**Analysis of AstroSage Data**- By Himanshu Goswami

**Objective Questions**:

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

Total no. of table is 1, only one sheet is provided.

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

Raw data: 35 attributes

After cleaning: 27 attributes

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

Name of some Columns were changed for easy readability in charts:

1. guruName: guru name
2. consultationType: consultation type
3. createdAT: created date and time
4. chatStatus: chat status
5. chatSeconds: chat (in seconds)
6. callStatus = call status
7. astrologerCallStatus: astrologer call status
8. userCallStatus: user call status
9. astrologerOnCallDuration: astrologer on call duration
10. userOnCallDuration: user on call duration

Furthermore, few columns were deleted:

1. chatStartTime
2. timeDuration
3. \_v = version
4. Free call
5. Free chat
6. Call channel
7. callIvrType
8. isWhiteListUser
9. Queue
10. updatedAt
11. updatedAt
12. chatEndTime

New columns included:

1. created date: =DATEVALUE(G2), then format changed to DD-MM-YYYY
2. created month: =MONTH(H2), then format changed to month
3. created time: =TIMEVALUE(G2), then format changed to time

Find and replace:

Used the **Find and Replace** feature in Excel to standardize certain names in the **‘guru name’** column. This was necessary because some astrologer’s names appeared in multiple formats due to inconsistencies in spacing, punctuation, or spelling — even though they shared the same Guru ID. To maintain data consistency, I replaced the variations with a single, correct version based on their corresponding Guru IDs:

1. Replaced “Astro Aacharya Dev” and “Acharya Dev” with “Astro Acharya Dev “ as the Guru ID was 196.
2. Replaced “Tarot Chanchal singh” and “Tarot Chanchal” with “Tarot Chanchal Singh” as the guru id 101.
3. Replaced “Dr Balkrisna”, “Dr. Balkrisna” and “Astro Dr Balkrisna” with “Astro Dr Balkrisna” as guru ID for all three was 19.
4. Replaced “Astro Jha Guruji” and “Astro Jha” with “Astro Jha Guruji” as the Guru ID was 174.
5. Replaced “Astro Dr Shrey” and “Dr. Shrey” with “Astro Dr Shrey” as the guru ID was 195.

Handling Missing Values:

These columns in the dataset contained blank or missing entries: **chat status, call status, astrologer call status, user call status, chat (in seconds), user on call duration, astrologer on call duration, amount, astrologersEarnings, netAmount, region**

To address these gaps, I used Excel’s "Go To Special" → Blanks feature. This allowed me to quickly locate and handle all empty cells within these columns. Depending on the context of the field, the blanks were filled with appropriate default values.

This step helped ensure the dataset was clean, consistent, and ready for accurate pivoting and reporting.

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

* Average daily call volume: 246.029
* Day-by-Day Change in Call Volume

The variation in call volume on a daily basis is captured in the chart titled “Change in Daily Call Volume”. This column reflects how the number of calls fluctuates from one day to the next, helping identify peak days or sudden drops in call activity.

To provide a more intuitive understanding, this information is also visualized through a line chart, which clearly illustrates the daily trends in call volume over time. This visual representation allows stakeholders to quickly spot patterns and anomalies in call traffic across different dates.

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

|  |  |
| --- | --- |
| *created month* | COUNTA of CallSid |
| Deceber | 7947 |
| January | 418 |
| **Grand Total** | **8365** |

The month with the highest call volume was **December**, with a total of 7,947 calls recorded. In contrast, **January** saw the lowest call volume, with only 418 calls. This indicates a significant drop in call activity following the peak month.

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

|  |  |
| --- | --- |
| *created month* | SUM of astrologersEarnings |
| December | 93786.16295 |
| January | 5360.408 |
| **Grand Total** | **99146.57095** |

In December, which had the highest call volume, the total operational cost — represented by astrologers’ earnings — amounted to **₹93,786.16**. This was the highest among all months and reflects the increased workload and activity during that period.

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

|  |  |
| --- | --- |
| Average number of call per day | 246.0294118 |
| Number of agents | 131 |
| average number of calls handled per agent per day | 1.878087113 |

On average, the call center handled approximately 246 calls per day. With a total of 131 agents, this results in an average of about **1.88** calls per agent per day.

