Empowering Decisions: A Collection of Power BI Works

Welcome to my Power BI Project Portfolio. My name is Ambili Arangath Narayanan, and I am a data enthusiast with a passion for transforming raw data into compelling stories that drive decision-making and offer insightful perspectives across various domains. Through this portfolio, I aim to showcase a selection of projects that highlight my expertise in leveraging Power BI to analyse, visualize, and interpret data.

Each project presented here is a testament to my commitment to excellence in data visualization and analytics. Some of the projects highlighted in this portfolio are real projects executed in previous experiences at organizations such as Debtorinfo.com, Maverick Systems, Cisco, and Bloomberg. Please note that while these projects draw from real-world experiences, the data and titles have been modified in adherence to the non-disclosure agreements signed earlier. This adjustment ensures the confidentiality and privacy policies of the companies involved are respected. The alterations are made with the utmost care to maintain the integrity and the essence of the projects, providing a clear view of my capabilities and achievements while safeguarding sensitive information.

As you navigate through this document, you will find detailed descriptions of the projects I have undertaken, including the challenges faced, the solutions implemented, and the results achieved. My goal is to not only demonstrate my proficiency with Power BI but also to reflect on my continuous journey of learning and growth in the field of data analytics.

Thank you for taking the time to explore my portfolio. I am eager to leverage my skills and experiences to contribute to data-driven projects and initiatives. Should you have any questions or wish to discuss potential opportunities,

Kind Regards

Ambili AN
0274083831 / ambiliarangathnarayanan@gmail.com

Project -1

Project Title: Analysis and Visualization of Zomato Restaurant Data

Project Objective

This project delves into a comprehensive dataset from Zomato, covering restaurant chains globally. The primary objective is to conduct a thorough descriptive and statistical analysis to uncover trends, patterns, and insights related to the restaurant industry. By addressing specific analytical goals, this project aims to provide actionable insights for restaurateurs and food enthusiasts alike.

Dataset Overview

Sourced from Zomato and Kaggle, the dataset encompasses a wide array of information, including but not limited to the average cost for two, restaurant location, number of votes, aggregate ratings, cuisines offered, and the countries these restaurants are located in. Through meticulous analysis, this project explores various facets such as popular cuisines, pricing strategies of high-end restaurants, country-wise restaurant ratings, and much more.

Analytical Process

Data Preparation

Loading the Raw Data: Utilizing Python libraries such as Numpy and Pandas for efficient data handling.

Data Cleaning: Techniques employed include removing irrelevant columns, eliminating duplicate entries, and refining individual data points to ensure quality and relevance.

Analysis

The project aims to answer pivotal questions such as:

The total count of restaurants and cuisines offered globally.

Countries with the highest number of Zomato-listed restaurants.

Identifying "value for money" restaurants across Indian cities.

The top 10 cuisines in India by the number of votes.

Countries where restaurants provide online delivery services.

Localities with the highest density of restaurants.

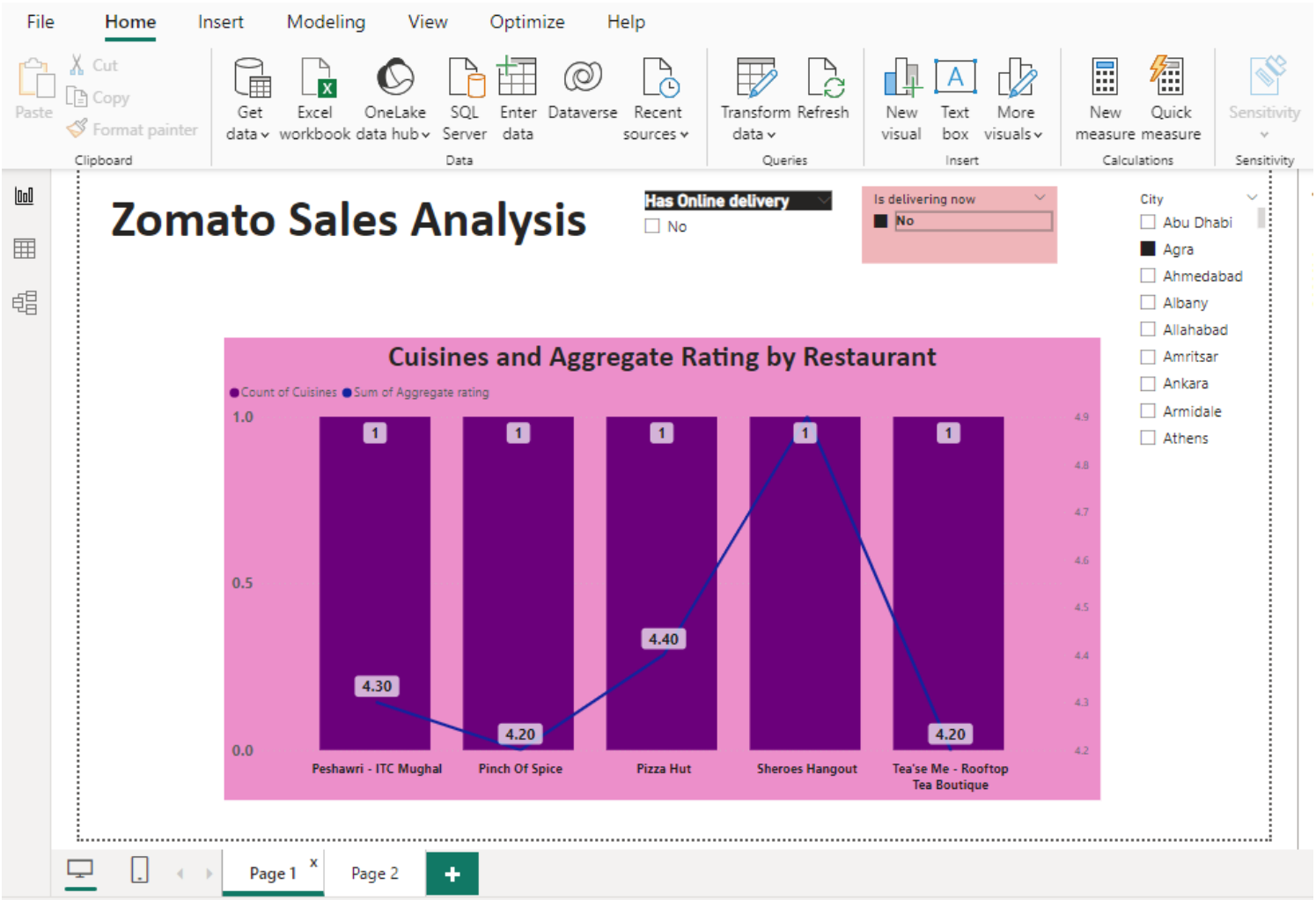
Conclusion and Insights

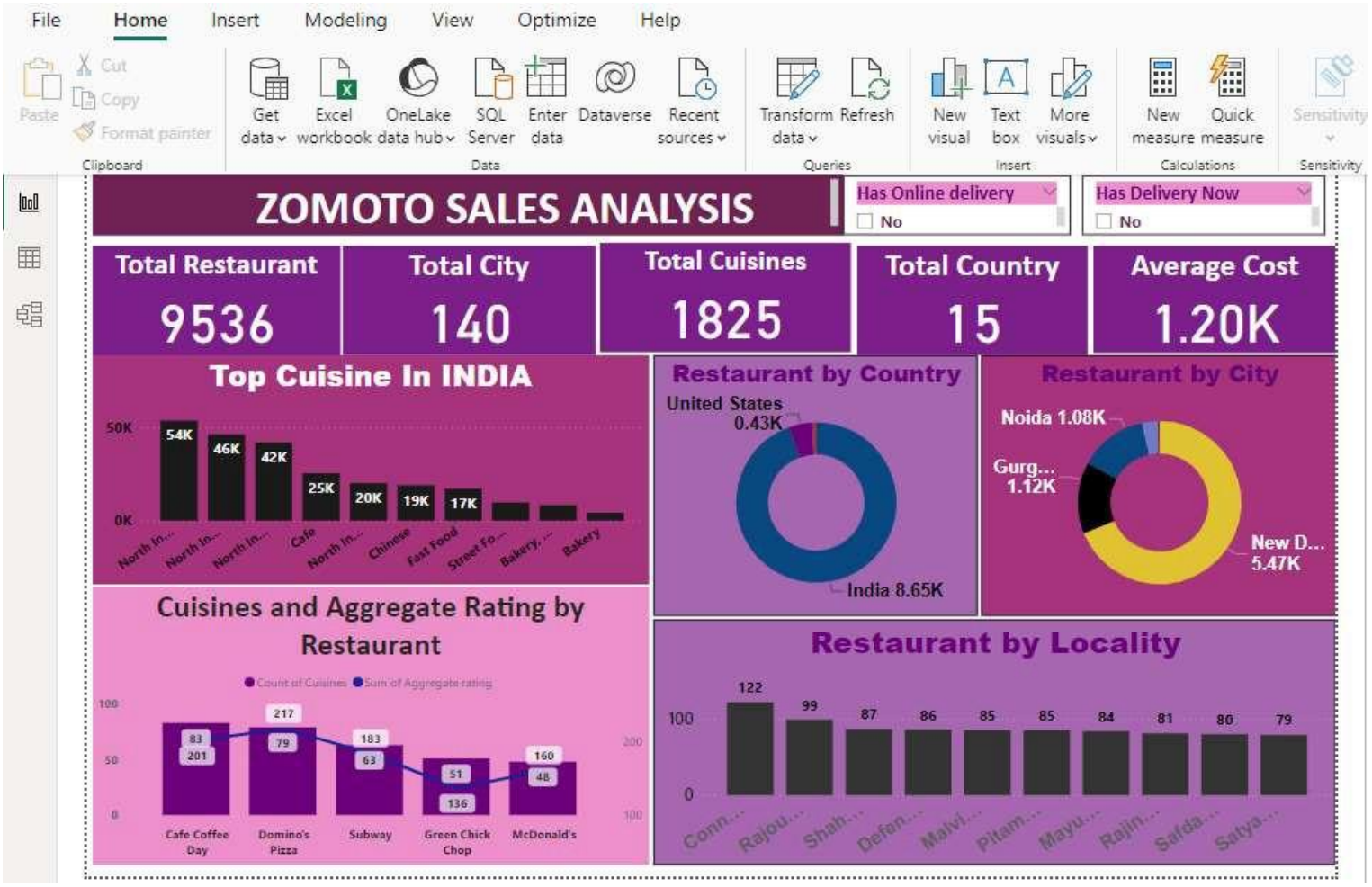
The analysis reveals key findings such as localities with a high concentration of restaurants, the popularity of online delivery services, and the average ratings across different countries. Recommendations for restaurant owners include enhancing quality, incorporating online delivery and table booking services, and diversifying cuisine offerings to attract a broader customer base. Additionally, the study provides valuable filters for consumers to make informed dining decisions based on cost, ratings, and cuisine preferences.

Key Takeaway

This project not only showcases the power of data analysis in understanding consumer preferences and industry trends but also demonstrates the effectiveness of interactive dashboards in making data-driven insights accessible to a wider audience.

