Employee Turnover

Presented By : Team 2

AGENDA

1	Problem Statement
2	Data Set Description
3	Data Insights
4	Statistical Tests
5	Dashboard
6	Recommendations to organizations

Problem Statement

Employee turnover reflects how many workers depart a business,

whether by their own choice or involuntarily. Turnover can happen because a competitor offers an employee a raise or because a few staff members were laid off or let go due to poor performance
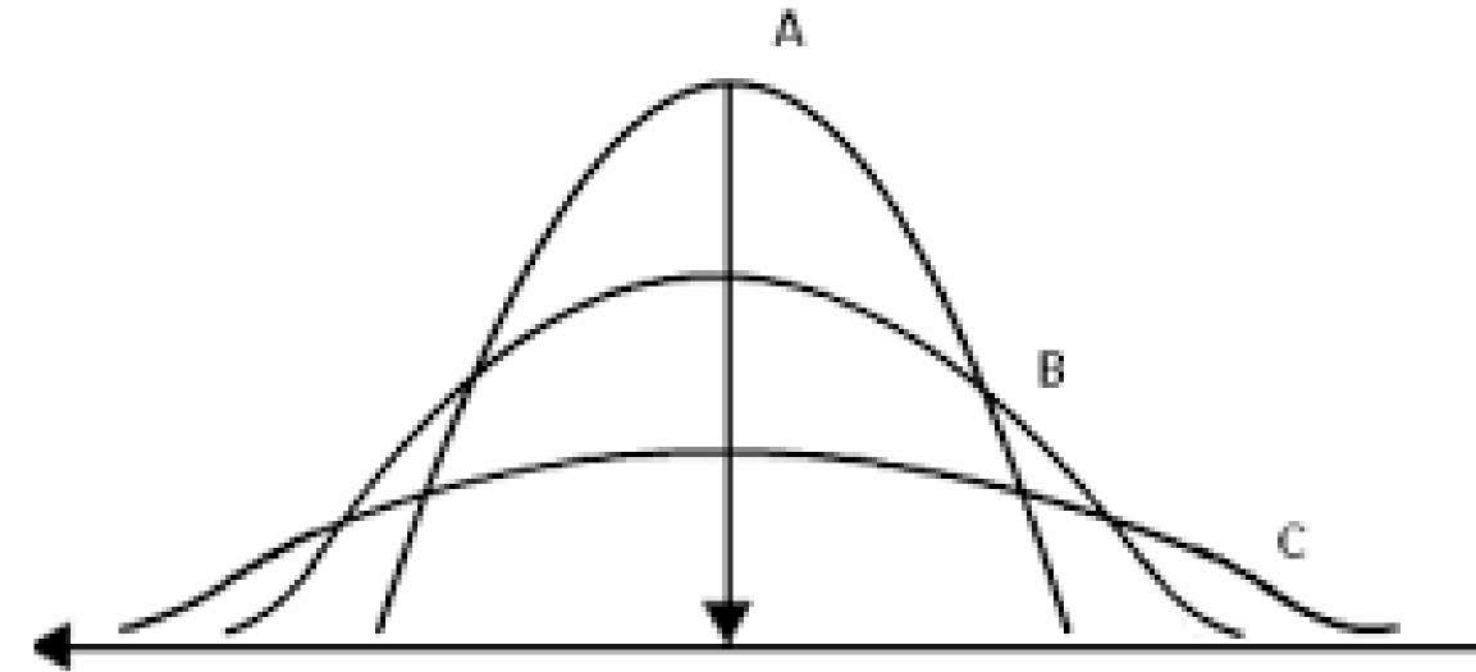
Analysis Scope

Most of the data in scope except (Bussienes travel, Distance from home, and Stock options level)

what KPI measures I'll use?