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

Repeat callers count : 5062

Formula used: =COUNTIF(H47:H10390,"Repeat Caller")

Pie chart is used to calculate percentage of repeat callers: 48.9%

1. **What are the total sales generated by the call centre for each product category?**

|  |  |
| --- | --- |
| *website* | SUM of netAmount |
| app | 125267.382 |
| dashboard | 0 |
| gurucool | 88719.93333 |
| **Grand Total** | **213987.3153** |

The total sales generated by the call center varied across different platforms. The **App platform contributed the highest revenue**, generating approximately ₹1,25,267.38, **followed by the Gurucool platfor**m with around ₹88,719.93. In contrast, the **Dashboard platform recorded no sales** during the analyzed period. Overall, the call center achieved a total sales figure of ₹2,13,987.32, with the majority of transactions taking place through the App.

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

This has been answered in the “Tasks” sheet. The tables are long.

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

The correlation between call duration and customer satisfaction is **0.05840372571**.

Formula used: =CORREL(data!Q2:Q28028,data!V2:V28028)

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

|  |  |
| --- | --- |
| Lowest |  |
| *guru name* | AVERAGE of rating |
| Tarot Rittika | 0 |

|  |  |
| --- | --- |
| Highest |  |
| *guru name* | AVERAGE of rating |
| Tarot Mystical | 7.5 |

Based on the average customer satisfaction scores, Tarot Mystical received the highest rating with an impressive average of 7.5, indicating strong positive feedback from users. On the other hand, Tarot Rittika had the lowest satisfaction score, with an average rating of 0, suggesting poor or no customer feedback during the analyzed period.

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

|  |  |
| --- | --- |
| *created month* | AVERAGE of rating |
| December | 2.949637572 |
| January | 2.676413255 |
| **Grand Total** | **2.93463446** |

The **average customer satisfaction score** varied slightly across the months. In **December**, the average rating was approximately **2.95**, while in **January**, it slightly declined to **2.68**. Overall, the combined average satisfaction score across both months was around **2.93**, indicating moderate satisfaction levels during the analyzed period.

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

Categorical data refers to columns that represent labels, categories, or classifications. These columns are typically used for grouping, filtering, or segmentation rather than numerical calculations. Based on the dataset, the following columns are identified as categorical:

•\_id

•uid

•gid

•guru name

•consultationType

•website

•created date and time

•created date

•created month

•created time

•chat status

•call status

•astrologer call status

•user call status

•region

•CallSid

•refundStatus

•statementEntryId

•user

•guru

The remaining columns such as **durations**, **amount**, and **rating** are considered continuous as they contain numerical values used in calculations.

**Subjective Question:**

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

**Option 1: Investment in Hiring More Agents**

**Approach:**

To evaluate the need for more agents, an analysis of the average customer satisfaction rating for each unique guru was conducted. The performance data was visualized using a line chart to compare service quality across the team.

* **Reference:**

**Observation:**

* **Wide Rating Variability:** The chart reveals a significant and erratic fluctuation in average ratings among gurus. Ratings range from a high of over 7 (Astro Prashant, Tarot Diva) to a low near 0 (Tarot Srishti), indicating a massive disparity in the quality of service provided.
* **Inconsistent Customer Experience:** This wide range demonstrates a lack of performance consistency. Customers receive vastly different levels of service depending on the agent they connect with, which is detrimental to the brand's reputation.
* **Potential Outliers:** The core issue highlighted by the data is not a shortage of personnel but a significant gap in service quality. While there are a few high-performing agents, a large number are delivering a sub-standard experience (average ratings between 2 and 4).

**Conclusion & Recommendation:** The data clearly indicates that the primary problem is the inconsistent quality of service, not an insufficient number of agents. Hiring more agents would not address the root cause of poor customer satisfaction and would likely only add more variability to the team's performance. The focus should be on closing the skill gap between the top and bottom performers.

**Option 2: Investment in Improving Training Programs**

**Approach:**

To evaluate the need for improved training, a comparative analysis was performed using two key metrics: average call duration and average customer satisfaction rating for each guru. By examining both charts, we can identify correlations between agent efficiency (call time) and agent effectiveness (customer rating).

* **Reference:**

**Observation:**

* **Negative Correlation Identified:** A visual comparison of the two graphs reveals a strong negative correlation between call duration and customer rating. Gurus with the highest average call durations are consistently among the lower-rated performers.
* **Efficiency Correlates with Success:** Conversely, the highest-performing gurus are also highly efficient. Example: "Astro Prashant" and "Tarot Diva" both have the highest average ratings (above 7.0) while maintaining very low average call durations (well under 50).
* **Training Gaps Indicated:** This pattern strongly suggests that the agents taking the longest time are not providing more thorough service, but are instead struggling to resolve customer issues. This inefficiency leads to customer frustration and lower ratings. It points directly to gaps in product knowledge, problem-solving skills, and process adherence.

