



ABC CALL VOLUME TREND ANALYSIS



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OVERVIEW

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- Insights
- Results

[Click Here for Dataset link](#) 





PROJECT DESCRIPTION

- A Customer Experience (CX) team plays a crucial role in a company. They analyze customer feedback and data, derive insights from it, and share these insights with the rest of the organization. This team is responsible for a wide range of tasks, including managing customer experience programs, handling internal communications, mapping customer journeys, and managing customer data, among others.
- In the current era, several AI-powered tools are being used to enhance customer experience. These include Interactive Voice Response (IVR), Robotic Process Automation (RPA), Predictive Analytics, and Intelligent Routing.

One of the key roles in a CX team is that of the customer service representative, also known as a call center agent. These agents handle various types of support, including email, inbound, outbound, and social media support.

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

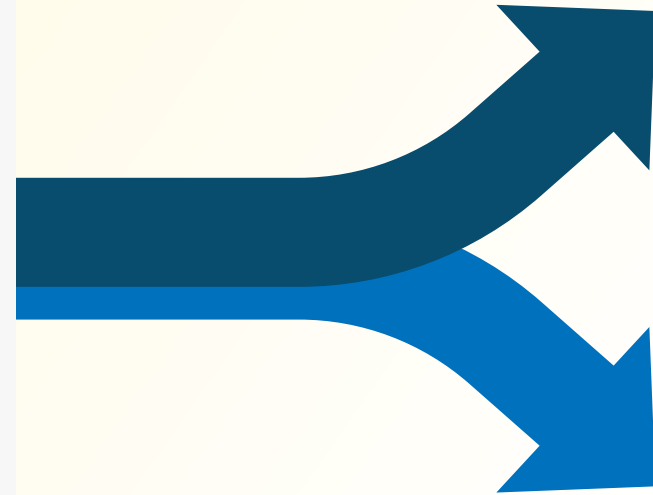


Advertising is a crucial aspect of any business. It helps increase sales and makes the audience aware of the company's products or services. The first impressions of a business are often formed through its advertising efforts.

In this project, we'll be using our ***analytical skills*** to understand the trends in the call volume of the CX team and derive valuable insights from it.



TECH-STACK USED



An All-Around Powerful Tool

Excel is a powerful tool for analyzing and visualizing data. It can help you understand how past events affect your future, which may be more critical than ever in today's uncertain world



Excel Offers a Variety of Ways to Visualize Your Data

From simple 2D charts to complex 3D models, Excel has many different types of charts that can be used for analysis. Each type of chart has its formatting options and color schemes, so there is no shortage of customization available.

DATA CLEANING

- Wrapped_By Column was removed since it was required during analysis
- No duplicated were found





