

## Case Study Report

# Data Analytics with Power BI

## “360-degree Business

## Analysis of Online Delivery App”

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# ABSTRACT

In today's digital age, online delivery apps have revolutionized the way consumers access goods and services. This study employs Power BI, a powerful business analytics tool, to conduct a comprehensive 360-degree analysis of online delivery apps. Through data visualization and analysis, this research aims to provide valuable insights into various aspects of these apps, including customer behavior, market trends, operational efficiency, and financial performance. The analysis begins by integrating data from multiple sources, such as transaction records, customer feedback, market demographics, and delivery logistics.

Utilizing Power BI's robust capabilities, the study delves into understanding customer preferences, identifying popular products and services, and assessing customer satisfaction levels. Moreover, the research investigates market dynamics, including competitive landscape analysis, market penetration strategies, and geographical demand patterns. By leveraging Power BI's geographic mapping and trend analysis features, the study uncovers opportunities for market expansion and optimization of delivery routes. Furthermore, the analysis extends to operational efficiency, examining key performance indicators (KPIs) related to order fulfillment, delivery times, and inventory management. Through interactive dashboards and real-time data monitoring, this study offers actionable insights to streamline operations and enhance overall efficiency. Finally, the research evaluates the financial performance of online delivery apps, encompassing revenue analysis, cost management, and profitability metrics. By visualizing financial data trends and conducting scenario analysis, the study aids decision-makers in optimizing pricing strategies and resource allocation. Overall, this 360-degree business analysis utilizing Power BI provides a holistic understanding of online delivery apps, empowering stakeholders to make informed decisions, drive innovation, and achieve sustainable growth in the competitive landscape of the digital marketplace.

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## CHAPTER 1

### INTRODUCTION

#### 1. Problem Statement

The rapidly evolving landscape of online delivery apps, businesses face multifaceted challenges spanning customer satisfaction, market competitiveness, operational efficiency, and financial viability. However, existing analytical approaches often lack the depth and breadth required to address these challenges comprehensively. Current methods for analyzing online delivery apps frequently rely on disparate data sources and conventional analytics tools, leading to fragmented insights and missed opportunities for improvement.

Without a unified and holistic approach to analysis, businesses struggle to uncover actionable insights and optimize performance across all dimensions of their operations. Moreover, the complexity of integrating and analyzing diverse datasets, including transaction records, customer feedback, market trends, and operational metrics, poses significant obstacles to conducting thorough and effective analysis.

#### 2. Proposed Solution

The proposed solution entails leveraging Power BI for a comprehensive analysis of online delivery apps. Firstly, gather diverse data from transaction records, customer feedback, market demographics, and delivery logistics.

Then, design interactive dashboards and visualizations to provide stakeholders with insights into customer behavior, market trends, operational efficiency, and financial performance. Utilize Power BI's capabilities to segment customers, analyze market dynamics, evaluate operational KPIs, and assess financial metrics. Implement predictive analytics models to forecast demand and predict customer behavior, enabling proactive decision-making. Continuously monitor key metrics and iterate strategies based on insights gained from ongoing analysis.

#### 3. Features:

- **Data Integration:** Seamlessly integrate diverse data sources including transaction records, customer feedback, market demographics, and delivery logistics into Power BI for comprehensive analysis. Interactive.
- **Dashboards:** Design interactive and visually appealing dashboards that provide stakeholders with a unified view of key metrics and performance indicators across all aspects of the business.
- **Customer Segmentation:** Utilize Power BI's analytics capabilities to segment customers based on dashboard.

- **Market Analysis:** Conduct in-depth market analysis using Power BI's geographical mapping and trend analysis features to identify market trends, competitor strategies, and geographical demand patterns.
- **Operational Efficiency Monitoring:** Monitor operational performance metrics such as order fulfillment times, delivery accuracy, and inventory turnover in real-time using Power BI's KPI monitoring and trend analysis tools.
- **Financial Performance Evaluation:** Perform detailed financial analysis using Power BI to assess revenue streams, cost structures, and profitability metrics, enabling informed financial decision-making.

