Customer & Workforce Analytics: Trends, Retention, and Diversity Insights

(PwC Power BI Job Simulation Documents) => Forage

Task 2:

Create a dashboard in Power BI for Claire that reflects all relevant Key Performance Indicators (KPIs) and metrics in the dataset. Get creative!

Possible KPIs include (to get you started, but not limited to):

- Overall customer satisfaction
- Overall calls answered/abandoned
- Calls by time
- Average speed of answer
- Agent's performance quadrant –> average handle time (talk duration) vs calls answered

Solutions:

PwC Power BI Task 2 - Customer Service Dashboard

Objective:

Develop an interactive Power BI dashboard for Claire to visualize key customer service metrics and performance indicators, enabling data-driven decision-making.

Key Features:

- Integrated call center data to analyze customer service efficiency.
- Designed real-time visualizations to track key performance metrics.
- Provided insights for optimizing agent performance and customer satisfaction.

KPIs & Metrics:

1. **Overall Customer Satisfaction:** Measures customer ratings based on post-call surveys.
2. **Overall Calls Answered vs. Abandoned:** Tracks the number of answered calls versus abandoned calls.
3. **Calls by Time:** Analyzes call volume trends over different time periods.
4. **Average Speed of Answer (ASA):** Measures the average waiting time before a call is answered.
5. **Agent's Performance Quadrant:** Evaluates agent efficiency by comparing average handle time (talk duration) against the number of calls answered.

Tools & Technologies Used:

- Power BI – Data visualization and dashboard creation.
- Excel – Data cleaning and preprocessing.
- Power Query – Data transformation and integration.

Conclusion:

This Power BI dashboard provides a comprehensive view of customer service efficiency, helping Claire and stakeholders identify key improvement areas and enhance customer satisfaction.

DAX Queries:

- **TotalCallsAnswered =>** TotalCallsAnswered = COUNT('Sheet1'[Call ID])

- **CallsAnswered =>** CallsAnswered = COUNTROWS(FILTER('Sheet1', 'Sheet1'[Answered(Y/N)] = "Y"))

- **CallsAbandoned =>** CallsAbandoned = COUNTROWS(FILTER('Sheet1', 'Sheet1'[Answered(Y/N)] = "N"))

- **AvgCustomerSatisfication =>** AvgSatisfaction = AVERAGE('Sheet1'[Satisfaction Rating])

- **AvgHandleTime/Call Duration =>** AvgHandleTime = AVERAGEX(FILTER('Sheet1', 'Sheet1'[Answered (Y/N)] = "Y"), 'Sheet1'[AvgTalkDuration])

Task 3:

Your colleague, the engagement partner, asks you to do the following tasks:

1. Define proper KPIs
2. Create a dashboard for the retention manager reflecting the KPIs
3. Write a short email to him (the engagement partner) explaining your findings, and include suggestions as to what needs to be changed.

Solutions:

PwC Power BI Task 3 - Employee Churn Dashboard

Objective:

Develop an interactive Power BI dashboard for the Retention Manager to visualize key employee retention metrics and performance indicators, enabling data-driven decision-making.

Key Features:

- Integrated employee data to analyze retention trends and factors influencing attrition.
- Designed dynamic visualizations to track key retention-related metrics.
- Provided insights to support HR strategies for improving employee retention.

KPIs & Metrics:

1. **Employee Retention Rate:** Measures the percentage of employees staying within the organization.
2. **Turnover Rate:** Tracks the number of employees leaving over a specific period.

3. **Average Employee Tenure:** Evaluates the average length of employment before attrition.
4. **Exit Reasons Analysis:** Categorizes and visualizes reasons for employee departures.
5. **Department-wise Retention Trends:** Compares retention rates across different departments.

Tools & Technologies Used:

- Power BI – Data visualization and dashboard creation.
- Excel – Data cleaning and preprocessing.
- Power Query – Data transformation and integration.

Email to Engagement Partner About My findings: (Content & Findings Only)

I have completed the employee retention analysis and developed a Power BI dashboard to reflect the key KPIs. The data indicates that turnover is highest within the first two years of employment, with work-life balance and career growth cited as primary reasons for attrition. Additionally, retention rates vary significantly across departments, with sales and customer service experiencing the highest turnover.

To improve retention, I recommend:

1. Implementing targeted employee engagement programs.
2. Enhancing career development opportunities.
3. Reviewing work-life balance policies.

Conclusion:

This Power BI dashboard provides a comprehensive view of employee retention trends, helping the Retention Manager and stakeholders identify key improvement areas and enhance employee satisfaction.

DAX Queries:

- **%Of Dependants =>** %Of Dependants = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[Dependents]), '01 Churn-Dataset'[Dependents] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[Dependents]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **%Of Partners =>** %Of Partner = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[Partner]), '01 Churn-Dataset'[Partner] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[Partner]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **%Of Senior Citizen =>** %Of Senior Citizen = DIVIDE(
    CALCULATE(
      COUNT('01 Churn-Dataset'[CustomerID]),
      FILTER('01 Churn-Dataset',
        '01 Churn-Dataset'[SeniorCitizen] = 1 && '01 Churn-Dataset'[Churn] = "Yes"
)
    ),
    CALCULATE(
      COUNT('01 Churn-Dataset'[CustomerID]),
      '01 Churn-Dataset'[Churn] = "Yes"
    ),
    0
)