INSIGHTS

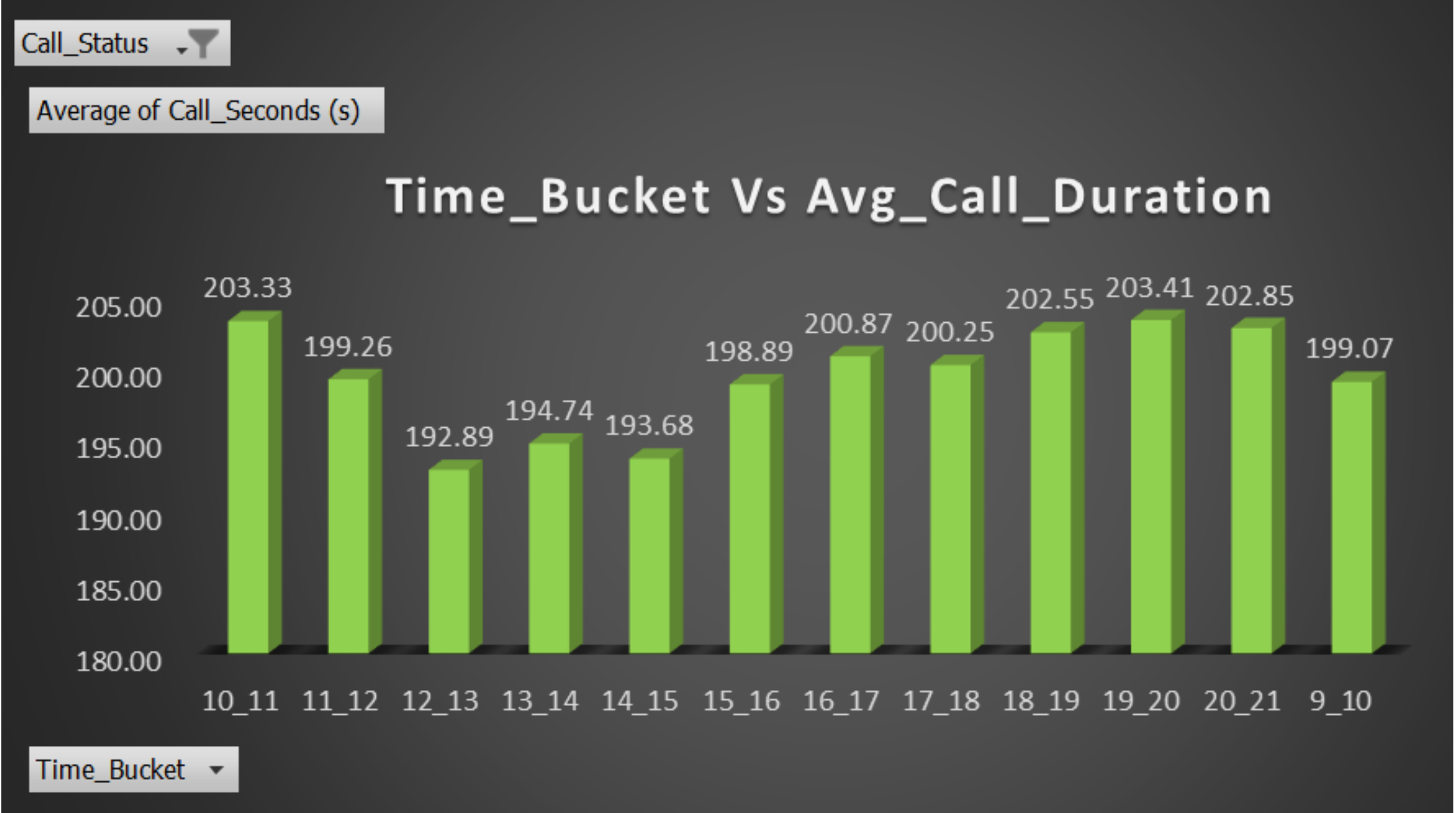
Data insights are found through the deep analysis of patterns and statistics within data.

[Click Here For Dataset Link](#)



Task 1: Determine the average duration of all incoming calls received by agents. This should be calculated for each time bucket.

