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Presenting a Model for Allocating Employee Motivational Benefits in the Iranian Railway Company Based on Performance-effective Criteria Using the Analytic Hierarchy Process

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Abstract

Human resources are among the most critical assets of large organizations. Human resource management and employee motivation play a key role in organizational performance, presenting a constant challenge for senior management. The Iranian Railway Company, employing over 22,000 staff and transporting nearly 50 million t of cargo annually, is one of the largest state-owned enterprises in Iran. Employee satisfaction significantly influences the company's performance indicators. The equitable allocation of motivational benefits impacts freight and passenger volumes, as well as transportation safety. Failure to allocate these benefits fairly can lead to employee dissatisfaction, undermining motivation and performance.

This study presents a method for allocating welfare and motivational benefits based on employee performance. Key performance criteria within the railway industry, such as net tkm, loading and unloading tonnage, wagon travel speed, income, accident rates, and passenger train delays, were identified. The relative importance of these criteria was determined using the pairwise comparison method. Monthly values for each criterion were calculated across 21 regions of the Iranian railway network. Motivational resources were then allocated accordingly through a hierarchical approach. The implementation of this model led to improvements in key productivity indicators, such as freight volumes and transportation efficiency, thereby enhancing overall company performance and employee satisfaction.

Keywords

railway, human resources, financial resource allocation, hierarchical model

1 Introduction

Employees of organizations are their greatest resource. Treating employees fairly and providing opportunities for their growth empowers organizational leaders to bring their ideas to life and achieve the goals of the organization. This is what human resources (HR) excel at (Anwar and Abdullah, 2021).

In the context of the Iranian Railway Company, HR plays a critical role in improving performance metrics that are central to the industry, such as net tkm, accident rates, and overall productivity. Motivating employees through performance-based rewards directly influences these operational metrics, which are essential to the company's performance (Djunaedi, 2024).

In the context of the Iranian Railway Company, performance metrics such as net tkm, accident rates, and wagon travel speed are crucial indicators of operational efficiency and safety. These metrics directly affect the company's productivity and profitability, as well as employee well-being. By linking HR strategies to these key performance indicators, the study explores how

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performance-based rewards can motivate employees to focus on areas that are vital for both individual and organizational success (Thneibat and Sweis, 2023).

The goal of this study is to develop a model for allocating motivational benefits to employees based on performance-related criteria, aiming to enhance both employee satisfaction and operational efficiency within the Iranian Railway Company. By aligning HR strategies with these performance metrics, this research explores how effective HR practices can lead to measurable improvements in key railway industry performance indicators (Elrayah and Semlali, 2023).

Ultimately, it's all about enhancing the performance and productivity of employees. Traditionally, human resources focused on hiring, firing, and annual salary reviews, but nowadays, human resources have taken on a new form, covering a broader spectrum of responsibilities (Hosain et al., 2020).

HR plays a significant role in fostering a positive organizational culture, improving employee interactions, and enhancing employee productivity. Additionally, it takes care of their mental well-being and individual development (Harney and Alkhalaf, 2021; Tjahjadi et al., 2022).

Managing employees effectively becomes increasingly challenging as businesses grow, with inadequate HR practices potentially impacting employee satisfaction and organizational success (Jebali and Meschitti, 2021).

The consequences of a weak human resources approach have always been a matter for managers to consider. In such situations, employees often don't feel supported, lack opportunities, work long hours, and ultimately lose their motivation to continue working (Al-Qudah et al., 2020; Juhász et al., 2023).

Poor HR management can significantly affect an organization's revenue and reputation, highlighting the importance of effective HR practices, especially in large organizations like the railway sector (Atmadja et al., 2021).

One of the strategies employed by HR managers to enhance organizational performance is acknowledging the efforts made by employees for the company. This is one of the reasons why employees take pride in their work within an organization (Mitręga and Choi, 2021).

