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Performance Analysis using PowerBI

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ABSTRACT

In the dynamic and competitive tea retailing environment, data-driven decision-making is the must for businesses to be able to succeed. The objective of this research work is to analyze the purchase data related to Chai Waale, a leading tea retailer from India, by using one of the most powerful analytics tools in business, called Power BI. The interactive dashboards and reports of Power BI were used to analyze customers' purchase patterns, how items are performing, and how item descriptions influence purchase decisions of customers. Moreover, the research identifies focused marketing opportunities in customer segments to help Chai Waale better enhance customer satisfaction, optimize its inventory, and strategize growth. By converting raw data into actionable insights, Chai Waale will be able to gain an understanding of customer preferences and operational efficiency, hence enhancing its market position. The power of the data visualization technique in Power BI is a valuable tool used by Chai Waale to make decisions on time to create resilience and growth for its business.

Keywords: *Chai Waale, data-driven decision-making, customer purchasing patterns, performance of items, targeted marketing, data visualization, retail industry and business analytics.*

I. INTRODUCTION

In today's competitive market, data-driven decisions are vital for business success, offering enterprises the insights needed to drive growth, improve customer satisfaction, and optimize operations. Power BI has become a powerful tool for data analytics, enabling businesses to turn raw data into meaningful insights through interactive dashboards and reports.

This study focuses on analyzing the purchase data of Chai Waale Traders Pvt. Ltd., a leading tea retailer in India, to aid strategic decision-making. With the rising trend of premium tea cafés, Chai Waale has successfully captured consumer demand for quality tea beverages. The study explores Chai Waale's purchase data, aiming to uncover customer preferences, purchase patterns, and item performance—key areas that inform inventory management and marketing

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strategies. Analyzing item performance, for instance, will highlight top-sellers and revenue-driving products, helping Chai Waale optimize its product offerings and pricing strategies.

Another critical aspect of this study is examining how item descriptions influence customer purchases, enabling refinements to boost sales. Additionally, segmenting customers based on buying behaviour can drive targeted marketing campaigns, fostering loyalty and repeat purchases. Using Power BI's advanced visualization capabilities, this analysis also aims to present complex data in an accessible format, providing Chai Waale with real-time visibility and enhancing its agility in the fast-paced retail environment. Through these insights, Chai Waale can leverage its purchase data to stay competitive, align closely with customer demands, and pave the way for sustained growth.

(A) Review of Literature

Kumar and Patel (2019): Kumar and Patel did comprehensive research on customer segmentation techniques, stressing crucial granular data analysis for forming targeted marketing strategies. They found out that the most high-powered analytical technique can help firms develop extensively unique customer experiences, increase retention rates, and maximize the overall lifetime value of customers. This research aligns closely with the objectives of the present study regarding learning customers' purchase behaviour and developing targeted marketing techniques.

Zhang and Wang (2020): Zhang and Wang trace the complex relationship between item descriptions and consumer purchasing behaviour, providing empirical evidence on how product narratives and exhaustive descriptions can significantly influence their purchasing decisions. Their research suggested that strategic refinements of product descriptions could lead to better sales performance and enhanced engagement with customers.

Raghu and Mohanty (2021): Raghu and Mohanty undertook an in-depth review of business intelligence platforms, especially those such as Power BI, discussing their transformative potential in modern analytics for businesses. Their study showed how advanced visualization technologies will allow real-time data processing-a key attribute of this technology-stating once again the business uniqueness of having a very dynamic response to changes in the market and making strategic decisions.

Gupta and Sharma 2023: Gupta and Sharma, looked into the conjunction of data visualization and strategic decision-making and brought forth how Power BI transforms those inwardly complex datasets to become accessible for actionable insights. Their research brought to the fore how intuitive and interactive dashboards are important to help achieve quick understanding

and rapid decision-making at all levels of an organization. looked into the conjunction of data visualization and strategic decision-making and brought forth how Power BI transforms those inwardly complex datasets to become accessible for actionable insights. Their research brought to the fore how intuitive and interactive dashboards are important to help achieve quick understanding and rapid decision-making at all levels of an organization.

Wong and Chen (2024): Wong and Chen on the changing face of customer experience by specialized retail sectors explore the role of data analytics in marketing. Their research showed that companies that can capitalize on purchase data to understand and predict what customers need will have the potential to build strong, lasting relationships with them and sustain long-term growth.

