

2023 Towson University Data Analytics Competition - Yousef Macer

For this year's data competition, the objective was to analyze the dataset to identify clients with the highest profitability and employee utilization to drive more opportunities. The findings revealed several insights that could help SC&H Group make informed business decisions.

I chose to use python and tableau for this competition. I used pandas to perform data cleaning, pre-processing, and analysis. The Pandas library is great for manipulating and transforming the data to prepare it for analysis. Matplotlib was used to create simple inline visualizations of the data to verify my pandas analysis. Tableau was used to create visualizations of client & employee performance; Tableau communicates insights in a more clear and compelling way.

Firstly, the data indicated that revenue declines throughout each year, which is likely due to tax season. However, the average revenue increased by 9% for each subsequent year. These findings could help SC&H Group plan for future revenue streams and manage its finances better.

Secondly, the top five most profitable clients were identified as CLT2729, CLT2137, CLT1968, CLT1871, and CLT3406. This insight could help SC&H Group focus on retaining these high-value clients and offering them additional services to increase revenue.

Thirdly, the average employee utilization was found to be 57.96%, with a variance of 649.2%. Almost 25% of employees had a rate greater than or equal to 80%, reinforcing the pareto principle. This could help SC&H Group allocate resources more efficiently and improve employee productivity.

Fourthly, the data revealed the top three billable hours by department and year as TAS Audit, Business Performance, and TAS Tax. This insight could help SC&H Group further prioritize these departments accordingly.

Fifthly, the data showed that the overall average total amount for billable transactions was \$480, with departments split into two factions based on their averages. Business Performance Management was the highest-performing department, with an average revenue of \$1656, while Affordable Housing was the lowest-performing department, with an average revenue of \$180. This finding could help SC&H Group identify areas for improvement and allocate resources accordingly.

In conclusion, the findings of the data competition for SC&H Group provide valuable insights into the company's operations, highlighting areas of strength and opportunities for improvement. By identifying the most profitable clients and departments, and improving employee utilization, SC&H Group can optimize its resources and drive more revenue. The increase in average revenue for each subsequent year is a positive trend that SC&H Group can build upon by planning for future revenue streams. The findings also underscore the importance of data-driven decision-making in optimizing business operations. By leveraging data analytics, SC&H Group can gain a competitive edge and deliver better value to its clients. Overall, the insights gleaned from the data competition can help SC&H Group make informed decisions and achieve its business objectives.