Tech Saksham

Case Study Report

Data Analytics with Power BI

“360-degree Business of Zomato Delivery App Using Power BI”

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ABSTRACT

This report presents a 360-degree business analysis of online delivery apps using Power BI. The analysis aims to provide a comprehensive view of key performance indicators (KPIs) and metrics related to online delivery services. Through interactive dashboards and visualizations, the report covers aspects such as overall sales performance, customer acquisition funnel, sales trends over time, healthcare KPIs, customer service metrics, top-performing products, social media monitoring, patient management, inventory analysis, hospitality management, and time-tracking/project management. By leveraging Power BI's capabilities, this analysis offers valuable insights to stakeholders, enabling them to make informed decisions and optimize their online delivery app strategies.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Despite the growing popularity of online delivery apps, many organizations struggle to effectively utilize data to drive their business strategies. The increasing volume of data and the rapid evolution of data technologies pose challenges in leveraging data investments and implementing a cohesive, data-driven strategy. This report addresses these challenges by conducting a 360-degree business analysis of online delivery apps using Power BI. The analysis aims to provide organizations with actionable insights to optimize their online delivery app strategies, enhance customer experiences, and improve overall business performance.

1.2 Proposed Solution

To address the challenges faced by organizations in effectively utilizing data for their online delivery apps, this report proposes the use of Power BI for comprehensive data analysis and visualization. Power BI offers powerful and advanced data analytics and visualization capabilities, allowing organizations to easily collect, prepare, analyze, and visualize data. By leveraging Power BI, organizations can create interactive dashboards and reports that provide a 360-degree view of their online delivery app performance.

1.3 Feature

- **Interactive Dashboards:** Utilize Power BI's interactive dashboards to provide a dynamic and user-friendly interface for exploring key metrics and KPIs related to online delivery app performance.

- **Data Visualization:** Create visually appealing charts, graphs, and maps to illustrate trends, patterns, and insights in the data, making it easier for stakeholders to understand complex information.

- **Drill-Down Functionality**: Implement drill-down functionality in the dashboards to allow users to delve deeper into the data and uncover more detailed insights.

- **Comparative Analysis:** Provide tools for comparing performance metrics across different time periods, regions, or other relevant categories to identify trends and patterns.

- **Predictive Analytics:** Use Power BI's predictive analytics capabilities to forecast future trends and make informed decisions about future strategies.

- **Data Integration:** Integrate data from multiple sources, including sales records, customer feedback, social media metrics, and operational data, to provide a comprehensive view of online delivery app performance.

- **Real-Time Data Updates:** Enable real-time data updates to ensure that stakeholders have access to the most up-to-date information**.**

- **Mobile Compatibility:** Ensure that the dashboards and reports are mobile-friendly, allowing users to access and interact with the data on the go.

- **Security and Privacy**: Implement robust security and privacy measures to protect sensitive data and ensure compliance with relevant regulations.

- **Customization**: Allow users to customize the dashboards and reports to meet their specific needs and preferences**.**

1.4 Advantages

- **Comprehensive Insights**: By analyzing a wide range of data sources, the report will provide a comprehensive view of online delivery app performance, enabling stakeholders to gain valuable insights into various aspects of their business**.**

- **Data-Driven Decisions:** The report will empower stakeholders to make informed, data-driven decisions by providing them with the information they need to understand trends, identify opportunities, and address challenges.

- **Improved Performance**: By identifying key performance indicators (KPIs) and trends, the report will help stakeholders optimize their online delivery app strategies, improve customer experiences, and drive business growth.

- **Enhanced Customer Experiences:** By analyzing customer feedback and other relevant data, the report will enable stakeholders to better understand customer needs and preferences, leading to improved products and services.

- **Cost Savings:** By identifying inefficiencies and areas for improvement, the report will help stakeholders streamline their operations and reduce costs.

- **Competitive Advantage:** By providing valuable insights and enabling data-driven decisions, the report will give stakeholders a competitive advantage in the online delivery app market.

- **Scalability**: The report can be scaled to analyze data from additional sources or expand to cover other aspects of the business, making it a flexible and scalable solution for ongoing analysis and reporting.