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

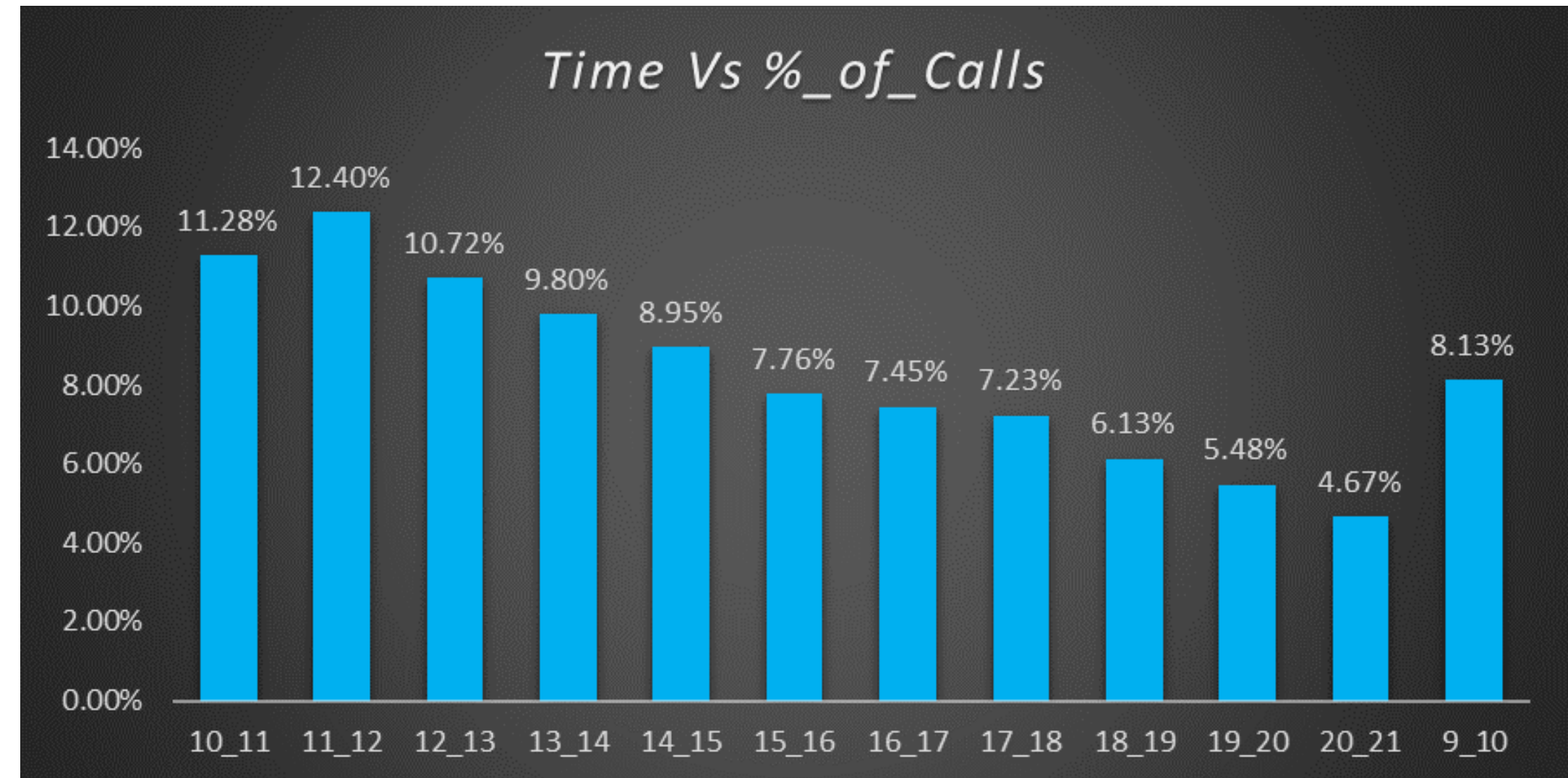


From the Graph we can infer that **Time Bucket 19_20** has the highest Average Calls '**203.41**' which is in the time range **7PM TO 8PM**



Task 2: Create a chart or graph that shows the number of calls received in each time bucket?

Time_Bucket	Count of Customer_Phone_No	% of Phone_no
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%



From the above graph we can infer that percentage of incoming calls are maximum i.e. '**12.40%**' in the Time_Bucket 11_12 i.e. **11AM to 12PM**.



Task 3: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%

Agent Working Time:

Agent Total Working Hours: **9 hrs**

Time spent on lunch and snacks in the office: **1.5 hrs**

Time Remaining: **7.5 hrs**

Time Spent on Working : **60% of 7.5**

Time Spent on Working in sec: **16200 seconds**

Average Duration of Call per time Bucket: **199 seconds**

Maximum Calls an Agent Picks per Day: **82**

Maximum Calls an Agent Picks per Hour: **18**

Current Abandon Rate: **30 %**

Target Abandon Rate: **10%**

%of Calls to Answer for 10% Abandon Rate: **90%**

Count of Calls to Answer for 10% Abandon Rate: **0.9 x (Total Incoming Calls)**

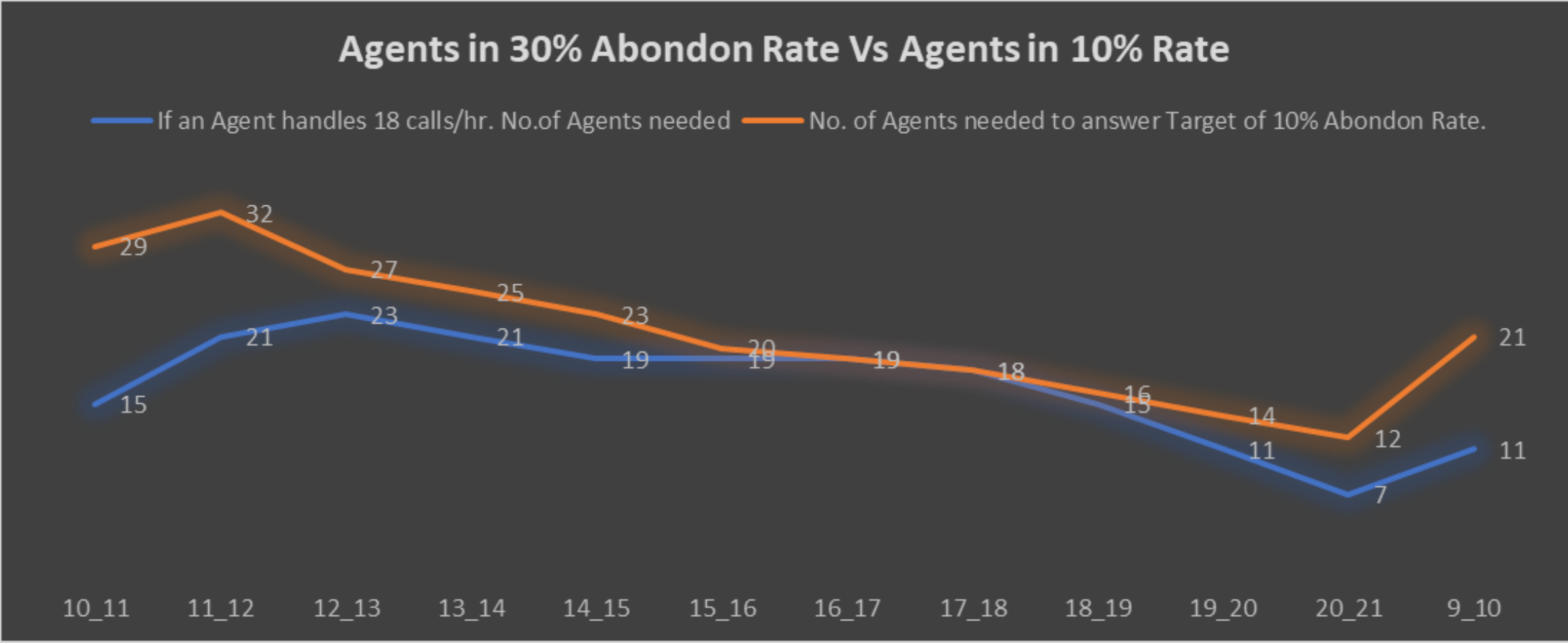
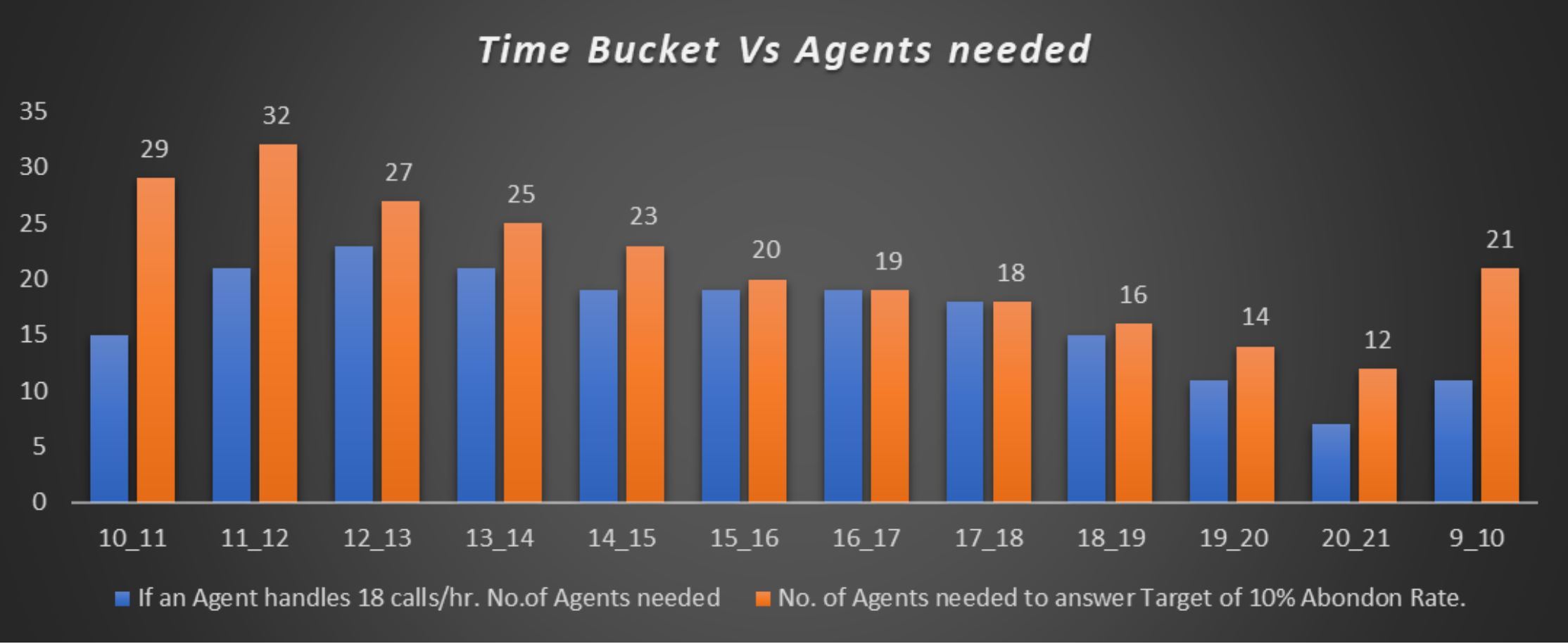
Table Showing Distribution of Incoming Calls per Day to Achieve Required Abandon Rate

