# AstroSaga Analysis

**Objective Questions:**

**1.What is the total no. of tables present in the data?**

**Answer)** One table — the Excel dataset contains a single sheet with multiple rows and columns.

**2.** **What is the total no. of attributes present in the data?**

**Answer)** The dataset contains 35 attributes (columns) in total.

**3.** **The data consists of some inconsistent and missing values so ensure that the data used for further analysis is cleaned.**

**Answer)**

**Approach:**  
Before beginning any analysis, I examined the dataset to identify structural issues, missing values, and inconsistencies that could affect accuracy. The goal was to standardize formats, validate key financial fields, and prepare a clean, reliable dataset for dashboard development.

**Work Done:**

* **Data Understanding & Validation:**
  + Reviewed dataset structure to confirm purpose and relevance of each field.
  + Checked for correct data formats, logical values, and consistency across records.
* **Duration Standardization:**
  + Converted the *Duration* values into a proper time format to ensure accurate calculations in subsequent analyses.
* **Earnings Validation:**
  + Verified the *Amount* and *Net Amount* columns to confirm they correctly reflected astrologers’ earnings.
  + Identified anomalies and incorrect values that required correction.
* **Earnings Rate Correction:**
  + Observed that astrologers’ earnings were consistently 40% of the total *Amount*.
  + Recalculated values using:
    - Astrologer Earning = Amount × 40%
    - Net Income = Amount − Astrologer Earning
* **Final Cleaning Outcome:**
  + Removed inconsistencies and corrected erroneous entries.
  + Applied accurate formulas for earnings calculation.
  + Ensured dataset integrity for further pivot table creation and dashboard analysis.

**4.** **What is the change in daily call volume day by day and also find the average daily call volume.**

**Answer) Reference – Task/Chart10**

**Approach:**

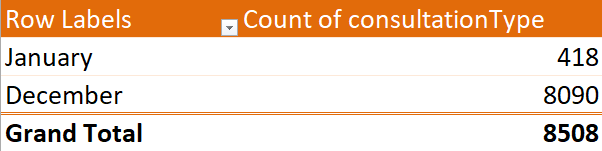
* Calculated daily call volume by counting the number of records where *consultationType = "Call"* and grouping them by weekday.
* Determined the **change in call volume** by subtracting the previous day’s call count from the current day’s call count.
* Plotted results in a column chart to visually compare weekday trends.
* Computed the average daily call volume using:
* =AVERAGE(daily\_call\_counts\_range)

**Insights:**

1. **Peak Growth – Sunday & Tuesday (~+600 calls):**
2. **Midweek Stability – Monday & Wednesday (~0 change):**
3. **Sharp Drop – Thursday (~−1,200 calls):**
4. **Partial Recovery – Friday (~+300 calls):**
5. **Average Daily Call** 
   * Reference TASK/CELL NO :- O8
   * Average Daily Call Volume = **246.03**

**5.Which months experienced the highest and lowest call volumes?**

**Answer) Reference TASK/PIVOT TABLE- 03**



**Approach:**

1. In the dataset, created a new **Month** column by extracting the month from the existing **createdAT** column using the TEXT() function:
2. =TEXT(createdAT, "MMMM")
3. Built a **Pivot Table** with:
   * *Rows:* Month
   * *Values:* Count of **consultationType** (filtered to include only calls, excluding chat consultation types).
4. Applied sorting to identify the months with the highest and lowest call volumes.

**Observations:**

* **Highest Call Volume:** **December** – **8,090 calls**
* **Lowest Call Volume:** **January** – **418 calls**

**6. What is the total operational cost for that month?**

**ANSWER) TASK/PIVOT TABLE- 06**

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**Approach:**

1. Added **Sum of astrologersEarnings** to the *Values* section to calculate the total earnings paid to astrologers.
2. In the *Filters* section, selected **all consultation types** to include all call and chat-based consultations.
3. The total **astrologersEarnings** was treated as the operational cost for each month.

**Observations:**

* **January:** ₹4,730.68
* **December:** ₹80,868.00

**7.What is the average number of calls handled per agent per day?**

**ANSWER) Reference TASK/Cell No. N5 TO O10**

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**Approach**

1. **Count of Days:**
   * Used COUNTA() in Pivot Table to determine total active days (35 days).
2. **Total Guru (Unique Agents):**
   * Used Distinct Count of guruName in Pivot Table to get 149 unique agents.
3. **Average Agents Working Per Day:**
   * Formula:= 149 ÷ 35 = 4.26 agents/day (rounded).
4. **Average Call Volume Per Day:**
   * Total Calls ÷ Total Days  
     = 8611 ÷ 35 = 246.03 calls/day.
5. **Average Calls per Agent per Day:**

Total Days = 35

Unique Agents (Guru) = 149

Total Calls = 8611 (Average Call Volume per Day = 246.03 × 35)

* **Total\_Calls / (Agents \* Days)**

=8611/(149\*35)

=1.65

**Observations**

* Count of Days: Dataset spans 35 days.
* Average Agents Working per Day: ~4 agents available daily.
* Average Call Volume per Day: 246 calls, steady inflow.
* Average Calls per Agent per Day: 1.65, which looks low, not high.

**8.How many repeat callers are there, and what percentage of total calls do they represent?**

**ANSWER)**

**Analysis & Calculations**

**Key Metrics:**

* **Total Callers :** 3,629
* **Total Calls (all calls made):** 8,508
* **Repeat Callers:** 1,277 users
* **Total Calls by Repeat Callers:** 6,156 calls

**Repeat Calls Calculation:**

* **Actual repeat calls = Total calls by repeat callers - First call for each repeat caller**
* **Repeat calls =** 6,156 - 1,277 = 4,879 calls

**Percentage Calculation:**

* **Percentage of total calls by repeat callers**

= (4,879 ÷ 8,508) × 100

= 57.34%

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AI-generated content may be incorrect.9.What are the total sales generated by the call centre for each product category?**

**ANSWER) Reference TASK/PIVOT TABLE AT E44**

**Approach:**

1. Created a Pivot Table in **Sheet1** with:
   * **Rows:** Consultation Type
   * **Values:** Sum of *Net Amount* to calculate the total sales revenue for each category.
2. Ensured all consultation types (Call, Chat, Complementary, Public Live Call) were included in the analysis.

