

Project of Business Intelligence

Data Analytics Internship

Job Involvement Analytics Dashboard Report



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I. Introduction :

Understanding employee job involvement is crucial for organizations aiming to enhance productivity and retain talent. Job involvement, satisfaction, and balance can significantly impact employee performance and organizational outcomes. This report provides a comprehensive analysis of the Job Involvement Dashboard created using Power BI, exploring key metrics and offering actionable insights to support decision-making processes.

High job involvement is associated with higher levels of job satisfaction and better work-life balance, leading to improved overall productivity. This report aims to investigate the factors influencing job involvement and provide data-driven recommendations for enhancing employee engagement.

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II. Data Import and Exploration :

1. Loading Data into Power BI :

The dataset was loaded into Power BI using the Power Query Editor, ensuring data types were verified and corrected.

= Table.TransformColumnTypes(#"Promoted Headers",{{"Age", Int64.Type}, {"Attrition", type text}, {"BusinessTravel", type text},							
123 Age	A8C Attrition	A8C BusinessTravel	123 DailyRate	A8C Department	123 DistanceFromHome	123 Educati	
1	41 Yes	Travel_Rarely	1102	Sales		1	
2	49 No	Travel_Frequently	279	Research & Development		8	
3	37 Yes	Travel_Rarely	1373	Research & Development		2	
4	33 No	Travel_Frequently	1392	Research & Development		3	
5	27 No	Travel_Rarely	591	Research & Development		2	
6	32 No	Travel_Frequently	1005	Research & Development		2	
7	59 No	Travel_Rarely	1324	Research & Development		3	
8	30 No	Travel_Rarely	1358	Research & Development		24	
9	38 No	Travel_Frequently	216	Research & Development		23	
10	36 No	Travel_Rarely	1299	Research & Development		27	
11	35 No	Travel_Rarely	809	Research & Development		16	
12	29 No	Travel_Rarely	153	Research & Development		15	
13	31 No	Travel_Rarely	670	Research & Development		26	
14	34 No	Travel_Rarely	1346	Research & Development		19	
15	28 Yes	Travel_Rarely	103	Research & Development		24	
16	29 No	Travel_Rarely	1389	Research & Development		21	
17	32 No	Travel_Rarely	334	Research & Development		5	
18	22 No	Non-Travel	1123	Research & Development		16	
19	53 No	Travel_Rarely	1219	Sales		2	
20	38 No	Travel_Rarely	371	Research & Development		2	
21	24 No	Non-Travel	673	Research & Development		11	
22	36 Yes	Travel_Rarely	1218	Sales		9	

