Executive Summary Report
Salifort Motors Employee Retention Project

Employee Retention Analysis

Executive Overview

Our analysis of employee records reveals critical insights into employee retention at Salifort Motors. Using predictive modeling, we identified key factors contributing to employee turnover and developed actionable recommendations to improve retention rates.

Key Findings:

- 23.8% of employees have left the company
- Overwork and low satisfaction are primary drivers of turnover
- Our predictive model can identify 91% of at-risk employees
- Specific patterns emerge around project load and tenure

Business Problem & Objectives

The HR department collected extensive employee data but needed data-driven insights to:

- Understand what makes employees likely to leave
- Predict which employees are at risk of leaving
- Identify actionable factors to improve retention
- Reduce costs associated with hiring and training new employees

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🕵️ **Data Exploration & Key Insights**

1. 📈 Project Load vs. Monthly Hours

- Employees with **6–7 projects** worked extreme hours (255–295 hours/month).

- **All employees with 7 projects left** — a red flag for overwork.

- Optimal range for retention: **3–4 projects**.

- Average hours exceed the standard 167/month for nearly all employees → **Overwork is widespread**.

2. 🥴 **Satisfaction vs. Monthly Hours**

- Two risk groups:

  o Overworked high contributors with very low satisfaction.

  o Employees working average hours but still dissatisfied (satisfaction ~0.4).

- Some stayed despite being overworked, likely driven by high evaluation scores or loyalty.

- **Satisfaction level is a major predictor of attrition.**

3. 🕰️ **Tenure vs. Satisfaction**

- Long-tenured employees (6+ years) tend not to leave.

- **Unusually low satisfaction** observed among 4-year tenure employees → investigate company policies for this group.

- Employees who left are either:

  o **Very dissatisfied with short tenure**, or

  o **Satisfied but with medium-length tenure** — possibly seeking external growth opportunities.

4. 📉 **Salary Levels & Promotions**

- Few high-hour employees received promotions → **promotion imbalance**.

- Most promotions occurred among those with lower working hours.

- Employees who left were:

  o Either working long hours and unrecognized,

  o Or underutilized with lower evaluation scores.

Predictive Model Results

We developed two logistic regression models to predict employee departure:

Model Performance Comparison

Metric	Standard Model	Balanced Model (Recommended)
Accuracy	83%	83%
Precision (Leave)	47%	49%
Recall (Leave)	**26%**	**91%** ✅
F1-Score (Leave)	33%	**64%** ✅

Recommended Model: Balanced Approach

Why We Recommend the Balanced Model:

✅ **Catches 91% of employees who will actually leave** (vs. only 26% with standard model)
✅ **Enables proactive intervention** before valuable employees quit ✅ **Better business value** - identifying at-risk employees is more valuable than perfect accuracy

Trade-off Accepted: Slightly more false positives (flagging some employees as "at-risk" who won't leave) in exchange for catching almost all actual departures.

Business Recommendations

Immediate Actions (0-3 months)

1. **Project Load Management**
   o Implement maximum 5 projects per employee policy
   o Redistribute workload from employees with 6+ projects
   o Monitor monthly hours to stay closer to 167-hour baseline
2. **Identify At-Risk Employees**
   o Deploy our predictive model to flag high-risk employees monthly
   o Prioritize intervention for employees with 240+ monthly hours
   o Focus on high-performers with low satisfaction scores

Short-term Initiatives (3-6 months)

3. **Four-Year Employee Review**
   o Conduct focused retention interviews with 4-year tenure employees
   o Investigate policy changes that may have affected this cohort

o   Develop career advancement pathways for mid-tenure staff
4. **Recognition and Promotion System**
    o   Review promotion criteria and frequency
    o   Ensure high-performing employees receive appropriate recognition
    o   Create clear advancement timelines and expectations

Long-term Strategy (6+ months)

5. **Workload Sustainability**
    o   Hire additional staff to reduce per-employee project load
    o   Implement work-life balance policies
    o   Regular workload audits and adjustments
6. **Culture and Satisfaction Improvement**
    o   Address systematic overwork culture
    o   Improve management practices for high-performing teams
    o   Regular satisfaction surveys and action plans

Expected Business Impact

Cost Savings

- **Reduced Turnover:** Potential 30-50% reduction in departures among high-risk employees
- **Hiring Costs:** Significant savings on recruitment, interviewing, and onboarding
- **Training Investment Protection:** Retain investment in experienced employees

Performance Improvements

- **Productivity:** More sustainable workloads leading to higher quality output
- **Team Stability:** Reduced disruption from frequent departures
- **Knowledge Retention:** Keep institutional knowledge and expertise

Implementation Timeline

Phase	Duration	Key Activities
Phase 1	Month 1	Deploy predictive model, identify immediate at-risk employees
Phase 2	Months 2-3	Implement project load caps, begin 4-year employee interviews
Phase 3	Months 4-6	Review promotion processes, develop retention programs
Phase 4	Months 6+	Culture change initiatives, ongoing monitoring and adjustment

Risk Considerations & Limitations

Model Limitations

- **Data Patterns:** Some data patterns suggest potential synthetic elements - validate with fresh data
- **External Factors:** Model doesn't account for market conditions, personal circumstances
- **Department Variations:** May need department-specific models for better precision

Implementation Risks

- **Change Management:** Employee resistance to workload redistribution
- **Resource Requirements:** May need additional hiring to reduce individual workloads
- **False Positives:** Over-intervention with employees incorrectly flagged as at-risk

Monitoring & Success Metrics

Key Performance Indicators

- **Monthly Turnover Rate:** Target reduction from 23.8% to <15%
- **Average Monthly Hours:** Target closer to 167 hours across all employee groups
- **Employee Satisfaction:** Quarterly surveys tracking improvement trends
- **Promotion Rate:** Increase from 2.1% to industry-standard levels
- **Model Performance:** Monthly validation of prediction accuracy

Recommended Reporting

- Monthly dashboard showing at-risk employee flags
- Quarterly retention analysis by department and tenure
- Annual review of model performance and business impact

Conclusion

This analysis provides a clear roadmap for improving employee retention at Salifort Motors. The data reveals that overwork, particularly among high-performing employees, is the primary driver of turnover. Our predictive model offers a proactive tool to identify at-risk employees before they leave.

Success depends on immediate action to address workload issues and systematic improvements to recognition and career advancement opportunities. With proper implementation, we expect to see significant improvements in retention rates and employee satisfaction within 6-12 months.