

Healthcare Appointment No-Show Analysis

Project Report

By: Patteti Sukshith Kumar

◇ Introduction:

Missed healthcare appointments lead to inefficient resource use and compromised patient care. This project analyses real-world appointment data to identify factors influencing patient no-shows. Using Power BI, we explore behavioural and demographic patterns behind missed appointments to drive actionable insights.

◇ Abstract:

This project focuses on predicting and analysing patient no-show behaviour using historical healthcare data. By leveraging Power BI for data visualization, we uncovered correlations between no-shows and factors like gender, age, SMS reminders, medical conditions, and waiting days. The findings help hospitals and clinics improve attendance rates and optimize scheduling systems.

◇ Tools Used:

- Power BI (Data Cleaning, DAX Measures, Interactive Visuals)
- Microsoft Excel (Initial Data Formatting)
- Canva (for optional PDF styling)

◇ Dataset Description:

The dataset includes over 110,000 scheduled medical appointments from Brazil. Key columns include Patient ID, Appointment Date, Scheduled Date, Age, Gender, Neighbourhood, Medical Conditions (e.g., Hypertension, Diabetes), SMS received, and No-show status.

◇ Steps Involved in Building the Project:

1. Data Cleaning:

- a. Removed irrelevant columns (e.g., PatientID)
- b. Corrected data types for date columns
- c. Created new columns like Waiting Days (Appointment Date - Scheduled Date)

2. DAX Measures:

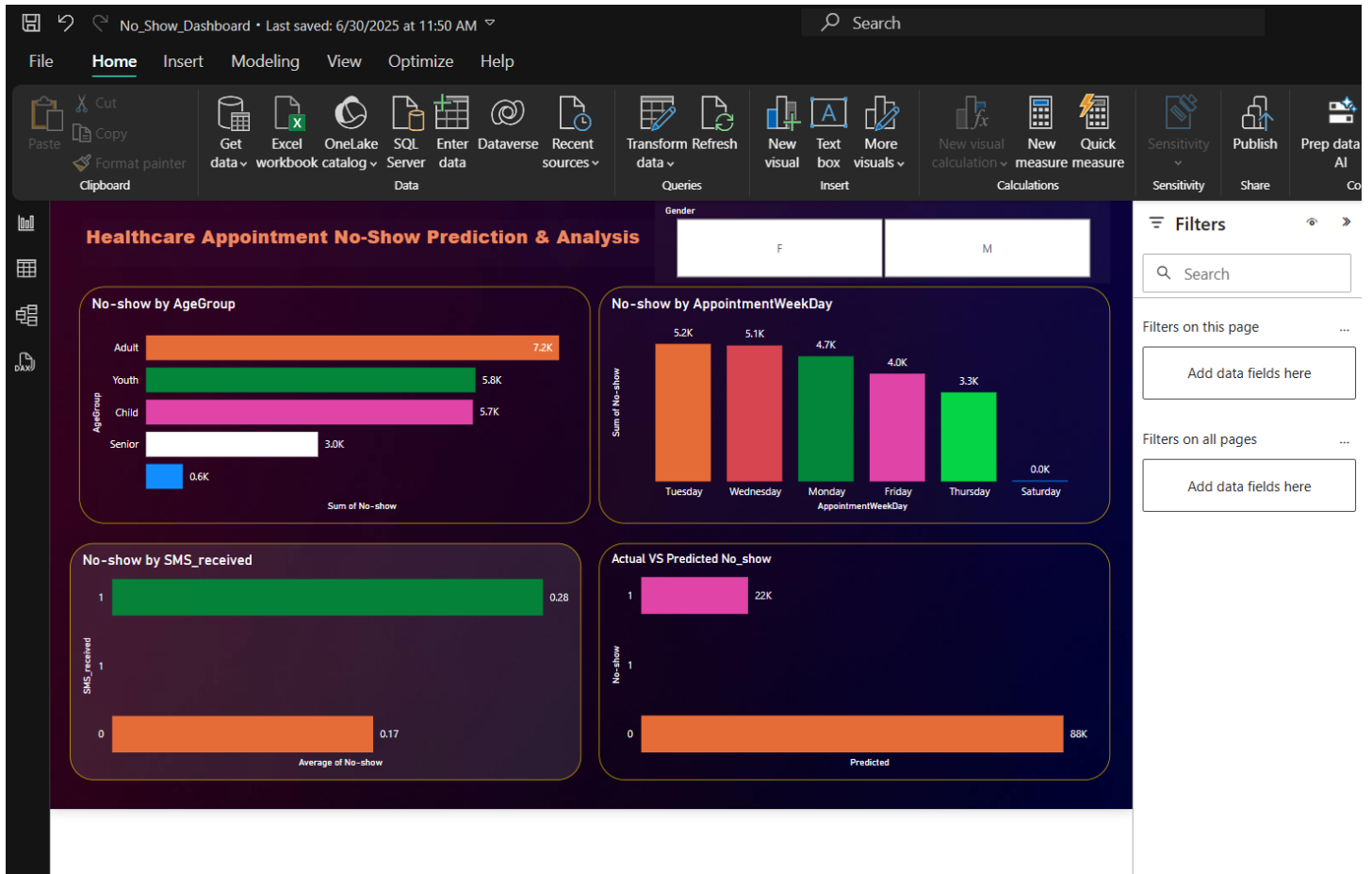
- a. Total Appointments = COUNTROWS('Appointments')
- b. Total No-Shows = CALCULATE(COUNTROWS('Appointments'), 'Appointments'[No-show]=1)
- c. Show-Up Rate (%) = DIVIDE([Total Show-Ups], [Total Appointments], 0)
- d. No-Show Rate (%) = DIVIDE([Total No-Shows], [Total Appointments], 0)

3. Visuals Created:

- a. Donut chart showing Show-Up vs No-Show Percentage

- b. Bar chart showing No-Show by Gender
- c. Line & Bar chart showing No-Show by Weekday
- d. Scatter plot showing Waiting Days vs No-Show Rate
- e. Bar chart showing SMS Reminder Impact
- f. KPI cards for quick metrics

4. Interactive And Visualize Dashboard as given below:



◆ Conclusion:

The dashboard revealed that approximately 20.19% of appointments were missed. No-show rates were higher for patients with longer waiting days and those who didn't receive SMS reminders. These insights can help healthcare providers reduce no-shows by shortening appointment lead times, enhancing reminder systems, and targeting high-risk groups.