#### •1.4 Advantages

- Comprehensive Insights:** Gain a holistic understanding of all aspects of online delivery operations.
- Actionable Insights:** Identify opportunities for improvement in customer service, operations, and financial management.
- Real-time Monitoring:** Stay informed with up-to-date data for quick decision-making.
- Predictive Analytics:** Anticipate future trends and customer behavior for proactive planning. Efficiency and Cost Savings: Streamline operations and reduce costs for improved profitability.
- Adaptability:** Customize analytics solutions to evolving business needs.
- Collaboration:** Facilitate sharing and collaboration among stakeholders for informed decision-making.

#### •1.5 Scope

It involves comprehensive customer analysis, including demographics, preferences, and satisfaction levels. Market analysis is crucial, focusing on understanding competition, market trends, and geographical demand patterns. Operational efficiency is evaluated through monitoring key performance indicators such as order fulfillment times and delivery accuracy. Financial performance analysis involves assessing revenue streams, cost structures, and profitability metrics. Additionally, predictive analytics enables forecasting demand and predicting customer behavior. Scenario analysis helps in assessing the impact of different strategies on key metrics. Continuous monitoring ensures ongoing tracking of performance for iterative improvement, while collaboration and sharing facilitate communication and knowledge sharing among 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 SageMaker can be used to build predictive models based on historical data.

#### 2. Tools and Software used

##### Tools:

- **PowerBI:** The main tool for this project is PowerBI, 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.

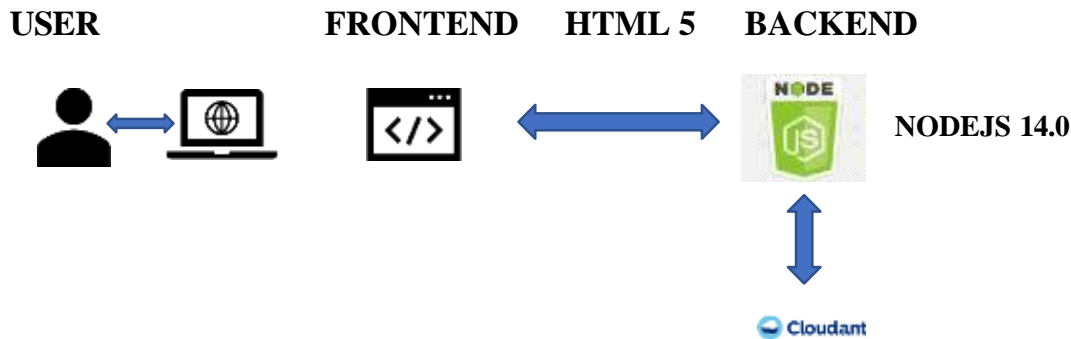
##### Software Requirements:

- **PowerBI Desktop:** This is a Windows application that you can use to create reports and publish them to PowerBI.
- **PowerBI Service:** This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.
- **PowerBI 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.
- 3. Data Processing:** The stored data is processed in real-time using services. Stream Analytics or AWS Kinesis Data Analytics.
- 4. Machine Learning:** Predictive models are built based on processed data using Azure Machine Learning or AWS SageMaker. 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 PowerBI. PowerBI allows you to create interactive dashboards that can provide valuable insights into the data.
- 6. Data Access:** The dashboards created in PowerBI can be accessed through PowerBI Desktop, PowerBI Service (online), and PowerBI 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.

