Tech Saksham

Case Study Report

Data Analytics with Power BI

“360-degree Business Analysis of Online Delivery Apps using Power BI)”

“S.T. HINDU COLLEGE”

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ABSTRACT

In today's fast-paced world, online delivery apps have revolutionized the way people access goods and services. These platforms offer convenience and efficiency, allowing users to order food, groceries, and other essentials with just a few taps on their smartphones. However, behind the seamless user experience lies a complex ecosystem of data and operations. This project aims to conduct a comprehensive 360-degree business analysis of online delivery apps using Power BI, a powerful business intelligence tool. By leveraging data visualization techniques, statistical analysis, and predictive modeling, this analysis will provide valuable insights into various aspects of online delivery app operations, including user behavior, market trends, operational efficiency, and revenue generation.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

In the fast-paced digital era, online delivery apps have become integral to modern living, offering convenience and accessibility to a wide range of goods and services. However, the landscape of online delivery apps is constantly evolving, presenting both opportunities and challenges for businesses operating within this domain. To effectively navigate this dynamic environment and optimize business performance, a comprehensive 360-degree business analysis is essential. The problem at hand lies in the need to harness the vast amounts of data generated by online delivery apps and transform it into actionable insights. Without a robust analytical framework in place, businesses risk making uninformed decisions, leading to suboptimal outcomes such as inefficient resource allocation, missed growth opportunities, and diminished customer satisfaction.

1.2 Proposed Solution

The proposed solution is to develop a PowerBI dashboard that can analyze and visualize real-time customer data. The dashboard will integrate data from various sources such as Data Integration, Customer Segmentation, Order Analysis, delivery performance. It will provide a comprehensive view of customer behavior, preferences, and trends, enables to make informed decisions.

1.3 Feature

- **Dashboard Overview**: Provide an executive-level dashboard that offers a high-level overview of key performance indicators (KPIs) such as total orders, revenue, customer satisfaction scores, and delivery efficiency.
- **Customer Segmentation**: Implement a feature for customer segmentation based on demographics, purchasing behavior, frequency of orders, and customer lifetime value. This allows for targeted marketing efforts and personalized experiences.
- **Feedback Analysis:** Incorporate features for sentiment analysis of customer feedback and reviews. This allows businesses to identify areas of improvement, address customer concerns, and enhance overall satisfaction.

1.4 Advantages

- **Real Time Monitoring**: This real-time visibility into delivery times, order volumes, customer satisfaction scores, and other critical metrics enables proactive decision-making and timely interventions to address issues as they arise.
- **Competitive Advantage**: By gaining a deeper understanding of market trends, competitor activities, and customer preferences, businesses can gain a competitive advantage in the online delivery space.
- **Scalability and Flexibility**: Power BI is a scalable and flexible platform that can accommodate businesses of all sizes and complexities. Whether it's a small startup or a large enterprise, Power BI can scale to meet the evolving needs of the business and adapt to changing data requirements over time.

1.5 Scope

The scope this project encompasses a holistic examination of various facets including customer behavior, operational efficiency, revenue generation, market trends, and competitive landscape. This analysis involves collecting and integrating data from multiple sources, preparing and cleaning the data for analysis, designing interactive dashboards to visualize key performance indicators, conducting customer analysis to identify preferences and trends, optimizing operational processes, forecasting demand and sales, monitoring market trends and competitor activities, and providing actionable insights to drive strategic decision-making and continuous optimization efforts.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Sources Integration**: Power BI allows integration with various data sources, including databases, spreadsheets, cloud services, and web APIs. For online delivery apps, data sources may include transaction databases, customer databases, order management systems, etc.
- **Data Preparation**: Before analysis, data often needs to be cleaned, transformed, and modeled appropriately.

- **Data Modeling**: Developing a robust data model is essential for meaningful analysis. Power BI's data modeling capabilities, including relationships, measures, and calculated columns, enable users to create a structured model that accurately represents the business.

2.2 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.