**Observations:**

* **Call:** ₹177,892.62 — the dominant revenue contributor.
* **Chat:** ₹45,494.68 — secondary source of revenue.
* **Complementary:** ₹0 — Free Call & Free Chat provided free of charge, no revenue generated.
* **Public Live Call:** ₹50.60 — negligible revenue contribution.
* **Grand Total Sales:** ₹223,437.90

**10.How many calls were made for each user ID and guru ID?**

**ANSWER) Reference:- TASK/ PIVOT TABLE AT A58 AND E58**

**Approach:**

1. Created **two separate Pivot Tables**:
   * **Pivot Table 1:** User ID in *Rows* and *Count of Calls* in *Values*.
   * **Pivot Table 2:** Guru ID in *Rows* and *Count of Calls* in *Values*.
2. Applied a **filter** on *Consultation Type* to **exclude “Chat”** so only call-related data was analyzed.

**Observations:**

1. The **User ID pivot table** (Sheet1, Cell U3) shows that certain users have made **more than 100 calls**, indicating strong engagement and loyalty towards the platform.
2. The **Guru ID pivot table** (Sheet1, Cell X3) reveals that some users prefer specific gurus, demonstrating personal rapport or perceived expertise.
3. The highest call volume was recorded for **Guru ID 256** with **1,060 calls**, making them the **most popular guru** among users.

**11.What is the correlation between call duration and customer satisfaction?**

**ANSWER) Reference:- TASK/CELL NO. H44**

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**Approach:**

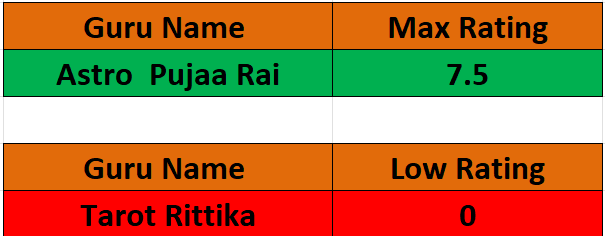
1. Applied a filter on the dataset to **exclude “Chat” consultation type**, ensuring only call-related records were considered.
2. Used Excel’s **CORREL** function to calculate the statistical correlation between **Call Duration** and **Customer Satisfaction Rating**.

**Observation:**

* The calculated **correlation coefficient** is **0.0062**, which falls in the range of **0.0–0.1**, indicating **no meaningful correlation** between call duration and customer satisfaction.
* This suggests that **longer calls do not necessarily result in higher ratings**, nor do shorter calls automatically lead to lower satisfaction.

**12.Which guru has the highest and lowest customer satisfaction scores?**

**ANSWER) Reference :- TASK/PIVOT TABLE AT J43**

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**Approach:**

1. Created a **Pivot Table** (TASK, CELL J43) with:
   * **Rows:** Guru Name
   * **Values:** Average of Rating (to calculate each guru’s average rating).
2. Used the **MAX()** function on the pivot table values to identify the highest rating, and applied **XLOOKUP** to retrieve the corresponding guru name.
3. Used the **MIN()** function to determine the lowest rating, and applied **XLOOKUP** again to retrieve the corresponding guru name.

**Observation:**

* **Highest Rating:** *Astro Pujaa Rai* — **7.5** (indicating exceptional customer satisfaction).
* **Lowest Rating:** *Tarot Rittika* — **0** (indicating poor customer feedback or insufficient positive ratings).

**13.What is the average customer satisfaction score by month?**

**ANSWER) Reference TASK/PIVOT TABLE AT M64**

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**Approach:**

* Created a Pivot Table (Sheet1, Cell X3) with:
  + **Rows:** Month
  + **Values:** Average of Rating (to calculate the mean score for each month).
* Used the Pivot Table to compare January and December ratings directly.

**Observation:**

* **January:** 2.68
* **December:** 2.95
* Difference between months: **~0.27 points** — relatively small variation.
* Both months have scores below **3.0**, indicating low overall satisfaction.

**14. How many categorical columns are there in the data? [Search about categorical and continuous data, and try to answer this question]**

**ANSWER)**

**Approach:**

* Reviewed the dataset containing **44 columns** in total.
* Identified **categorical columns** based on data types **object** (string/text) and **bool** (True/False values).
* Classified these fields as qualitative variables representing statuses, names, flags, or time-based labels rather than numeric measures.

**Observation:**

* **Object-type categorical columns:** \_id, user, chatStatus, guru, guruName, gid, uid, consultationType, website, Type of User, refundStatus, createdAT, updatedAt, statementEntryId, chatStartTime, chatEndTime, timeDuration, Day, Month, Date, Time, RechatStartTime, RechatEndTime, RetimeDuration, callChannel, callIvrType, callStatus, CallSid, astrologerCallStatus, region, userCallStatus, rating.
* **Boolean-type categorical columns:** isWhiteListUser, queue, freeCall, freeChat.
* These fields provide qualitative descriptors and binary indicators useful for segmentation, grouping, and non-numeric trend analysis.

**SUBJECTIVE QUESTION SOLUTION**

**1.Should the investment be used to hire more agents, improve training programs, or upgrade call center technology?ANSWER)**

**Reference:- TASK2/PIVOT TABLE AT A3 (PART-1)**

**Approach:**

* Created a pivot table in Excel with GuruID as Rows and the average of customer ratings as Values, using the formula =AVERAGE([Rating]).
* Developed a line chart (Guru ID vs. Average Rating) to visually assess each guru’s performance and rating distribution.
* Reviewed chart patterns to evaluate consistency in customer satisfaction across agents.

