RIFKI MUH ARBIAN

BUSINESS INTELLIGENCE

PEOPLE ANALYTICS

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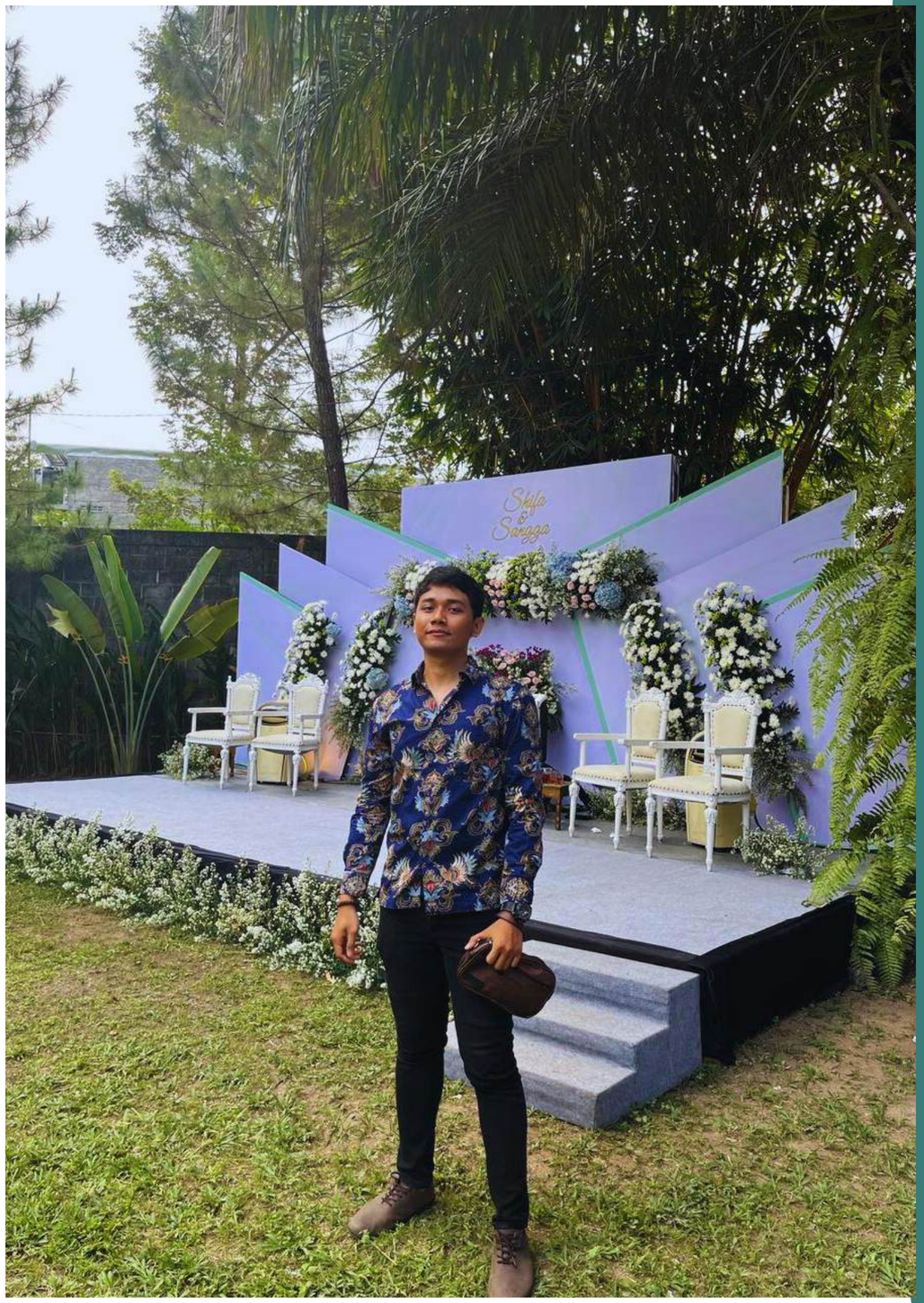
RIFKI MUJI ARDIANSYAH