Davenport and Harris (2017): Davenport and Harris have extensively documented how advanced analytics tools can be used to transform complex transactional data into strategic insights that help businesses navigate highly competitive market environments with better precision and understanding. Their research underscores the central role of technological platforms in unraveling intricate patterns of consumer behaviour and market dynamics.

(B) Objectives of the study

- To analyse customer purchasing patterns and preferences by correlating category names with item details and quantities.
- To evaluate item performance and revenue contribution by assessing purchase quantities and totals for each item.
- To assess the impact of item descriptions on customer buying behaviour and overall purchase performance.
- To identify opportunities for targeted marketing strategies or product recommendations based on customer segments and their purchasing histories.

(C) Research Methodology

a. Research Design

The research is a combination of descriptive and predictive analysis. In particular, deductive research investigates a well-established theory or phenomenon and determines its applicability in specific situations. Analytical research design is a systematic method used to explore phenomena by analyzing and interpreting data. It involves the formulation of hypotheses that are testable, identification of critical variables, selection of suitable data collection methods, and application of statistical or analytical methods to arrive at meaningful conclusions. This

research design seeks to unearth patterns, relationships, and insights through careful analysis of empirical data in a way that may heighten our understanding of the research problem or phenomenon under investigation.

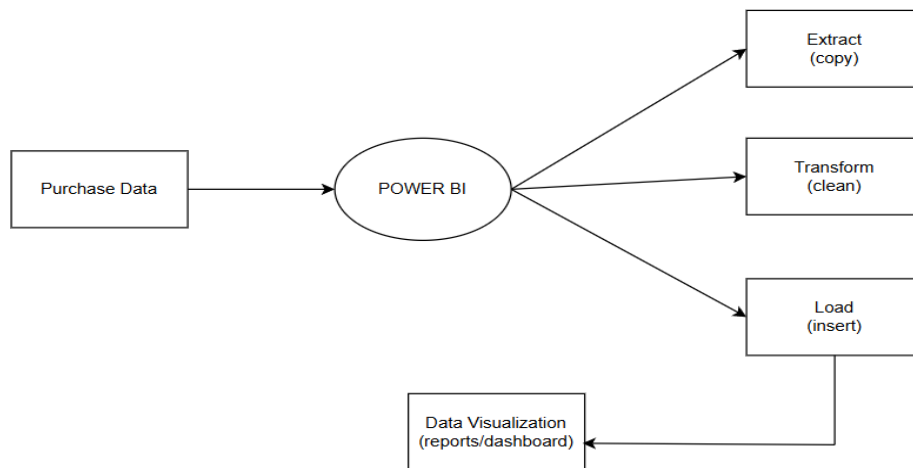
b. Sampling Method

In this study, the sampling method used to collect database from the purchase data set source are used for exporting data's of the company in power bi to get raw data cleansed, transformed, and enriched, for easier and better analysis.

c. Sample Size

The sample for the study is thousand five hundred data which provide by company as excel file.

