DATA @NALYTIC
Elites Global Ltd
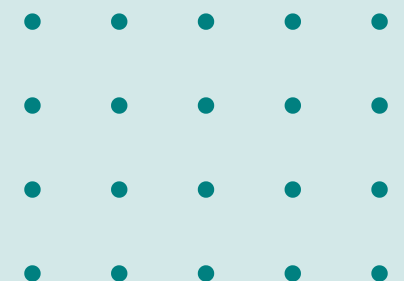
BDP - GROUP 3 - AUG 2024

BANK TERM DEPOSIT CAMPAIGN ANALYSIS REPORT

BDP POWER BI GROUP 3 - AUG 2024
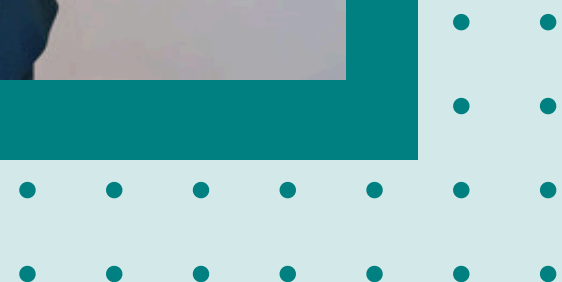
CONTENTS

# INTRODUCTION

Project Objective and Dataset Overview

Project Objective

The primary objective of the analysis is to assess the effectiveness of the bank term deposit campaign, identify key factors influencing client subscription, and provide actionable insights to improve future campaign outcomes.

Data Overview

The dataset includes various Columns such as age, job type, marital status, education level, credit default status, balance, housing loan status, personal loan status, contact communication type, last contact day and month, last contact duration, number of contacts during the campaign, days since last contact from a previous campaign, number of previous contacts, outcome of the previous campaign, and client subscription to term deposit.

DATA @NALYTICS
Elites Global Ltd.

DATA @NALYTICS
Elites Global Ltd

Methodology
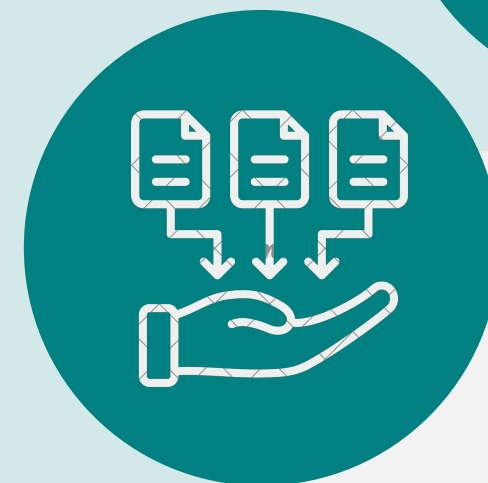
Data Visualzation

Data Analysis

Data Preparation

Data Collection

DATA COLLECTION AND PREPARATION

Data Collection: The dataset was provided by Data Analytics Elite Global Community, which includes client demographic information, campaign contact details, and the outcome of each campaign

Data cleaning: The data cleaning process includes Data validation and standardization, Column renaming, and Data formatting to maintain data consistency

Data Modelling: Additional calculated table (calendar) and calculated column (Month and Month number) with a many – to – many relationship was created to improve analysis accuracy and optimized over all dashboard performances.

DATA ANALYSIS AND VISUALIZATION

Descriptive Analysis: Used statistical measure to analyze the effectiveness of the overall campaign performance across various customer demographics .