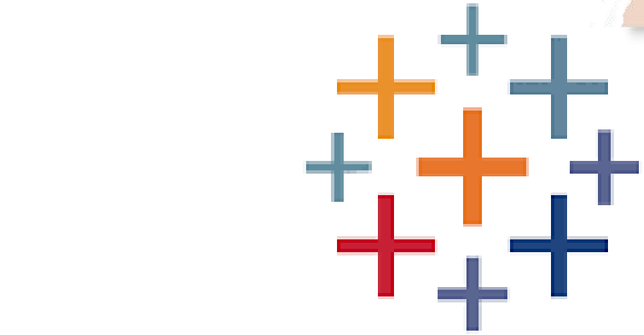
Introduction

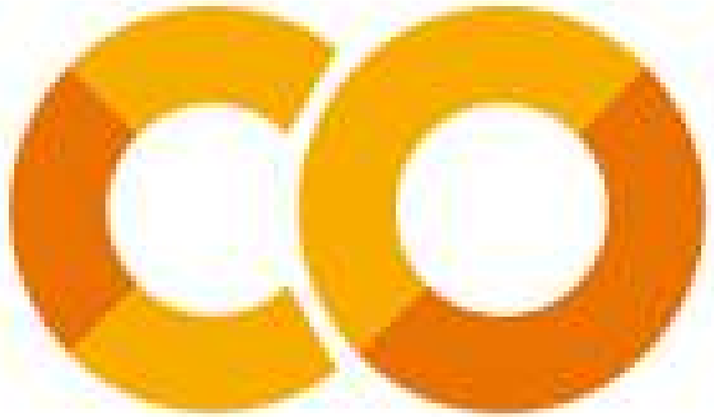


I’m a Student Business Intelligence Bootcamp Batch 9 at Dibimbing.id.
this is my 8th mini project about People analytics using Tableau to visualization about Human resource data set.

About me

Tools that i used for this case :





Source data from :

What is People Analytics ???

People analytics, also known as HR analytics or workforce analytics, refers to the practice of collecting, analyzing, and interpreting data about people in an organization to inform decision-making and improve performance.

This field uses various data sources such as employee demographics, engagement surveys, performance evaluations, and other HR metrics to gain insights into workforce behavior, trends, and outcomes.

By applying statistical and analytical techniques, organizations can identify patterns, predict future outcomes, and make data-driven decisions related to recruitment, retention, talent management, employee development, and overall organizational effectiveness. The goal of people analytics is to optimize human capital and enhance business performance by leveraging data and evidence-based approaches in HR management.

Dataset that i used to visualization and be using for People Analytics

	Employee_Name	EmpID	MarriedID	MaritalStatusID	GenderID	EmpStatusID	DeptID	PerfScoreID	FromDiversityJobFairID	Salary	...	ManagerName	ManagerID	RecruitmentSource	PerformanceScore	EngagementSurvey	EmpSatisfaction	SpecialProjectsCount	LastPerformanceReview_Date	DaysLateLast30	Absences
0	Adinolfi, Wilson K	10026	0	0	1	1	5	4	0	62506	...	Michael Albert	22.0	LinkedIn	Exceeds	4.60	5	0	1/17/2019	0	1
1	Ait Sidi, Karthikeyan	10084	1	1	1	5	3	3	0	104437	...	Simon Roup	4.0	Indeed	Fully Meets	4.96	3	6	2/24/2016	0	17
2	Akinkuolie, Sarah	10196	1	1	0	5	5	3	0	64955	...	Kissy Sullivan	20.0	LinkedIn	Fully Meets	3.02	3	0	5/15/2012	0	3
3	Alagbe,Trina	10088	1	1	0	1	5	3	0	64991	...	Elijah Gray	16.0	Indeed	Fully Meets	4.84	5	0	1/3/2019	0	15
4	Anderson, Carol	10069	0	2	0	5	5	3	0	50825	...	Webster Butler	39.0	Google Search	Fully Meets	5.00	4	0	2/1/2016	0	2