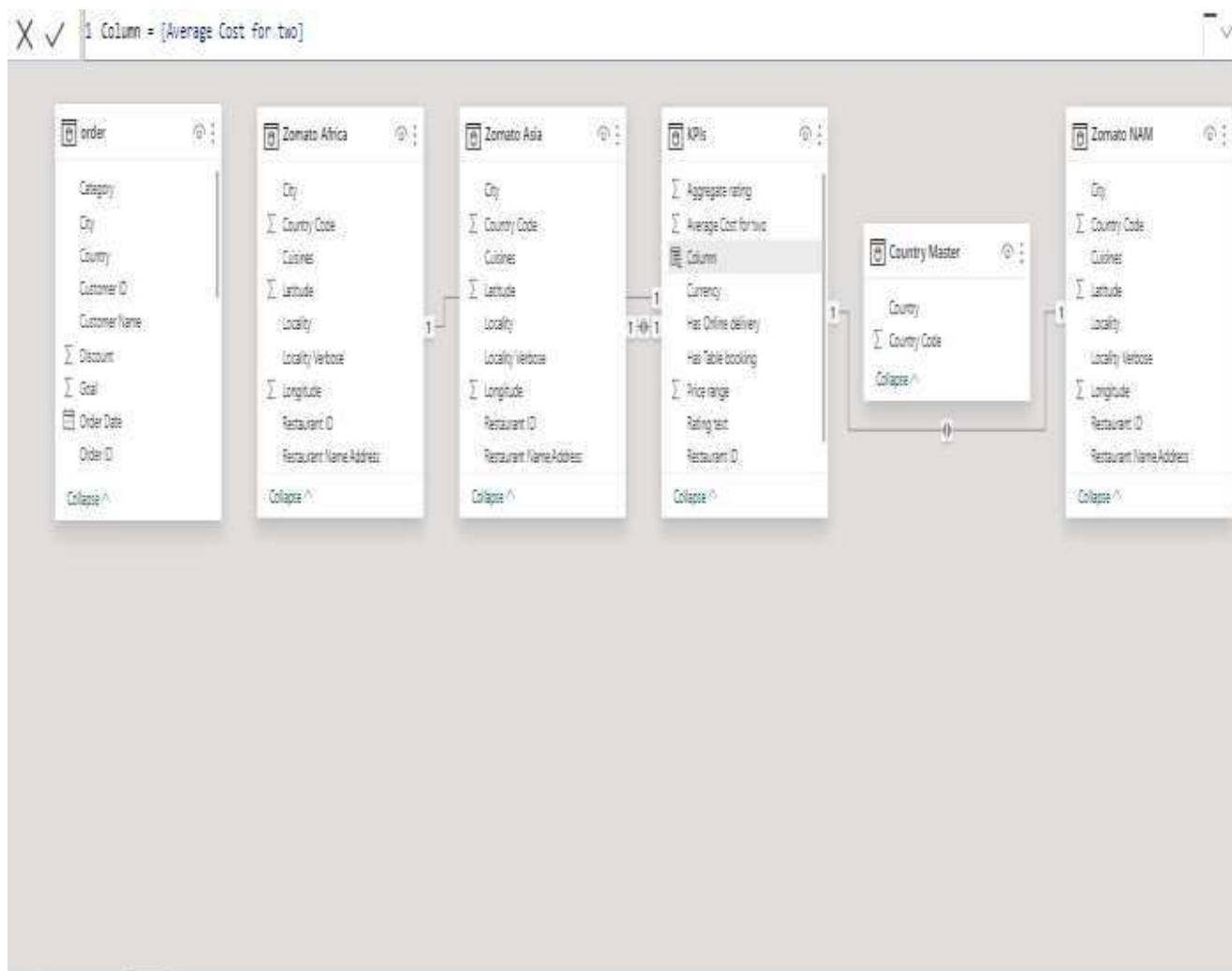


## CHAPTER 4

### MODELING AND RESULT

#### Manage relationship

The “disp” file will be used as the main connector as it contains most key identifier which can be use to relates the 6 data files together. The “district” file is use to link the restaurant name with “restaurant id”



The restaurant ID sorted in ascending order in Power BI Transform Data Query refers to arranging the unique identification numbers assigned to each restaurant in increasing numerical order. This sort operation organizes the data to display restaurant IDs sequentially from the smallest value to the largest. In the context of your project, this sorted list of restaurant IDs can be uploaded as a dataset or utilized for various analytical purposes, such as identifying trends, analyzing performance, or generating reports based on the sequential arrangement of restaurant IDs.

The screenshot displays the Power BI Transform Data Query interface. The main table shows restaurant data sorted by ID in ascending order. The columns are Country Code, City, Restaurant Name, Address, and Location. The 'Sort Ascending' dialog box is open on the left, showing a list of restaurant IDs to be sorted. The 'Query Settings' pane on the right shows the query name 'Sorted Rows'.

