Tech Saksham

Case Study Report

Data Analytics with Power BI

“360-degree business analysis of online delivery apps using power BI”

“A.P.C Mahalaxmi College for Women”

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ABSTRACT

In the ever-evolving landscape of online delivery apps, understanding every facet of the business is paramount for sustained success. This study employs Power BI, a robust business intelligence tool, to conduct a comprehensive 360-degree analysis of online delivery apps. By integrating data sources from various touchpoints including customer interactions, operational processes, financial transactions, and market dynamics, this research provides a holistic view of the ecosystem. Through interactive dashboards and advanced analytics, Power BI facilitates the identification of key performance indicators, market trends, customer preferences, operational efficiencies, and financial insights. The findings empower decision-makers with actionable insights to optimize strategies, enhance customer experiences, and drive competitive advantage in the online delivery app industry.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement:

The exponential growth of online delivery apps has reshaped consumer behavior and business operations, presenting both opportunities ang challenges for stakeholders. However, despite their widespread adoption, many online delivery apps face significant hurdles in maximizing efficiency, meeting customer expectations and sustaining profitability. These Challenges include but are not limited to:

- **Customer Experience Optimization:**
  Ensuring seamless and personalized experiences throughout the customer journey, from browsing to delivery, to foster loyalty and satisfaction.
- **Operational Efficiency Enhancement:**
  Streamlining processes such as order fulfillment, delivery logistics, and inventory management to minimize costs and improve service Quality

1.2 Proposed Solution:

- **Customer Experience Enhancement:**
  Utilize Power BI to analyze customer feedback and behavior data to identify pain points and preferences. Implement personalized recommendation systems and targeted marketing campaigns based on Power BI insights to enhance customer engagement and satisfaction**.**
- **Operational Efficiency Improvement:**
  Integrate Power BI with operational data sources to track and optimize key metrics such as order processing time, delivery routes and inventory turnover. Use predictive analytics to forecast demand, optimize resource allocation, and operational costs while maintaining service quality.
- **Market Intelligence Utilization:**
  Employ Power BI to analyze market trends, competitor strategies, and consumer demographics to identify untapped market segments and emerging opportunities. Develop data-driven pricing strategies and product offerings tailored to market demand and competitive dynamics.
- **Financial Performance Optimization**:
  Integrate financial data from various sources into Power BI to track revenue streams, cost structures, and profitability metrics in real-time.

1.3 Feature:

- **Data Integration:**
  Connect all your data sources to Power BI, including databases, Excel files, cloud services, and more.
- **Data Modeling**:
  Design a data model that integrates and relates all your data sources to provide a comprehensive view of your business.
- **Data Visualization:**
  Create interactive and insightful dashboards using a variety of visualizations to represent key performance indicators and metrics.
- **Advanced Analytics:**
  Utilize Power BI's advanced analytics features, such as machine learning algorithms, to uncover patterns and trends in your data.

1.4 Advantages:

- **Comprehensive Insights**: Power BI allows you to integrate data from various sources, providing a comprehensive view of your online delivery app's performance, including sales, customer behaviour, delivery efficiency, and more.
- **Interactive Dashboards**: You can create interactive dashboards that visualize key metrics and trends, enabling stakeholders to explore data intuitively and gain actionable insights.

- **Real-time Monitoring**: Power BI can be configured to provide real-time monitoring of crucial performance indicators, allowing you to respond promptly to issues and capitalize on opportunities as they arise.

- **Customized Reporting**: With Power BI's flexibility, you can create custom reports tailored to specific business needs, such as Analysing sales by region, customer segmentation, or product performance.

1.5 Scope:

- **Sales and Revenue Analysis**:

Tracking sales performance over time.
Analysing revenue streams (e.g., delivery fees, product sales).
Identifying top-selling items and categories.

- **Customer Behaviour Analysis**:

Understanding customer demographics.
Analysing purchasing patterns and frequency.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used:

Data Integration Services: Platforms like Azure Data Factory or AWS Glue are used to collect data from diverse sources such as app usage metrics, customer feedback, sales transactions, and delivery performance.

Data Warehousing: Services like Azure Synapse Analytics or Amazon Redshift provide scalable data warehousing solutions to store and organize large volumes of structured and unstructured data for analysis.

Data Preparation Tools: Power Query, a component of Power BI, is often used to clean, transform, and shape raw data into a format suitable for analysis. Additionally, tools like Trifacta or Alteryx can also be integrated for advanced data preparation task.

Data Visualization and Analytics: Power BI serves as the primary tool for creating interactive dashboards, reports, and visualizations to explore and analyse data. It offers a wide range of visualization options and analytical capabilities to derive insights from the data.

Cloud Storage: Services like Azure Blob Storage or Amazon S3 are utilized to store raw and processed data securely in the cloud, enabling easy access and scalability for analytical workloads.