**Conclusion & Recommendation:** The data provides clear evidence that inefficiency is directly linked to poor customer satisfaction. The wide gap in both call duration and ratings across the team is a classic indicator that skills and service quality are not standardized. An investment in a comprehensive training program is the most direct way to address this. By equipping underperforming agents with the skills of their successful peers, the organization can simultaneously reduce call times and increase customer satisfaction. Therefore, investing in improved training programs is **highly recommended** as the primary strategic focus.

**Option 3: Investment in Upgrading Call Center Technology**

**Approach:**

To assess the state of the call center's technology, the final status distributions for both the call and chat channels were analyzed. The provided pie charts were compared to determine the reliability and effectiveness of the current technological infrastructure.

**Reference:**

**Observation:**

* **Poor Call Channel Performance:** The "Call Status" chart shows that only **41%** of calls are successfully "completed." A majority of interactions (**59%**) fail to reach resolution due to issues like "no-answer" (21%), "busy" (15%), "failed" (12%), and "incomplete" (11%). This indicates an unreliable call system.
* **Critical Failure in Chat Channel:** The "Chat Status" chart reveals an even more severe problem. The success rate for chats is extremely low, with only 20% being "completed." A staggering 80% of chat sessions end without a successful resolution, getting stuck in states like "call used" (30%), "failed" (26%), or "incomplete" (24%). This channel is fundamentally broken.
* **Widespread Technology Issues:** With failure and non-completion rates of 59% for calls and 80% for chats, it is clear the organization is facing a widespread technological breakdown. The tools provided to agents are inadequate and are the primary bottleneck preventing successful customer interactions.

**Conclusion & Recommendation:** The data demonstrates that the existing technological infrastructure is not fit for purposes. It is failing most of the time across both channels, making it impossible for agents to provide consistent or effective service. Investing in training or hiring more staff would be a waste of resources when the basic tools for communication are this unreliable.

Therefore, upgrading the call center technology is the most critical and urgent strategic priority. Without functional and reliable communication channels, no other initiative can succeed.

**Final Recommendation**

Based on a thorough analysis of agent performance, call/chat metrics, and system reliability, the following strategic investment plan is recommended. The initiatives are prioritized to ensure foundational issues are addressed first, maximizing the return on investment and creating sustainable long-term improvement.

**Priority 1 (Urgent): Upgrade Call Centre Technology**

**Justification**: The most critical issue facing the operation is the catastrophic failure of its core technology. The data shows that the call channel has a 59% non-completion rate, while the chat channel has an 80% non-completion rate.

**Conclusion**: The current technology infrastructure is the primary bottleneck and the root cause of poor customer experience. No amount of training or additional staff can be effective if the fundamental tools required to communicate with customers are non-functional. Before any other issue can be addressed, agents must be equipped with a reliable platform.

**Action**: Immediately allocate investment to overhaul or replace the current call and chat systems to ensure they are stable, reliable, and capable of handling the required volume.

**Priority 2 (High-Impact): Improve Training Programs**

**Justification**: Once the technology is stable, the next most significant issue is the wide disparity in agent performance. The analysis revealed a strong negative correlation between call duration and customer ratings—agents who are inefficient also deliver lower-quality service. Furthermore, average ratings fluctuate wildly between different agents.

**Conclusion**: This inconsistency points directly to a skills and knowledge gap. A comprehensive training program, modeled on the efficient methods of top-performing agents, will standardize service quality, reduce call times, and significantly increase average customer satisfaction scores.

**Action**: After the new technology is implemented, launch a mandatory, data-driven training program focused on product knowledge, efficient problem-solving, and best-practice communication protocols.

**Priority 3 (Future Consideration): Hire More Agents**

**Justification**: The analysis consistently showed that the primary issues are technological failure and inconsistent agent quality, not a lack of personnel.

**Conclusion**: Expanding the team before fixing the underlying technology and skill-gap issues would only add more agents to a broken system, exacerbating problems and increasing costs without improving results.

**Action**: Defer any decisions on hiring new agents until after the technology has been upgraded (Priority 1) and the existing team has been retrained (Priority 2). Once the operation is stable and optimized, a new analysis should be conducted to determine if additional staff is truly needed to meet demand.

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

**Option 1: Risks of Investing in Hiring More Agents**

**Approach**

This analysis is a qualitative risk assessment focused on the strategic option of using the investment to increase headcount.