2. Initial Data Cleaning and Preparation :

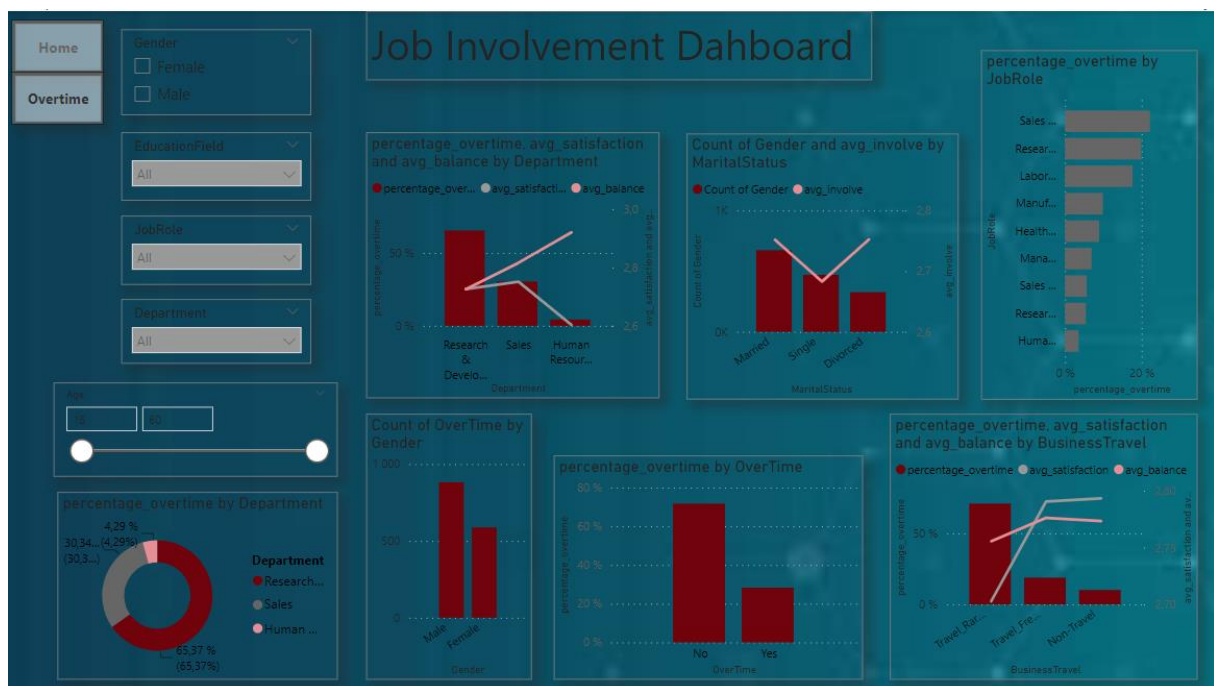
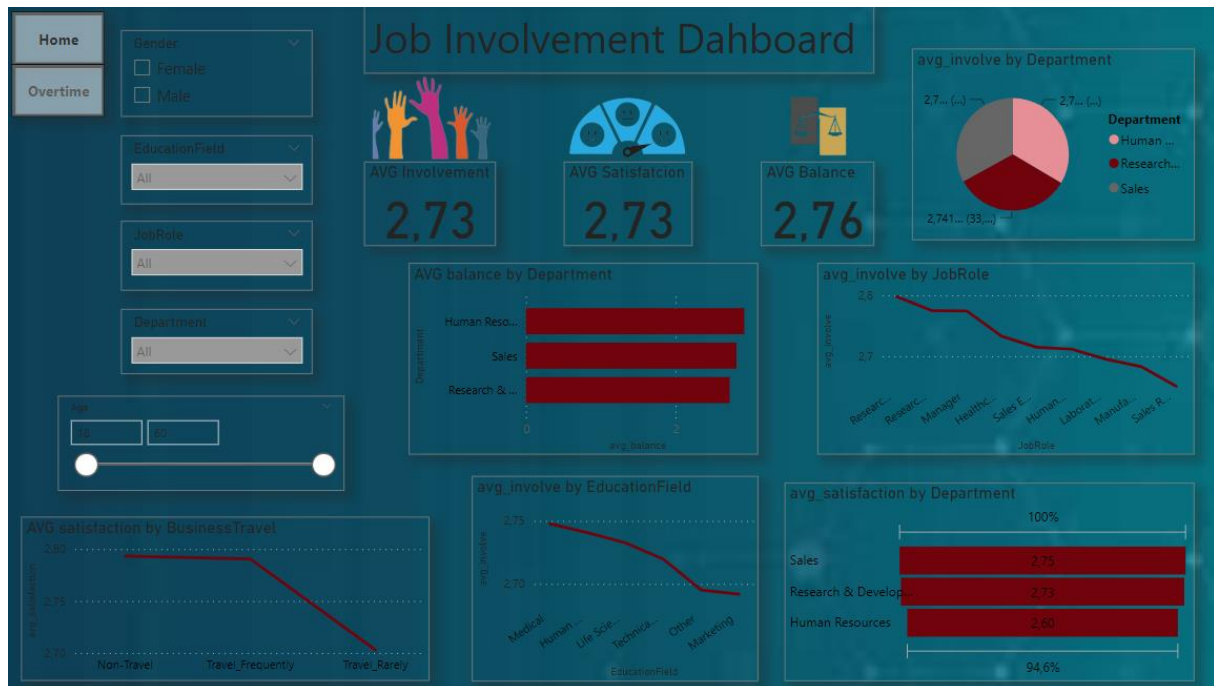
Once the data was collected, we prepared it by performing cleaning and transformation steps. This included handling missing values, converting data to the appropriate format, eliminating outliers or inconsistent values, and any other necessary steps to ensure data quality.

III. Descriptive Analytics :

The dataset typically includes various features that provide insights into employee characteristics, job satisfaction, and performance. Here's a list of common features found in the dataset:

1. **Employee ID:** A unique identifier for each employee.
2. **Age:** The age of the employee.
3. **Gender:** The gender of the employee.
4. **Job Role:** The specific role or title of the employee's job.
5. **Department:** The department to which the employee belongs.
6. **Marital Status:** The marital status of the employee.
7. **Business Travel:** The frequency and nature of business-related travel.
8. **Job Involvement:** The degree to which the employee is involved in their job.
9. **Job Satisfaction:** The level of satisfaction with the job.
10. **Work-Life Balance:** The balance between work and personal life.
11. **Over Time:** Whether the employee works overtime or not.

IV. Visualisation :



The Job Involvement Dashboard in Power BI provides a comprehensive analysis of various aspects related to job involvement, satisfaction, and balance. It includes metrics and visualizations such as average involvement, satisfaction, balance, and detailed breakdowns by gender, department, job role, marital status, and more.

V. Interpretation :

1. Filters :

Gender: The dashboard allows filtering by gender (Female, Male) to analyze differences in job involvement, satisfaction, and balance between genders.

Education Field: Users can filter the data by various education fields such as Life Sciences, Medical, Marketing, etc., to understand how educational background influences job involvement.

Job Role: Filtering by job roles such as Sales Executive, Research Scientist, Manager, etc., helps in identifying job involvement trends specific to each role.

Department: The dashboard provides a filter for departments like Sales, Research & Development, and Human Resources to analyze department-specific job involvement metrics.

Age: An age slider filter (18-60) is available to explore how job involvement varies across different age groups.