2.2 Tools and Software used:

Power BI: As the core tool for visualization and analytics, Power BI enables users to create interactive dashboards, reports, and visualizations to explore and analyse data from multiple sources.

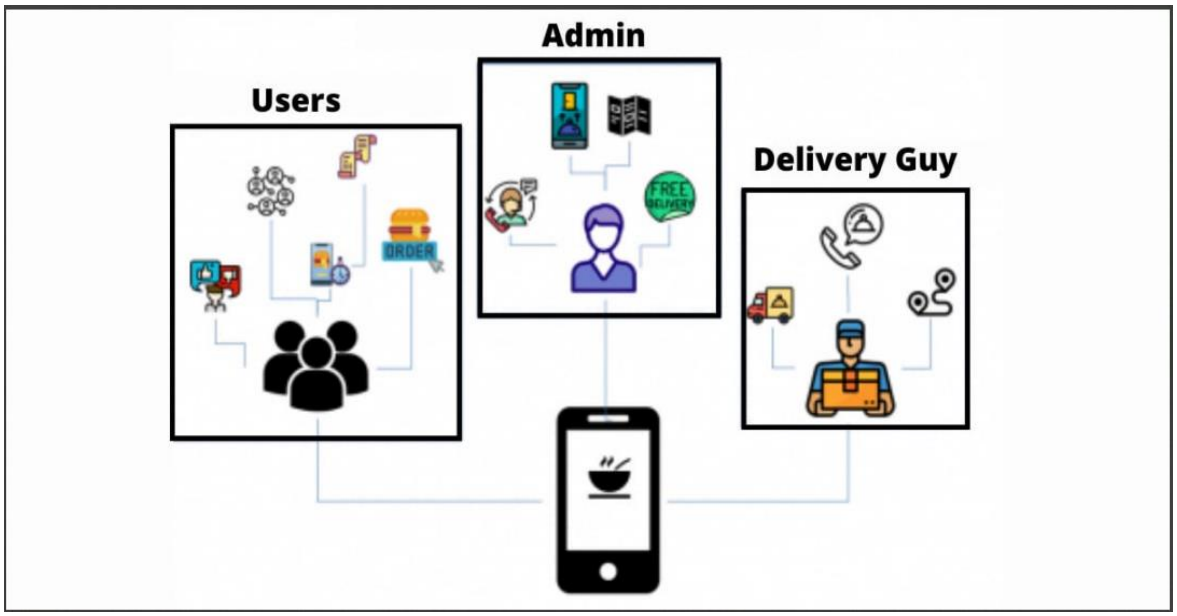
Microsoft Excel: Often used in conjunction with Power BI for data preparation and cleansing tasks, Excel provides a familiar interface for manipulating and formatting data before importing it into Power BI.

Azure Data Factor: Microsoft's cloud-based data integration service is used to ingest, transform, and load data from various sources into Azure storage or other destinations, preparing it for analysis in Power BI.

SQL Server Integration Services (SSIS): For on-premises data integration needs, SSIS can be used to extract, transform, and load data into SQL Server or other data repositories before connecting it to Power BI.

CHAPTER 3

PROJECT ARCHITECTURE



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

- **Data Sources:**
  Online apps delivery data (orders, transactions, user transactions)
  Customer data (profiles, preferences, demographics)
  Product data (catalog, descriptions, pricing)
  Marketing data (campaigns, channels, performance)
- **Data Integration:**
  Extract, Transform, Load (ETL)processes to bring data from various sources into Power BI
  Integration with APIs or direct database connections
  Data Cleansing and normalization to ensure consistency and accuracy
- **Data Modeling:**
  Designing a data model that reflects the relationships between different entities (example: customer, products, orders)
  Creating measure and calculated columns for key performance indicators (KPIs)
  Implementing data hierarchies for drill-down analysis
- **Visualization**:
  Creating interactive dashboards and reports using Power BI's visualization tools

