Refereed Journal Indexed Journal UGC Approved Journal Impact Factor*, 3(10), 206–212. <https://www.researchgate.net/publication/332537797%0Awww.wvjmr.com>
- Sabuhari, R., Adam, M. A., Soleman, M. M., & Jabid, A. W. (2022). THE EFFECT OF COMPETENCE: INTELLECTUAL, EMOTIONAL, AND SOCIAL ON EMPLOYEE PERFORMANCE WITH ADAPTABILITY AS A MEDIATION VARIABLE. *MIX: Jurnal Ilmiah Manajemen*, 12(2), 293–305.
- Safrizal, Tanti, L., Puspasari, R., & Triandi, B. (2019). Employee Performance Assessment with Profile Matching Method. *2018 6th International Conference on Cyber and IT Service Management, CITSM 2018*. <https://doi.org/10.1109/CITSM.2018.8674256>
- Saratian, E. T. P., Afri, O., Simamora, E. P., Susilowati T. (2022). Exploring Factors in Improving Funding Sales Team Performance: Case Study from Overseas Bank. *International Journal of Scientific Engineering and Science* 6(8), 63-68.
- Sitopu, Y. B., Sitingjak, K. A., & Marpaung, F. K. (2021). The Influence of Motivation, Work Discipline, and Compensation on Employee Performance. *Golden Ratio of Human Resource Management*, 1(2), 72–83. <https://doi.org/10.52970/grhrm.v1i2.79>
- Suswati, E. (2020). the Influence of Work Stress on Turnover Intention: Employee Performance As Mediator in Casual-Dining Restaurant. *Jurnal Aplikasi Manajemen*, 18(2), 391–399. <https://doi.org/10.21776/ub.jam.2020.018.02.20>
- Yan, L., Gao, B. W., & Zhang, M. (2017). A mathematical model for tourism potential assessment. *Tourism Management*, 63, 355–365. <https://doi.org/10.1016/j.tourman.2017.07.003>