Furthermore, HR experts have found that employees who receive recognition are up to three times more engaged and committed to their jobs. Additionally, offering performance-based reward is another HR strategy for improving human resources. In this scenario, employees are aware that their performance is being assessed, and they strive to improve their own conditions, contributing to the overall enhancement of the organization's performance metrics related to employee performance (Bakker et al., 2023; Demerouti and Bakker, 2022).

The research process in this study was designed and implemented as follows:

1. Identification of Performance-Related Criteria: Initially, the key performance-related criteria that directly affect employee performance in the railway industry were identified. These criteria include metrics such as net tkm transported, wagon travel speed, income, accident rates, passenger-km, generated passenger trains, and passenger train delays. This step is crucial because identifying these specific metrics allows for a targeted approach to improving operational efficiency and employee performance in the railway sector.
2. Prioritization of Criteria Using the Pairwise Comparison Method: The importance and priority of each criterion relative to others were determined using the Analytic Hierarchy Process (AHP). This step helped in identifying which criteria had the greatest impact on the allocation of motivational benefits. This prioritization ensures that the most influential performance metrics are given more weight in the allocation process, addressing the performance gaps that directly affect company productivity.
3. Calculation of Monthly Values for Each Region: Data related to each criterion was collected and calculated on a monthly basis for 21 different regions of the Iranian railway network. These data included operational metrics such as loading and unloading tonnage, wagon speed, and income. By calculating these values on a regional basis, we ensure that the allocation of benefits is tailored to the specific needs and performance levels of each area, optimizing overall operational efficiency.
4. Allocation of Motivational Resources Using the Hierarchical Method: Based on the performance data, the motivational financial resources were allocated to each region using a hierarchical approach. This allocation ensured that employee performance in each region was evaluated in a fair and transparent manner. This step is essential because it ensures that the allocation of resources is not only fair but also directly linked to actual performance, encouraging greater effort and accountability across all regions.
5. Evaluation of Results: Finally, the results of implementing the model were evaluated. The findings indicated that the new allocation method led to improved company performance. Additionally, employee satisfaction

increased as a key outcome of the new allocation system. Evaluating the results is important to measure the effectiveness of the new allocation model and to determine whether the changes have addressed the performance gaps identified earlier in the process.

This research seeks to create a model for allocating motivational benefits based on employee performance, directly linking HR strategies to the improvement of operational metrics in the railway sector.

2 Literature review

In the field of human resource management, evaluating employee performance is a key determinant of organizational success. The criteria used to evaluate employees must align with the company's broader goals and objectives. It is essential to select performance metrics that reflect the operational needs of the company (Djunaedi, 2024). In industries like the railway sector, where operational efficiency is critical, performance indicators such as net tkm, accident rates, and wagon travel speed are central to assessing both individual and organizational performance. For instance, net tkmdirectly reflect the volume of cargo transported, a key metric for productivity in the railway sector. Similarly, accident rates serve as a crucial safety indicator, directly affecting operational efficiency and employee welfare (Holbeche, 2022; Stahl et al., 2020).

The AHP is a widely-used decision-making method that facilitates the ranking and prioritization of multiple criteria in a hierarchical structure. This method has proven effective across various industries for making complex decisions involving multiple variables. AHP is particularly useful for performance evaluation, as it allows for the systematic assessment of performance metrics and assigns relative importance to each criterion (Gopinath et al., 2024; Onur and Özeren, 2024). This approach ensures that the most impactful criteria are prioritized, thus improving decision-making processes.

While AHP has been extensively applied in industries such as healthcare, manufacturing, and finance, its application in the railway sector, particularly for employee benefit allocation, remains underexplored (Sampath et al., 2024). Previous studies on AHP have demonstrated its ability to enhance decision-making processes by aligning HR strategies with operational goals. However, few studies have focused on using AHP in the railway industry to link employee performance directly to operational metrics, such as productivity, safety, and efficiency (Kutlu Gündoğdu and Kahraman, 2020).