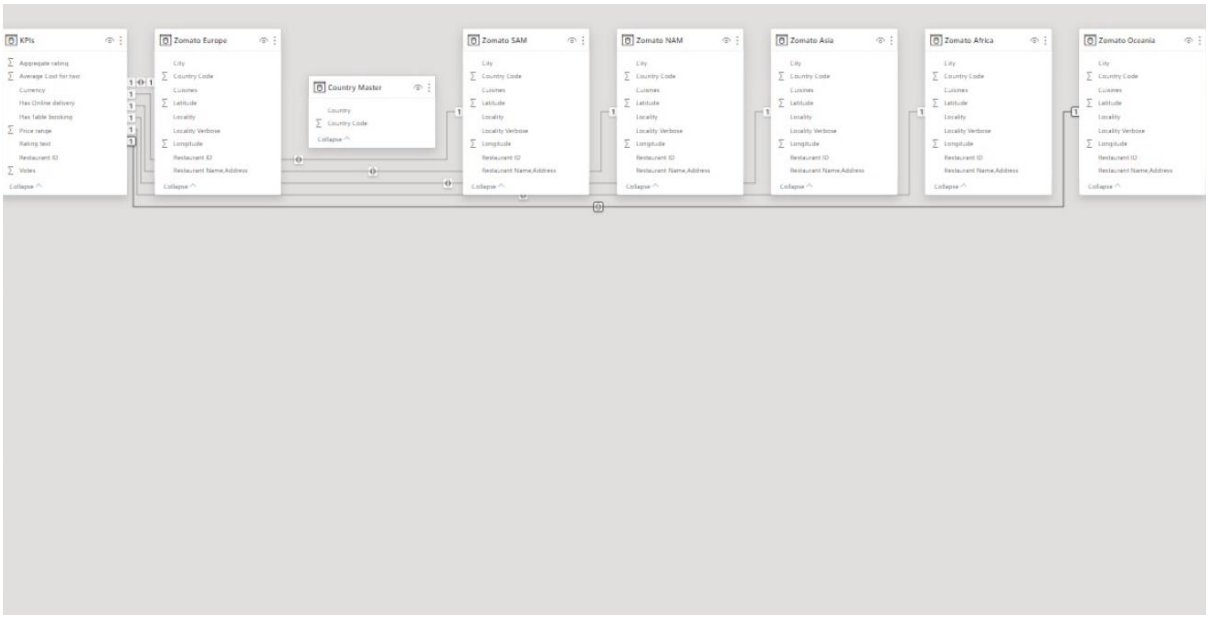
- **Advanced Analytics:**
  Implementing predictive analytics models for forecasting demand, customer Behavior, etc.
  Performing cohort analysis, segmentation, and customer lifetime value calculations
  Incorporating statistical functions and machine learning algorithms as needed
- **Deployment and Distribution:**
  Deploying Power BI reports to a cloud service (example, Power BI service) for sharing and collaboration
  Setting up scheduled data refreshers to keep the reports up to date
  Configuring security and access controls to restrict data visibility as per user roles
- **Monitoring and Optimization:**
  Monitoring report usage and performance metrics to identity areas for improvement
  Gathering feedback from stakeholders to iterate on the design and content of the reports
  Continuously optimizing data models and visualizations to ensure relevance and accuracy

CHAPTER 4

MODELING AND RESULT

4.1 Manage Relationships:

The KPIs file will be used as the main connector as it contains most key identifiers (Zomato Asia, Zomato Oceania, Zomato Europe, Zomato Africa) which can be used to relate 6 data files together. The country Master file is use to link the client profile geographically with “country code”.



Manage relationships

Active	From: Table (Column)	To: Table (Column)
☑	Zomato Africa (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Asia (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Europe (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato NAM (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Oceania (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato SAM (Restaurant ID)	KPIs (Restaurant ID)

New... Autodetect... Edit... Delete

Close

Edit relationship

Select tables and columns that are related.

Zomato Africa

Restaurant ID	Country Code	City	Restaurant Name,Address	Locality
18395463	189	Cape Town	The Butcher's Wife,15 Belgravia Road, Athlone, Cape T...	Athlone
18337845	189	Cape Town	Coco Safar,Ground Floor, Cavendish Square, Claremont...	Cavendish Square, C
6401732	189	Cape Town	La Parada,107 Bree Street, CBD, Cape Town	CBD

KPIs

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range
18433852	300	Indian Rupees(Rs.)	No	No	1
18465871	300	Indian Rupees(Rs.)	No	No	1
18471268	300	Indian Rupees(Rs.)	No	No	1

Cardinality: One to one (1:1)

