

Tech Saksham

Case Study Report

Data Analytics with Power BI

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

“ The Madurai Diraviyam Thayumanavar Hindu College”

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ABSTRACT

The rise of online delivery apps has transformed the way businesses operate and consumers access goods and services. This paper conducts a comprehensive 360-degree analysis of the business landscape surrounding online delivery apps, examining various aspects including market trends, competitive dynamics, technological advancements, regulatory challenges, and consumer behavior. Through a multi-dimensional approach, it delves into the opportunities and challenges faced by both established players and emerging startups in this rapidly evolving industry. By synthesizing insights from diverse perspectives, this analysis aims to provide valuable insights for stakeholders seeking to navigate the complexities of the online delivery app ecosystem and capitalize on emerging trends to drive business success.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Zomato operates in a highly competitive market, facing rivalry from global giants like Uber Eats, DoorDash, and local competitors in various regions. The fierce competition puts pressure on Zomato to continuously innovate and differentiate its offerings to retain market share and attract new customers

Efficient and timely delivery is crucial for customer satisfaction in the online delivery app industry. However, managing delivery logistics, optimizing routes, and ensuring driver availability pose operational challenges for Zomato, particularly during peak demand periods or in densely populated urban areas.

Retaining existing customers and fostering loyalty is essential for sustainable growth in the online delivery app industry. Zomato faces the challenge of delivering consistent and satisfying experiences to users while also competing for their attention and loyalty amid a plethora of competing platforms and services.

Zomato faces scrutiny and criticism regarding its labor practices, treatment of delivery partners, and ethical considerations such as environmental sustainability and social responsibility. Addressing these concerns and aligning with societal expectations is essential for maintaining Zomato's reputation and brand image.

1.2 Proposed Solution

Zomato should focus on innovation to differentiate its services from competitors. This could include introducing unique features such as personalized recommendations, advanced search filters, and virtual kitchen partnerships to offer exclusive menu items.

Investing in technology-driven solutions like AI-driven order prediction algorithms and augmented reality menu browsing can enhance user experience and set Zomato apart

in the market.

Zomato must prioritize regulatory compliance across all markets it operates in, ensuring adherence to local laws and regulations related to food safety, labor practices, data privacy, and taxation.

Implementing ethical practices such as fair compensation for delivery partners, transparent pricing policies, and sustainable packaging solutions can enhance Zomato's reputation and build trust with customers

Enhancing customer engagement through targeted marketing campaigns, social media interactions, and interactive content can strengthen Zomato's relationship with its user base.

Introducing loyalty programs, referral incentives, and exclusive deals for repeat customers can encourage retention and foster brand loyalty among users.

1.3 Feature

- **Real-Time Analysis:** In the highly dynamic online delivery app industry, timely insights into customer behavior, preferences, and trends are critical for making informed decisions and optimizing operations.
- **Customer Segmentation:** Transaction Behavior: Segmenting customers based on their transaction behavior, such as order frequency, average order value, and preferred cuisine types, enables Zomato to identify high-value customers and personalize their experiences. Usage Patterns: Analyzing usage patterns, such as app engagement frequency, preferred device types, and time of day for ordering, helps Zomato optimize its app features and user interface to enhance customer satisfaction.
- **Trend Analysis:** Analyze trends in delivery times, delivery distances, and delivery costs to optimize delivery operations and enhance service efficiency. Identify trends in delivery route optimization, driver availability, and order fulfillment rates to improve overall delivery performance.
- **Predictive Analysis:** Use historical delivery data and external factors such as traffic patterns, weather conditions, and order volumes to predict future delivery times. Optimize delivery route planning, staffing levels, and dispatching strategies to ensure timely and efficient order fulfillment.

