



Human Resources

Strategic plan

THE TEAM

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Structura proiectului

1

- Informații generale

2

- Top factori influenți asupra ratei de retenție

3

- Privire de ansamblu asupra bazei de date:
 - Media salariului lunar
 - Ierarhizarea angajaților în funcție de venitul lunar
 - Împărțirea angajaților pe categorii de vârstă
 - Starea civilă a angajaților
 - Topul funcțiilor din companie
 - Vechimea în companie în funcție de JobRole

4

- Rata retenției în funcție de caracteristici individuale ale angajaților

5

- Rata retenției în funcție de factori organizaționali

6

- Concluzii

*Python

*SQL

*Excel

*PowerBi

Attrition Importance



Why Analyze Employee Attrition?



Modelul analizei: O Investigare a Factorilor Individuali și Organizaționali

Informații Generale

- Ce este *atriția* sau rata de fluctuație?
- **Atriția** urmărește rata la care angajații părăsesc organizația.
- Rata de fluctuație și rata de rotație sunt metrici cheie pentru retenția angajaților.
- Identificarea cauzelor atriției este esențială pentru o companie.

Rata retenției în funcție de caracteristicile angajatului

- Sex
- Varstă
- Distanța de casă
- Starea civilă
- Educație
- Nivelul de experiență în câmpul muncii
- Numărul de companii la care angajatul a mai lucrat în trecut.

Rata retenției în funcție de caracteristicile companiei

- Salariu
- Rata de creștere salarială
- Departament
- Nivelul jobului
- Efectuarea de ore suplimentare
- Implicarea la locul de muncă
- Vechimea în companie.

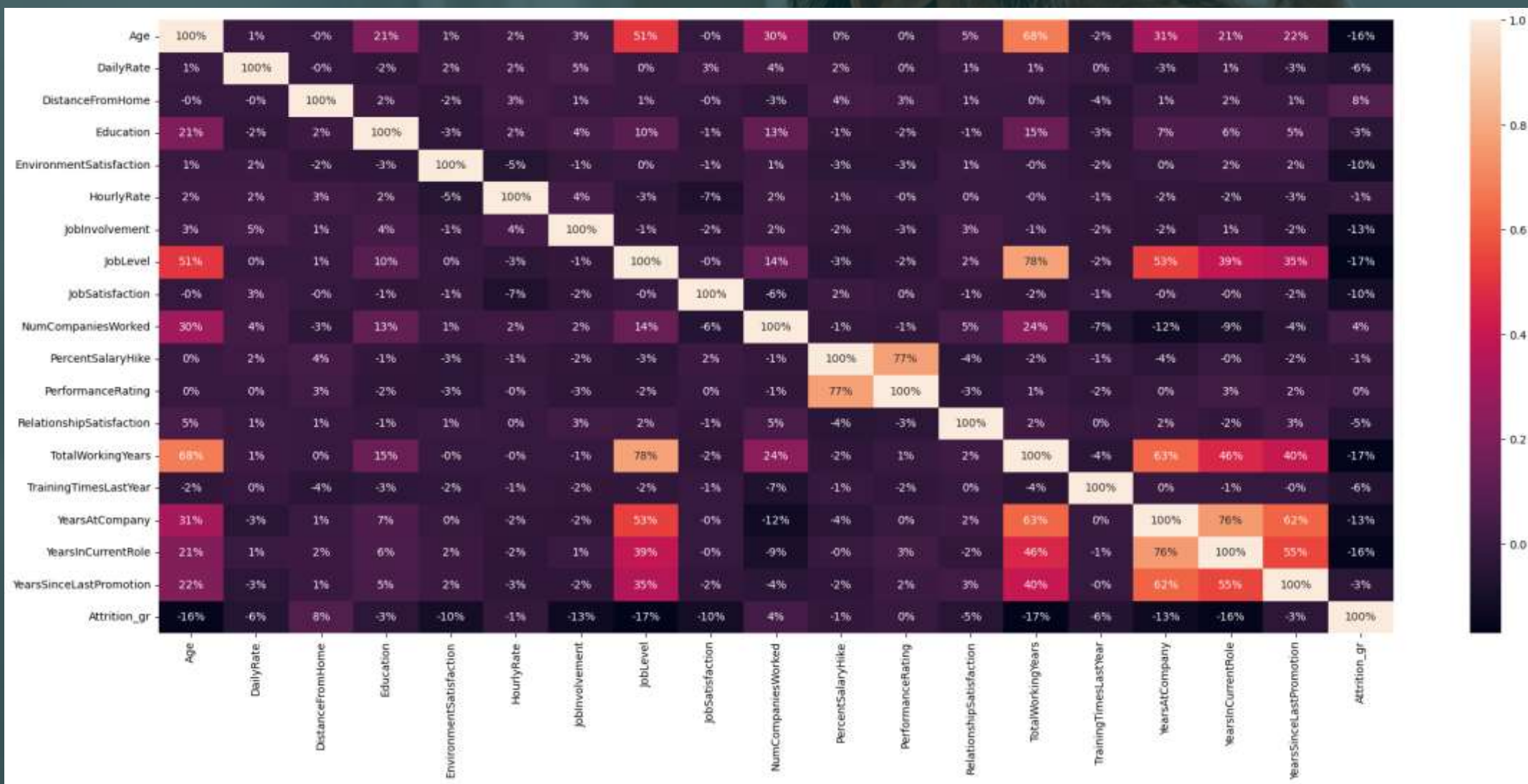
De ce analiza dupa atritie/fluctuație?

Având în vedere figura anterioară în care sunt prezentate principalele cauze ce influențează retenția, pentru o analiza structurată corect, am decis să împărțim cauzele după 2 categorii principale:

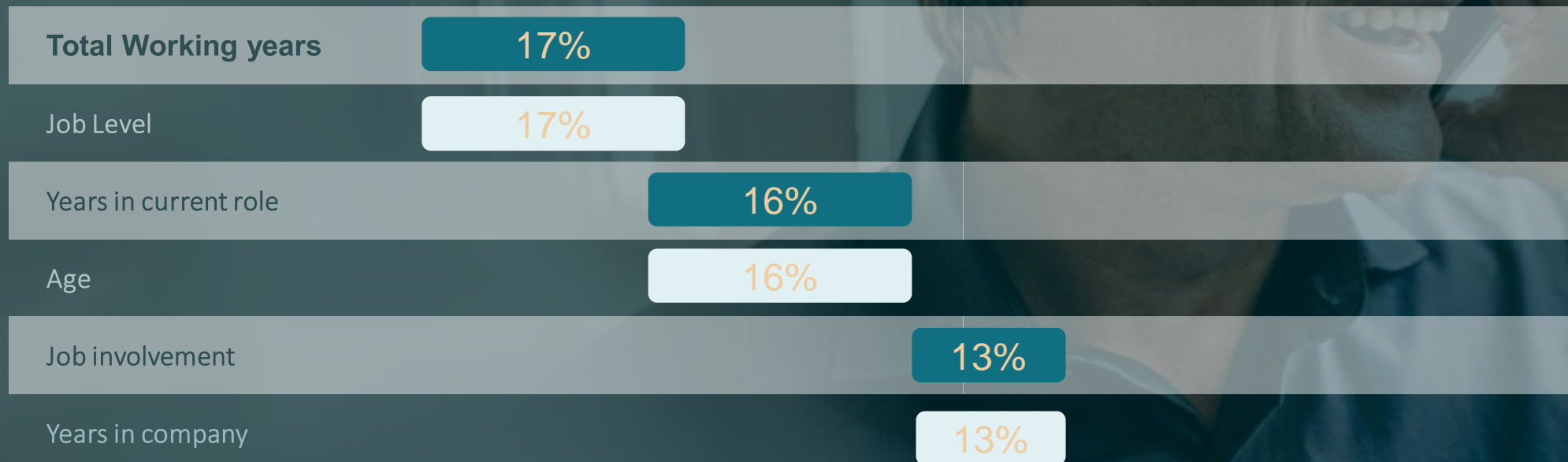
- Cauze ce țin de caracteristicile angajatului
- Cauze ce țin de structura și managementul companiei.