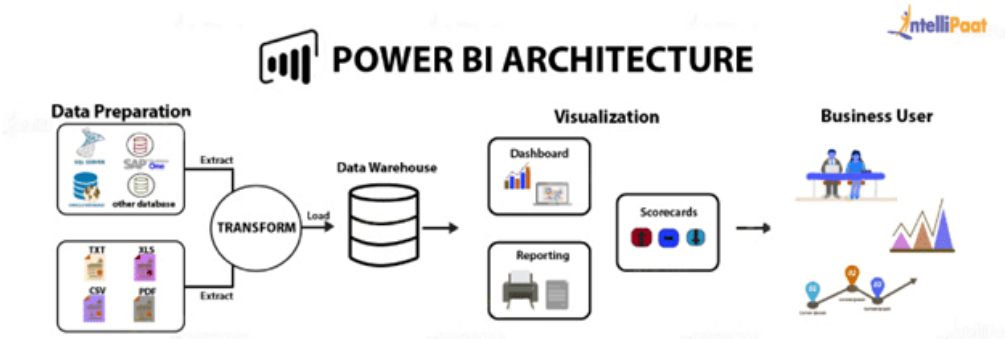
Software Requirements:

- **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:

Data Sources:

- Transactional databases (orders, deliveries, payments)
- Operational logs (delivery routes, driver performance)

Data Integration Level:

- Extract data from various sources using ETL (Extract, Transform, Load) processes.
- Transform and clean the data to ensure consistency and accuracy.

Data Warehousing:

- Optimize data storage for efficient querying and analysis.
- Ensure data security and compliance with relevant regulations.

Data Modeling and Analysis:

- Design a dimensional model for analysis, including fact tables (orders, deliveries) and dimension tables (customers, products, time).
- Utilize DAX (Data Analysis Expressions) for advanced calculations and analytics.

Machine Learning Integration:

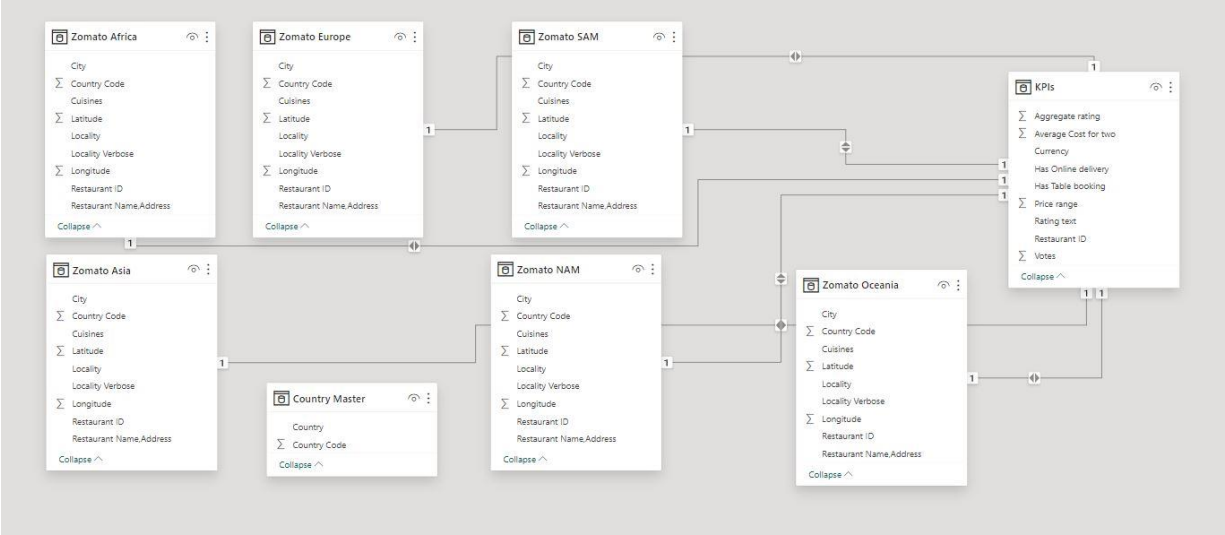
- Integration of machine learning models to perform predictive analytics and forecast future trends.
- Utilization of Power BI's integration with Azure Machine Learning or Python/R scripts for advanced analytics.

