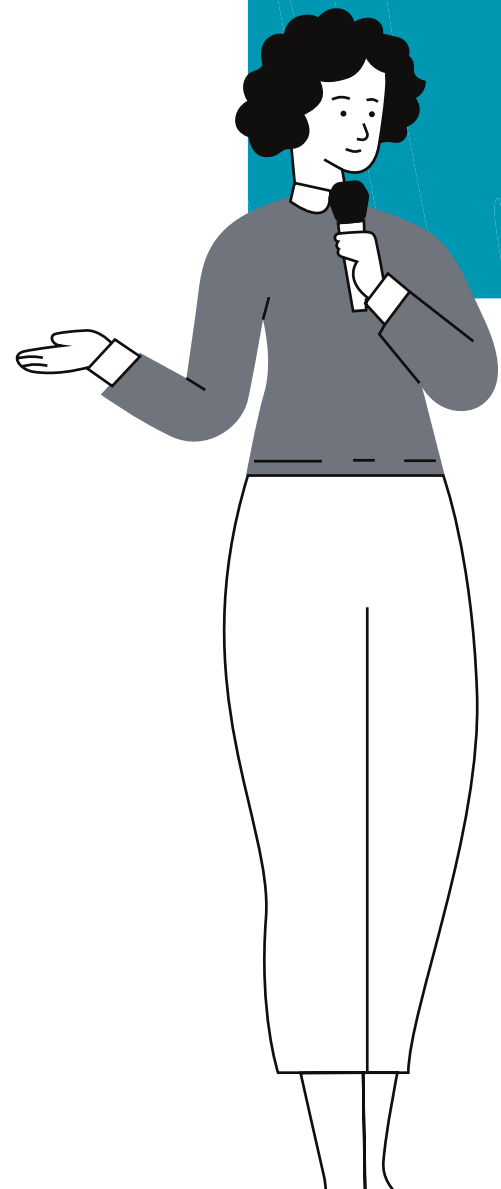# ABC Call Volume Trend Analysis

Project by Mayur Rajput

Analysis file Link

Project's Agenda

1. Project description
2. Approach & Tech-Stack Used
3. Data Cleaning
4. Data Analysis
5. Insights & Results

Analysis File Link

Project Description

In this project, By using analytical skills to understand the trends in the call volume of the CX team and derive valuable insights from it.

Inbound customer support, which is the focus of this project, involves handling incoming calls from existing or prospective customers. The goal is to attract, engage, and delight customers, turning them into loyal advocates for the business.

Approach

- **Data Cleaning:** This step involves cleaning the data to make it suitable for analysis. It includes removing columns which are not required for analysis

- **Data Analysis:** This step involves analyzing the data to understand the trends in the call volume of the CX team and derive valuable insights from it.
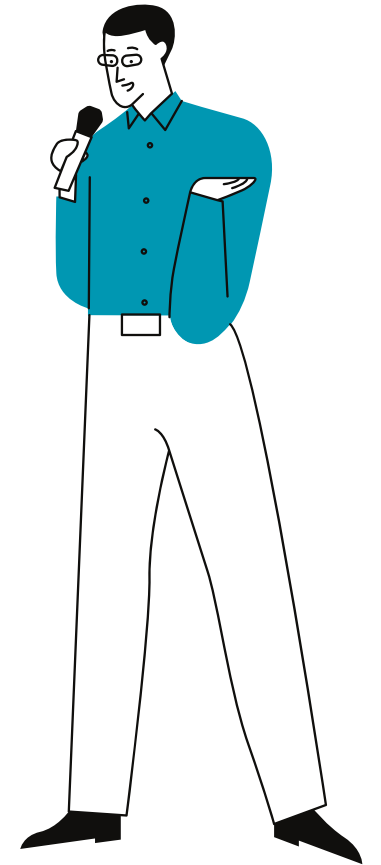
Tech Stack Used

Microsoft Excel

Microsoft Excel is used to perform data cleaning to make dataset suitable for further analysis and also to perform Data Analysis to understand the trends in the call volume of the CX team and derive valuable insights from it.