Screenshots of the Project 1

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ZOMOTO SALES ANALYSIS
Has Online delivery
No
Has Delivery Now
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Total Restaurant
9536
Total City
140
Total Cuisines
1825
Total Country
15
Average Cost
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17K
North In...
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Bakery
Restaurant by Country
United States
0.43K
India 8.65K
Restaurant by City
Noida 1.08K
Gurg...
1.12K
New D...
5.47K
Cuisines and Aggregate Rating by Restaurant
Count of Cuisines
Sum of Aggregate rating
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200
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183
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51
136
160
48
Cafe Coffee Day
Domino's Pizza
Subway
Green Chick Chop
McDonald's
Restaurant by Locality
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Pitam...
Mayu...
Rajin...
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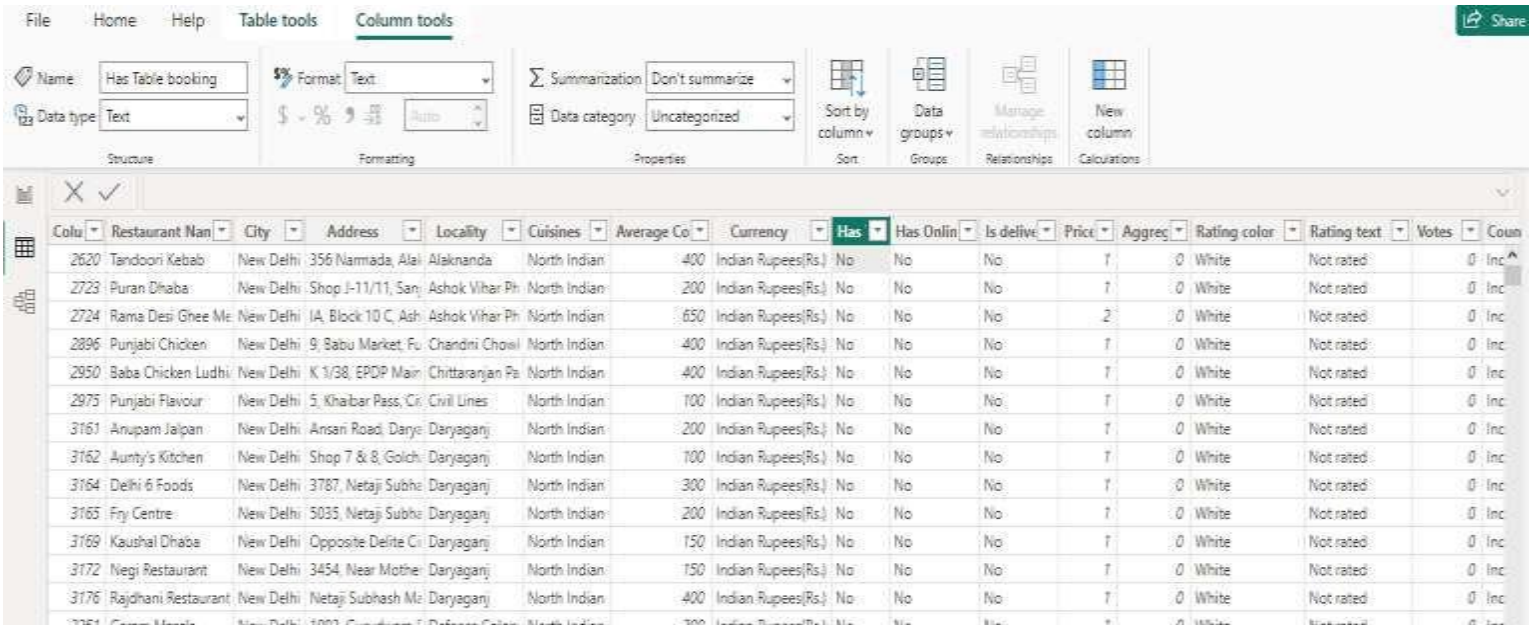
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Restaurant Nan
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Address
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Average Co
Currency
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2620 Tandoori Kebab New Delhi 356 Narmada, Alak Alaknanda North Indian 400 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
2723 Puran Dhaba New Delhi Shop J-11/11, San Ashok Vihar Ph North Indian 200 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
2724 Rama Desi Ghee Me New Delhi IA, Block 10 C, Ash Ashok Vihar Ph North Indian 650 Indian Rupees(Rs.) No No No 2 0 White Not rated 0 Inc
2896 Punjabi Chicken New Delhi 9, Babu Market, Fu Chandni Chowk North Indian 400 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
2950 Baba Chicken Ludhi New Delhi K 1/38, EPDP Main Chittaranjan Pa North Indian 400 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
2975 Punjabi Flavour New Delhi 5, Khaibar Pass, Civ Civil Lines North Indian 100 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3161 Anupam Jalpan New Delhi Ansari Road, Daryc Daryaganj North Indian 200 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3162 Aunty's Kitchen New Delhi Shop 7 & 8, Golch Daryaganj North Indian 100 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3164 Delhi 6 Foods New Delhi 3787, Netaji Subhc Daryaganj North Indian 300 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3165 Fry Centre New Delhi 5035, Netaji Subhc Daryaganj North Indian 200 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3169 Kaushal Dhaba New Delhi Opposite Delite Ci Daryaganj North Indian 150 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3172 Negi Restaurant New Delhi 3454, Near Mothe Daryaganj North Indian 150 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc
3176 Rajdhani Restaurant New Delhi Netaji Subhash Ma Daryaganj North Indian 400 Indian Rupees(Rs.) No No No 1 0 White Not rated 0 Inc

Project -2

Project Title: HR Gender Diversity and Inclusion Analytics

Introduction

In the contemporary workplace, fostering an environment that champions gender diversity and inclusion is not just an ethical imperative but also a strategic advantage. This project aims to leverage the analytical power of Power BI to develop a comprehensive dashboard that provides key insights into gender diversity and inclusion metrics within an organization. By tracking and analyzing various dimensions of diversity, this initiative seeks to promote transparency, identify opportunities for improvement, and drive strategic decisions towards creating a more inclusive workplace.

Key Features

Comprehensive Dashboard

Utilizing Microsoft Power BI, this project delivers an intuitive and interactive dashboard that aggregates and visualizes key performance indicators (KPIs) related to gender diversity and inclusion. The dashboard serves as a central platform for HR and management teams to monitor and assess gender diversity across different levels and departments within the company.

Multi-Dimensional Metrics

The analytics cover a broad spectrum of metrics, including but not limited to:

Age Diversity: Analysis of gender representation across different age groups.
Regional Diversity: Insights into gender diversity across various geographic locations and offices.
Job Diversity: Examination of gender distribution across different job functions and levels.
Employee Turnover Rate: Gender-specific insights into employee attrition, providing clues to potential areas of concern regarding inclusion.
Promotion Statistics: Tracking of promotion rates among genders, highlighting progress towards equitable career advancement opportunities.

Technology Stack

Data Modeling and Visualization: Developed with Microsoft Power BI, the dashboard harnesses advanced data modeling techniques to present data in a user-friendly manner.

Data Preparation: Utilizing Microsoft Excel for initial data cleaning and preparation, ensuring high-quality, actionable insights.

Benefits, Transparency and Accountability

The dashboard promotes a culture of transparency by providing clear visibility into gender diversity metrics, enabling the organization to hold itself accountable for its diversity and inclusion goals.

Identifying Gaps and Opportunities

By dissecting gender diversity across various dimensions, the project helps identify gaps in representation and inclusion. This insight is crucial for developing targeted strategies to address these gaps.

Data-Driven Decision Making

Empowers HR and management teams to make informed decisions based on robust data analytics. This approach ensures that strategies for enhancing gender diversity are grounded in reality and tailored to the organization's specific context.