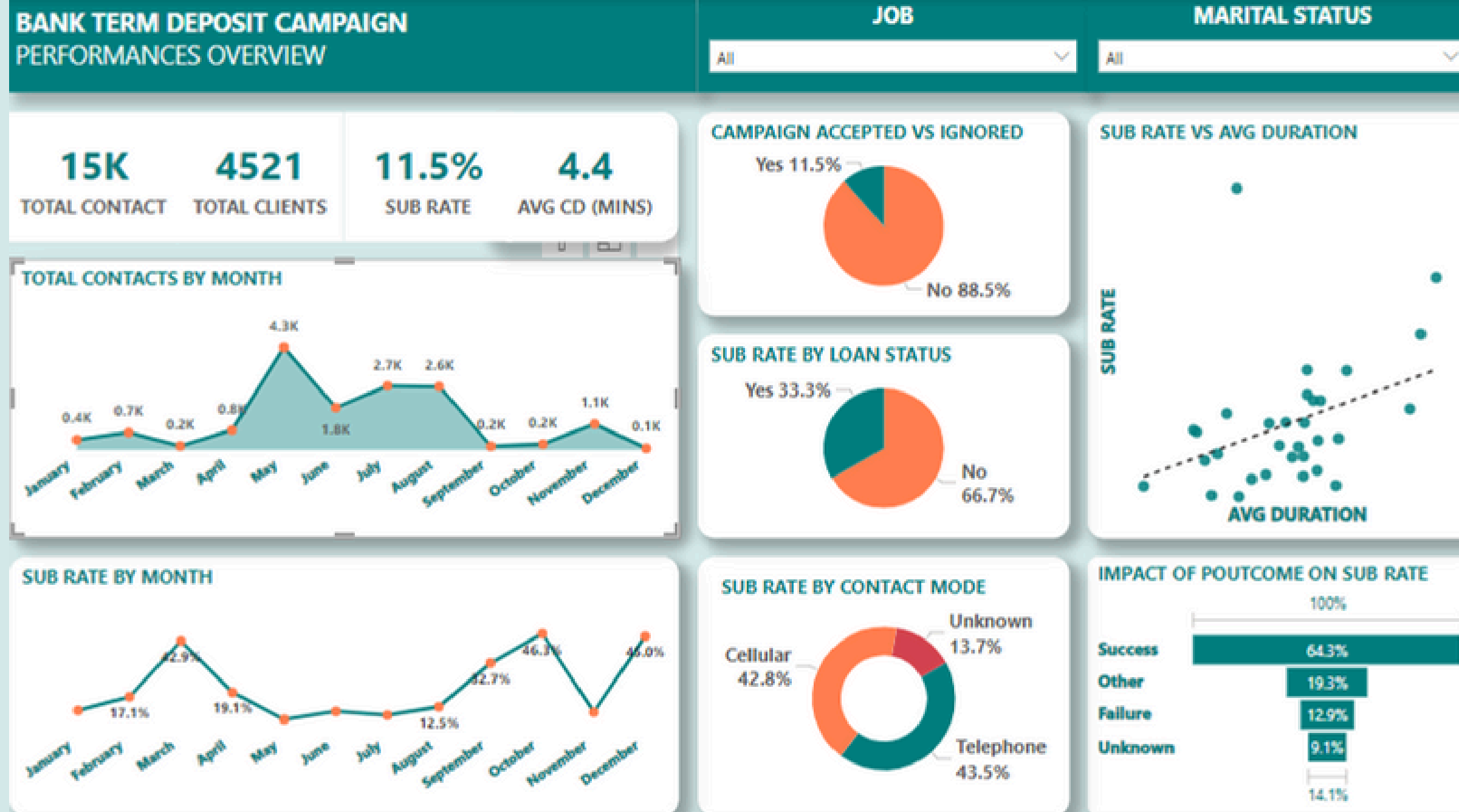**Predictive Modelling**: Utilized Power BI's Key Influencer visual to analyze both numeric and categorical data that influences client subscription to the term deposits and predict the customers segment that has higher likelihood of subscribing to future campaign.

Visualization: Created interactive dashboards in Power BI to display key metrics, trends, and influencers.