1. 4 Advantages

- **Data-Driven Decisions:**Data-driven insights help streamline operational processes within online delivery apps. By analyzing data on delivery routes, driver performance, and order fulfillment times, apps can optimize logistics, allocate resources efficiently, and ensure timely delivery, ultimately enhancing operational efficiency and reducing costs.
- **Improved Customer Engagement:**Improved customer engagement leads to a more satisfying user experience. By actively engaging with customers through personalized recommendations, timely notifications, and responsive customer support, online delivery apps like Zomato can create positive interactions that resonate with users, ultimately leading to higher satisfaction levels.Strong customer engagement fosters loyalty and retention among users. By building meaningful relationships with customers through regular communication, exclusive offers, and rewards programs, apps can cultivate a loyal user base that continues to patronize their services and advocate for the brand.Improved customer engagement can drive higher conversion rates and increased sales. By engaging with customers at various touchpoints throughout their journey, from browsing to ordering to post-purchase feedback, apps can influence purchasing decisions and encourage repeat purchases, ultimately boosting revenue and profitability.
- **Increased Revenue:** Increased revenue often correlates with a growing customer base. By attracting new users through targeted marketing campaigns, promotions, and referral programs, online delivery apps like Zomato can expand their reach and acquire more customers, ultimately driving revenue growth.Increased revenue can result from higher average order values. By offering upselling and cross-selling opportunities, personalized recommendations, and promotions for larger orders, apps can encourage customers to spend more per transaction, leading to increased revenue generation.Increased revenue can be driven by improved customer retention rates. By focusing on customer engagement, loyalty programs, and personalized experiences, apps can retain existing customers and encourage repeat purchases, leading to a steady stream of revenue over time.

1. 5 Scope

Market Analysis: Assess the current state of the online delivery market, including market size, growth trends, key players, and competitive landscape. Identify emerging market opportunities, market segments, and customer segments for targeted expansion and growth strategies.

Customer Analysis: Analyze customer demographics, preferences, behavior, and purchasing patterns to understand target audiences and tailor offerings accordingly. Conduct customer segmentation to identify high-value customer segments and develop personalized marketing strategies and loyalty programs.

Competitive Analysis: Evaluate competitors' offerings, pricing strategies, marketing tactics, and customer engagement initiatives to benchmark performance and identify areas for differentiation. Analyze competitive strengths and weaknesses to inform strategic positioning and value proposition development.

Operational Analysis: Assess the efficiency and effectiveness of operational processes, including order fulfillment, delivery logistics, inventory management, and customer support. Identify opportunities for process optimization, automation, and streamlining to improve operational efficiency and enhance customer experience.

Technology Analysis: Evaluate the technological infrastructure, platforms, and tools used in the online delivery app ecosystem, including order management systems, mobile apps, and delivery tracking systems. Identify opportunities for technology innovation, integration, and enhancement to drive operational excellence and customer satisfaction.

Financial Analysis: Conduct a financial analysis of revenue streams, cost structures, profit margins, and key financial metrics to assess business performance and profitability. Identify opportunities for revenue growth, cost optimization, and margin improvement to drive sustainable financial growth and maximize shareholder value.

Regulatory Analysis: Assess regulatory compliance requirements, legal frameworks, and industry standards governing the online delivery app industry in various regions

and jurisdictions. Identify potential regulatory risks, compliance challenges, and legal considerations to mitigate risks and ensure compliance with applicable laws and regulations.

Risk Analysis: Conduct a risk analysis to identify potential threats, vulnerabilities, and risks to the business, including cybersecurity risks, fraud risks, and market risks. Develop risk mitigation strategies and contingency plans to address identified risks and safeguard the business against potential threats and disruptions.

Sustainability Analysis: Evaluate environmental sustainability practices, social responsibility initiatives, and ethical considerations in the online delivery app industry. Identify opportunities for sustainable business practices, responsible sourcing, and environmental stewardship to enhance brand reputation and corporate citizenship.

Strategic Recommendations: Based on the findings of the 360-degree business analysis, provide strategic recommendations and action plans to capitalize on opportunities, address challenges, and achieve business objectives. Develop a roadmap for implementation, monitoring, and evaluation of recommended strategies to drive continuous improvement and sustainable growth.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Collection and Storage Services:** Zomato 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.

2.2 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.