-The attrition rate

-Avg length of employment

-New hire retention

-Retention for good employees

-Environment rate

What is my goal?
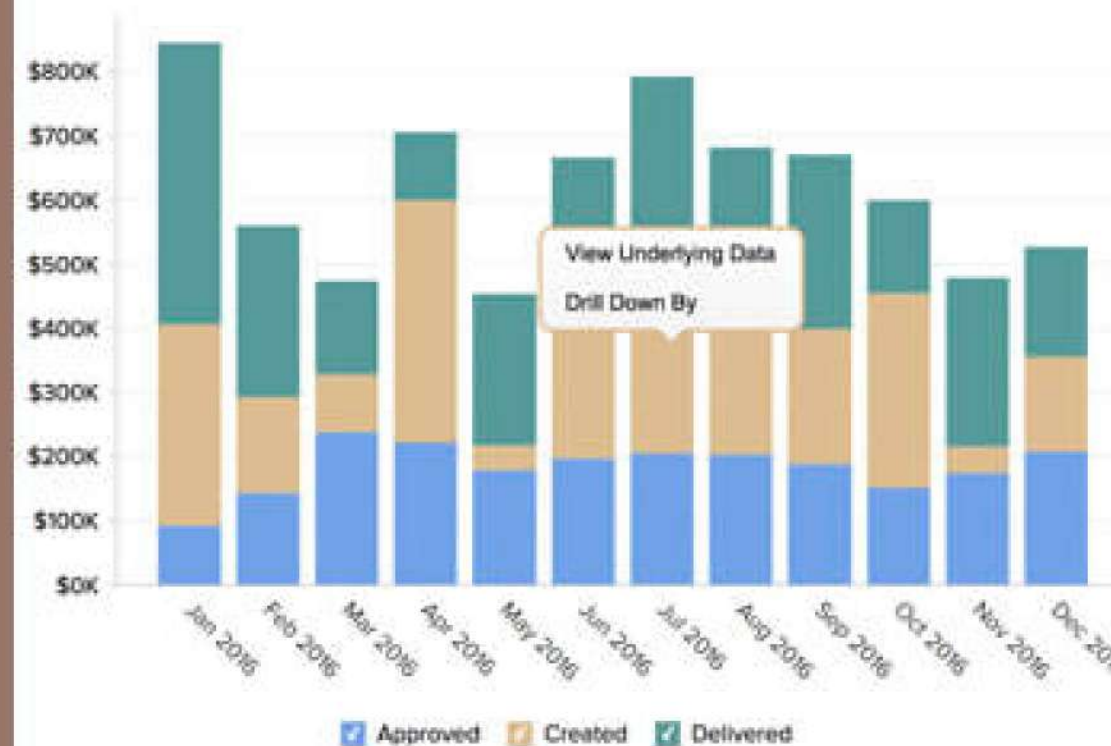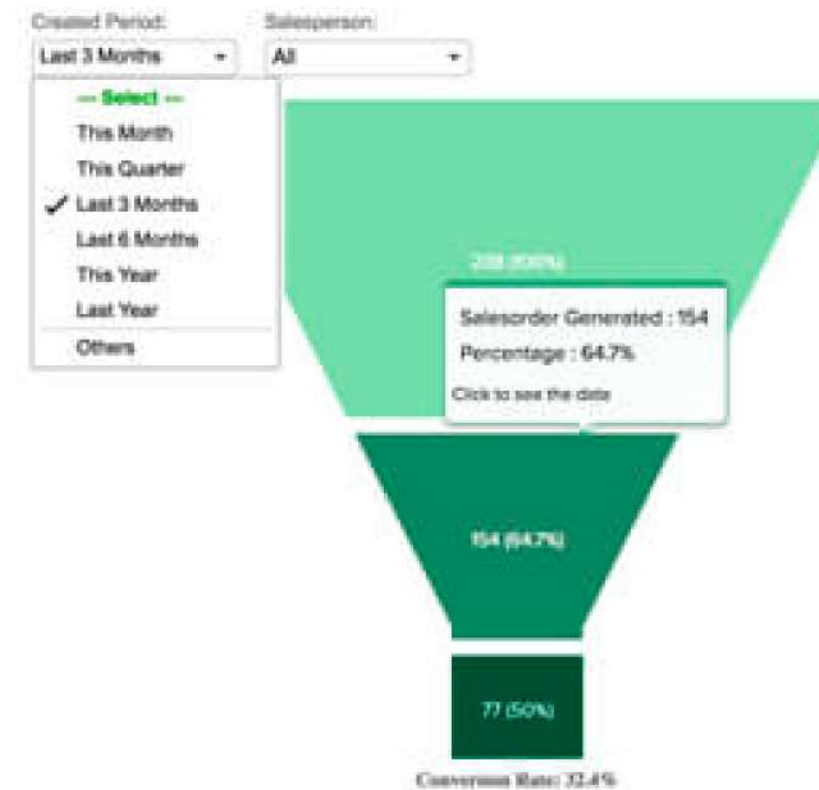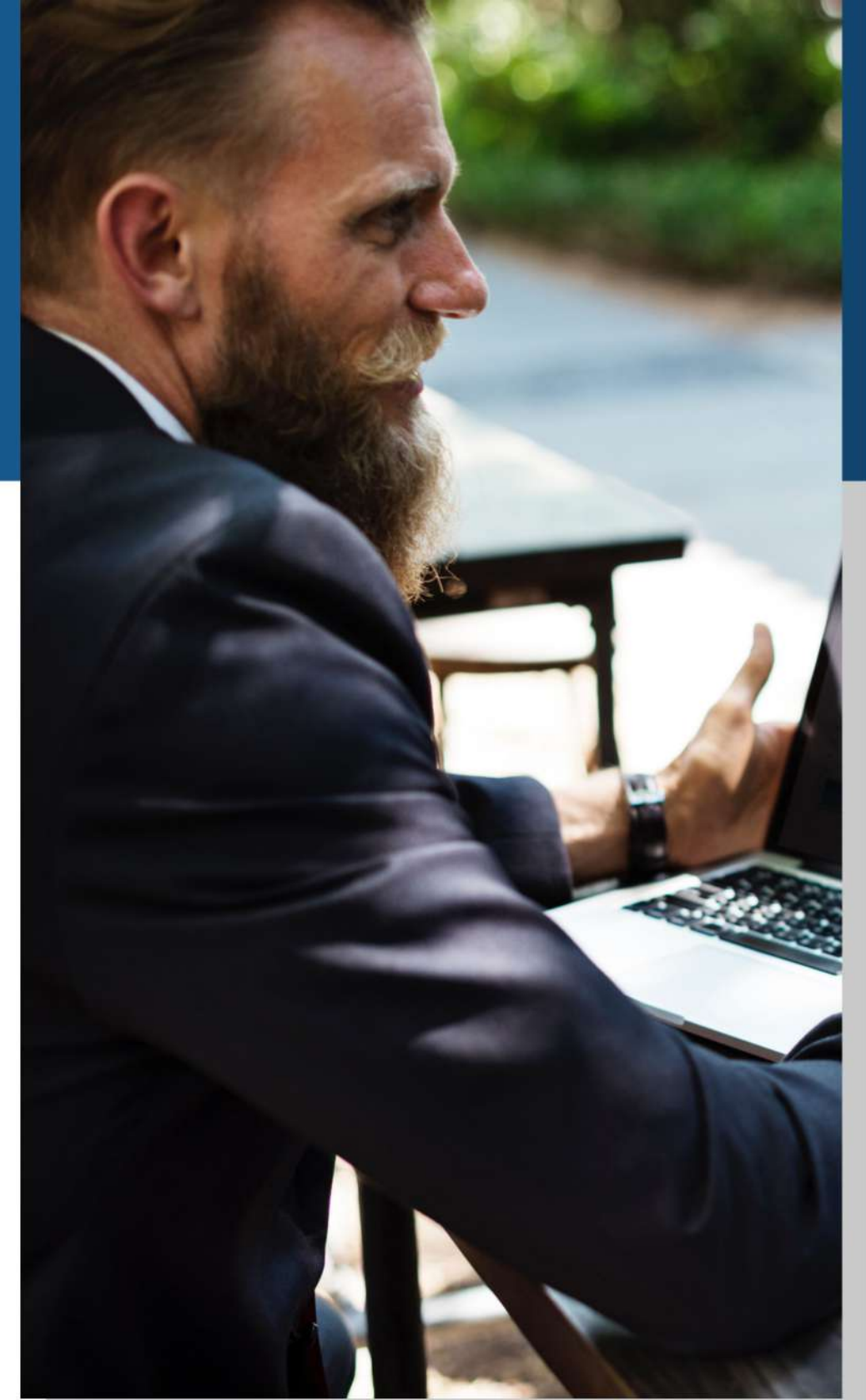
Achieve the solutions to reduce employees attrition

How to represent my work?