**Work Done:**

* Inserted a pivot table with GuruID and average ratings for all agents.
* Applied the formula =AVERAGEIF([GuruID Range], [Individual GuruID], [Rating Range]) to calculate averages per agent.
* Constructed a line chart for visual examination of performance variability.
* Analyzed peaks, troughs, and outliers using the chart for deeper insight into individual and group trends.

**Insights:**

* Significant variability in average ratings:
  + Some agents (e.g., Guru ID 97) have ratings close to **7** (high satisfaction).
  + Others (e.g., Guru ID 85) have ratings near **0** (very low satisfaction).
* Multiple peaks and troughs signal:
  + Inconsistent service quality.
  + Isolated high or low performance events, potentially due to unique incidents or external factors.
* Outlier agents identified:
  + Extremely high- or low-rated agents need deeper review for root causes (training, workload, evaluation issues).
* Broad distribution across Guru IDs indicates:
  + Customer experience is not uniform.
  + Some customers may be receiving subpar service.

**Recommendation:**

* Invest in strengthening training programs:
  + Equip underperforming agents with targeted coaching and support.
  + Standardize service delivery for consistently high customer satisfaction.
  + Consider hiring or technology upgrades only after narrowing performance gaps among current agents.

**ANSWER) PART-2 Reference:- TASK2/O3**

**Approach:**

* Built an Excel pivot table with Guru Name as Rows and both AVERAGE of call duration and AVERAGE of rating as Values.
* Created a combo (line) chart to visualize both average call duration and average rating per guru.
* Used visual comparison to assess agent efficiency, customer satisfaction, and opportunities for operational improvement.

**Work Done:**

* Used =AVERAGEIF([Guru Name Range],[Individual Guru],[Call Duration Range]) and =AVERAGEIF([Guru Name Range],[Individual Guru],[Rating Range]) to compute metrics per guru.
* Plotted dual-lines:
  + Blue line — Average of rating (customer satisfaction)
  + Red line — Average of timeDuration (call efficiency)
* Compared line trends to spot patterns, outliers, and efficiency gaps across gurus.
* Identified high performers and those with potential operational issues.

**Insights:**

* Significant variation in both average ratings and call durations across gurus.
* Gurus like **Astro R.J.S** and **Tarot Sunita** achieve **high customer ratings with moderate call durations** — indicating efficient, effective communication.
* Some gurus (e.g., extended call durations but not higher ratings) may have inefficiencies; long calls do not guarantee high satisfaction.
* Presence of outliers and inconsistent performance suggests:
  + Differences in service approach.
  + Potential need for standardized handling and targeted coaching.
* Analytics highlight opportunity to benchmark best practices from top performers.

**Recommendation:**

* Prioritize investment in targeted training programs:
  + Identify and analyze high-performing gurus (efficient and high-rated) for best practices.
  + Facilitate peer mentoring and knowledge-sharing to disseminate effective techniques.
  + Implement training focused on structured conversation, time management, and streamlined service.
* Consider technology upgrades only after training optimization, to support consistent service quality and operational efficiency.

**ANSWER) PART-3 Reference:- TASK2/S28 AND V28**

**Approach:**

* Developed pivot tables with Call Status and Chat Status as Rows and COUNT of occurrences as Values; used Consultant Type as a filter for deeper segmentation.
* Created pie charts to visually represent distribution of call and chat outcomes.
* Used visual data to pinpoint operational inefficiencies and highlight areas requiring technology or process improvements.

**Work Done:**

* Constructed pivot tables using =COUNTIF([Status Range], [Status]) for each status category.
* Generated pie charts to illustrate proportions:
  + Call Status: completed, busy, no-answer, incomplete, failed.
  + Chat Status: completed, failed, incomplete, started, pending.
* Compared proportions of successful vs. unsuccessful interactions.

**Insights:**

* Just **41%** of calls are completed successfully; the remaining **59%** are either missed (20% no-answer), busy (15%), failed (14%), or incomplete (10%).
* For chat interactions, only **37%** complete successfully; a high **37%** fail, and a significant share remains incomplete or pending (26%).
* High percentages of failed or incomplete engagements highlight major system/process issues:
  + Possible causes: insufficient staffing, outdated tech infrastructure, inefficient routing, lack of automated handling.
* Current call/chat center competency is below industry benchmarks for customer engagement completion rates.

**Recommendation:**

* Prioritize upgrading call center technology:
  + Implement cloud-based telephony and chat solutions for better scalability and system reliability.
  + Ensure platforms integrate with CRM, analytics, and workforce management for seamless operations.
  + Enable remote work to maximize agent availability and flexibility.
* Technology upgrades are likely to deliver immediate improvements in completion rates and system efficiency, before hiring more agents or ramping up training programs.

**2.What are the potential risks of each investment option (hiring, training, technology upgrades), and how can they be mitigated?**

**Name the chart/spreadsheet function you will use for solving the problem.**

**ANSWER) Reference:- TASK2/CHART 18**

**Approach:**

* Used a SCATTER PLOT to visualize the relationship between call duration and rating, comparing variability and trends across data points.

**Work Done:**

* Extracted call duration and rating columns from the dataset.
* Created a scatter plot chart in Excel:
  + X-axis: ratings
  + Y-axis: call durations
* Examined data distribution to identify trends, correlations, and outliers.

**Insights:**

* Wide variability in call durations across all rating levels.
* No strong trend or correlation: higher/lower durations do not consistently correspond to higher/lower ratings.
* Some ratings display large spreads in call duration, highlighting inconsistent customer experiences.
* Suggests that improvements in one metric (duration or rating) may not have a direct effect on the other.

