ABC Call Volume Trend Analysis

Trainity

AGENDA

Project Description:

In this project, I explored a dataset containing call volume data over a specific period. I'll walk you through my process of extracting, cleaning, and analyzing the data to uncover patterns and trends. By harnessing the power of data analysis, I aim to gain a deeper understanding of call volume dynamics and make informed decisions.

Approach And Tech-Stack Used

APPROACH

I start by extracting the call volume data for the specified period. Next, I clean the dataset by handling missing values and removing any irrelevant columns. I then perform a detailed analysis to identify patterns and trends, using statistical methods and visualizations to provide actionable insights into call volume dynamics.

TECH - STACK USED

I used MS Excel for this project. MS Excel has so many different features that can be used for data visualization, data cleaning

Insights: Task 1

Determine the average duration of all incoming calls received by agents:

Call_Status	answered

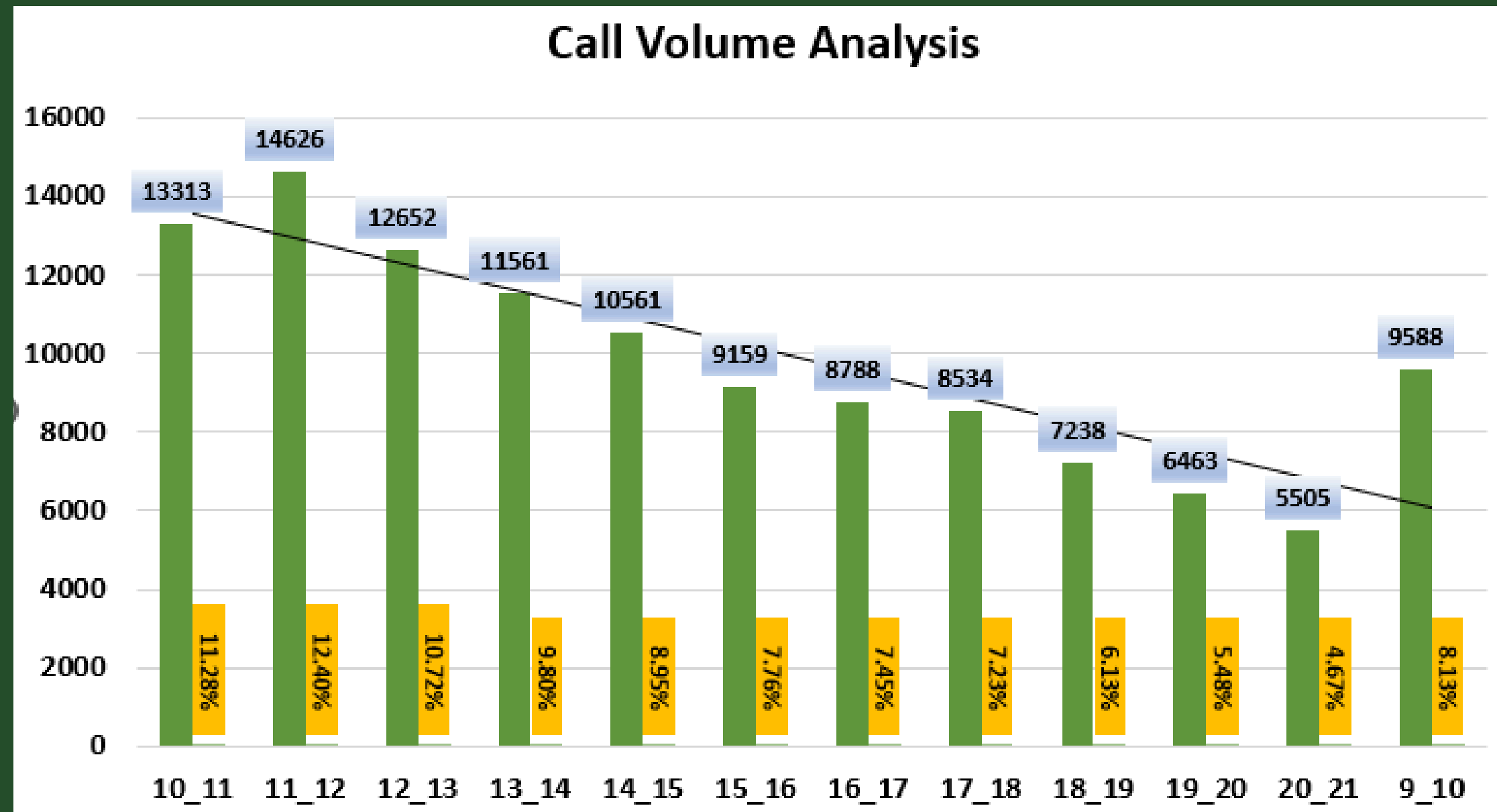| Time_Bucket	Average of Call_Seconds (s)
10_11	203.33
11_12	199.26
12_13	192.89
13_14	194.74
14_15	193.68
15_16	198.89
16_17	200.87
17_18	200.25
18_19	202.55
19_20	203.41
20_21	202.85
9_10	199.07
Grand Total	**198.62**
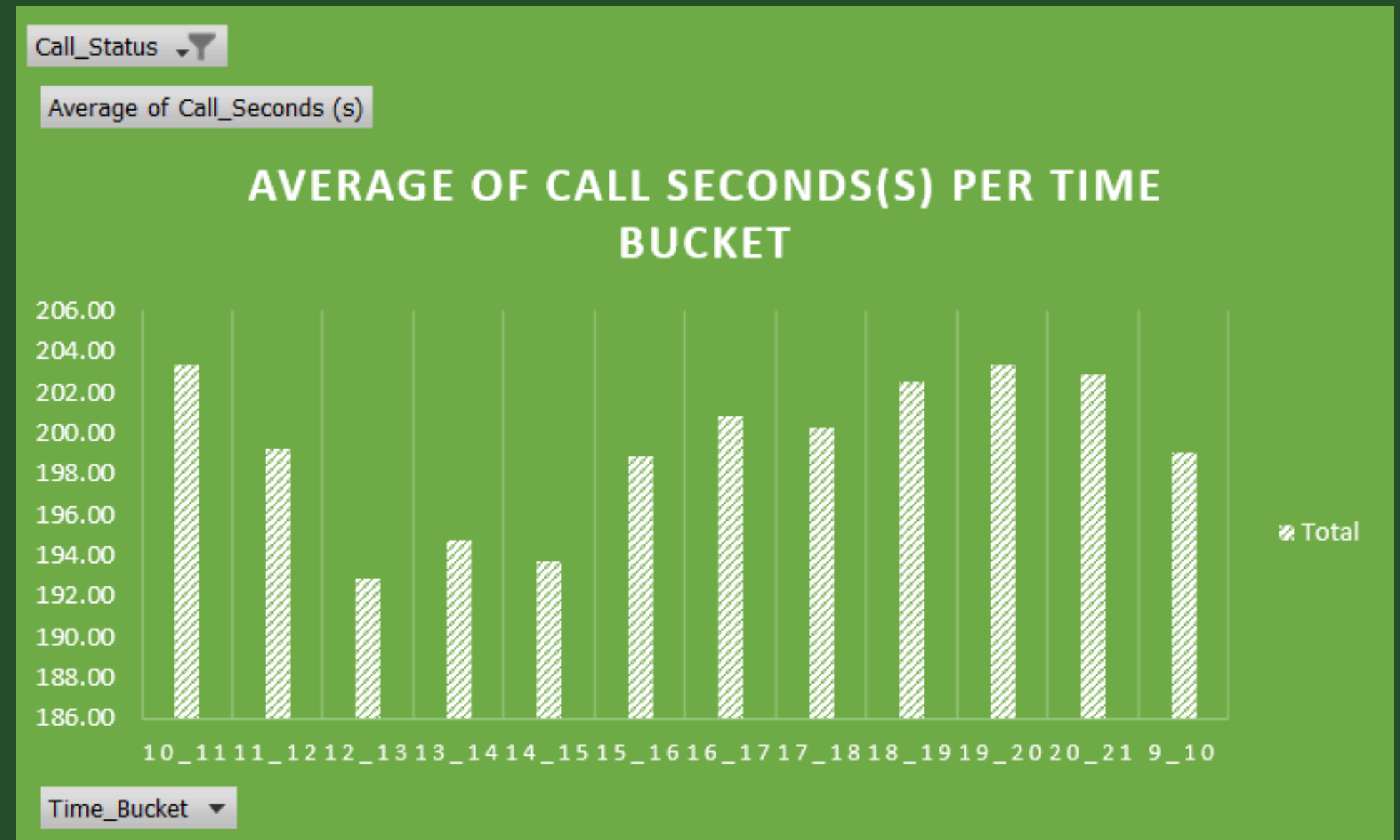
Insights: Task 2