Prepare & clean Data

- Structure data
- Joining data
- Duplicate data
- Fix typos
- Missing data

Integrate data

Joining data from different sheet by use PK column [Employee ID] => (V-lookup)

EmployeeID	Attrition	EnvironmentSatisfact	JobSatisfaction	WorkLifeBalance	DistanceFromHome	JobLevel	JobRole
1	No	3	4	2	6	1	Healthcare Representa
2	Yes	3	2	4	10	1	Research Scientist
3	No	2	2	1	17	4	Sales Executive
4	No	4	4	3	2	3	Human Resources
5	No	4	1	3	10	1	Sales Executive
6	No	3	2	2	8	4	Research Director
7	Yes	1	3	1	11	2	Sales Executive
8	No	1	1	3	18	2	Sales Executive
9	No	2	4	3	1	3	Laboratory Technician
10	No	2	1	3	7	4	Laboratory Technician
11	No	3	4	3	17	2	Laboratory Technician
12	No	3	4	3	28	1	Laboratory Technician
13	No	4	1	3	14	1	Sales Executive
14	Yes	1	2	2	1	1	Research Scientist
15	No	4	4	2	1	1	Manufacturing Directo
16	No	3	4	4	1	2	Healthcare Representa
17	No	4	3	4	3	1	Laboratory Technician
18	No	1	4	3	1	2	Sales Executive
19	No	2	2	2	7	1	Sales Representative
20	No	1	1	3	8	1	Manager
21	No	3	2	1	1	2	Laboratory Technician
22	No	1	2	2	8	1	Research Scientist
23	No	3	3	2	11	2	Research Scientist
24	No	2	3	3	4	1	Manufacturing Directo
25	No	2	4	2	16	1	Laboratory Technician
26	No	2	4	3	1	1	Research Scientist
27	No	1	1	3	9	1	Manager

Structure data

Divide the features into Categorical and Discrete

Fix the types of rating features to Text
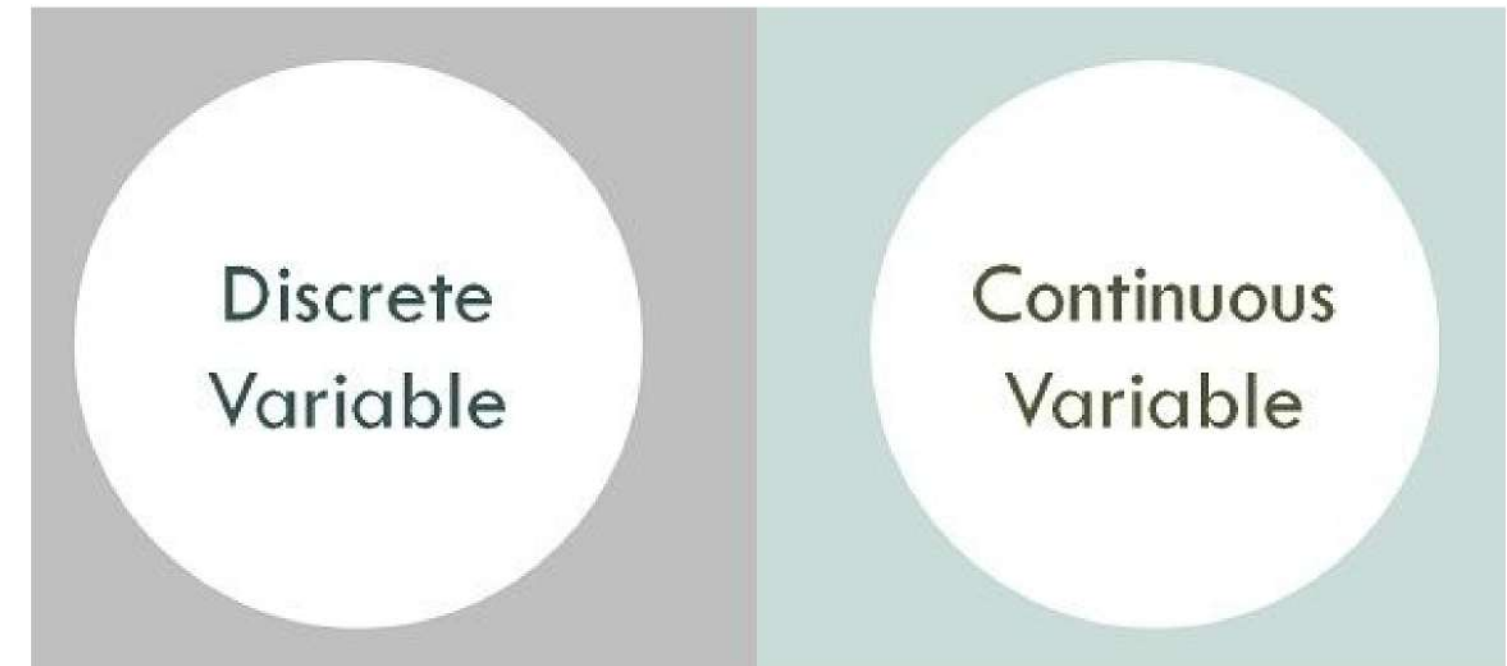
Missing data

Missing data Techniques

Categorical data

Getting the mode of categorical features depends on filtering with job role as (job satisfaction, work-life balance, and Environment satisfaction)

EmployeeID	EnvironmentSatisfaction	JobSatisfaction	WorkLifeBalance
1	3	4	2
2	3	2	4
3	2	2	1
4	4	4	3
5	4	1	3
6	3	2	2
7	1	3	1
8	1	2	3
9	2	4	3
10	2	1	3
11	3	4	3
12	3	4	3
13	4	1	3
14	1	2	2
15	4	4	2
16	3	4	4
17	4	3	4
18	1	4	3
19	2	2	2
20	1	1	3
21	3	2	1
22	1	2	2
23	3	3	2
24	2	3	3
25	2	4	2
26	2	4	3
27	1	1	3