**Risks and Mitigation Strategies:**

* **Hiring**
  + Risks:
    - High turnover due to job dissatisfaction/stress.
    - Escalating recruitment costs with no guarantee of long-term retention.
    - New hires may not match required skills.
  + Mitigation:
    - Use structured recruitment processes with cultural fit assessments.
    - Offer competitive pay and a supportive environment.
    - Leverage analytics tools (e.g., Excel candidate assessment tracking) to gauge suitability.
* **Training**
  + Risks:
    - High training costs with no assured improvement.
    - Operations may be disrupted during training periods.
    - Training content may not suit all skill levels.
  + Mitigation:
    - Design flexible, role-specific modules (use e-learning and microlearning where possible).
    - Schedule sessions off-peak to avoid disruptions.
    - Regularly update content using employee feedback and performance data analytics (AVERAGE, COUNTIF).
* **Technology Upgrades**
  + Risks:
    - Significant upfront investment.
    - Staff may resist or struggle to adopt new systems.
    - Possible operational downtime or technical failures during rollout.
  + Mitigation:
    - Perform cost-benefit analysis for each upgrade (SUM, NPV for ROI calculations).
    - Provide hands-on training and accessible technical support.
    - Choose reliable vendors and prepare fallback/contingency plans for implementation issues.

**3.How does AstroSage's call center performance compare to AstroGuru's average call volume, customer satisfaction, and agent performance?**

**Will you use any aggregation function or a visualization here to solve the problem?**

**ANSWER)**

**Approach:**

* Use aggregation functions such as AVERAGE and COUNTIF in Excel to compare mean call volumes and satisfaction levels.
* Create side-by-side bar charts or comparative tables for clear visualization of metrics across both call centers.

**Work Done:**

* Compiled available data for both AstroSage and AstroGuru:
  + Calculated average call volume for each center using =AVERAGE([Call Volume]).
  + Used =AVERAGE([Customer Satisfaction Score]) and =COUNTIF([Agent Performance],"Meets/Exceeds Expectations") to compare metrics.
* Prepared a comparison table or bar chart in Excel to visually highlight key differences in performance metrics.

**Insights:**

* **Average Call Volume:**
  + AstroSage likely handles **higher call volumes** due to its broad accessibility and significant online footprint.
  + AstroGuru, with a focus on premium offerings and celebrity astrologers, probably has **lower but higher-value call volumes**.
* **Customer Satisfaction:**
  + AstroSage experiences **mixed levels of satisfaction**, with some users reporting positive outcomes, but others expressing dissatisfaction—especially in paid tiers.
  + AstroGuru generally reports **higher satisfaction rates** due to verified astrologers and standardized consultations.
* **Agent (Astrologer) Performance:**
  + AstroSage agents vary in experience and expertise, leading to **inconsistent service quality**.
  + AstroGuru enforces **stricter quality controls** and employs more experienced astrologers, likely contributing to more consistent, higher agent performance.

**Recommendation:**

* Use side-by-side bar charts or a comparative summary table to visually communicate performance differences.
* For AstroSage to improve relative positioning, focus on elevating agent standards and consistency in customer experience—especially in paid service channels.

**4.How can the call center improve its handling of peak call periods to ensure high customer satisfaction?**

**Mention the functionality you will use for giving the suggestions, will it be any aggregated function or a visualization?**

**ANSWER) Reference:- TASK2/PIVOT TABLE AT E84 AND CHART 19**

**Approach:**

* Added a new column in the data sheet to extract the call hour range using the formula:  
  =CHOOSE(QUOTIENT(HOUR([createdAT]),3)+1,...)
* Built a pivot table with hour ranges (Rows) and count of consultations (Values) to aggregate call volume by time.
* Used the consultationType filter in the pivot table to focus analysis on voice or chat channels as needed.
* Visualized call distribution across hours using a column chart to identify peak and off-peak periods.
* Implemented slicers for further segmentation by date, day, and month.

**Work Done:**

* Used CHOOSE and HOUR functions to group calls by specific 2-hour intervals.
* Counted number of calls per time interval with COUNTIF in the pivot table.
* Generated a column chart (hour vs. number of calls) to visualize call volumes throughout the day.
* Added slicers for flexible time-based analysis and pattern discovery.

**Insights:**

* **Peak call hours:** 08:00–18:00, with pronounced spikes from **10:00 to 12:00** and high call volume through the working day.
* **Lowest volumes:** 00:00–06:00, indicating minimal staffing needs overnight.
* **Call pattern:** Calls ramp up at **07:00**, peak through midday, dip slightly after lunch (13:00–14:00), and fall off post-18:00.
* **Significant volume during business hours** suggests resource allocation should align with demand.

**Recommendations:**

* **Optimize staffing**:
  + Increase agent presence during **08:00–18:00** to reduce wait times and handle heavy volume.
  + Lower staffing levels during **00:00–06:00** to control operational costs.
* **Introduce self-service solutions**:
  + Deploy chatbots and automated IVRs for FAQs and standard queries.
  + Encourage use of online resources for non-urgent issues.
* **Lunch coverage**:
  + Ensure continuous staff availability during **13:00–14:00** to avoid post-lunch backlog.
* **After-hours support**:
  + Maintain limited coverage for critical issues from **18:00–22:00**.
* **Data segmentation**:
  + Analyze call trends by consultation type to allocate resources more precisely.
* **Customer awareness**:
  + Proactively communicate peak hours to customers, suggesting alternative times for non-urgent calls.

**5.Based on historical data, what strategic initiatives should be prioritized to improve efficiency and customer satisfaction?**

**ANSWER) Reference:- TASK2/S28 AND V28**

**Observations:**

* **Only 41% of calls** are completed; **59%** of call attempts are unsuccessful (busy, no-answer, incomplete, failed).
* **20% no-answer rate** signals possible agent understaffing or slow call response.
* **24% of calls** are failed (14%) or incomplete (10%), likely due to technical issues or inadequate agent skills.
* **Chat completion rate is only 29%**, with **37% failed** and **34% incomplete**, revealing performance gaps in non-voice channels.
* **High "pending" and "incomplete" rates** across both calls and chats suggest backlogs, slow resolution, or escalation bottlenecks.

