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HUMAN RESOURCES ANALYTICS FOR PREDICTING EMPLOYEE TURNOVER

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ABSTRACT

Human Resources Analytics for Predicting Employee Turnover is an emerging area that applies data-driven techniques to identify, analyse, and forecast the likelihood of employees leaving an organization. In today's competitive business environment, high employee turnover can lead to increased recruitment costs, loss of skilled talent, reduced productivity, and decreased organizational performance. This study focuses on the use of HR analytics tools and predictive models to examine key factors influencing employee attrition, such as job satisfaction, compensation, work environment, performance ratings, career growth opportunities, and employee engagement. By collecting and analysing historical employee data, statistical methods and machine learning techniques are used to identify patterns and trends that signal potential turnover risks. The research aims to develop a predictive framework that enables organizations to take proactive retention strategies, improve workforce planning, and enhance decision-making processes. Ultimately, the study highlights how integrating analytics into HR functions can transform traditional human resource management into a strategic, evidence-based approach that supports long-term organizational sustainability and employee satisfaction.

KEYWORDS: *HR Analytics, Employee Turnover, Predictive Modelling, Job Satisfaction, Retention Strategies*

INTRODUCTION

In today's competitive business environment, employee retention has become a critical concern for organizations. High employee turnover leads to increased recruitment costs, training expenses, and productivity loss. Human Resources Analytics, also known as People Analytics, uses data driven techniques to analyse employee behaviour and predict future outcomes.

HR analytics helps organizations move from traditional HR practices to data-based decision making. By analysing employee data such as performance ratings, attendance records, salary structure, engagement levels, and promotion history, companies can predict which employees are more likely to leave. Predicting employee turnover allows management to take preventive measures, improve employee engagement, and create better retention policies. This study focuses on understanding how HR analytics techniques can be applied to predict employee turnover effectively.

RESEARCH OBJECTIVES

- To identify the major factors influencing employee turnover.
- To analyze employee data using HR analytics techniques.
- To develop a predictive model to identify employees at risk of leaving.
- To evaluate the impact of turnover on organizational performance.
- To suggest effective retention strategies based on analytical findings.

LIMITATIONS OF THE STUDY

- The study is limited to 150 respondents only.
- The research is restricted to selected organizations and may not apply to all industries.
- Data is collected through questionnaires; responses may contain bias.
- The accuracy of prediction depends on the availability and quality of data.

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SCOPE OF THE STUDY

This study focuses on employees working in private sector organizations. It examines various factors influencing employee turnover such as salary, work-life balance, job satisfaction, career growth, and leadership style.

The study uses HR analytics tools to analyze employee data from the past two years. Both quantitative surveys and qualitative interviews are used to gather information. The findings will help organizations develop predictive models and improve employee retention strategies.

Future research can expand this study to multiple industries and include advanced machine learning techniques for better prediction accuracy.

STATEMENT OF PROBLEM

Employee turnover has become a significant issue in many organizations. Frequent employee exits increase recruitment and training costs and disrupt organizational stability. Many companies fail to identify early warning signs of employee dissatisfaction.

The core problem is the lack of data-driven strategies to predict employee turnover. Organizations need a systematic HR analytics approach to identify employees at risk and implement timely retention measures.

REVIEW OF LITERATURE

Previous studies highlight that job satisfaction, compensation, leadership support, and career opportunities are major determinants of employee turnover. Research shows that predictive analytics models such as logistic regression, decision trees, and machine learning algorithms help in identifying turnover patterns. Studies also indicate that employee engagement and work-life balance significantly reduce turnover rates.

However, challenges such as poor data quality, lack of skilled HR analysts, and resistance to technology adoption limit the effective implementation of HR analytics in many organizations.

RESEARCH METHODOLOGY

The research methodology adopted for the study on Human Resources Analytics for Predicting Employee Turnover is based on a quantitative research design, as the study focuses on analysing numerical employee data to identify patterns and predict attrition. Both primary and secondary data sources are used in this research. Primary data is collected through structured questionnaires distributed to employees to understand factors such as job satisfaction, work environment, compensation, career growth, performance evaluation, and organizational commitment. Secondary data is gathered from company records, HR databases, journals, articles, and previous research studies related to employee turnover and HR analytics. A suitable sampling technique, such as simple random sampling, is used to select respondents, and the sample size is determined based on the total number of employees in the organization. The collected data is analysed using statistical tools such as percentage analysis, correlation, regression analysis, and predictive modelling techniques to identify the key factors influencing turnover intention. Data visualization methods like charts and tables are also used for better interpretation.

