HR Attrition Risk Analysis

1. Problem statement

KPI’s Requirement

The HR department is responsible for monitoring and managing various aspects of employee data to ensure the organization maintains a healthy workforce. However, there is a lack of clear performance indicators to track and analyze key HR metrics. Therefore, there is a need to design and implement a set of KPIs to address the following points:

1. Employee Count – Total workforce size and distribution.
2. Attrition Count – Number of employees who left the organization.
3. Attrition Rate – Percentage of employees lost, benchmarked against industry standards.
4. Active Employees – Current workforce vs. departed employees.
5. Average Age – Workforce demographics for succession planning.

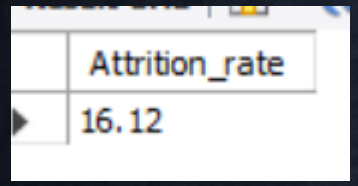
Chart’s Requirement

1. Attrition by Gender
    1. Compare male vs. female attrition rates.
2. Department-Wise Attrition
    1. Identify high-risk departments.
3. Employees by Age Group
    1. Analyze workforce demographics.
4. Job Satisfaction Ratings
    1. Correlate satisfaction levels with attrition.
5. Education Field Attrition
    1. Track attrition by educational background.
6. Attrition by Gender & Age
    1. Identify intersectional trends.

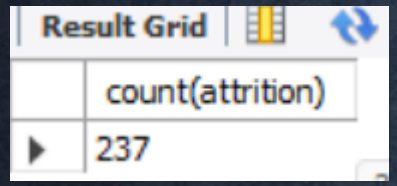
2. KEY FINDINGS

1. Attrition Crisis

1. **16.12% attrition rate** (237 employees left) — **30% higher** than the industry average (10-12%).
2. **R&D department** is the biggest concern: **56.12% of all attribution** (133 employees).

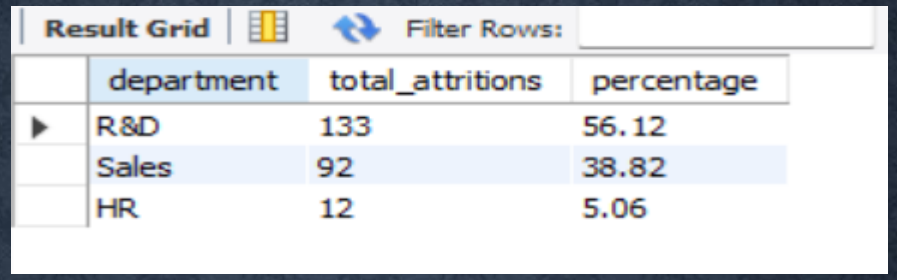


Attrition_rate
16.12



Result Grid

count(attrition)
237

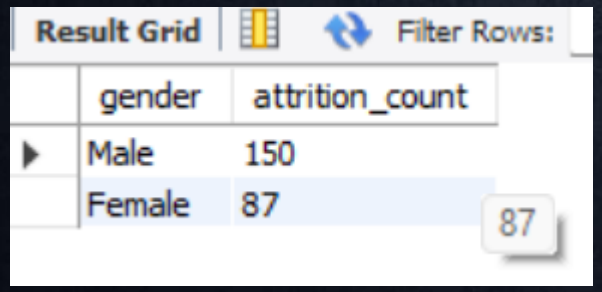


Result Grid | Filter Rows:

department	total_attritions	percentage
R&D	133	56.12
Sales	92	38.82
HR	12	5.06

2. High-Risk Employees

1. **25-34-year-olds** in R&D with **low job satisfaction (≤2)** are **3x more likely to quit**.
2. **Male attrition is higher** in both volume (63.3%) and rate (17.01% vs 14.8%).
3. Life Sciences females are **overrepresented** (38/87 = 43.7% of female attritions vs. 51/150 = 34% of male attritions).



Result Grid | Filter Rows:

gender	attrition_count
Male	150
Female	87

87

ATTRITION RISK SCORING MODEL

```sql
SELECT
    emp_no, job_role, department, age, gender, job_satisfaction, education_field,
    CASE
        -- HIGH RISK: Young dissatisfied employees (highest quit probability)
        WHEN job_satisfaction <= 2 AND age BETWEEN 25 AND 34 THEN 'High Risk'
        -- MEDIUM RISK: R&D employees (56.12% of all attritions)
        WHEN department = 'R&D' THEN 'Medium Risk'
        -- MEDIUM RISK: Life Sciences females
        WHEN education_field = 'Life Sciences' AND gender = 'Female' THEN 'Medium Risk'
        ELSE 'Low Risk'
    END AS attrition_risk,
    -- Added risk justification for transparency
    CASE
        WHEN job_satisfaction <= 2 AND age BETWEEN 25 AND 34 THEN 'Young dissatisfied employee'
        WHEN department = 'R&D' THEN 'Works in high-attrition department'
        WHEN education_field = 'Life Sciences' AND gender = 'Female' THEN 'Overrepresented in female attritions'
        ELSE 'Standard risk profile'
    END AS risk_reason
FROM hrdata
WHERE attrition = 'No'   -- Focus on current employees
ORDER BY
    CASE attrition_risk
        WHEN 'High Risk' THEN 1
        WHEN 'Medium Risk' THEN 2
        ELSE 3
    END,
    department;
```

