

# EMPLOYEE ATTRITION

## DATASET ANALYSIS

### INTRODUCTION

This report presents a comprehensive analysis of data sourced about employee attrition in a company. The primary objective of this analysis is to uncover key insights, trends and patterns within the dataset to find key factors that have lead to attrition.

### OBJECTIVE

#### 1. Data collection

By acquiring a well-structured dataset. This dataset included details such as employee ID, age, gender, education, department, monthly income, hourly rate, distance from home, business travel, etc .The data was stored in a relational database.

#### 2. Data cleaning and preprocessing

Performed data cleaning tasks to handle missing values, duplicate records, and outliers, ensuring the dataset's integrity.

#### 3. SQL queries

Designed and executed SQL queries to extract relevant information from the database. This involved a range of SQL operations, including SELECT, JOIN, GROUP BY, ALTER and aggregation functions.

# DATA OVERVIEW

<u>FIELDS</u>	<u>DATA TYPE</u>
Employee ID	int
Age	int
Attrition	text
Business Travel	text
Daily Rate	int
Department	text
Distance From Home	int
Education	int
Education Field	text
Employee Count	int
Environment Satisfaction	int
Gender	text
Hourly Rate	int
Job Involvement	int
Job Level	int
Job Role	text
Job Satisfaction	int
Marital Status	text
Monthly Income	int
Monthly Rate	int
Age_cat	varchar(50)
income_cat	varchar(50)

## QUERIES AND INSIGHTS

- Count of YES and NO.

attrition,count(\*) from employee\_attrition group by attrition;

Count of YES is 1477 and NO is 199.

- Count of YES or NO in each job level.

select attrition,joblevel,count(attrition) from employee\_attrition group by joblevel,attrition  
order by joblevel;

- Count of yes by level of job involvement.

select jobinvolvement,count(attrition) from employee\_attrition where attrition='Yes' group  
by jobinvolvement order by jobinvolvement;

- Count of YES and NO for each level of education.

select attrition,education,count(attrition) from employee\_attrition group by  
education,attrition order by education;

- Count of yes grouped by job involvement and education.

select jobinvolvement,education,count(attrition) from employee\_attrition where  
attrition='Yes' group by jobinvolvement,education order by education,jobinvolvement;

At every level of education, higher the level of job involvement, higher the count of yes.

- Count of YES based on age group.

select age\_cat,count(attrition) from employee\_attrition where attrition='Yes' group by  
age\_cat order by count(attrition);

Younger people have said Yes more than older people. It indicates that the younger the  
employee higher the chance of attrition.

- Count of YES by department.

select department,count(attrition) from employee\_attrition where attrition='Yes' group by  
department order by count(attrition);

- Count of yes by education field.

select educationfield,count(attrition) from employee\_attrition where attrition='Yes'  
group by educationfield order by count(attrition);

Human Resources	6
Other	8
Technical Degree	22
Marketing	28
Medical	51
Life Sciences	84

- Count of Yes by business travel.

select businesstravel,count(\*) from employee\_attrition where attrition='yes' group by businesstravel;

Travel\_Rarely      126

Travel\_Frequently 57

Non-Travel          16

- Count of YES and NO by gender.

select attrition,gender,count(\*) from employee\_attrition group by gender,attrition;

No Female 592

No Male    885

Yes Male    113

Yes Female 86

- Count of YES for different income categories.

select income\_cat,count(attrition) from employee\_attrition where attrition='Yes' group by income\_cat order by count(attrition);

above average      2

average              20

below average      177

- Count of YES by marital status.

select attrition,maritalstatus,count(\*) from employee\_attrition group by maritalstatus,attrition order by maritalstatus;

No Divorced 353

Yes Divorced 24

No Married    716

Yes Married    61

No Single      408

Yes Single      114

## **CONCLUSION**

1. Total number of employees is 1676.  
1477 of them has given attrition as NO and  
199 of them has given attrition as YES.
2. Employees in higher job level have lower attrition whereas lower job levels have higher attrition.
3. At every level of education when the job level is higher, there is a higher level of attrition.
4. When we look at the age of the employees, there is a higher level of attrition among younger employees.
5. Most number of attrition is for employees in Maternity department.
6. Employees that are from field of Life Science have the most number of attritions.
7. Employees that travel rarely have a higher number of attrition compared to employees that travel frequently.
8. Male employees have a higher number of attrition but they are more in number.  
The proportion of female attrition to total female count is more than proportion of male attrition to total male count.
9. Employees in lower income category has a higher number of attrition than employees in higher income categories.
10. The marital status have impacted the attrition level of the employees. Singles has the highest level of attrition followed by married. Divorced employees have the lowest attrition.