Top factori influenti asupra ratei de retentie(attrition)



Top factori influenti asupra ratei de retentie(attrition)



Average Monthly Salary

```
select Gender,  
        count (*) as NumberOfEmployees  
from hrDatabase  
where MonthlyIncome > (select AVG(MonthlyIncome)  
                        from hrDatabase)  
group by Gender
```

100 %

Results Messages

	Gender	Gender Count
1	Male	882
2	Female	588

➡ ①

Total count of employees

	Gender	NumberOfEmployees
1	Female	208
2	Male	285

➡ ②

Count of employees
that are paid over the
average monthly salary



Monthly Income:
Average: **6,502**
Min: **1,009**
Max: **1,999**



Women paid over Average Salary:
208 - **35%** (total 588)



Men paid over Average Salary:
285 - **32%** (total 882)

There are **294** more men than
women in the company.
There are **77** more men paid
over average salary

Rank Employees by Monthly Income

Salariul lunar al barbatilor incepe de la **1,009**

Salariul lunar al femeilor incepe de la **1,129**

```
-- Rank employees by Monthly income

SELECT top 50 EmployeeNumber,
    MonthlyIncome,
    Gender,
    RANK() OVER (ORDER BY MonthlyIncome DESC) AS Income_Rank
FROM hrDatabase
```

	EmployeeNumber	MonthlyIncome	Gender	Income_Rank
1	259	19999	Male	1
2	1035	19973	Female	2
3	1191	19943	Female	3
4	226	19926	Female	4
5	787	19859	Male	5
6	1282	19847	Male	6
7	1038	19845	Female	7
8	1740	19833	Male	8
9	1255	19740	Male	9
10	1338	19717	Male	10

	EmployeeNumber	MonthlyIncome	Gender	Income_Rank
876	1273	1118	Male	876
877	243	1102	Male	877
878	1928	1091	Male	878
879	1876	1081	Male	879
880	1056	1052	Male	880
881	1012	1051	Male	881
882	701	1009	Male	882
581	1624	1569	Female	581
582	1839	1514	Female	582
583	201	1483	Female	583
584	1079	1416	Female	584
585	1427	1359	Female	585
586	1433	1261	Female	586
587	411	1200	Female	587
588	1974	1129	Female	588

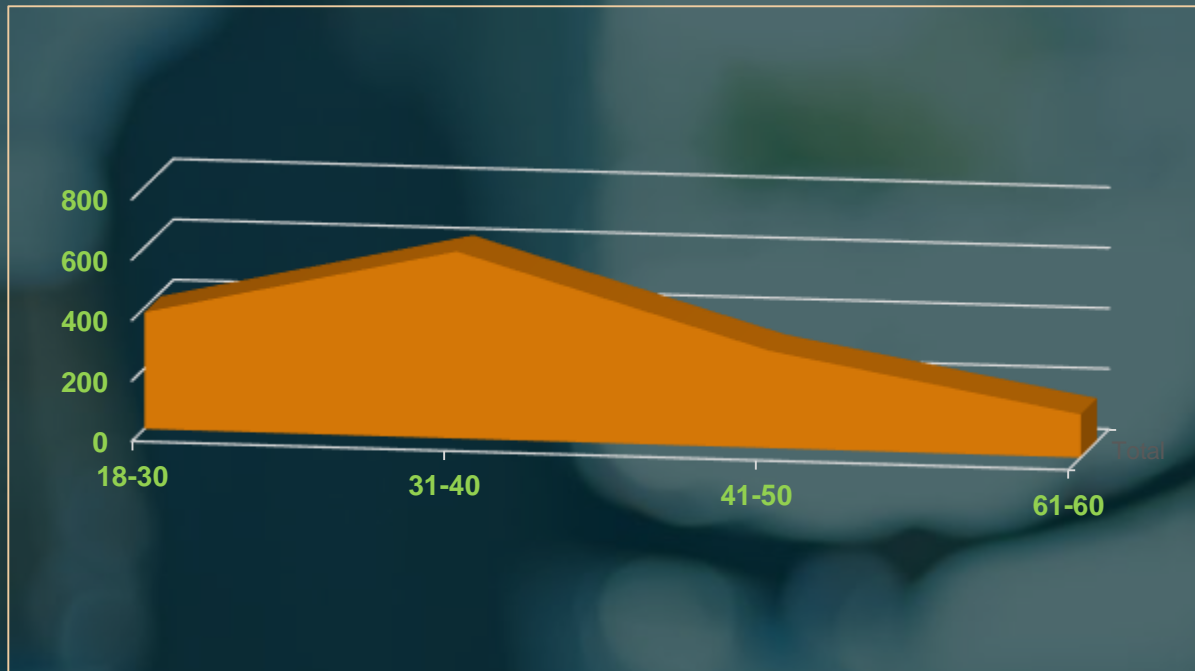
Concluzie:

- Femeile sunt mai puține ca număr decât bărbații.
- Totuși, femeile sunt plătite în procent mai mare cu salariul peste medie
- Salariul de încadrare este mai mare decât al bărbaților.

Age group count

- Predomina categoria de varstă **31- 40**
- Pe măsură ce vârsta crește, scade numărul angajaților

100 %		
Results Messages		
	Age_Group	Num_Employees
1	18-30	386
2	51-60	143
3	31-40	619
4	41-50	322

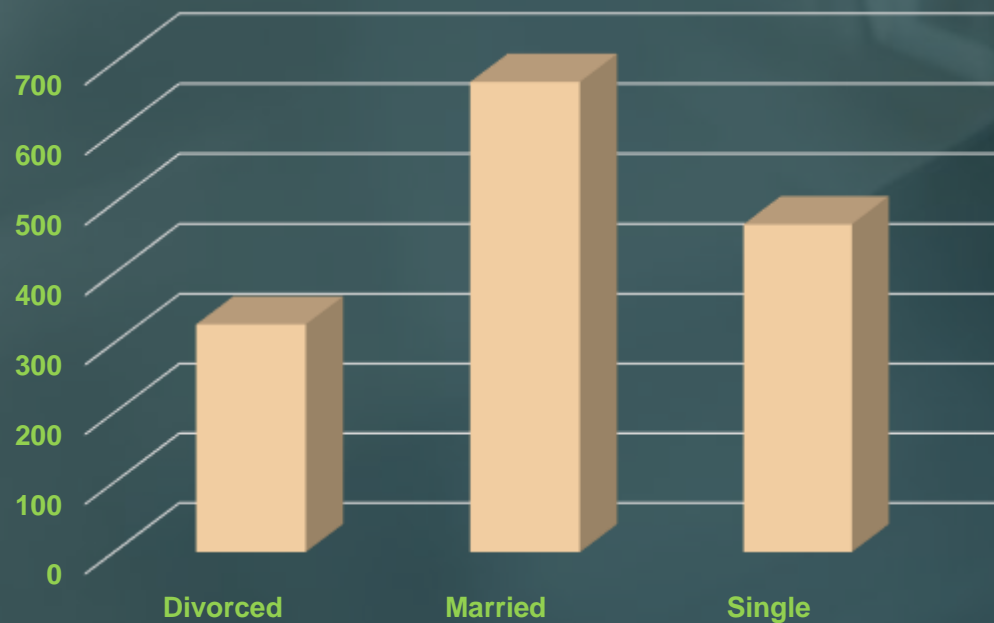


- Vârsta minimă: **18 ani**
- Vârsta maximă: **60 de ani**

Marital Status Count

➡

Divorced: **327**
Married: **673**
Single: **470**



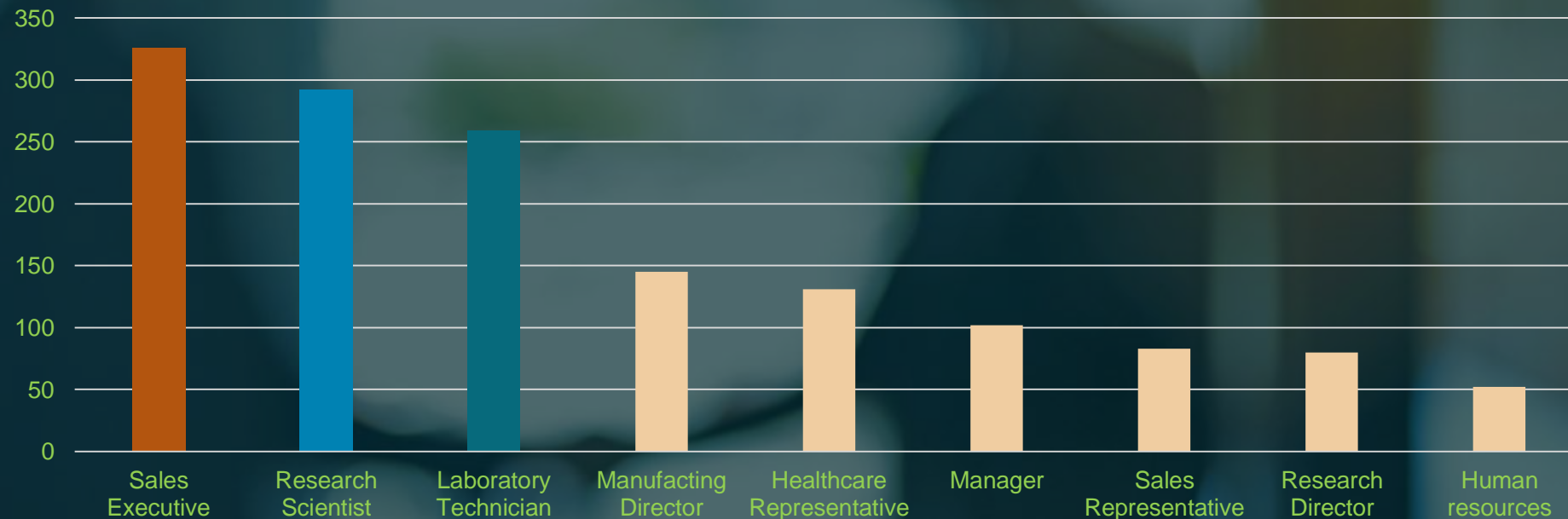
➡

Divorced: **22%**
Married: **46%**
Single: **32%**

Job Role count

- **Top 3 Job Roles:**
- **Sales Executive**
- **Research Scientist**
- **Laboratory Technician**
- **Lowest number of employees:**
- **Human resources**