2. Main Metrics :

Average Involvement, Satisfaction, and Balance:

These are displayed as prominent metrics at the top of the dashboard, showing overall average scores for job involvement (2.73), job satisfaction (2.73), and work-life balance (2.76).

3. Average Involvement by Department:

Visualization: A pie chart showing average job involvement scores by department.

Insights: Research & Development has the highest job involvement score, followed by Sales and Human Resources.

4. Average Involvement by Job Role:

Visualization: A line chart showing average job involvement by job role.

Insights: Job involvement varies significantly across different roles, with Research Scientists showing the highest involvement and Sales Representatives the lowest.

5. Average Balance by Department:

Visualization: A bar chart showing the average balance score by department.

Insights: Human Resources and Sales departments have lower average balance scores compared to Research & Development, indicating potential work-life balance issues.

6. Average Satisfaction by Department:

Visualization: A bar chart showing average job satisfaction scores by department.

Insights: Sales and Human Resources have lower job satisfaction scores compared to Research & Development, indicating areas needing improvement in job satisfaction.

7. Average Involvement by Education Field:

Visualization: A line chart showing average job involvement by education field.

Insights: Employees with a background in Medical and Life Sciences show higher job involvement compared to those in Marketing or Technical fields.

8. Average Satisfaction by Business Travel:

Visualization: A line chart showing average job satisfaction by the frequency of business travel.

Insights: Employees who travel rarely or not at all report better job satisfaction compared to those who travel frequently.

9. Percentage of Overtime by Job Role :

Visualization: A horizontal bar chart showing the percentage of overtime by job roles.

Insights: Roles such as Sales Executives and Research Scientists have higher percentages of overtime, indicating job roles with significant workload or time demands.

10. Count of gender and Involvement by Marital Status:

Visualization: A dual-axis chart displaying the count of gender and average job involvement across different marital statuses.

Insights: Married employees show higher job involvement compared to single and divorced employees. The count of male and female employees varies across marital statuses, impacting job involvement metrics.

11. Comparison of Percentage Overtime, Average Satisfaction, and Average Balance by Department :

Visualization: This chart illustrates the relationship between the percentage of employees working overtime, average job satisfaction, and average work-life balance across different departments.

Insight:

Workload Management in R&D: Despite high overtime, R&D employees maintain moderate satisfaction and balance.

Impact on Sales Employees: Overtime negatively impacts satisfaction and balance in Sales.

HR's Positive Balance: Effective policies in HR lead to better work-life balance.

12. Percentage of Overtime by Business Travel:

Visualization: A bar chart showing the percentage of overtime based on the frequency of business travel.

Insights: Employees who travel frequently for business have higher percentages of overtime, affecting their job satisfaction and work-life balance.

13. Distribution of Overtime:

Visualization: This chart visualizes the distribution of employees who work overtime versus those who don't.

Insights: Significant portion of employees work overtime with Higher concentration in departments like R&D and Sales. Notable group of employees do not work overtime concentrating likely in departments like HR.

14. Count of Overtime by Gender:

Visualization: A bar chart illustrating the count of employees working overtime by gender.

Insights: More male employees work overtime compared to female employees, which could point to gender-specific workload distribution or job role differences.

15. Percentage of overtime by Department :

Visualization: A bar chart showing the percentage of employees working overtime in different departments.

Insights: Research & Development has the highest percentage of overtime, followed by Sales and Human Resources. This indicates potential workload or resource allocation issues in these departments.

VI. Recommendations :

- **Develop Strategies:** Implement flexible working hours, especially in departments with higher overtime percentages. Also Foster team-building activities and provide support to enhance workplace relationships in the Sales department.
- **Focus on High Overtime Departments:** Investigate specific issues in departments with high overtime rates, such as Research & Development, and implement measures to reduce overtime and improve work-life balance.
- **Collaborate with Stakeholders:** Work with department heads to identify specific pain points and tailor solutions accordingly.
- **Regular Monitoring:** Continuously monitor these metrics to evaluate the effectiveness of implemented strategies and make necessary adjustments.
- **Enhance Job Satisfaction Programs:** Implement targeted programs to enhance job satisfaction in departments like Sales and Human Resources.
- **Support for Frequent Travelers:** Provide additional support and resources for employees who travel frequently to improve their job satisfaction and work-life balance.
- **Promote Career Development:** Encourage career development and promotion opportunities, particularly in roles and departments with lower job involvement scores.

VII. Conclusion :

The analysis of the Work-Life Balance and Engagement Dashboard reveals that while Human Resources shows higher satisfaction and work-life balance, the Sales department suffers from lower job involvement and relationship satisfaction, coupled with higher overtime. Research & Development needs better work-life balance initiatives. Frequent business travel negatively impacts satisfaction, and job roles such as sales representatives have notably low involvement. To enhance employee well-being and reduce attrition, targeted interventions to improve engagement in Sales and other affected roles, better support for traveling employees, and continuous monitoring of these metrics are recommended.

