HR ANALYTICS

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Abstract

- This abstract presents an HR analytics project focused on leveraging data-driven insights to enhance various aspects of human resources management within an organization. The project aims to utilize advanced analytics techniques to extract valuable information from HR data, enabling data-driven decision-making and improving overall HR processes.

Problem statement

- HR is not just about hiring people it is an ocean of its own. HR department goes through a constant journey of finding, selecting, on boarding and monitoring the right talent. You are required to use analytics concept to provide a smooth monitoring of workforce for the HR department.
- To investigate how the company objective factors influence in attrition of employees, and what kind of working environment is most likely to cause attrition. You shall be looking at all variables through some charts and infer about it in my exploratory analysis. And through exploration you shall try to identify the Variables that tend to have an impact in the attrition of the most experienced and talented employees.

Proposed solution

- Conduct EDA to gain initial insights into the data. Explore correlations, patterns, and trends in HR metrics to identify potential areas for improvement or further investigation with the help of excel pivot chart**.**
- Segment employees based on various criteria (e.g., job role, department, performance level) to identify distinct groups with unique characteristics and needs with the help of Interactive dashboard and develop employee profiles to tailor HR interventions and strategies accordingly.
- Diversity and inclusion analysis: Evaluate diversity and inclusion metrics to ensure equal opportunities and inclusivity within the organization. Identify potential biases, barriers, or underrepresented groups and develop strategies to foster a diverse and inclusive workforce.
- Create intuitive and visually appealing dashboards and reports to present key HR metrics, trends, and insights to stakeholders. Use interactive visualizations to facilitate data exploration and decision-making.

Technical requirements

- **Power BI Desktop:** Install Power BI Desktop, the primary tool for creating and designing reports, visualizations, and dashboards. It allows you to connect to various data sources, transform and clean the data, and build interactive visuals.
- **Data Sources:** Identify and connect relevant data sources to Power BI. These may include HR management systems, employee surveys, performance evaluation tools, spread sheets, databases, or other HR data repositories. Ensure that the data sources are accessible and compatible with Power BI's supported connectors.
- **Data Modelling:** Design a robust data model within Power BI Desktop. This involves creating relationships between different data tables, defining measures and calculated columns, and performing data transformations and aggregations as needed.
- **Data Transformation:** Utilize Power Query, an embedded data transformation tool in Power BI, to perform data cleansing, shaping, and merging operations. This step ensures that the data is in the appropriate format for analysis and visualization.

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- **Data Refresh:** Establish a data refresh mechanism to keep the HR data up to date. Power BI supports various data refresh options, including scheduled refreshes, direct query, or using on-premises gateways to refresh data from local data sources.
- **Data Visualization:** Leverage Power BI's rich collection of visualizations to create compelling HR analytics dashboards and reports. Utilize visuals such as bar charts, line charts, pie charts, tables, maps, and cards to represent HR metrics and trends effectively.
- **Calculated Measures and KPIs:** Define calculated measures and Key Performance Indicators (KPIs) within Power BI to perform calculations and track HR performance metrics. These can include turnover rates, average time-to-fill vacancies, employee satisfaction scores, training effectiveness metrics, or any other relevant HR metrics.
- **Drill-Down and Interactivity:** Utilize Power BI's interactive features to allow users to drill down into data at different levels of granularity. Implement slicers, filters, and hierarchical navigation to enable users to explore HR data based on various dimensions such as department, job role, or time period.

Tools used:

- **Excel provides** powerful data cleaning and transformation capabilities. You can use Excel functions, formulas, and features like Text-to-Columns, Find and Replace, and Conditional Formatting to clean and standardize HR data. Excel's sorting and filtering capabilities can help identify and remove duplicates, outliers, or inconsistencies.
- **Power BI** enables the creation of interactive HR dashboards and reports. You can leverage a rich set of visualizations (charts, graphs, maps, etc.) and customize them to represent HR metrics, trends, and insights. Power BI's drag-and-drop interface allows you to quickly design and update visualizations based on changing HR data.

