Tech Saksham

Case Study Report

Data Analytics with Power BI

“360-degree Business Analysis of Online Delivery Apps”

“S.T. Hindu College”

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ABSTRACT

This business analysis project utilizes Power BI to dissect the performance of Zomato's delivery app, focusing on critical metrics such as user engagement, delivery efficiency, and revenue generation. Through data visualization techniques, it aims to offer actionable insights to optimize operational processes and enhance user experience within the platform. The analysis begins by examining user behavior patterns, including app usage frequency, preferred cuisines, and peak ordering times, to tailor marketing strategies and boost user retention. Additionally, it delves into delivery logistics, scrutinizing metrics like delivery times, route optimization, and driver performance, to streamline operations and improve service efficiency. Moreover, the project evaluates revenue streams, such as transactional data and advertising revenue, to identify opportunities for growth and maximize profitability. By leveraging Power BI's advanced analytics, this project equips Zomato with valuable insights to drive data-driven decisions, foster operational efficiency, and bolster its position in the competitive food delivery market.Top of Form

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Zomato faces challenges in keeping users engaged, ensuring efficient delivery, and maximizing revenue through its delivery app. Users sometimes lose interest, deliveries take too long, and the app might not be making as much money as it could. To address these issues, Zomato can use Power BI for detailed analysis and strategic planning. By understanding user behavior patterns, such as when and how often they use the app, Zomato can send personalized offers and reminders to keep them engaged. Additionally, Power BI can help optimize delivery routes and driver performance to ensure faster deliveries and happier customers. Furthermore, by analyzing revenue streams and identifying new opportunities for income generation, Zomato can maximize profitability. Through these efforts, Zomato can enhance user satisfaction, streamline operations, and increase revenue within its delivery app platform.

1.2 Proposed Solution

Zomato faces challenges in keeping users engaged, ensuring efficient delivery, and maximizing revenue through its delivery app. Users sometimes lose interest, deliveries take too long, and the app might not be making as much money as it could. To address these issues, Zomato can use Power BI for detailed analysis and strategic planning. By understanding user behavior patterns, such as when and how often they use the app, Zomato can send personalized offers and reminders to keep them engaged. Additionally, Power BI can help optimize delivery routes and driver performance to ensure faster deliveries and happier customers. Furthermore, by analyzing revenue streams and identifying new opportunities for income generation, Zomato can maximize profitability. Through these efforts, Zomato can enhance user satisfaction, streamline operations, and increase revenue within its delivery app platform.

1.3 Feature

1 User Engagement Analysis

2 Delivery Logistics Optimization

3 Revenue Stream Analysis

4 Data Visualization

5 Predictive Analytics

6 Real-time Monitoring

7 Personalization Enhancements

8 Revenue Optimization Strategies

9 Integration with Emerging Technologies

10 Implementation Support and Recommendations

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11.1 Advantages

- Data-Driven Decision Making
- Operational Efficiency
- Enhanced User Experience
- Revenue Growth
- Competitive Advantage
- Predictive Insights
- Scalability
- Long-term Sustainability

11.2 Scope

Data Collection: Gathering relevant data from Zomato's delivery app, including user activity, delivery metrics, and revenue streams.

Data Preparation: Cleaning and preprocessing the collected data to ensure accuracy and consistency for analysis within Power BI.

Data Analysis: Utilizing Power BI's analytical capabilities to explore user behavior patterns, delivery efficiency metrics, and revenue trends.

Visualization: Creating interactive and insightful visualizations to present findings and identify actionable insights for stakeholders.

Insight Generation: Deriving actionable insights from the analyzed data to inform strategic decision-making processes aimed at optimizing user engagement, delivery operations, and revenue generation.

Recommendations: Providing recommendations based on the insights generated to enhance Zomato's delivery app performance, streamline operations, and maximize profitability.