Mode of EnvironmentSatisfaction	3
Mode of JobSatisfaction	4
Mode of WorkLifeBalance	3

Missing Data

Continous data

[Number of companies] filter with age column skewness => 1.3 And median is 2

[total working years] filter with age column skewness => 1.11 And median is 10

YearsSinceLastPromotion	YearsWithCurrManager	Column1	Column2	Column3	Column4	Column5	C
0	0						
1	4						
0	3						
7	5	Skewness of column number of companies	1.0319796				
0	4						
7	7						
0	0	Median of column number of companies	2				
0	0						
7	8						
1	5						
4	10	Skewness of column TotalWorkingYears	1.1190418				
10	11						
4	13	Median of column TotalWorkingYears	10				
9	9						
0	4						
0	1						
1	0						
0	2						
6	2						
7	7						
1	4						
1	6						
1	3						
11	6						
0	9						
0	8						
3	3						
5	7						

Preliminary questions

- What is the root cause of the problem?
- How did employee turnover compare to total employees last year?
- Which department had the most employee turnover last year?
- Is salary affect attrition?
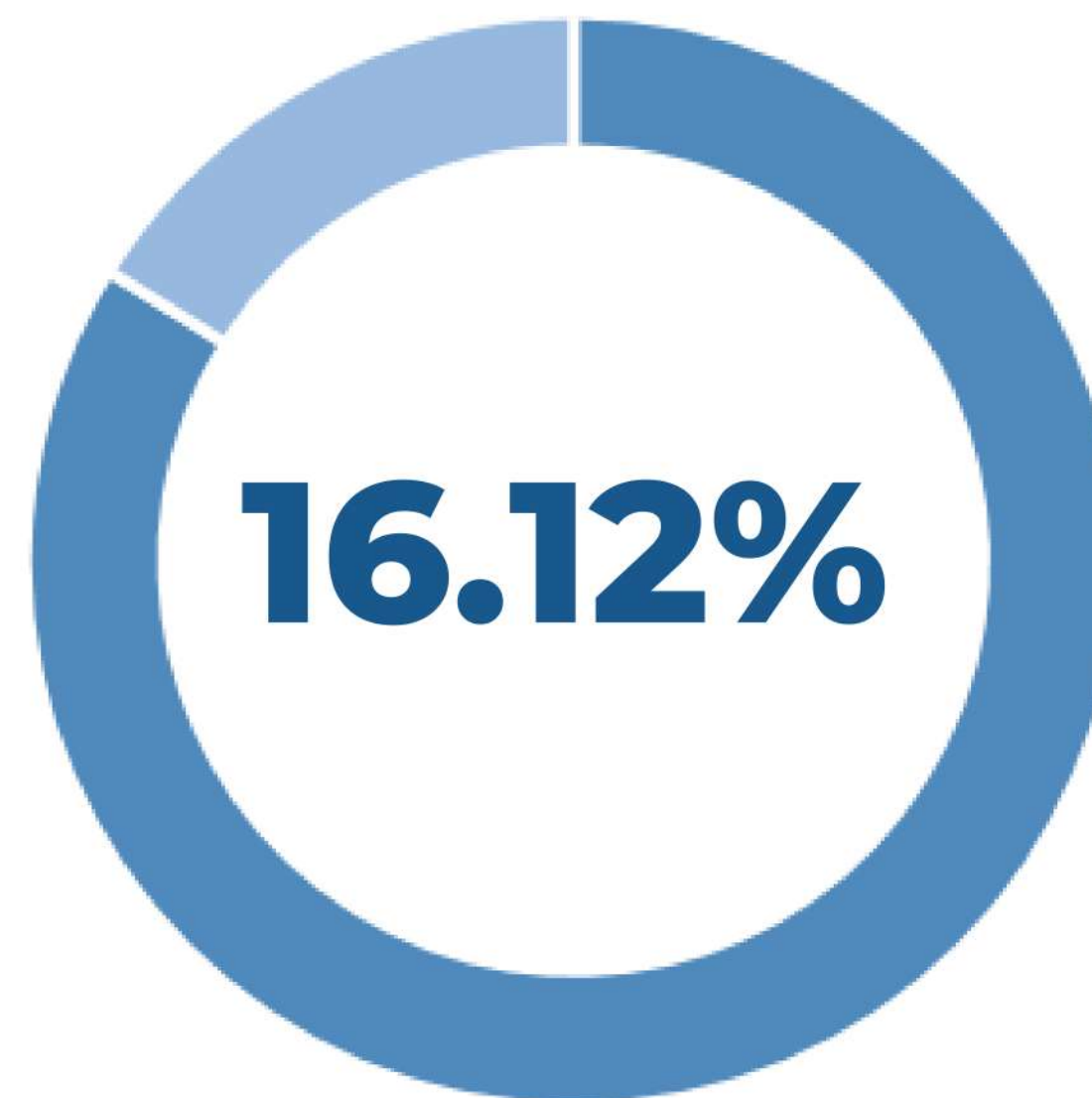- How many juniors leave compared with seniors?