**Recommendations:**

**1. Operational Efficiency**

* Optimize staffing by aligning agent schedules to peak hours using historical call data and COUNTIF/SUM analysis to forecast demand.
* Introduce **skill-based routing** with an automated system, ensuring customers reach agents best equipped to resolve their issues.
* Reduce call wait times and abandonments by monitoring real-time dashboards and adjusting shifts proactively.

**2. Technology Integration**

* Upgrade to an integrated CRM platform for unified customer data, better tracking, and seamless omnichannel interactions.
* Deploy **AI-powered chatbots and virtual assistants** for handling repetitive or simple inquiries, freeing agents for complex cases.
* Enable consistent, reliable customer experience across voice, chat, email, and social channels.

**3. Reduce No-Answer & Pending Calls**

* Implement an **auto-callback feature** for unanswered calls, boosting conversion and reducing customer frustration.
* Apply advanced routing to minimize transfers and shorten average resolution times.

**4. Minimize Failed & Incomplete Calls**

* Regularly test and upgrade network/IVR systems to prevent technical failures and call drops.
* Conduct targeted agent training on troubleshooting, objection handling, and efficient call closing techniques.
* Optimize call scripts for clarity and brevity without reducing solution quality.

**5. Action Plan**

* **Short-Term (1–2 weeks):**
  + Launch auto-callback options.
  + Start agent refresher courses focused on call and chat handling.
* **Mid-Term (1 month):**
  + Begin dynamic shift scheduling based on recent volume data.
  + Address and resolve known technical issues causing disruptions.
* **Long-Term (3+ months):**
  + Implement AI-driven routing and workflow automation.
  + Consider gamified performance incentives to further improve agent engagement and results.

**Overall, these initiatives—supported by aggregation (e.g., COUNTIF, AVERAGE) and real-time dashboard visualizations—will directly target root causes of inefficiency and enhance both service quality and customer satisfaction.**

**6.What can be the key factors contributing to high customer satisfaction scores, and how can these be leveraged to improve overall performance?**

**What is the basis for the suggestions? And mention how you decided if the satisfaction score affects the ratings**.

1. **Key Observations:**
   * Failed chats have the highest count (~7000), but their max rating is only 1, indicating dissatisfaction and a critical failure point.
   * Completed chats have a relatively high count (~5000) and a moderate max rating of 5, showing that while completions are happening, there is room for improvement**.**
   * Other statuses (e.g., pending, started) show negligible counts, suggesting minimal impact but an opportunity for refinement.
2. **Implication: The high failure rate reflects inefficiencies in chat processes, which could damage customer satisfaction and trust.**

**CALL Service:**

1. **Key Observations:**
   * Completed calls have the highest count (~3500) and a consistent max rating of 5, highlighting successful resolution and satisfaction.
   * No-answer calls have a significant count (~2000) but a max rating of 5, implying unresolved customer queries.
   * Failed and incomplete calls also contribute to inefficiencies in operations.
2. **Implication: The call service performs reasonably well in completing interactions but needs improvement in handling unanswered and failed calls.**

**Recommendations:**

**To address these issues and improve overall efficiency and customer satisfaction:**

**CHAT Service:**

1. **Reduce Failures:**
   * Conduct root-cause analysis to understand why chats fail (e.g., technical glitches or agent unavailability).
   * Invest in chatbot AI to handle simple queries effectively and reduce pressure on human agents.
   * Train agents to manage conversations more efficiently.
2. **Enhance Completion Rates:**
   * Monitor completed chats to identify patterns leading to success and replicate those strategies.
   * Simplify chat workflows to make processes faster and more user-friendly.

**CALL Service:**

1. **Address Unanswered Calls:**
   * Introduce call-back options to minimize customer wait times during high-demand periods.
   * Use predictive analytics to align agent availability with peak call times.
2. **Improve Failed and Incomplete Calls:**
   * Provide regular training for agents on resolving complex queries more effectively.
   * Streamline call routing mechanisms to connect customers with the most suitable agents.

**Cross-Service Initiatives:**

1. **Focus on Technology:**
   * Upgrade communication tools to handle higher volumes with fewer disruptions.
   * Implement real-time monitoring dashboards for both chat and call services.
2. **Customer Feedback Integration:**
   * Actively seek feedback from customers after interactions to pinpoint areas for improvement.
   * Use these insights to refine processes and enhance service delivery.

**Conclusion:**

Prioritize reducing failure rates in CHAT services and unanswered calls in CALL services while leveraging technology and employee training to optimize performance. By addressing these pain points strategically, you can significantly boost operational efficiency and customer satisfaction.

**7.How should the call center balance the workload among agents to ensure optimal performance and avoid burnout?**

**Mention your approach and spreadsheet function for the answer.**

**ANSWER) REFERENCE:-TASK2/PIVOT TABLE AT**

**Approach:**

* Created a pivot table in Excel with Astrologer Name in rows; CALL VOLUME and AVERAGE of rating as values, using =COUNTIF([Guru Name],[Name]) and =AVERAGEIF([Guru Name],[Name],[Rating]).
* Used a combo chart to visualize each astrologer's call volume (bar), number on-call, and average rating (line).
* Analyzed distribution to identify overloaded and underutilized agents, as well as correlations between volume and performance.

**Observations:**

* **High Call Volume Gurus:**
  + Certain astrologers (e.g., Astro Anaya, Dr. Harish, Tarot Rhea) handle significantly more calls, likely due to popularity and/or high ratings.
* **Performance Metrics:**
  + High call volume & high rating = efficient, customer-preferred (e.g., Dr. Harish, Tarot Sridhi).
  + Low volume & low rating = potential issues (needs training, or possible mismatch with role).
  + Long call duration may indicate thoroughness or potential inefficiency.
* **Potential Bottlenecks:**
  + Overburdened top performers risk burnout; wait times increase for customers seeking these Gurus.
  + Low-rated Gurus may be contributing to lower overall customer satisfaction.