Canva

Canva is used to prepare this presentation

Data Cleaning

Customer_Phone_No, Wrapped _By columns are removed

Agent_Nam	Agent_	Queue_Time(Sec	Date_&_Tim	Tim	Time_Buck	Duration(hh:mm:s	Call_Seconds (	Call_Statu	Ringi	IVR _Duratic
Executives 42	1000042	2	2022-01-01	9.00	9_10	00:01:36	96.00	answered	YES	00:00:16
Executives 4	1000004	0	2022-01-01	9.00	9_10	00:02:20	140.00	answered	YES	00:00:26
Executives 65	1000065	0	2022-01-01	9.00	9_10	00:01:25	85.00	answered	YES	00:00:16
Executives 55	1000055	1	2022-01-01	9.00	9_10	00:01:31	91.00	answered	YES	00:00:25
Executives 21	1000021	0	2022-01-01	9.00	9_10	00:02:45	165.00	answered	YES	00:00:23
#N/A	#N/A	13	2022-01-01	9.00	9_10	00:00:00	0.00	abandon	YES	00:00:16
Executives 55	1000055	79	2022-01-01	9.00	9_10	00:01:25	85.00	answered	YES	00:00:13
#N/A	#N/A	60	2022-01-01	9.00	9_10	00:00:00	0.00	abandon	YES	00:00:17
Executives 42	1000042	52	2022-01-01	9.00	9_10	00:01:05	65.00	answered	YES	00:00:20
Executives 65	1000065	62	2022-01-01	9.00	9_10	00:03:00	180.00	answered	YES	00:00:44
Executives 4	1000004	52	2022-01-01	9.00	9_10	00:01:48	108.00	answered	YES	00:00:15
Executives 21	1000021	89	2022-01-01	9.00	9_10	00:03:06	186.00	answered	YES	00:00:16
#N/A	#N/A	120	2022-01-01	9.00	9_10	00:00:00	0.00	abandon	YES	00:00:40
Executives 55	1000055	45	2022-01-01	9.00	9_10	00:01:40	100.00	answered	YES	00:00:42
Executives 42	1000042	55	2022-01-01	9.00	9_10	00:01:15	75.00	answered	YES	00:00:19
#N/A	#N/A	16	2022-01-01	9.00	9_10	00:00:00	0.00	abandon	YES	00:00:18
#N/A	#N/A	44	2022-01-01	9.00	9_10	00:00:00	0.00	abandon	YES	00:00:17
Executives 4	1000004	88	2022-01-01	9.00	9_10	00:04:03	243.00	answered	YES	00:00:15
Executives 49	1000049	46	2022-01-01	9.00	9_10	00:04:10	250.00	answered	YES	00:00:19
Executives 50	1000050	64	2022-01-01	9.00	9_10	00:03:28	208.00	answered	YES	00:00:48
Executives 42	1000042	52	2022-01-01	9.00	9_10	00:02:34	154.00	answered	YES	00:00:26
Executives 65	1000065	67	2022-01-01	9.00	9_10	00:02:07	127.00	answered	YES	00:00:45
Executives 55	1000055	64	2022-01-01	9.00	9_10	00:03:11	191.00	answered	YES	00:00:40