5 rows × 36 columns

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 311 entries, 0 to 310
Data columns (total 36 columns):
 #   Column                      Non-Null Count  Dtype
---  ------                      --------------  -----
 0   Employee_Name               311 non-null    object
 1   EmpID                       311 non-null    int64
 2   MarriedID                   311 non-null    int64
 3   MaritalStatusID             311 non-null    int64
 4   GenderID                    311 non-null    int64
 5   EmpStatusID                 311 non-null    int64
 6   DeptID                      311 non-null    int64
 7   PerfScoreID                 311 non-null    int64
 8   FromDiversityJobFairID      311 non-null    int64
 9   Salary                      311 non-null    int64
 10  Termd                       311 non-null    int64
 11  PositionID                  311 non-null    int64
 12  Position                    311 non-null    object
 13  State                       311 non-null    object
 14  Zip                         311 non-null    int64
 15  DOB                         311 non-null    object
 16  Sex                         311 non-null    object
 17  MaritalDesc                 311 non-null    object
 18  CitizenDesc                 311 non-null    object
 19  HispanicLatino              311 non-null    object
 20  RaceDesc                    311 non-null    object
 21  DateofHire                  311 non-null    object
 22  DateofTermination           104 non-null    object
 23  TermReason                  311 non-null    object
 24  EmploymentStatus            311 non-null    object
 25  Department                  311 non-null    object
 26  ManagerName                 311 non-null    object
 27  ManagerID                   303 non-null    float64
 28  RecruitmentSource           311 non-null    object
 29  PerformanceScore            311 non-null    object
 30  EngagementSurvey            311 non-null    float64