Implementation Support: Offering support for the implementation of recommended strategies and continuous monitoring of performance metrics to track progress and make adjustments as necessary.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used:

1. **Zomato API:** Access to Zomato's data through their API would be crucial for extracting information related to orders, delivery times, customer feedback, restaurant performance, etc.
2. **Power BI**: Microsoft Power BI is the primary tool for data visualization, analysis, and reporting. It allows you to connect to various data sources, prepare and clean data, and create interactive dashboards and reports.
3. **Data Preparation Tools**: Tools like Microsoft Excel, Power Query (integrated into Power BI), or SQL for data cleaning, transformation, and modeling. These tools are essential for preparing the raw data obtained from Zomato's API for analysis.
4. **Data Visualization Libraries:** Besides Power BI, you might use additional data visualization libraries or tools like D3.js or Plotly.js for creating custom visualizations or enhancing the visual appeal of your reports.

5. **Cloud Storage:** If you're dealing with large datasets, cloud storage solutions like Amazon S3, Google Cloud Storage, or Azure Blob Storage can be used to store and manage the data securely.

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

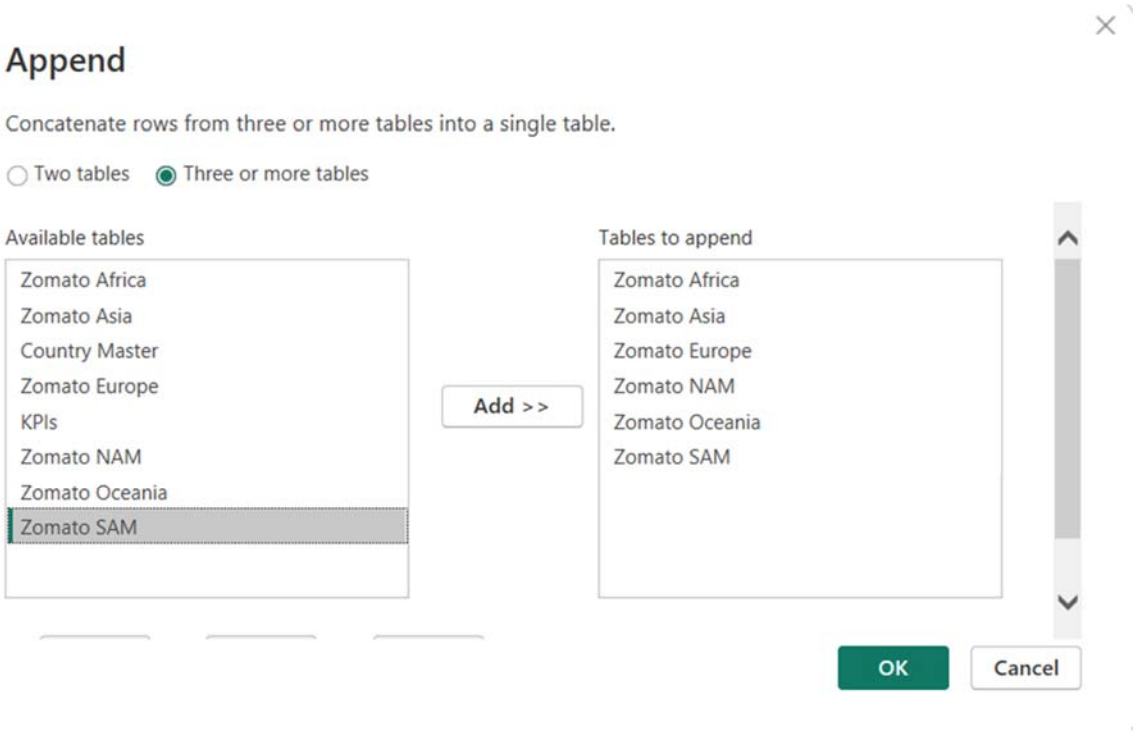
A high-level architecture for the project:

1. **Data Collection**: 360-degree Business Analysis of Online Delivery Apps is collected from various sources like bank transactions, customer interactions, Company data etc.
2. **Data Storage**: The collected data is stored in a database for processing.
3. **Data Processing**: The stored data is processed usual information like restaurant details, online delivery and restaurant rating.
4. **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.
5. **Data Access**: The dashboards created in Power BI can be accessed through Power BI Desktop, Power BI Service (online), and Power BI Mobile.