ANALYSIS AND INTERPRETATION

1.Age Group and Employee Turnover Intention

Age Group	Intend to Leave	Not Intend	Total
Below 25	20	10	30
25-35	25	35	60
35-45	10	20	30
Above 45	5	25	30

Explanation

- Younger employees show higher turnover intention.
- Age significantly influences employee turnover

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2.Job Satisfaction Level and Turnover

Job Satisfaction	Intend to Leave	Not Intend to Leave
Low	30	5
Medium	20	35
High	10	50

Explanation

- Employee with low satisfaction have higher turnover intention.
- Job Satisfaction is a major predictor of employee turnover.

3.Salary Satisfaction and Turnover

Salary Satisfaction	Intend to Leave	Not Intend to Leave
Unsatisfied	35	10
Neutral	15	30
Satisfied	10	50

Explanation

- Salary dissatisfaction increases turnover intention.
- Compensation plays a key role in employee retention.

4.Work-Life Balance Impact

Work-Life Balance	Intend to Leave	Not Intend to Leave
Poor	28	12
Average	20	40
Good	12	38

Explanation

- Employee with poor work-life balance show higher turnover risk.
- Flexible work policies can reduce employee exits.

5.Performance Rating and Turnover

Performance Rating	Intend to Leave	Not Intend to Leave
Low	15	10
Medium	30	45
High	15	35

Explanation

- High-performing employee also show turnover risk if not properly rewarded.
- Recognition and growth opportunities are essential.

FINDINGS

SIMPLE PERCENTAGE ANALYSIS

- The majority of the respondents are **male** accounting for **(51.1%)** of the total sample.
- The majority of the respondents are **undergraduate** for **(38.2%)** of the total sample
- The majority of the respondents **(26.7%)** hold the position of **senior executive** of the total sample.
- The majority of the respondents **(41.2%)** possess **3-5 years** of work experience, suggesting a mid-level professional workforce.
- The majority of respondents **(52.7%)** reported being **satisfied** with their current job.
- The majority of participants **(38.2%)** provided a **good** as the moderately experienced within their roles.
- The majority of the respondents **(35.9%)** find their **manageable** current workload representing of the total sample.
- The majority of the respondents **(37.4%)** admits to **sometimes** feeling overwhelmed by their responsibilities.
- The majority of the **(47.3%)** identified themselves as **satisfied**, reflecting a generally positive sentiment across the surveyed workforce.
- The majority of the **64.1%** overall answered **yes** when reflecting on their current state.

SUGGESTIONS

- Conduct regular engagement surveys and act on feedback.
- Ensure competitive and fair compensation across roles.
- Provide clear career paths and training opportunities.
- Monitor and balance workload distribution to prevent burnout.
- Use predictive analytics dashboards to flag potential turnover risks.
- Hold managers accountable for retention and provide leadership training.
- Create personalized retention plans for high-performing employees.
- Improve internal communication and transparency within the organization.

CONCLUSION

The study concludes that HR analytics plays a vital role in predicting employee turnover. Factors such as job satisfaction, salary, work-life balance, and career growth significantly influence employee decisions to stay or leave By implementing predictive analytics models, organizations can identify high-risk employees and take preventive actions. Effective retention strategies not only reduce turnover costs but also improve overall organizational performance. Thus, HR analytics is a powerful strategic tool for enhancing employee retention and achieving long-term business success. The integration of HR analytics into workforce management not only reduces turnover but also strengthens organizational resilience. By continuously monitoring employee data and applying predictive insights, companies can anticipate challenges before they escalate. This proactive approach enables HR teams to design tailored retention strategies, improve leadership effectiveness, and foster a supportive environment. Human Resources Analytics has emerged as a powerful strategic tool in addressing one of the most critical organizational challenges—employee turnover. In today's competitive and rapidly changing business environment, retaining skilled and experienced employees is essential for maintaining productivity, profitability, and long-term growth. Traditional HR practices that rely on intuition and past experience are no longer sufficient to manage complex workforce dynamics. This study highlights how data-driven HR analytics can be effectively used to analyse employee behaviour, identify key factors influencing turnover, and predict potential attrition risks in advance.

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