Country Code	City	Restaurant Name, Address	Location
189	Pretoria	Boatlab Cafe & Grill, Menlyn Shopping Centre, Level 1, Corner of Atterbury Road & Lois Ave...	Men
189	Pretoria	Kream, 570 Fehrns Street, Brooklyn, Pretoria	Broo
189	Pretoria	Geet Indian Restaurant, 541 Fehrns Street, Nieuw Muckleneuk, Brook...	Broo
189	Pretoria	Parrot's Menlyn Shopping Centre, Corner of Atterbury Road & Lois Ave...	Men
189	Pretoria	Crawdaddy's, Watergen Shopping Centre, Corner of Garstfontein Road ...	Wat
189	Pretoria	The Black Bamboo, Menlyn Boutique Hotel, 209 Tugela Road, Ashlea G...	Men
189	Pretoria	Harissa Bistro, The Club Centre, Corner of Pinaster Avenue & 18th Str...	The
189	Pretoria	Capital Craft Beer Academy, Greenlyn Village, Shop 20, 13th Street, Me...	Gree
189	Pretoria	23 On Hazelwood, 23 Hazelwood Road, Menlo Park, Near, Waterloof...	Wat
189	Pretoria	Bios Cafe, 66 Olympus street, Faerie Glen, Pretoria	Faer
189	Pretoria	Life Grand Cafe, The Club Centre, Corner of Pinaster Avenue & 18th Str...	The
189	Pretoria	Restaurant Mosaic @ The Orient, The Orient Boutique Hotel, Crocodile...	Wes
189	Cape Town	Beluga, The Foundry, Prestwich Street, Green Point, Cape Town	Gree
189	Cape Town	Willoughby & Co., Ground Level, Victoria Wharf, V & A Waterfront, Cap...	Vict
189	Cape Town	Gibson's Gourmet Burgers & Ribs, Shop 157, Lower Level, Victoria Wha...	Vict
189	Cape Town	Truth Coffee, 36 Buitenkant Street, CBD, Cape Town	CBD
189	Cape Town	Nobu - One & Only, One & Only Hotel, Dock Road, V & A Waterfront, Ca...	One
189	Cape Town	Kloof Street House, 30 Kloof Street, Gardens, Cape Town	Garc
189	Cape Town	Jason Bakery, 185 Bree Street, CBD, Cape Town	CBD
189	Cape Town	Origin Coffee Roasting, 28 Hudson Street, De Waterkant, Cape Town	De V
189	Cape Town	The Creamery, Newlands Quarter, Dean Street, Newlands, Cape Town	New
189	Cape Town	La Parada, 107 Bree Street, CBD, Cape Town	CBD
189	Cape Town	tashas, Ground Level, Victoria Wharf, V & A Waterfront, Cape Town	V &

Filtering the restaurant codes in Power BI Transform Data Query involves selecting specific restaurant codes based on certain criteria or conditions. This process helps narrow down the dataset to only include restaurant codes that meet the specified filtering criteria, such as a particular range of values, specific categories, or certain attributes. The filtered restaurant codes can then be uploaded as a refined dataset for analysis, visualization, or reporting purposes within your project.

The screenshot shows the Power BI Transform Data Query interface. The 'Queries' pane on the left lists various queries, including 'Zomato Africa'. The main area displays a table with columns: Restaurant ID, Country Code, City, Restaurant Name, Address, and Loc. A filter is applied to the 'Country Code' column, showing a list of values: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24. The filter is set to 'Sort Ascending'. The 'Country Code' column is highlighted, and a dropdown menu is open, showing a list of values: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24. The filter is set to 'Sort Ascending'. The 'Country Code' column is highlighted, and a dropdown menu is open, showing a list of values: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24. The filter is set to 'Sort Ascending'.