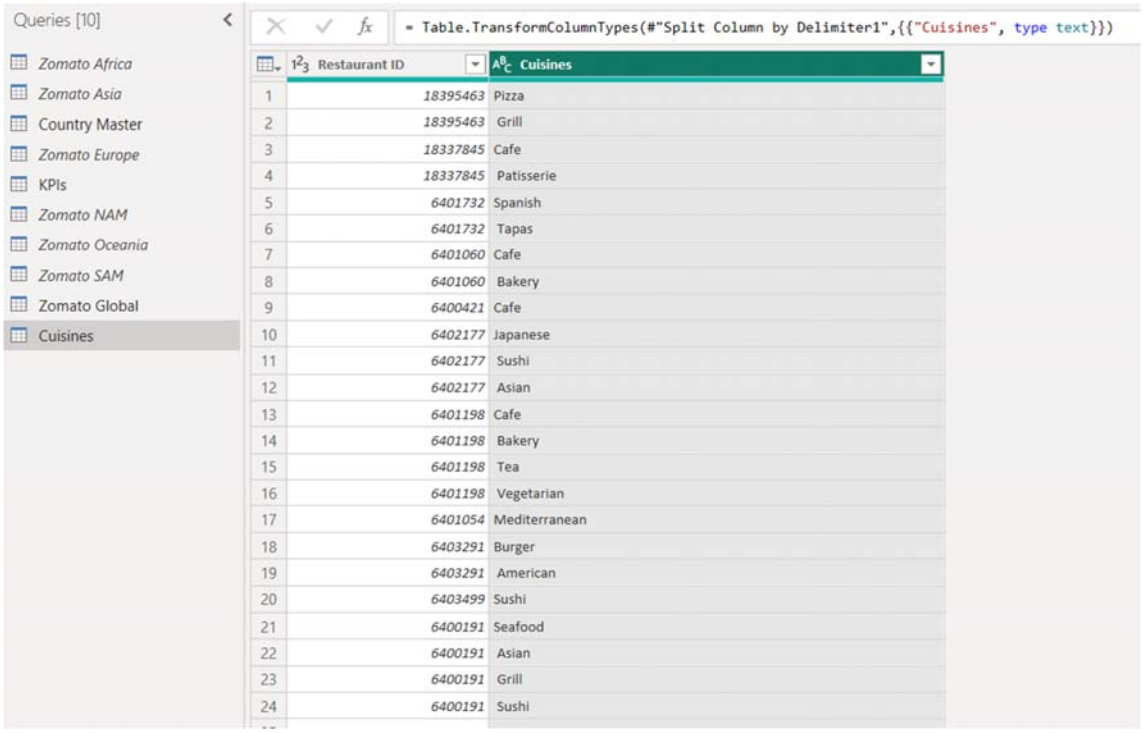
CHAPTER 4

MODELING AND RESULT

Transform data

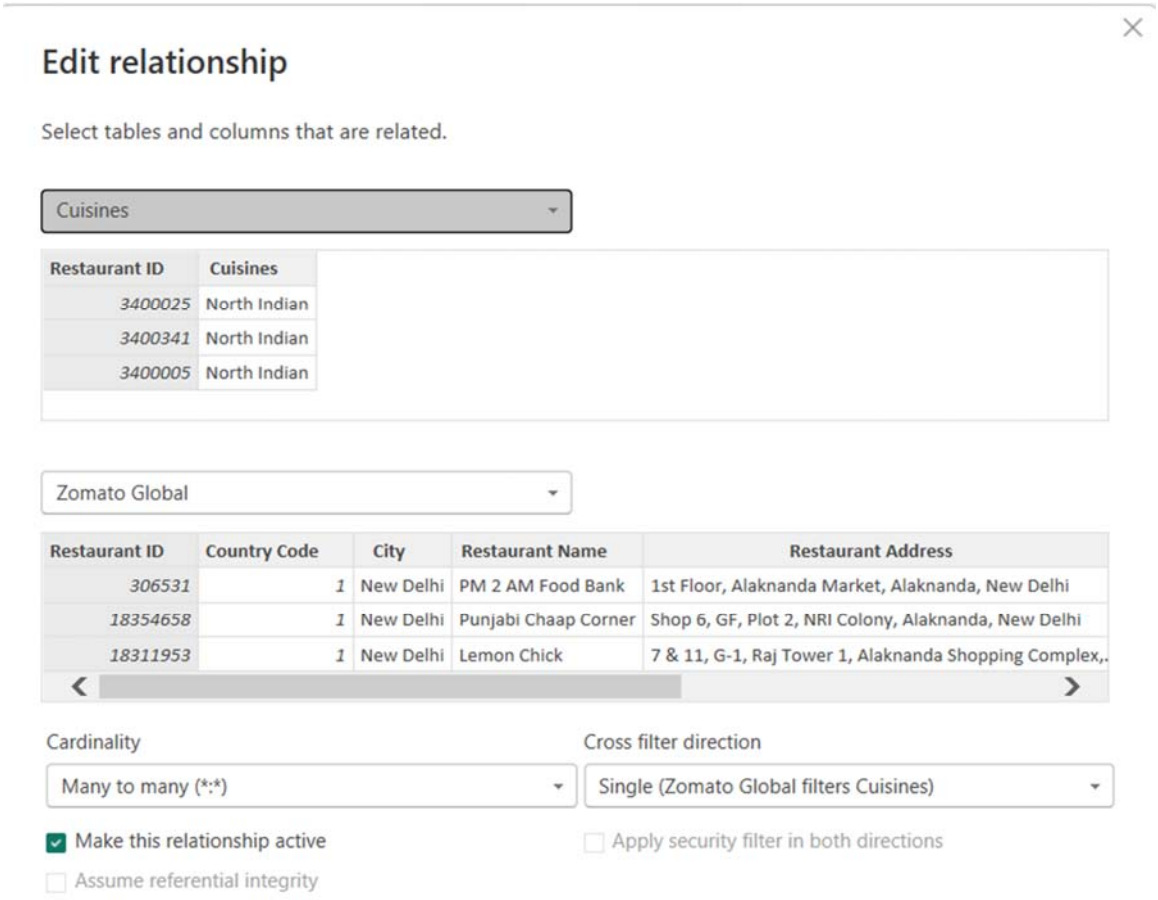


Append the data source, Zomato Africa, Zomato Asia, Zomato Europe, Zomato NAM, Zomato Oceania, Zomato SAM into a new data source. The new data source was renamed ‘Zomato Global’. Then the other sub data source was disabled.



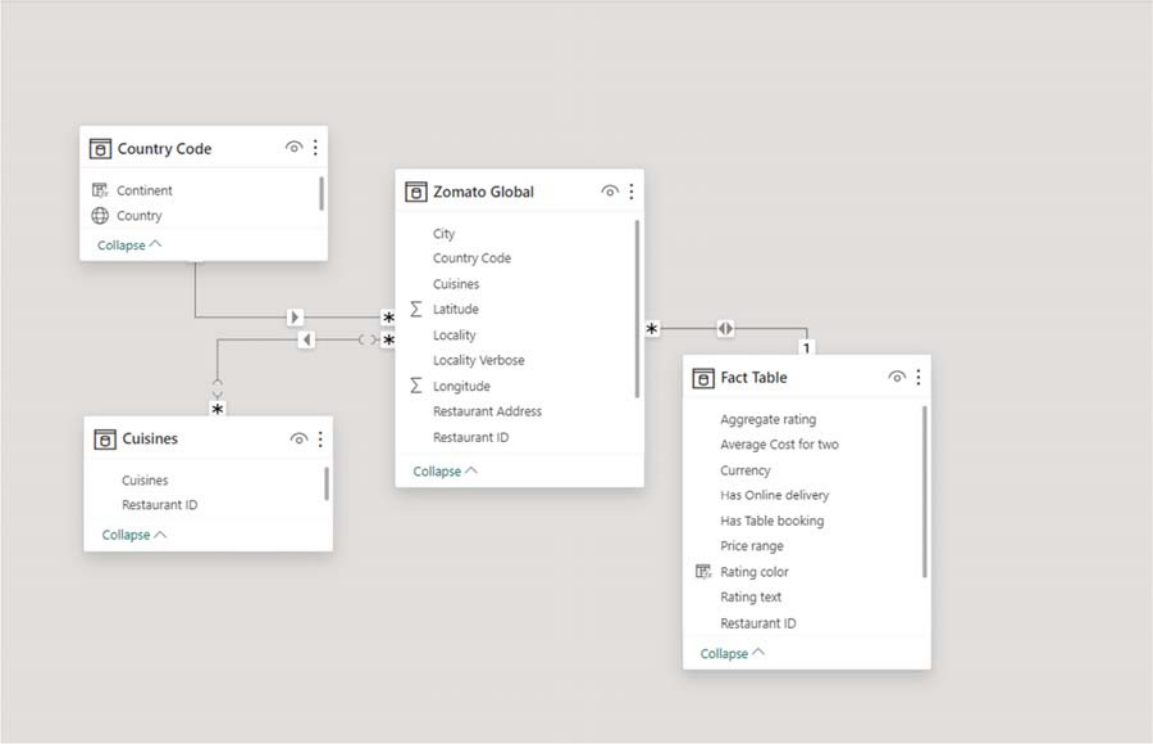
Duplicate the Zomato Global Data source then remove the all columns except Restaurant ID and Cuisines. Renamed the new data into Cuisines. Then split the column cuisines by delimiter format.