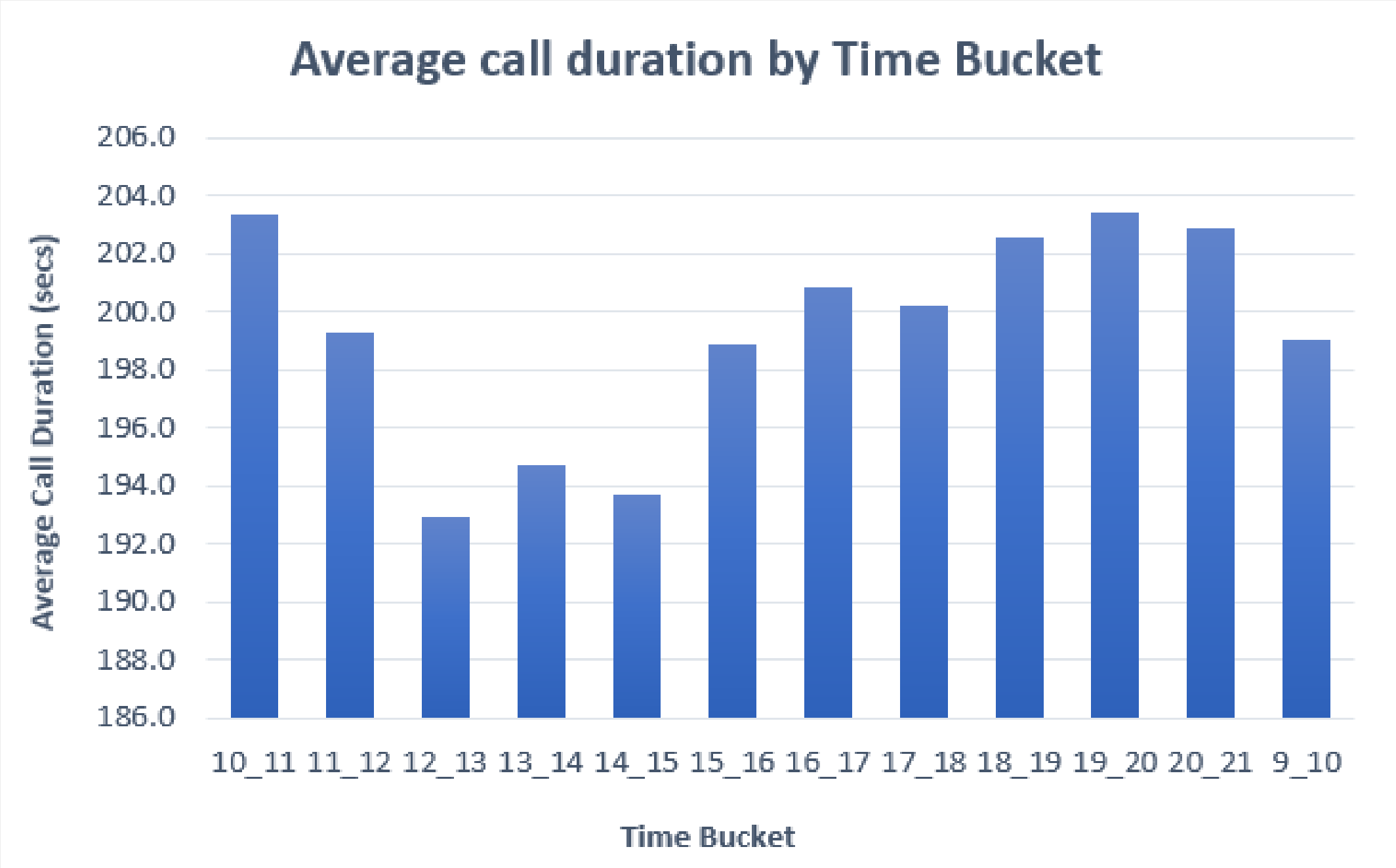**Task 1 : Average Call Duration**

Determine the average duration of all incoming calls received by agents for each time bucket.

Call_Status	answered	

| Time Bucket	Average of Call_Seconds (s)
10_11	203.3
11_12	199.3
12_13	192.9
13_14	194.7
14_15	193.7
15_16	198.9
16_17	200.9
17_18	200.2
18_19	202.6
19_20	203.4
20_21	202.8
9_10	199.1

Average call duration by Time Bucket

The time bucket "10_11" and "19_20" has the highest average call duration and call durations from "12_13" to "15_16" seem to be slightly lower, while they increase again from "15_16" onwards. This could be worth investigating further to understand if there's a reason for this trend.

Task 2 : Call Volume Analysis   Determine the total number of calls received for each time bucket.