Create a chart or graph that shows the number of calls received in each time bucket:

Approach:

- With the help of the pivot table, we have taken the count of calls received in each time-bucket .

- Then we have created a bar chart to show the distribution of number of calls received in each time bucket with their call seconds.

Call Volume Analysis

Time bucket	Calls	Percentage
10_11	13313	11.28%
11_12	14626	12.40%
12_13	12652	10.72%
13_14	11561	9.80%
14_15	10561	8.95%
15_16	9159	7.76%
16_17	8788	7.45%
17_18	8534	7.23%
18_19	7238	6.13%
19_20	6463	5.48%
20_21	5505	4.67%
9_10	9588	8.13%

Insights: Task 3

The current rate of abandoned calls is approximately 30%. Propose a plan for manpower allocation during each time bucket (from 9 am to 9 pm) to reduce the abandon rate to 10%. In other words, you need to calculate the minimum number of agents required in each time bucket to ensure that at least 90 out of 100 calls are answered.

ASSUMPTIONS	
Agent working days a week	6 Days
Average Unplanned Leaves	4 days a month
Total Working Hrs in Day	9 hours
Lunch/Snacks, Break	1.5 hours
Total Actual Working in Hrs	60%
Total Time Spent on Call	4.5

Average call duration	198.62
Seconds to hours conversion	0.055172993
For 90% of calls needed to be answered	254.7293904
Minimum number of Agents	56.60653119
Convert it into general form	57
From 9AM to 9PM	57

Number of Agents required in each time bucket to make sure that 90 of 100 calls are answered are 57.

Insights: Task 4

Customers also call ABC Insurance Company at night but don't get an answer because there are no agents available. This creates a poor customer experience. Assume that for every 100 calls that customers make between 9 am and 9 pm, they also make 30 calls at night between 9 pm and 9 am. The distribution of these 30 calls is as follows: Your Task: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Average of call duration	198.62
Average number of calls at night(30%)	1539
Seconds to hour conversion	0.055172993
Additional hours required	76.41881711
Convert in Genral form	76
Number of agents required	16.98195936
Round off	17
From 9PM to 9AM	**17**

Number of Agents required from 9 PM to 9AM to make keep only 10 % of abandon rate with 30 calls getting answered is 17.

Insights: Task 4

Time Bucket	Sum of No. of Agents
10pm-11pm	1.7
11pm-12am	1.133333333
12am-1am	1.133333333
1am-2am	0.566666667
2am-3am	0.566666667
3am-4am	0.566666667
4am-5am	0.566666667
5am-6am	1.7
6am-7am	2.266666667
7am-8am	2.266666667
8am-9am	2.833333333
9pm-10pm	1.7
Grand Total	**17**