(D) Research Model



II. DATA ANALYSIS AND VISUALIZATION

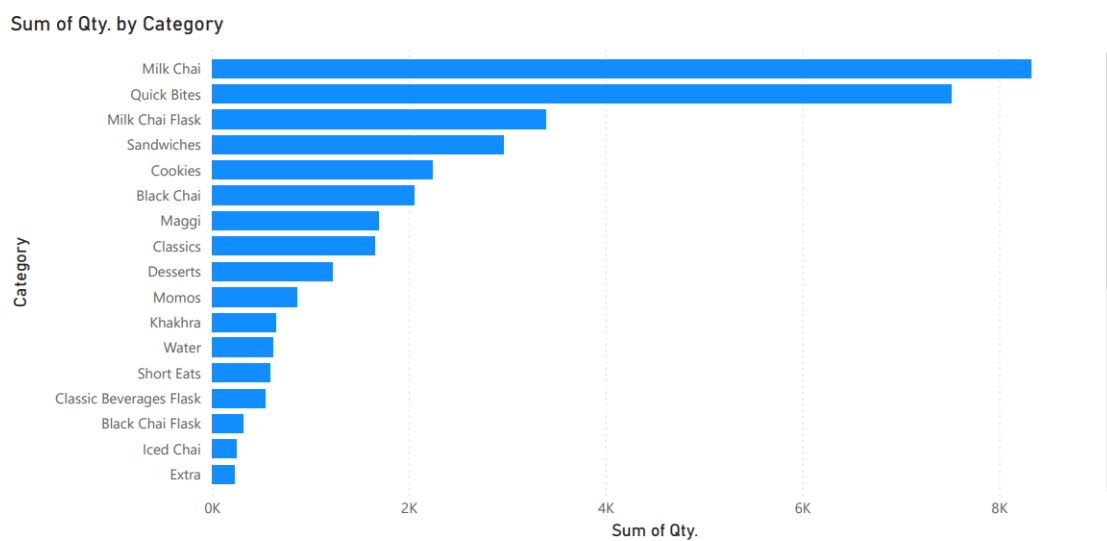


Figure No: 1 Sum of Quantity by Category

Sum of Total by Item

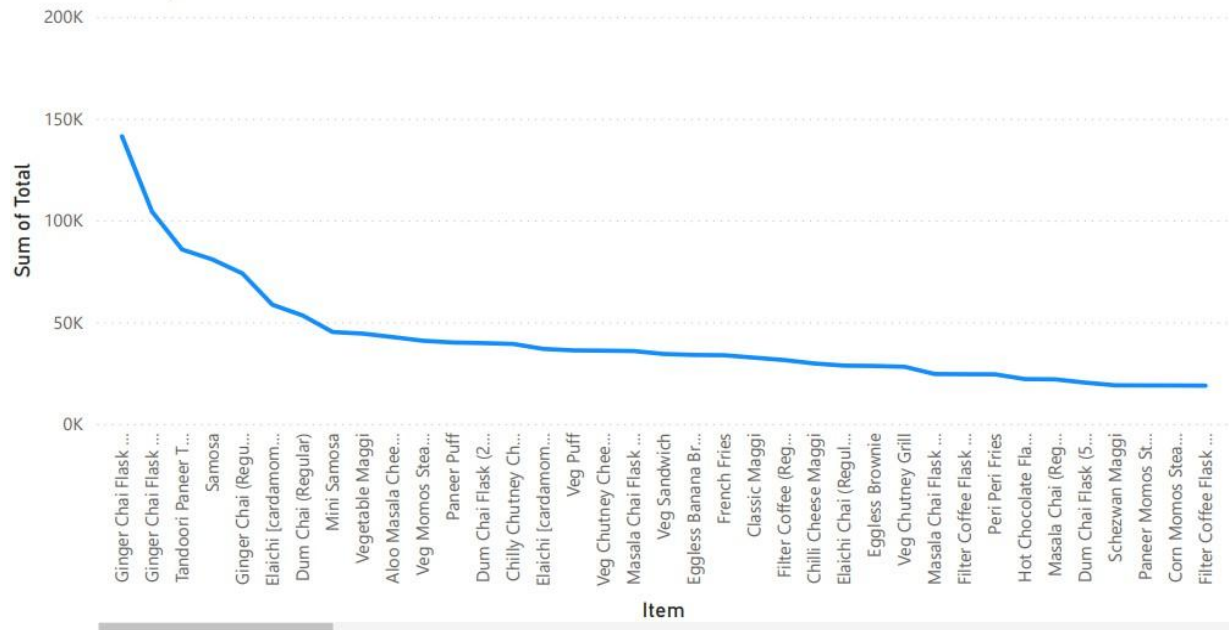


Figure No:2 Sum of Total by Item

Average of Total by Item

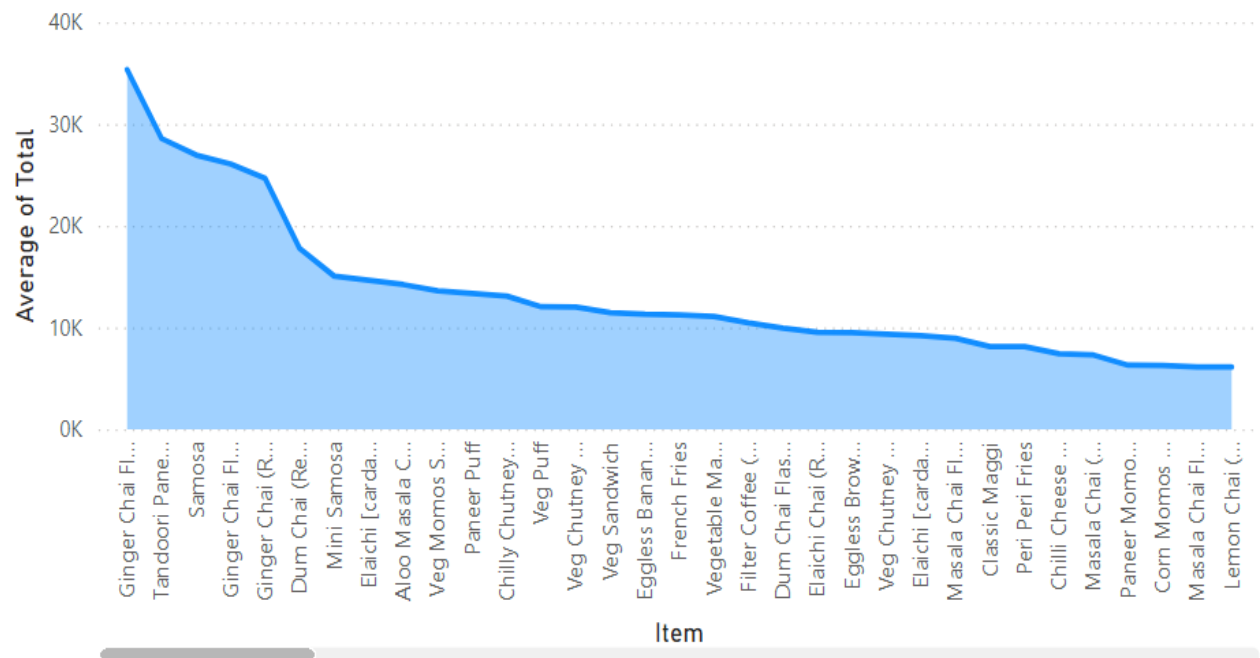
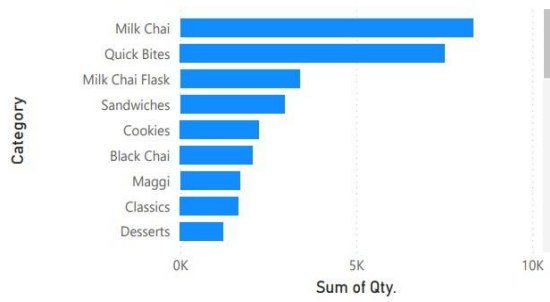
