ABC CALL VOLUME TREND ANALYSIS

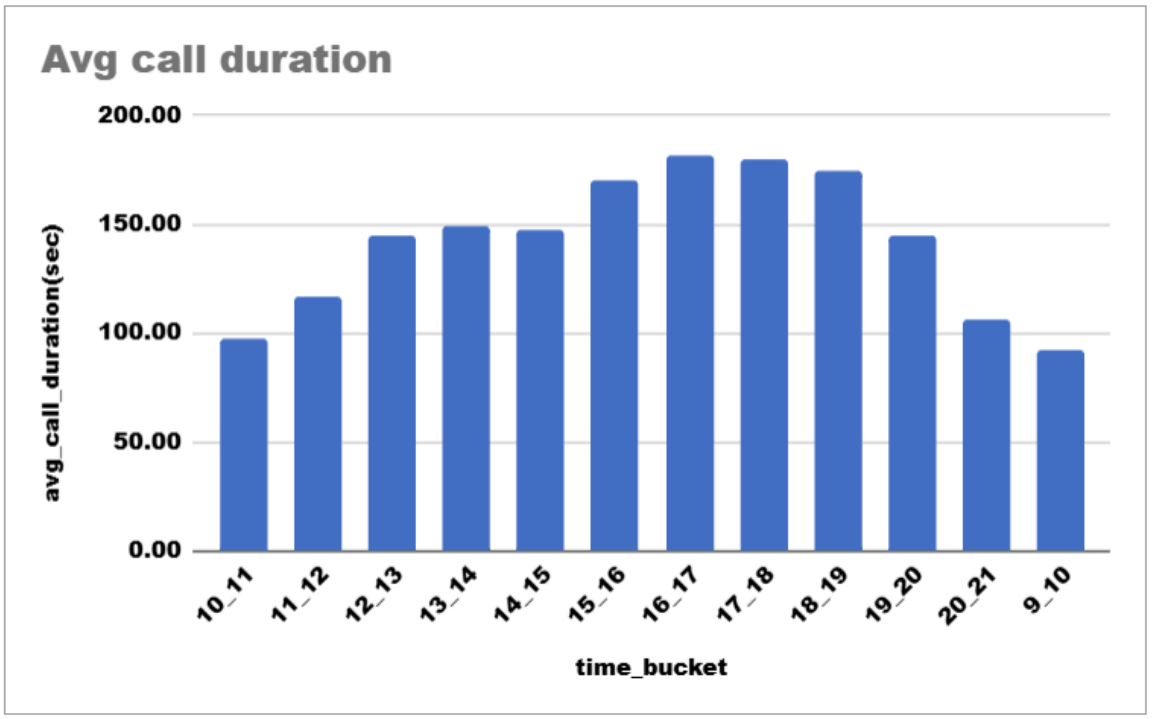
Project Description: This project focuses on Customer Experience (CX) analytics for ABC Insurance Company, specifically analyzing inbound call data spanning 23 days. The goal is to derive insights that help optimize call handling, improve customer satisfaction, and support strategic manpower planning. Key call-related metrics such as duration, volume, and abandon rate were analyzed across different time buckets.

Approach: We performed an in-depth data analysis using Microsoft Excel to clean and structure the dataset. Calculations and visualizations were developed to determine average call durations, call volumes by time bucket, and agent requirements to reduce the abandon rate. We applied time-based aggregation, pivot tables, bar charts, and manpower efficiency assumptions to generate actionable insights and forecasts.

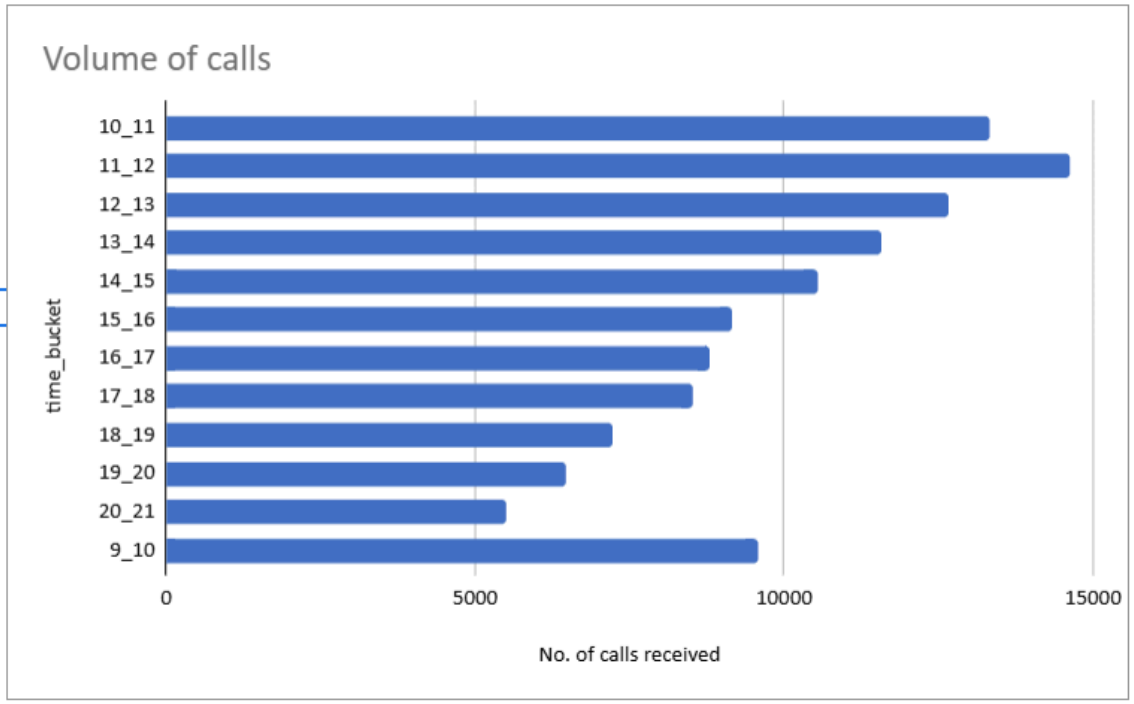
Tech Stack Used: **Microsoft Excel**: Used for time-series analysis, statistical calculations, and data visualization.