Job Role	Count
Sales Executive	326
Research Scientist	292
Laboratory Technician	259
Manufacturing Director	145
Healthcare Representa	131
Manager	102
Sales Representative	83
Research Director	80
Human resources	52

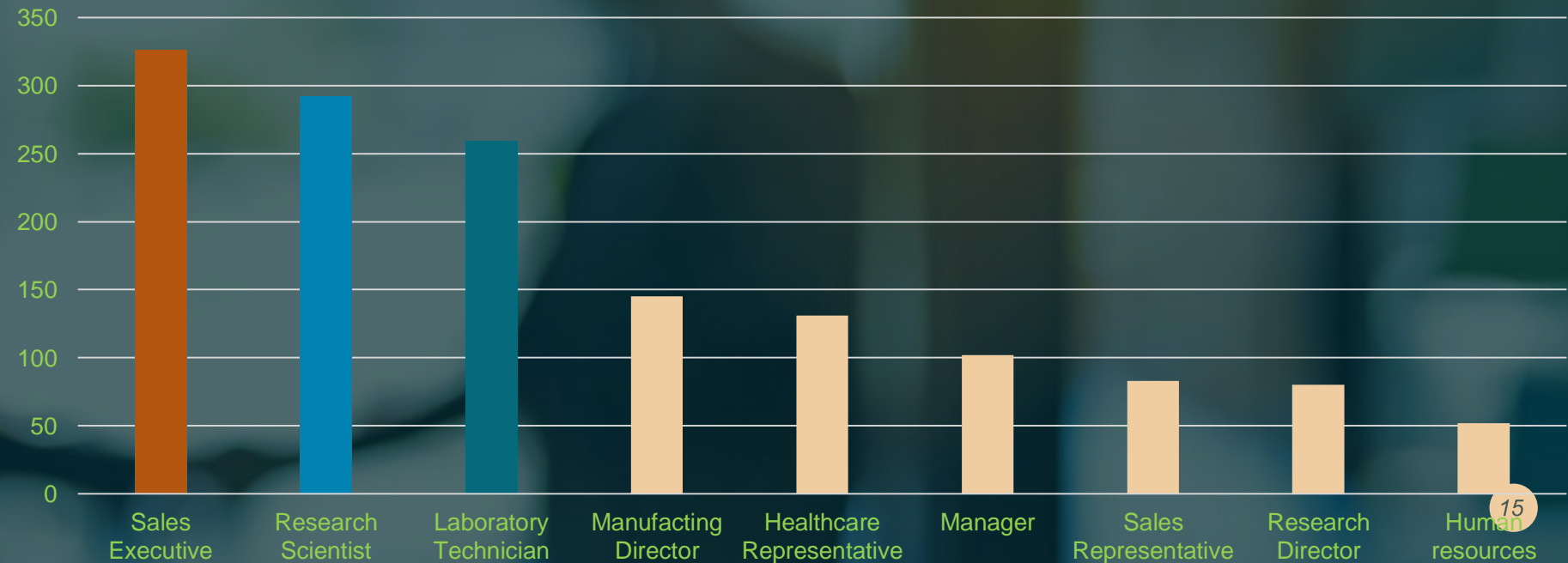


Length of Service

- **Top 3 Length of Service Jobs:**
- **Manager**
- **Research Director**
- **Healthcare Representative**

	JobRole	Avg_Years_At_Company	Avg_Years_In_Current_Role
1	Manager	14	6
2	Research Director	10	6
3	Healthcare Representative	8	4
4	Sales Executive	7	4
5	Manufacturing Director	7	4
6	Human Resources	5	3
7	Laboratory Technician	5	3
8	Research Scientist	5	3
9	Sales Representative	2	2

- **Top 3 Job Roles:**
- **Sales Executive**
- **Research Scientist**
- **Laboratory Technician**



Attrition analysis based on employee traits and factors

Attrition

Continue employment

Resign contract

Gender

Female

Male

AgeGroup

18-25

26-35

36-45

46-60

Education

Human Resources

Life Sciences

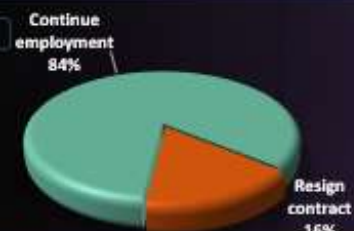
Marketing

Medical

Other

Technical Degree

1. General info



2. Gender

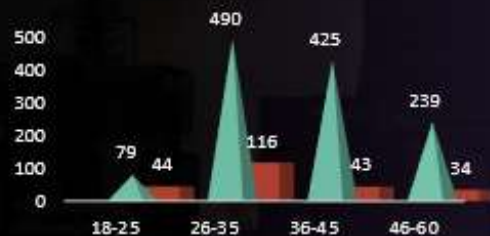
Continue employment Resign contract



Distance from home



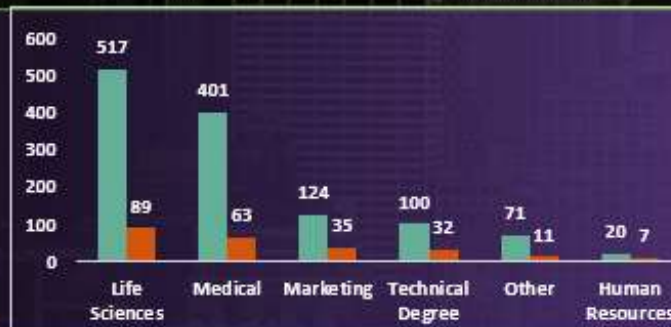
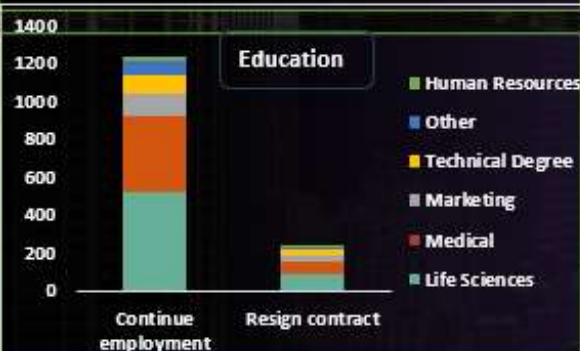
Age group