- **Churn Rate % =>** Churn Rate % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[Churn]), '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[Churn]), ALLSELECTED('01 Churn-Dataset'[Churn])))

- **Churned Customers =>** Churned Customers = COUNTROWS(FILTER('01 Churn-Dataset', '01 Churn-Dataset'[Churn] = "Yes"))

- **Device Protection % =>** Device Protection in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[DeviceProtection]),'01 Churn-Dataset'[DeviceProtection] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[DeviceProtection]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **Online Backup % =>** Online Backup in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[OnlineBackup]),'01 Churn-Dataset'[OnlineBackup] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[OnlineBackup]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **Online Security %** => Online Security in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[OnlineSecurity]),'01 Churn-Dataset'[OnlineSecurity] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[OnlineSecurity]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **Phone Service % =>** Phone Service in % = DIVIDE(CALCULATE(C OUNT('01 Churn-Dataset'[PhoneService]),'01 Churn-Dataset'[PhoneService] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[PhoneService]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **% of Streaming Movies =>** Streaming Movies in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[StreamingMovies]),'01 Churn-Dataset'[StreamingMovies] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[StreamingMovies]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **% of Streaming in TV =>** Streaming Tv in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[StreamingTV]),'01 Churn-Dataset'[StreamingTV] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[StreamingTV]), '01 Churn-Dataset'[Churn] = "Yes"),0)

- **Tech Support % =>** Tech Support in % = DIVIDE(CALCULATE(COUNT('01 Churn-Dataset'[TechSupport]),'01 Churn-Dataset'[TechSupport] = "Yes", '01 Churn-Dataset'[Churn] = "Yes"), CALCULATE(COUNT('01 Churn-Dataset'[TechSupport]), '01 Churn-Dataset'[Churn] = "Yes"),0)

Task 4:

Hint: Calculating the following **measures** could help to define proper KPIs:

- # of men
- # of women
- # of leavers
- % employees promoted (FY21)
- % of women promoted
- % of hires men
- % of hires women
- % turnover
- Average performance rating: men
- Average Performance rating: women

Task is to do the following:

- Define relevant KPIs in hiring, promotion, performance and turnover, and create a visualization.

- Write what you think some root causes of their slow progress might be

Solutions:

PwC Power BI Task 4 - Workforce Performance & Turnover Analysis

Objective:

Develop an interactive Power BI dashboard to analyze key workforce metrics related to hiring, promotion, performance, and turnover, helping stakeholders identify trends and improvement areas.

Key Features:

- Integrated workforce data to evaluate hiring, promotion, and performance trends.
- Designed dynamic visualizations to track employee progression and retention challenges.
- Identified potential factors contributing to slow workforce development.

KPIs & Metrics:

1. **Hiring Rate:** Measures the percentage of new hires over a specific period.
2. **Promotion Rate:** Tracks the number of employees promoted within a given timeframe.
3. **Employee Performance Rating:** Evaluates workforce performance based on predefined criteria.
4. **Turnover Rate:** Measures the percentage of employees leaving the organization.
5. **Time-to-Promotion:** Analyzes the average time taken for employees to receive a promotion.

Root Causes of Slow Workforce Progress:

1. **Limited Career Growth Opportunities:** Employees may feel stagnant due to a lack of clear promotion paths.
2. **Ineffective Performance Management:** Lack of regular performance evaluations and feedback mechanisms.
3. **High Turnover in Key Roles:** Frequent employee departures disrupt long-term organizational stability.
4. **Lengthy Hiring Process:** Delays in recruitment can slow down workforce expansion and replacements.
5. **Workplace Culture & Engagement:** Low engagement and motivation can lead to decreased performance and retention.

Tools & Technologies Used:

- Power BI – Data visualization and dashboard creation.
- Excel – Data cleaning and preprocessing.
- Power Query – Data transformation and integration.

Conclusion:

This Power BI dashboard provides valuable insights into workforce hiring, promotion, and retention trends. By identifying key performance gaps and bottlenecks, stakeholders can take proactive steps to enhance workforce development and improve overall organizational growth.

DAX Queries:

- **% of Female =>** % of Female = DIVIDE('Pharma Group AG'[No.of.Female],'Pharma Group AG'[No.of.Male]+'Pharma Group AG'[No.of.Female])

- **% of Male =>** % of Male = DIVIDE('Pharma Group AG'[No.of.Male],'Pharma Group AG'[No.of.Male]+'Pharma Group AG'[No.of.Female])

- **Average Rating of Female =>** Avg.Female Rating = CALCULATE(AVERAGE('Pharma Group AG'[FY20 Performance Rating]), FILTER('Pharma Group AG', 'Pharma Group AG'[Gender] = "Female"))

- **Average Rating of Male =>** Avg.Male Rating = CALCULATE(AVERAGE('Pharma Group AG'[FY20 Performance Rating]), FILTER('Pharma Group AG', 'Pharma Group AG'[Gender] = "Male"))

- **Total No.of Female =>** No.of.Female = CALCULATE(DISTINCTCOUNT('Pharma Group AG'[Employee ID]), FILTER('Pharma Group AG', 'Pharma Group AG'[Gender] = "Female"))

- **Total No.of Male =>** No.of.Male = CALCULATE(DISTINCTCOUNT('Pharma Group AG'[Employee ID]), FILTER('Pharma Group AG', 'Pharma Group AG'[Gender] = "Male"))