Time_Bucket	Count of Abandoned calls of 23 days	count of Answered calls of 23 days	Total count of calls for 23 days	Count of Abandon calls per day	Count of Answered calls per day	Total count of Calls per day	Abandon Percentage	Count of Calls to Answer for 10% Abandon Rate
10_11	6911	6368	13279	300	277	577	52.0%	519
11_12	6028	8560	14588	262	372	634	41.3%	571
12_13	3073	9432	12505	134	410	544	24.6%	490
13_14	2617	8829	11446	114	384	498	22.9%	448
14_15	2475	7974	10449	108	347	454	23.8%	409
15_16	1214	7760	8974	53	337	390	13.6%	351
16_17	747	7852	8599	32	341	374	8.6%	337
17_18	783	7601	8384	34	330	365	9.3%	329
18_19	933	6200	7133	41	270	310	13.2%	279
19_20	1848	4578	6426	80	199	279	28.7%	251
20_21	2625	2870	5495	114	125	239	47.7%	215
9_10	5149	4428	9577	224	193	416	53.8%	374

Task 3: What is the minimum number of agents required in each time bucket to reduce the abandon rate to 10%

Table Showing Agents Required to Achieve 10% Abondon Rate

Time_Bucket	Total answered calls for 23 days	answered Calls per day	If an Agent handles 18 calls/hr. No.of Agents needed	No. of calls to be answered/day for 10% Abondon	No. of Agents needed to answer Target
10_11	6368	277	15	519	29
11_12	8560	372	21	571	32
12_13	9432	410	23	490	27
13_14	8829	384	21	448	25
14_15	7974	347	19	409	23
15_16	7760	337	19	351	20
16_17	7852	341	19	337	19
17_18	7601	330	18	329	18
18_19	6200	270	15	279	16
19_20	4578	199	11	251	14
20_21	2870	125	7	215	12
9_10	4428	193	11	374	21



