

Implementation of the Composite Performance Index (CPI) Method in Determining Employee Promotion: Case Study of PTPN IV Kebun Mayang Business Unit


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ABSTRACT

The role of the decision support system will help the personnel to achieve the goals of performance appraisal such as promotion without overriding the parameters set by the relevant agencies. The Composite Performance Index (CPI) method is a combined indicator that can be used to determine an assessment or rating of various alternative (i) based on several criteria (j). The results of this study indicate that the calculation of alternative values and the combined index table obtained the highest value of alternative B3 and got the first rank and got the highest class increase, from 1A / 4 to 1B / 0 in the 2019 period with a value of 108.78.

Keyword : System Support Decision; Composite Performance Index (CPI); Increase Group

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1. INTRODUCTION

The promotion of each employee is one of the efforts to motivate employees or people who are led in a company or organization to be able to decide on a promotion that is fully given to an employee based on the results of his performance assessment so far, then the company must have a proper reward system. The process to be able to determine appropriate compensation for a work achievement is by assessing work performance to increase the employee's class and employee competence.

PTPN IV in determining employee grade increases has so far been using a manual process and is time consuming which is not efficient in making decisions. The stages for determining grade increases are once a year and are seen from employee performance. To support this decision, a system needs to be created to determine grade increases for employees.

According to Limbong et al. (2020: 1) a decision support system (DSS) is an interactive computer-based system that helps decision makers utilize data and models to solve unstructured and semi-structured problems. In fact, the initial definition, DSS is a model-based system consisting of procedures in data processing and its considerations to help managers in making decisions. In order to achieve its goals, the system must be simple, easy to control, easy to adapt, complete.

The CPI method is one of the methods in determining decisions based on performance indexes. This approach is useful for determining alternatives based on non-uniform criteria, this is because the criteria have different characteristics, namely positive and negative trends. In addition, this method has the ability to determine the ranking of a number of alternatives and criteria. The ranking system is arranged based on the acquisition of alternative values from the highest to the lowest value is useful for providing convenience for decision makers in determining their decisions.

By using the Composite Performance Index (CPI) method, the criteria used are work ability, work enthusiasm and discipline, good character towards superiors, honesty and responsibility, high curiosity, and can control emotions. From these criteria, it will determine the increase in employee ranks.

2. RESEARCH METHOD/MATERIAL AND METHOD/LETERATURE REVIEW

A. Types of research

The type of research used by the researcher is quantitative research, where the definition of quantitative research is research based on the assumption of employee promotion assessment, then determining the variables where x is the employee name and y is the employee assessment criteria and then carried out using a valid research method, namely the Composite Performance Index (CPI) method, especially in quantitative research. The type of quantitative research used is comparative research, where this type of research is used to find answers to fundamental problems about cause and effect by analyzing the factors that cause or emerge a particular phenomenon.

B. Composite Performance Index(CPI)

The Composite Performance Index (CPI) method is a composite index that can be used to determine the assessment or ranking of various alternatives based on several criteria.

In this study, the composite performance index (CPI) technique is used to solve the decision-making problem. The CPI method is a combination of index-based approaches that can be used to calculate various alternatives and rank alternatives. This composite performance index method allows evaluating non-identical criteria: trend criteria (+) and trend criteria (-). In other words, CPI allows detecting variations in alternative characteristics that may contribute positively or negatively to the research objectives. This approach provides flexibility in evaluating the performance of complex alternatives and becomes a powerful tool for a more holistic and nuanced understanding of decision-making.

The procedure for solving the Composite Performance Index (CPI) method is:

1. Identify the criteria for positive and negative trends. The criteria include a (+) trend if the higher the value, the better and the criteria include (-) if the lower the value, the better.
2. For the positive trend criteria, the minimum value for each criterion is transformed to one hundred, while the other values are transformed proportionally higher.
3. For the negative trend criteria, the minimum value for each criterion is transformed to one hundred, while the other values are transformed proportionally lower.
4. The calculation of the alternative index is the multiplication of the criterion value with the criterion weight.
5. The calculation of the combined index value by adding the multiplication of the criterion value with the criterion weight.

