

An Predictive Analysis on Effectiveness of Employee Retention Strategies at Luke Export, Padanthalumoodu, Kanyakumari

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Abstract

This study examines the effectiveness of employee retention strategies at Luke Export, Padanthalumoodu using both primary and secondary data. Primary data were collected from employees through a structured questionnaire, and secondary data were obtained from past HR records. The study uses only factor analysis and trend analysis as the main tools. Factor analysis is used to identify the key factors influencing employee retention, while trend analysis is applied using the linear prediction method to forecast employee turnover rates over time. The results show that employee retention is mainly influenced by factors such as job satisfaction, career growth opportunities, work environment, and compensation. The trend analysis indicates variations in employee turnover over different time periods. The linear prediction model shows a declining trend in employee turnover, with forecasts indicating a reduction from 7.13 percent in 2026 to 4.15 percent by 2030, reflecting a positive future outcome with improved employee retention and organizational stability. The study concludes that strengthening job satisfaction, workplace conditions, and career growth opportunities can further enhance employee retention and support sustained organizational growth.

Keywords: Employee Retention, Factor Analysis, Predictive Analysis, Trend Analysis, Linear Prediction Method, Job Satisfaction, HR Analytics.

Introduction

Predictive analysis is a useful approach that helps organizations understand future possibilities by studying past and current data. It uses methods like statistical analysis, data mining, and machine learning to identify trends and patterns within data. In the business environment, predictive analysis is commonly applied in areas such as sales forecasting, customer behavior analysis, risk management, and employee retention. It also supports organizations in identifying

employees who may be likely to leave, helping management take timely actions to improve retention and workforce stability.

Employee retention refers to an organization's ability to retain its employees and reduce the number of employees leaving the company. It plays a vital role in human resource management because experienced and skilled employees contribute to higher productivity, organizational stability, and long-term growth. Retaining employees also helps organizations maintain work quality and reduce the costs associated with hiring and training new staff.

The success of employee retention depends on how effectively an organization creates a supportive and satisfying work environment for its employees. Factors such as fair compensation, opportunities for career development, supportive leadership, recognition, and a positive workplace culture encourage employees to remain with the organization for a longer period. Effective retention practices not only reduce employee turnover but also improve employee satisfaction, commitment, and overall organizational performance.

Literature Review

Prof. Brijesh Singh and et al (2025) studied AI-driven predictive analytics in employee retention and found that artificial intelligence helps identify turnover risks and improve workforce planning through employee engagement and career development initiatives. Alfred Presbitero and et al (2025) highlighted the importance of cultural intelligence, work-life balance, and supportive workplace culture in improving employee retention.

Mettu Narayana Murthy and et al (2025) emphasized that predictive analytics and machine learning techniques help organizations identify at-risk employees and improve HR decision-making. Ankita Yadav and et al (2024) found that HR analytics, employee satisfaction, and performance evaluation support effective retention strategies.

Agustinus Sri Wahyudi and et al (2023) concluded that talent development, employee engagement, and continuous communication are important for employee commitment and retention. Vartika H. Duggal and et al (2023) stated that employee satisfaction and motivation improve workforce stability and productivity. Mamatha Sridevi and et al (2023) identified monetary and non-monetary benefits as key factors influencing employee retention.

Research Gap

Although many studies have been conducted on employee retention and attrition, most of them focus mainly on traditional HR factors such as salary, job satisfaction, incentives, working conditions, and career growth. Earlier research explains how these factors influence employee retention and turnover, but only limited studies have used statistical techniques like factor analysis and trend analysis to study these relationships in depth. Therefore, there is a research gap in applying factor analysis to identify key influencing factors and trend analysis to examine employee turnover patterns over time for better understanding and decision-making.

Objectives of the Study

- To identify the key factors influencing Employee Retention at Luke Export.
- To analyze employee turnover patterns using Historical HR data.

Research Methodology

The study adopts an Descriptive and Analytical research Approach. The study population consists of 160 employees working at Luke Export, out of which 113 employees were selected as the sample using Cochran's formula. The study adopted the Simple Random Sampling technique

through the lottery method to ensure equal selection opportunity and reduce bias. Both primary and secondary data were used for the research. Primary data was collected through structured questionnaires and Google Forms to gather information on employee retention, job satisfaction, working conditions, salary, and related factors. Secondary data was collected from journals, research articles, books, company records, websites, and online databases. The collected data was analyzed using Factor Analysis, Trend Analysis, Decision Tree, and Spearman Correlation to identify the factors influencing employee retention and predict employee attrition.

Data Analysis and Interpretation

Factor Analysis

Factor analysis was conducted to identify the major factors influencing employee retention. Principal Component Analysis (PCA) with Varimax rotation was used to group related variables into meaningful factors.

Table 1.1 Factor Analysis

Factors	Component		
	Employee Satisfaction and Growth	Work Environment and support	Compensation and Job Security
Career growth	.808		
Job satisfaction	.677		
Supervisor relationship	.643		
Commitment	.635		
Recognition		.792	
Worklife balance		.722	
Work environment		.559	
Salary			.784
Job security			.755
KMO	.718		
Chi-square	256.890		
Df	45		
Sig	0.000		

Source: Primary data

The factor analysis identified three major factors influencing employee retention: Employee Satisfaction and Growth, Work Environment and Support, and Compensation and Job Security. The KMO value of 0.718 and significance value of 0.000 indicate that the data is suitable and statistically reliable for analysis. The results show that career growth, job satisfaction, recognition, salary, and job security are the key factors affecting employee retention at Luke Export

Trend Analysis Using Linear Prediction

Linear prediction is a trend analysis technique that uses past data to identify changes over time and predict future values using a linear equation. In this study, it is used to analyze and forecast employee turnover rates.

