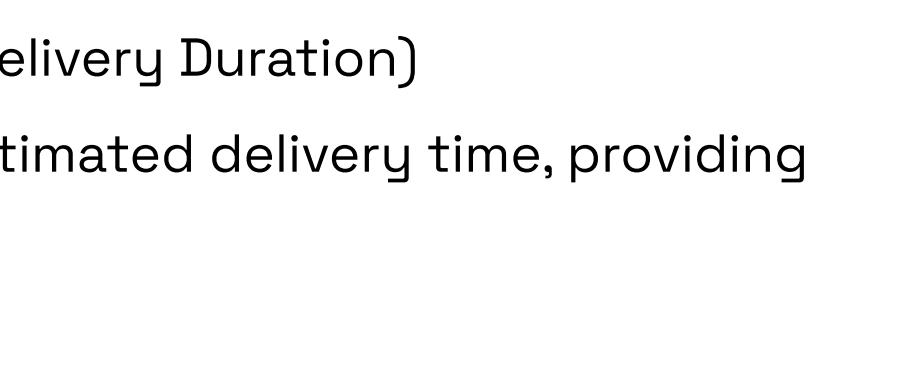


APPENDIX



A. POWER BI CALCULATIONS AND METRICS:

Average Delivery Delay:

Formula: $\text{Average Delivery Delay} = \text{AVERAGE}(\text{Actual Delivery Duration}) - \text{AVERAGE}(\text{Estimated Delivery Duration})$

Description: Calculates the difference between the actual delivery time and the estimated delivery time, providing insights into delivery delays across orders.

Average Delivery Time:

Formula: $\text{Average Delivery Time} = \text{AVERAGE}(\text{Actual Delivery Duration})$

Description: Calculates the average time taken to deliver an order across all markets, providing an overview of delivery performance.

Average Estimated Delivery Time:

Formula: $\text{Average Estimated Delivery Time} = \text{AVERAGE}(\text{Estimated Delivery Duration})$

Description: Computes the average of estimated delivery times across all orders, helping to gauge the accuracy of time predictions.

Average Items Per Order:

Formula: $\text{Average Items Per Order} = \text{AVERAGEX}(\text{DoorDash}, \text{DoorDash}[\text{Total Items}])$

Description: Calculates the average number of items in each order, helping to analyze order size and customer preferences.

Average Orders Per Busy Dasher:

Formula: $\text{Average Orders Per Busy Dasher} = \text{Total Outstanding Orders} / \text{Total Busy Dashers}$

Description: Measures the average number of outstanding orders per busy dasher, providing insights into dasher workload distribution.

Avg Busy Dashers per Order:

Formula: $\text{Avg Busy Dashers per Order} = \text{Total Busy Dashers} / \text{Total Outstanding Orders}$

Description: Calculates how many busy dashers are working per order, indicating how efficiently orders are being distributed among dashers.

Avg Max Price:

Formula: $\text{Avg Max Price} = \text{AVERAGE}(\text{Max Item Price in Dollars})$

Description: Computes the average price of the most expensive item in each order, which can help identify high-value orders.

Avg Min Price:

Formula: $\text{Avg Min Price} = \text{AVERAGE}(\text{Min Item Price in Dollars})$

Description: Calculates the average price of the least expensive item in each order, helping to analyze pricing trends for low-cost items.

Current Time:

Formula: $\text{Current Time} = \text{NOW}()$

Description: Returns the current date and time, often used for dynamic analysis or time-based insights like greetings.

Dasher Load Factor:

Formula: $\text{Dasher Load Factor} = \text{Total Busy Dashers} / \text{Total On-Shift Dashers}$

Description: Used to calculate the dasher load factor, providing a measure of how busy dashers are compared to the total number of dashers on shift.

Delivery Delay Percentage:

Formula: $\text{Delivery Delay Percentage} = ((\text{Total Delivery Time} - \text{Total Estimated Delivery Time}) / \text{Total Estimated Delivery Time}) * 100$

Description: calculates the percentage of delay between the actual and estimated delivery times, highlighting delays in the system.

Idle Dashers Percentage:

Formula: $\text{Idle Dashers Percentage} = (\text{Idle Dashers} / \text{Total On-Shift Dashers}) * 100$

Description: Calculates the percentage of idle dashers out of the total number of on-shift dashers, helping to assess resource under utilization.

On-Shift Dashers:

Formula: $\text{On-Shift Dashers} = \text{COUNT}(\text{Total On-Shift Dashers})$

Description: Counts the total number of dashers on shift, providing an overview of staffing levels.

Order to Dasher Ratio:

Formula: $\text{Order to Dasher Ratio} = \text{Total Outstanding Orders} / \text{Total Busy Dashers}$

Description: Calculates the ratio of outstanding orders to busy dashers, providing an insight into workload distribution and potential dasher overload.

Outstanding Orders Per Dasher:

Formula: $\text{Outstanding Orders Per Dasher} = \text{Total Outstanding Orders} / \text{Total On-Shift Dashers}$

Description: Calculates the number of outstanding orders per dasher during their shift, highlighting potential workload imbalances.