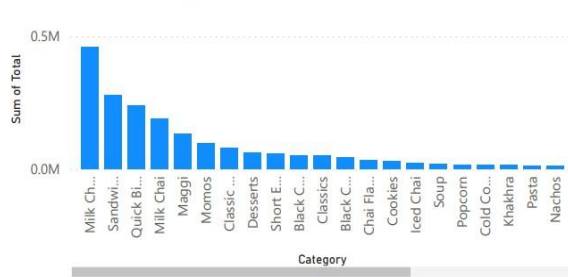


Figure No:3 Average of Total by Item

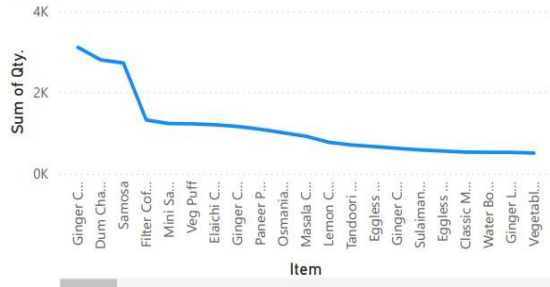
Sum of Qty. by Category



Sum of Total by Category



Sum of Qty. by Item



Sum of Total by Item

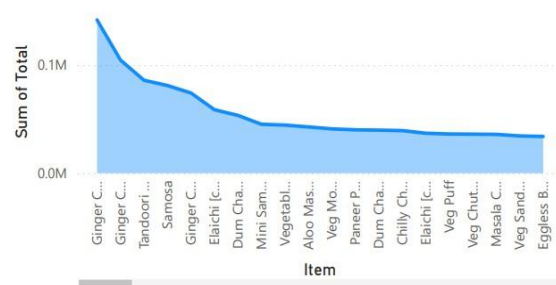
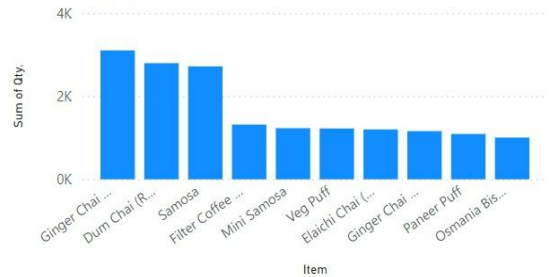
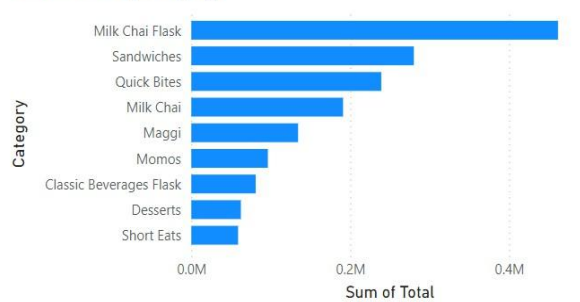