- **User-Friendly Interface:** The report will be designed with a user-friendly interface, making it easy for stakeholders to access and interact with the data, even if they are not data experts.

1.5 Scope

The scope of this report encompasses the comprehensive analysis of online delivery apps using Power BI. It involves gathering data from various sources such as sales records, customer feedback, social media metrics, and operational data. The data will be cleaned, transformed, and prepared for analysis to ensure accuracy. Power BI's analytics features will be utilized to identify key trends and insights related to online delivery app performance. The analysis will be presented through interactive dashboards and reports, providing stakeholders with actionable insights and recommendations to optimize their strategies and improve customer experiences. Implementation, testing, and validation of the proposed solution will be conducted, and the findings will be documented and presented to stakeholders.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Collection and Storage Services**: Banks need to collect and store customer data in real-time. This could be achieved through services like Azure Data Factory, Azure Event Hubs, or AWS Kinesis for real-time data collection, and Azure SQL Database or AWS RDS for data storage.

- **Data Processing Services**: Services like Azure Stream Analytics or AWS Kinesis Data Analytics can be used to process the real-time data.

- **Machine Learning Services**: Azure Machine Learning or AWS Sage Maker can be used to build predictive models based on historical data.

2.2 Tools and Software used

Tools:

- **Power BI**: The main tool for this project is Power BI, which will be used to create interactive dashboards for real-time data visualization.

- **Power Query**: This is a data connection technology that enables you to discover, connect, combine, and refine data across a wide variety of sources.

Software Requirements:

- **Power BI Desktop**: This is a Windows application that you can use to create reports and publish them to Power BI.

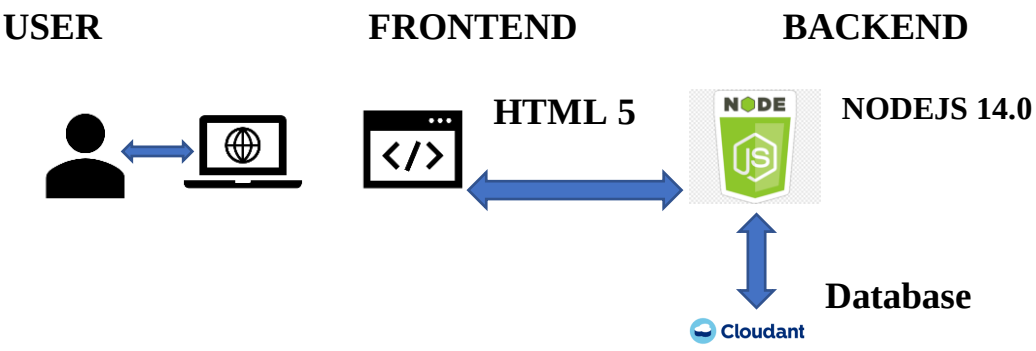
- **Power BI Service**: This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.

- **Power BI Mobile**: This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture



Here's a high-level architecture for the project:

1. **Data Collection**: Real-time customer data is collected from various sources like bank transactions, customer interactions, etc. This could be achieved using services like Azure Event Hubs or AWS Kinesis.

2. **Data Storage**: The collected data is stored in a database for processing. Azure SQL Database or AWS RDS can be used for this purpose.

3. **Data Processing**: The stored data is processed in real-time using services like Azure Stream Analytics or AWS Kinesis Data Analytics.

4. **Machine Learning**: Predictive models are built based on processed data using Azure Machine Learning or AWS Sage Maker. These models can help in predicting customer behavior, detecting fraud, etc.

5. **Data Visualization**: The processed data and the results from the predictive models are visualized in real-time using Power BI. Power BI allows you to create interactive dashboards that can provide valuable insights into the data.

6. **Data Access**: The dashboards created in Power BI can be accessed through Power BI Desktop, Power BI Service (online), and Power BI Mobile.