Modified relationship



Remove the Restaurant ID relationship between Fact Table to Cuisines and merge new Restaurant ID relationship between Zomato Global to cuisines in

‘many to many’ format.



The above model view image shows the relationship of the full data base Zomato Global database to other data sets Fact Table, Country Code, Cuisines.

Modelling rating color

Notice that the Rating color are missing from the Fact table data. These can be formulated from the Aggregate rating column in the fact table by give four color value like red, orange, green, dark green to separate value of Aggregate rating.


```
1 Rating color = IF('Fact Table'[Aggregate rating]=0,"Not Rated",IF('Fact Table'[Aggregate rating]<=2.9,"Red",IF('Fact Table'[Aggregate rating]<=3.4,"Orange",IF
('Fact Table'[Aggregate rating]<=4.4,"Green",IF('Fact Table'[Aggregate rating]<=5,"Drak Green","Others")))))
```

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rating text	Votes	Rating color
18433852	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18465871	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18471268	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18472429	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18471296	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18466420	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18464607	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18464631	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18433879	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18480389	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18446428	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18446082	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18471244	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18424179	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18294253	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18471308	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18471320	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18398616	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18481295	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18462605	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18463989	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18463992	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18451168	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18312606	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18393717	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18392211	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated
18438453	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0	Not Rated

Apply the colors, show Not Rated to the Aggregate value ‘0’, Red for the values<=2.9, Orange for the values<=3.4, Green for the values<=4.4, Dark green for the values<=5 and other values.

Creating new measurements

```
1 Restaurant Count = COUNT('Zomato Global'[Restaurant ID])
```

Restaurant ID	Country Code	City	Restaurant Name	Restaurant Address
306531	1	New Delhi	PM 2 AM Food Bank	1st Floor, Alaknanda Market, Alaknanda, New Delhi
18354658	1	New Delhi	Punjabi Chaap Corner	Shop 6, GF, Plot 2, NRI Colony, Alaknanda, New Delhi
18311953	1	New Delhi	Lemon Chick	7 & 11, G-1, Raj Tower 1, Alaknanda Shopping Complex, Near Post Office, Alaknanda, New D
18489513	1	New Delhi	Tandoori Kebab	356 Narmada, Alaknanda, New Delhi
3326	1	New Delhi	The Mirch Masala	DDA Murga Market, Near Deep Cinema, Ashok Vihar Phase 1, New Delhi
18457050	1	New Delhi	Puran Dhaba	Shop J-11/11, Sanjay Market, Opposite Nimri Colony, Ashok Vihar Phase 4, Near Ashok Vihar
18375413	1	New Delhi	Rama Desi Ghee Meat Wala	IA, Block 10 C, Ashok Vihar Phase 1, New Delhi
6574	1	New Delhi	Pandit Ji Paranthe Wale	Ashok Vihar Phase 2, New Delhi
1192	1	New Delhi	Apni Rasoi	1, Pocket B, DDA Market, Ashok Vihar Phase 3, New Delhi
18400739	1	New Delhi	Balaji Dhaba	Shop 23, NDMC Market, Babar Road, Near Bengal Market, Barakhamba Road, New Delhi
304211	1	New Delhi	High Street Kitchen & Bar	32, Basant Lok Market, Vasant Vihar, New Delhi
6394	1	New Delhi	Punjabi Tadka	6, UG-64, Ansal Chamber 2, Bhikaji Cama Place, New Delhi
6079	1	New Delhi	Break Fast Point	27, Satnam Park, Bhagat Singh Road, Chander Nagar, New Delhi
6117	1	New Delhi	Breakfast Corner	K-14, Bhagat Singh Road, Satnam Park, Chander Nagar, New Delhi
302490	1	New Delhi	Vaishno Punjabi Dhaba	H 1A, New Gobind Pura, Near, Chander Nagar, New Delhi

