

ABC Call Volume Trend Analysis

Project Description: In this project, I was experienced into the world of Customer Experience (CX) analytics, specifically focusing on the inbound calling team of a company. I was provided with a dataset that contains information about the inbound calls received by a company named ABC, which operates in the insurance sector. My task was to use this data to answer the following questions:

1. Average Call Duration:

What is the average duration of calls for each time bucket?

2. Call Volume Analysis:

Can you create a chart or graph that shows the number of calls received in each time bucket?

3. Manpower Planning:

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

4. Night Shift Manpower Planning:

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

Approach: First I gone through dataset to know all the columns present in the table. Then I saw all the questions and thought of functions which could be used to answer each question. After that I applied those functions and found the answer to each question and plotted the graph wherever was required.

Link of working excel file:

https://docs.google.com/spreadsheets/d/1yIXt9mu_V5DmdTaMRfBrxA3ZwwkNJHnG/edit?usp=sharing&oid=106942457558004201317&rtpof=true&sd=true

Tech-Stack Used: The software used for the project is Microsoft Excel 365. It is used to run the functions and get answers of each question. It is also used to plot the graphs.

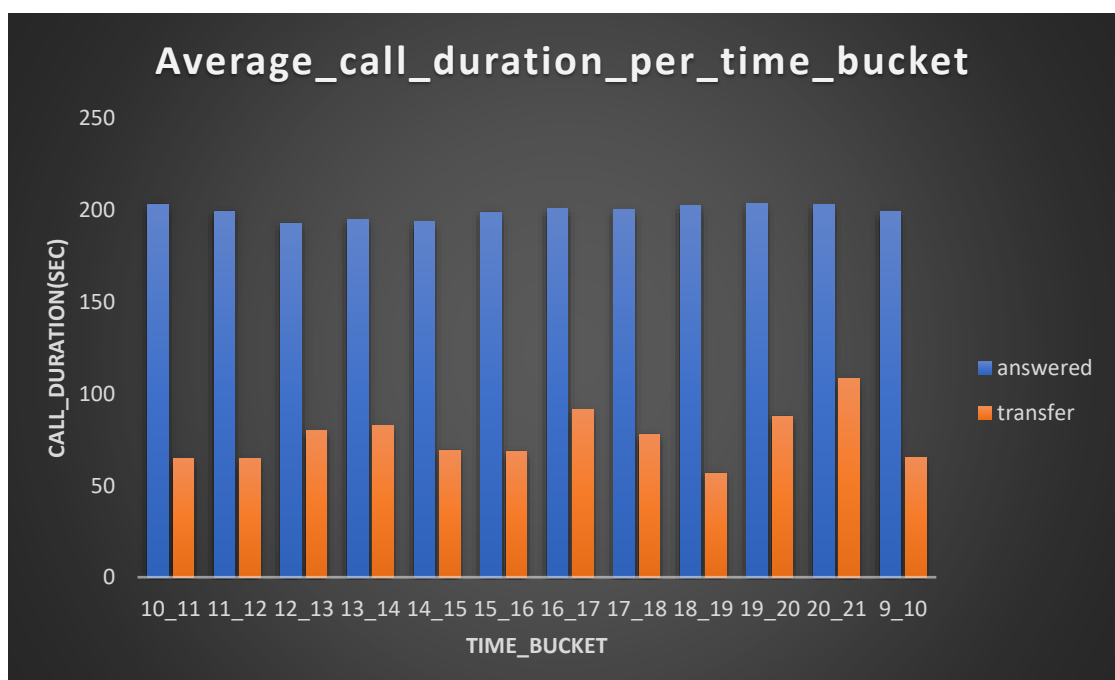
Insights:

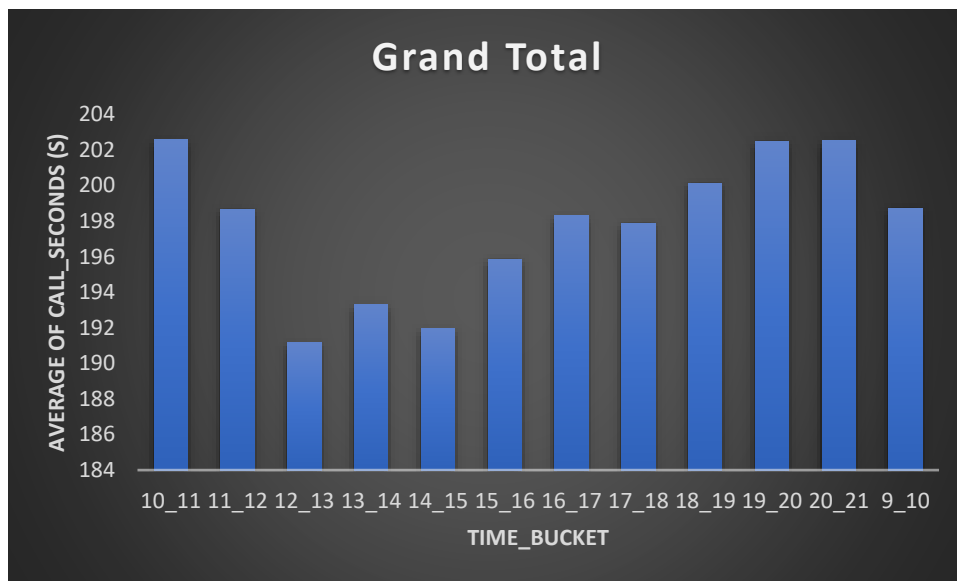
1. Average Call Duration:

Function:-

Average of Call_Seconds (s)	Column Labels		
Time_Bucket	answered	transfer	Grand Total
10_11	203.3310302	64.52941176	202.5938769
11_12	199.2550234	64.63157895	198.6600372
12_13	192.8887829	79.82312925	191.1536695
13_14	194.7401744	82.45217391	193.2963998
14_15	193.6770755	69.30357143	191.9543656
15_16	198.8889175	68.68648649	195.8571429
16_17	200.8681864	91.38624339	198.2948638
17_18	200.2487831	77.85333333	197.8801445
18_19	202.5509677	56.62857143	200.1208565
19_20	203.4060725	87.67567568	202.4782232
20_21	202.845993	108.2	202.5173611
9_10	199.0691057	65.18181818	198.7373282
Grand Total	198.6227745	76.14651368	196.9626009