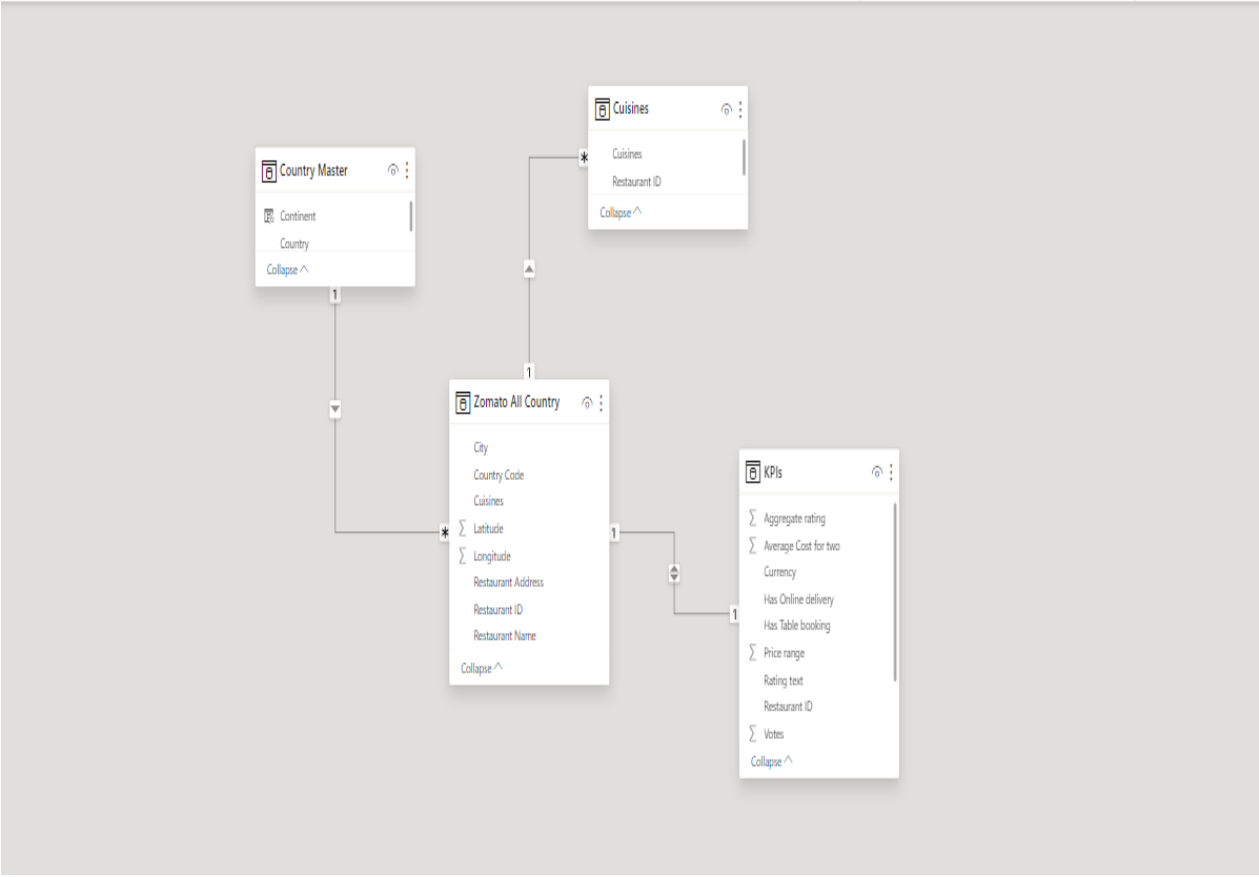
This architecture provides a comprehensive solution for real-time analysis of bank customers. However, it's important to note that the specific architecture may vary depending on the bank's existing infrastructure, specific requirements, and budget. It's also important to ensure that all tools and services comply with relevant data privacy and security regulations.