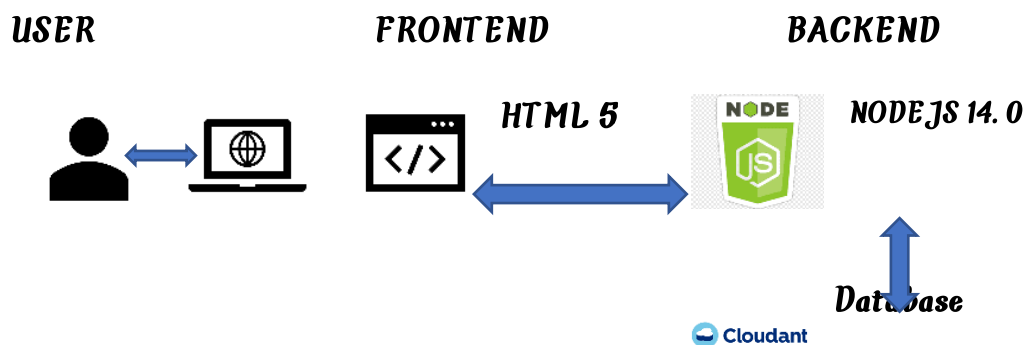
Software Requirements:

- **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. 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 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.

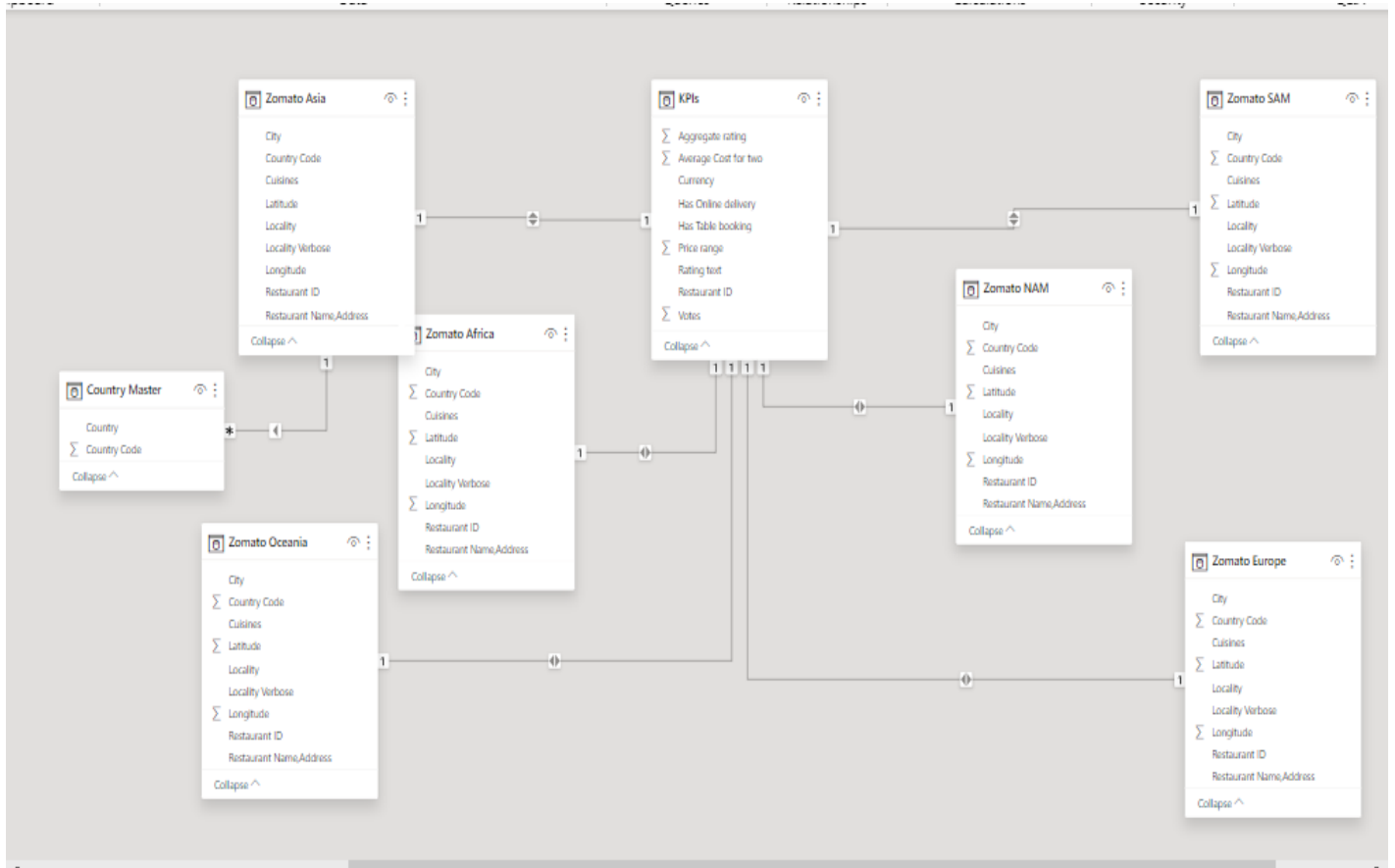
This architecture provides a comprehensive solution for real-time analysis of bank customers. However, it's important to note that the specific architecture may vary depending on the bank's existing infrastructure, specific requirements, and budget. It's also important to ensure that all tools and services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