By following this high-level architecture, organizations can leverage Power BI to conduct a comprehensive 360-degree business analysis of their online delivery apps, enabling them to make data-driven decisions and drive business growth.

CHAPTER 4

MODELING AND RESULT

Manage Relationship



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)

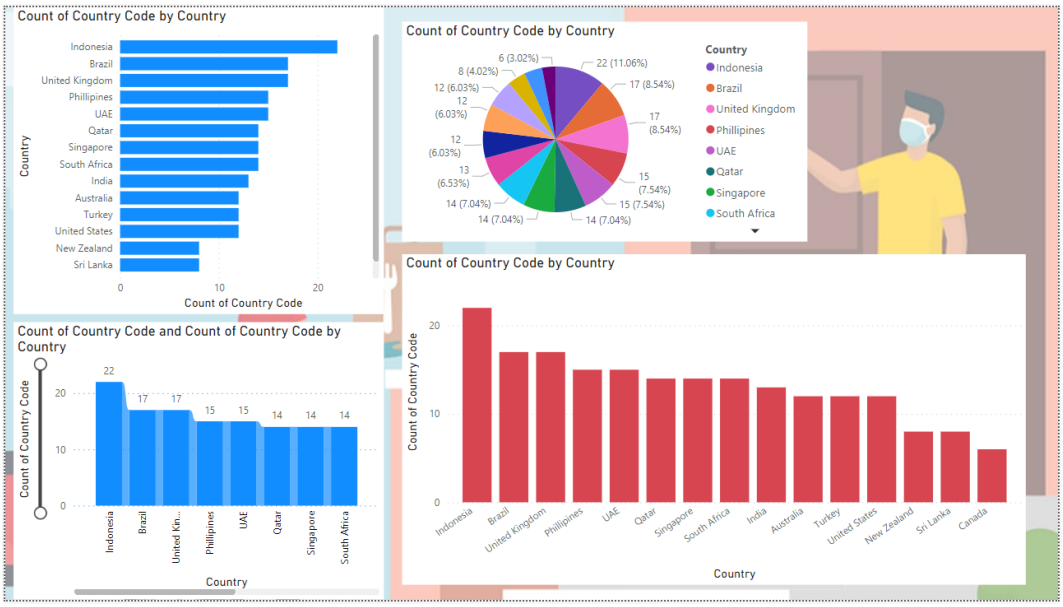
New... Autodetect... Edit... Delete

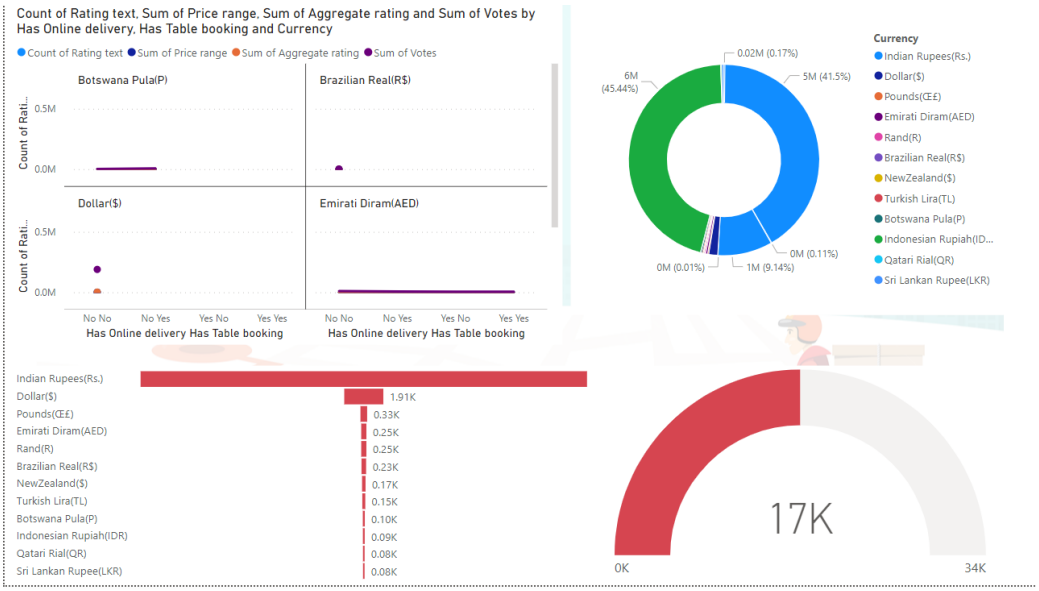
Country Code	Country
94	Indonesia
94	Indonesia
191	Sri Lanka
214	UAE
94	Indonesia
1	India
30	Brazil
14	Australia
208	Turkey
189	South Africa
1	India
216	United States