Application of the CPI (Composite Performance Index) Method

Case Example: Promotion of Employees

C. Research variable

The variables studied are employee name data and employee performance assessment criteria during the 2019 period. Where x is the employee name and y is the employee assessment criteria. The employee performance assessment indicators are as follows:

1. y_1 is the ability to work with a weighting scale ranging from 50 to 80. If the ability to work is very good and has initiative in carrying out work, the value is 71-80, able to work alone and take initiative, the value is 61-70, able to work well even though lacking initiative, the value is 51-60, still needs guidance, the value is 50.
2. y_2 is the enthusiasm for work and discipline with a weighting scale of 50 to 80. The enthusiasm for work with very good discipline is 71-80, the enthusiasm for work with good discipline is 61-70, the enthusiasm for work is good but lacks discipline is 51-60, the absence of enthusiasm for work and lack of discipline is 50.
3. y_3 is honesty with a weighting scale of 51 to 80. Honesty in carrying out duties is very good with a value of 71-80, good honesty with a value of 61-70, and less good honesty with a value of 51-60.
4. y_4 is good manners towards superiors with a weight of 50 to 80. Very good speech with superiors with a value of 71-80, good speech with superiors with a value of 61-70, poor speech with superiors with a value of 51-60, lack of politeness with superiors with a value of 50.

D. Research Procedure

The steps to be taken in this research are as follows:

1. Data Collection

The secondary data needed is employee performance assessment data at PT. Perkebunan Nusantara IV Kebun Mayang Business Unit obtained offline.

2. Data Processing

The existing data is processed manually using the Composite Performance Index method. The following is a flowchart of the Composite Performance Index method.

3. Data Analysis

4. Making Conclusions

After the final results are obtained using the Composite Performance Index method, it can be determined whether the increase in class has an effect on the performance assessment at PT. Perkebunan Nusantara IV Kebun Mayang Business Unit.

3. RESULTS AND DISCUSSION

A. Presentation of Research Data

At PTPN IV Kebun Mayang Business Unit, there are 11 criteria for each employee promotion assessment, including: knowledge of work, work performance, ability to work independently and initiative, ability to cooperate, enthusiasm for work and discipline, leadership and organization, self-adjustment, honesty, health, socializing and politeness/good character towards superiors. Among the 11 assessment criteria, only 4 criteria are the most decisive in the employee promotion assessment while the other 7 criteria are only considered if there is a similarity in the average value. So, only these 4 criteria will be used as a reference in making decisions regarding this study.

The criteria data contained in determining the value of the increase in rank are work ability, work enthusiasm and discipline, honesty and good character towards superiors. There are fifteen samples of A_i data in the form of member data, for example B_1 = Employee Name. And X_j is a criterion in the performance assessment that will be used as a reference in decision making, the criteria contained in determining the increase in rank are X_1 = Ability to Work, X_2 = Passion for Work and Discipline, X_3 = Honesty and X_4 = Character Towards Superiors.

Each criterion X_j has a trend criterion, namely:

1. X_1 = Ability to Work: has a high value, then the ability to work means this criterion is a positive trend
2. X_2 = Passion in Work and Discipline: the higher the value of the ability to work, the better, then the ability to work in the positive trend criterion
3. X_3 = Honesty: the higher the value of honesty, the better, then honesty in this criterion is a positive trend
4. X_4 = Good Character Towards Superiors: the greater the number in this criterion, the better, this criterion is called a positive trend.

Next, data is provided on the degree of importance for each criterion, the value of which has been determined by PTPN IV Kebun Mayang Business Unit, as in Table 1. below.

Table 1. Data on Degree of Importance of Criteria

No	Assessment Criteria	Weight of Degree of Importance
1	Ability to Work	50%
2	Work Passion and Discipline	25%
3	Honesty	15%
4	Good Character Towards Superiors	10%

From table 1 there are 4 criteria for employee performance assessment, each of which has a weight determined by the company, where work ability has a weight of 50%, work enthusiasm and discipline have a weight of 25%, honesty has 15% and good character towards superiors has a weight of 10%.