| Call_Status	answered
Time Bucket	**Count of Calls**
10_11	6368
11_12	8560
12_13	9432
13_14	8829
14_15	7974
15_16	7760
16_17	7852
17_18	7601
18_19	6200
19_20	4578
20_21	2870
9_10	4428
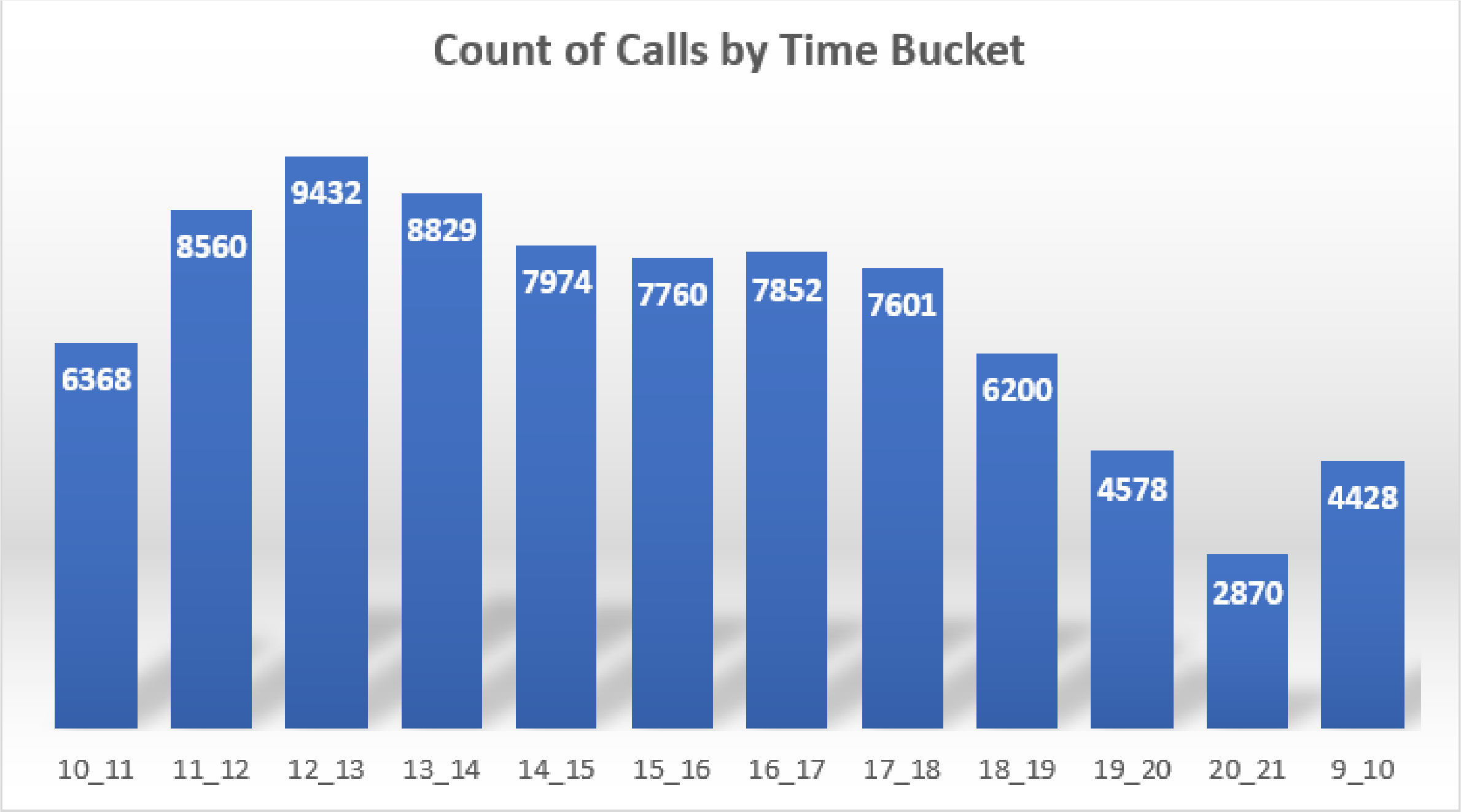
Count of Calls by Time Bucket

The time slot "12_13" received the highest total number of calls. There is a significant increase in call volume from "9_10" to "11_12" and there is noticeable drop in call volume from the "19_20" and "20_21" time slots.

Determine minimum number of agents required in each time bucket to reduce the abandon rate to 10%.

Time Bucket	Count of Call_Seconds (s)	Count of Call_Seconds (s)2	Agents Required
10_11	11.28%	0.11	6
11_12	12.40%	0.12	7
12_13	10.72%	0.11	6
13_14	9.80%	0.10	5
14_15	8.95%	0.09	5
15_16	7.76%	0.08	4
16_17	7.45%	0.07	4
17_18	7.23%	0.07	4
18_19	6.13%	0.06	3
19_20	5.48%	0.05	3
20_21	4.67%	0.05	3
9_10	8.13%	0.08	4