Experience Level



Marital Status



No. of Companies worked



Attrition Rate



Resign contract



Resign contract



Distance

Close

Far

Medium

MaritalStatus

Divorced

Married

Single

ExperienceLevel

Junior

Mid-Senior

Senior

JobRole

Healthcare Representative

Human Resources

Laboratory Technician

Manager

Manufacturing Director

Research Director

Research Scientist

Sales Executive

Sales Representative

Overall Attrition rate

CONTINUE EMPLOYMENT

1,233- 84%



RESIGN CONTRACT

237- 16%

Attrition based on Gender

RESIGN CONTRACT MALE

150 - 17%

CONTINUE EMPLOYMENT
MALE

732 - 83%

GRAND TOTAL MALE

588

RESIGN CONTRACT FEMALE

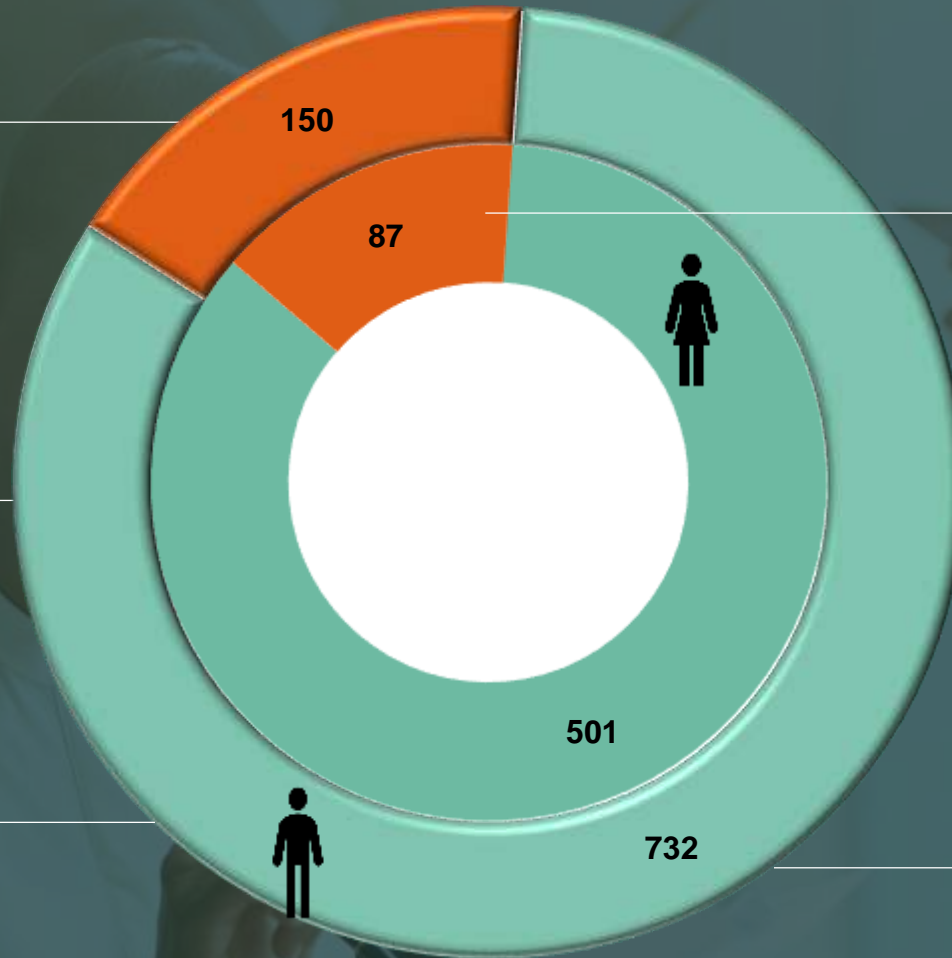
87 - 15%

CONTINUE EMPLOYMENT FEMALE

501 - 85%

GRAND TOTAL FEMALE

882



Attrition based on Age

AGE 18-25

Total: 123

Resign contract: 44 - 36%

Continue employment: 79 - 64%

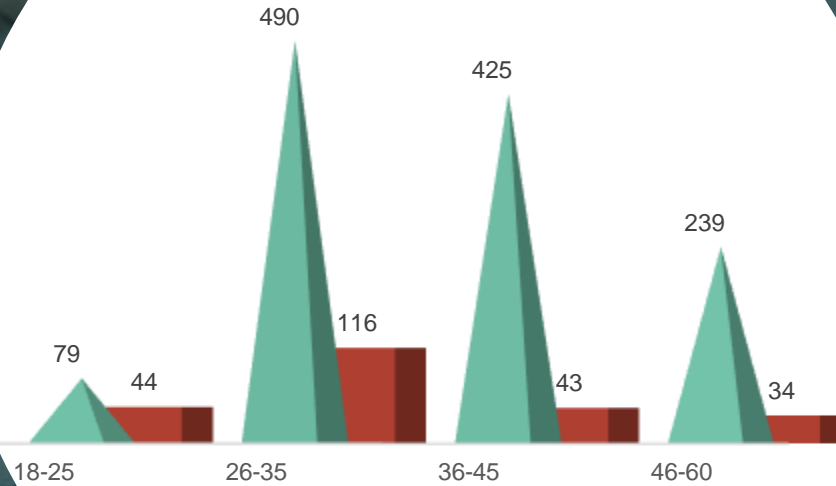
AGE 26-35

Total: 490

Resign contract: 116 - 19%

Continue employment: 490 - 81%

Continue employment Resign contract



AGE 36-45

Total: 468

Resign contract: 43 - 9%

