

Project overview

Analyzing tips in restaurant is important for several reasons. Understanding tipping patterns can provide valuable insights into customer behavior, service quality, staff performance, and overall restaurant operations. This project is based on a real-life scenario that my former restaurant employer who are interested in seeing the tipping patterns and I carried out the data analysis project. In this project, I aim to identify:

- Average tips amount and percentage per bill
- Whether tips in the weekend are higher than weekday
- Which hour of a day receiving highest tips amount per bill.
- Which day receiving highest tips amount per bill
- Whether evening shift receives higher tips amount than morning shift.
- Correlation between tips amount and total bill

Business impact:

- **Enhanced Customer Experience:** Understanding tipping patterns allows the restaurant to identify peak times and areas where service can be improved, directly impacting customer satisfaction.
- **Inventory Preparation:** Higher tip amounts per bill usually indicate larger family tables. Therefore, front-end waiters and kitchen staff will have the necessary information to perform excellently during these periods.

Deliverables

- Python Jupyter Notebook exploratory data analysis with supporting visualizations and insights summary
- Tableau dashboard

About the data

This is real data collected from restaurant archived receipts. Due to confidential information, data are collected as a sample from the total transaction receipts, actual data sample size are much larger and the patterns are slightly different. Any customers and restaurant information are removed.

How the data are collected?

The total receipts of each day are put into a box and randomly collected; I ensure that each day must has a range of hours to accurately represent the total tips amount of that day. After that, my worker fellow and I carefully input the data into Excel.

Assumptions of data

- Due to time constraint, the data sample size might not adequate to precisely Identify the pattern.
- The data don't include tips by cash
- The data don't include app to-go orders tips.
- The data don't include every month of the year.

Tableau Dashboard

Insights summary and dashboard all included in this link:

https://public.tableau.com/views/Restauranttipsanalysis/Descriptive_data?:language=en-GB&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link