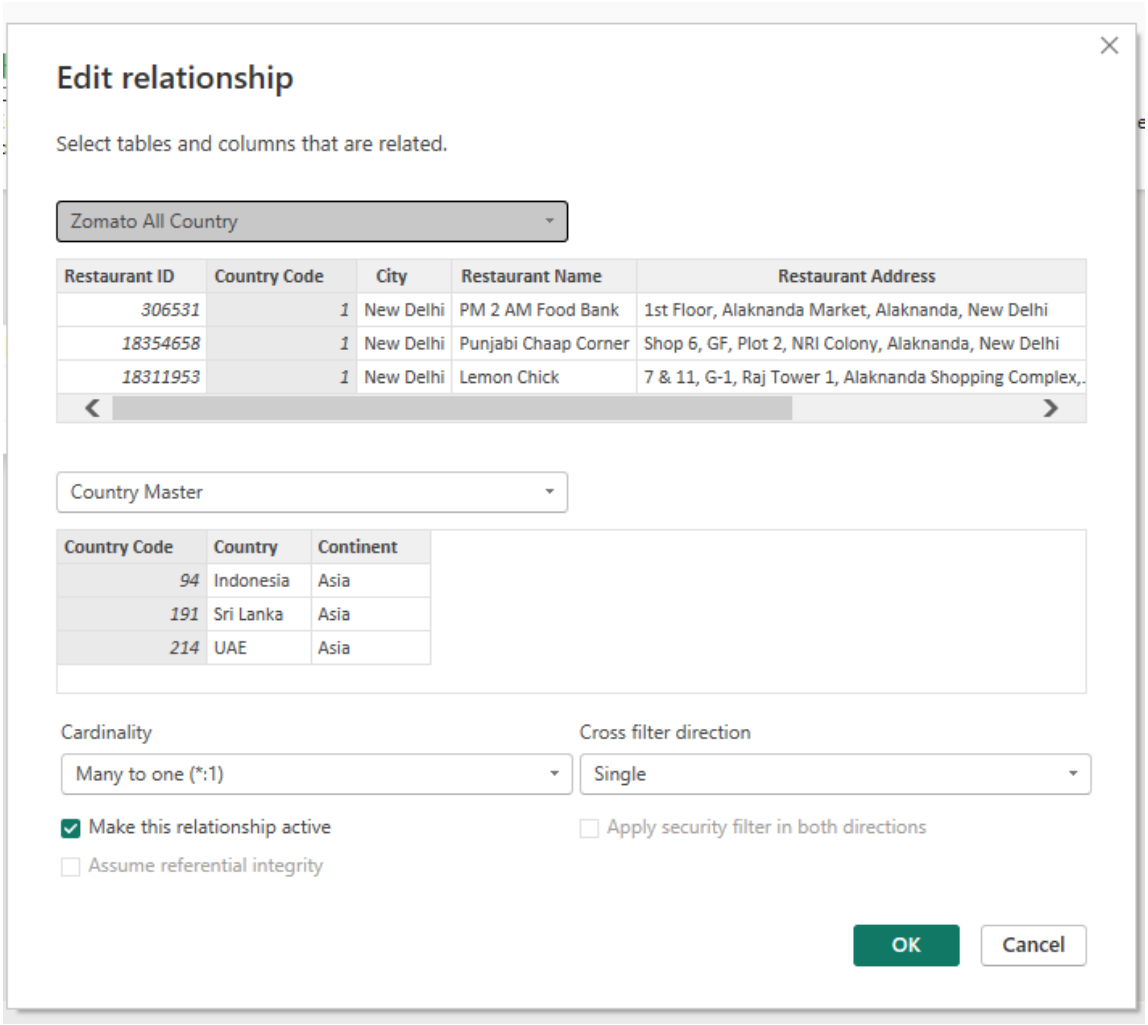
CHAPTER 4

MODELING AND RESULT

Manage relationship

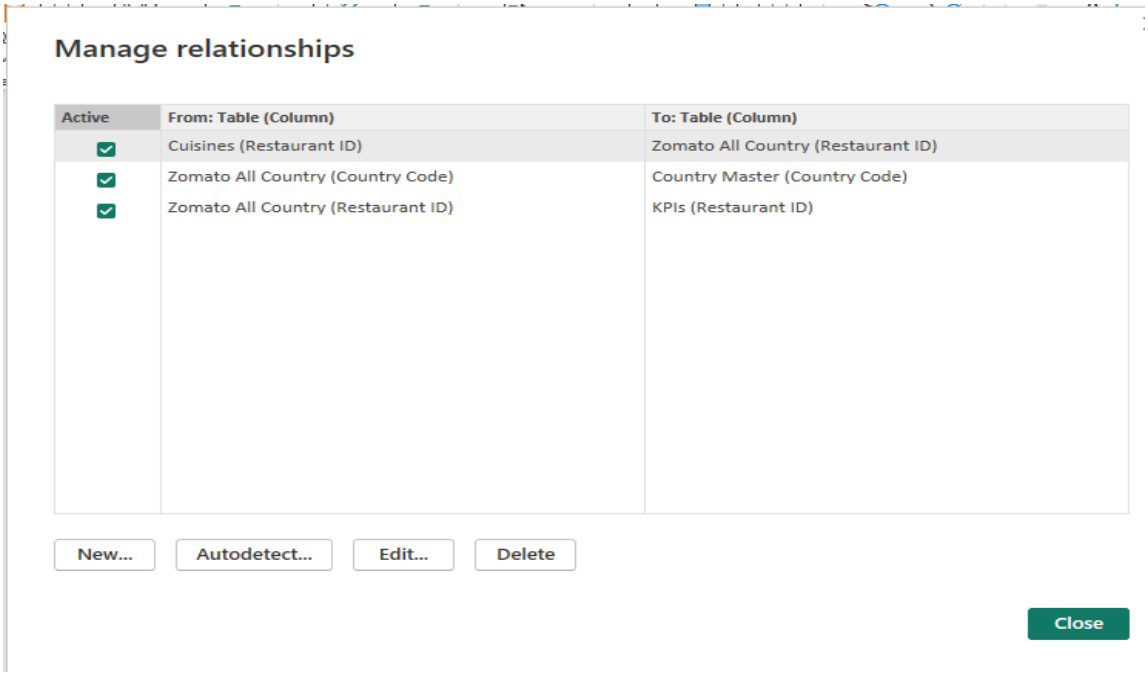
The “ KPIs” file will be used as the main connector as it contains most key identifier (Country , Country code) which can be used to relate the 6 data files together . The “ district” file is use to link the client profile geographically with “ Restaurants id”.



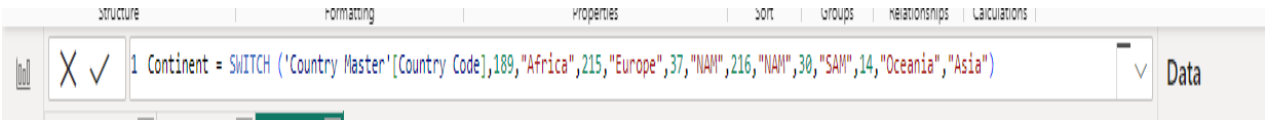


In Power BI, editing relationships allows users to adjust how tables are linked together, which is crucial for accurate data analysis. This feature enables users to establish or modify connections between tables based on common fields ,ensuring data integrity and enabling seamless querying across multiple tables.

By editing relationships, users can define relationships as one-to-one, one-to-many , or many-to-many, depending on the nature of the data. This flexibility empowers users to refine their data models, resolve data inconsistencies , and optimize performance. Overall, editing relationships in Power BI is a fundamental aspect of data modeling, enabling users to create robust and efficient data structures that support their analytical needs.



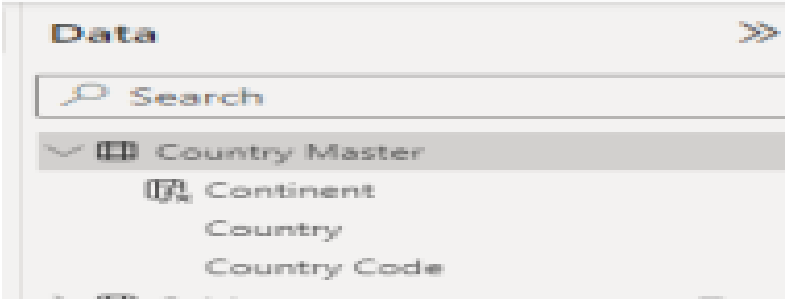
Condition Column :