ANALYSIS FINDINGS

DATA VISUALIZATIONS AND KEY INSIGHTS

BANK TERM DEPOSIT CAMPAIGN
PERFORMANCES OVERVIEW

JOB
All

MARITAL STATUS
All

15K	4521	11.5%	4.4
TOTAL CONTACT	TOTAL CLIENTS	SUB RATE	AVG CD (MINS)

TOTAL CONTACTS BY MONTH

CAMPAIGN ACCEPTED VS IGNORED
Yes 11.5%
No 88.5%

SUB RATE VS AVG DURATION

SUB RATE BY LOAN STATUS
Yes 33.3%
No 66.7%

SUB RATE BY MONTH

SUB RATE BY CONTACT MODE
Unknown 13.7%
Cellular 42.8%
Telephone 43.5%

IMPACT OF POUTCOME ON SUB RATE
100%
Success 64.3%
Other 19.3%
Failure 12.9%
Unknown 9.1%
14.1%

- The total numbers of 15k contact was made during the campaign with an average call duration of 4.4 minutes, resulting in an 11.5% subscription rate.

- Out of 4,521 client that was contacted, 521 subscribed to the term deposit resulting to an 11.5% campaign success rate.

- The scattered plot showed weak positive correlation between average duration and subscription rate, implying that longer or shorter calls don't strongly correlate with the likelihood of subscription

- Successful past campaigns contributed 64% to the overall campaign success.

- The distribution of contact modes shows a near equal preference between telephone and cellular contacts while larger percentage of client that has personal loan ignored the campaign.

8

BANK TERM DEPOSIT CAMPAIGN
DEMOGRAPHICS ANALYSIS

SUB RATE BY MARITAL
- Single 36.3...
- Married 25.76%
- Divorced 37.93%

SUB RATE BY HOUSING
- Yes 35.91%
- No 64.09%

SUB RATE ACROSS AGE GROUP
- 71 Above: 39.3%
- (50 -70): 11.9%
- (19 -39): 11.3%
- (40 -49): 10.2%

CHAT ASSISTANT
hi

Hello! How can I assist you today with questions related to the dataset in the report?

Ask a question..

SUB RATE ACCROSS JOB CATEGORY
- Retired: 23.5%
- Student: 22.6%
- Unknown: 18.4%
- Management: 13.5%
- Housemaid: 12.5%
- Admin.: 12.1%
- Self-Employed: 10.9%
- Technician: 10.8%
- Unemployed: 10.2%
- Services: 9.1%
- Entrepreneur: 8.9%
- Blue-Collar: 7.3%

SUB RATE ACROSS EDUCATION
- Tertiary: 14.3%
- Secondary: 10.6%
- Unknown: 10.2%
- Primary: 9.4%

- **Marital Status**: Divorced individuals have the highest subscription rate (37.93%), followed by singles (36.3%). Married individuals have the lowest rate (25.76%).

- **Housing Loan Status**: Clients without housing loans have a higher subscription rate (64.09%) compared to those with loans (35.91%).

- **Age Group:** Clients aged 71+ have the highest subscription rate (39.3%), while those 40 and below have lower rates.

- **Job Category:** Retired individuals (23.5%) and students (22.6%) have the highest subscription rates.

- **Education**: Clients with tertiary education have the highest subscription rate (14.3%), while those with primary education have the lowest (9.4%).

BANK TERM DEPOSIT CAMPAIGN
PREDICTIVE ANALYSIS INSIGHT

CATEGORICAL DATA FEATURE

Key influencers   Top segments

What influences Y to be Yes ?

When...   ...the likelihood of Y being Yes increases by

← Y is more likely to be Yes when Average of Age is more than 60 than otherwise (on average).

Average of Age is more than 60	3.51x
Loan is No	2.01x
Housing is No	1.78x
Education is Tertiary	1.38x