Figure No:4 Overall purchase dashboard

Sum of Qty. by Item



Sum of Total by Category



Sum of Total by Item



Sum of Total



Figure No:5 Overall Purchase Dashboard Top Performance

Average of Total by Item

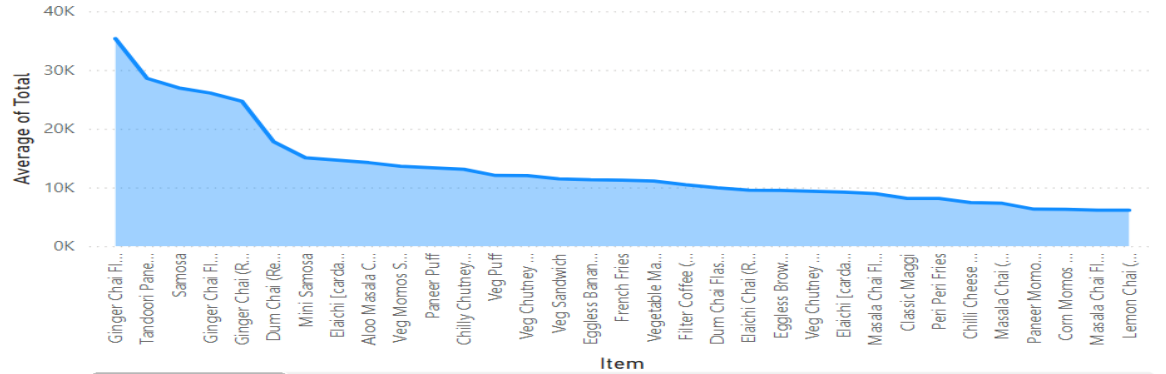


Figure No:6 Average of Total by Item



Figure No:7 Average of Purchase Dashboard Top Performance (Qty)

(A) Interpretation

This dashboard gives a snapshot of purchase data, showing top-sellers like Ginger Cha, Dum Cha, and Samosa. Milk Cha Flask, Sandwiches, and Quick Bites are the highest revenue categories. Ginger Cha Flask 500 ml has generated 50% of its potential sales. Such insights help in optimized stocking and targeted marketing strategies.

III. SUMMARY OF FINDINGS

- Best-Selling Category was Milk Tea Cha, which tells us about consumer preference being high.
- Long-tailed distribution was the case; wherein a few items contribute immensely to overall sales.
- These were the two highest items: Milk Cha Flask and Sandwiches, proving their significance in the menu.
- Analysis of customer behaviour while purchasing points out inclination towards cha-based beverages, as well as quick snacking.
- Extremely high variations across categories, with some categories displaying almost zero sales, thus scope for product optimization
- Items like Ginger Cha and Dum Cha remain in the leading list. So, they must be in

high demand.

- Findings of the study indicate that the detailed descriptions of items can have significant impacts on the purchasing behaviour of customers.
- The use of the Power BI dashboards helps in better visualization and, hence, informed decision-making on the sales data.

IV. CONCLUSION

In Summary, analyzing the purchase data with Power BI offers strategic insights into possible improvements. It has been found that items like Milk Tea Chai, Ginger Chai, and Samosa are constantly best-sellers in both quantity and revenue, with the Milk Chai Flask topping the revenue for the general management category. Sales performance differs significantly by product, with a few being the most revenue-generating items, which indicates focus on culturally valued teas and snacks. The results may be applied in visualizing purchase seasonality, revenue contribution as well as brand preference. The insights could call for rebranding or removing poor performance products. Power BI dashboards enable frequent strategy adjustments that enhance decision-making as the competition of the tea industry becomes more intense. It will help the company to optimize the products, streamline operations, and to support long-term business growth.

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