Output:-



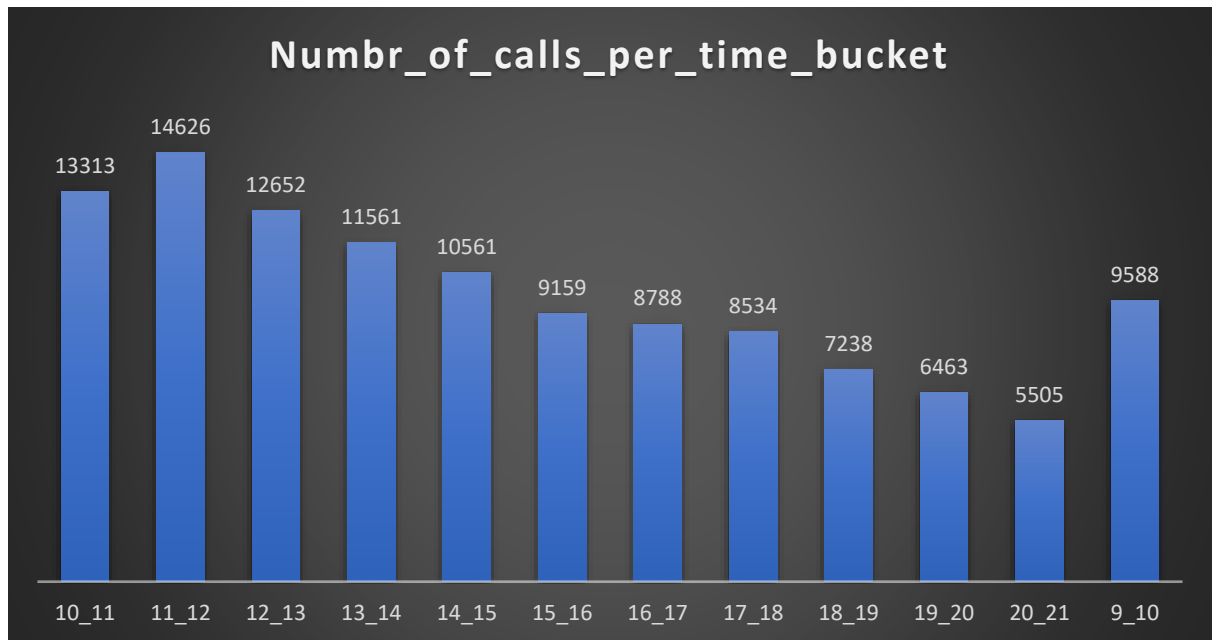


2. Call Volume Analysis:

Function:-

Number_of_calls	Column Labels ▼			
Row Labels ▼	abandon	answered	transfer	Grand Total
10_11	6911	6368	34	13313
11_12	6028	8560	38	14626
12_13	3073	9432	147	12652
13_14	2617	8829	115	11561
14_15	2475	7974	112	10561
15_16	1214	7760	185	9159
16_17	747	7852	189	8788
17_18	783	7601	150	8534
18_19	933	6200	105	7238
19_20	1848	4578	37	6463
20_21	2625	2870	10	5505
9_10	5149	4428	11	9588
Grand Total	34403	82452	1133	117988

Output:-



3. Manpower Planning:

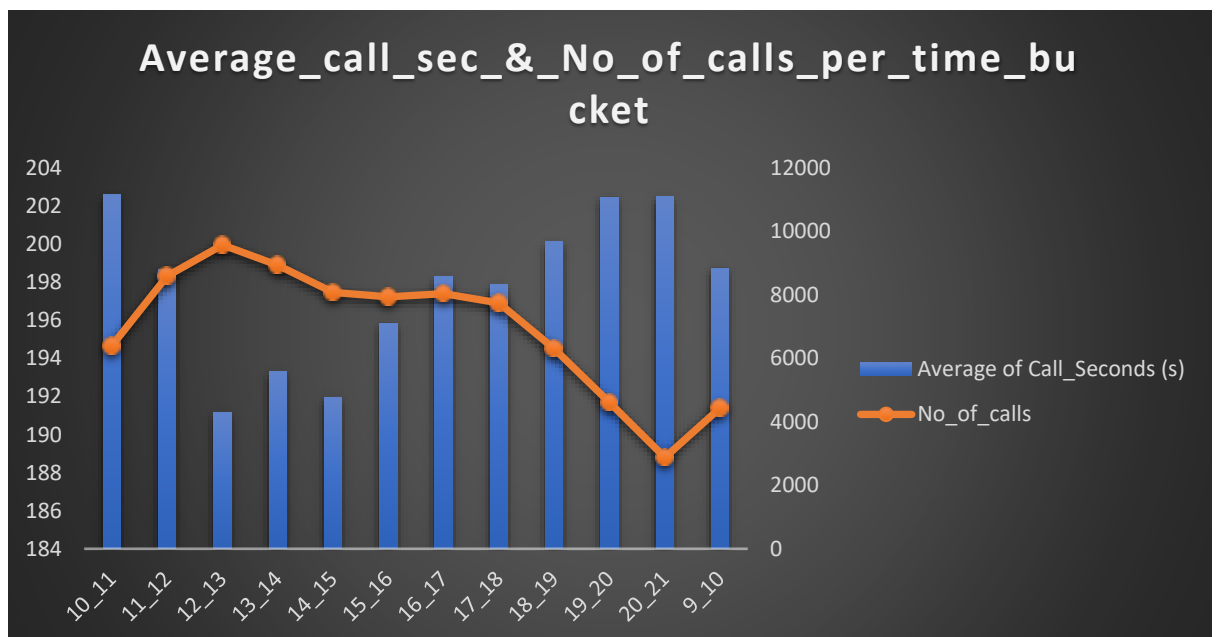
Function:-

Agent working days a week	6
Unplanned leave of agent per month	4
Agent working days a week excluding leaves	5
Total working hours of an agent	9
Working hours of an agent excluding breaks	7.5
Time spent on calls per agent	4.5