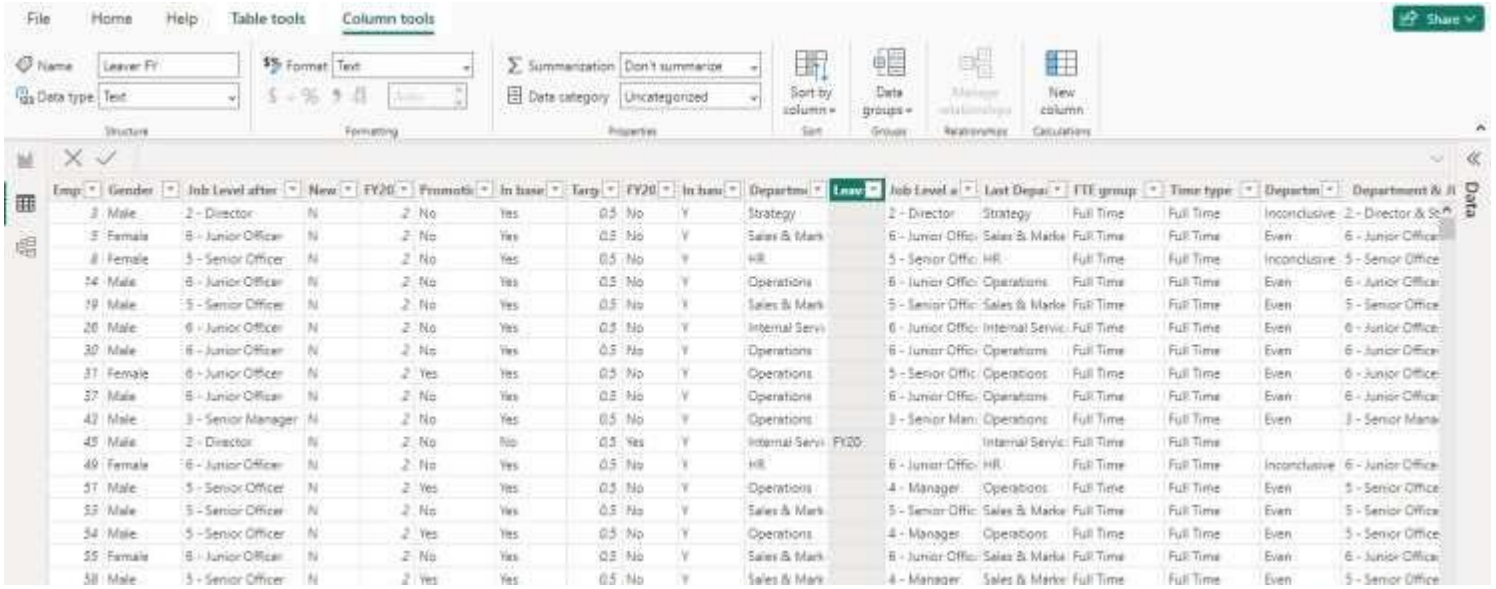
Fostering an Inclusive Culture

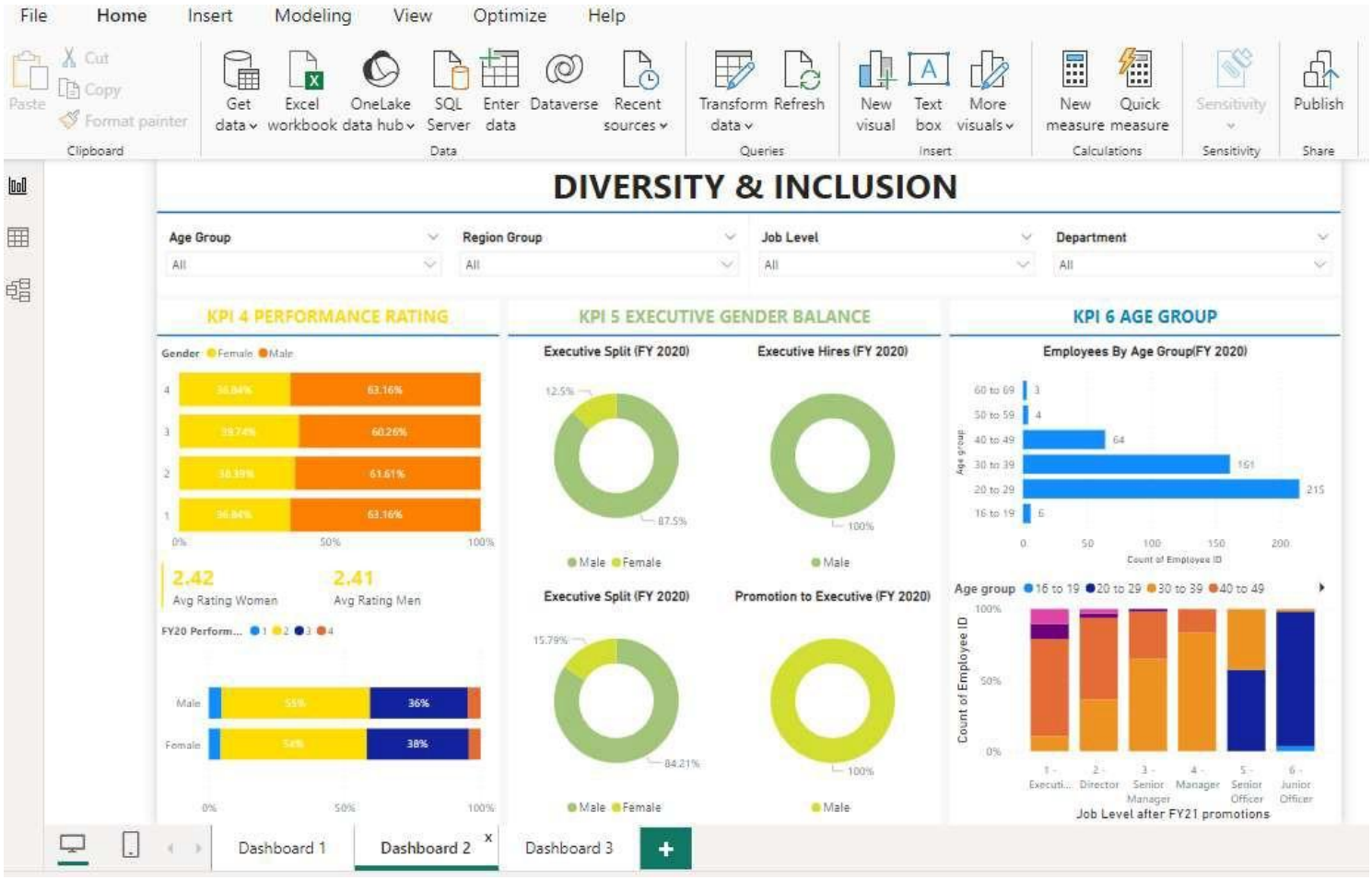
Ultimately, the project's goal is to leverage data analytics to foster a workplace culture that values and promotes diversity and inclusion. By continuously monitoring and addressing gender diversity metrics, the organization can make significant strides towards creating an equitable and inclusive environment for all employees.

Conclusion

The HR Gender Diversity and Inclusion Analytics project exemplifies the power of data analytics in driving meaningful change within organizations. Through meticulous data analysis and interactive visualization, this Power BI dashboard enables stakeholders to gain insights into critical aspects of gender diversity and inclusion, laying the groundwork for a more diverse, equitable, and inclusive workplace.

Screenshots of the Project 2

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Clipboard
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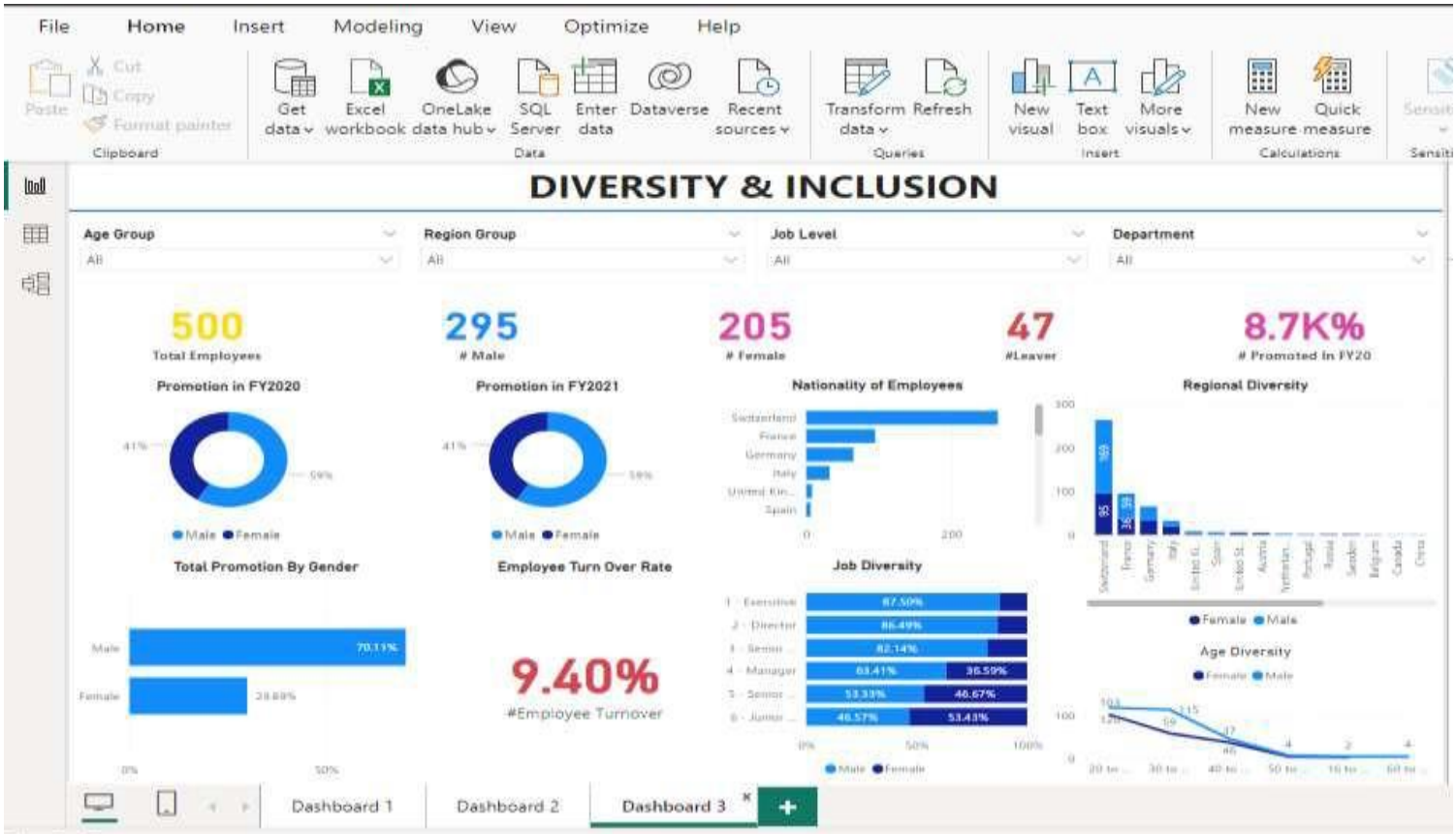
Queries
New visual Text box More visuals
Insert
New measure Quick measure
Calculations
Sensitivity
Publish
Share
DIVERSITY & INCLUSION
Age Group All
Region Group All
Job Level All
Department All
KPI 4 PERFORMANCE RATING
Gender Female Male
2.42 Avg Rating Women
2.41 Avg Rating Men
FY20 Perform...
KPI 5 EXECUTIVE GENDER BALANCE
Executive Split (FY 2020)
Executive Hires (FY 2020)
Executive Split (FY 2020)
Promotion to Executive (FY 2020)
KPI 6 AGE GROUP
Employees By Age Group(FY 2020)
Age group 16 to 19 20 to 29 30 to 39 40 to 49
Count of Employee ID
Job Level after FY21 promotions
Dashboard 1 Dashboard 2 Dashboard 3


File Home Insert Modeling View Optimize Help
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DIVERSITY & INCLUSION
Age Group All
Region Group All
Job Level All
Department All
500 Total Employees
295 # Male
205 # Female
47 #Leaver
8.7K% # Promoted In FY20
Promotion in FY2020
Promotion in FY2021
Nationality of Employees
Regional Diversity
Total Promotion By Gender
Employee Turn Over Rate
Job Diversity
Age Diversity
9.40% #Employee Turnover
Dashboard 1 Dashboard 2 Dashboard 3

Project -3

Project Overview: HR Gender Diversity and Inclusion Analytics

Objective

This project is dedicated to developing a Power BI Dashboard aimed at a comprehensive understanding of employee attrition within an organization. By delving into the myriad factors contributing to turnover, this initiative seeks to arm HR professionals with the data-driven insights necessary to formulate and implement effective retention strategies, ultimately aiming to bolster retention rates and reinforce the organizational workforce.

Dataset Insights

Utilizing a rich dataset from the IBM HR Analytics Employee Attrition & Performance available on Kaggle, this project examines a variety of variables including employee demographics, job characteristics, performance metrics, and attrition outcomes. The depth and breadth of the dataset enable a multifaceted analysis of the factors influencing employee turnover, providing a solid foundation for deriving actionable insights.

Analytical Methodology

Initial Steps

Objective Definition: Establishing clear goals to uncover patterns and drivers of employee attrition.

Data Acquisition and Preliminary Analysis: Securing the dataset from Kaggle, followed by an exploratory analysis to understand the distribution and relationship of key variables impacting attrition.

Metric Formulation

KPI Development: Leveraging Power BI Desktop along with Data Analysis Expressions (DAX) to craft essential Key Performance Indicators, including attrition rates by various demographics, turnover trends by department, and more.

Dashboard Development

Interactive Visualization: Creating a dynamic dashboard in Power BI Desktop, featuring a suite of visualizations, filters, and slicers. This dashboard serves as a

tool for HR and management to interactively explore and digest the nuances of employee attrition patterns.

Dataset Acquisition: Obtain the dataset via the provided link in the Dataset section.
Accessing the Dashboard: Clone or download this project repository to your local system. Then, open the HR-attrition-dashboard.pbix file with Power BI Desktop to engage with the dashboard's full capabilities.

Analytical Inquiries

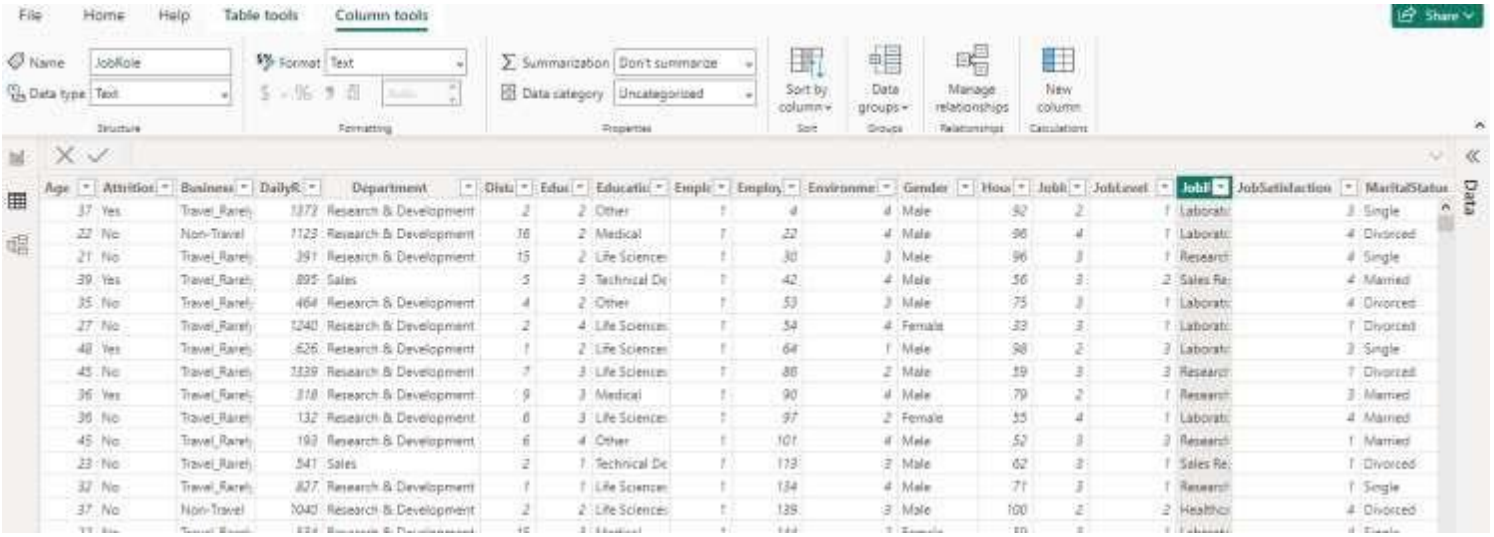
The dashboard facilitates deep dives into various aspects of attrition, answering critical questions such as:

What is the overall attrition rate and its variation across gender demographics?
Which age demographic is most affected by attrition?
How does attrition distribution look across different organizational departments?
Identification of job roles witnessing the highest rates of turnover.
Exploration of the relationship between tenure at the company and likelihood of attrition.
Analysis of the impact of monthly salary levels on attrition rates.
Examination of overtime requirements in relation to attrition trends.
Assessment of performance ratings' effect on attrition probabilities.
Investigating the influence of work-life balance satisfaction on employee retention.

