Microsoft Elevate

CAPSTONE PROJECT

Marketing Campaign Performance

PRESENTED BY

STUDENT NAME: ROHAN S

COLLEGE NAME: UBDT COLLEGE OF ENGINEERING

DEPARTMENT: CSE

EMAIL ID: ROHANRODU@GMAIL.COM

OUTLINE:

- **Problem Statement**

- **Proposed System/Solution**

- **System Development Approach**

- **Algorithm & Deployment**

- **Result (Output Image)**

- **Conclusion**

- **Future Scope**

- **References**

PROBLEM STATEMENT:

- Organizations run multiple marketing campaigns without clear insight into effectiveness.

- Difficulty identifying high-value customers and successful channels.

- Need for data-driven decision making.

- To identify key factors influencing the success or failure of marketing campaigns.

PROPOSED SOLUTION:

- **Data Driven**: Leveraging marketing campaign datasets containing customer demographics, campaign details, channel information, and response metrics.

- **Preprocessing**: Cleaning and transforming data in Power Query by handling missing values, removing duplicates, and standardizing formats for accurate analysis.

- **Data Modeling**: Building a structured data model with relationships between customer, campaign, product, and time tables.

- **KPI Definition**: Creating key performance indicators such as impressions, CTR, conversion rate, campaign cost, and ROI using DAX measures.

PROPOSED SOLUTION:

- Optimization: Analyzing campaign performance across channels and segments to identify high-performing strategies and areas for improvement.

- Visualization: Developing interactive Power BI dashboards with slicers, drill-down, and drill-through features for detailed insights.

- Decision Support: Enabling data-driven marketing decisions by providing actionable insights to optimize future campaigns and budget allocation.

SYSTEM APPROACH:

- **System Requirements:**
  - Python 3.x Environment
  - Jupyter Notebook or VS Code or Google colab
  - Power BI
  - CSV Dataset

- **Libraries Required:**
  - Pandas: For data manipulation and CSV handling.
  - NumPy: For numerical computations and array processing.
  - Matplotlib: For creating customizable and low-level data visualizations.
  - Seaborn: For statistical data visualization with attractive, high-level plots built on Matplotlib.

ALGORITHM & DEPLOYMENT:

Algorithm.

- Import marketing campaign data into Power BI from sources such as CSV files, Excel, or databases.

- Clean and preprocess the data using Power Query

- Build relationships between relevant tables

- Create calculated columns and DAX measures to compute KPIs like CTR, conversion rate, cost per lead, and ROI.

- Analyze campaign performance across different dimensions such as time, region, customer segment, and channel.

- Visualize insights using charts, tables, slicers, and KPI cards in Power BI.

ALGORITHM & DEPLOYMENT:

Deployment.

- Publish the Power BI report to the Power BI Service.

- Configure datasets and set up scheduled data refresh to keep reports up to date.

- Create and share interactive dashboards with stakeholders using workspace access.

- Apply row-level security (RLS) to restrict data visibility based on user roles.

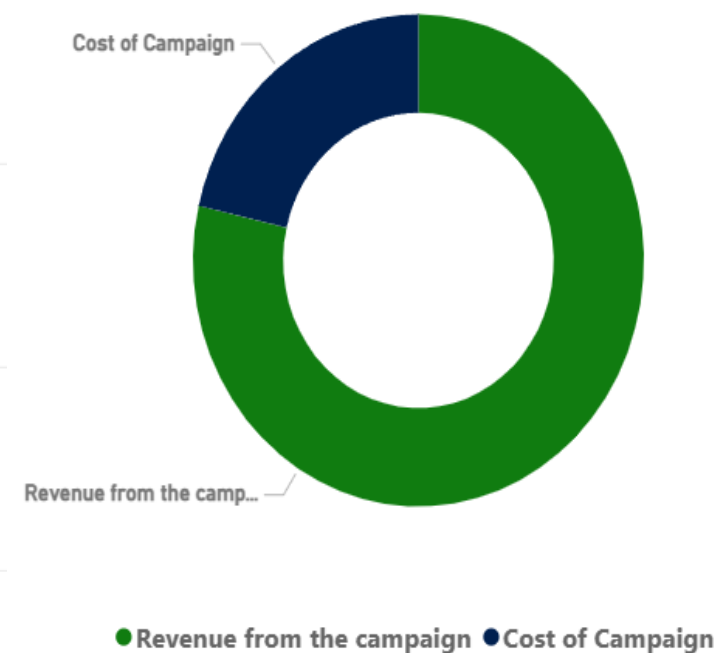- Access dashboards via web or mobile devices for real-time monitoring of campaign performance.