 31  EmpSatisfaction             311 non-null    int64
 32  SpecialProjectsCount        311 non-null    int64
 33  LastPerformanceReview_Date  311 non-null    object
 34  DaysLateLast30              311 non-null    int64
 35  Absences                    311 non-null    int64
dtypes: float64(2), int64(16), object(18)
memory usage: 87.6+ KB
```

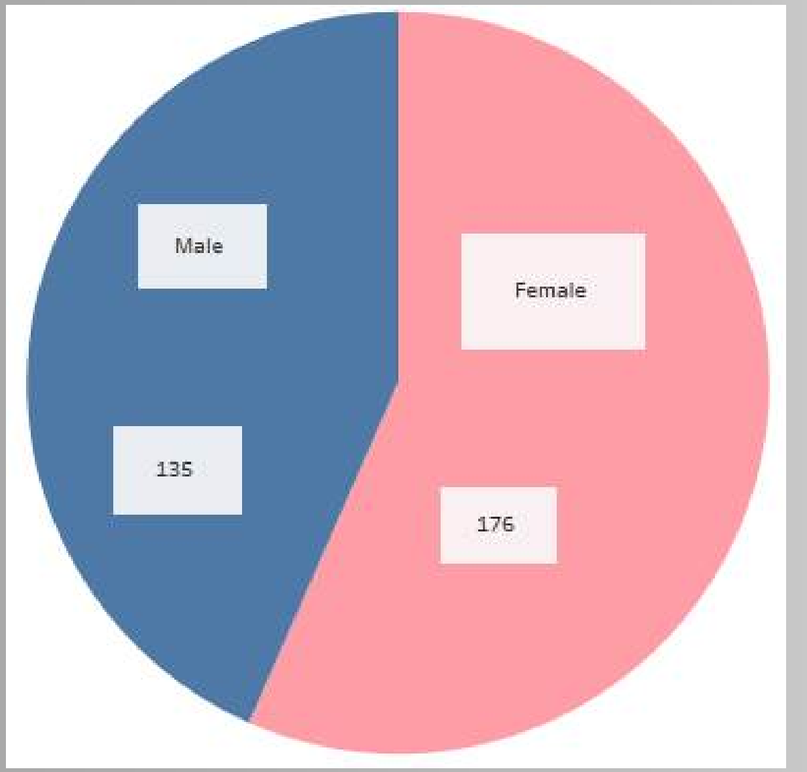
Employee_Name: Employee's name.
EmpID: Employee ID.
MarriedID: Marital status (0 for unmarried, 1 for married).
MaritalStatusID: Marital status ID (0 for single, 1 for married, 2 for divorced). GenderID: Gender (0 for female, 1 for male).
EmpStatusID: Employee status (e.g., 1 for active, 0 for terminated).
DeptID: Department ID where the employee works.
PerfScoreID: Performance score ID.
FromDiversityJobFairID: ID if the employee was recruited from a diversity job fair (0 for no, 1 for yes). Salary: Employee's salary. Termd: Whether the employee has been terminated (0 for active, 1 for terminated).
PositionID: Employee's position ID.
Position: Employee's position name.

Another explanation's in the continued slide

State: State where the employee works.
Zip: ZIP code where the employee works.
DOB: Employee's date of birth.
Sex: Employee's gender.
MaritalDesc: Description of marital status.
CitizenDesc: Description of citizenship status.
HispanicLatino: Whether the employee is of Hispanic/Latino descent (No for no, Yes for yes).
RaceDesc: Description of employee's race.
DateofHire: Employee's date of hire.
DateofTermination: Employee's date of termination (if applicable).
TermReason: Reason for termination (if applicable).
EmploymentStatus: Employment status (e.g., Active, Voluntarily Terminated).
Department: Department where the employee works.
ManagerName: Employee's manager's name.
ManagerID: Employee's manager's ID.
RecruitmentSource: Source of employee recruitment.
PerformanceScore: Employee's performance score.
EngagementSurvey: Employee's engagement survey score.