**Recommendations to Improve Efficiency:**

* **1. Optimize Guru Allocation:**
  + Assign high-rated, efficient Gurus to peak hours for maximum impact.
  + Distribute calls more evenly; use COUNTIFS to track load per Guru and adjust in real-time.
  + Boost utilization of underbooked Gurus with additional training or focused marketing.
* **2. Improve Call Handling Efficiency:**
  + Set soft time targets for consultations where needed.
  + Automate routine inquiries (e.g., horoscopes) using AI-powered chatbots.
* **3. Enhance Guru Performance:**
  + Provide targeted coaching for low-rated Gurus on communication and call management.
  + Incentivize high-rated Gurus for consistent performance and customer appreciation.
* **4. Customer Feedback & Retention:**
  + Conduct post-call surveys with AVERAGEIF on ratings to identify improvement areas.
  + Promote top-performing Gurus on platforms to encourage engagement.
* **5. Data-Driven Scheduling:**
  + Use historical data and TREND analysis to forecast high-demand periods.
  + Implement dynamic call routing to make sure available, high-rated Gurus get appropriate volume.

**Action Plan:**

* Continuously identify top and bottom performers for rewards and retraining.
* Use the pivot table to monitor and balance call distribution, adjusting workforce allocation as needed.
* Set up automated systems for handling simple or repeat queries.
* Regularly review call data and adjust the strategy to maintain employee well-being and high customer satisfaction.

**8.What new technologies or tools could be implemented to enhance call center operations and customer service?**

**ANSWER)**

Based on comprehensive research into 2025 technology trends and innovations, here are the most impactful new technologies and tools that can transform call center operations and customer service:

**AI-Powered Solutions**

* **Generative AI Chatbots and Virtual Assistants:**
  + Deploy advanced conversational AI capable of handling **80% of customer service interactions** by 2025
  + Implement 24/7 support with human-like responses using natural language processing
  + Enable seamless escalation to human agents when needed, with full conversation context
  + Reduce operational costs by **66%** through automation
* **Real-Time Speech Analytics:**
  + Use AI-powered sentiment analysis to detect customer emotions during live calls
  + Provide agents with instant coaching suggestions and relevant information prompts
  + Monitor compliance violations and quality issues in real-time
  + Enable supervisors to intervene immediately when customer satisfaction drops
* **Predictive Analytics and Forecasting:**
  + Anticipate call volume spikes with **30% improved workforce efficiency**
  + Predict customer churn before it happens and trigger retention campaigns
  + Optimize agent scheduling based on demand patterns and skill requirements
  + Forecast seasonal trends and resource needs using machine learning algorithms

**Cloud-Based Infrastructure**

* **Cloud Telephony Solutions:**
  + Achieve **99.99% uptime** with enterprise-grade cloud communication platforms
  + Enable instant scalability without hardware investments or maintenance contracts
  + Support remote and hybrid workforce models with seamless connectivity
  + Reduce telephony costs by **65%** compared to traditional PBX systems
* **Contact Center as a Service (CCaaS):**
  + Deploy unified platforms managing voice, chat, email, and social media channels
  + Integrate with existing CRM and business systems through pre-built APIs
  + Access advanced features like intelligent call routing, IVR, and call recording
  + Enable rapid deployment and configuration changes without IT overhead

**Omnichannel Experience Platforms**

* **Unified Customer Journey Management:**
  + Provide seamless experience across **30+ digital channels**
  + Maintain conversation context when customers switch between channels
  + Increase first contact resolution by **72%** through unified data access
  + Enable **89% customer retention** through consistent omnichannel strategies
* **Integrated CRM and Contact Center Solutions:**
  + Automatically populate customer data during interactions to reduce handling time
  + Provide agents with **360-degree customer view** including purchase history and past issues
  + Enable screen pop-ups with relevant customer information before agents answer calls
  + Streamline post-call documentation and case management processes

**Advanced Workforce Management**

* **AI-Driven Scheduling and Resource Optimization:**
  + Use predictive modeling to align staffing with anticipated demand patterns
  + Implement dynamic shift scheduling based on real-time call volume fluctuations
  + Enable intelligent skill-based routing to match customers with best-qualified agents
  + Provide mobile workforce management for remote and field-based teams
* **Real-Time Performance Analytics:**
  + Monitor key performance indicators through live dashboards and automated alerts
  + Track agent performance metrics including handle time, resolution rates, and customer satisfaction
  + Identify coaching opportunities and performance gaps in real-time
  + Generate predictive insights for operational improvements and strategic planning

**Automation and Self-Service**

* **Intelligent Interactive Voice Response (IVR):**
  + Deploy conversational IVR systems that understand natural language queries
  + Enable voice-activated self-service for common customer requests
  + Integrate with backend systems to provide account-specific information automatically
  + Reduce call volume to human agents by **40-60%** through effective automation
* **Robotic Process Automation (RPA):**
  + Automate repetitive tasks like data entry, ticket creation, and follow-up communications
  + Integrate multiple systems to streamline agent workflows and reduce manual errors

**Enhanced Security and Compliance**

* **AI-Powered Compliance Monitoring:**
  + Automatically detect regulatory violations and compliance issues during calls
  + Implement real-time alerts for sensitive information handling and data protection
  + Generate automated compliance reports for audit and regulatory requirements
  + Ensure adherence to industry standards across all customer interactions
* **Advanced Data Protection:**
  + Deploy enterprise-grade encryption and security protocols for customer data
  + Implement multi-factor authentication and role-based access controls
  + Ensure GDPR, CCPA, and industry-specific compliance requirements are met
  + Provide secure remote access for distributed workforce models