Insights:

1. **Average Call Duration:** Average duration was calculated for each time bucket (e.g., 9-10 am, 10-11 am, etc.). Higher average durations were noted in mid-morning and late afternoon slots, indicating possible complexity in customer queries during those periods.

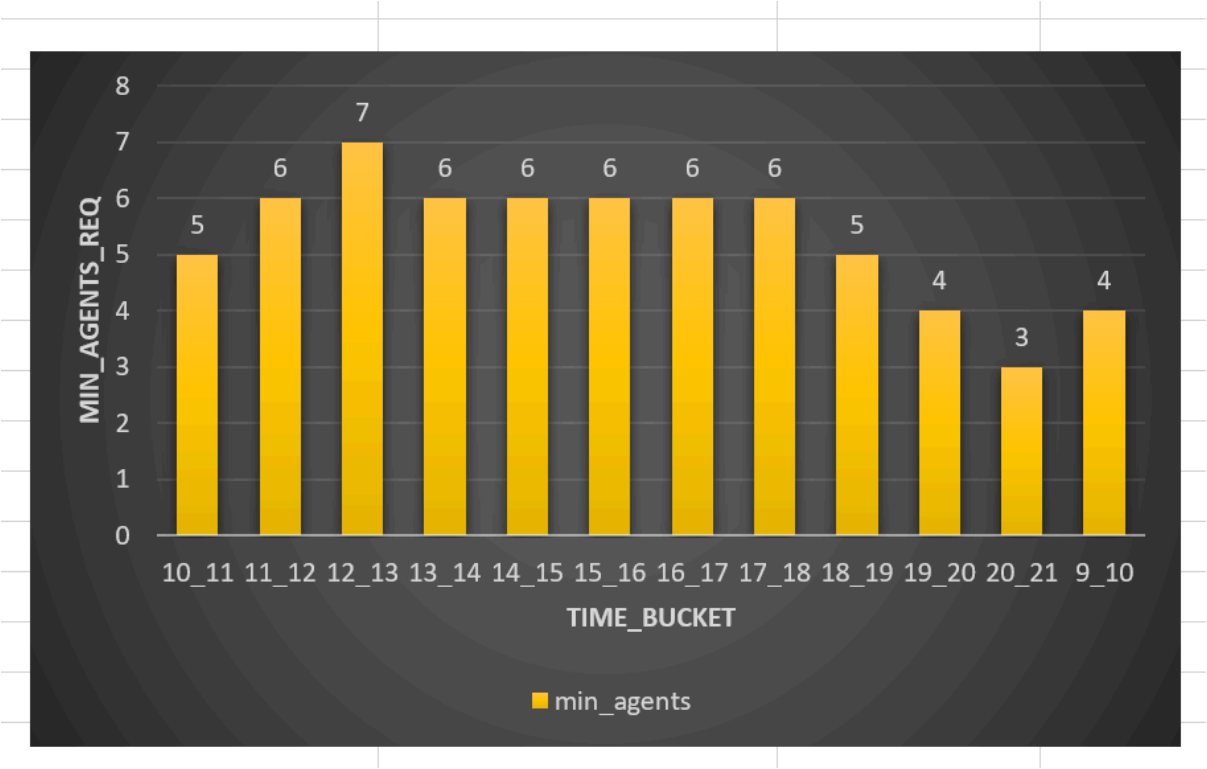


2. **Call Volume Analysis:** A time-bucketed bar chart showed peak call volumes between 10 am to 12 pm and again from 9 pm to 10 pm. These peaks suggest the need for focused manpower allocation during these hours.