Continue employment: 425 - 91%

AGE 46-60

Total: 273

Resign contract: 34 - 12%

Continue employment: 239-88%

Attrition based on Distance from Home

CLOSE

Total: 1.026

Resign contract: 144 - 14%

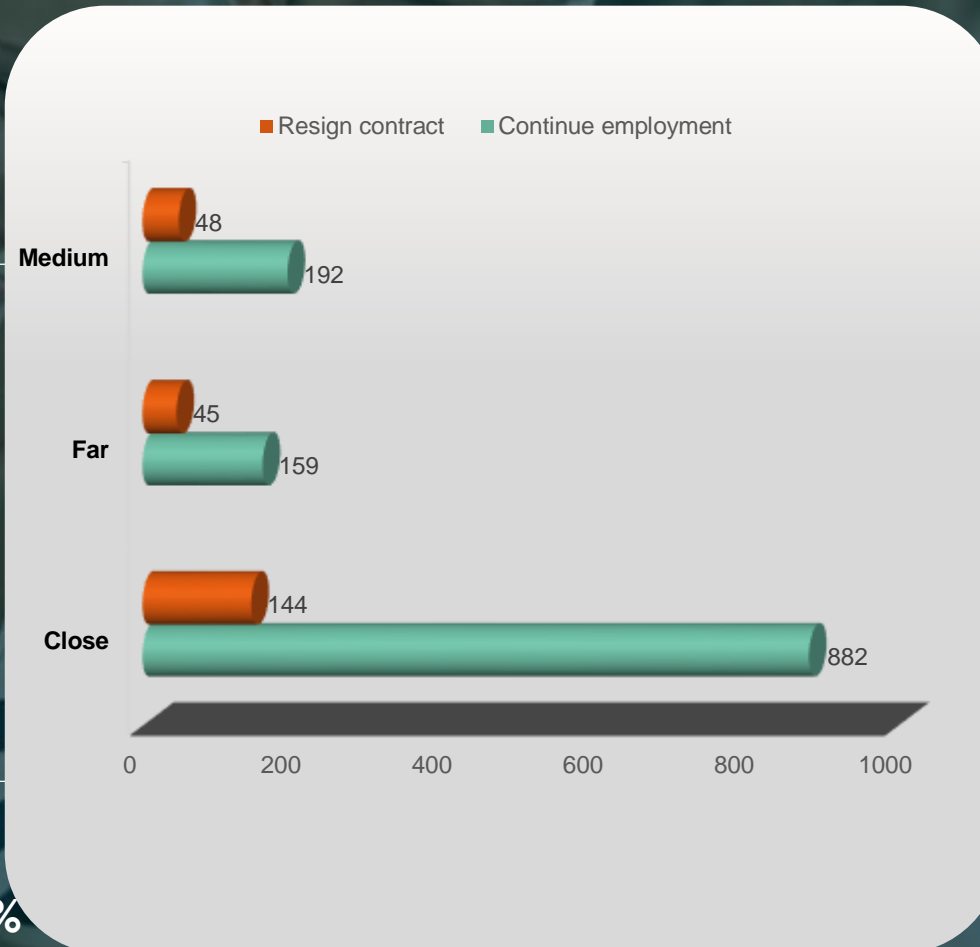
Continue employment: 882 - 86%

MEDIUM

Total: 240

Resign contract: 48 - 20%

Continue employment: 192 - 80%



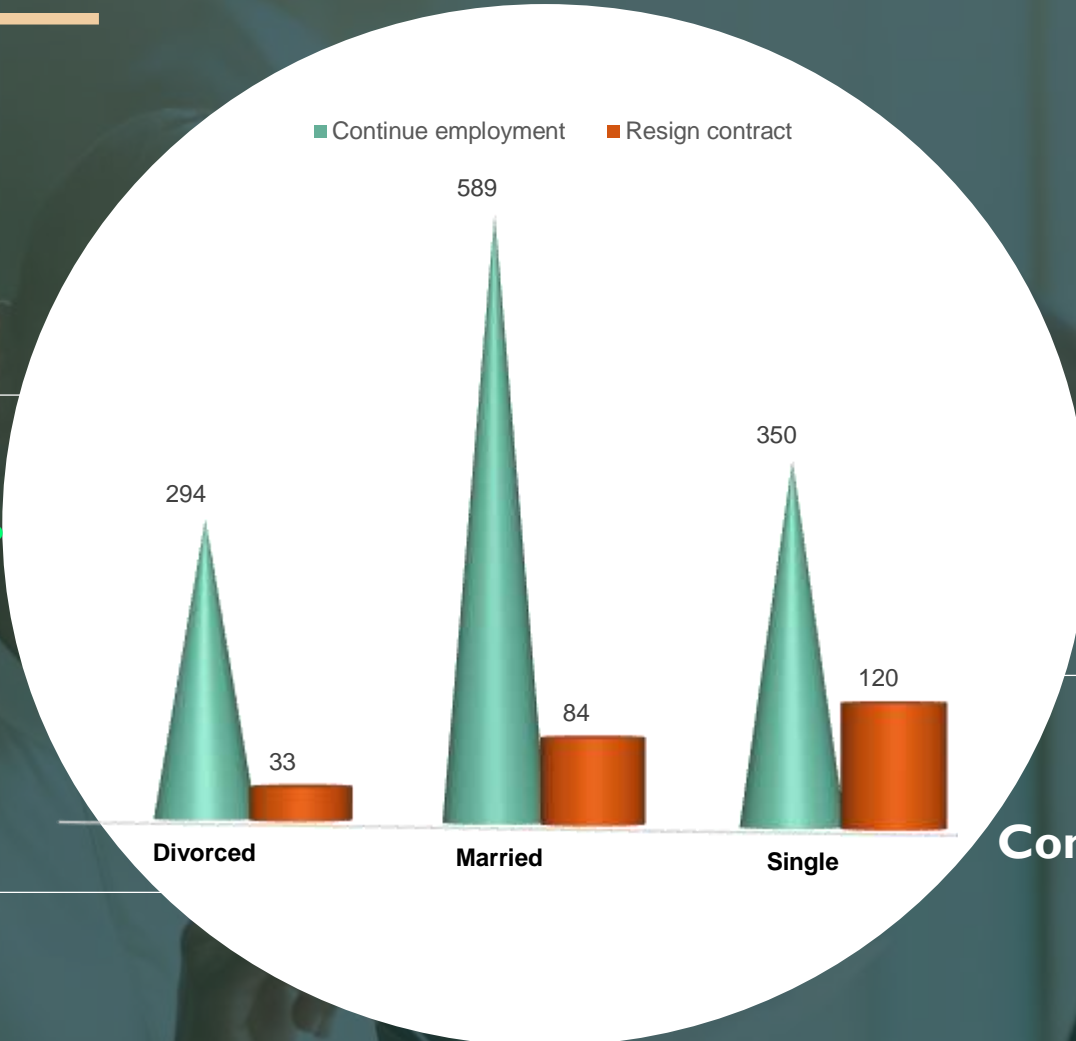
FAR

Total: 204

Resign contract: 45 - 22%

Continue employment: 159 - 78%

Attrition based on Marital Status



DIVORCED

Total: 327

Resign contract: 33 – 10%

Continue employment: 294 – 90%

MARRIED

Total: 673

Resign contract: 84 – 12%

Continue employment: 589 – 88%

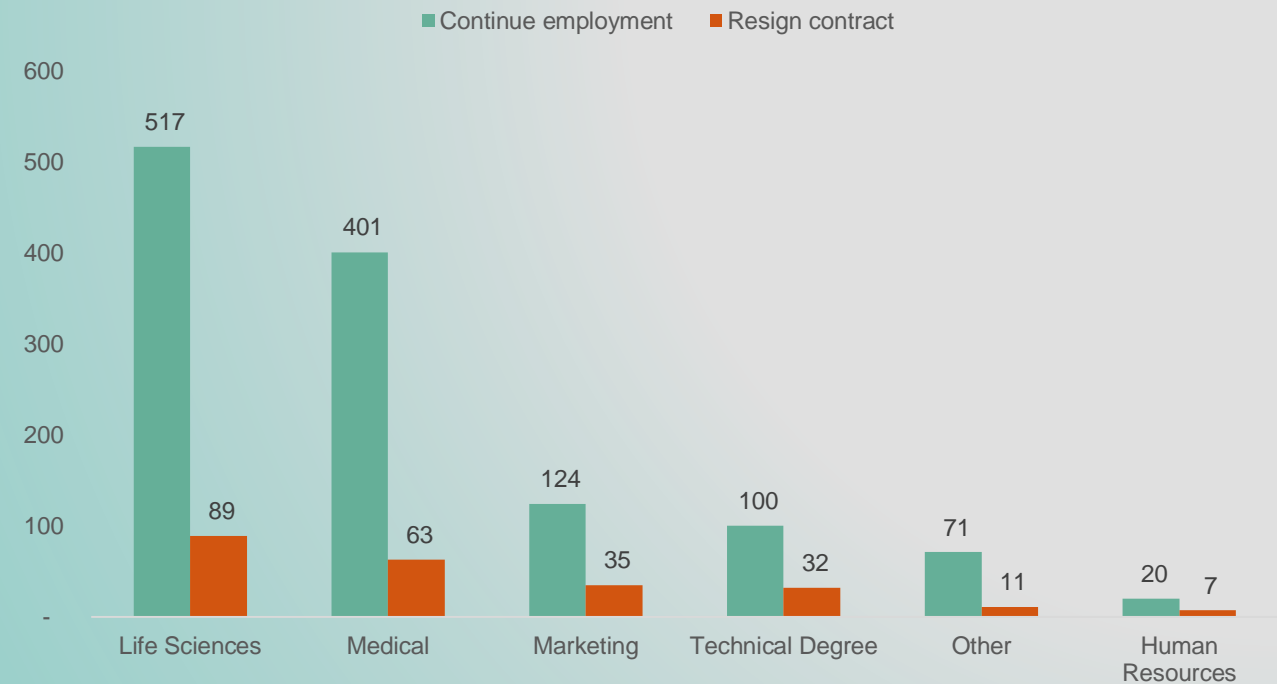
SINGLE

Total: 470

Resign contract: 120 – 26%

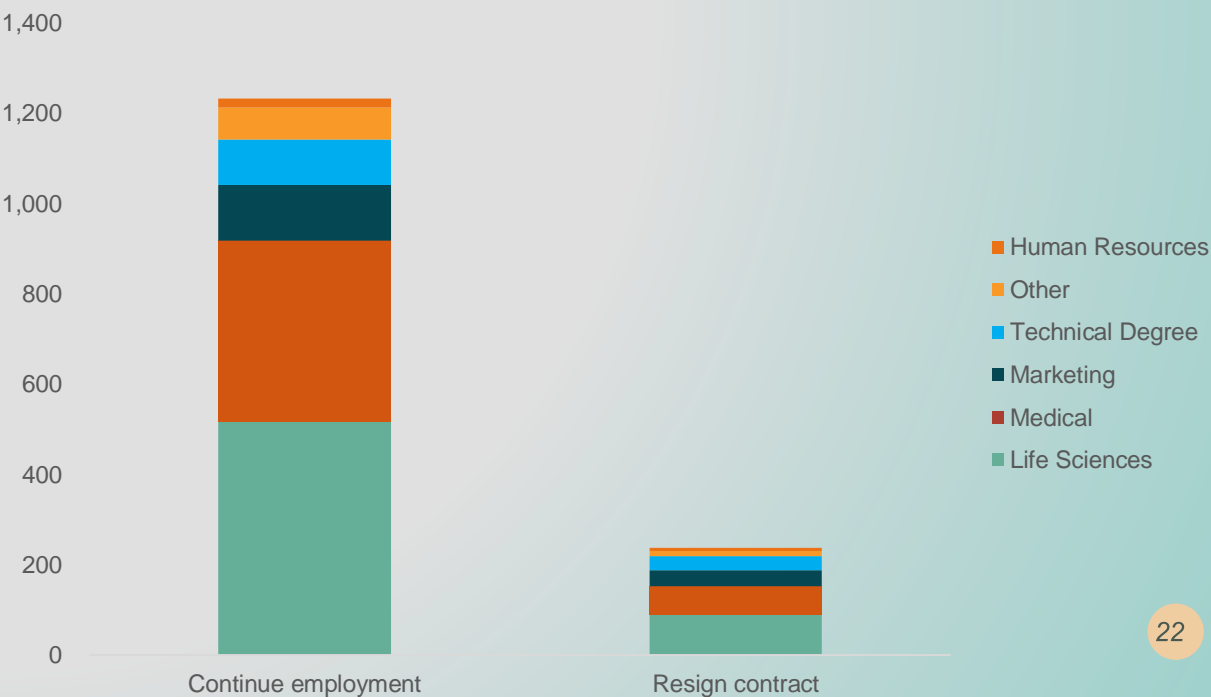
Continue employment: 350 – 74%

Attrition based on Education



Retention percentage based on Education

Education Field	Continue employment	Resign contract
Life Sciences	85%	15%
Medical	86%	14%
Marketing	78%	22%
Technical Degree	76%	24%
Other	87%	13%
Human Resources	74%	26%
Grand Total	84%	16%