Average of Call_Seconds (s)	answered	transfer	Grand Total	Number_of_calls	Number_of_calls_per_day	Total_call_time_per_day(Hours)	minimum_number_of_agents_required
10_11	203.3310302	64.5294118	202.593877	13313	578.83	29.31685344	30
11_12	199.2550234	64.6315789	198.660037	14626	635.91	31.58247607	32
12_13	192.8887829	79.8231293	191.153669	12652	550.09	26.28793051	27
13_14	194.7401744	82.4521739	193.2964	11561	502.65	24.29010884	25
14_15	193.6770755	69.3035714	191.954366	10561	459.17	22.03492151	23
15_16	198.8889175	68.6864865	195.857143	9159	398.22	19.49855786	20
16_17	200.8681864	91.3862434	198.294864	8788	382.09	18.04162113	19
17_18	200.2487831	77.8533333	197.880144	8534	371.04	18.3553622	19
18_19	202.5509677	56.6285714	200.120856	7238	314.7	15.74450838	16
19_20	203.4060725	87.6756757	202.478223	6463	281	14.22409518	15
20_21	202.8459993	108.2	202.517361	5505	239.35	12.1181326	13
9_10	199.0691057	65.1818182	198.737328	9588	416.87	20.7119075	21
Grand Total	198.6227745	76.1465137	196.962601	117988	5129.92	258.1064752	

Output:-

Total_call_time_per_day(Hours)	253.1064752
minimum number of agents required per day	57



4. Night Shift Manpower Planning:

Function:-

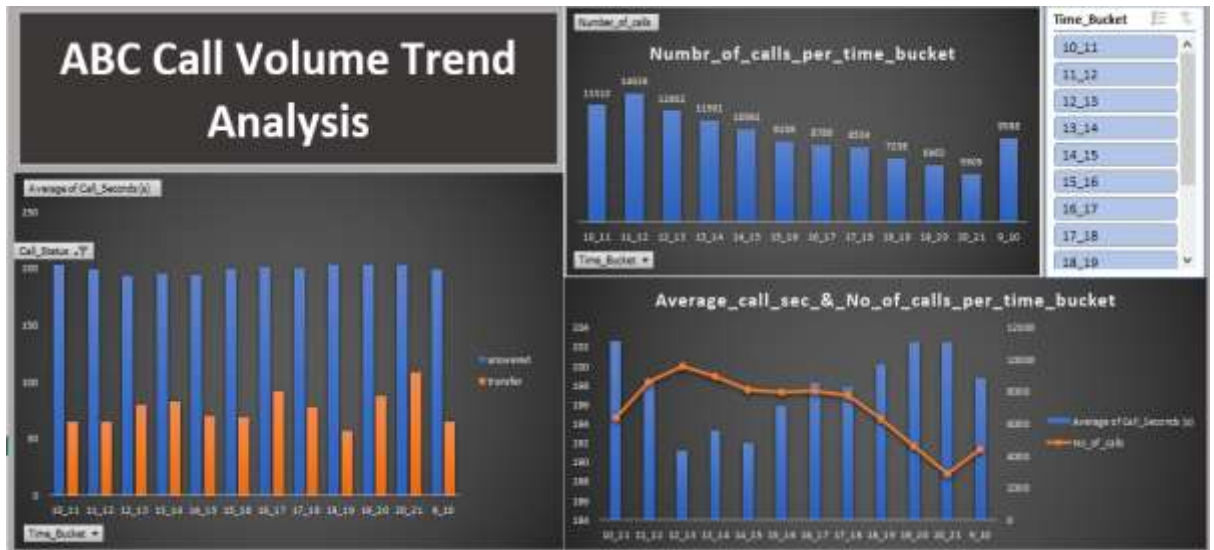
According to last question	
calls that customers make between 9 am and 9 pm	5129.92
calls at night between 9 pm and 9 am	1538.976
average duration of call(seconds)	196.9626009

Time_Bucket (+12:00)	Distribution_of_every_30_calls	Number_of_calls_during_night_per_day	Total_call_time_during_night_per_day(Hours)	minimum_number_of_agents_required
10_11		3	153.8976	8
11_12		2	102.5984	6
12_13		2	102.5984	6
13_14		1	51.2992	3
14_15		1	51.2992	3
15_16		1	51.2992	3
16_17		1	51.2992	3
17_18		3	153.8976	8
18_19		4	205.1968	11
19_20		4	205.1968	11
20_21		5	256.496	13
9_10		3	153.8976	8
Grand Total		30	1538.976	

Output:-

Total_call_time_during_night_per_day(Hours)	75.78018
minimum number of agents required per day	17

Dashboard:



Results:

1. Average Call Duration:
Most call duration is of 10_11 time bucket.
2. Call Volume Analysis:
Most calls are received between 11_12 time buckets.
3. Manpower Planning:
Minimum number of agents required per day is 57.
4. Night Shift Manpower Planning:
Minimum number of agents required during night per day is 17.