Conclusion

The HR Attrition Analysis Dashboard project encapsulates the essence of leveraging advanced analytics to foster a more engaged and stable workforce. Through meticulous analysis and interactive data visualization, it provides HR practitioners with the insights needed to address attrition proactively, paving the way for a more resilient and inclusive corporate culture.

Screenshots of the Project 3



Project -4

Project Name: Exploratory Analysis Report: Superstore Sales Data

Objective
This project is dedicated to developing a Power BI Dashboard aimed at a comprehensive

Introduction
In this exploratory analysis, we delve into the sales data of our superstore, aiming to uncover key insights and potential areas for improvement. The dashboard and analysis are done with Microsoft PowerBI.

1. Performance Against Expected Values
We begin by comparing Total Sales and Total Profit against the company's expected values. This provides an overview of our performance relative to set benchmarks.

2. Category Analysis: Sales vs. Profit
A closer look at our product categories reveals intriguing findings:

Technology : Highest in both sales and profit (51%).
Furniture : Second in sales but only 6% profit.
Office Supplies: Lowest sales, yet yields 43% profit.

3. Top and Bottom Selling Items
Identifying our top 5 and bottom 5 selling items within sub-categories sheds light on product popularity and areas needing attention.

4. Monthly Sales Trends
Examining monthly sales data helps us pinpoint peak and off-peak periods. We also analyze the margin between total sales and returns: Notably high margin in Q4 (Oct-Dec) suggests a strategic focus on this quarter for increased profitability.

5. Geographic Sales Analysis
Visualizing sales by state using bubbles highlights regional disparities:

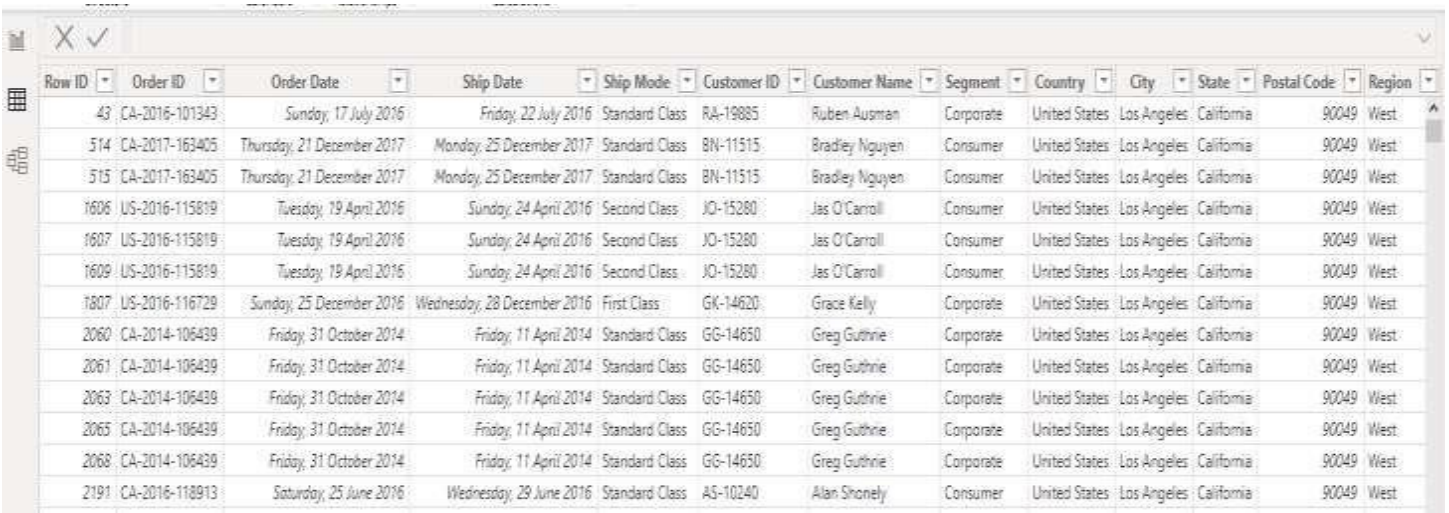
California and New York stand out with high sales, potentially due to their larger populations and higher tech consumption.
Low sales states present opportunities for targeted advertising and tailored product offerings.

Recommendations:
From our analysis, several actionable insights emerge:

Furniture Sales: Despite high sales, profitability is low. Consider product innovation and price adjustments to increase profit margins.
Product Focus: Allocate resources towards top-selling items for sales growth, while re-evaluating the bottom 5 for potential discontinuation.
Q4 Strategy: Develop a Q4 sales strategy to capitalize on the high margin between total sales and returns.
Geographical Targeting: Implement targeted advertising strategies based on regional sales trends to maximize sales potential.

Conclusion
This analysis provides a data-driven perspective on our superstore's performance, offering valuable insights and actionable recommendations. While it serves as a foundation, a comprehensive business strategy should be developed considering all relevant factors.

Screenshots of the Project 4



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514	CA-2017-163405	Thursday, 21 December 2017	Monday, 25 December 2017	Standard Class	BN-11515	Bradley Nguyen	Consumer	United States	Los Angeles	California	90049	West
515	CA-2017-163405	Thursday, 21 December 2017	Monday, 25 December 2017	Standard Class	BN-11515	Bradley Nguyen	Consumer	United States	Los Angeles	California	90049	West
1606	US-2016-115819	Tuesday, 19 April 2016	Sunday, 24 April 2016	Second Class	JO-15280	Jas O'Carroll	Consumer	United States	Los Angeles	California	90049	West
1607	US-2016-115819	Tuesday, 19 April 2016	Sunday, 24 April 2016	Second Class	JO-15280	Jas O'Carroll	Consumer	United States	Los Angeles	California	90049	West
1609	US-2016-115819	Tuesday, 19 April 2016	Sunday, 24 April 2016	Second Class	JO-15280	Jas O'Carroll	Consumer	United States	Los Angeles	California	90049	West
1807	US-2016-116729	Sunday, 25 December 2016	Wednesday, 28 December 2016	First Class	GK-14620	Grace Kelly	Corporate	United States	Los Angeles	California	90049	West
2060	CA-2014-106439	Friday, 31 October 2014	Friday, 11 April 2014	Standard Class	GG-14650	Greg Guthrie	Corporate	United States	Los Angeles	California	90049	West
2061	CA-2014-106439	Friday, 31 October 2014	Friday, 11 April 2014	Standard Class	GG-14650	Greg Guthrie	Corporate	United States	Los Angeles	California	90049	West
2063	CA-2014-106439	Friday, 31 October 2014	Friday, 11 April 2014	Standard Class	GG-14650	Greg Guthrie	Corporate	United States	Los Angeles	California	90049	West
2065	CA-2014-106439	Friday, 31 October 2014	Friday, 11 April 2014	Standard Class	GG-14650	Greg Guthrie	Corporate	United States	Los Angeles	California	90049	West
2068	CA-2014-106439	Friday, 31 October 2014	Friday, 11 April 2014	Standard Class	GG-14650	Greg Guthrie	Corporate	United States	Los Angeles	California	90049	West
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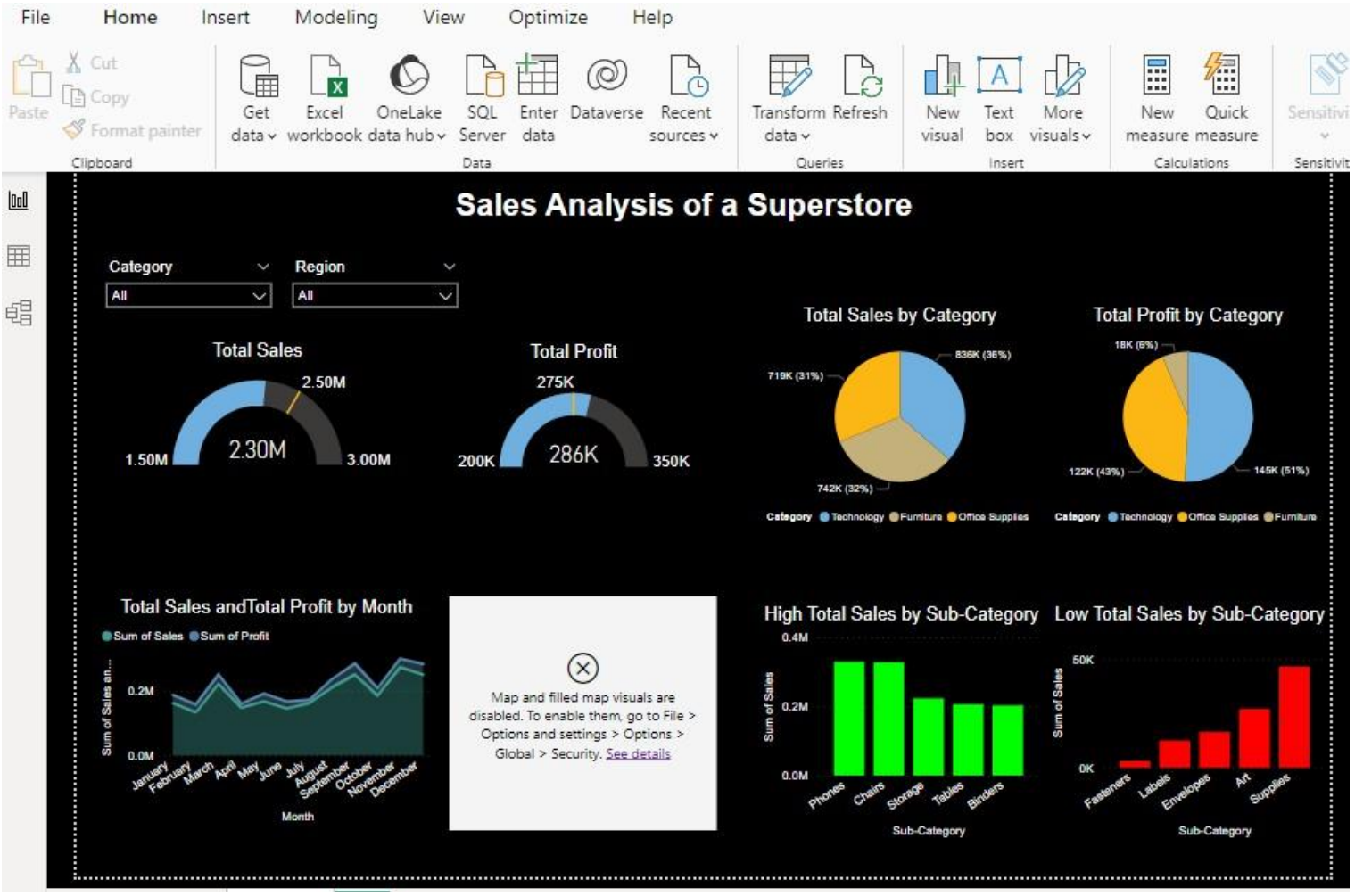
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Sales Analysis of a Superstore
Category
All
Region
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Total Sales
2.50M
1.50M
2.30M
3.00M
Total Profit
275K
200K
286K
350K
Total Sales by Category
836K (36%)
719K (31%)
742K (32%)
Category Technology Furniture Office Supplies
Total Profit by Category
18K (6%)
122K (43%)
145K (51%)
Category Technology Office Supplies Furniture
Total Sales andTotal Profit by Month
Sum of Sales Sum of Profit
Sum of Sales an...
0.2M
0.0M
January February March April May June July August September October November December
Month
Map and filled map visuals are disabled. To enable them, go to File > Options and settings > Options > Global > Security. See details
High Total Sales by Sub-Category
0.4M
Sum of Sales
0.2M
0.0M
Phones Chairs Storage Tables Binders
Sub-Category
Low Total Sales by Sub-Category
50K
Sum of Sales
0K
Fasteners Labels Envelopes Art Supplies
Sub-Category

Project -5

Project Name: E-Commerce Sales Insights Analysis

Objective
This project is dedicated to developing a Power BI Dashboard aimed at a comprehend.