RESULT:

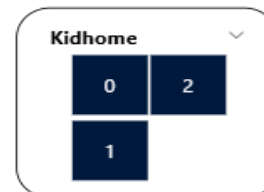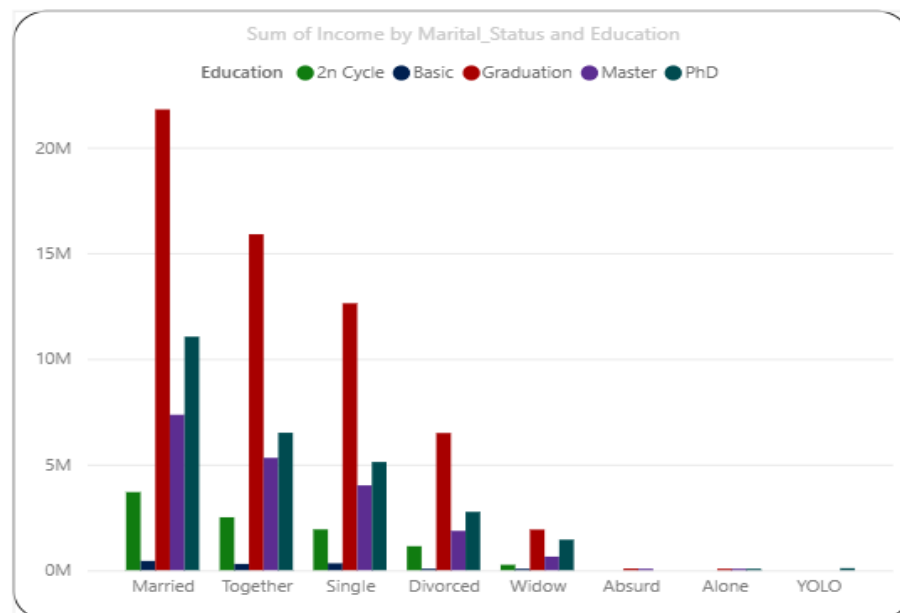Total Income and Sum of Year_Birth by Marital_Status and Education

Education ● 2n Cycle ● Basic ● Graduation ● Master ● PhD —Sum of Year_Birth
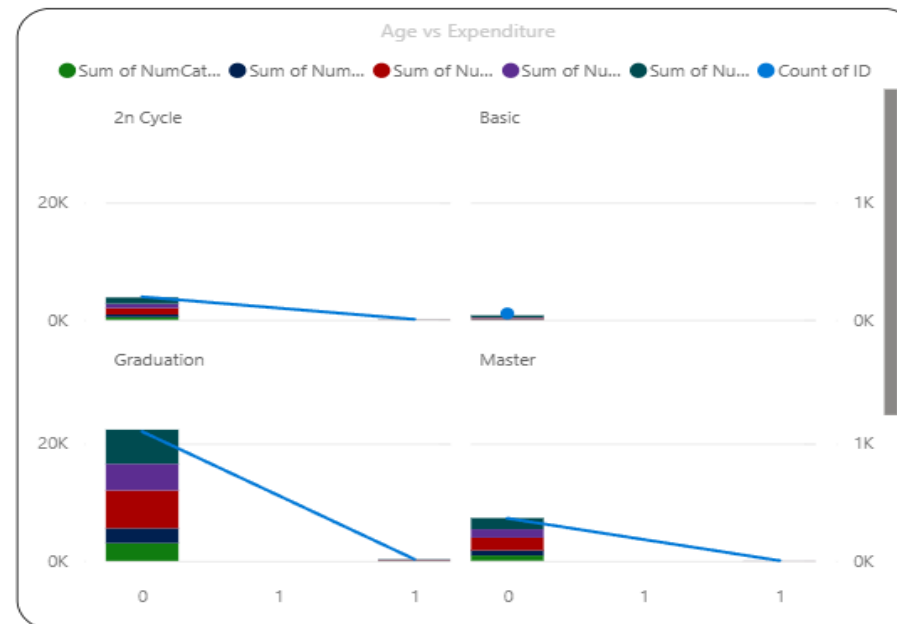
Revenue from the campaign and Cost of Campaign