**Reference**

The analysis is based on the conclusion from Question 1 that the core issue is quality and inconsistency, not a lack of staff.

**Insights**

The key risks identified with prioritizing hiring are:

* **Amplification of Core Issues:** Hiring more agents without first fixing the underlying training and process flaws will likely add more underperforming agents, worsening the average customer satisfaction score.
* **Negative Return on Investment:** This path increases operational costs (salaries, benefits) without addressing the root cause of poor quality, leading to inefficient spending and a higher cost-per-call.
* **Increased Agent Attrition:** Placing new hires into a system without proper training or support can lead to frustration, poor performance, and high turnover, resulting in recurring recruitment costs.

**Recommendations**

To mitigate the risks associated with hiring, the following actions are recommended:

* **Prioritize Systemic Fixes First:** De-prioritize hiring and focus the initial investment on creating a robust training program and supportive technology infrastructure to establish a stable, high-performing environment.
* **Develop a Structured Onboarding Program:** Before considering scaling the team, develop a new, data-driven onboarding and training program based on the best practices of existing top performers.

**Option 2: Risks of Investing in Improving Training Programs**

**Approach**

This analysis is a qualitative risk assessment focused on the recommended option of investing in new training programs. It identifies potential challenges in the execution, adoption, and measurement of such an initiative.

**Reference**

The analysis is based on the conclusion from Question 1 that inconsistent agent performance, stemming from a lack of standardized skills, is the primary issue to be solved.

**Insights**

The key risks identified with implementing a new training program are:

* **Ineffective Program Design:** The training curriculum may be too generic and fail to address the specific skill gaps identified in the data, resulting in wasted time and resources with no measurable improvement.
* **Lack of Agent Buy-in:** Experienced agents may resist mandatory training or see it as redundant, leading to low engagement and poor retention of new best practices.
* **Temporary Productivity Dip:** Pulling agents away from their duties for training will temporarily reduce staff availability, which could increase customer wait times if not managed properly.

**Recommendations**

To mitigate the risks associated with a new training program, the following actions are recommended:

* **Design a Data-Driven Curriculum:** Build the training program directly on the analysis of top-performer habits and the specific knowledge gaps identified in underperforming agents.
* **Involve Agents as Champions:** Engage high-performing agents in the design and delivery of the training to increase credibility, validate the material, and foster buy-in from the rest of the team.

**Option 3: Risks of Investing in Upgrading Call Centre Technology**

**Approach**

This analysis is a qualitative risk assessment for the strategic option of upgrading call center technology. It focuses on the potential financial, operational, and user-adoption challenges associated with a major tech implementation.

**Reference**

The analysis is based on the recommendation from Question 1 to use technology as a high-impact enabler for training and performance consistency.

**Insights**

The key risks identified with a technology upgrade are:

* **High Costs and Budget Overruns:** New technology (like a modern CRM or AI tools) can have significant upfront and ongoing costs, with a risk of exceeding the allocated budget.
* **Poor User Adoption:** If new tools are not intuitive or agents are not adequately trained, they may resist using them or find workarounds, negating the technology's potential benefits.
* **Complex Integration Challenges:** The new software may not integrate seamlessly with AstroSage’s existing systems, leading to data silos and inefficient workflows for agents.

**Recommendations**

To mitigate the risks associated with a technology upgrade, the following actions are recommended:

* **Conduct a Pilot Program:** Before a full-scale deployment, run a pilot test (Proof of Concept) of new technology with a small group of agents to prove its value, test usability, and identify potential issues early.
* **Prioritize User Training:** Allocate a specific portion of the technology budget for comprehensive user training to ensure agents are comfortable with the new tools and understand how they make their jobs easier.

1. **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?**

**Approach**

This analysis is a qualitative comparative study of two competing astrology service providers, AstroSage and AstroGuru. The evaluation is based on three key criteria:

* Average Call Volume
* Customer Satisfaction
* Agent (Astrologer) Performance

**Insights**

The comparison highlights a clear divergence in competitive strategy between the two companies:

* **Average Call Volume:** AstroSage's model, built on a strong online presence and free services, likely results in a high volume of customer interactions. In contrast, AstroGuru's premium positioning with higher-value consultations suggests a focus on quality over quantity, leading to a lower overall call volume.
* **Customer Satisfaction:** AstroGuru's stricter quality control and use of verified, well-known astrologers likely leads to more consistent and higher customer satisfaction. AstroSage, with its broader service range (free vs. paid), experiences more varied customer reviews and satisfaction levels.
* **Agent Performance:** AstroGuru has a clear advantage in agent quality, as it tends to onboard experienced and well-trained astrologers. AstroSage's agents may have a wider range of experience, resulting in less uniform performance.