B. Data Analysis Discussion

The results of this study indicate that the calculation of alternative values and the combined Index table above, obtained alternative B12 has the highest value and gets the first ranking. So that alternative B12 was selected as the best alternative with the most increase in class from IID / 6 to IIIA / 0 in the 2019 period with a value of 108.75. However, the data on the increase in class obtained did not match the employee performance assessment during the 2019 period, where the results of the performance

assessment with a decision support system using the composite performance index method, the average value did not guarantee a high increase in class for employees.

Employee performance appraisal does not fully affect the increase in grade, there is a proposal from the manager with a general view of whether the employee is outstanding or not. If the employee has very good achievements and loyalty to the company, the increase in grade will be higher. So this increase in this grade has no view of the performance appraisal during the 2019 period, therefore the author helps determine the increase in grade for employees using the composite performance index method to obtain more accurate and efficient results.

From this, it also teaches us to be fair in all things, especially concerning employee welfare, where leaders must also be fair in providing welfare, happiness, and security for all their employees.

C. System Implementation

The system implementation stage is a process carried out after the system design stage is completed. The goal achieved at this stage is to be able to operate the results of the system design that has been made. In designing the application of the decision support system for determining the chairman of the OSIS Smp Swasta Kavri Talun Kenas, Visual Basic.net is used using the MySQL database.



Figure 1. Login Menu Form

In this login form, users are asked to enter their user name and password to enter the menu form. When the Employee Promotion application is first run, the Login Form will appear, which is a login menu for regular users and admins. If the system user is a user, simply select the user option and then select login, then the system will continue to the main menu display.

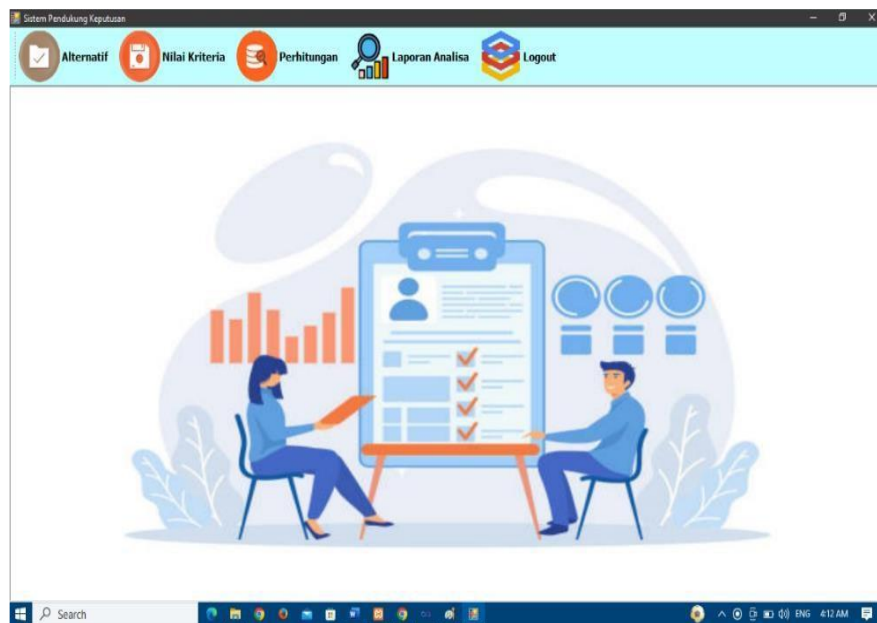


Figure 2. Main Menu Form

The main menu display is used to accommodate all menu and submenu options in the system such as the user menu, user menu, description menu.