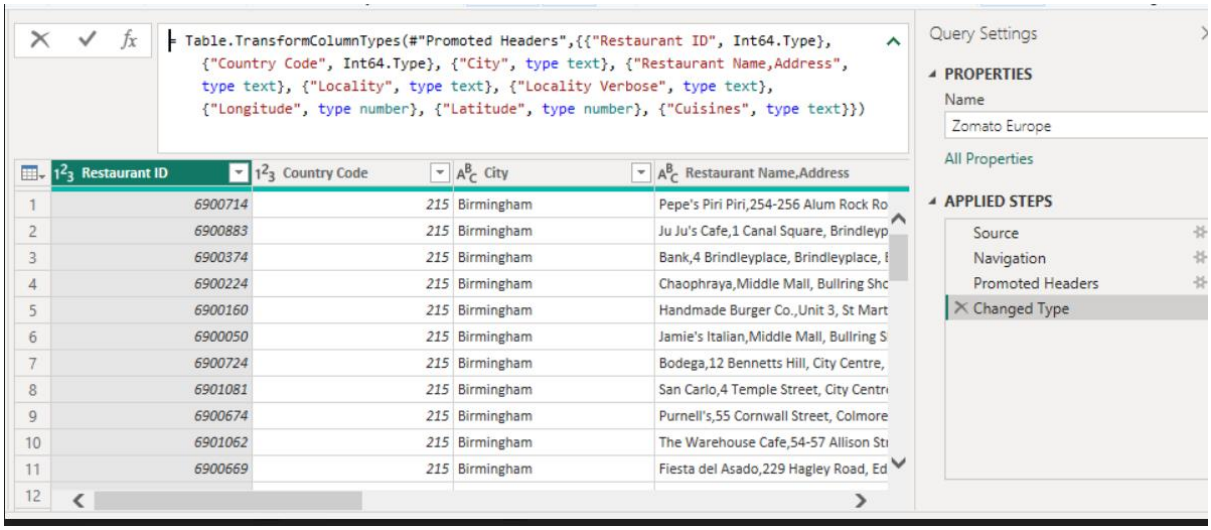
Cross filter direction: Both

☑ Make this relationship active

☐ Assume referential integrity

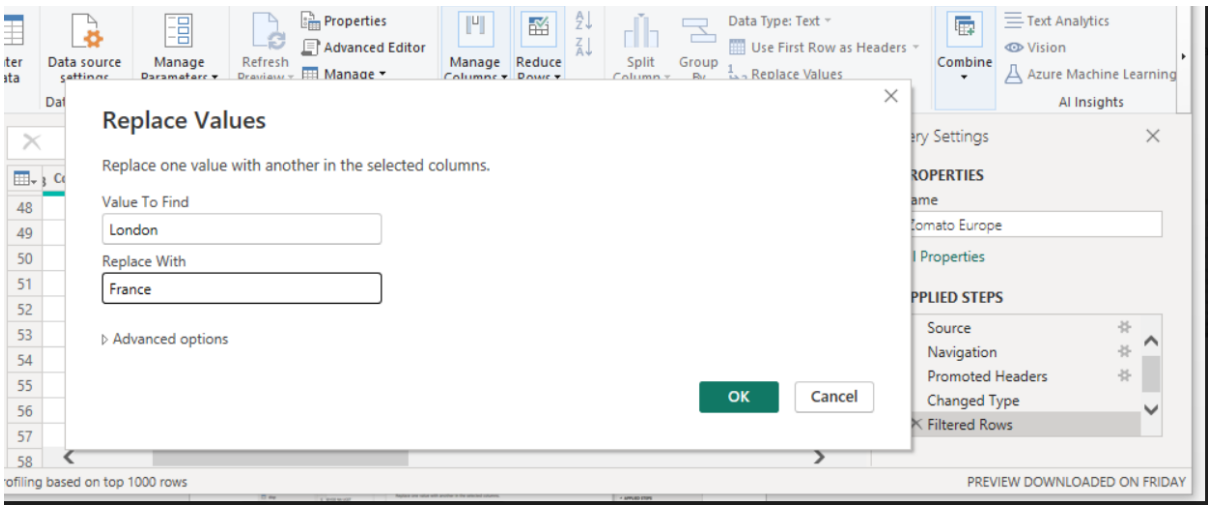
OK Cancel

Modelling for the data:

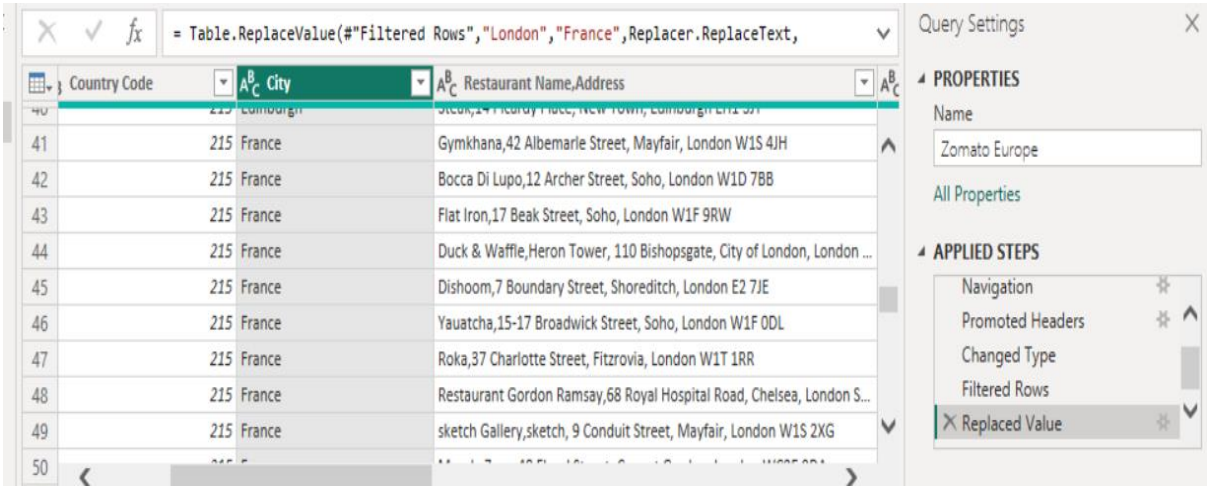


Replacing the values:

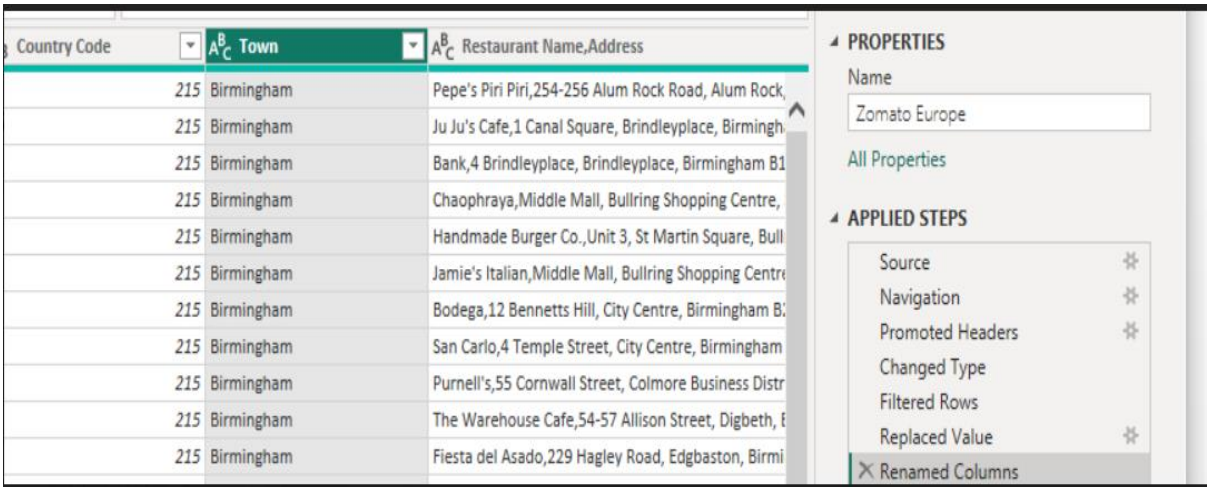
Set some fields to English for easy understanding, we replace values to English with the Power Query Editor.



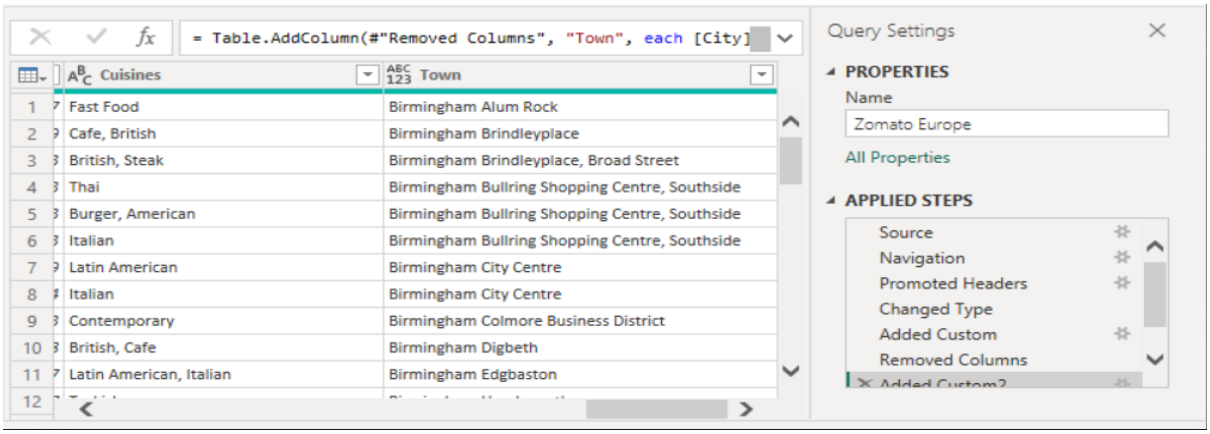
To replace the values “London” with “France” in a sentence.



Changing the order of town name at Power Query Duplicate the “City/Town” then split column using space as delimiter.

