

# Case Study: Understanding Employee Feedback to Improve Workplace Engagement

## About the Project

This project analyzes employee feedback data at **BrightWave Solutions**, a mid-sized company looking to improve employee satisfaction and engagement. The goal was to explore structured survey ratings and open-ended comments to uncover key workplace issues and provide data-driven recommendations.

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## Business Context

Despite consistent business results, BrightWave Solutions faced rising employee dissatisfaction, high turnover, and weak engagement. Leadership had access to regular survey data but lacked clear insights into what was driving employee sentiment especially from open-ended feedback.

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## Business Problem

The company was struggling with:

- Low morale and internal disengagement
  - Feedback being collected but not acted on
  - Poor visibility into what employees actually feel or need
  - Consistently low scores in compensation, management, and remote work satisfaction
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## Project Objectives

- Analyze employee survey ratings to identify patterns and pain points
  - Explore differences across tenure, engagement, and location
  - Visualize comment trends using word frequency analysis
  - Provide actionable insights to support better HR and retention strategies
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## Dataset Overview

The dataset included:

- **Quantitative Ratings** (e.g., Overall Ratings, Compensation, Work-Life Balance)
  - **Textual Feedback** (e.g., Positives, Negatives, Advice to Management)
  - **Employee Attributes** (e.g., Tenure, Location, Engagement Participation)
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## Analytical Approach

1. **Data Cleaning** – Removed missing values, normalized rating scales, and formatted dates.
  2. **EDA (Exploratory Data Analysis)** – Used visualizations to explore patterns in satisfaction, engagement, and tenure.
  3. **Word Frequency Analysis** – Identified top recurring words in employee comments (positives, negatives, and suggestions).
  4. **Temporal Trend Analysis** – Tracked how feedback patterns changed over time.
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## Tools Used

- **Python Libraries:** Pandas, Matplotlib, Seaborn, WordCloud
  - **Environment:** Jupyter Notebook
  - **Techniques:** Descriptive Statistics, Grouping, Cross-tabulation, Word Cloud Analysis
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## Outcomes & Key Insights

- **Compensation** is the most consistently low-rated area (~1.75/5)
  - **Culture** and **Career Opportunities** are company strengths (~4.39/5)
  - **Engagement Activities** and **Tenure** are not strongly linked
  - **Wellness Satisfaction** is much higher among engaged employees
  - **Common comment themes:** workload, management, flexibility, growth
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## Recommendations

- **Review Compensation Structure** – Adjust pay policies or introduce perks.
  - **Boost Career Growth Programs** – Align real advancement paths with expectations.
  - **Strengthen Wellness & Remote Policies** – Refresh communication and offerings.
  - **Act on Feedback Consistently** – Close the loop so employees feel heard.
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## Value Delivered

This project empowered HR at BrightWave Solutions to:

- Understand the true drivers of satisfaction and dissatisfaction
- Visualize sentiment trends with clarity
- Take data-backed actions to retain talent and improve morale

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