**Recommendations**

Based on these insights, a business operating in this market should consider the following strategic directions:

* **For a volume-driven model (similar to AstroSage):** Focus on maximizing market reach and user acquisition through accessible platforms and free services. The key challenge would be to manage the quality of paid services to convert free users effectively.
* **For a quality-driven model (similar to AstroGuru):** Prioritize investing in premium branding, a stringent agent selection process, and structured consultations. The strategy should focus on attracting and retaining high-value customers through superior service quality and consistency.
* **Strategic Alignment:** The most critical recommendation is to define a clear business model. An organization must choose whether to compete on volume or quality and align all operational aspects—from agent training and pricing to marketing and customer service—with that core strategy. Attempting to compete on both without the necessary resources can lead to mixed results.

1. **How can the call centre 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?**

**Approach**

This analysis identifies and visualizes the peak call hours to inform staffing and operational decisions.

**Criteria:**

* 1. A pivot table was generated, using the extracted hour range in the rows and the count of calls (Count of CallSid) in the values.
  2. A column chart was created from the pivot table to visualize the call volume per hour.

**Reference**

The analysis is based on the provided screenshot of the pivot table, which shows the count of calls for each hour of the day.

**Insights** The data reveals a clear and consistent pattern of call volume throughout the day:

* **Peak Call Hours:** The highest call volumes occur during standard business hours, particularly from **8 AM to 6 PM**. The peak is most pronounced from **8 AM to 12 PM**, with a significant spike in call volume.
* **Call Distribution:** Call volumes begin to rise sharply in the morning, reach their highest point during the day, and then steadily decline after 6 PM.
* **Off-Peak Hours:** The lowest call volumes are observed during late-night and early-morning hours, specifically between **12 AM and 6 AM**.
* **Total Volume:** The high total call volume during business hours indicates that the majority of customer demand for call consultations occurs during this period.

**Recommendations**

Based on these insights, the following recommendations are made to optimize call center operations:

* **Staffing Optimization:**
  + **Increase staffing** during peak hours (8 AM - 6 PM) to handle the high call volume, reduce wait times, and improve the customer experience.
  + **Reduce staffing** during off-peak hours (12 AM - 6 AM) to minimize costs, as demand is minimal.
* **Lunch Break Coverage:** Ensure there is adequate staff coverage during the midday period (12 PM - 2 PM) to handle the significant call volume that continues through this time.
* **Automated Support:** Implement automated systems or chatbots to handle common inquiries during peak hours. This can help reduce the load on human agents and allow them to focus on more complex issues.
* **Customer Communication:** Consider informing customers of the peak hours and suggesting alternative times for non-urgent calls. This can help balance the workload more effectively.

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

**Analysis of Customer Satisfaction vs. Call Duration**

**Approach**

This analysis was conducted to re-examine the relationship between call duration and customer satisfaction. The methodology involved creating a pivot table that grouped the user on call duration into bins of 100-second intervals. The average rating was then calculated for each of these bins, and a **line plot** was used to visualize the trend.

**Reference**

The analysis is based on the data from a pivot table and the corresponding line plot, which displays the average customer rating for calls segmented by duration in 100-second intervals.

**Insights**

The line plot reveals a nuanced relationship between call duration and customer satisfaction:

* **Positive Correlation:** The average rating generally increases as the call duration increases. This suggests that customers who engage in longer, more detailed consultations tend to be more satisfied with the service.
* **Peak Satisfaction:** Customer satisfaction appears to peak in the **901-1000 second** interval, which has the highest average rating of 3.93.
* **Declining Satisfaction in Very Long Calls:** The trend of increasing satisfaction does not hold for extremely long calls. The average rating drops significantly for calls in the **1501-1600 second** range, indicating a potential issue with very prolonged consultations.
* **Value of Thoroughness:** This data suggests that a simple, quick call is not the primary driver of satisfaction. Instead, customers seem to appreciate and reward more comprehensive and thorough consultations.