In the context of employee benefit allocation, research has shown that performance-based rewards can significantly enhance motivation and productivity. These rewards encourage employees to focus on improving areas that directly impact company performance, such as reducing accident rates and increasing tkm. For example, studies have shown that recognizing and rewarding high performance can increase employee engagement, reduce turnover, and improve overall organizational performance (Mitręga and Choi, 2021; Bakker et al., 2023). Moreover, performance-based rewards have been linked to greater commitment to organizational goals, which is essential for improving both individual and collective productivity (Demerouti and Bakker, 2022).

Research into HR strategies in the railway industry has shown that by aligning performance metrics with incentive allocation, organizations can achieve both employee satisfaction and improved operational efficiency. However, these studies often fail to utilize a structured methodology like AHP, which is essential for prioritizing performance criteria and ensuring that motivational resources are allocated in a fair and transparent manner (Zhu et al., 2025). This study seeks to fill this gap by applying the AHP method to allocate motivational benefits in a way that is directly linked to performance-related criteria in the railway sector. By doing so, it aims to improve both the performance of employees and the overall productivity of the Iranian Railway Company (Song et al., 2023).

Previous research has shown that employee benefit allocation based on performance metrics can enhance employee engagement, motivation, and job satisfaction. However, studies that specifically address performance-based reward systems in the railway industry remain limited. This research adds to the existing literature by exploring how AHP can be used to link employee performance with financial rewards in a structured and transparent manner, filling a critical gap in the current body of knowledge on HR practices in the railway sector (Zheng et al., 2021; Keßels, 2022).

3 Materials and methods

The AHP is a widely used decision-making method that organizes multiple criteria into a hierarchical structure. In this study, the AHP method is applied to prioritize performance criteria affecting employee rewards in the Iranian Railway Company. These criteria include net tkm, accident rates, wagon travel speed, and others, which are essential for improving operational efficiency. Fig. 1 illustrates the hierarchical structure of the AHP model and its relationship with the different levels of criteria and subcriteria (Stofkova et al., 2022).

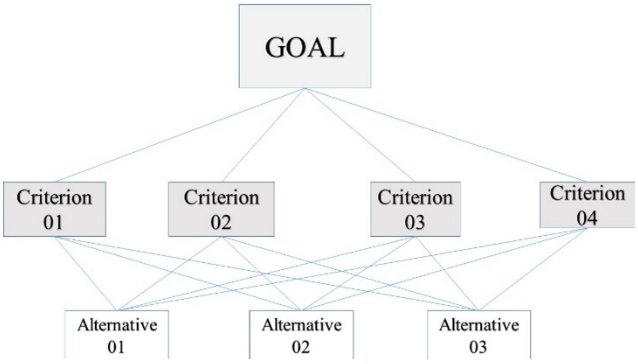

Fig. 1 Analytic hierarchy process

3.1 Analytic hierarchy process

AHP is a decision-making method that considers multiple criteria across a system's parameters. In this research, the key performance-related criteria influencing employee rewards, such as net tkm, accident rates, and wagon travel speed, were determined by expert railway professionals. The pairwise comparison method is used to assess the importance of each criterion, which is then weighted based on its relevance to the company's performance (Bokor, 2010; Galdiani et al., 2022).

Iran's state-owned railway company, Islamic Republic of Iran Railways (RAI), operates a rail network spanning over 14,000 km, divided into 21 regions. The allocated budget for employee rewards in each region is variable in this research. The parameters for prioritization are selected based on technical literature and expert recommendations (Zakeri et al., 2020) These criteria are used to rank each region in terms of its share of employee rewards, as detailed in Table 1 that shows the performance metrics used to assess employee performance across various regions, such as grosstkm, loading and unloading tonnage, and wagon travel speed. These metrics are directly linked to employee rewards, ensuring alignment with the company's operational goals.

Table 1 The parameters influencing the benefits of railways regions

	Criterion	Unit	Effect
X_1	Gross Ton-Kilometers carried	Tkm	+
X_2	Loading Tonnage	T	+
X_3	Unloading Tonnage	T	+
X_4	Wagon Travel Speed	km/h	+
X_5	Income	Rial (Iranian currency)	+
X_6	Accidents	Number	-
X_7	Passenger	Train - km	+
X_8	Created Passenger Trains	Number	+
X_9	Passenger Train Delays	Min	-

In the performance evaluation of each region, all mentioned criteria in Table 1 were investigated.