Data Insights

investigating the causes of
employees attrition

Attrition Percentage

16.12%

Potentiel Causes

▶ Relating to not getting enough recognition

▶ Due to the work environment itself

▶ Low salaries

▶ Relating to certain job role

▶ Due to poor management

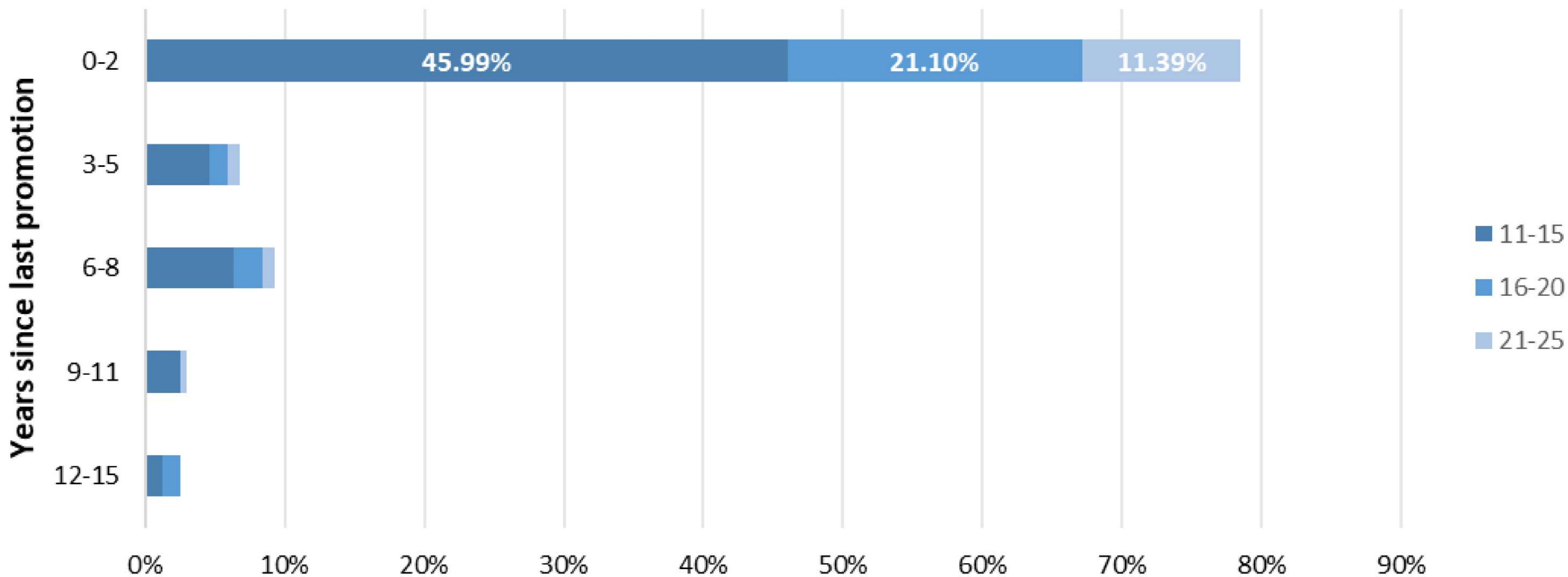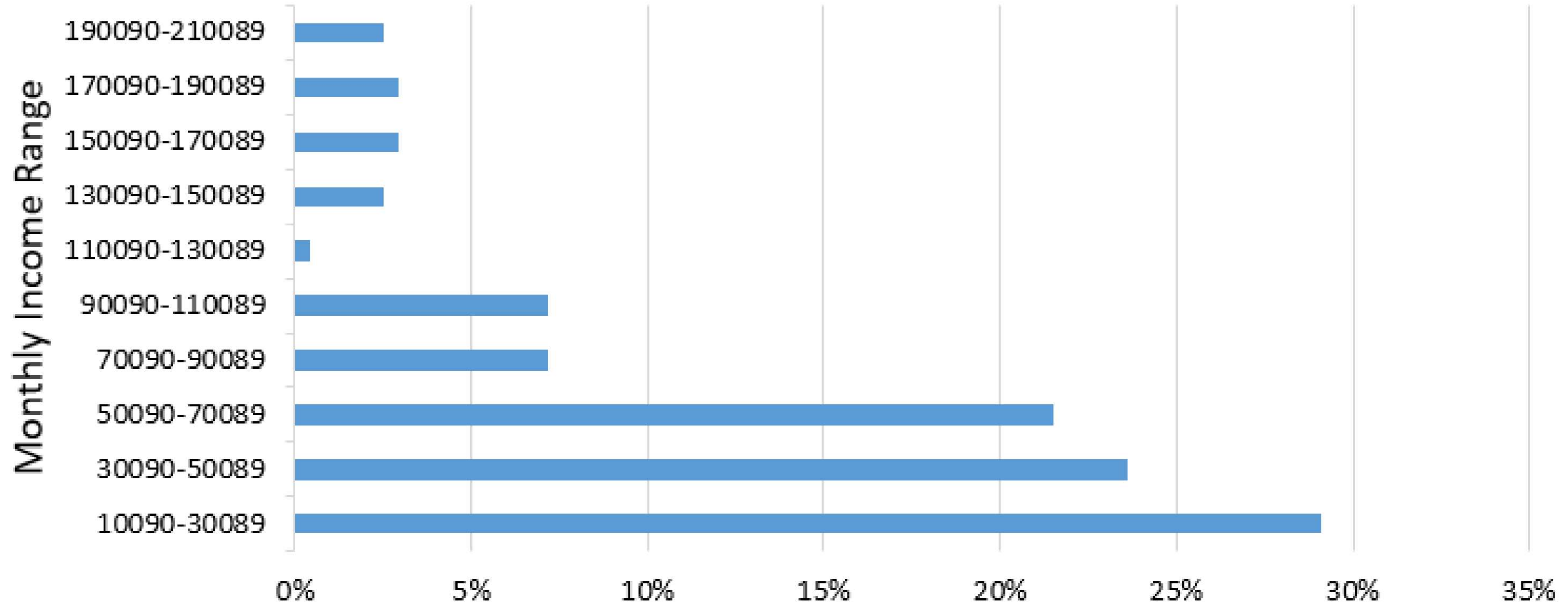# Employess attrition precentage based on years since last promotion