Overview
This project offers an in-depth analysis of an e-commerce enterprise leveraging Power BI tools. Key business metrics and trends are visualized through a comprehensive dashboard. The insights derived facilitate data-driven decision-making, aiding business growth. The project incorporates forecasting techniques for predictive analysis.

Aim
The primary goal is to provide actionable insights into the e-commerce landscape, pinpointing areas for enhancement and growth through comprehensive analysis.

Dashboard Insights
Key Performance Indicators (KPIs): Total Profit, Total Sales, Total Quantity, Profit Margin%
Monthly Trends: Sales and Profit
Category-wise Analysis: Profits, Sales, and Sales%
Sales by Geography: States and Regions
Top & Bottom 5 Products Analysis
Regional Sales Analysis

Business Performance Analysis
The project aims to highlight crucial business metrics and trends via a Power BI dashboard, identifying areas for optimization and informed decision-making.

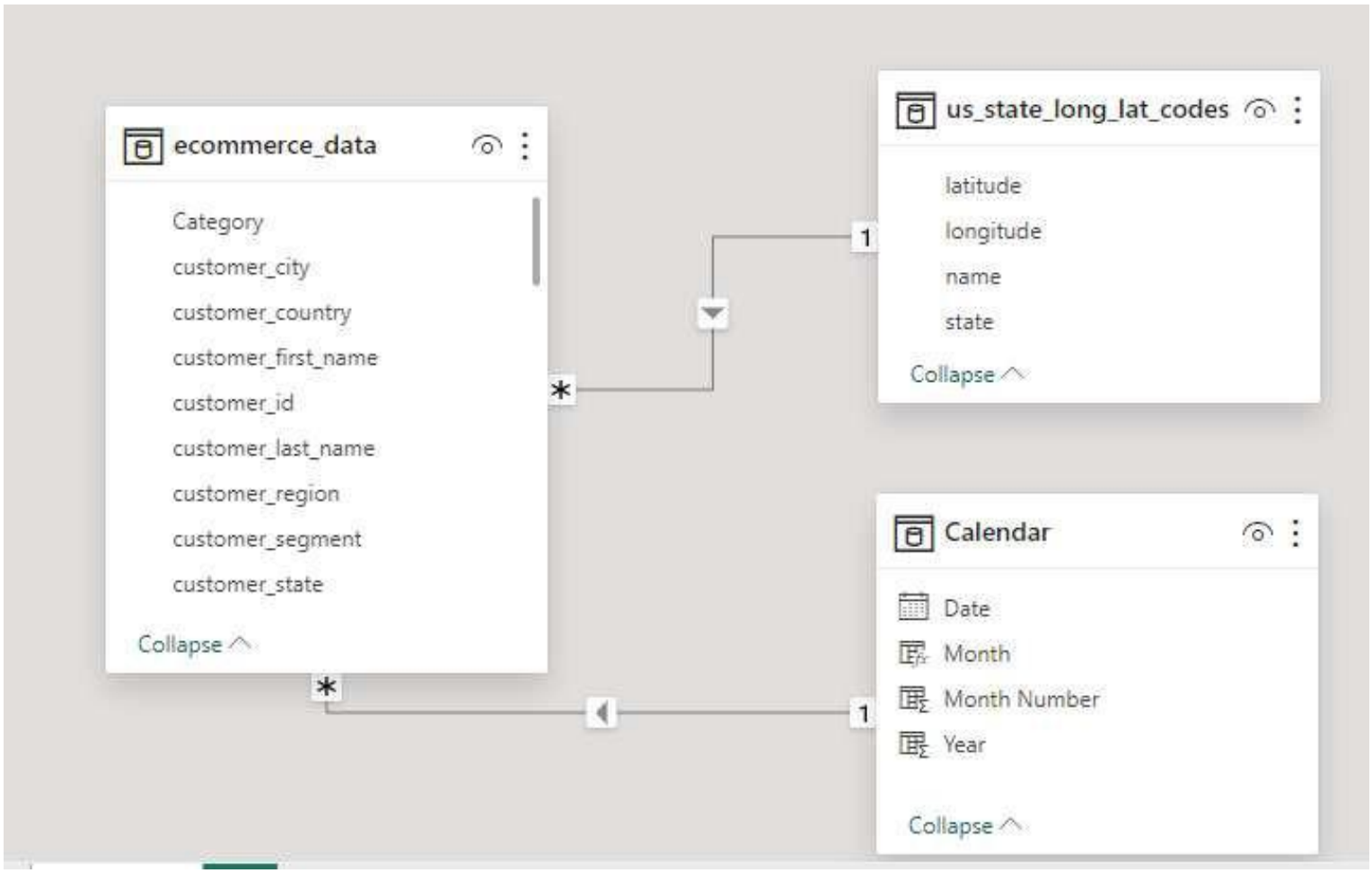
Project Learnings
Creation of interactive dashboards for online sales data analysis
Utilization of complex parameters for drill-down analysis and filter customization

Data manipulation techniques: connections, table joins, calculations, and user-driven parameters for visualization
Various visualization types used: bar chart, pie chart, donut chart, clustered bar chart, scatter chart, line chart, area chart, map, slicers, etc.

Conclusion

This project harnesses Power BI's capabilities to empower stakeholders with a dynamic platform for sales data analysis. The derived insights lead to informed decisions and refined sales strategies.

Screenshots of the Project 5


ecommerce_data
Category
customer_city
customer_country
customer_first_name
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customer_last_name
customer_region
customer_segment
customer_state
Collapse
us_state_long_lat_codes
latitude
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Project -6

Project Title: Sales Dashboard & Analysis

Introduction

In the dynamic realm of retail sales, understanding the intricacies of consumer behaviour and sales trends is paramount for strategic decision-making. This project is conceived to unravel the layers of sales data through meticulous analysis, focusing on item categories, sub-categories, seasonal trends, and payment preferences that drive profitability. By leveraging the analytical prowess of Power BI, this initiative aims to distill actionable insights, enabling the business to optimize its sales strategies and enhance overall profitability.

Objective and Business Task

The core objective of this analysis is to dissect various dimensions of sales data to uncover underlying patterns and trends that influence the shop's profit margins. Specifically, the project endeavors to:

Identify the categories and sub-categories of items that contribute most significantly to profits, providing a clear direction for inventory management and marketing efforts.

Analyze monthly sales trends to pinpoint periods of heightened profitability, aiding in the strategic planning of promotions and stock allocations.

Assess the impact of different payment modes on order volume and profitability, guiding the enhancement of payment infrastructure to cater to consumer preferences.

Dataset Overview

The analytical framework of this project is built upon two key datasets:

Orders Dataset: A comprehensive record of all orders placed, encapsulating details such as item categories, order dates, and payment methods.

Order Details Dataset: A granular view of each order, including sub-category information, quantity ordered, and profit generated.

Analytical Process

Data Preparation: Initial steps involve cleaning and consolidating the datasets to ensure accuracy and relevance of the analysis.

Visualization and Dashboard Creation: Utilizing Power BI, a comprehensive dashboard is developed to encapsulate key metrics and trends. This dashboard

serves as a real-time tool for visualizing profitability trends, category performance, and the efficacy of payment modes.

Insight Generation:

Through the dashboard, the analysis sheds light on profitable categories and sub-categories, identifies lucrative months, and evaluates the profitability linked to various payment methods.

Key Findings and Business Applications

Profitable Categories: The dashboard highlights the item categories that are most profitable, guiding inventory and marketing focus.

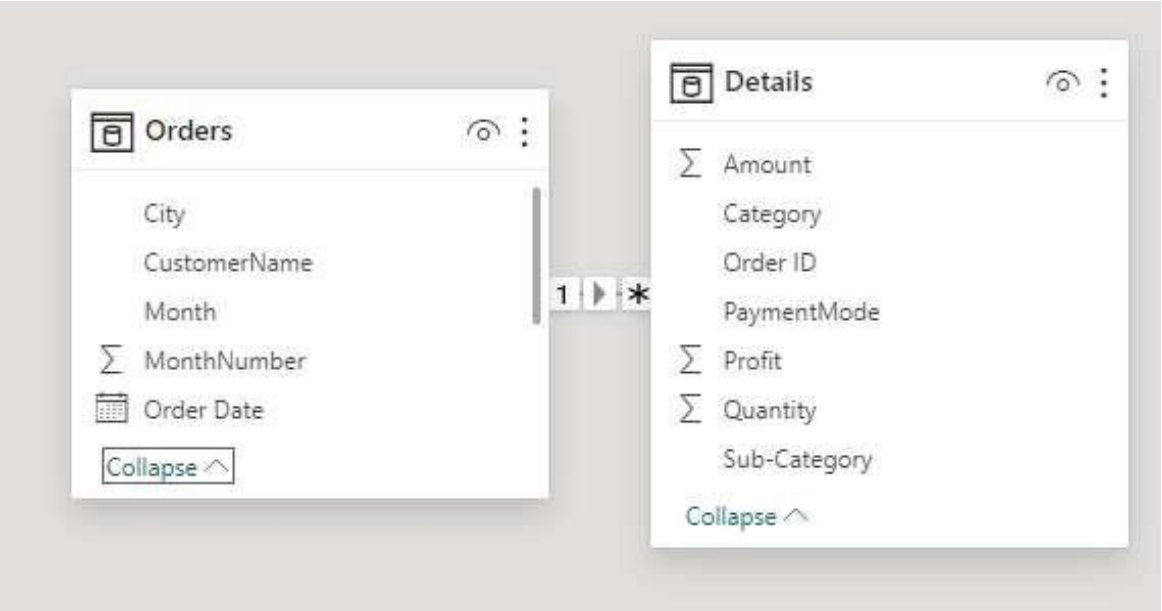
Seasonal Trends: Analysis of monthly trends uncovers periods with increased profitability, informing promotional and stocking strategies.