Task 4: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

<u>Agent Working Time:</u>	
Agent Total Working Hours: 9 hrs	
Time spent on lunch and snacks in the office: 1.5 hrs	
Time Remaining: 7.5 hrs	
Time Spent on Working : 60% of 7.5	4.5 Hours
Time Spent on Working in sec:	16200 seconds
Average Duration of Call per time Bucket:	198.62 seconds
Maximum Calls an Agent Picks per Day:	82
Maximum Calls an Agent Picks per Hour:	18
Current Abondon Rate: 30 %	
Target Abondon Rate: 10%	
Average Calls in a Day to Answer for 10% Abondon Rate:	4573
Average Calls at Night: to Answer for 10% Abondon Rate:	1372

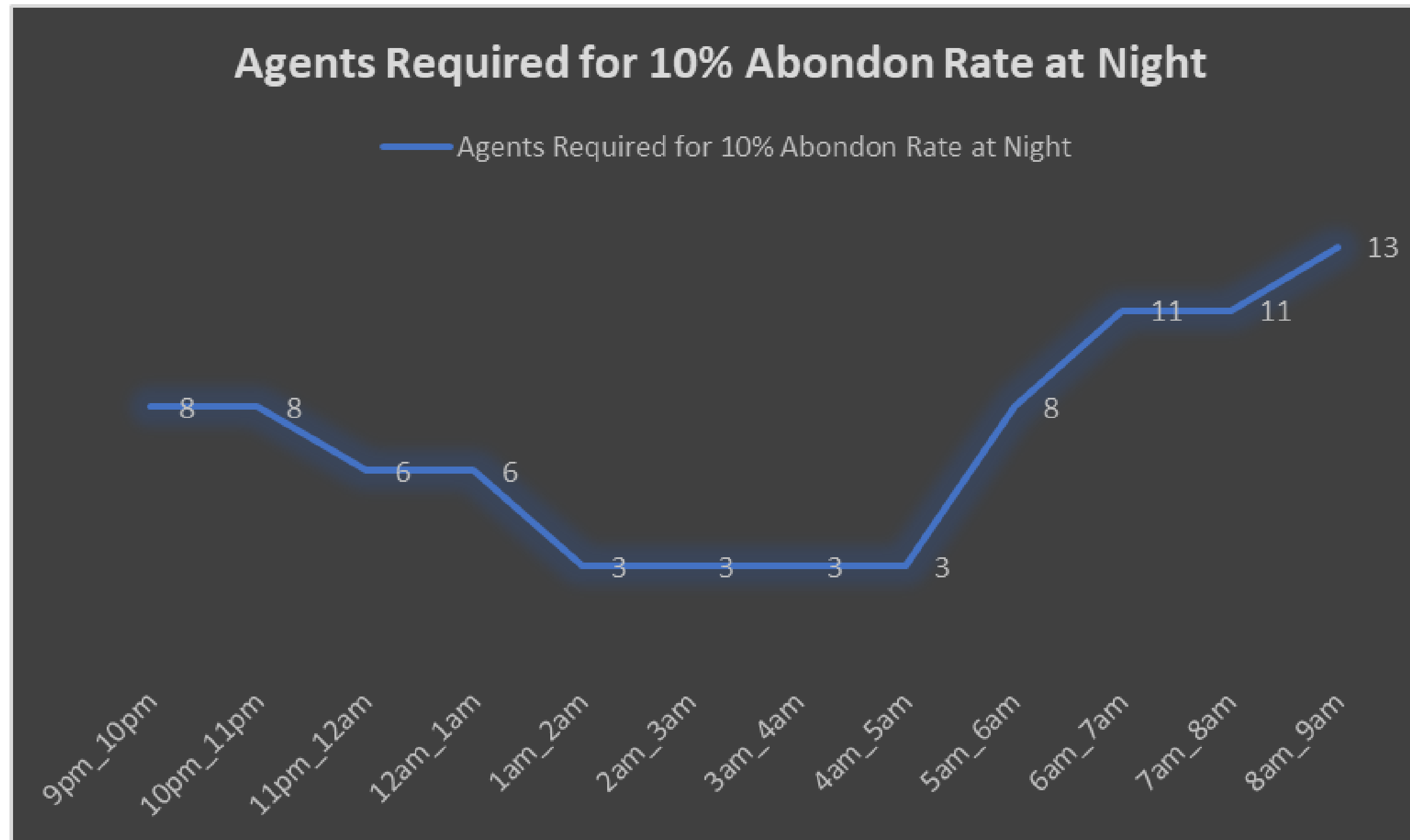
Agents Required for 10% Abondon Rate=Calls Distribution per Day for 10% Abondon Rate /Avg Calls an Agent can answer per hour(18)