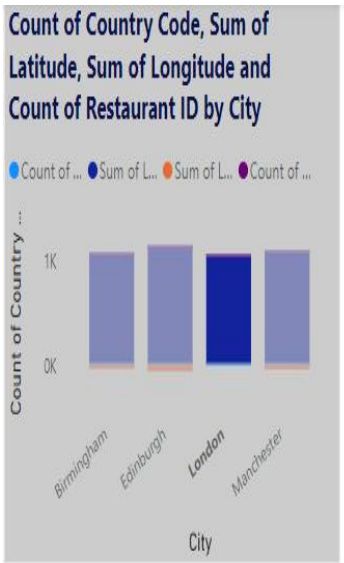


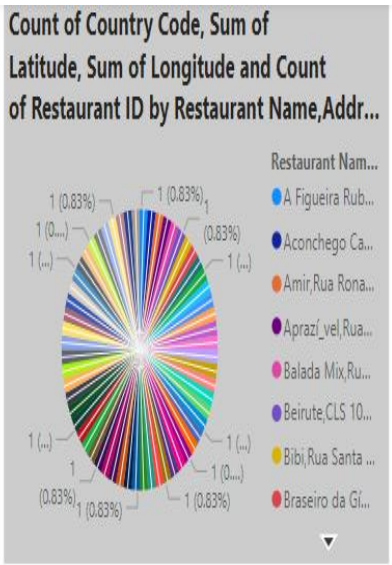
Then merge the column by city and locality. Refer to applied steps for details.

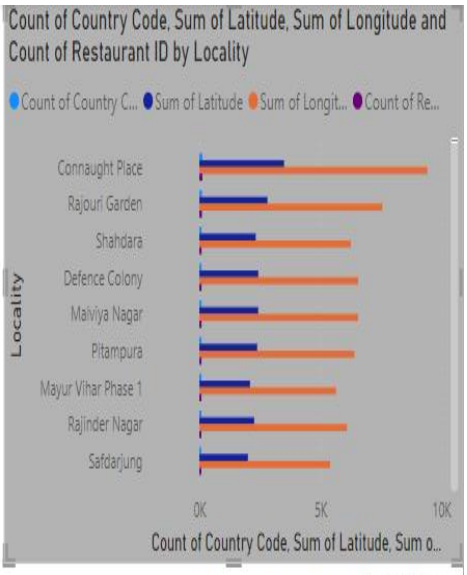


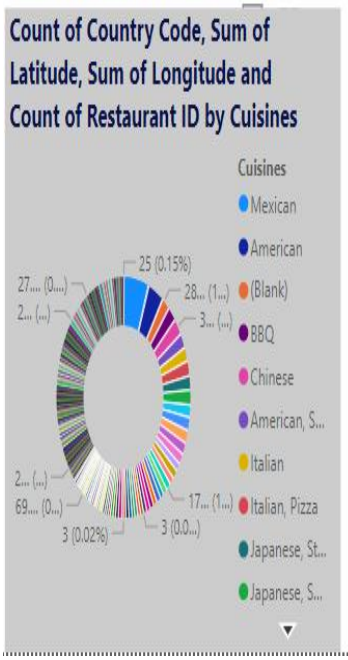
Dashboard:

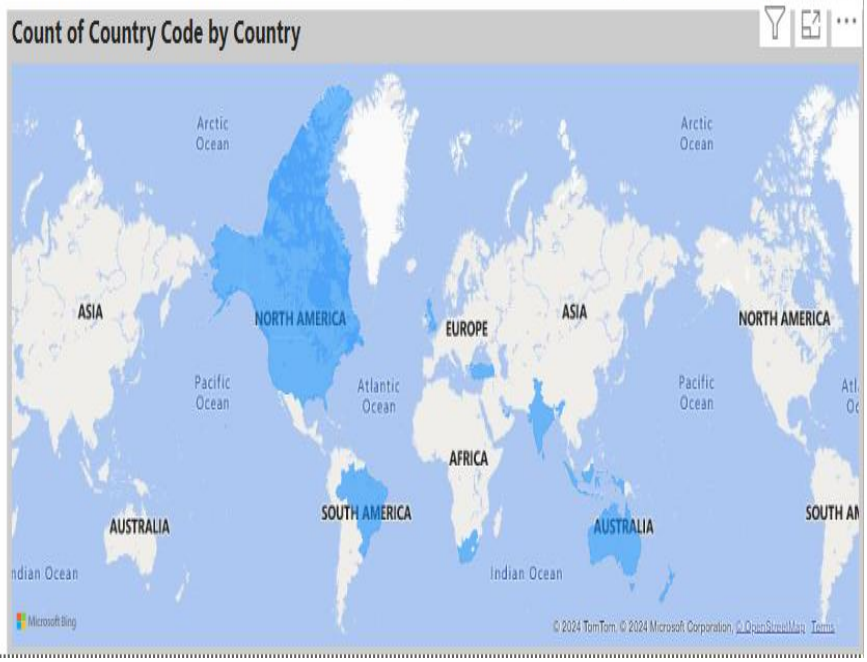

Food delivery app 360 marketing plan
This slide covers food distribution plan advertising plan. The purpose of this template is to provide insights of various marketing plans that Zomato uses to attract its target audience. Different digital plans are SEO, social media, paid advertising, email marketing and visual advertising.
01
SEO Plan
Target over 900K keywords for SEO purposes
54 million is on company's website as it is registered with 6.5 k restaurants
Add test here
02
Social Media Plan
Perform meme marketing strategy to attract youth
Post funny content related to food
Add text here
03
Paid Advertising Campaign
Run google ads for targeted audience
Add text here
04
Email Marketing
Create attractive one – liners for the subjects
Set impressive themes of Email such as famous series theme
Add text here
05
Visual Advertising
Put challenges videos on its YouTube channel to create brand awareness
Add text here
This slide is 100% editable. Adapt it to your needs and capture your audience's attention.