Attrition based on Experience Level

JUNIOR

Total: 123

Resign contract: 54 – 44%

Continue employment: 69 – 56%

MID-SENIOR

Total: 193

Resign contract: 37 – 19%

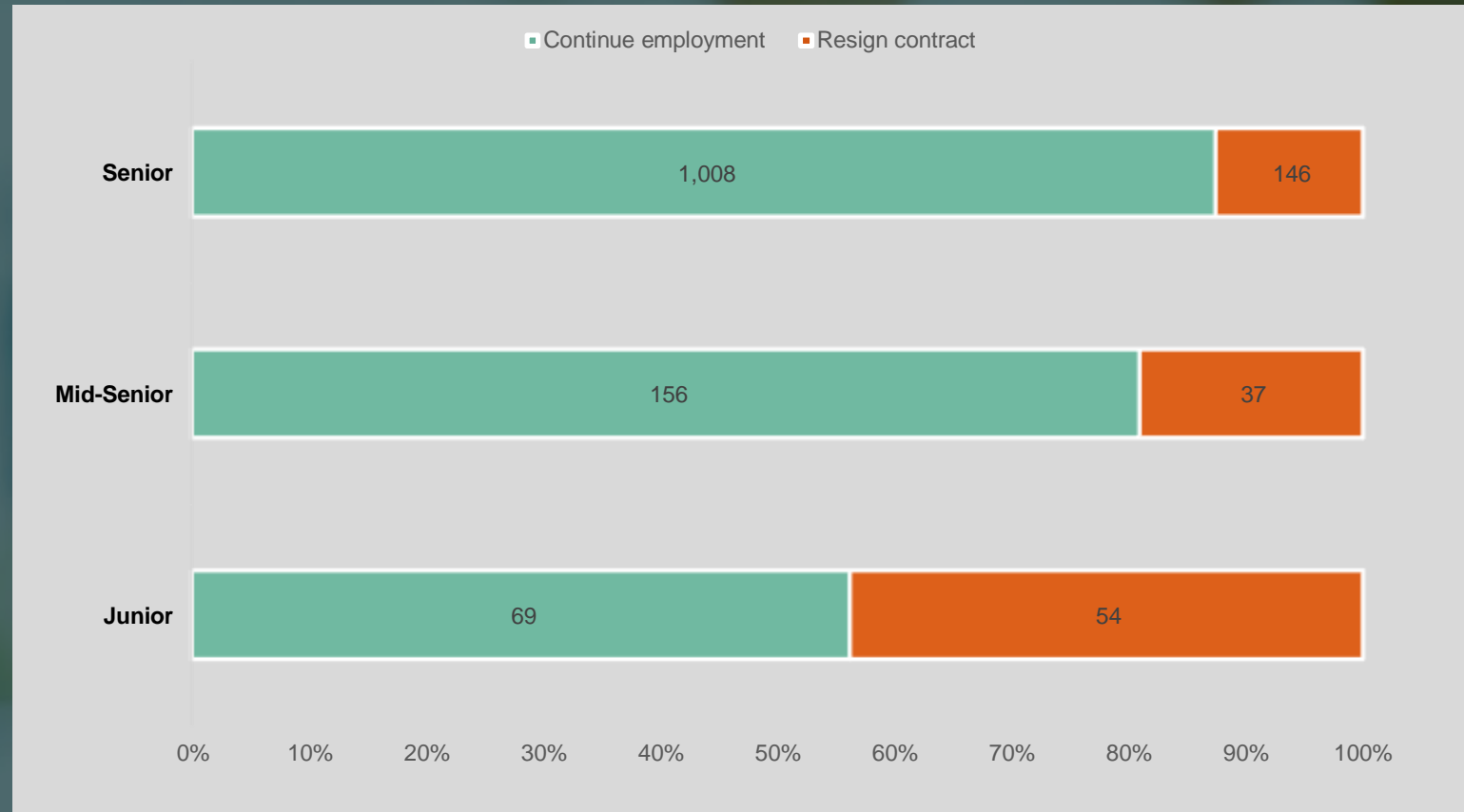
Continue employment: 156 – 81%

SENIOR

Total: 1.154

Resign contract: 146 – 13%

Continue employment: 1.008 – 87%



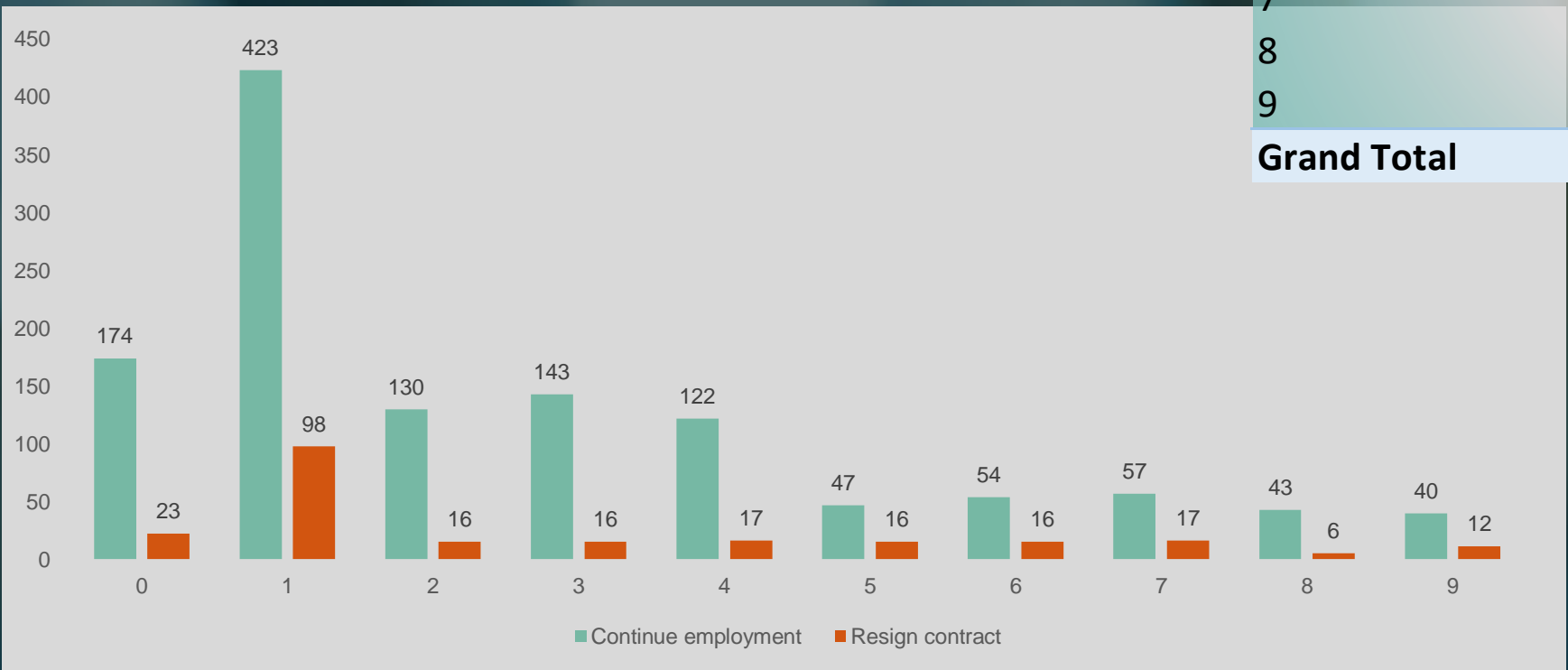
Attrition based on No. of Companies worked

Top Resign contract:

5 Companies worked – 25%

Top Continue employment:

3 Companies worked – 10%



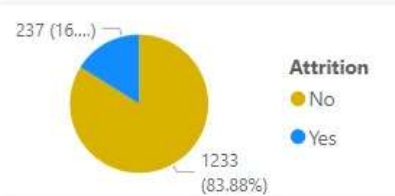
Row Labels	Continue employment	Resign contract
0	88%	12%
1	81%	19%
2	89%	11%
3	90%	10%
4	88%	12%
5	75%	25%
6	77%	23%
7	77%	23%
8	88%	12%
9	77%	23%
Grand Total	84%	16%

Most of the employees have worked for only 1 other company before: 423.

The retention rate for this category is: 19%

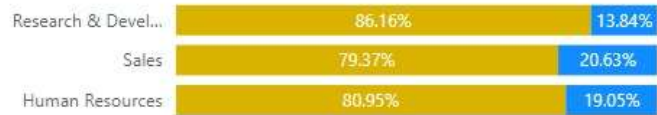
Informatii generale despre retentie

Attrition analysis by company factors



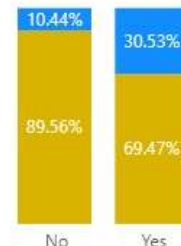
No Yes

Attrition by department



Human Resources Research & Development Sales

Attrition by overtime demand



Employees:

1470

Average Age:

37

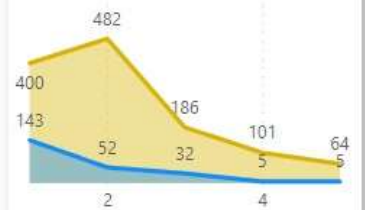
Avg years in company:

7.0

Average Income:

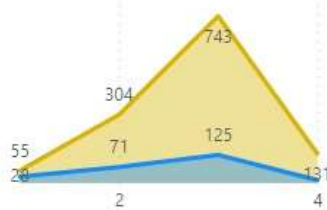


Attrition by job level



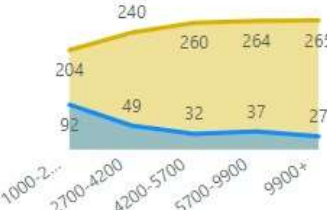
1 2 3 4 5

Attrition by job involvement



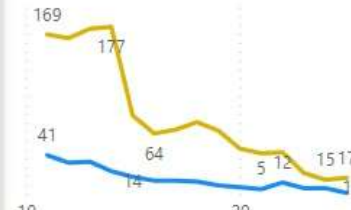
1 2 3 4

Attrition by monthly income

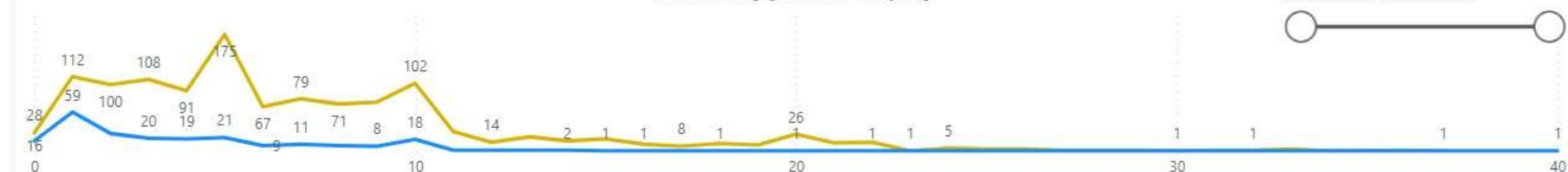


1009 19999

Attrition by salary hike



Attrition by years in company

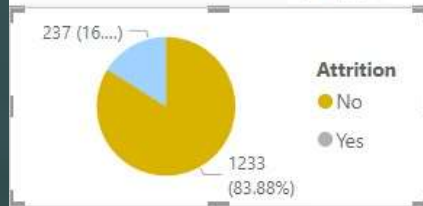


Attrition “Yes” information

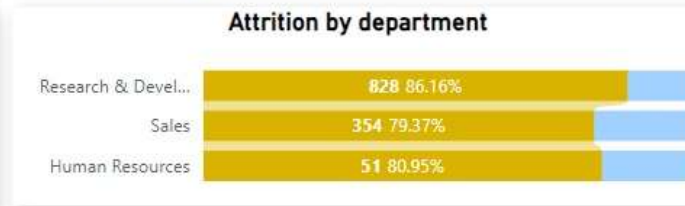


Attrition “No” information

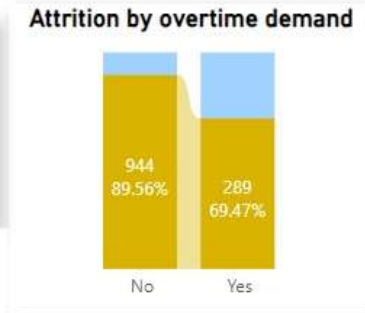
Attrition analysis by company factors



No Yes



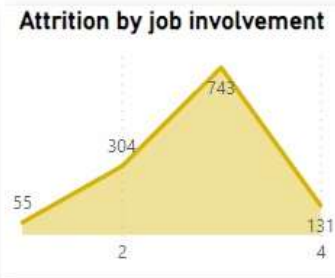
Human Resources Research & Development Sales