Time Bucket	Calls per slot	% Of Slot Distribution	Calls Distribution/Day for 10% Abondon Rate	Agents Required for 10% Abondon Rate	
9pm_10pm	3	10.00%	137	8	
10pm_11pm	3	10.00%	137	8	
11pm_12am	2	6.67%	91	6	
12am_1am	2	6.67%	91	6	
1am_2am	1	3.33%	46	3	
2am_3am	1	3.33%	46	3	
3am_4am	1	3.33%	46	3	
4am_5am	1	3.33%	46	3	
5am_6am	3	10.00%	137	8	
6am_7am	4	13.33%	183	11	
7am_8am	4	13.33%	183	11	
8am_9am	5	16.67%	229	13	
Grand Total	30	100.00%	1372		



Task 4: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

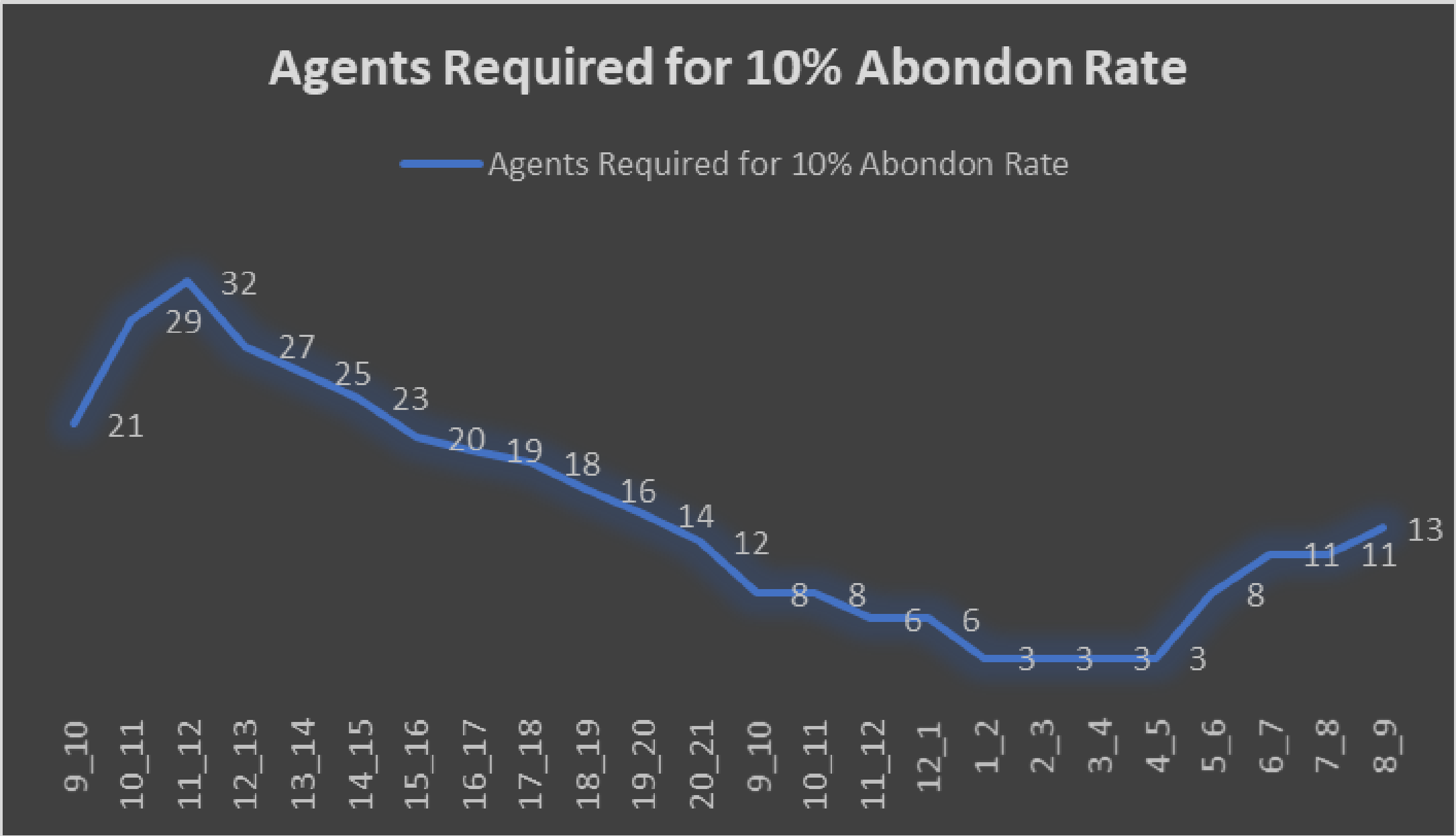
- **Line Graph Showing the Distribution of Agents across different time bucket During Night Shift with abandon rate 10%**