Sum of No. of Agents

TIME BUCKET VS NO. OF AGENTS IN NIGHT SHIFT

Time Bucket
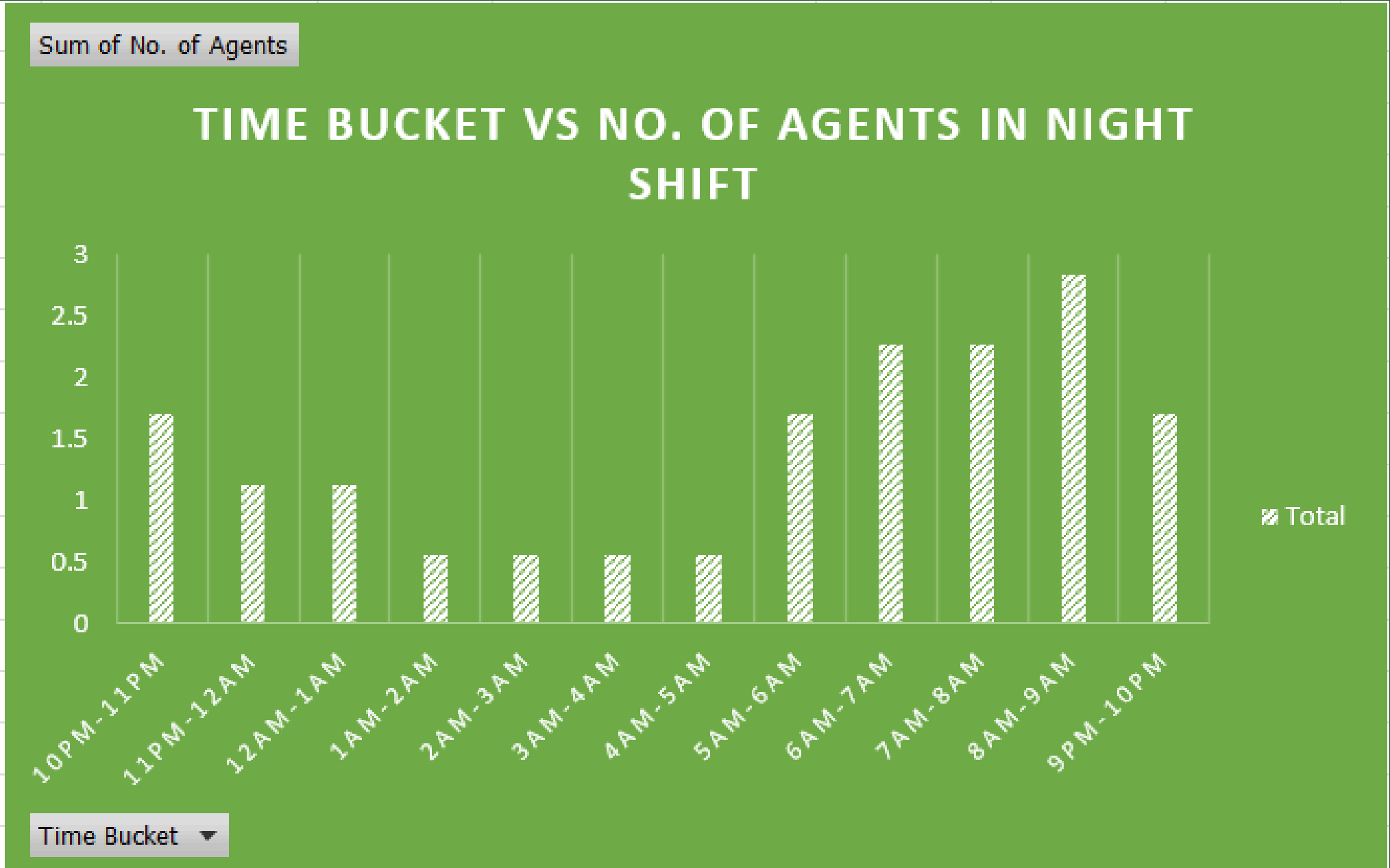
Results and Drive Link:

1. Analyze call durations across different time segments to enhance resource management and planning.

2. Create visualizations of call volume trends over time to support informed staffing decisions.

3. Develop a manpower strategy to lower the call abandon rate from 30% to 10% during key periods, improving customer satisfaction.

4. Formulate a plan to handle unanswered calls at night, ensuring a better customer experience around the clock.

Drive Link: Please Download the Excel sheet since it may show errors online.
https://docs.google.com/spreadsheets/d/1F25rSLBfxHafW7Bz5NGoMykWsNDnWZ_I/edit?usp=drive_link&ouid=104159851622002118898&rtpof=true&sd=true

THANK YOU!

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