Count of Country Code, Sum of Latitude, Sum of Longitude and Count of Restaurant ID by City
Count of ...
Sum of L...
Sum of L...
Count of ...
Count of Country ...
1K
0K
Birmingham
Edinburgh
London
Manchester
City


Count of Country Code, Sum of Latitude, Sum of Longitude and Count of Restaurant ID by Restaurant Name,Addr...
Restaurant Nam...
A Figueira Rub...
Aconchego Ca...
Amir,Rua Rona...
Aprazí_vel,Rua...
Balada Mix,Ru...
Beirute,CLS 10...
Bibi,Rua Santa ...
Braseiro da Gí...
1 (0.83%)


Count of Country Code, Sum of Latitude, Sum of Longitude and Count of Restaurant ID by Locality
Count of Country C...
Sum of Latitude
Sum of Longit...
Count of Re...
Connaught Place
Rajouri Garden
Shahdara
Defence Colony
Malviya Nagar
Pitampura
Mayur Vihar Phase 1
Rajinder Nagar
Safdarjung
Locality
0K
5K
10K
Count of Country Code, Sum of Latitude, Sum o...


Count of Country Code, Sum of Latitude, Sum of Longitude and Count of Restaurant ID by Cuisines
Cuisines
Mexican
American
(Blank)
BBQ
Chinese
American, S...
Italian
Italian, Pizza
Japanese, St...
Japanese, S...
25 (0.15%)
3 (0.02%)
3 (0.0...)


Count of Country Code by Country
Arctic Ocean
ASIA
NORTH AMERICA
EUROPE
AFRICA
SOUTH AMERICA
AUSTRALIA
Pacific Ocean
Atlantic Ocean
Indian Ocean
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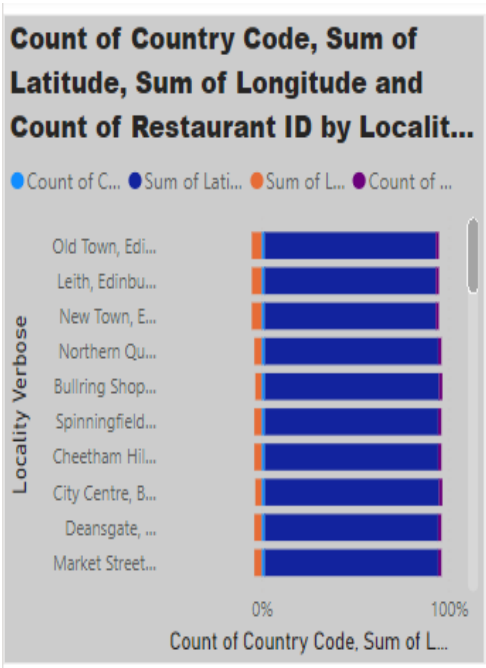
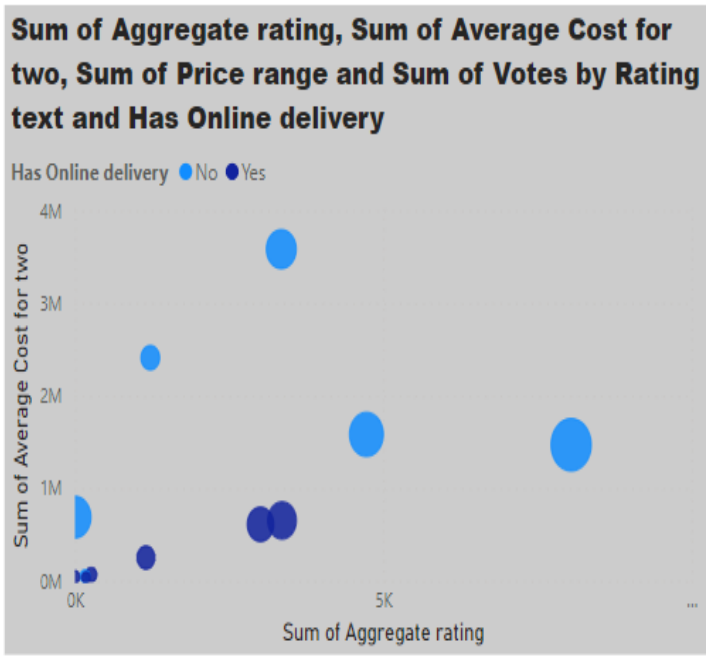
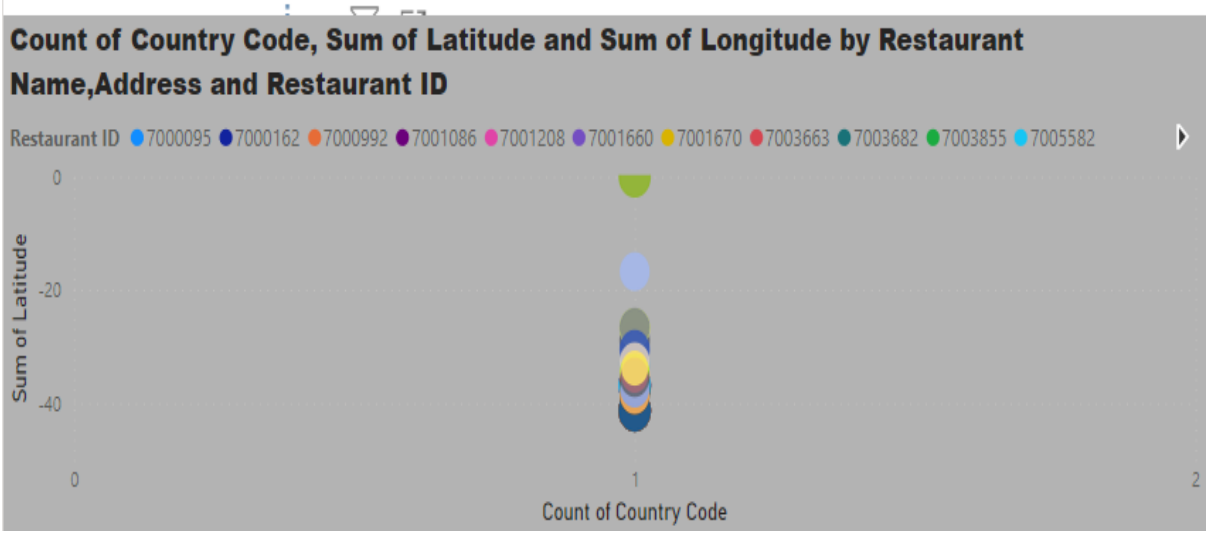

