**Bank Term Deposit Campaign Analysis - Comprehensive Report**

# 1. Introduction

**1.1 Objective**

The primary objective of this 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.

**1.2 Scope**

This report covers:

* Campaign performance metrics.
* Demographic analysis of clients.
* Identification of key influencers driving subscription.
* Visualization of data for easy interpretation and decision-making.

**1.3 Data Overview**

The dataset includes various features 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.

# 2. Methodology

## 2.1 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.

## 2.2 Data Preparation

* **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

## 2.3 Data Analysis

* **Descriptive Analysis**: Examined overall campaign performance and demographic distributions.
* **Predictive Modelling**: Utilized Power BI’s Key Influencer visual to identify factors that influences client subscription to the term deposits.
* **Visualization**: Created interactive dashboards in Power BI to display key metrics, trends, and influencers.

# 3. Dashboard Metrics And Key Insights

## 3.1 Overview Page

### 3.1.1 Key Metrics

* Total Contacts Made
* Avg Duration (Mins)
* Subscription Rate
* Total Clients
* Total Contacts by Month
* Campaign Ignored vs Campaign Accepted
* Sub Rate Vs Duration
* Sub Rate by Month
* Impact of Poutcome on Sub Rate

### 3.1.2 Insights

* The campaign had a total of 15k contact made 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.

## 3.2 Demography Analysis Page

### 3.2.1 Key Metrics

* Subscription Rate by Marital Status
* Subscription Rate by Housing
* Subscription Rate by Age Group
* Subscription Rate by Job Category
* Subscription Rate by Education Level

### 3.2.2 Insights

* **Divorced** individuals and those **without housing loans** have the highest subscription rates.
* **Older clients (71 and above)** and those with **tertiary education** are more likely to subscribe.
* **Retired individuals** have the highest subscription rate among job categories.

## 3.3 Key Influencer Page

### 3.3.1 Key Influencers

**Categorical Features Selection**

* Age
* Loan
* Education
* Housing

**Numeric Data Features Selections**

* Previous
* Campaign
* Balance
* P days

### 3.3.2 Insights

* Clients aged over 60 are 3.51 times more likely to subscribe, indicating a strong preference among older clients.
* Clients without any loans are 2.01 times more likely to subscribe.
* Clients without a house have a 1.78 times higher chance of subscribing.
* Clients with tertiary education are 1.3 times more likely to subscribe.
* Clients contacted between 28 and 100 days after a previous campaign are 4.73 times more likely to subscribe, highlighting the importance of timing in follow-up campaigns.
* Clients contacted more than 374 times during the campaign have a 4.59 times higher likelihood of subscription.
* Clients who had a positive outcome in a previous campaign are 2.48 times more likely to subscribe.
* Clients with a balance greater than 1626 have a higher likelihood of subscribing.

# 4. Findings and Recommendations

## 4.1 Findings

### Overview Page:

* The campaign achieved an 11.5% success rate with 15,000 contacts made, averaging a 4.4-minute call duration.
* 64% of overall campaign success was driven by clients from previously successful campaigns.
* A weak positive correlation between call duration and subscription rate was observed.
* Telephone and cellular contacts were used almost equally.

### Demographics Page:

* Divorced individuals and those without housing loans had the highest subscription rates.
* Older clients (71+) and those with tertiary education were more likely to subscribe.
* Retired individuals exhibited the highest subscription rates among job categories.

### Key Influencer Page:

* Clients aged over 60 and those without any loans were significantly more likely to subscribe.
* Timing is crucial: contacting clients 28-100 days after a previous campaign dramatically increased subscription rates.

## 4.2 Recommendations

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.

# 5. 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.