- X_1 Gross km Carried: This is the most crucial indicator in assessing the performance of regions. Gross km Carried is calculated by multiplying the tonnage carried, whether loaded within the region or passing through, by the distance covered within the region. Regions with high traffic, such as Yazd, Isfahan, the East, and Hormozgan, receive the highest scores in this criterion. In consideration of the geographical conditions of various regions, a linear coefficient has been defined for each area to normalize the network lines. This coefficient is incorporated into the calculations by multiplying it with the tkm performance of the region for the current month and the corresponding month of the previous year. The difference between these values is computed to determine the extent of regional improvements.
- X_2 Loading Tonnage: This criterion, measured in tons, reflects the loading volume in different regions. Regions such as Isfahan and Yazd, which serve as primary loading hubs, achieve the highest scores for this metric.
- X_3 Unloading Tonnage: This criterion, measured in tons, pertains to the volume of cargo unloaded at unloading centers located within various regions. Regions such as Isfahan and Hormozgan score the highest on this criterion.
- X_4 Wagon Travel Speed: This criterion relates to the speed of wagon travel, measured in km per hour. The more frequent the stops, the slower the travel speed. For each region, a specific benchmark travel speed is determined based on its geographical conditions and traffic volume. The impact of this criterion in the model is assessed by comparing the current month's performance with the benchmark travel speed and the performance of the same month in the previous year.
- X_5 Income: This criterion represents the income generated, calculated by the sum of domestic and foreign currency earnings for each region. The income from loading activities is attributed to the specific region where it takes place, while regions where the cargo merely transits do not benefit from this income criterion. This criterion is intended to incentivize regions to attract more freight onto the rail network.
- X_6 Accidents: The accident index has an inverse impact in the model. If a region experiences an accident during the current month, the accident is first

normalized based on its severity and magnitude, and then factored into the model considering the volume of freight and passenger traffic in that region.

To assess the performance of each region from the perspective of passenger service, the following three criteria have been defined:

- X_7 Passenger Train km: This index is calculated by multiplying the number of passenger trains, either originating or passing through a region, by the distance traveled within that region. Its impact in the model is used to compare the performance of the current month with the same month of the previous year, and to determine the level of improvement in the regions
- X_8 Passenger Train Formation: This index accounts for the efforts of regions in forming passenger trains at the origin station. Its impact is determined by comparing the performance of the current month with the same month of the previous year, and assessing the level of improvement.
- X_9 Passenger Train Delays: This index is designed to encourage regions to reduce passenger train delays and is calculated in minutes.

For each region, a specific baseline delay figure is established based on traffic volume and track conditions. The impact of this criterion in the model is determined by comparing the performance of trains passing through the region against the baseline figure and the performance of the same month in the previous year.

3.2 Practical implementation of the AHP model

The practical application of AHP in this study begins with the creation of pairwise comparison matrices, which are used to assign weights to each criterion. The Saaty scale, as shown in Table 2, is applied for pairwise comparisons, determining the relative importance of each criterion. This structured approach ensures a transparent and objective decision-making process. Pairwise comparisons help prioritize criteria, with the most significant factors being given higher importance. Experts are involved in determining the relative importance of each parameter through these comparisons (Ponsiglione et al., 2022). Table 2 presents Saaty's Scale for Pairwise Comparison, which guides the comparison process based on the relative importance of criteria, ensuring the prioritization is consistent and objective.

Matrix "***A***" (Eq. 1) illustrates pairwise comparisons among the parameters. This matrix represents the experts' prioritization of the parameters that affect the overall ranking.