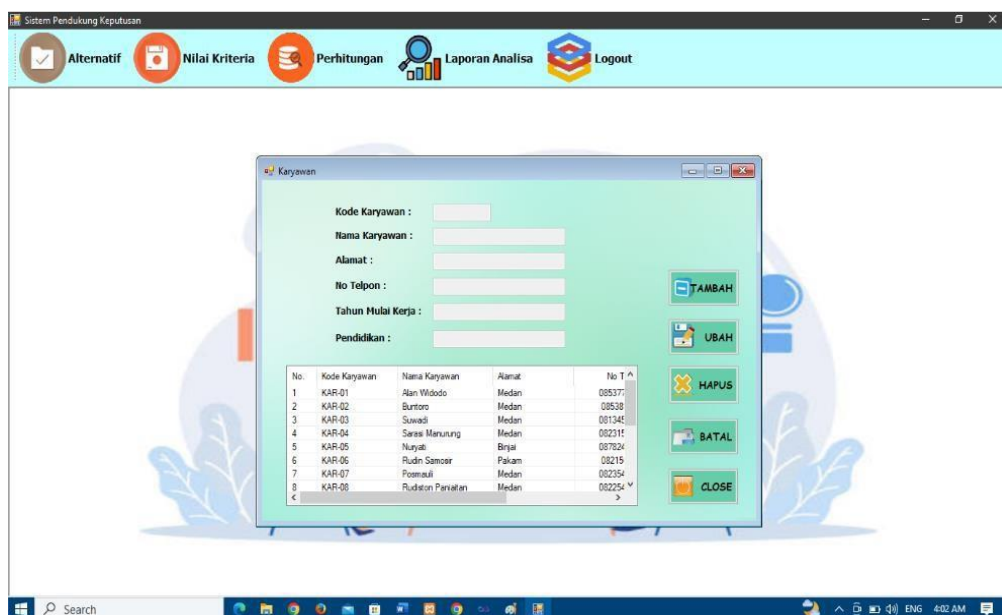


Figure 3. Alternative Data Form

On the Alternative data input form display, it is used to enter employee data.

Figure 4. Criteria Data Form

This menu is used to carry out the determination process based on the Criteria data owned by the Employee.

Figure 5. Assessment Result Data Form

This menu is used to carry out the process of determining ranking results based on alternative assessment data and criteria owned by the Employee.

PTPN IV
UNIT USAHA KEBUN MAYANG
Desa Mayang, Kec. Bosar Maligas, Kab. Simalungun, Sumatera Utara

LAPORAN HASIL KEPUTUSAN PENILAIAN KARYAWAN

No.	Kode Karyawan	Nama Karyawan	Total Nilai	Keputusan
1	KAR-12	Marius Tumanggor	108,77	Rangking 1
2	KAR-14	Fano	108,27	Rangking 2
3	KAR-04	Sarani Manurung	108,21	Rangking 3
4	KAR-03	Suwad	108,03	Rangking 4
5	KAR-15	Suyono	107,58	Rangking 5
6	KAR-06	Rudin Sarnoir	107,26	Rangking 6
7	KAR-02	Buntoro	106,95	Rangking 7
8	KAR-01	Alan Widodo	106,81	Rangking 8
9	KAR-07	Pesmandi	106,26	Rangking 9
10	KAR-10	Tukara	106,23	Rangking 10
11	KAR-05	Nuryan	105,37	Rangking 11
12	KAR-13	Danni Manurung	105,22	Rangking 12
13	KAR-08	Rudiston Panjaitan	105,05	Rangking 13
14	KAR-11	Hasan Kurniadi S	103,81	Rangking 14
15	KAR-09	Sumono	102,25	Rangking 15

Figure 6. Report Result Data Form

This menu is used to carry out the process of printing employee promotion reports.

D. System Testing

The system that is built is tested to ensure that the system is error-free and can run properly. The approach used to test the system is black-box testing. Testing is done by testing one by one the features in the system whether an error occurs or not. Testing with black-box testing that has been done is presented in Table 2.

Table 2. Black-box Testing Tests

No	Test Features	Function	Status
1	Login	The user enters the username and password to enter the main menu	Success
2	Main Menu	Users can view the main menu by displaying other main menus	Success
3	Data Features	Users can process criteria data, including adding, changing and deleting criteria data.	Success
4	Data Features	Users can perform alternative data processing such as adding, changing and deleting alternative data.	Success
5	Value Feature	Users can enter values for each alternative and can change and delete them.	Success
6	Process Features	Users can view the process of calculating employee promotion using the CPI method and the system can display alternative rankings.	Success
7	User Features	Users can add, modify and delete user data using the system.	Success

4. CONCLUSION

It can be concluded that the calculation results carried out using the composite performance index method can provide more effective results regarding employee promotion assessments and make it easier to select the best employees. The existence of a decision support system can minimize errors and subjective employee promotion assessments.

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