

# Executive Summary: Salifort Motors Employee Turnover Analysis

Data-Driven Insights for Long-Term Employee Retention: A Strategic Analysis to Optimize Workforce Stability and Engagement

## ISSUE / PROBLEM

Salifort Motors is experiencing costly and high employee turnover, impacting productivity and profitability. The company urgently needs to understand the underlying reasons for employees leaving and implement effective retention strategies to reduce these departures.

## RESPONSE

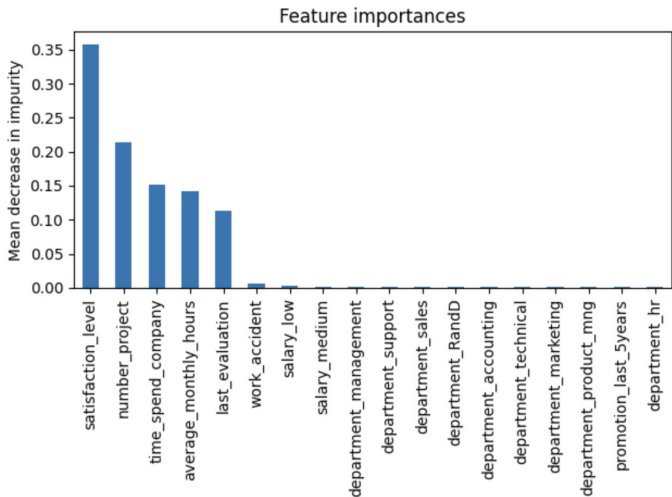
This project undertook a comprehensive data analysis and predictive modeling initiative to address Salifort Motors' turnover challenge. The project involved:

- In-depth Exploratory Data Analysis:** To understand the patterns and potential drivers of turnover using visualizations and statistical methods.
- Predictive Model Development:** Building machine learning models to accurately predict which employees are at high risk of leaving the company.
- Strategic Feature Importance Analysis:** Identifying the key factors driving turnover based on model analysis, focusing on actionable root causes rather than just predictive indicators.
- Data-Driven Recommendations:** Formulating a set of prioritized and actionable recommendations for Salifort Motors HR to implement strategic changes and improve employee retention.

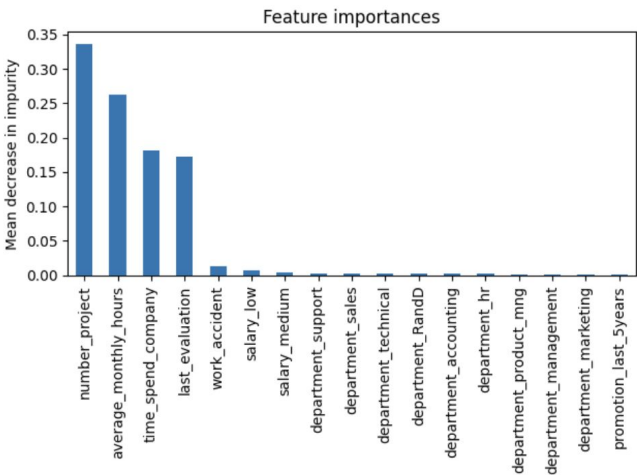
## IMPACT

The potential impact of this project for Salifort Motors is significant. By implementing the recommended strategies, Salifort Motors can:

- Reduce Employee Turnover Rates:** Leading to lower recruitment and training costs, and improved workforce stability.
- Increase Employee Engagement and Satisfaction:** Creating a more positive and productive work environment, ultimately boosting morale and performance.
- Proactively Address Attrition Risk:** Using predictive models to identify and intervene with at-risk employees before they decide to leave, improving retention outcomes.
- Improve Long-Term Organizational Performance:** By fostering a more stable and engaged workforce, contributing to sustained business success.



Feature importance from the Champion Predictive Model (e.g., XGBoost with Satisfaction). This model highlights **Satisfaction Level** as the strongest predictor, confirming its critical role. Other key features include **Time Spent at Company**, **Number of Projects**, and **Average Monthly Hours**, demonstrating the interplay of workload and tenure on employee attrition. This model is optimal for high predictive accuracy when satisfaction data is available.



Feature importance from the Root Cause Focused Model (e.g., Random Forest or Logistic Regression without Satisfaction). This model emphasizes **Number of Projects** and **Time Spent at Company** as primary drivers, demonstrating the root cause influence of workload and tenure on turnover. **Average Monthly Hours** and **Last Evaluation** also remain significant, reinforcing the workload and performance aspects. This model is strategically valuable for guiding long-term HR interventions and understanding root cause dynamics, even without immediate satisfaction data.

## KEY INSIGHTS

The analysis revealed critical insights into the drivers of employee turnover:

- Employee Satisfaction is Paramount, but Often a Symptom:** Low satisfaction is the strongest predictor of leaving, but is frequently driven by underlying issues. Satisfaction significantly declines after two years of employment.
- Workload Imbalance is a Key Root Cause:** Both underwork and overwork (changing with employee tenure) negatively impact retention. Project workload distribution requires careful management.

- Years 3-5 are a Critical Turnover Window:** Employee experience and career progression in this mid-tenure period must be strategically addressed.
- Compensation and Career Growth are Essential:** Fair compensation, transparent salary progression, and promotion opportunities are vital for retaining employees, especially high performers and mid-tenure staff.
- Addressing Root Causes is Key to Long-Term Retention:** Focusing on fixing workload imbalances, compensation concerns, and career limitations is more effective than simply addressing surface-level dissatisfaction.