CHAPTER 4

MODELING AND RESULT

Manage relationship

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



Edit relationship

Select tables and columns that are related.

Hole Data

Restaurant ID	Country Code	City	Restaurant Name,Address	Locality	Localit
306531	1	New Delhi	PM 2 AM Food Bank,1st Floor, Alaknanda Market, Alak...	Alaknanda	Alaknar
18354658	1	New Delhi	Punjabi Chaap Corner,Shop 6, GF, Plot 2, NRI Colony, AI...	Alaknanda	Alaknar
18311953	1	New Delhi	Lemon Chick,7 & 11, G-1, Raj Tower 1, Alaknanda Shop...	Alaknanda	Alaknar

Country Master

Country Code	Country	Region
94	Indonesia	Asia
191	Sri Lanka	Asia
214	UAE	Asia

Cardinality

Many to one (*:1)

Cross filter direction

Single

☒ Make this relationship active

☐ Apply security filter in both directions

☐ Assume referential integrity

OK

Cancel

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 need

×

Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	Country Master (Country)	Zomato Asia (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Africa (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Asia (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Europe (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato NAM (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato Oceania (Restaurant ID)	KPIs (Restaurant ID)
<input checked="" type="checkbox"/>	Zomato SAM (Restaurant ID)	KPIs (Restaurant ID)

New...

Autodetect...

Edit...

Delete

Close


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
	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
	215		United Kingdom
	94		Indonesia
	214		UAE
	162		Phillipines
	215		United Kingdom
	215		United Kingdom
	166		Qatar
	215		United Kingdom
	14		Australia

In this data the new column added to identify the country with the help of country code. every contry code have a uniqu region so easy to access the slicer.

✓		Country Master	
	<input type="checkbox"/>	Country	...
	<input type="checkbox"/>	Σ Country Code	

Duplicate the “district” then split column using space as delimiter. Then merge column byn and direction. Refer to applied steps for detail

	1 ² ₃ Country Code	A ^B _C Country
1	94	Indonesia
2	94	Indonesia
3	null	null
4	191	Sri Lanka
5	214	UAE
6	94	Indonesia
7	1	India
8	30	Brazil
9	null	null
10	14	Australia
11	208	Turkey
12	189	South Africa
13	1	India
14	216	United States
15	null	null
16	215	United Kingdom
17	94	Indonesia
18	214	UAE
19	162	Phillipines
20	215	United Kingdom
21	215	United Kingdom
22	166	Qatar
23	215	United Kingdom
24	14	Australia
25	30	Brazil
26	94	Indonesia

Edit the columns:

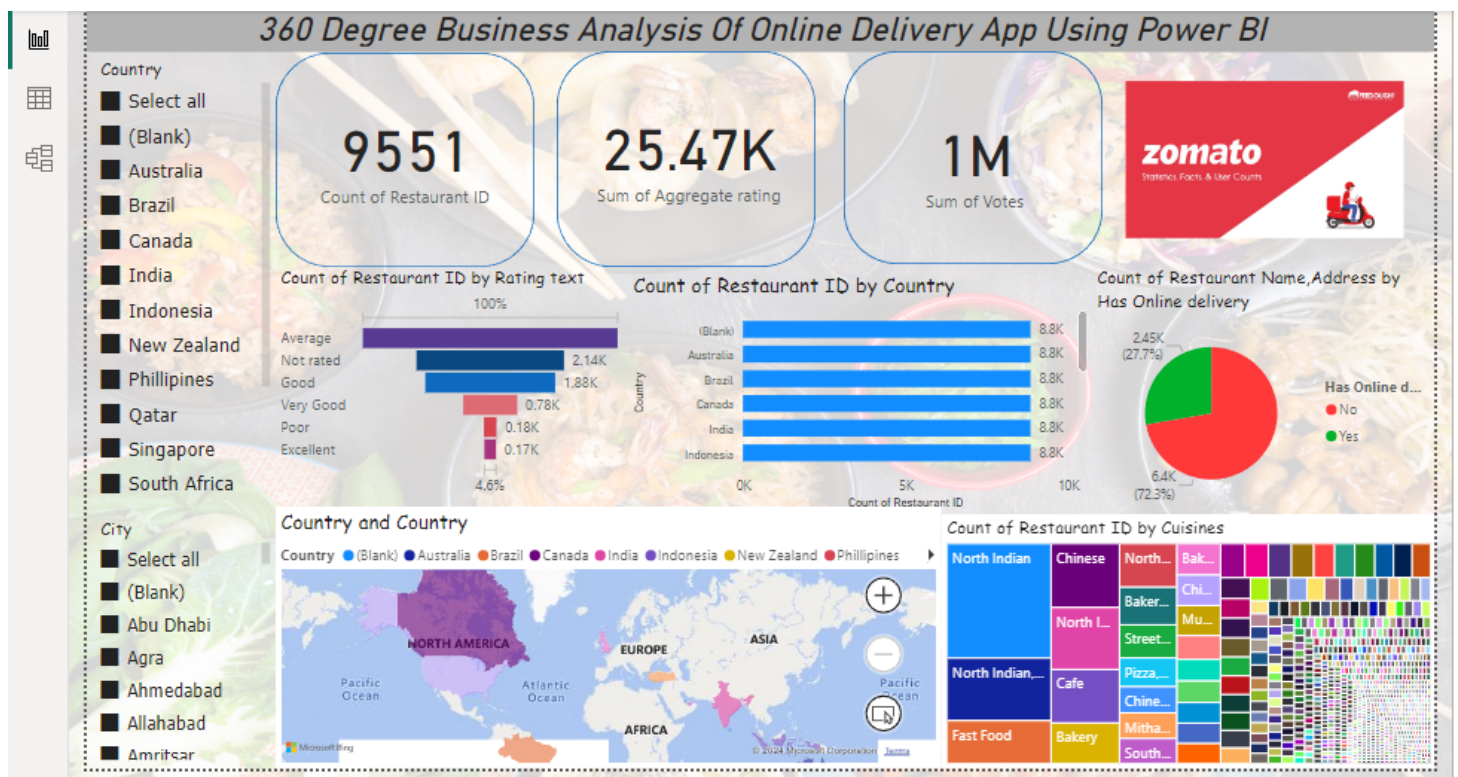
In “ country master” dataset there are so many duplicate columns. Use the condition columns to remove the duplicate columns and null values

✓	Grid	Zomato Asia
		City
		Country Code
		Cuisines
		Latitude
		Locality
		Locality Verbose
		Longitude
		Restaurant ID
		Restaurant Name,Address

Combine data set using power query:

Create a new dataset named “ Whole data” and combine all the existing dataset into One single dataset. it is used to access the visual more effectively . The main dataset Named as Wholedata . it consist 6 type of dataset named as “ Zomato Africa” “ Zomato asia”” Zomato europe” Zomato oceania”” zomato NAM” Zomato sa”

Dashboard



CONCLUSION

The project “ Real-Time Analysis of Zomato Customers” using PowerBI 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 PowerBI 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

<http://youtu.be/ZgzGqoq3Xuc?si=ClRHlJTMjVwfV3VT>

LINK