	0-2	3-5	6-8	9-11	12-15
No	83.12%	89.99%	82.76%	85.17%	85.58%
Yes	16.88%	10.01%	17.24%	14.83%	14.42%
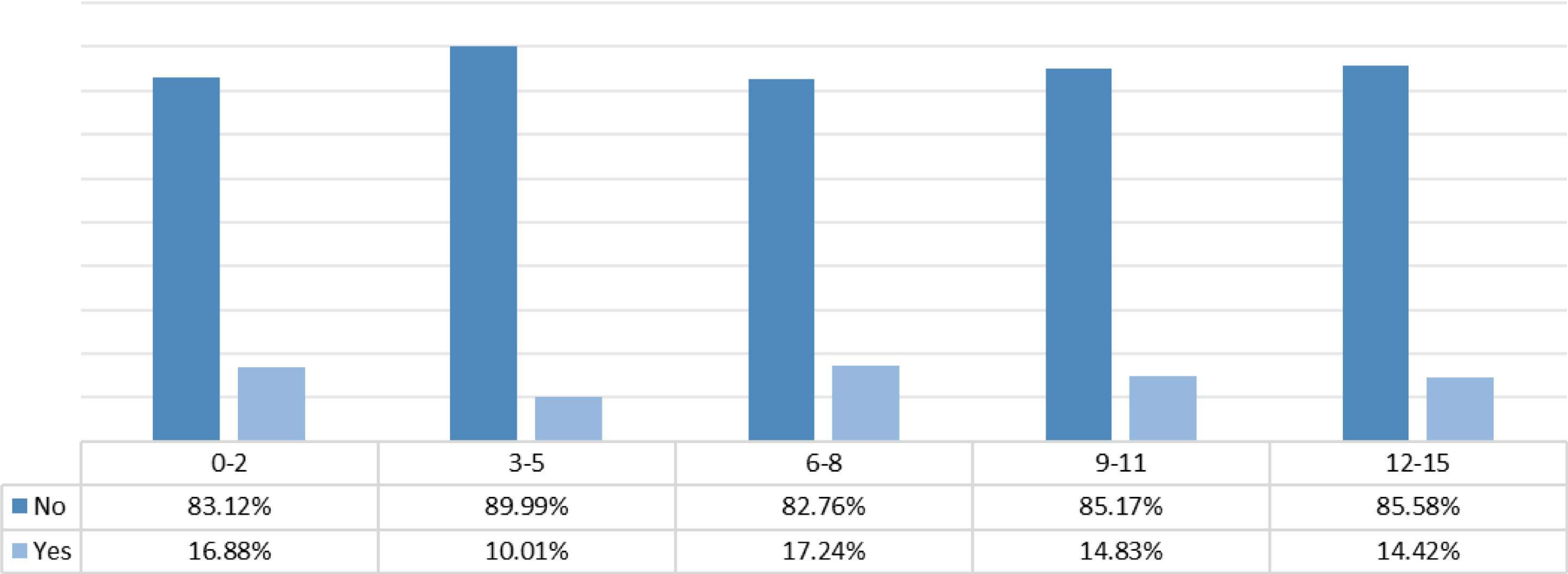
Years since last promotion
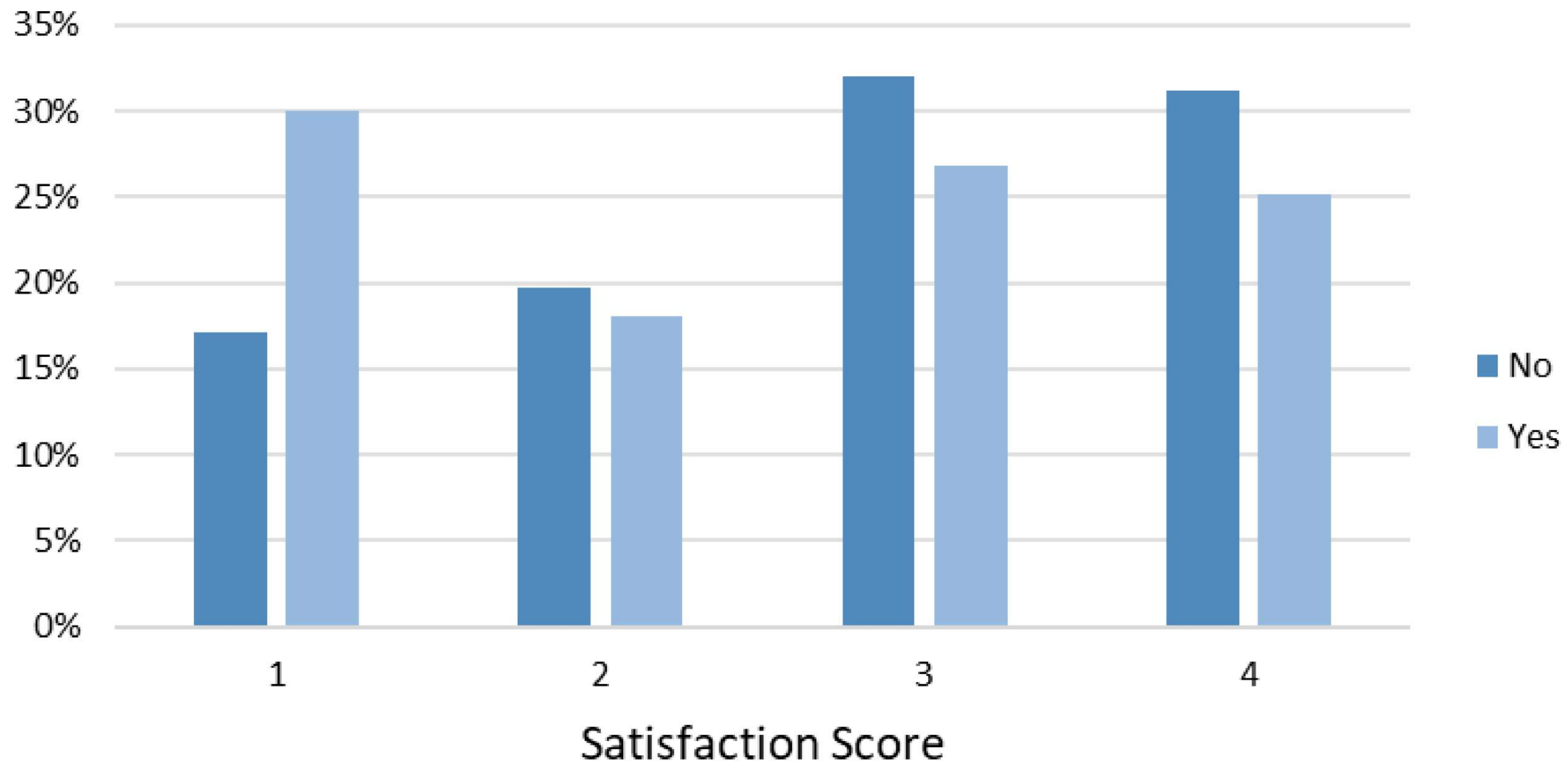
Employee attrition according to salary hike