Restaurant ID	Country Code	City	Restaurant Name, Address	Loc
1	75	Sort Ascending	Baobab Cafe & Grill, Menlyn Shopping Centre, Level 1, Corner of Atterbury Road & Lois Ave.	Men
2	75	Sort Descending	Kream, 570 Fehrsen Street, Brooklyn, Pretoria	Brook
3	75	Clear Sort	Geet Indian Restaurant, 541 Fehrsen Street, Nieuw Muckleneuk, Brooklyn, Pretoria	Brook
4	75	Clear Filter	Panor's, Menlyn Shopping Centre, Corner of Atterbury Road & Lois Ave.	Men
5	75	Remove Empty	Crawdaddy's, Watergen Shopping Centre, Corner of Garfontein Road & Lois Ave.	Wat
6	75	Text Filters	The Black Bamboo, Menlyn Boutique Hotel, 209 Tugela Road, Ashlea G.	Men
7	75	Search	Harissa Bistro, The Club Centre, Corner of Pinaster Avenue & 18th Street	The
8	75	(Select All)	Capital Craft Beer Academy, Greenlyn Village, Shop 20, 11th Street, Ma.	Gree
9	75	Cape Town	23 On Hazelwood, 23 Hazelwood Road, Menlo Park, Near, Waterkloof...	Wat
10	75	Inner City	Bios Cafe, 66 Olympus street, Fairlie Glen, Pretoria	Faer
11	75	Johannesburg	Life Grand Cafe, The Club Centre, Corner of Pinaster Avenue & 18th Street	The
12	75	Pretoria	Restaurant Mosaic @ The Orient, The Orient Boutique Hotel, Crocodile...	Wes
13	6400	Randburg	Beluga, The Foundry, Prestwich Street, Green Point, Cape Town	Gree
14	6400	Sandton	Willoughby & Co., Ground Level, Victoria Wharf, V & A Waterfront, Cap...	Vici
15	6400		Gibson's Gourmet Burgers & Ribs, Shop 157, Lower Level, Victoria Wha...	Vici
16	6400		Truth Coffee, 36 Buitenkant Street, CBD, Cape Town	CBD
17	6400		Natru - One&Only, One & Only Hotel, Dock Road, V & A Waterfront, Ca...	One
18	6401		Kloof Street House, 30 Kloof Street, Gardens, Cape Town	Garc
19	6401260	129 Cape Town	Jason Bakery, 185 Bree Street, CBD, Cape Town	CBD
20	6401198	129 Cape Town	Origin Coffee Roasting, 28 Hudson Street, De Waterkant, Cape Town	De V
21	6401485	129 Cape Town	The Creamery, Newlands Quarter, Dean Street, Newlands, Cape Town	New
22	6401732	129 Cape Town	La Paradia, 107 Bree Street, CBD, Cape Town	CBD
23	6401789	129 Cape Town	tashas, Ground Level, Victoria Wharf, V & A Waterfront, Cape Town	V &

File

Home

Transform

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New Source

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Merge Queries

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Combine Files

Text Analytics

Vision

Azure Machine Learning

Close

New Query

Data Sources

Parameters

Query

Manage Columns

Reduce Rows

Sort

Transform

Combine

AI Insights

Queries [8]

Table.SelectRows(#"Filtered Rows1", each [Latitude] <> null and [Latitude] <> "")

1.2 Longitude

1.2 Latitude

Cuisines

	1.2 Longitude	1.2 Latitude	Cuisines
entre, Menlyn, Pretoria	28.275005	-25.782735	Cafe, Grill
	28.23604667	-25.77074833	African
	28.235482	-25.771335	Indian
entre, Menlyn, Pretoria	28.275316	-25.783539	Contemporary, Sushi, Grill, Italian, Steak
g Centre, Garsfontein, Pretoria	28.28159167	-25.7989333	Continental, Seafood, Burger, South African, Finger Food, Grill
otel, Menlyn, Pretoria	28.270627	-25.780358	Continental
otelwood, Near Waterkloof, Pretoria	28.257131	-25.778387	European, South African, Steak
enlopark, Near Lynnwood, Pretoria	28.25643333	-25.76973333	Street Food, Burger, American, Finger Food, German
a	28.257074	-25.775722	Street Food, Continental, Burger, Grill
a	28.331763	-25.798167	Cafe, Burger, Tapas, South African, European, Grill
otelwood, Near Waterkloof, Pretoria	28.256922	-25.777898	Italian, Mediterranean, Sushi, Desserts
	27.999097	-25.761238	French
own	18.418015	-33.912585	Seafood, Asian, Grill, Sushi
A Waterfront, Cape Town	18.421	-33.90416667	Seafood, Japanese, Sushi
A Waterfront, Cape Town	18.42030041	-33.9042665	Burger, American, Grill
	18.42285024	-33.92849643	Cafe
, V & A Waterfront, Cape Town	18.416435	-33.908603	Japanese, Asian, Seafood, Sushi
n	18.4125	-33.9285	Mediterranean
	18.41457088	-33.92451525	Cafe, Bakery
e Town	18.41766667	-33.91793333	Cafe, Bakery, Tea, Vegetarian
am	18.46195	-33.970286	Desserts, Ice Cream
	18.41789113	-33.92154333	Spanish, Tapas
ape Town	18.421341	-33.902336	Cafe, Mediterranean

Query Settings

PROPERTIES

Name

Zomato Africa

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Sorted Rows

Filtered Rows

Filtered Rows1

Filtered Rows2



Removing duplicates from latitude in Power BI Transform Data Query involves eliminating redundant latitude values from the dataset to ensure each latitude value is unique. This process helps to clean and streamline the data, ensuring accuracy and avoiding redundancy in latitude information.