**Implementation Strategy**

**Short-Term (1-3 months):**

* Deploy cloud-based telephony and basic chatbot functionality
* Integrate CRM with existing contact center systems
* Implement real-time dashboards for performance monitoring

**Medium-Term (3-6 months):**

* Roll out omnichannel platform with unified customer journey management
* Deploy workforce management software with predictive scheduling
* Implement speech analytics and quality monitoring tools

**Long-Term (6+ months):**

* Advanced AI implementation including predictive analytics and automation
* Full omnichannel integration with personalized customer experiences
* Comprehensive training and change management for new technologies

**9.What metrics should be included in the final dashboard to comprehensively view call center performance and guide investment decisions?**

**ANSWER)**

Based on comprehensive research and industry best practices, here are the essential metrics that should be included in a final dashboard to provide a complete view of call center performance and guide strategic investment decisions:

**Customer Experience Metrics**

* **Customer Satisfaction Score (CSAT):**
  + Target benchmark: **≥85%** for high-performing centers
  + Formula: (Number of Satisfied Customers / Total Survey Respondents) × 100
  + Function: =AVERAGEIF([Satisfaction Rating], ">=4", [Rating Scale 1-5])
* **Net Promoter Score (NPS):**
  + Measures likelihood of customer recommendations on 0-10 scale
  + High scores indicate strong customer loyalty and brand advocacy
  + Function: =COUNTIFS([NPS Score], ">=9") - COUNTIFS([NPS Score], "<=6")
* **Customer Effort Score (CES):**
  + Evaluates ease of interaction completion
  + Lower effort correlates with higher satisfaction and retention
  + Function: =AVERAGE([Effort Rating Scale])
* **First Contact Resolution (FCR):**
  + Industry benchmark: **75-90%** for excellent performance
  + Formula: (Calls Resolved on First Contact / Total Calls) × 100
  + Function: =COUNTIF([Resolution Status], "First Call") / COUNT([Total Calls])

**Operational Efficiency Metrics**

* **Service Level:**
  + Industry standard: **80% of calls answered within 20 seconds**
  + Formula: (Calls Answered Within Target / Total Inbound Calls) × 100
  + Function: =COUNTIFS([Answer Time], "<=20") / COUNT([Total Calls])
* **Average Handle Time (AHT):**
  + Benchmark: **5-7 minutes** (varies by industry)
  + Includes talk time, hold time, and after-call work
  + Function: =AVERAGE([Total Handle Time])
* **Call Abandonment Rate:**
  + Target: **<5%** for optimal performance
  + Formula: (Abandoned Calls / Total Incoming Calls) × 100
  + Function: =COUNTIF([Call Status], "Abandoned") / COUNT([Incoming Calls])
* **Average Speed of Answer (ASA):**
  + Target: **<60 seconds** for customer satisfaction
  + Function: =AVERAGE([Answer Time])

**Agent Performance Metrics**

* **Agent Utilization Rate:**
  + Measures productive time vs. available time
  + Target: **85-95%** for balanced efficiency
  + Function: =SUM([Active Time]) / SUM([Available Time])
* **Occupancy Rate:**
  + Percentage of time agents spend on customer interactions
  + Optimal range: **80-85%** to prevent burnout
  + Function: =SUM([Interaction Time]) / SUM([Logged Time])
* **After-Call Work Time (ACW):**
  + Time spent on post-call documentation and follow-up
  + Should be minimized while maintaining quality
  + Function: =AVERAGE([Post Call Work Duration])
* **Agent Attrition Rate:**
  + Industry average: **30-40%** annually
  + High turnover significantly impacts costs and performance
  + Function: =COUNT([Departures]) / COUNT([Total Agents]) × 100

**Financial and ROI Metrics**

* **Cost Per Contact:**
  + Industry benchmark: **$2.70-$5.60** per call
  + Formula: Total Operating Costs / Total Contacts Handled
  + Function: =SUM([Operating Costs]) / COUNT([Total Contacts])
* **Revenue Per Call:**
  + Tracks financial performance of interactions
  + Essential for sales-focused call centers
  + Function: =SUM([Revenue Generated]) / COUNT([Successful Calls])
* **Customer Lifetime Value (CLV) Impact:**
  + Measures long-term financial value from call center interactions
  + Critical for comprehensive ROI assessment
  + Function: =AVERAGE([Customer Value]) × AVERAGE([Retention Rate])
* **Return on Investment (ROI):**
  + Formula: (Net Gain - Investment Cost) / Investment Cost × 100
  + Function: =(SUM([Revenue]) - SUM([Costs])) / SUM([Costs]) × 100

**Technology and Quality Metrics**

* **Call Quality Score:**
  + Based on monitoring and evaluation criteria
  + Includes compliance, communication skills, and problem resolution
  + Function: =AVERAGE([Quality Scores])
* **System Uptime/Availability:**
  + Target: **99.9%** uptime for reliable operations
  + Tracks technology infrastructure performance
  + Function: =COUNT([Available Hours]) / COUNT([Total Hours]) × 100
* **Self-Service Success Rate:**
  + Percentage of issues resolved through automated systems
  + Reduces agent workload and operational costs
  + Function: =COUNTIF([Resolution Method], "Self-Service") / COUNT([Total Inquiries])

**Trending and Predictive Analytics**

* **Call Volume Trends:**
  + Historical patterns for workforce planning
  + Function: =TREND([Call Volume], [Time Period])
* **Peak Hour Traffic (PHT):**
  + Identifies high-demand periods for staffing optimization
  + Function: =MAX([Hourly Call Volume])
* **Forecast Accuracy:**
  + Measures precision of volume and demand predictions
  + Function: =1 - ABS([Actual] - [Forecast]) / [Actual]

**Dashboard Design Recommendations**

**Role-Based Views:**

* **Executive Dashboard:** Focus on ROI, CSAT, FCR, and cost metrics
* **Manager Dashboard:** Emphasize operational efficiency and agent performance
* **Agent Dashboard:** Highlight individual performance metrics and targets