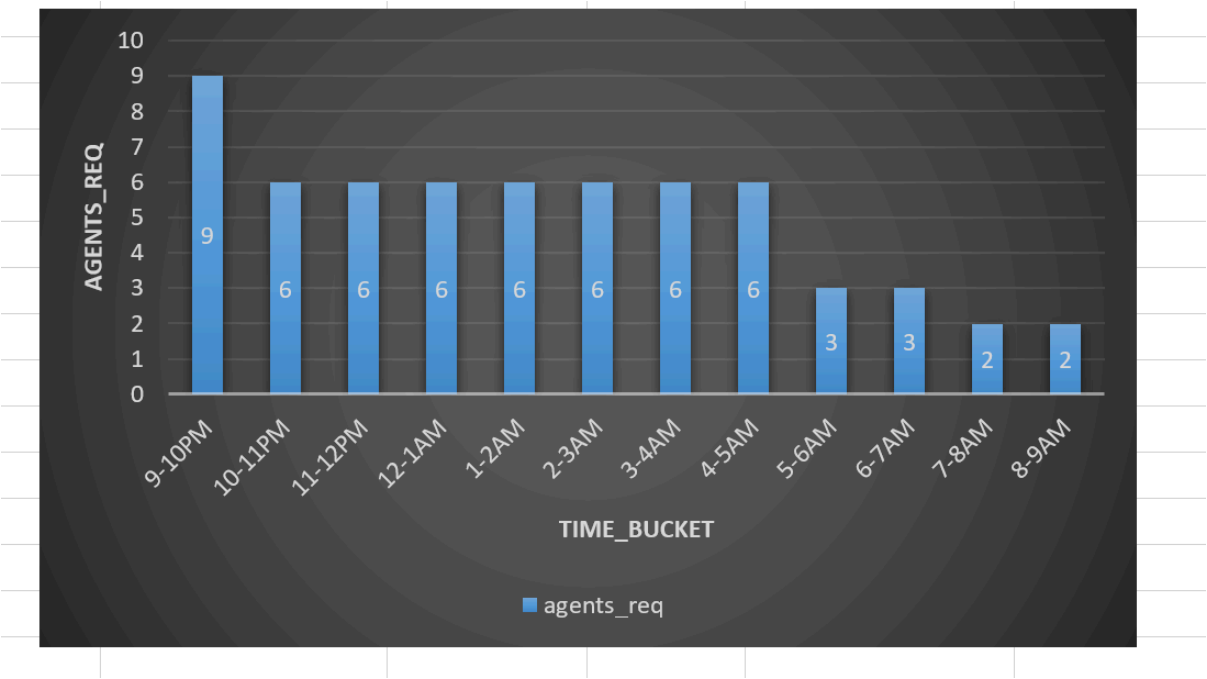
3. **Manpower Planning:** Based on the existing 30% abandon rate and target of 10%, the number of agents per time bucket was recalculated. The number of agents was proportionally scaled to ensure at least 90 out of 100 calls are answered during peak hours.

time_bucke	Sum of Call_Seconds (s)	avg_daily_duration	req_duration	min_agents
10_11	1297006	56391.56522	72503.44099	5
11_12	1708079	74264.30435	95482.67702	6
12_13	1831061	79611.34783	102357.4472	7
13_14	1728843	75167.08696	96643.39752	6
14_15	1552143	67484.47826	86765.75776	6
15_16	1556085	67655.86957	86986.11801	6
16_17	1594489	69325.6087	89132.92547	6
17_18	1533769	66685.6087	85738.63975	6
18_19	1261762	54859.21739	70533.2795	5
19_20	934437	40627.69565	52235.6087	4
20_21	583250	25358.69565	32604.03727	3
9_10	882195	38356.30435	49315.24845	4
Grand Total	**16463119**	715787.7826	920298.5776	57



4. **Night Shift Planning:** Assuming night calls are 30% of day calls, the call distribution was modeled across 9 pm to 9 am in hourly buckets. A manpower plan was proposed for night shifts to meet the same 10% maximum abandon rate, considering operational constraints.

time_bucket	%calls(assumed)	calls/night	call_sec	call_sec/day	agents_req
9-10PM	15	23085	3231900	140517.3913	9
10-11PM	10	15390	2154600	93678.26087	6
11-12PM	10	15390	2154600	93678.26087	6
12-1AM	10	15390	2154600	93678.26087	6
1-2AM	10	15390	2154600	93678.26087	6
2-3AM	10	15390	2154600	93678.26087	6
3-4AM	10	15390	2154600	93678.26087	6
4-5AM	10	15390	2154600	93678.26087	6
5-6AM	5	7695	1077300	46839.13043	3
6-7AM	5	7695	1077300	46839.13043	3
7-8AM	3	4617	646380	28103.47826	2
8-9AM	2	3078	430920	18735.65217	2
				total_agents_req	61



Results: The project resulted in a detailed hourly manpower allocation plan aimed at reducing call abandon rates to 10% during both day and night operations. The analysis also revealed high-demand periods, enabling more efficient resource scheduling. This contributes to improved customer satisfaction and operational efficiency for ABC Insurance Company's inbound support team.

Hyperlink: **Call_Volume_Trend_Analysis_.xlsx**