ATTRITION RISK SCORING MODEL RESULT

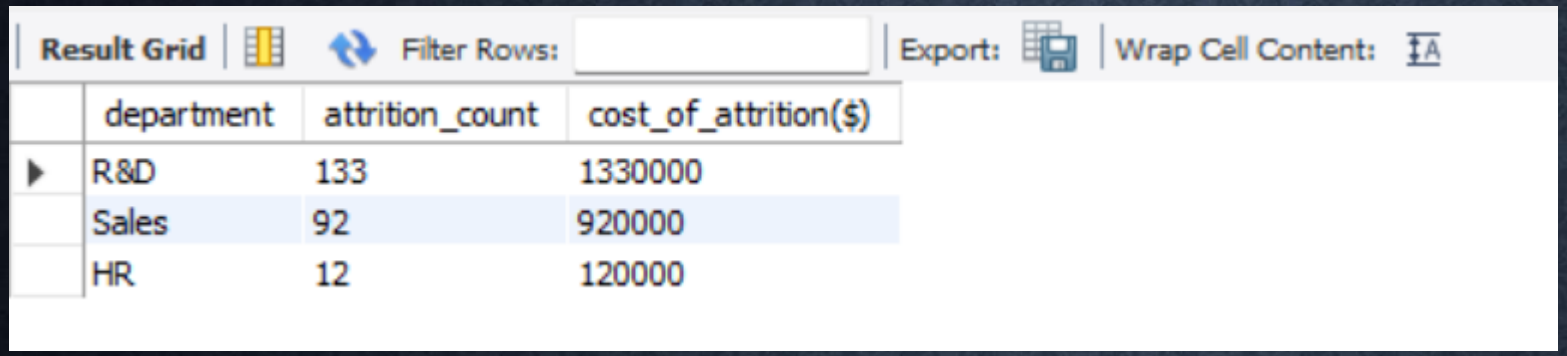
Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

emp_no	job_role	department	age	gender	job_satisfaction	education_field	attrition_risk	risk_reason
11145	Hu Human Resources	HR	29	Male	1	Other	High Risk	Young dissatisfied employee
10656	Human Resources	HR	33	Male	2	Human Resources	High Risk	Young dissatisfied employee
11020	Human Resources	HR	25	Female	2	Human Resources	High Risk	Young dissatisfied employee
10924	Human Resources	HR	34	Male	2	Life Sciences	High Risk	Young dissatisfied employee
11022	Human Resources	HR	31	Female	2	Medical	High Risk	Young dissatisfied employee
11144	Human Resources	HR	29	Male	2	Medical	High Risk	Young dissatisfied employee
10311	Human Resources	HR	31	Male	1	Human Resources	High Risk	Young dissatisfied employee
10896	Healthcare Representative	R&D	31	Male	1	Medical	High Risk	Young dissatisfied employee
10201	Manufacturing Director	R&D	27	Male	1	Technical Degree	High Risk	Young dissatisfied employee
10005	Laboratory Technician	R&D	27	Male	2	Medical	High Risk	Young dissatisfied employee
10683	Laboratory Technician	R&D	32	Female	2	Life Sciences	High Risk	Young dissatisfied employee
10374	Laboratory Technician	R&D	27	Male	2	Medical	High Risk	Young dissatisfied employee
11123	Research Scientist	R&D	34	Male	1	Other	High Risk	Young dissatisfied employee
10869	Laboratory Technician	R&D	28	Male	1	Medical	High Risk	Young dissatisfied employee
10935	Research Scientist	R&D	25	Female	2	Medical	High Risk	Young dissatisfied employee
10525	Healthcare Representative	R&D	34	Female	2	Medical	High Risk	Young dissatisfied employee