Table 2 Saaty's scale for pairwise comparison

Importance Coefficient	Definition
1	Equal importance
2	Between equal and moderate importance
3	Moderate importance
4	Between moderate and strong importance
5	Strong importance
6	Between strong and very strong importance
7	Very strong importance
8	Between very strong and extreme importance
9	Extreme importance

$$A = \begin{array}{c} \\ A_1 \\ A_2 \\ \vdots \\ A_j \\ \vdots \\ A_n \end{array} \begin{array}{c} \begin{array}{cccccc} A_1 & A_2 & \cdots & A_i & \cdots & A_n \end{array} \\ \begin{bmatrix} 1 & a_{12} & \cdots & a_{1i} & & a_{1n} \\ a_{21} & 1 & & \vdots & & a_{2n} \\ \vdots & \cdots & & & & \vdots \\ a_{j1} & a_{j2} & & 1 & & a_{jn} \\ \vdots & & & & & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{ni} & \cdots & 1 \end{bmatrix} \end{array}, a_{ji} = \frac{1}{a_{ij}} \quad (1)$$

Matrix "***M***" (Eq. 2) presents the normalized matrix of "***A***", with its elements denoted as $a'ij$.

$$M = \begin{bmatrix} a'11 & a'12 & \cdots & a'1n \\ a'21 & & & \\ & & & \\ \cdots & & a'ij & \\ a'n1 & \cdots & & a'nn \end{bmatrix}, \cdot\ a'ij = 1 \Big/ \sum_{i=1}^{n} aij \quad (2)$$

Matrix "***W***" (Eq. 3) is the eigenvector of matrix "***A***" and is referred to as the priority vector. The factor $\lambda_{\max}$ (Eq. 4), where n represents the number of criteria, is used to compute the consistency index (CI) (Eq. 5) of the pairwise comparison matrix. This relationship is applied to assess the consistency of the prioritization parameters and to validate the experts' judgments (Saaty and Vargas, 2012).

$$W = \begin{bmatrix} W_1 \\ \vdots \\ W_i \\ \vdots \\ W_n \end{bmatrix}, \cdot\ W_i = \frac{1}{n} \sum_{j=1}^{n} a'_{ij} \quad (3)$$

$$\lambda_{\max} = \sum_{j=1}^{n} \left(W_i \cdot \left[\sum_{j=1}^{n} a_{ij} \right] \right) \quad (4)$$

$$\mathrm{CI} = \left(\lambda_{\max} - n \right) / \left(n - 1 \right) \quad (5)$$

$$\mathrm{CR} = \mathrm{CI} / \mathrm{RI} \quad (6)$$

Upon computing the consistency index (CI) and the consistency ratio (CR) (Eq. 6), the following formula can be used to evaluate the validity of the experts' judgments in relation to the prioritization criteria. Table 3 presents the Random Index (RI) values used to assess the consistency of the pairwise comparison matrix. For a consistency ratio (CR) greater than 0.1, the model is considered reliable, ensuring that the criteria are prioritized accurately (Pant et al., 2022).

The final allocation of rewards is based on these weights and comparisons. The consistency of the prioritization is checked using the consistency ratio (CR) and the random index (RI), as explained in Table 3. When the CR is greater than 0.1, the results are deemed reliable, indicating the appropriateness of the criteria prioritization (Tavana et al., 2023).

4 Result and discussion

Based on the preceding discussions, all defined criteria for the relevant sections were computed, with the results summarized in Table 4. This data is used to construct a pairwise comparison matrix, ensuring that regions with the highest impact metrics are prioritized accordingly in the ranking. The construction of the criteria comparison matrix was carried out through surveys with subject-matter experts.

Table 4 presents the operational data for each region, including key performance metrics such as gross tkm, loading and unloading tonnage, and wagon travel speed. These metrics are essential for aligning employee rewards with company goals. By evaluating the data in the context of each region's performance, we can ensure that rewards are distributed fairly, with the highest-performing regions receiving the largest share. Following the pairwise comparison process, we calculated the prioritization matrix, as shown in Table 5. The table demonstrates that gross tkm carried (X_1) had the most significant impact on reward allocation, with a weight of 0.187.