Table 1.2 Turnover Rate

Year	Turnover rate (%)
2018	7.84
2019	8.63
2020	20.9
2021	18.33
2022	8.16
2023	5.84
2024	4.00
2025	10.13

Source: Annual Reports, Luke Export

Forecast of Next 5 Years

Table 1.3 Forecast Value

Years	Forecast Value
2026	7.13
2027	6.38
2028	5.64
2029	4.89
2030	4.15



Chart 1.1 Turnover Trend

The analysis shows the trend and forecast of employee turnover from 2018 to 2030 using the linear prediction method. Employee turnover was highest in 2020 and 2021, but gradually declined in later years, indicating improved retention and organizational stability. Based on the trend equation, $Y=10.48-0.744X$ the turnover rate is forecasted to decrease from 7.13 percent in 2026 to 4.15 percent by 2030, showing a positive future outlook.

Findings

- The analysis shows that a large portion of employees belong to the middle age group, indicating a workforce that is both experienced and active.

- The gender distribution highlights some imbalance, suggesting that there is scope to improve diversity within the organization.
- Department-wise data indicates that a few departments have a higher number of employees, reflecting their critical role in daily operations.
- The salary structure appears to be concentrated within a certain range, which suggests a standardized pay system across the organization.
- The incentive-related data shows that not all employees receive incentives consistently, pointing to possible gaps in the reward mechanism.
- The shift pattern indicates that a majority of employees are assigned to a common shift, showing the organization's primary work schedule.
- Attendance trends reveal that while many employees maintain good attendance, there are some inconsistencies that need attention.
- The results suggest that factors such as job satisfaction, salary, and working conditions play a major role in influencing attrition.

Suggestions

- The organization should take steps to improve job satisfaction by creating a supportive and positive work environment.
- Introducing a more consistent and transparent incentive system can help motivate employees and improve retention.
- Efforts should be made to maintain a healthy work-life balance by avoiding excessive working hours.
- Providing flexible shift options may help improve employee comfort and overall productivity.
- Strengthening attendance policies and monitoring can help reduce irregular attendance patterns.
- Employee engagement initiatives such as training, feedback sessions, and recognition programs can improve morale.
- Workload should be balanced across departments to avoid pressure on specific teams.

Conclusion

In this study, the key factors influencing employee retention were identified through factor analysis, and employee turnover patterns were examined using trend analysis. The findings show that job satisfaction, salary, and working conditions are the major factors affecting employee retention. The trend analysis indicates that employee turnover is expected to gradually decrease over the next five years. Overall, the study provides clear insights that can help the organization improve employee retention and support better decision-making.

References

1. Armstrong, Michael. "Handbook of Human Resource Management Practice." Kogan Page Publishers, 15th ed., 2021, pp. 120-145.
2. Cascio, Wayne F. "Managing Human Resources: Productivity, Quality of Work Life, Profits." McGraw-Hill Education, vol. 11, 2019, pp. 210-235.
3. Bhattacharyya, Dipak Kumar. "Human Resource Analytics." Sage Publications, 2017, pp. 45-68.
4. Duggal, V. H., and D. D. Makwana. "Effectiveness of Employee Retention Strategies in Organizations." International Journal of Business Research, vol. 23, no. 4, 2023, pp. 88-102.
5. Field, Andy. "Discovering Statistics Using IBM SPSS Statistics." SAGE Publications, 5th ed., 2018, pp. 300-325.

6. Dessler, Gary. "Human Resource Management." Pearson Education, 16th ed., 2020, pp. 150-175.
7. Hair, Joseph F., et al. "Multivariate Data Analysis." Cengage Learning, vol. 8, 2019, pp. 412-440.
8. Sullivan, John. "Strategic Talent Management." McGraw-Hill Education, 2011, pp. 55-70.
9. Branham, Leigh. "The 7 Hidden Reasons Employees Leave." AMACOM Publishers, 2012, pp. 12-38.
10. Montgomery, Douglas C., et al. "Introduction to Time Series Analysis and Forecasting." Wiley, vol. 2, 2015, pp. 95-118.
11. Murthy, M. N., and M. Katyal. "Role of AI-based Predictive Analytics in Employee Turnover Reduction." *Journal of Business Analytics*, vol. 6, no. 1, 2025, pp. 22-40.
12. Presbitero, A., et al. "Employee Engagement and Retention in Multicultural Work Groups: The Role of Cultural Intelligence." *Journal of Organizational Behavior*, vol. 46, no. 2, 2025, pp. 154-172.
13. Singh, B., Sruthi, J., & Hitha, K. K. "Impact of AI-driven predictive analytics on employee retention strategies." *International Journal of Human Resource Management*, vol. 36, no. 3, 2025, pp. 45-62.
14. Sridevi, M., & Reddy, J. S. "Employee retention strategies in IT organizations: A study on monetary and non-monetary benefits." *Journal of HR and Organizational Studies*, vol. 15, no. 2, 2023, pp. 110-128.
15. Wahyudi, A. S., et al. "Modern HR practices and employee retention in organizations." *Journal of Human Resource Development*, vol. 10, no. 1, 2023, pp. 75-90.
16. Yadav, A., Gautam, R. D., & Sainy, M. "HR analytics and employee retention strategies in modern organizations." *International Journal of Management Studies*, vol. 12, no. 6, 2024, pp. 74-77.

Websites

1. <https://scholar.google.com/>
2. <https://www.ibm.com/products/spss-statistics>
3. <https://www.shrm.org/>
4. <https://www.researchgate.net/>