40%

30%

20%

10%

0%

29 or less   29 - 60   more than 60
Average of Age (bins)
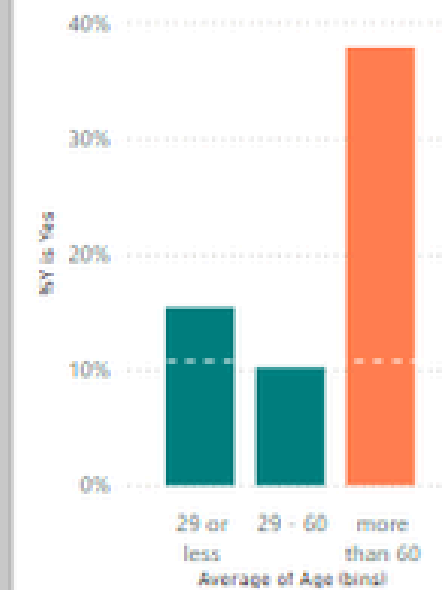
☐ Only show values that are influencers

NUMERIC DATA FEATURE

Key influencers   Top segments

What influences Y to be Yes ?

When...   ...the likelihood of Y being Yes increases by

← Y is more likely to be Yes when Pdays is 28 - 100 than otherwise (on average).

Pdays is 28 - 100	4.73x
Pdays is more than 374	4.59x
Sum of Previous is more than 0	2.48x
Pdays is 100 - 209	2.18x
Sum of Balance is more than $454	1.62x
Sum of Campaign is 1 or less	1.37x

60%

40%

20%

0%

28 or less   28 - 100   100 - 209   209 - 374   mo... than 374
Pdays (bins)
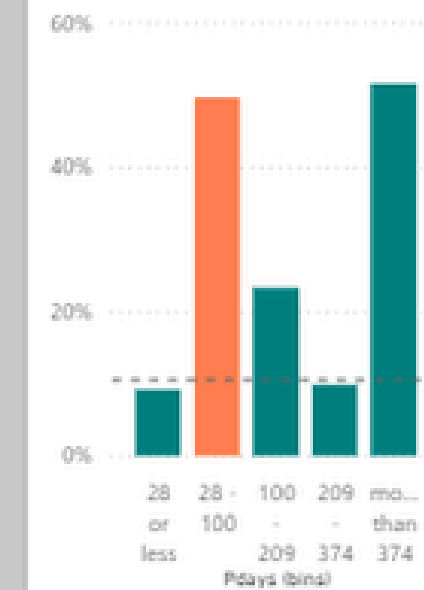
☐ Only show values that are influencers

- **Age:** Clients over 60 are 3.51 times more likely to subscribe.

- **Loan Status:** Clients without personal loans are 2.01 times more likely to subscribe.

- **Housing Status:** Clients without housing loans are 1.78 times more likely to subscribe.

- **Education Level:** Clients with tertiary education are 1.38 times more likely to subscribe.

- **Pdays:** Clients contacted 28-100 days ago are 4.73 times more likely to subscribe.

- **Contact Recency**: Clients contacted over 374 days ago are 4.59 times more likely to subscribe.

- **Previous Campaigns:** Clients with past positive outcomes are 2.48 times more likely to subscribe.

- **Balance:** Clients with a balance above 454 euros are 1.62 times more likely to subscribe.

- **Campaign Contacts**: Clients contacted once are 1.37 times more likely to subscribe

RECOMMENDATION

- Target campaigns towards older clients, especially those over 60, and individuals without loans, as they show higher subscription likelihood.

- Optimize contact timing by focusing follow-ups between 28-100 days after previous campaigns for better results.

- Leverage insights from successful past campaigns to guide future strategies, especially for clients with a history of positive outcomes.

- Maintain a balanced approach in using both telephone and cellular contact methods to reach a broader audience effectively.

- Prioritize clients without housing loans, Personal loan and those with tertiary education, as they are more likely to subscribe.

- Focus on the quality of interactions rather than call duration, as the latter does not strongly impact the likelihood of subscription.

CONCLUSION

The analysis of the bank term deposit campaign provides actionable insights into the factors influencing client subscriptions. By understanding the key influencers, the bank can optimize future campaigns, increase the success rate, and better target potential clients. The findings suggest that demographic factors such as age, loan status, and education level play a significant role in determining the likelihood of subscription. Future campaigns should leverage these insights to enhance effectiveness.

THANK YOU!

Contact

LinkedIn: Data Analytics Elites Global Ltd