EmpSatisfaction: Employee's satisfaction level.
SpecialProjectsCount: Number of special projects handled by the employee.
LastPerformanceReview_Date: Date of the employee's last performance review.
DaysLateLast30: Number of days late in the last 30 days.
Absences: Number of absences of the employee.

Total Data

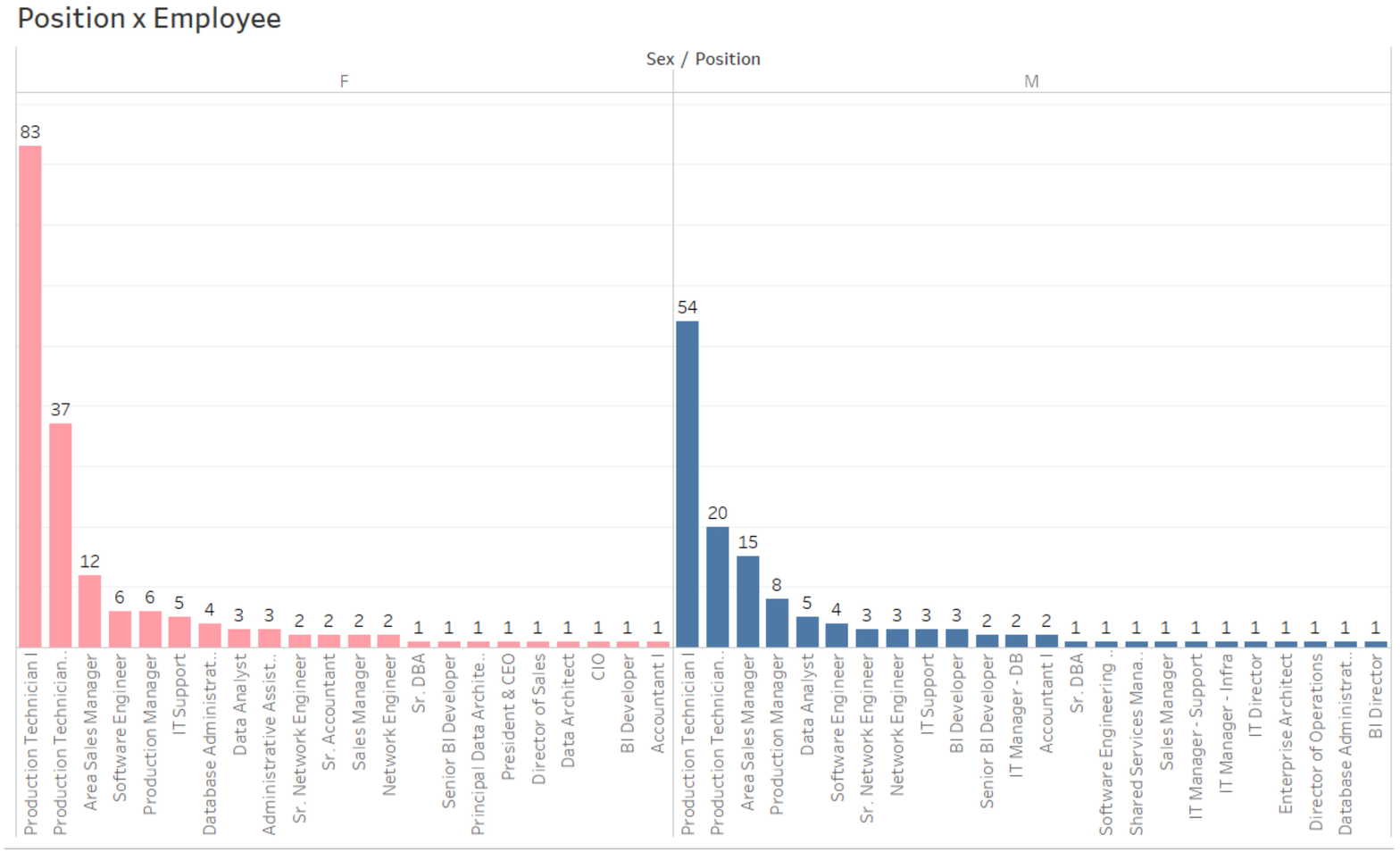
311



The first one, data set that we used contain

311 employee. With a distribution of 176 female workers and 135 male workers, it can be presented as 57% female and 43% male.

Then I perform visualization by combining the position variable and employees, and the result is.



From the visualization results obtained, the position with the highest count is Production Technician I, with an average of 83 for females and 54 for males. This is followed by Production Technician II at number 2.

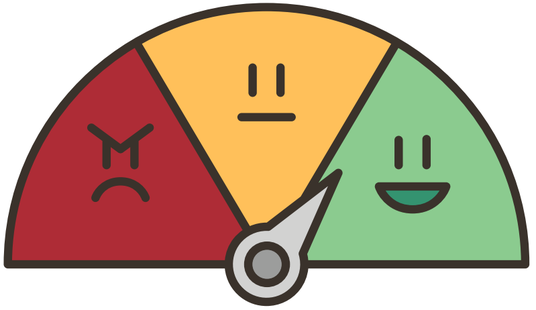
Link public Tableau

Position x Salary

Position	
President & CEO	250,000
CIO	220,450
Director of Sales	180,000
IT Director	178,000
Director of Operatio..	170,500
IT Manager - Infra	157,000
Data Architect	150,290
IT Manager - DB	144,960
IT Manager - Support	138,888
Principal Data Archi..	120,000
BI Director	110,929
Database Administr..	108,500
Enterprise Architect	103,613
Sr. Accountant	102,859
Sr. DBA	102,234
Software Engineer	96,719
BI Developer	95,465
Sr. Network Engineer	93,071
Shared Services Ma..	93,046
Data Analyst	89,757
Senior BI Developer	84,803
Software Engineerin..	77,692
Production Manager	75,295
Sales Manager	69,240
Area Sales Manager	64,933
Production Technici..	64,892
IT Support	63,684
Accountant I	63,508
Network Engineer	61,605
Production Technici..	55,524
Administrative Assi..	52,280

Next, to find out the salary for each position, here is the visualization.