COUNT OF CALLS

- ABANDON — 29.16%
- ANSWERED — 69.88%
- TRANSFER — 0.96%
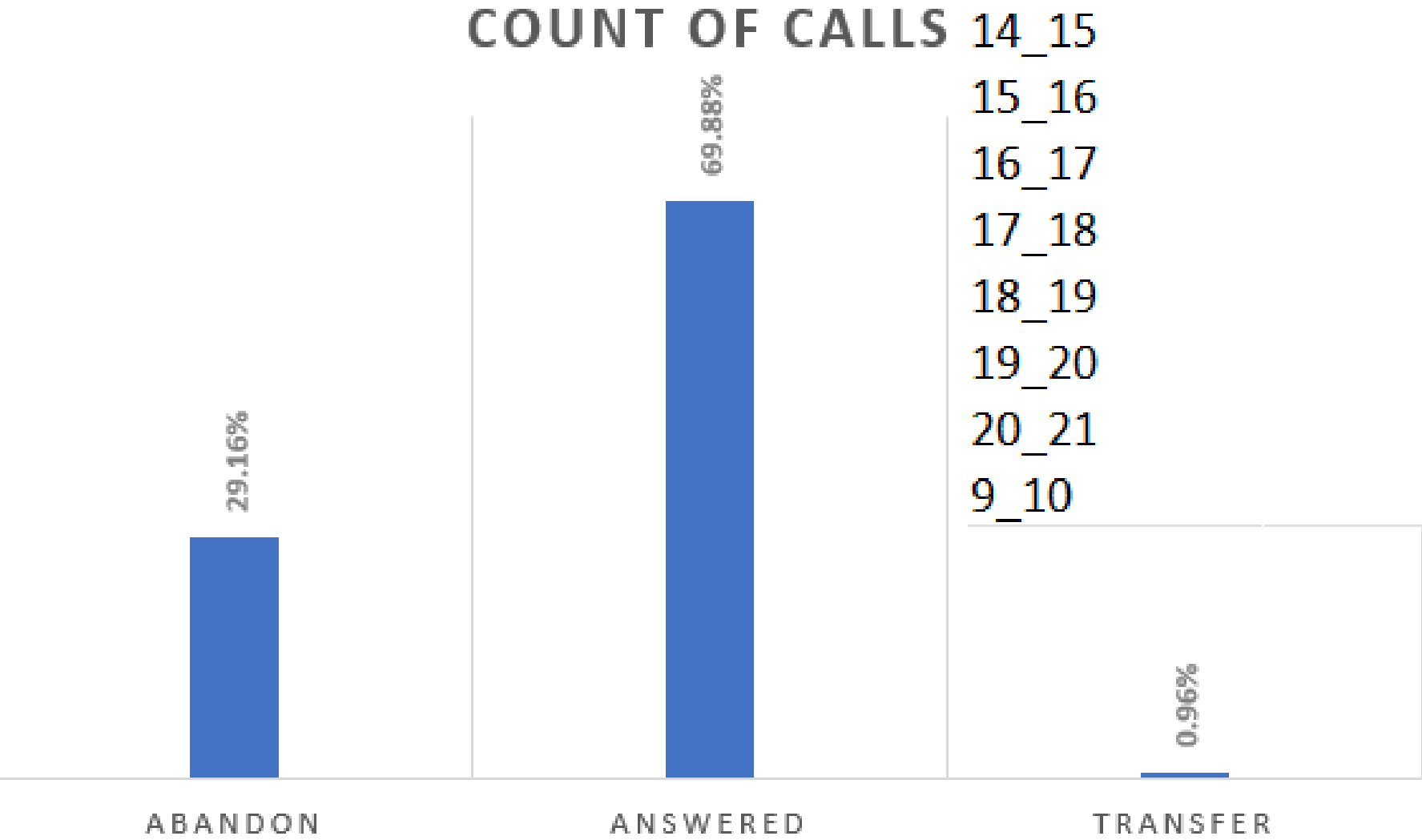
54 agents required to achieve 10% abandon rate on calls.

Task 4 : Night Shift Manpower Planning

Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Time Bucket(9PM tp 9AM)	Calls Count	Calls Distribution	Agents Required
9_10	3	0.10	2
10_11	3	0.10	2
11_12	2	0.07	1
12_1	2	0.07	1
1_2	1	0.03	1
2_3	1	0.03	1
3_4	1	0.03	1
4_5	1	0.03	1
5_6	3	0.10	2
6_7	4	0.13	2
7_8	4	0.13	2
8_9	5	0.17	3

19 agents required during Night Shift.

Insights :

- The time bucket "10_11" and "19_20" has the highest average call duration and call durations from "12_13" to "15_16" seem to be slightly lower, while they increase again from "15_16" onwards. This could be worth investigating further to understand if there's a reason for this trend.
- The time slot "12_13" received the highest total number of calls. There is a significant increase in call volume from "9_10" to "11_12" and there is noticeable drop in call volume from the "19_20" and "20_21" time slots.
- 54 agents required to achieve 10% abandon rate on calls.
- 19 agents required during Night Shift.

Results :

- This project helped me to advance Excel skills and problem solving ability. Through this project I have Extensively worked on pivot table and charts which enabled me to give better representation of output in form of charts.