Create new measurement ‘Restaurant Count’ using count function to the Restaurant ID in the Zomato Global data source.


```
1 Average Cost = AVERAGE('Fact Table'[Average Cost for two])
```

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Ra
18433852	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18465871	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18471268	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18472429	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18471296	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18466420	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18464607	300	Indian Rupees(Rs.)	No	No	1	0	Ne
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18471308	300	Indian Rupees(Rs.)	No	No	1	0	Ne
18471320	300	Indian Rupees(Rs.)	No	No	1	0	Ne

Creating new measurement ‘Average Cost’ by using average function ‘Average Cost for two’ table in the fact table data source.

```
1 Average Rating = AVERAGE('Fact Table'[Aggregate rating])
```

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rati
18433852	300	Indian Rupees(Rs.)	No	No	1	0	Not
18465871	300	Indian Rupees(Rs.)	No	No	1	0	Not
18471268	300	Indian Rupees(Rs.)	No	No	1	0	Not
18472429	300	Indian Rupees(Rs.)	No	No	1	0	Not
18471296	300	Indian Rupees(Rs.)	No	No	1	0	Not
18466420	300	Indian Rupees(Rs.)	No	No	1	0	Not
18464607	300	Indian Rupees(Rs.)	No	No	1	0	Not
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18433879	300	Indian Rupees(Rs.)	No	No	1	0	Not
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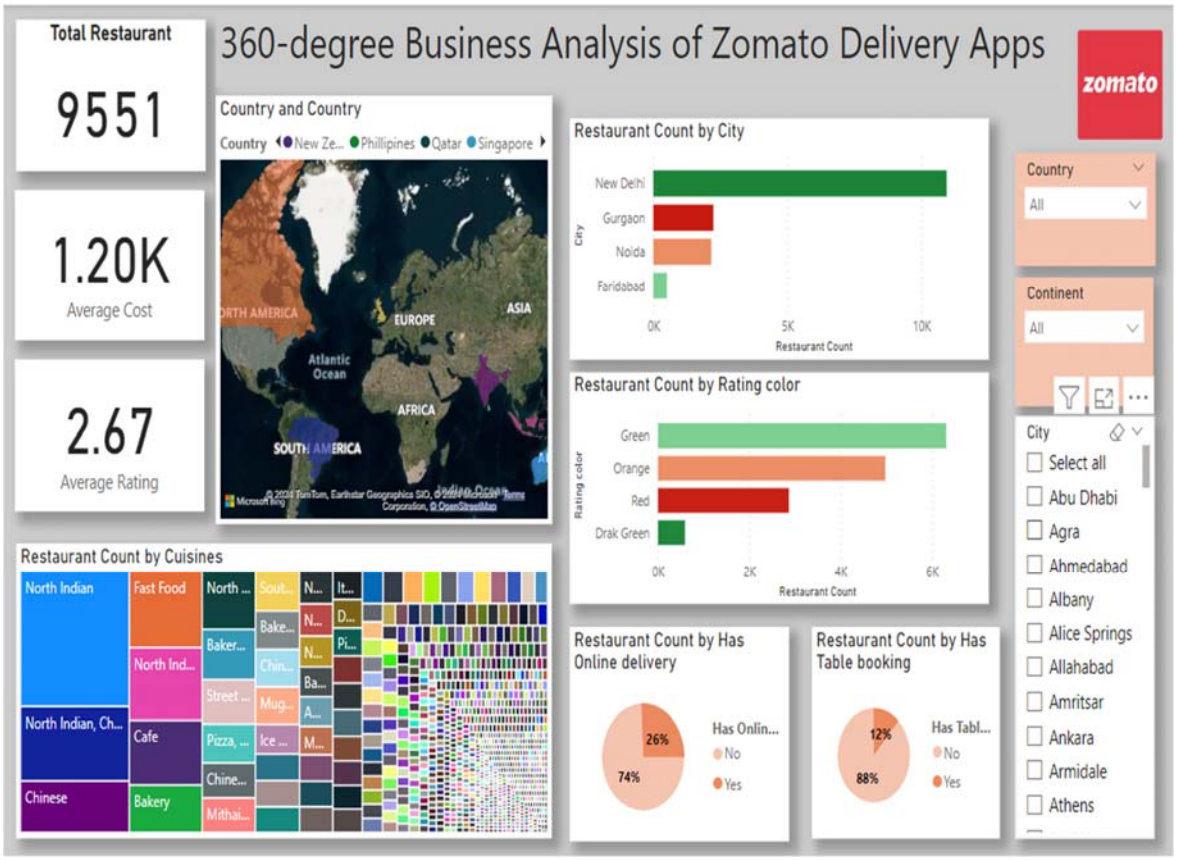
18446428	300	Indian Rupees(Rs.)	No	No	1	0	Not
18446082	300	Indian Rupees(Rs.)	No	No	1	0	Not
18471244	300	Indian Rupees(Rs.)	No	No	1	0	Not
18424179	300	Indian Rupees(Rs.)	No	No	1	0	Not
18294253	300	Indian Rupees(Rs.)	No	No	1	0	Not
18471308	300	Indian Rupees(Rs.)	No	No	1	0	Not
18471320	300	Indian Rupees(Rs.)	No	No	1	0	Not

