

HR DATA ANALYSIS AND INSIGHTS

Leveraging Data-Driven Insights
for Strategic HR Decision-Making

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PROJECT OVERVIEW

- Analyzing and visualizing HR data from the Human Resources Data Set
- Leveraging Excel Power Query, Pivot Tables, and statistical analysis
- Goals: Insights into workforce diversity, employee performance, and organizational trends



DATASET OVERVIEW

TBL_ACTION.CSV

Employee actions (e.g., promotions, terminations)

TBL_EMPLOYEE.CSV

Personal and job-related data (e.g., employee ID, name, gender)

TBL_HR_DATA.TXT

HR data including performance, status, and department info

TBL_PERF.CSV

Performance data including ratings and review dates



DATA PREPARATION PROCESS

- Imported tables using Power Query
- Cleaned text with TRIM, CLEAN, SUBSTITUTE;
standardized dates
- Joined tables on EmpID, calculated Age, and Length
of Service



BUSINESS PROBLEM 1:

Workforce Diversity and Engagement

PROBLEM STATEMENT:

Analyze gender and race distribution across departments

SOLUTION STEPS:

- Categorize employees by age groups and calculate average engagement scores
- Functions: COUNTIF, AVERAGEIF

VISUALIZATION:

Pie, Bar, and Clustered Column charts for diversity and engagement



BUSINESS PROBLEM 2:

Employee Profiles and Communication

PROBLEM STATEMENT:

Streamline employee profiles for internal communication

SOLUTION STEPS:

- Extract employee names, department, and position; calculate ages
- Generate personalized email addresses

VISUALIZATION:

Text manipulation, conditional formatting



BUSINESS PROBLEM 3:

Performance Evaluation

PROBLEM STATEMENT:

Efficiently retrieve employee data for evaluations

SOLUTION STEPS:

- Use lookup formulas like VLOOKUP and XLOOKUP for name and performance score retrieval
- INDEX-MATCH for dynamic reporting

OUTCOME:

Streamlined performance reports for HR managers



STATISTICAL ANALYSIS & INSIGHTS

Statistical Analysis

METRICS CALCULATED:

Mean, median, mode, variance, standard deviation, and correlation

INSIGHTS:

- Average age and level, most common department, variance and standard deviation in age and level
- Correlation between department and manager

OUTCOME:

Supports strategic decision-making for hiring and promotions



PIVOT TABLE ANALYSIS

Pivot Table Analysis for Key Insights

CONTENT:

- Compare employee metrics (e.g., salary, performance rating) across categories
- Employee distribution by department, marital status, gender

VISUALS:

Pivot tables with charts for quick analysis and trend identification



DATA VISUALIZATION & REPORTING

- Used Clustered Column, Pie, and Bar charts for engagement and diversity insights
- Conditional formatting for clear data trends
- Company logo and professional design elements for a polished presentation



TOOLS & TECHNIQUES

- Excel Functions: SUM, AVERAGE, MIN, MAX, COUNT, IF, COUNTIF, SUMIF, VLOOKUP, XLOOKUP, INDEX-MATCH
- Power Query: For data import and transformation
- Statistical Concepts: Mean, Median, Mode, Variance, Standard Deviation, Correlation



BUSINESS IMPACT

- Diversity & Inclusion: Gender, race, and age distribution to inform diversity efforts
- Performance Management: Streamlined evaluations and engagement insights
- Workforce Planning: Data-driven hiring and promotion strategies
- Compensation Analysis: Ensure fair and competitive salaries based on analysis



PROJECT SUMMARY & NEXT STEPS

- Comprehensive analysis of employee demographics and engagement
- Actionable insights for workforce planning and strategic decision-making
- Next Steps: Share findings with HR for policy and strategy improvements



THANK YOU !



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