This query is used to connect the another coloums. Use this query to split the region from the exiting data. Then the data visualization is much better. In Power BI, conditions are utilized extensively to manipulate, filter, and format data. These Conditions can be applied in various aspects of Power BI development, such as filtering data displayed in visuals, creating calculated columns based on specific criteria, applying conditional formatting to visuals, defining measures with dynamic logic, transforming data in the Power Query Editor, implementing hierarchical filtering, and parameterizing queries for interactive filtering. Essentially, conditions in Power BI empower users to tailor their data analysis, visualization, and transformation processes to suit their specific needs, enabling them to derive valuable insights and make informed decisions effectively.

Country Code	Country	Continent
94	Indonesia	Asia
191	Sri Lanka	Asia
214	UAE	Asia
1	India	Asia
30	Brazil	SAM
14	Australia	Oceania
208	Turkey	Asia
189	South Africa	Africa
216	United States	NAM
215	United Kingdom	Europe
162	Phillipines	Asia
166	Qatar	Asia
37	Canada	NAM
148	New Zealand	Asia
184	Singapore	Asia

In this data the new column added named Continent to identify the country with the help of country code. Every country code have a unique region so easy to access the slicer.



Changing the order of Region name at Power Query. Duplicate the “district /region” then split column using space as delimiter. Then merge column by Region and direction. Refer to applied steps for details.

Country Code	Country
94	Indonesia
191	Sri Lanka
214	UAE
1	India
30	Brazil
14	Australia
208	Turkey
189	South Africa
216	United States
215	United Kingdom
162	Phillipines
166	Qatar
37	Canada
148	New Zealand
184	Singapore

Edit the Columns :

In " Country master" dataset there are so many duplicate columns. Use the condition columns to remove the duplicate columns and null values.

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rating text	Votes
18433852	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18465871	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471268	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18472429	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471296	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18466420	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18464607	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18464631	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18433879	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18480389	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18446428	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18446082	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471244	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18424179	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18294253	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471308	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471320	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18398616	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18481295	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18462605	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18463989	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18463992	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18451168	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0

Combine Data Set using Power Query :

Create a new dataset named “ KPIs” and combine all the existing dataset.

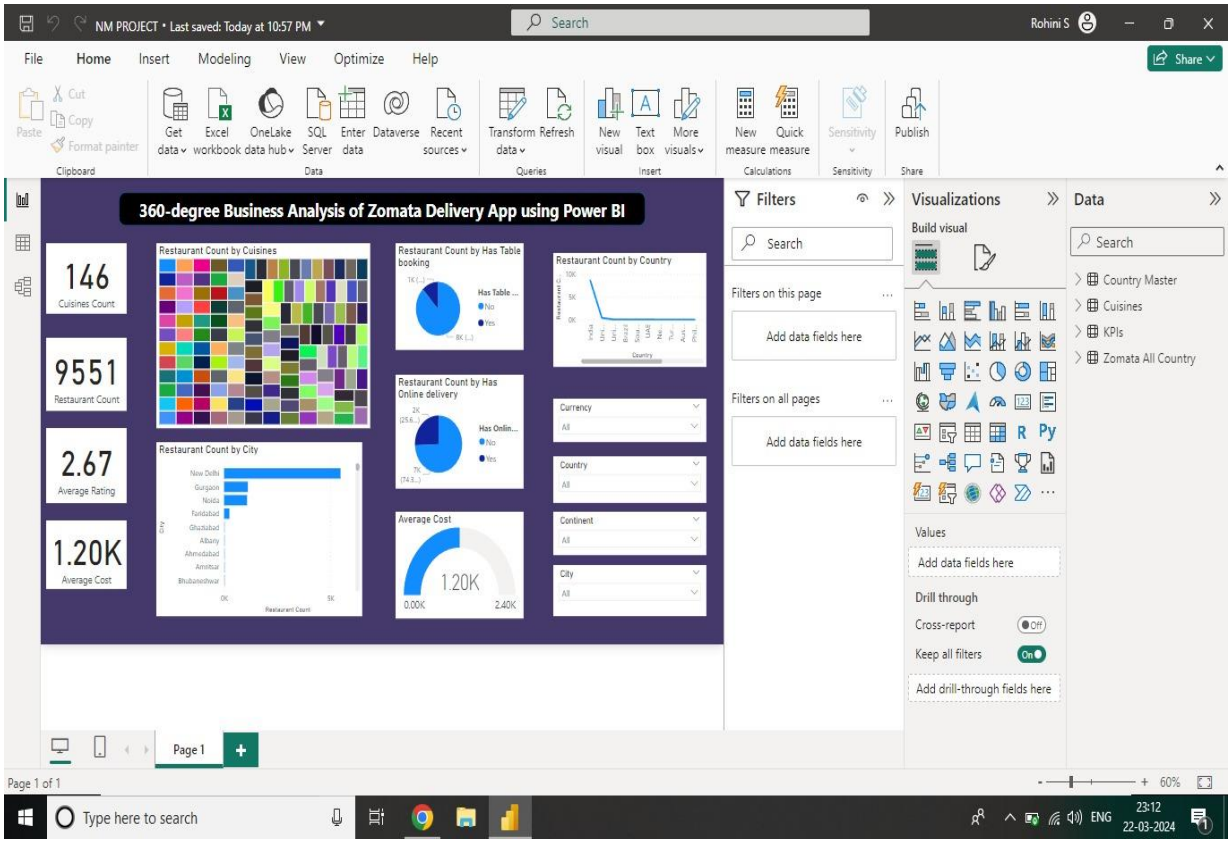
Into one single dataset. It is used to access the visual more effectively .The main dataset