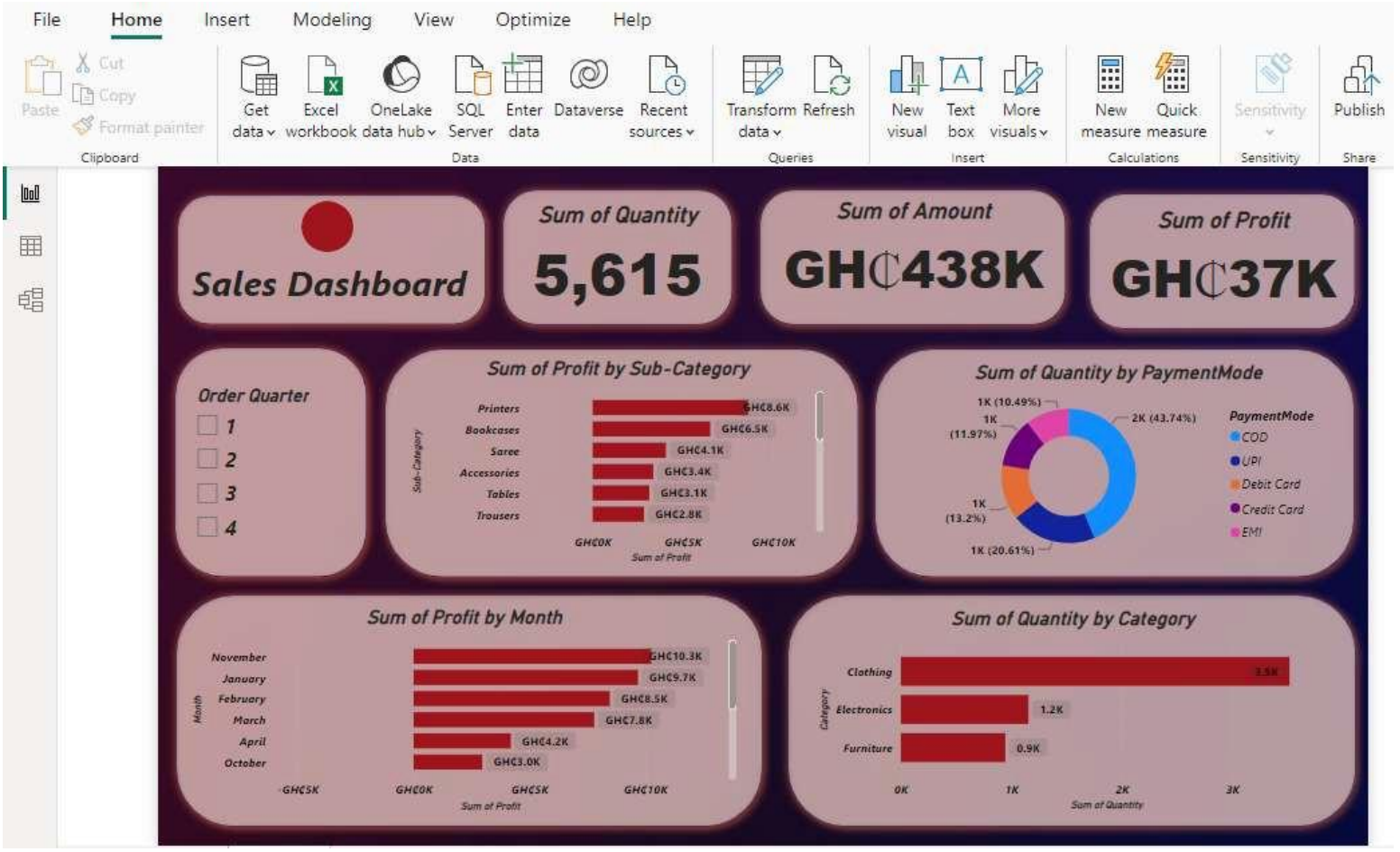
Payment Mode Insights: Examination of payment modes reveals preferences that correlate with higher order values, suggesting areas for payment process improvements.

Conclusion

The Sales Dashboard & Analysis project exemplifies the transformative power of data visualization in uncovering hidden patterns and driving business strategy. By providing a detailed examination of sales data through the lens of Power BI, this initiative equips the business with the insights needed to refine its sales approach, ultimately leading to enhanced profitability and customer satisfaction.

Screenshots of the Project 6

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Sensitivity
Publish
Share
Sales Dashboard
Sum of Quantity
5,615
Sum of Amount
GH₵438K
Sum of Profit
GH₵37K
Order Quarter
1
2
3
4
Sum of Profit by Sub-Category
Printers
Bookcases
Saree
Accessories
Tables
Trousers
GH₵8.6K
GH₵6.5K
GH₵4.1K
GH₵3.4K
GH₵3.1K
GH₵2.8K
GH₵0K
GH₵5K
GH₵10K
Sum of Profit
Sum of Quantity by PaymentMode
1K (10.49%)
1K (11.97%)
2K (43.74%)
1K (13.2%)
1K (20.61%)
PaymentMode
COD
UPI
Debit Card
Credit Card
EMI
Sum of Profit by Month
November
January
February
March
April
October
GH₵10.3K
GH₵9.7K
GH₵8.5K
GH₵7.8K
GH₵4.2K
GH₵3.0K
GH₵5K
GH₵0K
GH₵5K
GH₵10K
Sum of Profit
Sum of Quantity by Category
Clothing
Electronics
Furniture
1.2K
0.9K
0K
1K
2K
3K
Sum of Quantity

Project -7

Project Overview: Bank Customer Churn Analysis

Introduction

Customer churn, the phenomenon where customers cease their engagement with a service or business, poses a significant challenge across industries, particularly in the banking sector. The ability to predict and understand churn rates is crucial for maintaining a stable customer base and optimizing retention strategies. This project leverages Power BI to delve into the bank's customer data, aiming to uncover patterns and drivers of churn through a meticulous analytical approach.

Objective

The primary goal of this analysis is to dissect the bank's customer churn rates by examining various parameters. By identifying the key factors that contribute to customer departure, this project seeks to equip the bank with actionable insights to enhance customer retention strategies and reduce the churn rate effectively.

Analytical Approach

Data Preparation

The first phase involves thorough data cleansing and preparation, ensuring the quality and integrity of the bank's customer data. This step is crucial for laying a solid foundation for accurate and meaningful analysis.

Data Modeling and Analysis

Employing Power BI's robust data modeling capabilities, this stage focuses on constructing a comprehensive analytical model. The model facilitates a deep dive into the data, enabling the identification of trends, patterns, and correlations that influence customer churn.

Data Visualization

The culmination of the project is the creation of an interactive dashboard in Power BI, designed to visualize the findings from the analysis. This dashboard serves as a dynamic tool, providing stakeholders with an intuitive means to explore churn patterns, segment customer behaviors, and understand the underlying causes of churn.

Key Insights and Implications

Through this analytical journey, the project unveils critical insights into bank customer churn, including but not limited to:

Demographic factors influencing churn rates

The impact of account features and services on customer retention

Behavioral patterns associated with high-risk churn customers

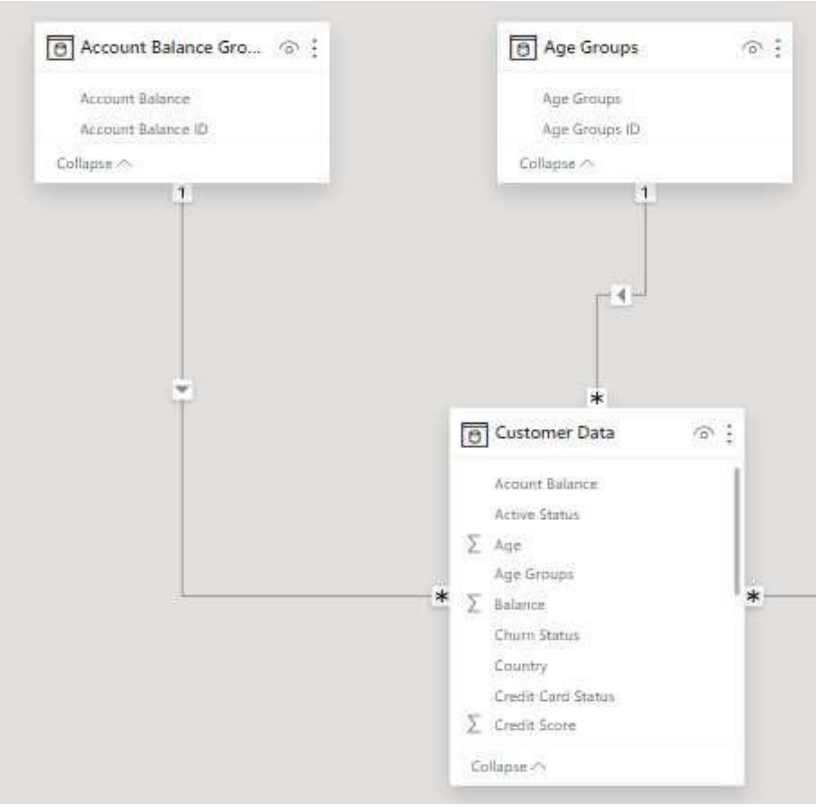
Seasonal or cyclical trends in churn rates

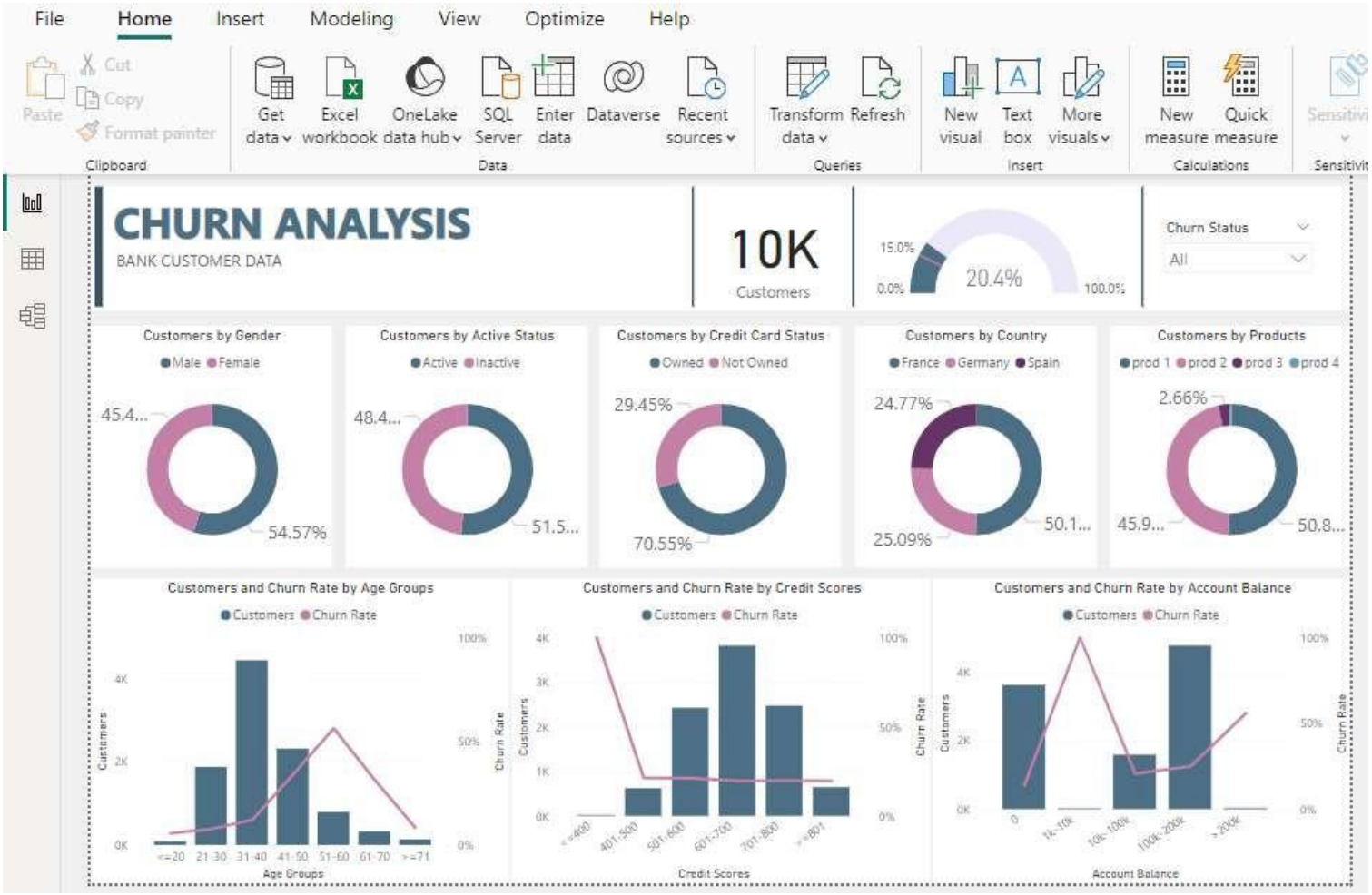
These findings not only highlight areas for immediate action but also inform longer-term strategies for enhancing customer loyalty and engagement.