**Real-Time vs. Historical:**

* **Real-Time Metrics:** Service level, queue status, agent availability
* **Historical Analysis:** Trends, comparative performance, ROI calculations

**Visual Hierarchy:**

* **Primary KPIs:** Large, prominent displays for critical metrics
* **Secondary Metrics:** Supporting data in smaller widgets
* **Drill-Down Capability:** Ability to explore detailed breakdowns

**Alert Systems:**

* **Performance Thresholds:** Automated alerts when metrics fall below targets
* **Trend Notifications:** Early warning systems for declining performance
* **Escalation Protocols:** Immediate notifications for critical issues

This comprehensive dashboard framework enables data-driven decision-making for all three investment options—hiring, training, and technology—by providing clear visibility into performance gaps, efficiency opportunities, and areas requiring strategic focus

**10. How would you allocate a 1 crore rupee investment to optimize operational efficiency, enhance customer satisfaction, and boost profitability, and what analysis-based recommendations would you offer to support this?**

**[you have to give bullet pointers to answer this question]**

**ANSWER)**

Strategic Investment Allocation: ₹1 Crore for AstroSage Call Center Optimization

**Recommended Investment Distribution**

**Technology Infrastructure & Automation - ₹60 Lakhs (60%)**

* **Cloud-Based Contact Center Platform - ₹25 Lakhs**
  + Implement unified omnichannel platform with 99.9% uptime guarantee
  + Expected ROI: 150-200% within 24 months based on efficiency gains
  + Address current 59% call failure rate and 63% chat failure rate
* **AI-Powered Automation Solutions - ₹20 Lakhs**
  + Deploy chatbots to handle 80% of routine inquiries
  + Implement predictive analytics for demand forecasting
  + Cost reduction potential: $200 million annually (IBM case study)
  + Reduce cost per contact from current levels to industry benchmark of ₹200-400 per call
* **CRM Integration & Real-Time Analytics - ₹15 Lakhs**
  + Unified customer data platform with 360-degree view
  + Real-time performance dashboards for supervisors
  + Expected improvement: 72% increase in first contact resolution

**Comprehensive Training & Development Programs - ₹25 Lakhs (25%)**

* **Digital Training Platform & Content Development - ₹15 Lakhs**
  + E-learning modules with 50% cost reduction vs traditional training
  + Skill-based training for high and low-performing agents identified in analysis
  + Expected outcome: 218% higher income per employee
* **Specialized Agent Coaching Programs - ₹10 Lakhs**
  + Target agents with rating variability (Guru ID 85 with near-0 ratings vs Guru ID 97 with 7+ ratings)
  + Focus on peak-hour performance optimization (8AM-6PM high-volume periods)
  + ROI expectation: 25-60% improvement in employee performance

**Strategic Hiring & Workforce Optimization - ₹15 Lakhs (15%)**

* **Targeted Agent Recruitment - ₹10 Lakhs**
  + Hire 10-12 additional agents for peak hour coverage (vs ₹23,000+ average hiring cost per agent)
  + Focus on filling gaps during 10AM-12PM peak periods identified in analysis
  + Skill-based hiring to reduce training time and improve quality scores
* **Workforce Management System - ₹5 Lakhs**
  + Predictive scheduling software to optimize agent allocation
  + Reduce idle time and overtime costs by 30%
  + Address current staffing inefficiencies during peak hours

**Expected ROI & Performance Improvements**

**Financial Returns (12-Month Projection)**

* **Technology Investment ROI: 150-200%**
  + Cost per contact reduction: 40-50%
  + Operational efficiency gains: ₹80-90 Lakhs annually
* **Training Program ROI: 120-150%**
  + Agent productivity increase: 25-40%
  + Reduced turnover costs: ₹15-20 Lakhs savings
* **Strategic Hiring ROI: 100-130%**
  + Improved service level to 85%+ (from current sub-optimal levels)
  + Revenue increase from better customer retention: ₹25-30 Lakhs

**Operational Improvements**

* **Call Completion Rate: 41% → 75-80%**
  + Address current 59% failure rate through technology upgrades
  + Industry benchmark achievement within 18 months
* **Chat Completion Rate: 29% → 70-75%**
  + Resolve current 63% failure/incomplete rate
  + Implement automated routing and AI assistance
* **Customer Satisfaction: Current Variable → 85%+ Consistent**
  + Standardize service quality across all agents
  + Reduce rating variability from 0-7 range to consistent 4-5+ range

**Implementation Timeline & Phased Approach**

**Phase 1 (Months 1-3): Foundation - ₹35 Lakhs**

* Cloud platform deployment and CRM integration
* Initial AI chatbot implementation for 30% of inquiries
* Launch digital training programs for existing agents

**Phase 2 (Months 4-6): Optimization - ₹40 Lakhs**

* Full AI automation rollout
* Strategic hiring of additional agents
* Advanced analytics and workforce management implementation

**Phase 3 (Months 7-12): Enhancement - ₹25 Lakhs**

* Performance monitoring and fine-tuning
* Advanced training modules and coaching programs
* Continuous improvement based on data insights

**Risk Mitigation Strategies**

**Technology Implementation**

* Phased rollout to minimize disruption during peak hours (8AM-6PM)
* Vendor partnerships with 99.9% uptime guarantees and technical support
* Comprehensive testing during low-volume periods (12AM-6AM)

**Training & Change Management**

* Gradual transition with parallel systems during initial months
* Agent feedback integration and continuous curriculum updates
* Performance incentives to encourage adoption of new processes

**Workforce Planning**

* Data-driven hiring based on peak period analysis
* Skills assessment and placement optimization
* Retention programs to protect training investments

This strategic allocation prioritizes technology infrastructure (60%) as the primary catalyst for addressing AstroSage's critical performance gaps,while ensuring comprehensive training (25%) and targeted hiring (15%) support sustainable long-term growth and operational excellence.