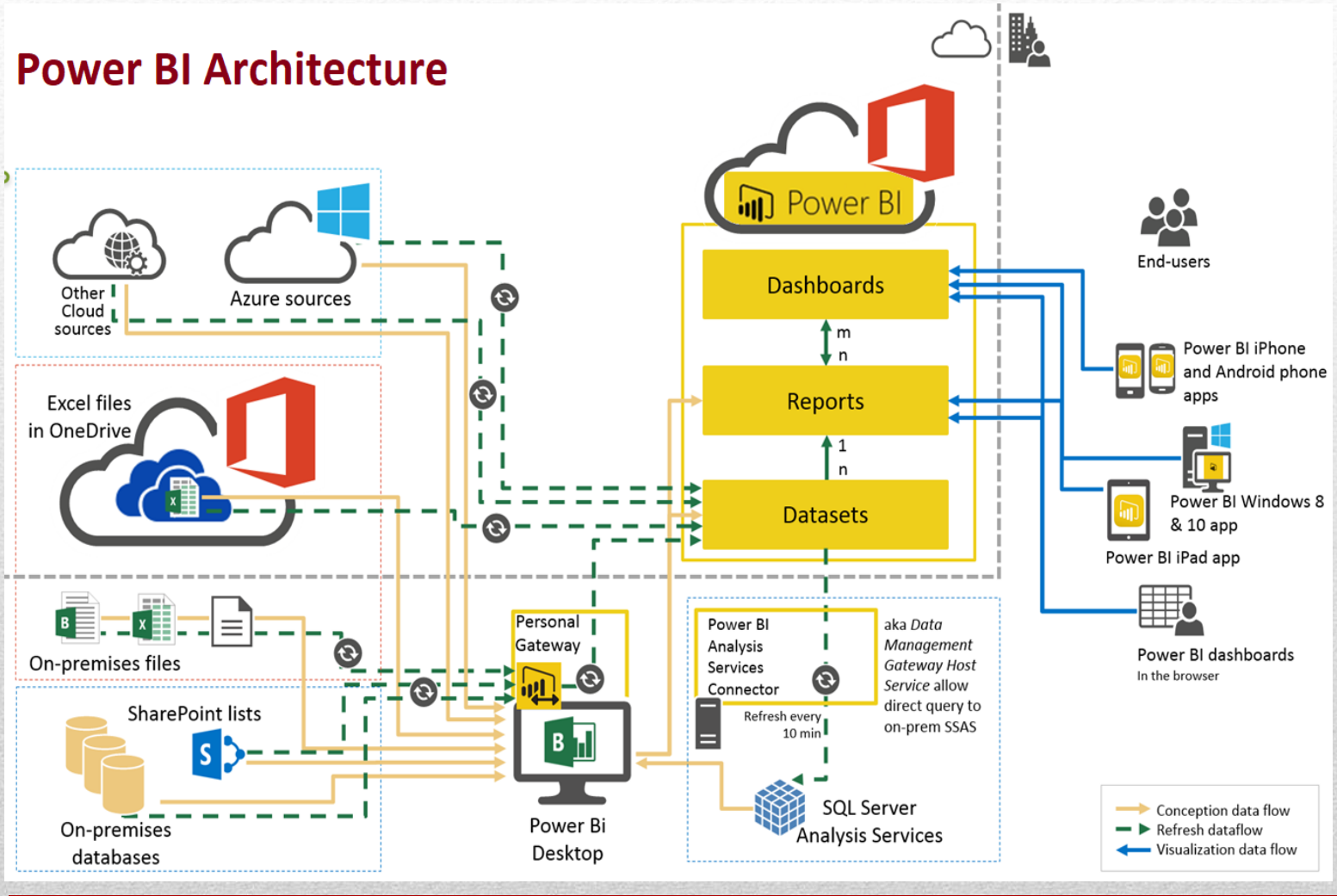
Constraints

- The quality of HR data can vary, and it may require significant effort to ensure data accuracy, completeness, consistency, and relevance. Inaccurate or incomplete data can impact the reliability and validity of the analytics results and insights.
- Integrating HR data from multiple sources can be complex, especially if the data is stored in different formats, databases, or systems. Organizations may need to invest time and resources in data mapping, data cleansing, and resolving data inconsistencies to ensure seamless integration.

Assumptions

- It is assumed that the HR data collected from various sources, such as HR management systems or employee surveys, is accurate and reliable. However, data entry errors, inconsistencies, or missing data can occur. Organizations should implement data validation and cleansing processes to address data quality issues.
- It is assumed that the HR data includes all relevant information necessary for the analysis. However, there may be cases where certain data elements are missing or not captured in the available data sources. This can impact the comprehensiveness of the analysis and may require additional data collection efforts.

Process Flow chart



Dashboard


HR ANALYTICS
Human Resources
Research & Development
Sales
Count of Employee
1416
Attrition Count
229
Attrition Rate
16.17%
Average Age
37
Monthly Income
6.52K
Year At Company
7.04
Gender
Male
136
Female
76
Attrition By Education
Other 5%
Technical Degree 14%
Life Sciences 38%
Marketing 15%
Medical 25%
Attrition By Age
111
43
41
26
8
26-35
18-25
36-45
46-55
55+
JobRole 1 2 3 4 Total
Healthcare Representative 2 2 1 4 9
Human Resources 5 2 3 2 12
Laboratory Technician 18 8 21 13 60
Manager 1 2 1 1 5
Manufacturing Director 2 2 3 2 9
Research Director 0 1 1 0 2
Research Scientist 11 10 14 9 44
Sales Executive 16 9 18 12 55
Sales Representative 7 10 9 7 33
Total 62 46 71 50 229
Salary
Upto 5k 158
5k-10k 48
10k-15k 18
15k+ 5
Years at Company
Sum of AttritionCount
57
16
18
20
9
8
16
2
0
5
10
YearsAtCompany
Job Role
Laboratory Techn... 60
Sales Executive 55
Research Scientist 44
Sales Representa... 33
Human Resources 12

Deployment

- The first step in the deployment process is to develop and test your Power BI content. This includes creating reports, dashboards, and data models using Power BI Desktop. You can connect to data sources, transform and model the data, and design visualizations to meet your analysis requirements. During the development phase, it's important to thoroughly test your content to ensure accuracy and functionality.
- Once your Power BI content is ready, you can publish it to the Power BI Service. The Power BI Service is a cloud-based platform where you can store and share your reports, dashboards, and datasets. To publish your content, you can save your Power BI Desktop files (.pbix) and upload them to the Power BI Service.

Conclusion

- Power BI empowers HR professionals to access and analyze vast amounts of HR data quickly and effectively. By visualizing key HR metrics and trends, Power BI enables informed decision-making across various HR functions, including recruitment, employee engagement, talent management, and workforce planning.
- Power BI's interactive dashboards and reports allow HR teams to explore data and identify meaningful patterns and correlations. This leads to actionable insights that can drive strategic initiatives, such as enhancing employee engagement, reducing turnover, or optimizing training and development programs.
- Power BI's rich visualization capabilities allow HR professionals to present HR data in a visually compelling manner. Interactive charts, graphs, and maps make it easier to communicate complex HR insights to stakeholders, enabling effective data storytelling and enhancing data-driven discussions.

THANK YOU