Table 3 Random index (RI) values for consistency check

n	RI
1	0
2	0
3	0.58
4	0.9
5	1.12
6	1.24
7	1.32
8	1.41
9	1.45
10	1.49

Conversely, passenger train km (X_7) had the least impact, with a weight of 0.062. These findings align with the goal of prioritizing criteria that are most influential in enhancing operational performance. Finally, to calculate the final prioritization matrix, the matrix of key parameters influencing prioritization (Table 5) is multiplied by the matrix of financial resource allocation prioritization for the mentioned parameters (Table 4).

The final allocation of rewards is based on the weighted prioritization of these criteria. Table 6 presents the distribution of financial benefits across the 21 railway regions, with Hormozgan and Isfahan receiving the highest allocations of 12.65% and 12.53%, respectively. This allocation reflects various factors, including the operational scale, performance metrics, and regional needs.

The Table 6 lists each region along with its corresponding weight, which represents the proportion of the total financial benefits allocated to that region. The weights are expressed as percentages, indicating the relative share of each region in the overall distribution of bonuses.

The allocation scheme ensures that financial benefits are distributed in a manner that aligns with the performance and strategic importance of each region, thereby promoting efficiency and motivation within the railway network.

Importantly, according to internal performance statistics retrieved from the Iranian Railway's Business Intelligence (BI) platform, the implementation of the AHP-based incentive allocation model led to a 4.3% improvement in locomotive productivity (Iranian Railway Company, 2025). This was measured using the metric of Gross tkm per active locomotive. Such evidence supports the premise that linking incentives to quantifiable operational metrics can foster measurable improvements in efficiency.

5 Conclusion

The process of budgeting and allocating financial resources for job benefits, specifically bonuses, presents a significant challenge for human resource managers in large organizations such as railway companies. Traditionally, the responsibility for resource allocation has rested with managers, heavily influenced by their individual preferences, personal biases, and varying management styles. Unfortunately, this practice has sometimes led to employee dissatisfaction and perceptions of inequity, which can undermine morale and productivity within the workforce.

In response to these challenges, this paper presents a pragmatic model for the allocation of financial resources for employee incentives (bonuses) based on the

Table 4 Values of criteria

Row	Region	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
1	Northeast 2	6,611,219	43,393	4,776	21.6	14,417,710,835	0.00	16,840	120	0.0
2	Qom	144,289,661	18,598	9,939	10.2	15,888,498,277	0.53	193,734	289	2.2
3	Zagros	123,247,440	10,675	3,905	6.1	8,600,056,776	0.40	55,738	120	8.5
4	Fars	3,148,353	3,455	1,038	23.4	7,038,559,717	0.00	57,834	59	5.9
5	Southeast	30,627,001	14,852	74,311	19.5	97,854,504,823	0.00	14,580	30	0.0
6	Kerman	113,279,534	115,903	60,386	11.8	143,819,634,362	0.00	65,188	73	10.7
7	East	732,211,570	470,584	1,904	11.3	1,030,368,210,399	0.00	138,509	14	43.3
8	Hormozgan	865,700,424	524,594	660,770	14.5	1,226,220,613,669	0.07	123,981	102	39.0
9	Yazd	812,808,884	1,047,777	341,617	11.4	1,065,722,444,760	0.47	187,384	58	10.7
10	Isfahan	704,097,880	278,572	1,002,704	13.7	1,300,676,791,745	0.00	135,944	99	11.1
11	Arak	111,937,194	52,665	45,215	20.0	58,219,649,333	0.00	58,348	42	0.0
12	Lorestan	104,578,476	41,575	1,595	11.5	23,869,321,940	0.00	43,267	0	0.0
13	South	135,891,207	341,724	413,433	17.1	630,103,476,771	0.00	61,884	114	16.6
14	Tehran	144,131,578	105,801	123,589	5.0	163,313,306,548	0.67	457,724	128	1.1
15	Northeast 1	169,538,130	30,178	13,134	16.0	50,093,838,995	0.00	1,049,783	27	25.9
16	Khorasan	122,734,894	183,900	193,100	14.1	227,973,629,623	0.00	570,841	1,013	13.2
17	North	56,409,953	21,146	76,050	6.6	96,982,234,684	0.27	71,532	74	0.0
18	Northwest	63,138,605	31,858	39,431	23.7	28,318,773,081	0.00	137,663	147	5.8
19	Azarbayejan	90,882,065	96,461	88,947	16.7	137,059,177,343	0.33	103,163	146	2.3
20	North 2	33,654,296	83,164	137,053	10.3	107,446,392,060	0.00	94,023	127	5.9
21	West	1,677,377	11,818	1,658	41.3	11,586,923,462	0.00	14,168	28	0.0