Task 4: Propose a manpower plan for each time bucket throughout the day, keeping the maximum abandon rate at 10%.

Following Line Chart Displays the Manpower Distribution throughout the Entire day provided that Abondon Calls Rate is maximum 10%

Time_Bucket	Agents Required for 10% Abondon Rate
9_10	21
10_11	29
11_12	32
12_13	27
13_14	25
14_15	23
15_16	20
16_17	19
17_18	18
18_19	16
19_20	14
20_21	12
9_10	8
10_11	8
11_12	6
12_1	6
1_2	3
2_3	3
3_4	3
4_5	3
5_6	8
6_7	11
7_8	11
8_9	13



Result

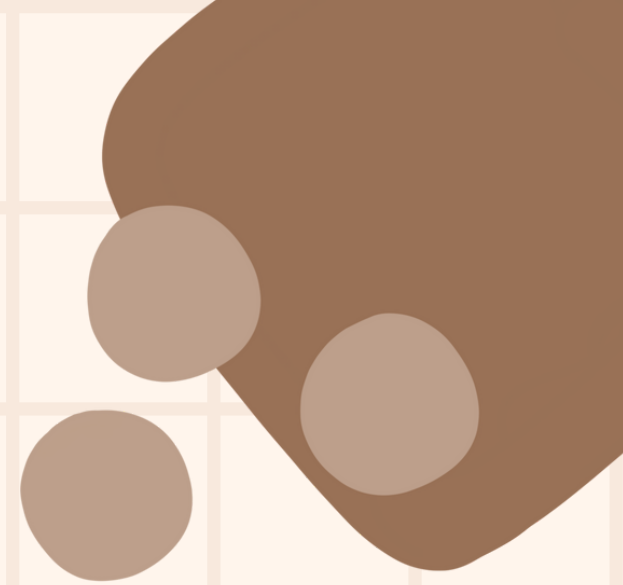
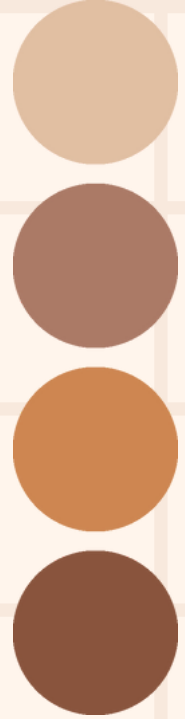
Result 1

It was found that time slot 11AM to 12 PM is considered to be busiest of the day.

While time Slot 12PM to 1PM is considered to be most answered incoming calls time slot.

Result 2

Man Power Planning in a Customer Service company is very essential to satisfy the costumers and develop there interest and trust more towards the company.



THANK YOU
SO MUCH!