Creating new measurement ‘Average Rating’ by using average function to ‘Aggregate rating’ table in the fact table data source.

Dashboard



CONCLUSION

In conclusion, leveraging Power BI for data analysis presents a pivotal opportunity for Zomato to overcome the challenges it faces within its delivery app ecosystem. By understanding user behavior, optimizing delivery logistics, and maximizing revenue streams, Zomato can significantly improve its operational efficiency, enhance user satisfaction, and drive sustainable growth in the competitive food delivery market. With a data-driven approach facilitated by Power BI, Zomato is poised to not only address its current challenges but also to innovate and thrive in the ever-evolving landscape of the digital food delivery industry. Through continuous refinement and strategic implementation of insights gained, Zomato can solidify its position as a leader in the market, delivering exceptional value to both its users and stakeholders alike.

FUTURE SCOPE

The future scope of the project involving the use of Power BI for analyzing Zomato's delivery app performance is promising, with numerous avenues for further enhancement and expansion. Incorporating predictive analytics models could enable Zomato to forecast user behavior and delivery patterns, optimizing operations in real-time. Real-time monitoring capabilities would allow for prompt decision-making and proactive issue resolution. Moreover, by delving into more granular user attributes, Zomato could enhance personalization efforts, tailoring recommendations and promotions to individual preferences. Advanced revenue optimization strategies, such as dynamic pricing and premium subscriptions, could be explored further to maximize profitability. Integration with IoT and emerging technologies presents opportunities to gather additional data, such as vehicle performance metrics, for improved efficiency. By pursuing these avenues, Zomato can continue leveraging Power BI to drive innovation, operational efficiency, and an enhanced user experience, positioning itself for sustained success in the competitive food delivery market.

REFERENCES

https://community.fabric.microsoft.com/t5/Data-Stories-Gallery/Zomato-food-delivery-Analysis/m-p/2528457

LINK

https://github.com/vibi2024/Business-analysis-of-online-delivery-app