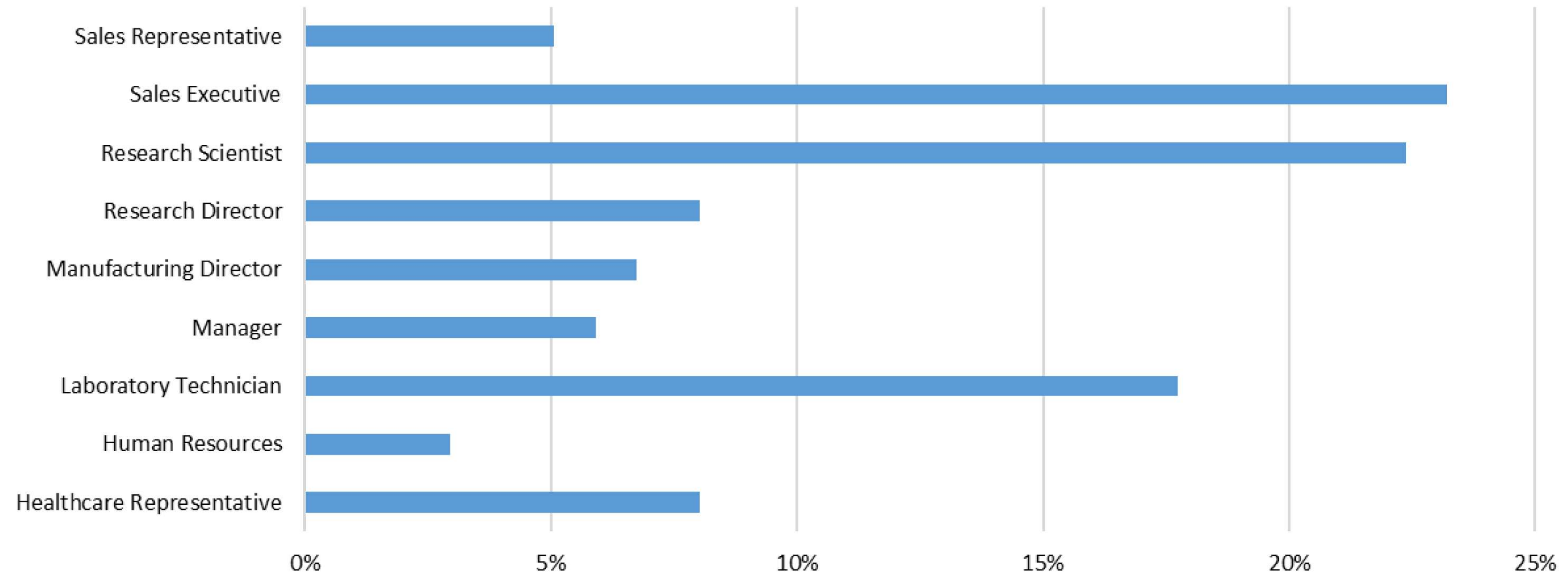Monthly Income with Attrition

Environment Satisfaction with attrition

Environment satisfaction with current manangers

Enironment satisfaction score

Legend:
- 6-8
- 3-5
- 0-2

Bar values:
- Score 1: 19.11%
- Score 2: 11.85%
- Score 3: 16.74%
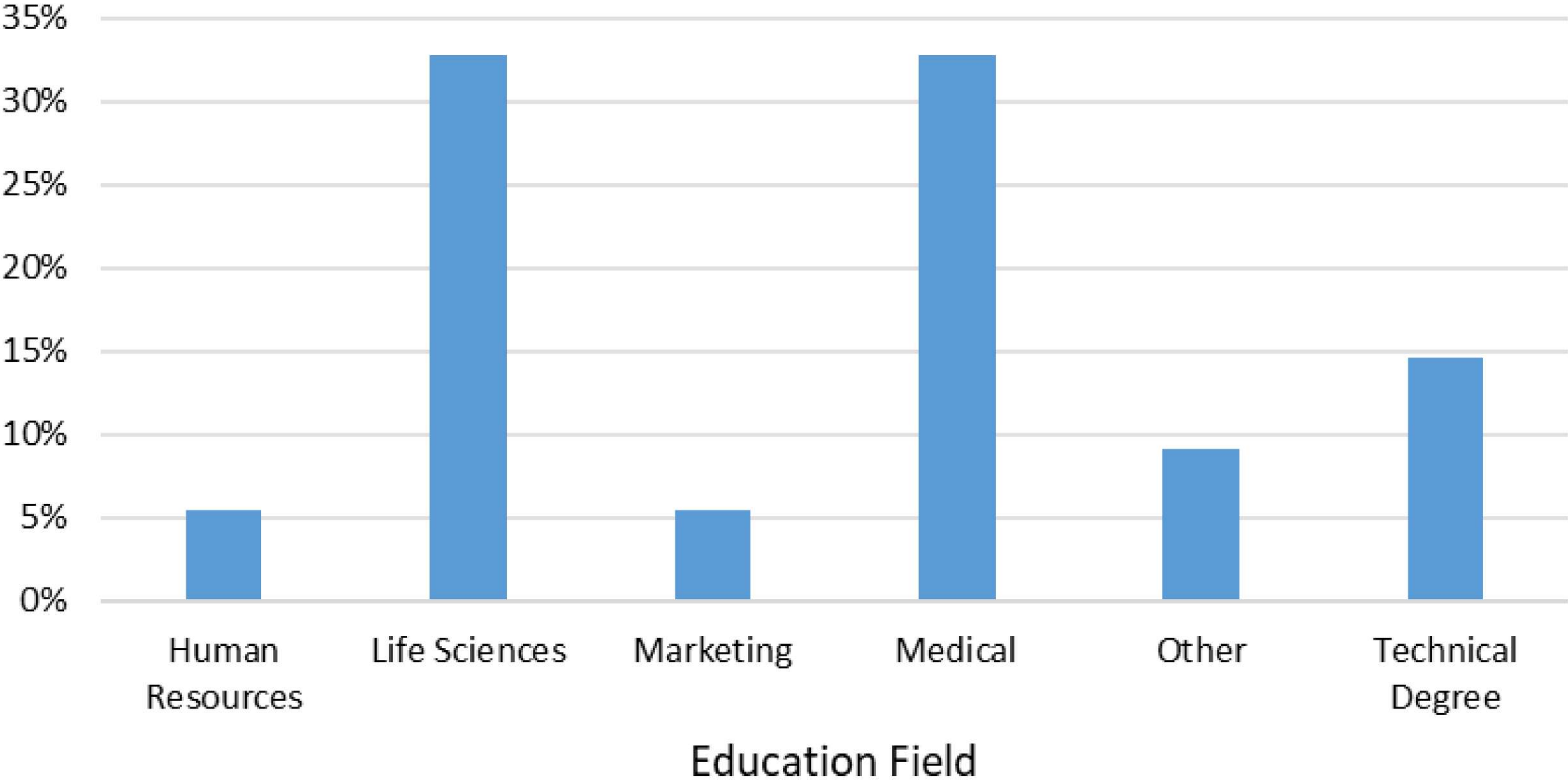- Score 4: 17.19%
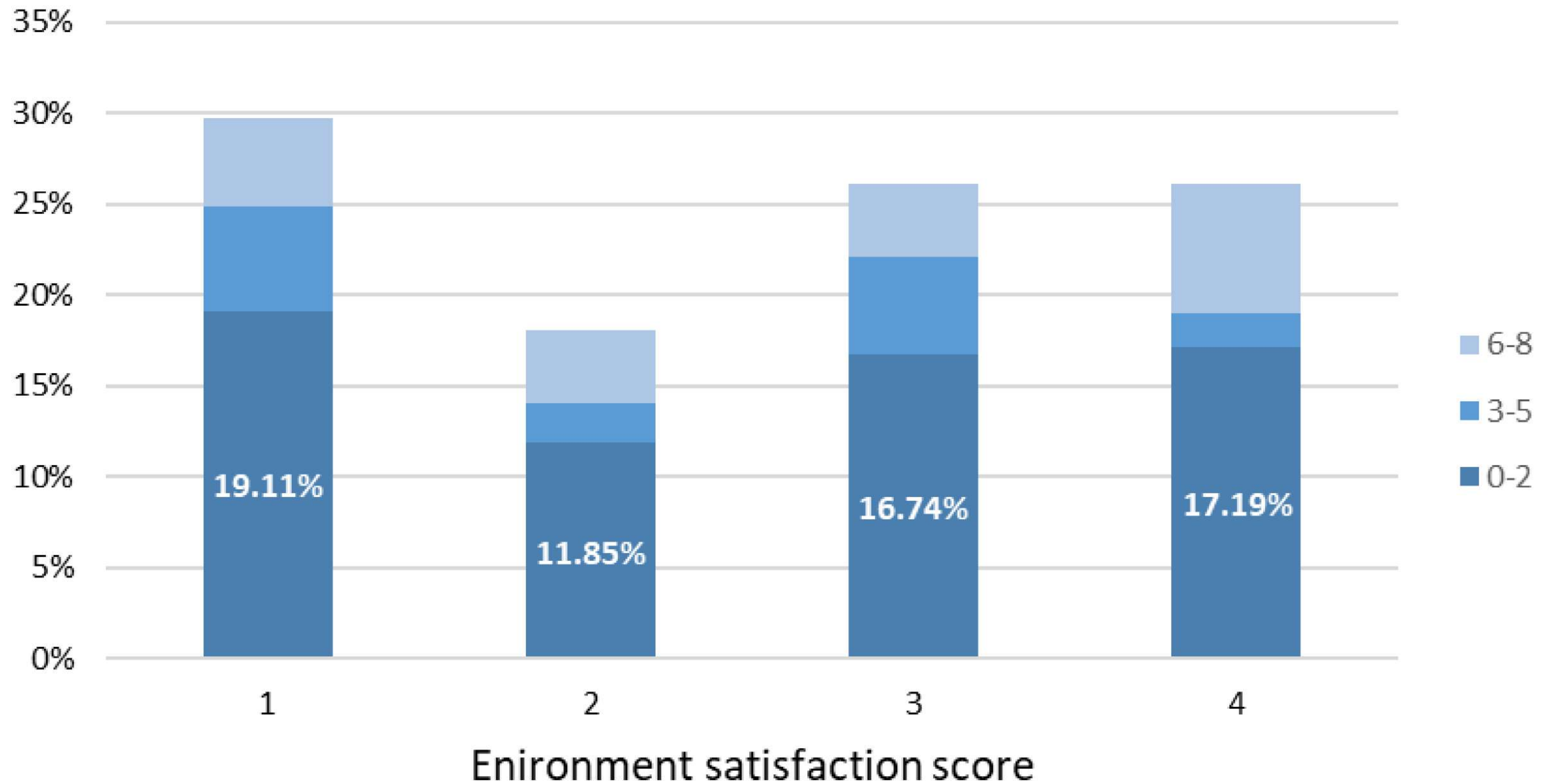
Attrition by Job Role

Sales Executives Education Field

Education Field

Dashboard

Recommendations to organizations

Recommendations

▶ **Organizations can offer competitive salaries and benefits packages to attract and retain top talent.**
This can include offering :
- Performance-based incentives
- Retirement plans
- Health
- Wellness programs.

Recommendations
Cont'd

▶ **For incompatibility between the educational background and job role, It is recommended for the organization to :**

Provide training for employees in medical and life science to help them be more fitted to their positions (especially juniors)

▶ **Find the Right Talent:**

Or in the hiring stage, it's recommended to choose those whose educational background is compatible with their roles and have a good experience in the field and passion

Recommendations
Cont'd

▶ Organizations can invest in **leadership development programs and train managers** to help them effectively lead and motivate their teams. This can help create a positive work environment and reduce the likelihood of employees are leaving due to poor management.

▶ In order to break the ice between managers and new employees, Organizations could provide social events

Recommendations
Cont'd

- Recognize and Reward Employees measuring employee performance periodically in order to promote the employees who deserve that and motivate them

- Conduct regular surveys to measure the satisfaction of employees periodically

- Closely monitor toxic employees (work environment)