Named as KPIs . It consist 6 type of dataset named as “ Zomato Africa”,

“ Zomato Asia”,” Zomato Europe”,” Zomato Oceania”,” Zomato NAM”,

”Zomato SAM”.

Dashboard



CONCLUSION

The project " Real-Time Analysis of Zomato Customers" using Power BI has successfully demonstrated the potential of data analytics in the Food sector. The real-time analysis of customer data has provided valuable insights into customer behavior, preferences, and trends, thereby facilitating informed decision making. The interactive dashboards and reports have offered a comprehensive view of customer data, enabling the identification of patterns and correlations. This has not only improved the efficiency of data analysis but also enhanced the Zomato ability to provide personalized services to its customers. The project has also highlighted the importance of data visualization in making complex data more understandable and accessible. The use of Power BI has made it possible to present data in a visually appealing and easy-to-understand format, thereby aiding in better decision-making.

FUTURE SCOPE

In the coming years, Zomato is poised to expand its scope beyond its current offerings, driven by a combination of technological innovation, strategic partnerships, and evolving consumer demands. While continuing to strengthen its core food delivery and restaurant discovery services, Zomato is likely to explore new avenues for growth, including vertical integration into food production and supply chain management. International expansion remains a significant opportunity, with emerging markets presenting untapped potential for the company. Diversification into adjacent sectors such as grocery delivery and alcohol delivery, along with a heightened focus on sustainability and health-conscious options, could further broaden Zomato's appeal. Continued investment in technology, including artificial intelligence and machine learning, will enable Zomato to enhance its platform's capabilities and deliver personalized experiences to users. Strategic partnerships and collaborations with other industry players may unlock synergies and create new revenue streams. Additionally, data monetization efforts leveraging Zomato's rich dataset could provide valuable insights to businesses and advertisers. As Zomato navigates these opportunities and challenges, its ability to innovate and adapt will be pivotal in shaping its future trajectory in the dynamic landscape of food delivery and hospitality services.

REFERENCES

https://medium.com/@manya_gulati27/zomato-restaurant-data-8e2611ce82cd

LINK

https://app.powerbi.com/view?r=eyJrIjoiMjUxMDg1MTMtNTllNS00NGMxLWJiOTItMDY1ODVhZGQxYWM4IiwidCI6ImI5MGQ3MmMxLTFlZTctNGQxZC05YjZiLTRkNDRhNjBhOTQ1MSJ9

