Case Study: The Loyalty Blueprint: Understanding Employee Retention Through Data Analytics

Part 2 of HR Analytics Series

This case study is the second part of a two-part HR analytics series. While Part 1 (The Exit Equation) focused on attrition, this one explores the other side of the coin: retention. Using SQL for segmentation and Excel for the dashboard. I analyzed what drives employees to stay, so HR can scale what's working.

TL;DR

Goal: Uncover the drivers of employee loyalty and engagement

Tools: MySQL(data cleaning, transformations), Excel(dashboard, KPIs)

Approach: Segmented retention by salary hikes, manager tenure, stock options, and job involvement.

Outcome: Found that moderate raises, strong leadership, and high involvement predict retention. Recommendations help HR optimize rewards and stability strategies.

Project Background

High turnover drains productivity and culture, but what about the employees who stay?
This case flips the narrative from exit risk to loyalty insights. Using a dataset of 1,470 employees, I investigated the factors that separate long-term team players from those at risk of leaving.

Business Problem

"What makes employees stay, and how can we double down on it?"
Many companies focus on attrition metrics. But knowing what drives retention is just as vital. This case helps HR teams identify the hidden levers of loyalty.

Data Overview

Source: Mock HR dataset
Features Used:

- Salary Hike (%)
- Job Involvement Score
- Manager Tenure
- Stock Option Level

- Satisfaction Metrics
- Attrition Flag

Tools Used

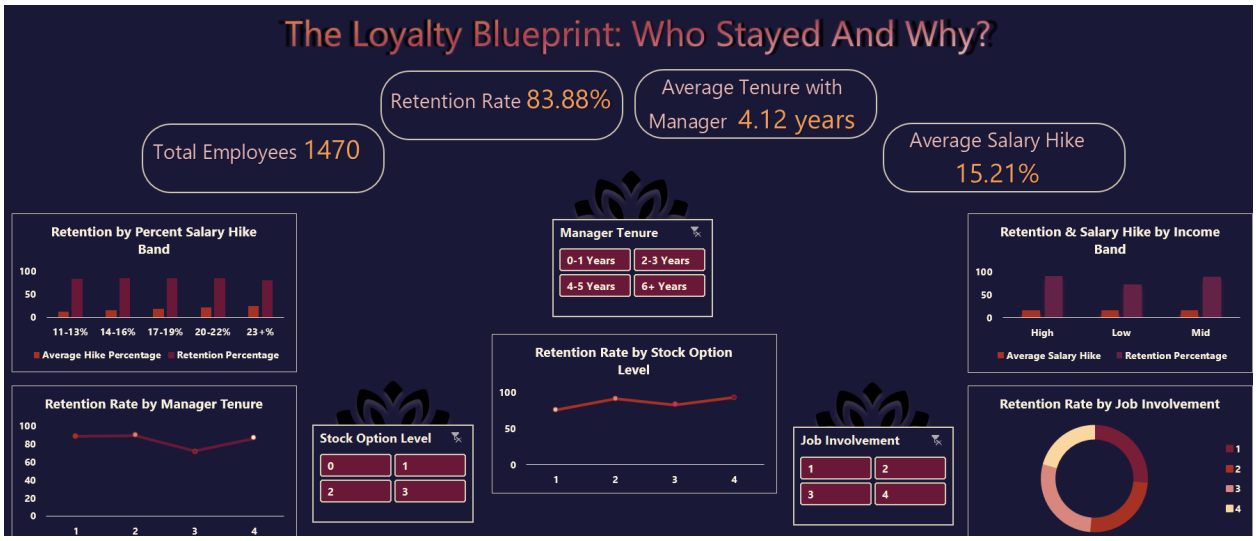
- MySQL- Data cleaning, segmentation logic, retention calculations
- Excel- Interactive dashboard, KPI visuals

Key Business Questions

- Do moderate or large salary hikes drive stronger loyalty?
- How does job involvement influence whether employees stay?
- What role does a manager's tenure play in team stability?
- Are stock options helping retain employees, or not?

Dashboard Preview

Snapshot of the Excel dashboard showing retention trends across salary hike bands, manager tenure, stock options, and job involvement.



Key Insights & Recommendations

- **Salary Hike Band (17-19%) = Loyalty Sweet Spot**
  Retention peaked for employees with moderate salary hikes. Loyalty dropped slightly when hikes exceeded 23%.
  Recommendation: Align hike bands with performance and satisfaction to avoid disengagement from inflated raises.
- **Stock Option Level 2 = Retention Engine**

Employees with Level 2 stock options have the highest retention (92.41%).
Recommendation: Review equity programs; sometimes, moderate incentives work better than excessive ones.

- **High Job Involvement = Low Attrition**
  Level 4 involvement had the lowest churn (90.97% retention), reinforcing that purpose and engagement anchor loyalty.
  Recommendation: Double down on job clarity, recognition, and autonomy to boost involvement scores.

- **Manager Tenure (6+ years) = Team Stability**
  Employees reporting to seasoned managers showed 90%+ retention.
  Recommendation: Invest in manager coaching and reduce frequent leadership reshuffles.

Challenges Faced & How I Solved Them

- **Inconsistent Data Bands:** Continuous values (like salary hikes) weren't insightful alone. I created custom bins using SQL to surface clearer behavioral patterns.

- **Missing/Noisy Satisfaction Metrics:** I applied basic imputation and focused on segments with clean scoring to retain reliability without skewing insights.

What I'd Explore Next

If this were a live consulting engagement, I'd extend the analysis to:

- Compare high-retention teams vs low-retention ones for culture signals
- Integrate exit interviews and engagement surveys for qualitative depth
- Build a predictive model to identify "flight-risk" employees before they leave

Why This Project Matters

Most dashboards stop at "who left." This one asks, *"Who stayed, and why?"* By shifting from churn to strategic retention, companies can protect high-value employees, foster leadership stability, and reward what works.

Explore the Project

- GitHub Repo
- Portfolio