**Recommendations**

Based on these insights, the following strategic recommendations are made:

* **Encourage Deeper Consultations:** Train agents to prioritize comprehensive and thorough consultation rather than aiming for a quick resolution. This approach is likely to increase customer satisfaction.
* **Re-evaluate Efficiency Metrics:** Re-assess efficiency metrics that may penalize longer call durations. Instead, focus on the quality and completeness of the resolution as the primary measure of an agent's effectiveness.
* **Investigate Extremely Long Calls:** Investigate the specific cases of very long calls (e.g., those over 1500 seconds) that are associated with lower ratings. This could reveal issues such as unresolved complex problems, technical difficulties, or agent-customer communication breakdowns.
* **Provide Targeted Training:** Use the data to identify the ideal consultation duration range (e.g., 500-1000 seconds) that yields the highest satisfaction. Train agents to aim for this "sweet spot" by ensuring they have the tools and skills to provide a complete and satisfying consultation within that time frame.

1. **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.**

**Factors for High Customer Satisfaction and Strategic Initiatives**

**Approach**

The analysis is based on the "Call duration vs Ratings" line chart, which plots the average customer rating against different call duration intervals. This allows us to understand how the length of a consultation directly influences the satisfaction score.

**Reference**

The analysis is based on a line plot, which shows the average customer rating on the y-axis and the call duration intervals on the x-axis.

**Insights**

The line plot reveals a clear and significant trend regarding customer satisfaction and call duration:

* **Longer Calls Correlate with Higher Ratings:** The chart shows a general positive trend where longer calls, up to a certain point, receive higher ratings. For example, the satisfaction score peaks for calls in the **2400-2799 second** range. This suggests customers value thorough, unhurried interactions where agents take the time to fully address their concerns.
* **Speed is Not a Key to Satisfaction:** The assumption that shorter, faster calls are better is incorrect. Very short calls (under 200 seconds) have lower average ratings, indicating that customers may perceive them as rushed or incomplete.

**Recommendations**

Based on the insights drawn from the line plot, the following strategic recommendations are made:

* **Train for Thoroughness, Not Speed:** Shift agent performance metrics away from minimizing call duration. Instead, coach agents to provide comprehensive consultations, as this is proven to lead to higher satisfaction.
* **Identify Best Practices from Optimal Calls:** Analyze the calls within the peak satisfaction range (around 2400-2799 seconds) to identify the methods and solutions used by agents to achieve high ratings. These insights can be used to create a "best practice" model for the entire team.

**Additional Factors: Service Quality and Delivery**

This analysis is based on the **"Call Status"** and **"Chat Status"** pie charts. A customer cannot be satisfied if they can't access the service in the first place. Therefore, the completion rate of these channels is a foundational factor for customer satisfaction.

**Reference**

A pie chart with text and purple circles

AI-generated content may be incorrect. A pie chart with text on it

AI-generated content may be incorrect.

**Insights**

* **High Failure Rate for Calls:** The "Call Status" chart shows that only 41% of calls are successfully "completed." A majority of customers (59%) face issues like a busy line, no answer, or a failed connection. This creates significant frustration before any conversation begins.
  + **Critical Failure Rate for Chats:** The situation is even worse for the chat service, where only 20% of interactions are "completed." A staggering 80% of chat attempts fail. This makes the channel highly unreliable and a major source of customer dissatisfaction.

**Recommendations**

* + **Prioritize Technology and Channel Management**: The extremely low completion rates are a critical issue. The highest priority should be to investigate and invest in the technological infrastructure to reduce failure rates. A customer's journey starts with a successful connection.
  + **Address Accessibility as a Key Metric:** The company must treat channel reliability (call and chat completion rates) as a primary Key Performance Indicator (KPI) for the customer service department. Improving these rates will directly reduce the number of dissatisfied customers.

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

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

**Approach**

This analysis was conducted to determine how to best balance the workload among agents. The methodology involved creating a pivot table to calculate the total on-call duration for each astrologer. This on-call duration was used as the primary criterion to assess individual workload and identify any disparities.

**Reference**

The analysis is based on a line plot that displays the total on-call duration on the y-axis against each individual agent on the x-axis, derived from the provided pivot table data.

**Insights**

The data reveals a significant and unhealthy disparity in the workload distribution among agents:

* **Extreme Workload Disparity:** The on-call time varies drastically across the team. For example, the top agent, 'Astro Krishaa', has an on-call duration of 1580 minutes, while many others are at or near zero minutes. The average on-call duration is approximately 197 minutes, but the median is only 75 minutes, indicating that a small number of agents are handling the majority of the work.
* **Risk of Burnout for Top Agents:** The heavy concentration of the workload on a handful of agents, such as 'Astro Krishaa' (1580 minutes), 'Astro Sakthi' (1450 minutes), and 'Astro Shalini' (1321 minutes), poses a significant risk of burnout, stress, and a potential decline in the quality of their consultations over time.
* **Underutilized Resources:** A large number of agents have very low on-call times, with some handling as little as 1 or 2 minutes. This clearly indicates that the full potential of the team is not being utilized, which is a major source of inefficiency.
* **Inconsistent Customer Experience:** This imbalance can lead to longer wait times for customers trying to reach a few select popular agents, while other, less busy agents are readily available, creating an inconsistent customer experience.

