HUMAN RESOURCE(HR) ATTRITION ANALYSIS

Problem Statement:

High employee attrition is affecting the organization's productivity and increasing costs related to recruitment and training. Understanding the factors contributing to turnover, such as job roles, education, marital status, and work distance, is crucial for developing effective retention strategies. Without data-driven insights, the organization struggles to address the root causes of employee dissatisfaction and prevent further attrition.

Objectives:

The objective of this HR Attrition Dashboard is to analyse and visualize employee attrition across various dimensions within the organization. The dashboard aims to:

1. Provide a clear breakdown of total employees, attrition rate, and active employees.
2. Identify attrition patterns based on job roles, education levels, marital status, and age groups.
3. Evaluate the impact of work distance and business travel on employee turnover.
4. Segment employee performance and attrition by education field, department, and job satisfaction rating.
5. Help HR and management identify high-risk areas and create targeted employee retention strategies based on data-driven insights.

MYSQL QUERIES

KPI's:

1.Total Number of Employees:

```
Select count('Employee Number')
as "Total Employees" from hr_csv;
```

Total Employees
1470

2.Total Attrition:

```
Select sum(`CF_attrition count`)
as Attrition from hr_csv;
```

Attrition
237

3.Total Active Employees:

```
Select count("Employee Number")-sum(`CF_attrition count`)
as "Active Employees" from hr_csv;
```

Active Employees
1233

4.Total Attrition Rate:

```
select round((sum(`CF_attrition count`)/count('Employee Number')*100),2)
As "Attrition Rate" from hr_csv;
```

Attrition Rate
16.12

5.Average Age:

```
Select round(avg(`Age`)) as Average_Age from hr_csv;
```

Average_Age
37

6.Job Satisfaction Rating:

```
select round((avg(`Job Satisfaction`)),1)
As "Job Satisfaction Rate" from hr_csv;
```

Job Satisfaction Rate
2.6

Addition of Some Important Columns:

1.Distance Status:

```
Alter Table hr_csv
ADD COLUMN Distance_Status VARCHAR(25);

UPDATE hr_csv
SET Distance_Status = CASE
    WHEN `Distance From Home` <= 20 THEN 'Near'
    WHEN `Distance From Home` <= 30 THEN 'Far'
    ELSE 'Very_Far'
END;
```

2.Performance status:

```
Alter Table hr_csv
ADD COLUMN Working_Year_Group VARCHAR(25);

UPDATE hr_csv
SET Working_Year_Group = CASE
    WHEN `Total Working Years` <= 10 THEN '0-10'
    WHEN `Total Working Years` <= 30 THEN '11-20'
    WHEN `Total Working Years` <= 30 THEN '21-30'
    ELSE '31+'
END;
```

3. Working Year Group:

```
Alter Table hr_csv
ADD COLUMN Working_Year_Group VARCHAR(25);

UPDATE hr_csv
SET Working_Year_Group = CASE
    WHEN `Total Working Years` <= 10 THEN '0-10'
    WHEN `Total Working Years` <= 30 THEN '11-20'
    WHEN `Total Working Years` <= 30 THEN '21-30'
    ELSE '31+'
END;
```

Employee Status in Various Field:

1.Performance Status:

```
Select Performance_Status,count(`Employee Number`) as Total_Employees  from hr_csv
where Performance_Status="High";
```

Performance_Status	Total_Employees
High	226

```
Select Performance_Status,count(`Employee Number`) as Total_Employees  from hr_csv
where Performance_Status="Low";
```

Performance_Status	Total_Employees
Low	1244

2.Distance Status:

```
Select Distance_Status,count(`Employee Number`) as Total_Employees  from hr_csv
Group by Distance_Status;
```

Distance_Status	Total_Employees
Near	1266
Far	204

3.Gender wise Employees:

```
Select Gender ,count(`Employee Number`) as Total_Employees from hr_csv
group by Gender;
```

Gender	Total_Employees
Female	588
Male	882

Attrition Charts:

1.Education wise Attrition:

```
Select Education ,Sum(`CF_attrition count`) as Attrition from hr_csv
group by Education
Order by Sum(`CF_attrition count`) Desc;
```

Education	Attrition
Bachelor's Degree	99
Master's Degree	58
Associates Degree	44
High School	31
Doctoral Degree	5

2. Attrition by Job role:

```
Select sum(`CF_attrition count`) as Attrition,`Job Role`  from hr_csv
group by `Job Role`
Order by sum(`CF_attrition count`) Desc;
```

Attrition	Job Role
62	Laboratory Technician
57	Sales Executive
47	Research Scientist
33	Sales Representative
12	Human Resources
10	Manufacturing Director
9	Healthcare Representative
5	Manager
2	Research Director

3. Department Wise Attrition:

```
Select Department,
SUM(`CF_attrition count`) as "Attrition",
Concat(round(SUM(`CF_attrition count`)/(SELECT SUM(`CF_attrition count`) FROM hr_csv) * 100),"%")
as "Attrition in %"
from hr_csv
group by Department
Order by sum(`CF_attrition count`) Desc;
```

Department	Attrition	Attrition in %
R&D	133	56%
Sales	92	39%
HR	12	5%

4.Attrition By age Group:

```
Select sum(`CF_attrition count`) as Attrition,`CF_age band`  from hr_csv
group by `CF_age band`
Order by sum(`CF_attrition count`) Desc;
```

Attrition	CF_age band
112	25 - 34
51	35 - 44
38	Under 25
25	45 - 54
11	Over 55

5.Attrition By Marital Status:

```
Select sum(`CF_attrition count`) as Attrition,`Marital Status`  from hr_csv
group by `Marital Status`
Order by sum(`CF_attrition count`) Desc;
```

Attrition	Marital Status
120	Single
84	Married
33	Divorced

Next Step to Improve Job Satisfaction and Other Performance:

1. Engagement Programs: Create programs for younger employees and Job roles with high attrition, like Laboratory Technician andSales Executives.
2.Improve Job Satisfaction: Address factors affecting job satisfaction through better work environments and career development.
3.Retention Focus: Offer career growth and development for employees with higher education and those aged 25-34.
4.Flexible Work: Implement flexible work arrangements for those commuting longer distances.
5.Performance Support: Enhance performance management to help lower-performing employees improve skills and career paths.