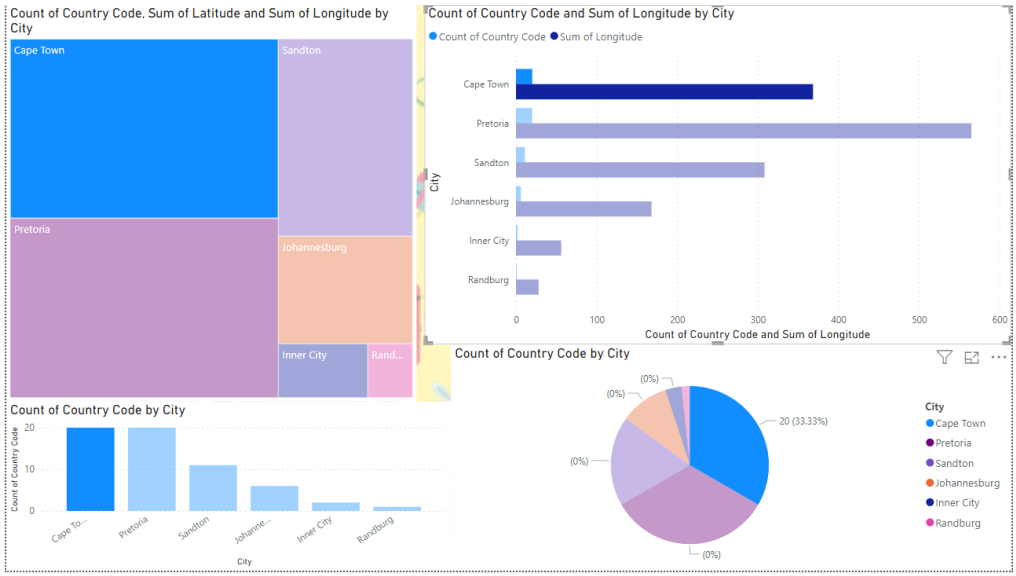
Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rating text	Votes
18433852	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18465871	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18471268	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18472429	300	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
18312606	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0
18393717	300	Indian Rupees(Rs.)	No	No	1	0	Not rated	0

