

Human Resources Data Analysis and Visualization Report

Abstract: The dataset obtained from Human Resources contains 51,450 records and includes the following data fields:

Age, Attrition, BusinessTravel, DailyRate, Department, DistanceFromHome, Education, EducationField, ID, EnvironmentSatisfaction, Gender, HourlyRate, JobInvolvement, JobLevel, JobRole, JobSatisfaction, MaritalStatus, MonthlyIncome, MonthlyRate, NumCompaniesWorked, Over18, OverTime, PercentSalaryHike, PerformanceRating, RelationshipSatisfaction, StandardHours, StockOptionLevel, TotalWorkingYears, TrainingTimesLastYear, WorkLifeBalance, YearsAtCompany, YearsInCurrentRole, YearsSinceLastPromotion, YearsWithCurManager.

Using this data, valuable insights were derived by leveraging MySQL and Power BI, making it possible to create this report. To avoid confusion, the analyses have been divided into sections.

Employee Field-Department-Job Title Analysis

Using the columns Department, ID, Education, EducationField, JobRole, and DistanceFromHome, I reached the following conclusions:

	employees
▶	1470

Our total number of employees is 1,470.

	Department	Employee
▶	Research & Development	961
	Sales	446
	Human Resources	63

Of our employees, 961 work in the Research and Development department, 446 in

the Sales department, and 63 in the Human Resources department.

	DistanceRange	EmployeeCount
▶	1-10	1026
	11-20	240
	21-30	204

To determine the distance employees live from the company, I created three different standards in 10 km intervals. The results show that 1,026 employees live within 10 km, 240 employees live between 11-20 km, and 204 employees live between 21-30+ km.

	DistanceRange	OverTime	NoOverTime
▶	1-10 / KM	279	747
	11-20 / KM	76	164
	21-30 / KM	61	143

When we analyze the relationship between employees' distance from the company and overtime work, I find that 75% of employees living within 10 km do not work overtime, more than 66% of those living within 11-20 km do not work overtime, and 70% of those living within 21-30 km do not stay for overtime. Overall, the rate of not working overtime seems to be around 70% when divided into segments.

A large proportion of employees live within 10 km of the workplace. Employees living closer to the office (1-10 km) tend to not work overtime as much as those living farther away.

That being said this could indicate that proximity to work may reduce the likelihood of overtime, potentially due to reduced commute stress. It might also suggest that those living further away may be more willing to work overtime, possibly because they spend more time away from home anyway.

The company might consider investigating further the reasons behind the higher overtime work among employees living farther from the office, potentially looking into flexible work arrangements or commute-related benefits to improve work-life balance.

	EducationField	Employees	Sales	ResearchDevelopment	HumanResources
►	Life Sciences	606	150	440	16
	Medical	464	88	363	13
	Marketing	159	159	0	0
	Technical Degree	132	34	94	4
	Other	82	15	64	3
	Human Resources	27	0	0	27

The academic fields of the employees are categorized as Life Sciences, Medical, Marketing, Technical Degree, Human Resources, and Other. Within the company, we categorize their departments into three areas: Marketing, Research and Development, and Human Resources. When analyzing the relationship between the fields of study and the departments they work in, it is observed that outside of Marketing and Human Resources, the department with the highest percentage of employees working outside their academic field is Marketing. At least 20% of graduates from each academic field are found in the Marketing department, indicating a high demand for technical knowledge in this area.

The company seems to value diverse educational backgrounds, especially in departments like Marketing, where a broad range of skills might be required. This diversity in academic background within departments like Marketing and R&D suggests that the company values cross-functional knowledge and skills.

Human Resources Data Visualization

Field-Department-JobTitle Distribution

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