**Recommendations**

Based on these insights, the following recommendations are made to balance the workload and ensure optimal performance:

* **Implement a Fairer Workload Distribution System:** Immediately review and adjust the call routing mechanism to ensure that calls are distributed more equitably among all available and qualified agents.
* **Investigate High-Volume Agents:** Analyze the performance of high-volume agents like 'Astro Krishaa' to understand their efficiency and techniques. Use these insights to develop best practices for the entire team, and consider offering these agents additional support or incentives to manage their heavy workload.
* **Address Underutilization:** Investigate the reasons why many agents have minimal on-call time. This could be due to a lack of training, technical issues, or poor scheduling. Address these issues to bring more agents into active service.
* **Provide Targeted Training:** Offer additional training and support to agents with low on-call times. This can improve their skills, boost their confidence, and enable them to handle a higher volume of calls, contributing to a more balanced team workload.

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

**Approach**

This analysis identifies new technologies and tools that could be implemented to address the specific operational challenges revealed by the historical data. The approach is to match technological solutions to the problems identified in previous analyses, such as agent workload imbalance, varying customer satisfaction across consultation types, and the need for better performance tracking.

**Criteria:** Any recommended technology must directly contribute to at least one of the following goals:

* + Improve workload distribution and agent efficiency.
  + Enhance customer satisfaction and service quality.
  + Provide deeper, real-time insights into operations.
  + Support agent training and performance development.

**Reference**

Based on the severe workload imbalance among agents

**Insights**

The historical data and analyses point to several key areas where technological enhancements could yield significant improvements:

* **Inefficient Workload Distribution:** The extreme disparity in agent on-call duration indicates that the current call routing system is inefficient and may be leading to agent burnout and underutilization.
* **Customer Service Gaps:** The difference in satisfaction between call and chat services suggests that the chat platform could be enhanced with tools that make it more effective for both agents and customers.
* **Lack of Real-time Insight:** The difficulty in immediately identifying peak hours and workload imbalances suggests a need for a more dynamic, real-time performance dashboard.
* **Missed Feedback Opportunities:** The high number of unrated consultations highlights a lack of a streamlined, automated system for gathering post-service feedback.

**Recommendations**

Based on these insights, the following technologies and tools are recommended for implementation:

* **Advanced Call Routing and Workforce Management:**
  + **Automated Call Distributor (ACD):** Implement an advanced ACD with skill-based routing to ensure that calls are directed to the most qualified and available agent. This will automatically balance the workload and reduce wait times.
  + **Workforce Management (WFM) Software:** Use WFM tools to forecast call volume and schedule agents accordingly, ensuring optimal staffing during peak hours and reducing underutilization during off-peak times.
* **Integrated Customer Relationship Management (CRM):**
  + Integrate a CRM system that provides agents with a unified view of the customer's history, previous consultations, and feedback. This will enable agents to provide more personalized and efficient service, directly contributing to higher satisfaction.
* **Automated Feedback and Quality Assurance (QA) Tools:**
  + **Automated Surveys:** Implement an automated post-consultation feedback system via SMS or email to increase the rate of customer ratings and gather more actionable feedback.
  + **Speech and Text Analytics:** Utilize AI-powered tools to analyze call and chat transcripts for keywords related to customer sentiment and satisfaction. This can provide real-time QA and identify trends in customer issues.
* **Agent Assist Tools and Knowledge Bases:**
  + **AI-Powered Chatbots:** For the chat service, implement an AI chatbot to handle basic, repetitive queries, freeing up human agents to focus on more complex issues and providing faster initial responses to customers.
  + **Centralized Knowledge Base:** Provide agents with a searchable, centralized knowledge base that integrates with their communication tools. This will help them find information quickly, leading to more efficient and accurate consultations.

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

Based on an analysis of the provided dataset, the following metrics can be derived to create a comprehensive dashboard. These metrics are chosen specifically because they can be calculated directly from the available data fields, such as Guru ID, User on Call Duration, Rating, and Call/Chat Status.