No Yes



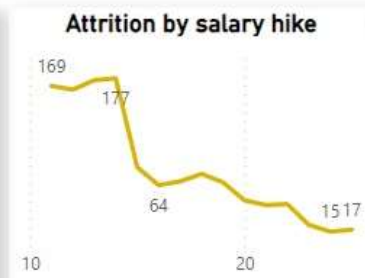
1 2 3 4 5



1 2 3 4



1009 19999



10 20

Employees:

1233

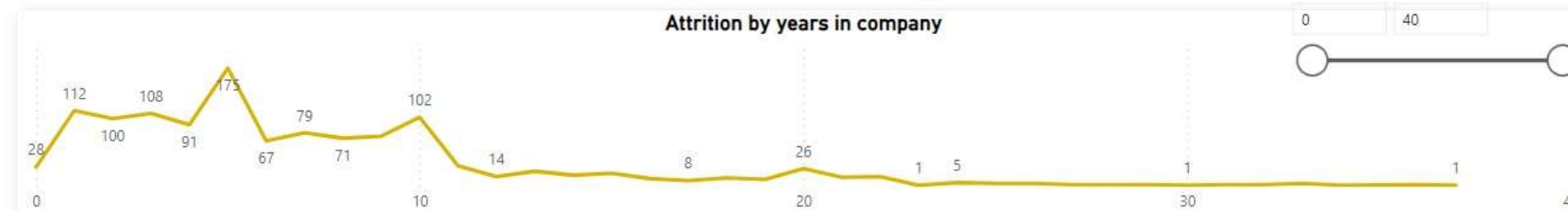
Average Age:

38

Avg years in company:

7.4

Average Income:



0 40



Attrition “Yes” critical points





Attrition “No” critical points





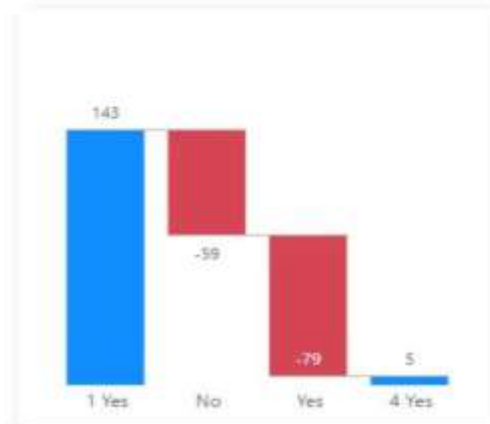
**Attrition “Yes” decrease
Job level from 1 to 5**

Total decrease:
143 to 5138
- 96,50%

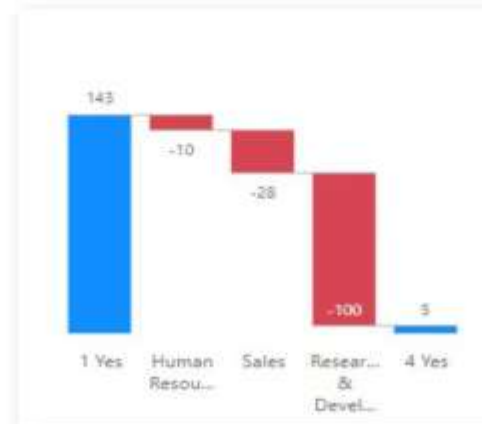
Top department:
Research and development
100 employees
78% from total decrease

Top income group:
1000-2700 (entry level)
91 employees
65% from total decrease

Overtime accord



Department



Monthly income





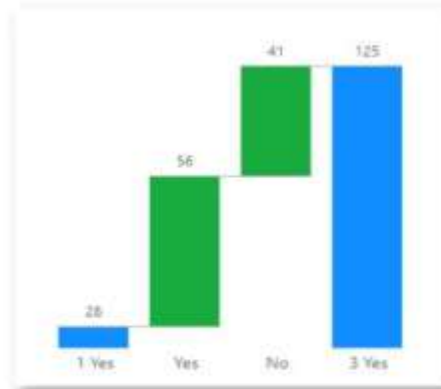
Attrition “Yes” increase Job involvement from 1 to 3

Total increase:
28 to 125.....120
346 %

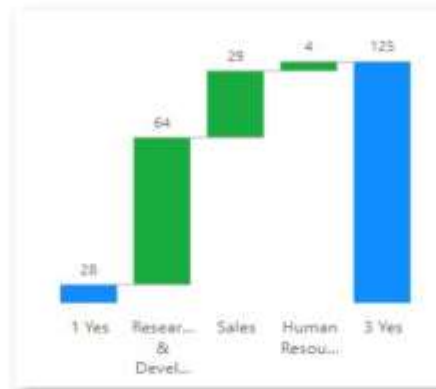
Top department:
Research and development
64 employees
54% from total increase

Top income group:
1000-2700 (entry level)
37 employees
31% from total decrease

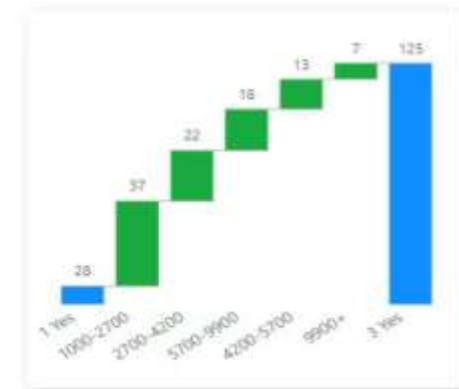
Overtime accord



Department



Monthly income





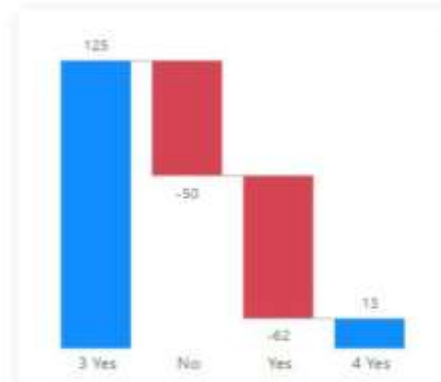
**Attrition “Yes” decrease
Job involvement from 3 to 4**

Total decrease:
125 to 13112
- 90%

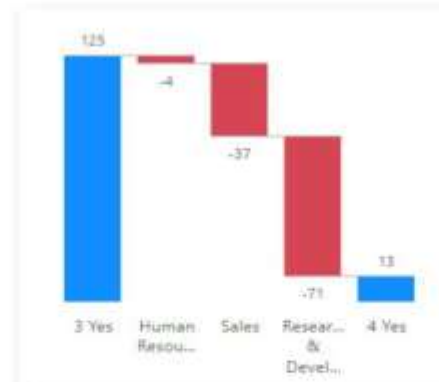
Top department:
Research and development
71 employees
63% from total decrease

Top income group:
1000-2700 (entry level)
44 employees
39% from total decrease

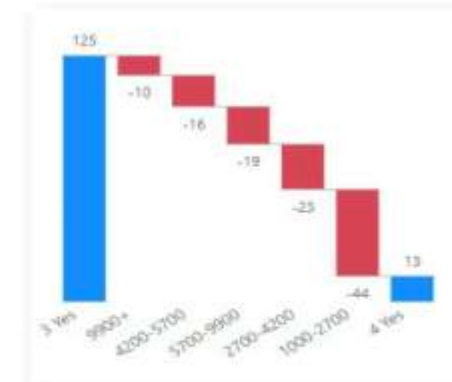
Overtime accord

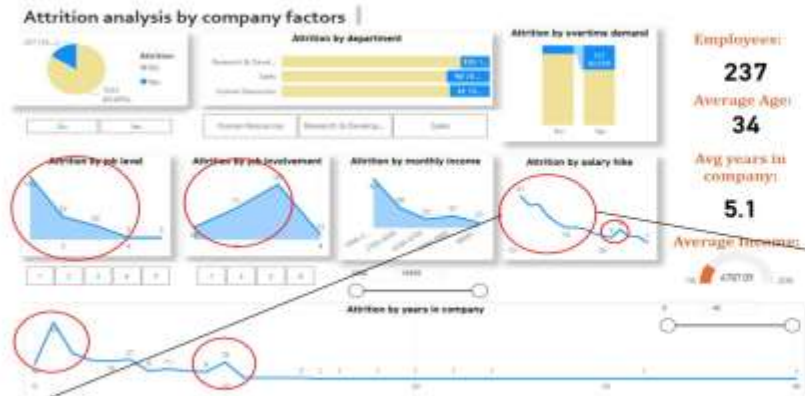


Department



Monthly income





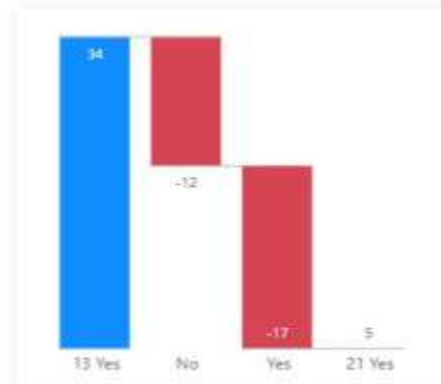
Attrition “Yes” decrease
Salary hike from 13% to 21%