For positions with the highest salaries, they are President & CEO, followed by CIO and Director of Sales. Upon examining the previous visualization, it's notable that all three positions are held by women, whereas traditionally executive positions are mostly occupied by men. This indicates that the President, CEO, and Director of Sales in this context are women with exceptional capabilities and emotional stability, enabling them to utilize logic better than emotions.



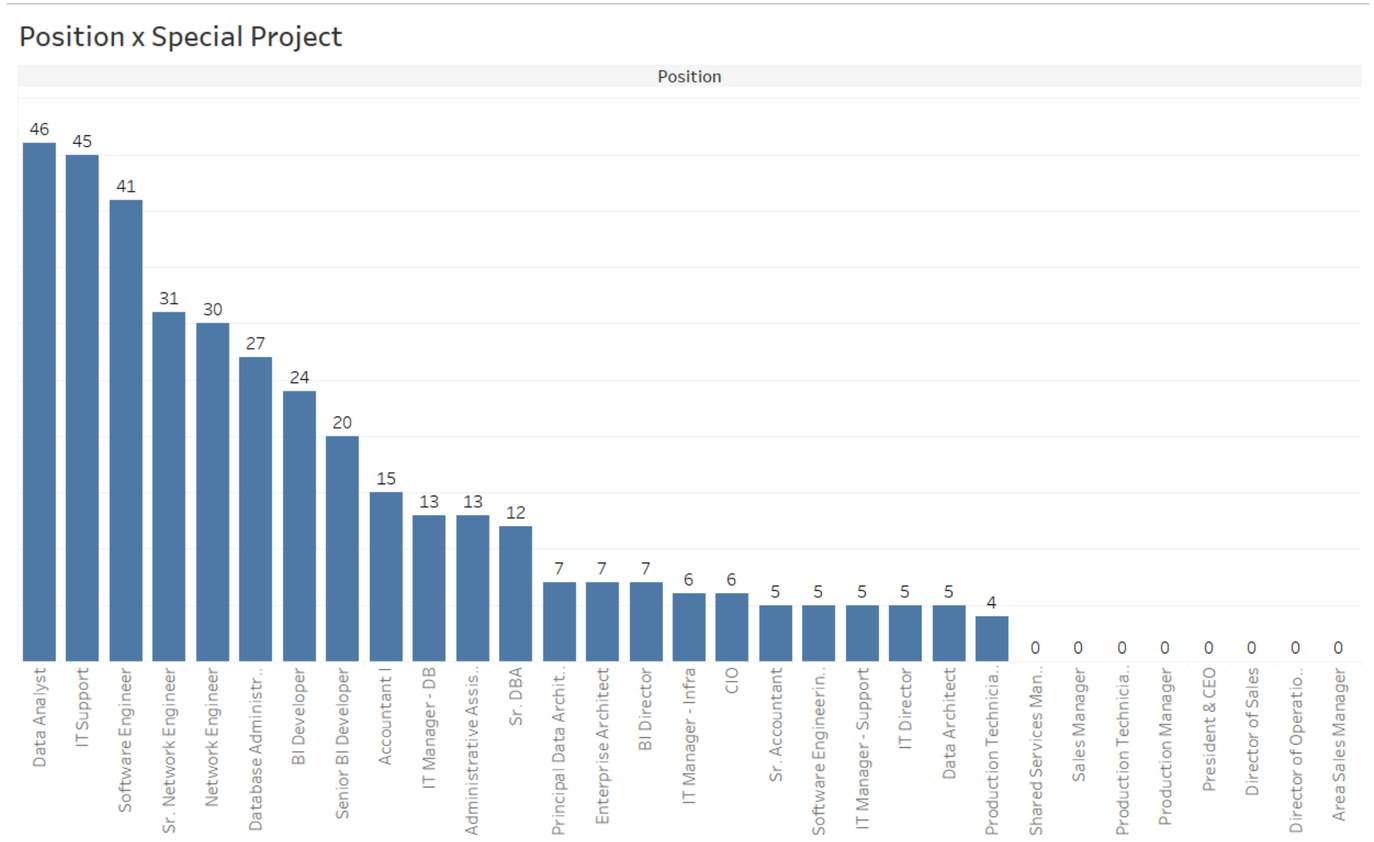
Does high salary correlate with satisfaction? Let's find out.

It turns out that for positions with satisfaction levels, it doesn't always correlate. As we saw in the previous visualization, the highest salary position is held by the President & CEO, yet the satisfaction level is actually ranked at number 3, which is the lowest average. My assumption is that perhaps the President & CEO position entails many responsibilities, especially concerning the company's well-being, which might not be in an optimal state.

On the other hand, the CIO's satisfaction level correlates, but for the Director of Sales, their satisfaction level is only at number 4.

Position x Satisfaction

Position	
IT Manager - Support	5.000
IT Director	5.000
Enterprise Architect	5.000
Director of Operatio..	5.000
CIO	5.000
BI Director	5.000
IT Manager - DB	4.500
Sales Manager	4.333
BI Developer	4.250
Sr. Network Engineer	4.200
Software Engineer	4.200
Sr. DBA	4.000
Shared Services Ma..	4.000
Senior BI Developer	4.000
IT Support	4.000
Director of Sales	4.000
Area Sales Manager	4.000
Production Technici..	3.949
Database Administr..	3.800
Production Technici..	3.754
Data Analyst	3.750
Accountant I	3.667
Sr. Accountant	3.500
Production Manager	3.357
Administrative Assi..	3.333
Network Engineer	3.200
Software Engineerin..	3.000
Principal Data Archi..	3.000
President & CEO	3.000
IT Manager - Infra	3.000
Data Architect	3.000



[Link public Tableau]

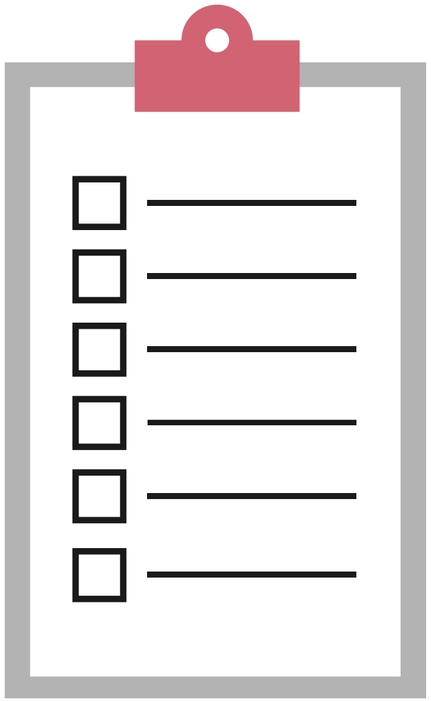
Trying to find out what factors contribute to their lower satisfaction level, so I've got.