Conclusion

The Bank Customer Churn Analysis project demonstrates the pivotal role of data analytics in addressing one of the banking sector's most pressing challenges. By harnessing the power of Power BI for comprehensive data analysis and visualization, the project provides a blueprint for reducing churn and fostering a more robust and enduring customer relationship. Through strategic application of the insights gained, the bank can significantly improve its customer retention efforts, contributing to sustained business growth and competitiveness. In the dynamic

Screenshots of the Project 7

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CHURN ANALYSIS
BANK CUSTOMER DATA
10K
Customers
15.0%
0.0%
20.4%
100.0%
Churn Status
All
Customers by Gender
Male
Female
45.4...
54.57%
Customers by Active Status
Active
Inactive
48.4...
51.5...
Customers by Credit Card Status
Owned
Not Owned
29.45%
70.55%
Customers by Country
France
Germany
Spain
24.77%
25.09%
50.1...
Customers by Products
prod 1
prod 2
prod 3
prod 4
2.66%
45.9...
50.8...
Customers and Churn Rate by Age Groups
Customers
Churn Rate
Age Groups
<=20
21-30
31-40
41-50
51-60
61-70
>=71
Customers and Churn Rate by Credit Scores
Credit Scores
Customers and Churn Rate by Account Balance
Account Balance

Project -8

Project Title: Customer Churn and Risk Analysis in Power BI

Introduction

Proactively prevent customer churn and optimize customer service with interactive dashboards.

Key Features:

📌 **Predictive Churn Modelling:** Identify at-risk customers before they churn, enabling proactive interventions and retention strategies.

📌 **Customer Segmentation:** Group customers based on shared characteristics and churn risk, allowing for targeted marketing and engagement efforts.

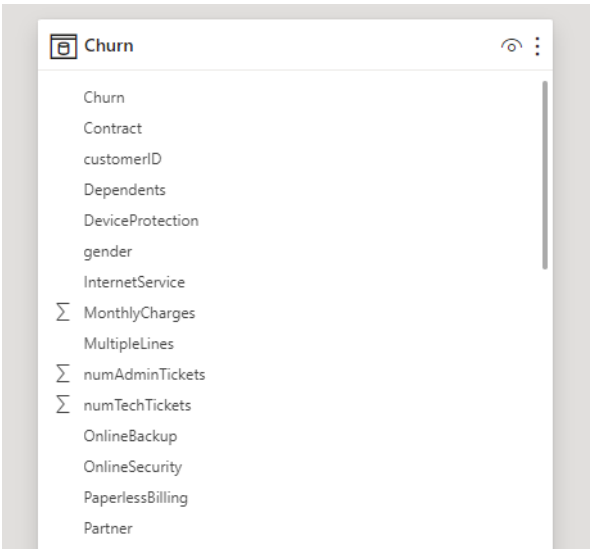
In the dynamic realm of retail sales, understanding the intricacies of consumer behaviour.

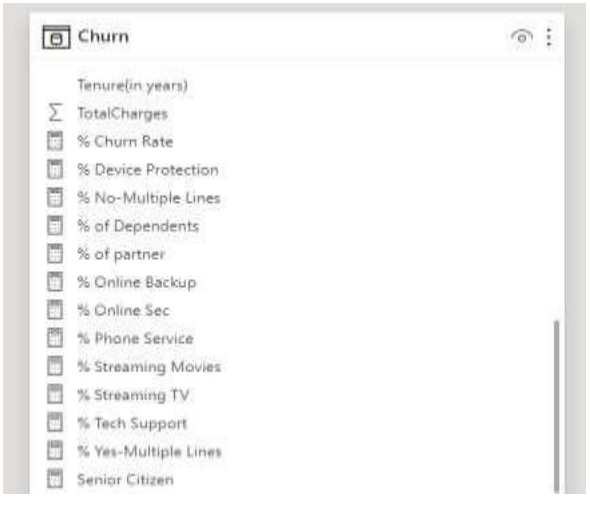
Benefits:

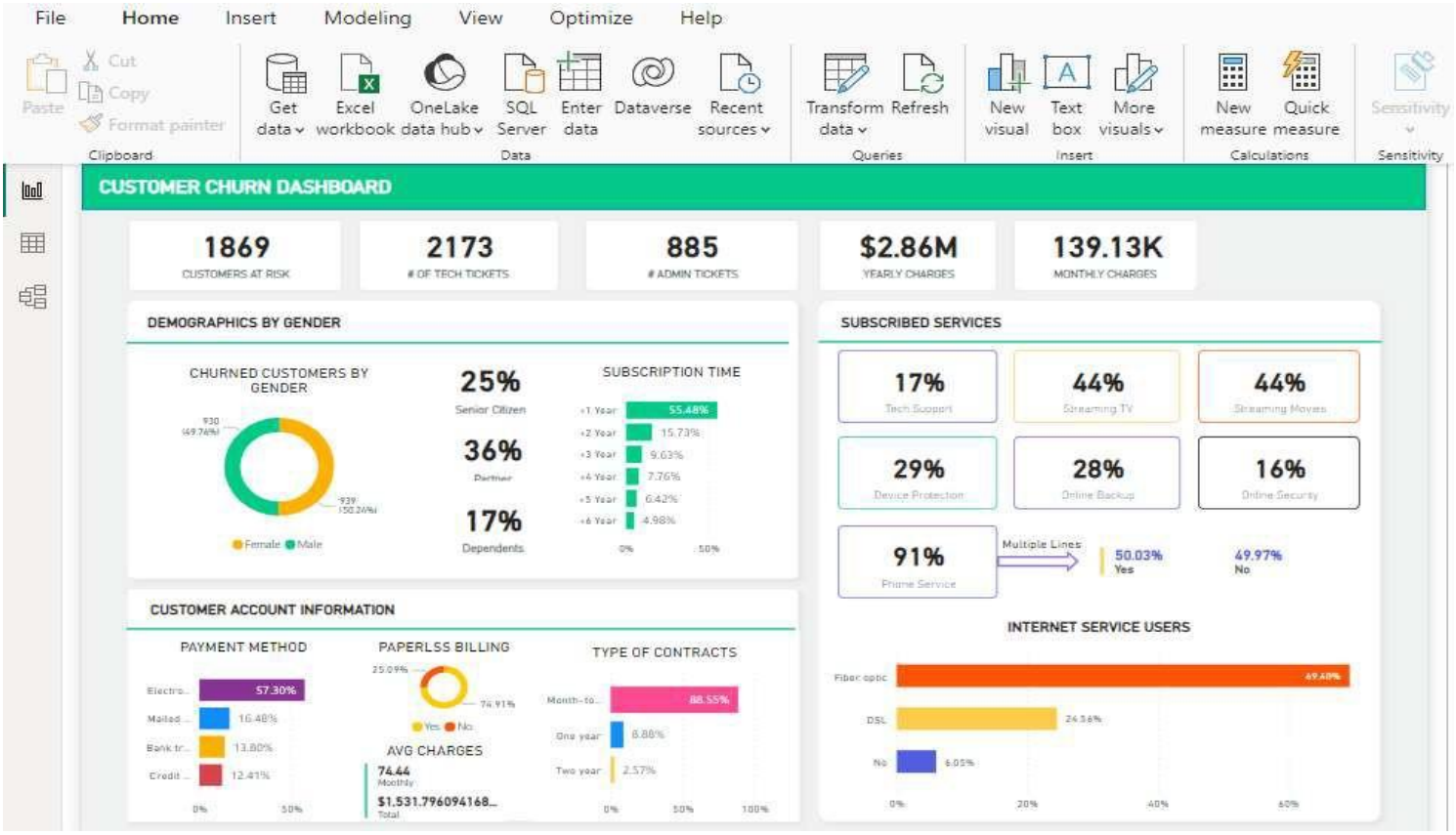
Proactively identify and address at-risk customers, leading to improved retention rates.

Enhance customer satisfaction: Gain deeper understanding of customer needs and tailor service experiences accordingly.