Total decrease:
 34 to 529
 - 86%

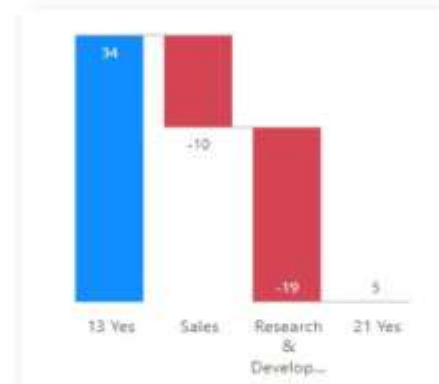
Top department:
 Research and development
 19 employees
 65% from total decrease

Top income group:
 1000-2700 (entry level)
 2700-4200
 10 employees
 34% from total decrease

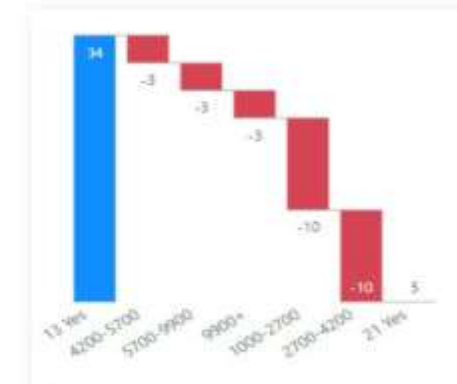
Overtime accord



Department



Monthly income





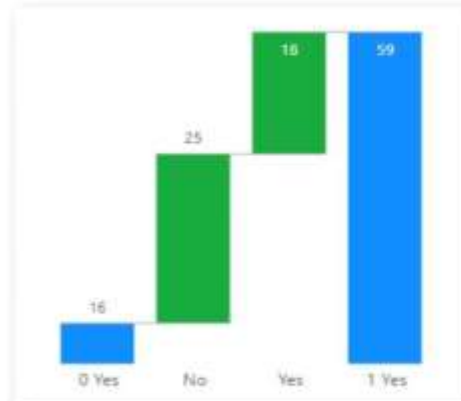
Attrition “Yes” increase Years in co. from 0 to 1

Total increase:
16 to 5943
268%

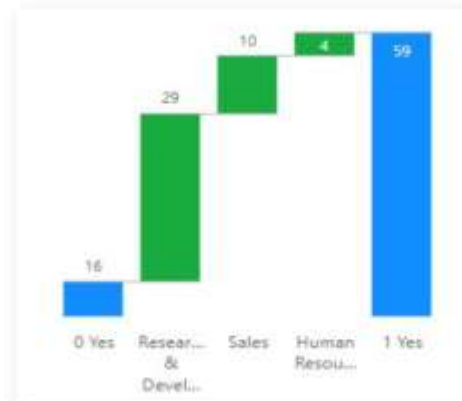
Top department:
Research and development
29 employees
67% from total increase

Top income group:
1000-2700 (entry level)
27 employees
62% from total increase

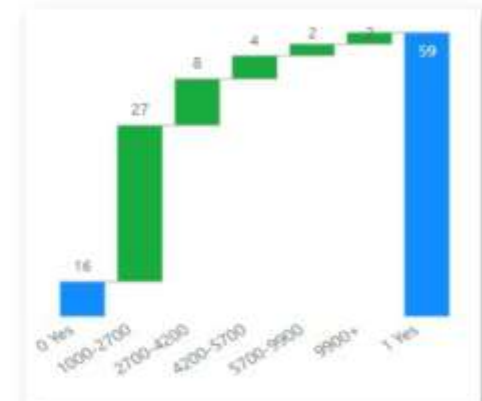
Overtime accord



Department



Monthly income





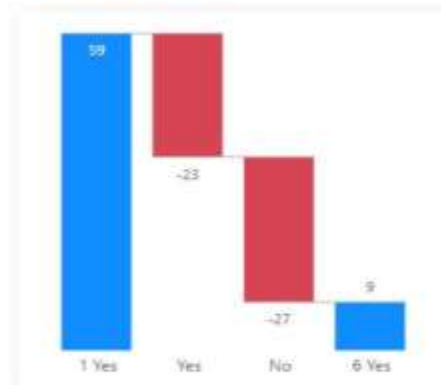
Attrition “Yes” decrease Years in co. from 1 to 6

Total decrease:
59 to 9.....50
- 85%

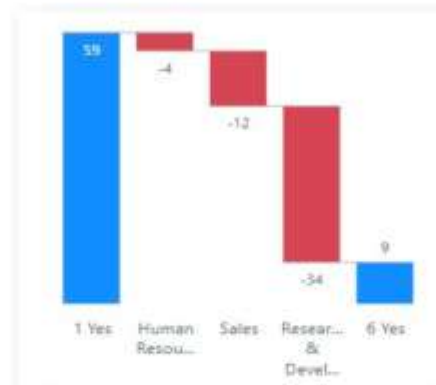
Top department:
Research and development
34 employees
68% from total decrease

Top income group:
1000-2700 (entry level)
36 employees
72% from total decrease

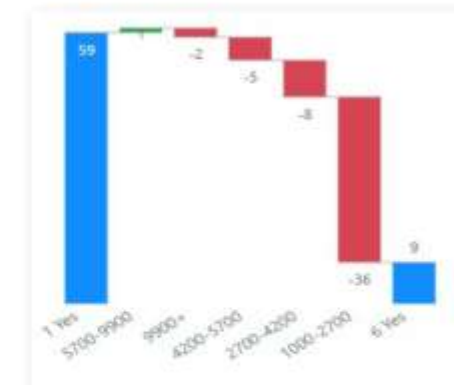
Overtime accord



Department



Monthly income





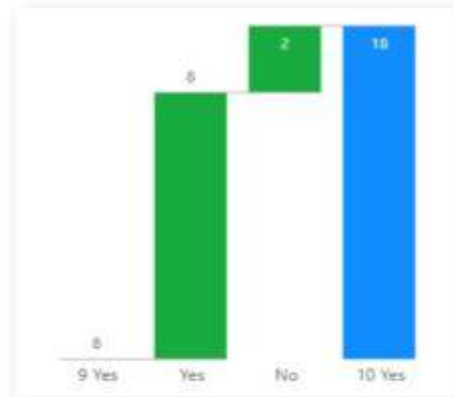
Attrition “Yes” increase Years in co. from 9 to 10

Total increase:
8 to 1810
125%

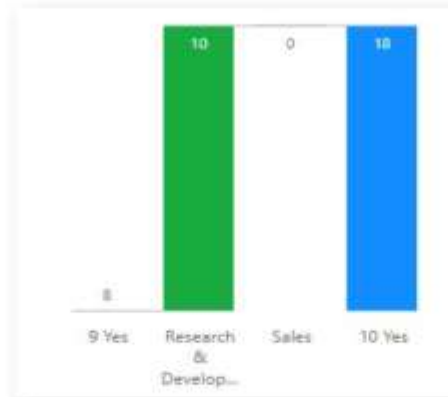
Top department:
Research and development
10 employees
100% from total increase

Top income group:
5700-9900
3 employees
33% from total increase

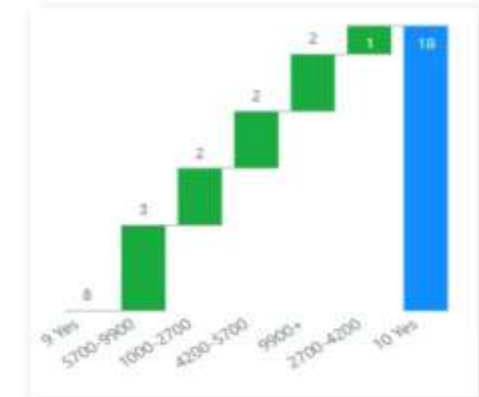
Overtime accord



Department



Monthly income



Concluzii



- ✓ Departamentul cu cea mai mare influenta in analiza retritiei este Research and Development. 56% dintre angajati activeaza in acest departament .
- ✓ Pe nivel de fiecare departament in parte rata de atritie este in medie de 20%, o valoare acceptabila.
- ✓ Nivelul de salariu cu cea mai mare influenta in analiza retritiei este cel cuprins intre 1000 si 2700, entry level .
- ✓ Cu cat nivelul jobului este mai crescut cu atat nivelul de atritie scade.
- ✓ Cu cat nivelul salarial este mai crescut cu atat nivelul de atritie scade.
- ✓ Faptul ca nivelul de atritie scade o data cu nivelul salarial, ne arata o pozitionare corecta a companiei in piata muncii din acest punct de vedere.
- ✓ Odata cu cresterea numarului de ani in companie, angajatii nostri sunt din ce in ce mai putin tentati de o schimbare a companiei. Un trend sanatos pentru compania noastra.

THANK YOU!