From this visualization, it's evident that the Data Analyst position has the highest number of special projects, with a total of 46 projects. Additionally, we can see that the President & CEO does not have any special projects, whereas the CIO, despite having a high salary, also has a significant number of special projects, specifically 6 projects.
So, I think this factor could be one of the reasons why the satisfaction level of the President & CEO is at number 3.

Summary

Dari visual yang ditampilkan tersebut dalam diambill ringkasan

- Dari Human Resource dataset tersebut diketahui ada total 311 employee, dengan laki - laki - laki 43%(135) dan perempuan 57%(176).
- From the visualization results obtained, the position with the highest count is Production Technician I, with an average of 83 for females and 54 for males. And the executive positions are held by women.
- The position with the highest salary is President & CEO, and the lowest is Administrative Assistant, followed by Production Technician I, which is the position with the highest number of employees.
- From the following case, the department with the highest average satisfaction is IT/IS, averaging at 5.



Conclusion

So, from the analysis results I obtained through the discussion of People Analytics, I emphasize that here high salary doesn't always correlate with job satisfaction, as seen in the case of the President & CEO, for instance. My assumption is that the main problem shouldered by the President & CEO is quite burdensome for a single executive who has to consider everything related to the sustainability of the company, ranging from salary disbursement to increasing the company's revenue. Therefore, it's necessary to delegate tasks to positions directly under the President & CEO to provide relief and allow for more focused thinking by the President & CEO.

Link Dataset Scan here

Link Dashboard Tableau scan here

For your appreciation to my post, i would say

https://www.linkedin.com/in/rifkimuharbian99/