Count of Country Code, Sum of Latitude, Sum of Longitude and Count of Restaurant ID by Localit...
Count of C...
Sum of Lati...
Sum of L...
Count of ...
Locality Verbose
Old Town, Edi...
Leith, Edinbu...
New Town, E...
Northern Qu...
Bullring Shop...
Spinningfield...
Cheetham Hil...
City Centre, B...
Deansgate, ...
Market Street...
0%
100%
Count of Country Code, Sum of L...


Sum of Aggregate rating, Sum of Average Cost for two, Sum of Price range and Sum of Votes by Rating text and Has Online delivery
Has Online delivery
No
Yes
Sum of Average Cost for two
4M
3M
2M
1M
0M
0K
5K
Sum of Aggregate rating


Count of Country Code, Sum of Latitude and Sum of Longitude by Restaurant Name,Address and Restaurant ID
Restaurant ID
7000095
7000162
7000992
7001086
7001208
7001660
7001670
7003663
7003682
7003855
7005582
Sum of Latitude
0
-20
-40
0
1
2
Count of Country Code

Conclusion:

The project of “360-degree business analysis of online delivery apps in Power BI”. Gain a deeper understanding of customer behavior, preferences, and trends to tailor marketing strategies and improve customer satisfaction. Optimize operational processes, including order fulfillment, delivery logistics, and inventory management, to enhance efficiency and reduce cost. Stay competitive by analyzing market trends, monitoring competitor activities, and identifying growth opportunities in real-time. Make informed financial decisions by tracking revenue streams, managing expenses, and forecasting future performance based on data-driven insights. Foster a culture of data-driven decision-making across the organization, empowering stakeholders at all levels to drive innovation and business growth.

Future Scope:

The future scope of this project is vast. Analyzing customer behavior, preferences, and trend can help improve targeted marketing campaigns, personalize offerings, and enhance overall customer satisfaction. Monitoring delivery times, order processing, and inventory management can optimize operational processes, reduce costs, and improve service quality. Analyzing supplier performance, demand forecasting, and inventory levels can streamline the supply chain, minimize stockouts and reduce lead times. Keeping tracks of industry trends, competitor analysis, and market dynamics can help in staying ahead of the competition and adapting strategies accordingly.

REFERENCES

https://images.app.goo.gl/pCDA7GCLZBKQsqZm8

LINK


Microsoft

edunet
foundation

SAP

TAMIL NADU SKILL DEVELOPMENT CORPORATION
SKILLS FOR PROGRESS AND PROSPERITY