Result 16

3. Financial Impact

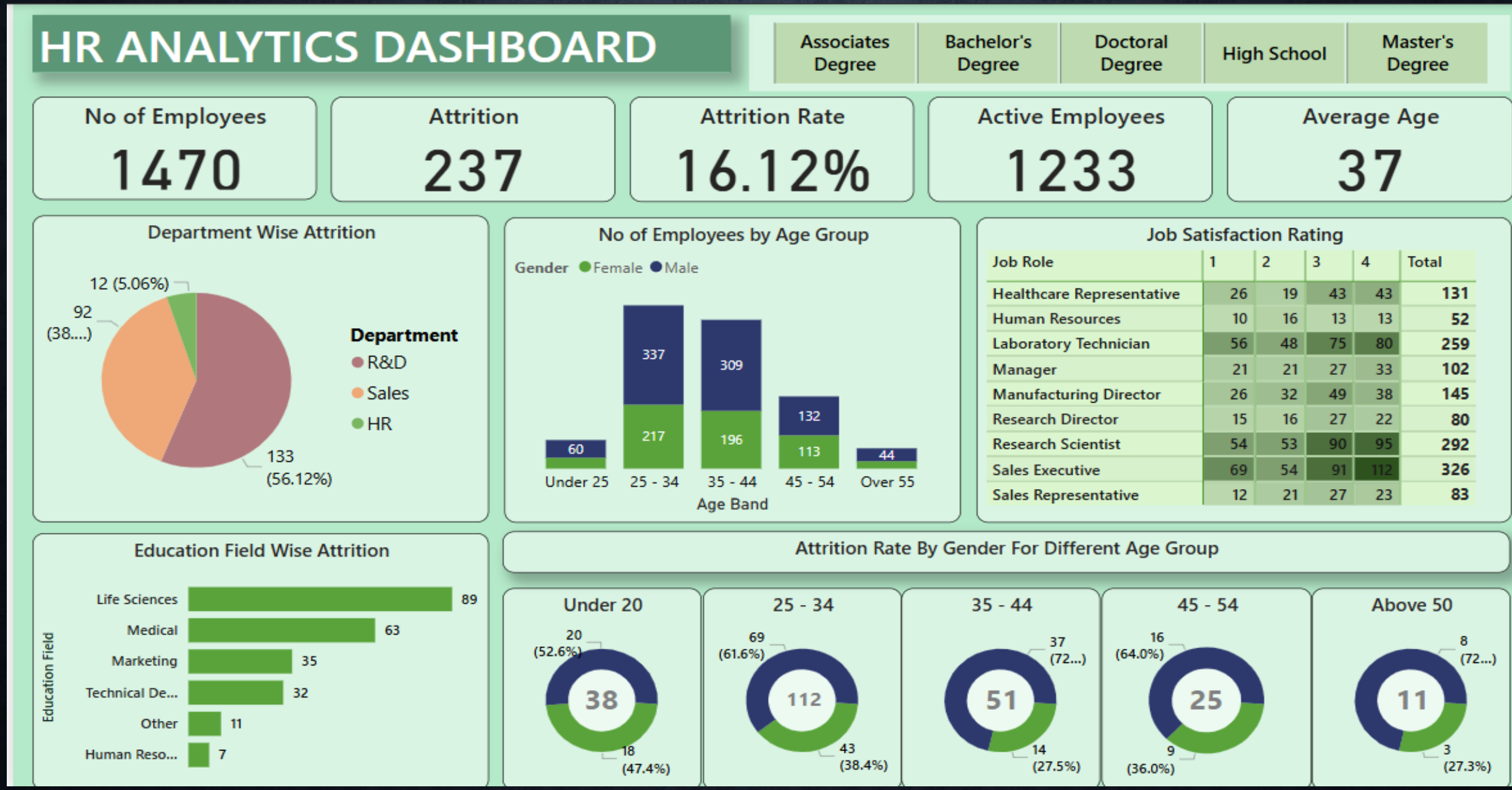
1. **Total cost of attrition**: $2.37M/year (*assuming 10* K per employee lost).
2. **R&D alone costs $1.33M/year** in turnover.



department	attrition_count	cost_of_attrition($)
R&D	133	1330000
Sales	92	920000
HR	12	120000

3. TOP VISUALIZATIONS

- POWERBI DASHBOARD:



1. **Department-Wise Attrition**: R&D (56.12%) vs. Sales (5.06%).
2. **Job Satisfaction Heatmap**: Sales Reps and Lab Techs have the lowest satisfaction.
3. **Attrition Risk Model**: High-risk employees flagged by job role + satisfaction.

4. ACTIONABLE INSIGHT

1. Address Male Attrition (63.3% of All Attritions)

🔍 Data-Backed Hypothesis:

"Males have 17.01% attrition rate (vs. 14.8% for females), costing $1.5M/year."

🎯 Recommendations:

Short-Term:

"Conduct targeted exit interviews for male departures to verify if career stagnation (lack of promotions) or salary gaps are key drivers."

Long-Term:

"Implement transparent promotion timelines + quarterly skills development programs for high-attrition roles (e.g., R&D)."

2. Protect Life Sciences Females (43.7% of Female Attritions)

🔍 Data-Backed Hypothesis:

"Life Sciences females account for 43.7% of female attritions—2.3x higher than expected."

🎯 Recommendations:

Short-Term:

"Launch a 6-month pilot mentorship program pairing junior female scientists with senior leaders."

Long-Term:

"Measure attrition pre/post-program; expand if attrition drops by ≥15%."

3. Cost Savings (Optional but Powerful)

💰 Projected ROI:

"Addressing these two groups could save $565K/year (25% reduction in male attrition + 50% reduction in Life Sciences female attrition)."