Screenshots of the Project 8



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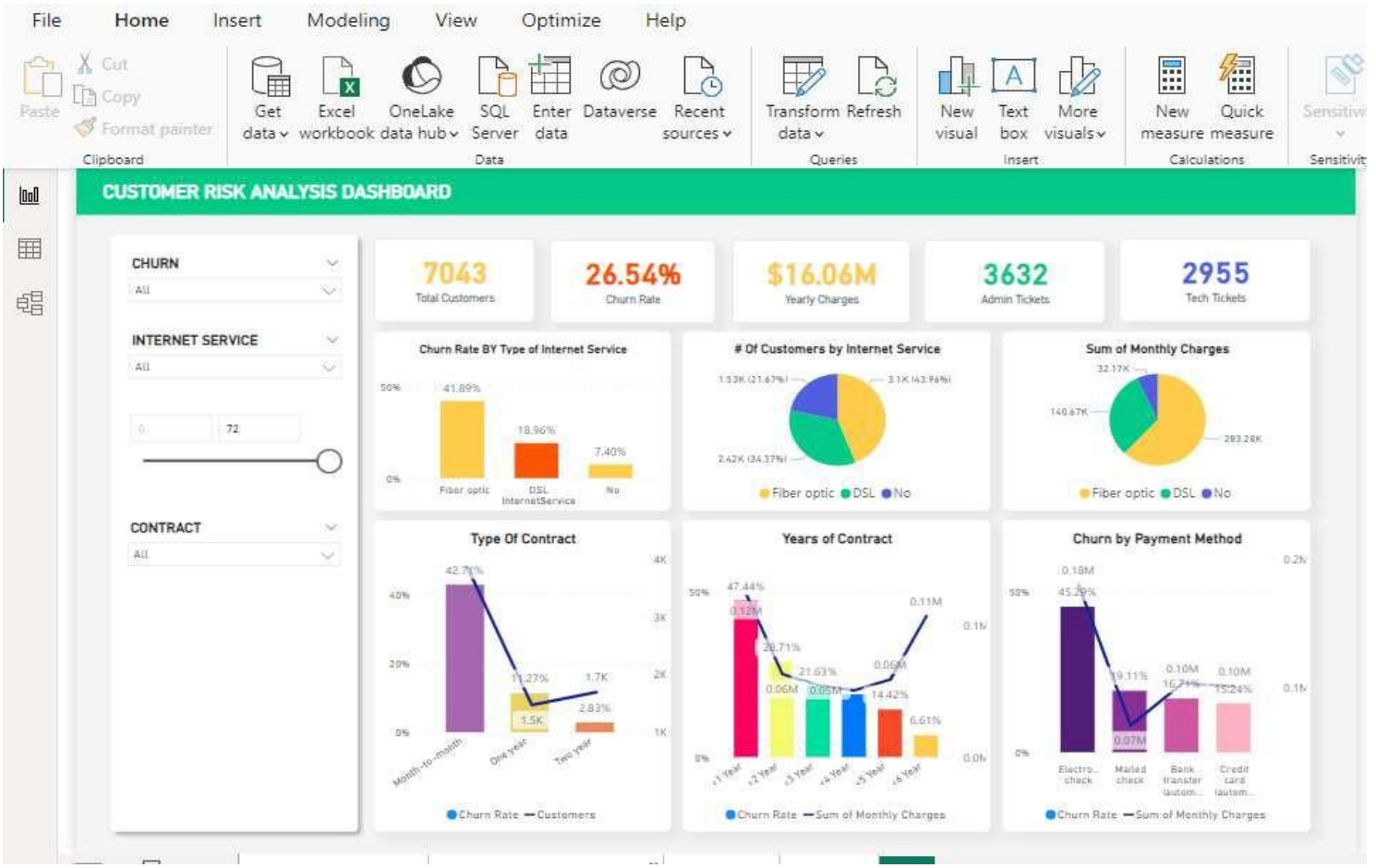
CUSTOMER CHURN DASHBOARD
1869
CUSTOMERS AT RISK
2173
OF TECH TICKETS
885
ADMIN TICKETS
$2.86M
YEARLY CHARGES
139.13K
MONTHLY CHARGES
DEMOGRAPHICS BY GENDER
CHURNED CUSTOMERS BY GENDER
930
939
Female
Male
25%
Senior Citizen
36%
Partner
17%
Dependents
SUBSCRIPTION TIME
+1 Year
55.48%
+2 Year
15.73%
+3 Year
9.63%
+4 Year
7.76%
+5 Year
6.42%
+6 Year
4.98%
SUBSCRIBED SERVICES
17%
Tech Support
44%
Streaming TV
44%
Streaming Movies
29%
Device Protection
28%
Online Backup
16%
Online Security
91%
Phone Service
Multiple Lines
50.03%
Yes
49.97%
No
CUSTOMER ACCOUNT INFORMATION
PAYMENT METHOD
Electro...
57.30%
Mailed ...
16.48%
Bank tr...
13.80%
Credit ...
12.41%
PAPERLSS BILLING
25.09%
74.91%
Yes
No
AVG CHARGES
74.44
Monthly
$1.531.796094168...
Total
TYPE OF CONTRACTS
Month-to...
88.55%
One year
6.88%
Two year
2.57%
INTERNET SERVICE USERS
Fiber optic
49.48%
DSL
24.56%
No
6.05%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Calculations
CUSTOMER RISK ANALYSIS DASHBOARD
CHURN
All
INTERNET SERVICE
All
72
CONTRACT
All
7043
Total Customers
26.54%
Churn Rate
$16.06M
Yearly Charges
3632
Admin Tickets
2955
Tech Tickets
Churn Rate BY Type of Internet Service
41.89%
18.96%
7.40%
Fiber optic
DSL
No
InternetService
Of Customers by Internet Service
1.53K (21.67%)
3.1K (43.96%)
2.42K (34.37%)
Fiber optic
DSL
No
Sum of Monthly Charges
32.17K
140.67K
283.28K
Fiber optic
DSL
No
Type Of Contract
42.7%
11.27%
2.83%
1.5K
1.7K
Month-to-month
One year
Two year
Churn Rate
Customers
Years of Contract
47.44%
26.71%
21.63%
14.42%
6.61%
0.12M
0.06M
0.05M
0.09M
0.11M
Churn Rate
Sum of Monthly Charges
Churn by Payment Method
0.18M
45.29%
19.11%
16.74%
15.24%
0.07M
0.10M
0.10M
Electro... check
Mailed check
Bank transfer (autom...
Credit card (autom...
Churn Rate
Sum of Monthly Charges

Project -9

Project Title: Call Center Analytics in Power BI

Introduction

- ✓ Proactively prevent customer churn and optimize customer service with interactive dashboards.
- ✓ Call Center Analytics in Power BI
- ✓ Boost agent performance and improve customer satisfaction with interactive dashboards.
- ✓ This repository showcases my portfolio project, built using Power BI Desktop and Excel during my internship at PwC. It leverages call center data to provide data-driven insights into agent performance, call trends, and customer experience.

Key Features:

Agent Performance: Track individual and team performance metrics like average call handling time, call resolution rate, and customer satisfaction ratings.

Call Trends: Analyze call volume by time of day, day of week, and agent. Identify peak periods and optimize resource allocation.

Customer Experience: Uncover patterns in customer feedback and identify areas for improvement.

Interactive Dashboards: Visualize data through various charts and graphs, enabling easy exploration and analysis.

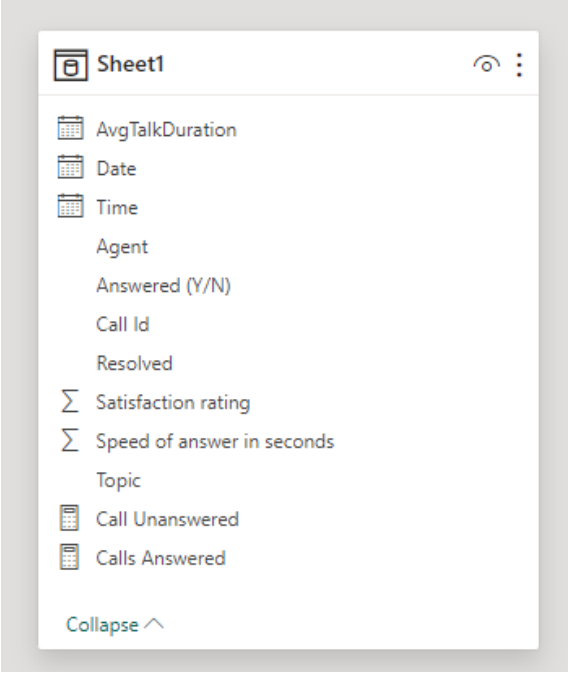
Target Audience:

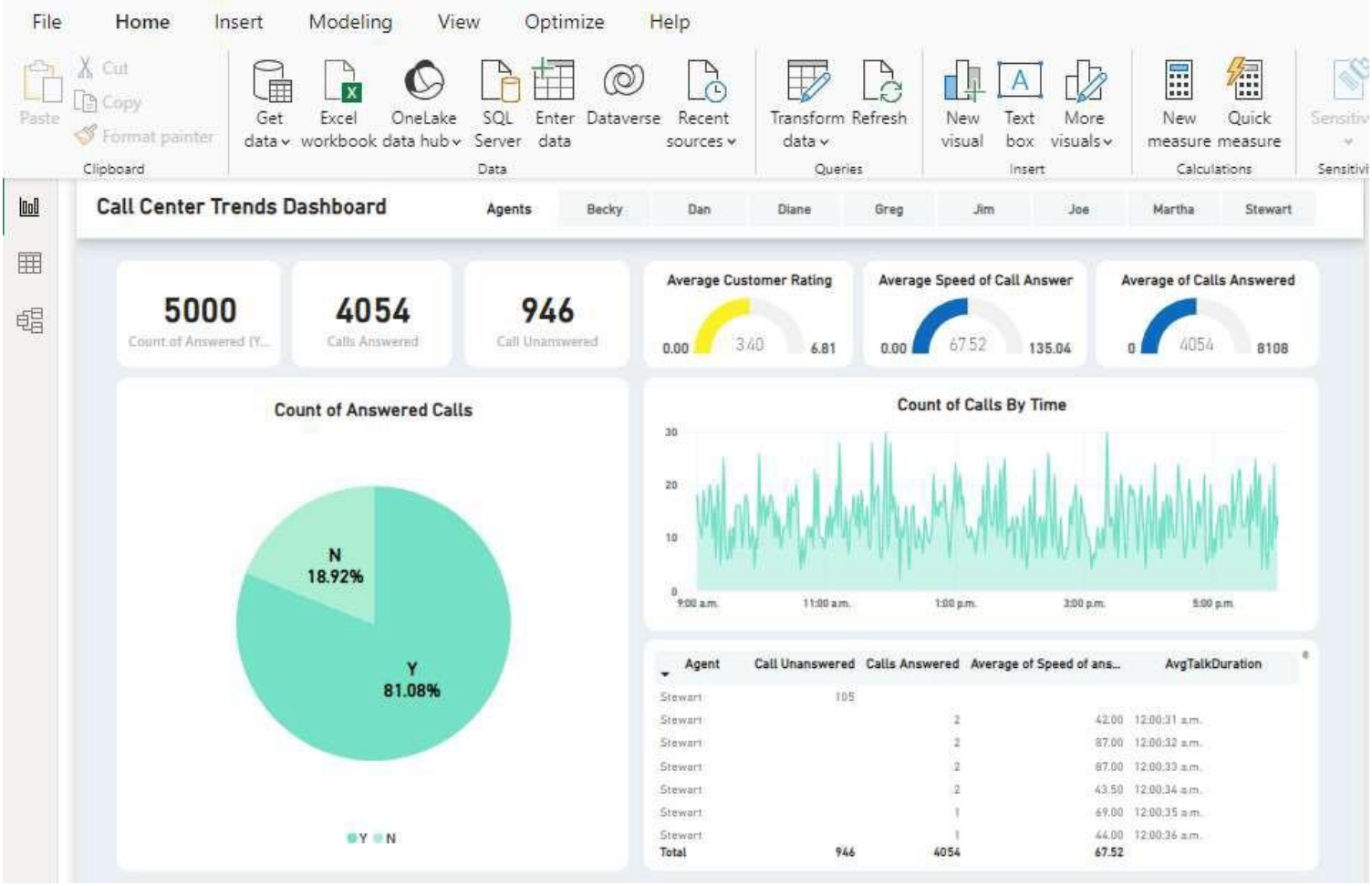
- ✓ Call centre managers and supervisors
- ✓ Business analysts and data scientists
- ✓ Anyone interested in data-driven decision-making

Future Work:

Integrate with additional data sources such as CRM systems. Develop machine learning models to predict call volume and customer churn. Implement real-time data refreshes for up-to-date insights. I'd like to encourage you to explore this project and see how Power BI can be used to transform your call center data into actionable insights.

Screenshots of the Project 9





Project -10

Project Title: Call Center Analytics in Power BI

Introduction

This Power BI dashboard aims to provide comprehensive insights into customer complaints. It contains various visualizations that allow users to understand key metrics related to complaints, identify trends, and gain a deeper understanding of complaint types, products, channels, priorities, and customer satisfaction. The dashboard provides a holistic view of customer feedback, helping businesses make informed decisions to improve customer satisfaction.

Project Insights

Total Complaint KPI: This key performance indicator (KPI) provides a snapshot of the total number of customer complaints.

Closed Complaints KPI: This KPI indicates the number of complaints that have been successfully resolved or closed.

Complaint Types Button: Allows users to interact with the dashboard by filtering data based on different complaint types.

Top 5 Products Complaints (Clustered Bar Chart): This chart visually displays the top 5 products that have received the most complaints.

Complaints by Type (Clustered Bar Chart): This chart breaks down complaints by their type.

Complaints by Channel (Clustered Bar Chart): This chart shows the distribution of complaints across different channels.

Complaints by Priority (Donut Chart): The donut chart presents complaints categorized by their priority levels.

Complaint Trends (Area Chart): This area chart tracks the trends of complaints for products purchased in 2020 and 2021.

Customer Satisfaction Rating (Gauge Chart): The gauge chart provides an overview of customer satisfaction, helping assess overall customer sentiment.

Complaints by State (Map): The map visualization displays the geographic distribution of complaints by state.

Screenshots of the Project 10