Restaurant ID	Count	City	Restaurant Name,Address	Locality	Locality Verbose	Longitude
18395463	189	Cape Town	The Butcher's Wife,15 Belgravia Road, Athlone, Cape Town	Athlone	Athlone, Cape Town	18.51440571
18337845	189	Cape Town	Coco Safar,Ground Floor, Cavendish Square, Claremont, Cape Town	Cavendish Square, Claremont	Cavendish Square, Claremont, Cape Town	18.46489381
6401732	189	Cape Town	La Parada,107 Bree Street, CBD, Cape Town	CBD	CBD, Cape Town	18.41789313
6401060	189	Cape Town	Jason Bakery,185 Bree Street, CBD, Cape Town	CBD	CBD, Cape Town	18.41457088
6400421	189	Cape Town	Truth Coffee,36 Buitenkant Street, CBD, Cape Town	CBD	CBD, Cape Town	18.42286024
6402177	189	Cape Town	Salushi,25 Protea Road, Claremont, Cape Town	Claremont	Claremont, Cape Town	18.462423
6401198	189	Cape Town	Origin Coffee Roasting,28 Hudson Street, De Waterkant, Cape Town	De Waterkant	De Waterkant, Cape Town	18.41766667
6401054	189	Cape Town	Kloof Street House,30 Kloof Street, Gardens, Cape Town	Gardens	Gardens, Cape Town	18.4125
6403291	189	Cape Town	Jerry's Burger Bar,5 Park Road, Kloof Street, Gardens, Cape Town	Gardens	Gardens, Cape Town	18.410769
6403499	189	Cape Town	Active Sushi,32 Hudson Street, Mirage Building, Green Point, Cape Town	Green Point	Green Point, Cape Town	18.417566
6400191	189	Cape Town	Beluga,The Foundry, Prestwich Street, Green Point, Cape Town	Green Point	Green Point, Cape Town	18.418015
6404082	189	Cape Town	Rocomamas,107a Main Road, Green Point, Cape Town	Green Point	Green Point, Cape Town	18.409153
6401485	189	Cape Town	The Creamery,Newlands Quarter, Dean Street, Newlands, Cape Town	Newlands	Newlands, Cape Town	18.46195
6400621	189	Cape Town	Nobu - One&Only,One & Only Hotel, Dock Road, V & A Waterfront, Cape Tc	One and Only Hotel, V & A Waterf	One and Only Hotel, V & A Waterfront, Cape T	18.416435
6403544	189	Cape Town	Jarryds,90 Regent Road, Sea Point, Cape Town	Sea Point	Sea Point, Cape Town	18.381997
6403452	189	Cape Town	My Sugar,77 Regent Road, Sea Point, Cape Town	Sea Point	Sea Point, Cape Town	18.382759
6402163	189	Cape Town	Grand Café© & Beach,Granger Bay Road, Granger Bay, V & A Waterfront, Ca	V & A Waterfront	V & A Waterfront, Cape Town	18.415163
6401789	189	Cape Town	tashas,Ground Level, Victoria Wharf, V & A Waterfront, Cape Town	V & A Waterfront	V & A Waterfront, Cape Town	18.421341
6400235	189	Cape Town	Gibson's Gourmet Burgers & Ribs,Shop 157, Lower Level, Victoria Wharf, V &	Victoria Wharf, V & A Waterfront	Victoria Wharf, V & A Waterfront, Cape Town	18.42030041
6400217	189	Cape Town	Willoughby & Co.,Ground Level, Victoria Wharf, V & A Waterfront, Cape Tow	Victoria Wharf, V & A Waterfront	Victoria Wharf, V & A Waterfront, Cape Town	18.421
6501534	189	Inner City	Cube - Tasting Kitchen,24 Albrecht Road, Maboneng Precinct, City and Subu	City and Suburban	City and Suburban, Inner City	28.060192
18339373	189	Inner City	Urbanologi,1 Fox Street, Marshalltown, Inner City, Johannesburg	Marshalltown	Marshalltown, Inner City	28.031863

Dashboard







CONCLUSION

The comprehensive 360-degree business analysis of online delivery apps conducted through Power BI reveals invaluable insights crucial for strategic decision-making. Leveraging diverse data sources, Power BI provides a holistic view encompassing customer behavior, market trends, operational efficiency, and financial performance. Through dynamic visualizations and interactive dashboards, it elucidates key metrics such as customer acquisition cost, lifetime value, order frequency, and geographic penetration. Moreover, it identifies actionable patterns

and correlations, empowering stakeholders to optimize marketing strategies, streamline operations, enhance user experience, and maximize revenue generation.

FUTURE SCOPE

The future scope for 360-degree business analysis of online delivery apps using Power BI holds immense potential for further innovation and refinement. As technology continues to evolve, Power BI can anticipate integrating advanced analytical techniques such as predictive analytics and machine learning algorithms to forecast demand, optimize supply chain logistics, and personalize user experiences. Enhanced integration capabilities with other data sources, including IoT devices and social media platforms, facilitating deeper understanding of consumer preferences and market trends. Furthermore, as businesses increasingly prioritize sustainability and ethical practices, Power BI can play a pivotal role in measuring and analyzing environmental impact metrics, fostering responsible decision-making. Overall, the future trajectory of 360-degree business analysis using Power BI holds promise for continued innovation, agility, and value creation within the online delivery app industry.

REFERENCES

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https://www.spec-india.com/blog/power-bi-dashboard-examples

LINK

https://github.com/harinisri3003/deliveryapp_using_powerBI.git