**1. Operational & Efficiency Metrics**

These metrics provide a high-level view of the call center's workload and efficiency in handling interactions.

* **Total Call Volume:** The total number of calls handled within a selected period. This is a fundamental measure of demand.

*Derivation:* COUNT of all call records.

* **Average Handling Time (AHT):** The average duration of a call. This helps in understanding agent efficiency and can be used for staffing calculations.

Derivation: AVERAGE of the user on call duration column.

* **Resolution Rate:** The percentage of calls that were successfully marked as 'Resolved'. This is a key indicator of the effectiveness of the support provided.

Derivation: (COUNT of calls where Status = 'Resolved') / (Total Call Volume) \* 100.

**2. Customer Satisfaction Metrics**

These metrics measure the quality of the service from the customer's perspective, using the feedback provided.

**• Average Customer Satisfaction Score:** The overall average of customer ratings. This is the primary KPI for customer sentiment.

Derivation: AVERAGE of the Rating column.

**• Distribution of Ratings:** A visual breakdown (e.g., bar chart) showing the count of each rating score (1-7). This helps identify the proportion of very unhappy versus very happy customers.

Derivation: COUNT of calls, grouped by each Rating value.

**3. Agent Performance Metrics**

These metrics allow for the evaluation of individual and team performance, helping to identify top performers and those who may need additional coaching.

**• Average Rating per Agent:** The average satisfaction score for each individual agent. This is crucial for performance reviews and identifying training needs.

Derivation: AVERAGE of Rating, grouped by Guru ID.

**• Resolution Rate per Agent:** The percentage of issues each agent successfully resolves. This measures agent effectiveness.

Derivation: Calculated for each Guru ID similar to the overall Resolution Rate.

**• Calls Handled per Agent:** The total number of calls managed by each agent. This provides context to their other performance metrics.

Derivation: COUNT of calls, grouped by Guru ID.

1. **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]**

**Investment Allocation: 1 Crore Rupees**

* **Operational & Technology Improvements (40 Lakhs):** Focus on technology that directly addresses the severe workload imbalance and underutilization of agents. This includes an advanced call routing system and a performance dashboard.
* **Agent Training & Development (30 Lakhs):** Allocate funds to programs that elevate agent skills and standardize performance, directly addressing the wide variability in ratings and the high satisfaction with thorough consultations.
* **Customer Service & Feedback Tools (20 Lakhs):** Invest in tools to improve the quality of the chat service and to capture more customer feedback, addressing the satisfaction gap between call and chat services and the high number of unrated interactions.
* **Strategic Buffer (10 Lakhs):** Reserve a portion of the investment for unforeseen costs and pilot programs to test new initiatives.

**Analysis-Based Recommendations**

**To Optimize Operational Efficiency**

* **Implement an Advanced Call Routing System:** The data showed an extreme workload disparity, with some agents handling over 1000 calls while others had zero. Invest in a smart call routing system to automatically distribute calls more equitably among all available agents. This will reduce agent burnout and increase the overall capacity of the team.
* **Deploy a Real-time Performance Dashboard:** The data from the pivot tables and charts revealed key insights about agent performance and call volume patterns. Invest in a real-time dashboard that automatically tracks these metrics, allowing managers to proactively identify and address workload imbalances and staffing needs.

**To Enhance Customer Satisfaction**

* **Enhance the "Chat" Consultation Service:** The data revealed that "Call" consultations have a significantly higher average rating than "Chat." Use the investment to develop specialized training for chat agents to improve their efficiency and quality of communication, thereby closing the satisfaction gap.
* **Standardize Quality with Best Practices:** The top agents with the highest call volumes consistently maintained high ratings. Invest in a program to document and formalize their best practices, then use this to train all other agents. This will standardize service quality and improve customer ratings across the board.
* **Investigate Extremely Long Calls:** The line plot analysis showed that satisfaction drops off for extremely long calls (over 1500 seconds). Allocate funds to a deep-dive analysis of these specific calls to identify the root causes of the low ratings, which could lead to process improvements.

**To Boost Profitability**

* **Incentivize Quality and Efficiency:** Implement a new incentive program that rewards agents not just for call volume, but for high customer satisfaction ratings and successful outcomes. This will motivate agents to provide the kind of thorough service that the data shows lead to higher ratings.
* **Improve the Customer Feedback Loop:** The high number of unrated consultations represents a missed opportunity to gather valuable data. Use part of the investment to develop a more user-friendly post-consultation rating system or automated reminders to increase the rate of feedback, providing more accurate data for performance analysis and decision-making.