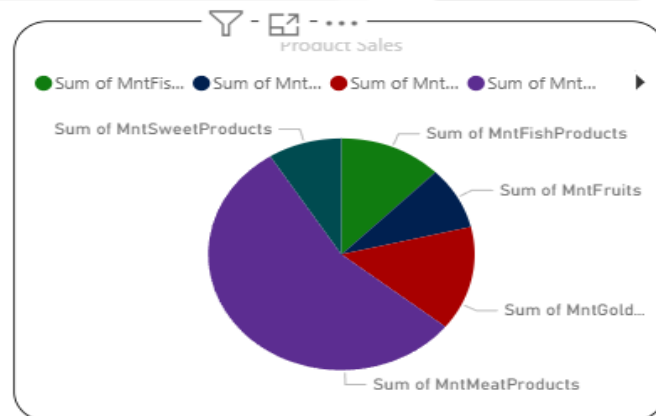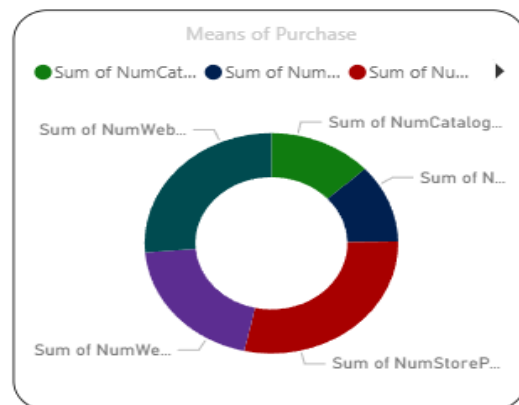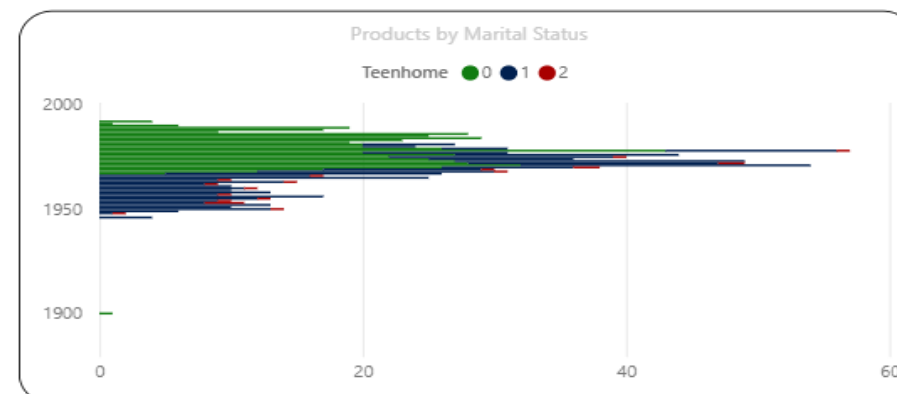● Revenue from the campaign ● Cost of Campaign

RESULT:

CONCLUSION:

- The Marketing Campaign Performance analysis using Power BI provides clear visibility into campaign effectiveness and customer behavior.

- Interactive dashboards and KPIs enable stakeholders to quickly identify high-performing and underperforming campaigns.

- Data-driven insights support better decision-making, improved budget allocation, and optimized marketing strategies.

- Power BI's visualization and reporting capabilities simplify complex data into actionable business intelligence.

FUTURE SCOPE:

- Integrate real-time data sources to enable live campaign performance tracking.

- Incorporate advanced analytics and machine learning models for campaign response prediction.

- Expand customer segmentation using behavioral and predictive analytics.

- Automate insights and alerts for performance thresholds using Power BI Service.

- Integrate additional data sources such as social media and web analytics for deeper marketing insights.

REFERENCES:

1. Chandra Pratap Singh; Rizwan Yousuf et al. (2024): "Enhancing Marketing Strategies Through Big Data-Driven Customer Journey Mapping: An Analysis Using Machine Learning Algorithms," IEEE Access. DOI: 10.1109/INNOCOMP63224.2024.00084.

2. Milena Vuckovic; Dawid Wolosiuk; Johanna Schmidt. et al. (2024): "Designing Interactive Analytics Dashboards for Diverse Target Groups: The Process and Decision-Making," IEEE Access. DOI:10.23919/SpliTech61897.2024.10612622.

3. Wissam Nazeer Wassouf, Ramez Alkhatib, Kamal Salloum & Shadi Balloul et al. (2020): "Predictive analytics using big data for increased customer loyalty: Syriatel Telecom Company case study," Springer

GitHub Link: https://github.com/rohanrodu/Marketing-Campaign-Performance

Thank You