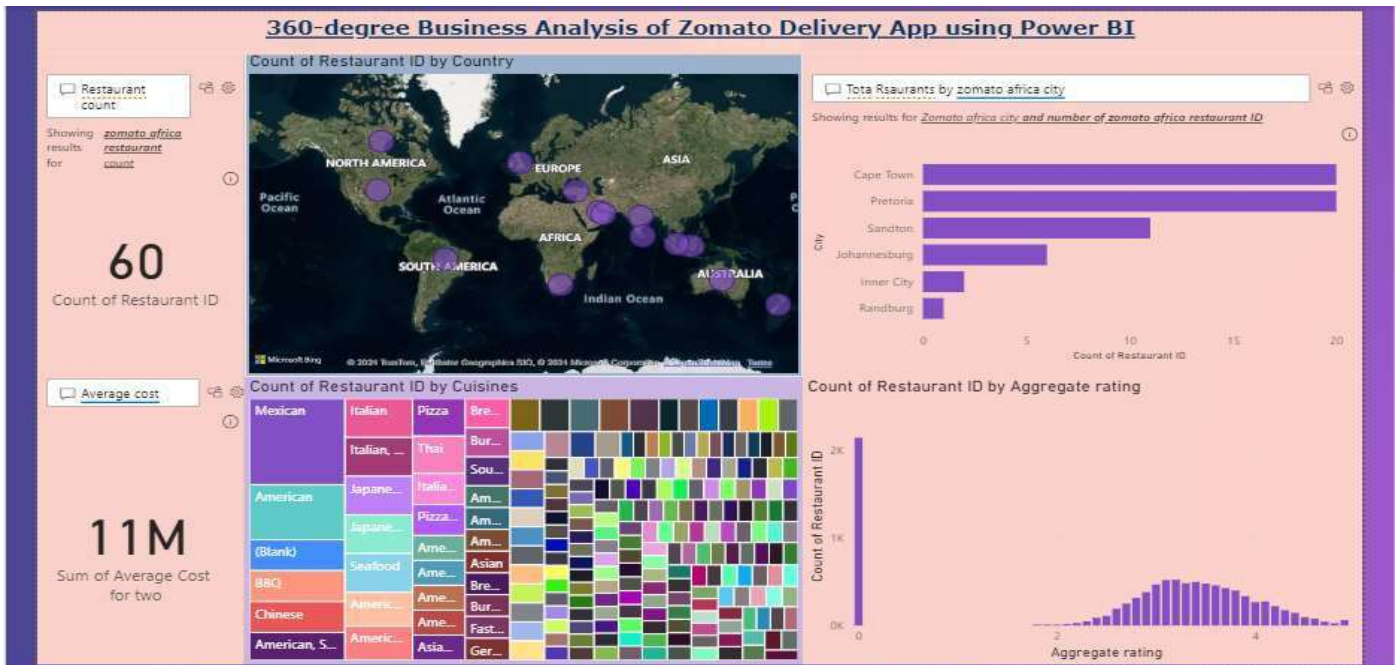
Once duplicates are removed, the cleaned latitude data can be uploaded as a refined dataset for analysis, visualization, or reporting purposes in your project, providing more accurate insights into geographical data.

The screenshot displays the Power BI Transform Data Query interface. The main area shows a table with the following data:

Restaurant ID	Country Code	City	Restaurant Name.Address
1	16668008	37 Yorkton	Angato Sush, 14 Second Ave North, Yorkton, SK S9N 1G1
2	17556793	216 Winchester Bay	Fishpatrick's Crabby Cafe, 196 Bayfront Loop, Winchester Bay, OR 97467
3	17694056	216 Welton	Theo Yianni's Authentic Greek Restaurant, 322 American Way, Welton...
4	17696918	216 Waterloo	Montage, 222 Main St, Cedar Falls, IA 50613
5	17697384	216 Waterloo	HuHot Mongolian Grill, 6301 University Ave, Cedar Falls, IA 50613
6	17696920	216 Waterloo	Mulligan's Brick Oven Grill, 205 E 18th St, Cedar Falls, IA 50613
7	17697398	216 Waterloo	Sakura, 5719 university avenue, Cedar Falls, IA 50613
8	17696871	216 Waterloo	Brown Bottle The Cedar Falls, 1111 Center St, Cedar Falls, IA 50613
9	17697406	216 Waterloo	Scratch, 315 Main St, Cedar Falls, IA 50613
10	17697444	216 Waterloo	Masala Grill & Coffee House, 911 W 23rd St, Cedar Falls, IA 50613
11	17696955	216 Waterloo	Texas Roadhouse, 5715 University Ave, Cedar Falls, IA 50613
12	17696881	216 Waterloo	Four Queens Dairy Cream, 1310 W 1st St, Cedar Falls, IA 50613
13	17697332	216 Waterloo	Tokyo Japanese Steak House, 1931 Sears Street, Waterloo, IA 50702
14	17696901	216 Waterloo	Hong Kong Chinese Restaurant, 6306 University Ave, Cedar Falls, IA 50...
15	17697418	216 Waterloo	Chapala, 900 La Porte Road, Waterloo, IA 50702
16	17697386	216 Waterloo	Galleria de Peco, 622 Commercial Street, Waterloo, IA 50701
17	17697417	216 Waterloo	J's Homestyle Cooking, 1724 West 31st Street, Cedar Falls, IA 50613
18	17696941	216 Waterloo	SOHO Sushi Bar & Deli, 119 Main St, Cedar Falls, IA 50613
19	17697224	216 Waterloo	Golden China, 106 Brookridge Dr, IA 50702
20	17697304	216 Waterloo	Rudy's Tacos, 2401 Falls Avenue, IA 50701
21	17697424	216 Waterloo	The Tital Bowl, 624 Sycamore Street, Waterloo, IA 50703
22	17696957	216 Waterloo	Tony's La Pizzeria, 407 Main St, Cedar Falls, IA 50613
23	17697389	216 Waterloo	The Screaming Eagle, 228 E 4th St., Waterloo, IA 50703

The interface includes a ribbon with tabs: File, Home, Transform, Add Column, View, Tools, and Help. The right sidebar shows Query Settings, Properties, and Applied Steps. The Applied Steps list includes: Source, Navigation, Promoted Headers, Changed Type, and Sorted Rows.

## Dashboard



## **CONCLUSION**

The project the 360-degree business analysis of the Tomato delivery app using Power BI has successfully documented and it has provided comprehensive insights into various aspects of the platform's performance. Through data visualization and analytics, we have gained a deep understanding of customer preferences, delivery trends, restaurant performance, and market dynamics. By leveraging Power BI's capabilities, we have identified opportunities for optimization, such as enhancing delivery routes, improving restaurant partnerships, and refining marketing strategies to drive growth and customer satisfaction. This holistic approach to analysis has empowered Zomato to make data-driven decisions, adapt to changing market conditions, and ultimately strengthen its position as a leading player in the food delivery industry.

## **FUTURE SCOPE**

The feature scope for the 360-degree business analysis of Zomato's delivery app using Power BI encompasses several critical components. Firstly, it involves integrating data from diverse sources, including transactional records, customer feedback, delivery logs, and market trends, to provide a comprehensive view of the business landscape.

Interactive dashboards with drill-down capabilities enable stakeholders to explore data at various levels of granularity, facilitating deeper insights into performance metrics and trends.

Advanced visualizations, such as geographic maps, trend lines, and heat maps, enhance the analysis by visually representing complex data relationships and patterns. Predictive analytics models are employed to forecast customer demand, optimize delivery routes, and anticipate market trends, enabling proactive decision-making.

Real-time monitoring capabilities track key performance indicators like order volumes, delivery times, and customer satisfaction scores, empowering timely interventions and adjustments. Cross-functional analysis correlates data across marketing campaigns, menu optimization, and customer segmentation to uncover interdependencies and synergies, fostering holistic business optimization.

Additionally, robust data governance and security measures ensure the integrity and confidentiality of sensitive information, maintaining trust and compliance with regulatory requirements. By leveraging these features, Zomato can derive actionable insights, optimize operational efficiency, improve customer satisfaction, and drive sustainable growth in the competitive food delivery market.