

Analysis Report of Employee Attrition Data

SUBMITTED BY

NIMMY GODFRY

OBJECTIVE: The objective of an analysis report on employee attrition data is to understand the factors contributing to employee turnover within an organization. This involves identifying patterns and trends related to why employees leave, which can help the company improve retention strategies. The dataset contain total of 1676 entries and 21 columns. The ultimate goal is to help the organization reduce employee turnover, retain valuable talent, and maintain a healthy and productive work environment.

Key columns: Employee ID, Age, Attrition, Business Travel, Department, Distance from home, education, job role, gender etc.

Result Grid		Filter Rows:			Export:	Wr
Field	Type	Null	Key	Default	Extra	
EmployeeID	int	YES		NULL		
Age	int	YES		NULL		
Attrition	text	YES		NULL		
BusinessTravel	text	YES		NULL		
DailyRate	int	YES		NULL		
Department	text	YES		NULL		
DistanceFromHome	int	YES		NULL		
Education	int	YES		NULL		
EducationField	text	YES		NULL		
EmployeeCount	int	YES		NULL		
EnvironmentSatisf...	int	YES		NULL		
Gender	text	YES		NULL		
HourlyRate	int	YES		NULL		
JobInvolvement	int	YES		NULL		
JobLevel	int	YES		NULL		
JobRole	text	YES		NULL		
JobSatisfaction	int	YES		NULL		
MaritalStatus	text	YES		NULL		
MonthlyIncome	int	YES		NULL		
MonthlyRate	int	YES		NULL		
age_category	varc...	YES		NULL		

Main steps in this analysis:

DATA CLEANING: Using MySQL table import dataset into a newly created database. Remove unnecessary columns and check for any missing or inconsistent data. The last column labeled as “?” has no data, which can likely be ignored.

Feature Engineering: created new features for making the analysis more easier and meaningful.

DATA ANALYSIS: Using SQL queries order by, group by, limit, etc. and aggregate functions like min, max, avg, sum, etc.

Attrition Analysis:

1. Attrition by age: Higher attrition rates are observed in younger employees, especially those aged 18 -30 Attrition rates generally decrease with age, with almost no attrition among employees aged 46 and older.

Age category	Count of employees have left the company (Yes)	Count of employees remain with the company (No)
Young adults	109	339
adults	74	841
Old age	16	297

Overall attrition rate: The count of attrition distributed in the dataset Attrition.

Yes count: 199 Attrition No count: 1477

2. Attrition by job satisfaction: Employees with lower job satisfaction rated 1. As job satisfaction increases, attrition decreases where high satisfaction rated 4.

jobsatisfaction	count(*)
4	45
3	60
2	42
1	52

3. Attrition by job role: The Nurse job role has the highest attrition rate, while no employees have left the job role of an Admin.

Job role	Count where attrition (Yes)	Count where attrition (No)
Nurse	107	715
Therapist	4	185
administrative	1	114
Admin	0	16
others	87	447

4. Attrition by marital status: Single employee leads to higher attrition ,that means most of the employees who left the company were single. most of the employees who remain with the company are married.

Marital status	Count where attrition (Yes)	Count where attrition (No)
Single	144	408
married	61	716
Divorced	24	353

5. Attrition by Hourly rate:

Average hourly rate is 65.47

Minimum=30 Maximum=100

6. Attrition by Educational field:

Educational field	Count of attrition (yes)	Count of attrition(No)
Life science	84	613
Medical	51	473
marketing	28	161
Technical degree	22	127
Human resource	6	23
other	8	80

7. Attrition by gender:

113 male and 86 female employees have left the company.

885 male and 592 female employees remain with the company.

8. Attrition by Business travel:

Rarely travel leads to higher attrition.

Business Travel	Count where attrition (Yes)	Count where attrition (NO)
Travel-rarely	126	1058
Travel-frequently	57	263
Non-travel	16	156

9. Attrition by Department:

High attrition rates are observed in maternity department. High attrition in maternity roles often results from poor work life balance, high stress, limited career growth, and challenging work conditions.

department	count(*)
Maternity	98
Cardiology	74
Neurology	27

10. Attrition by business travel:

Different travel categories included in the dataset. High attrition rates can increase business travel costs and disrupt schedules due to frequent staff changes.

businesstravel	count(*)
Travel_Rarely	126
Travel_Frequently	57
Non-Travel	16

CONCLUSION:

In conclusion, the analysis of employee attrition data identifies critical factors contributing to turnover. Key issues such as employee engagement, work-life balance, and career development opportunities have been highlighted. Implementing targeted strategies to address these issues can help reduce attrition rates, improve retention, and enhance organizational performance.

1. Overall attrition rate: Approximately 12% of employees have left the company
2. Age related trends: Young employees are more likely to leave the company. As employees age, attrition rate tend to decrease significantly. This suggests that younger workers may be seeking more growth opportunities or face challenges that older employees do not.
3. Higher attrition rate observed in male. Attrition rates can impact men based on their industry, job role, work life balance.