Table 5 Prioritization of criteria

Criteria	Priority	Weight (Wi)	X_9	X_8	X_7	X_6	X_5	X_4	X_3	X_2	X_1
X_1	1	0.187	6	4	4	5	3	3	4	2	1
X_2	2	0.152	2	2	1	3	1	2	1	1	
X_3	4	0.117	1	1/5	1/4	4	1/5	2	1		
X_4	6	0.096	1/6	1/4	1/6	1	1/7	1			
X_5	3	0.149	3	1/6	3	8	1				
X_6	5	0.102	1/6	3	1/6	1					
X_7	9	0.062	2	1/6	1						
X_8	7	0.069	4	1							
X_9	8	0.067	1								

performance metrics of the 21 railway regions in Iran. The model employs the Analytic AHP, a structured decision-making tool that enables a more systematic evaluation of criteria influencing bonus distribution and regional performance. Initially, a group of railway experts conducted a comprehensive assessment to identify the criteria affecting bonus allocation. These criteria encompass several key performance indicators, including gross tkm transported (18.7%), loaded tonnage (15.2%), unloaded tonnage (11.7%), wagon travel speed (9.6%), revenue generated (14.9%), accident rates (10.2%), passenger train-km (6.2%), the number of created passenger trains (6.9%), and passenger train delays (6.7%). The percentages in parentheses represent the weight of influence each criterion has on the overall performance evaluation.

The implementation of this performance-based allocation model aims to address historical challenges by ensuring a more objective and equitable distribution of financial resources. By linking bonuses directly to measurable performance metrics, the model not only fosters fairness in how rewards are dispensed but also enhances overall employee satisfaction and motivation. This data-driven approach facilitates transparency in the decision-making process, thereby promoting a culture of accountability and high performance within the organization.

Table 6 Allocation of credit for financial benefits (Bonuses)

Row	Region	Weight
1	Hormozgan	12.65%
2	Isfahan	12.53%
3	Khorasan	8.74%
4	Yazd	8.38%
5	Tehran	8.26%
6	East	5.64%
7	South	5.63%
8	Azerbaijan	4.53%
9	Northeast 1	4.52%
10	Kerman	4.43%
11	Arak	4.22%
12	Qom	2.82%
13	Northwest	2.79%
14	Northeast 2	2.63%
15	North	2.40%
16	Southeast	2.38%
17	North 2	2.08%
18	Fars	1.84%
19	Zagros	1.76%
20	Lorestan	1.69%
21	West	0.09%

The results of this model indicate a notable enhancement in overall productivity, with key human resource management indicators showing significant improvement within the railway company. As employees feel more valued and recognized for their contributions, their engagement and commitment to organizational goals are likely to increase. Furthermore, the alignment of financial incentives with performance outcomes can lead to a more competitive and efficient operational environment.

Future research could explore the long-term impacts of performance-based models, focusing on how such systems evolve over time. One potential area of investigation is the scalability of the model, particularly in large, geographically diverse organizations like the Iranian Railway Company. Additionally, future studies could address the challenges of implementing such a model, including employee resistance to performance-based rewards and the potential cultural barriers in large organizations. Understanding how these factors affect the model's adoption and effectiveness would provide valuable insights for organizations looking to implement similar systems. Research into the impact of external factors, such as economic shifts or changes in government policies, could also enhance the robustness and adaptability of the model.

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