Revenue Per Item:

Formula: $\text{Revenue Per Item} = \text{Total Revenue} / \text{Total Items}$

Description: Calculates the average revenue generated per item, helping to understand sales dynamics and the financial contribution of individual items.

Total Busy Dashers:

Formula: $\text{Total Busy Dashers} = \text{COUNT}(\text{Total Busy Dashers})$

Description: Counts the total number of busy dashers (those with active orders) during a given period.

Total Delivery Time:

Formula: $\text{Total Delivery Time} = \text{SUM}(\text{Actual Delivery Duration})$

Description: Sums the actual delivery duration across all orders, providing insights into total time spent delivering orders.

Total Orders:

Formula: $\text{Total Orders} = \text{COUNTRROWS}(\text{DoorDash})$

Description: Counts the total number of orders, offering an overview of order volume during a given period.

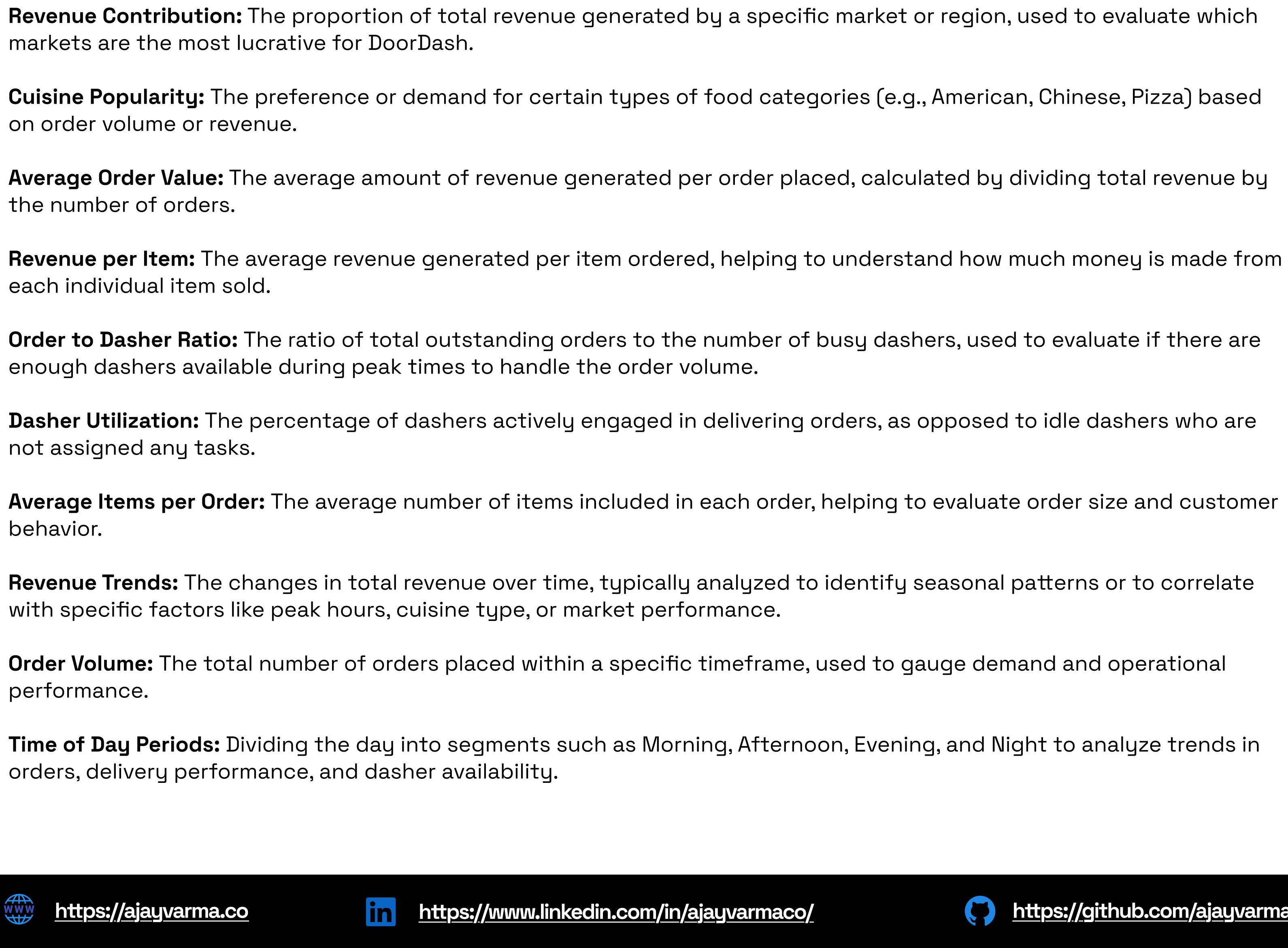
Total Revenue:

Formula: $\text{Total Revenue} = \text{SUM}(\text{Subtotal in Dollars})$

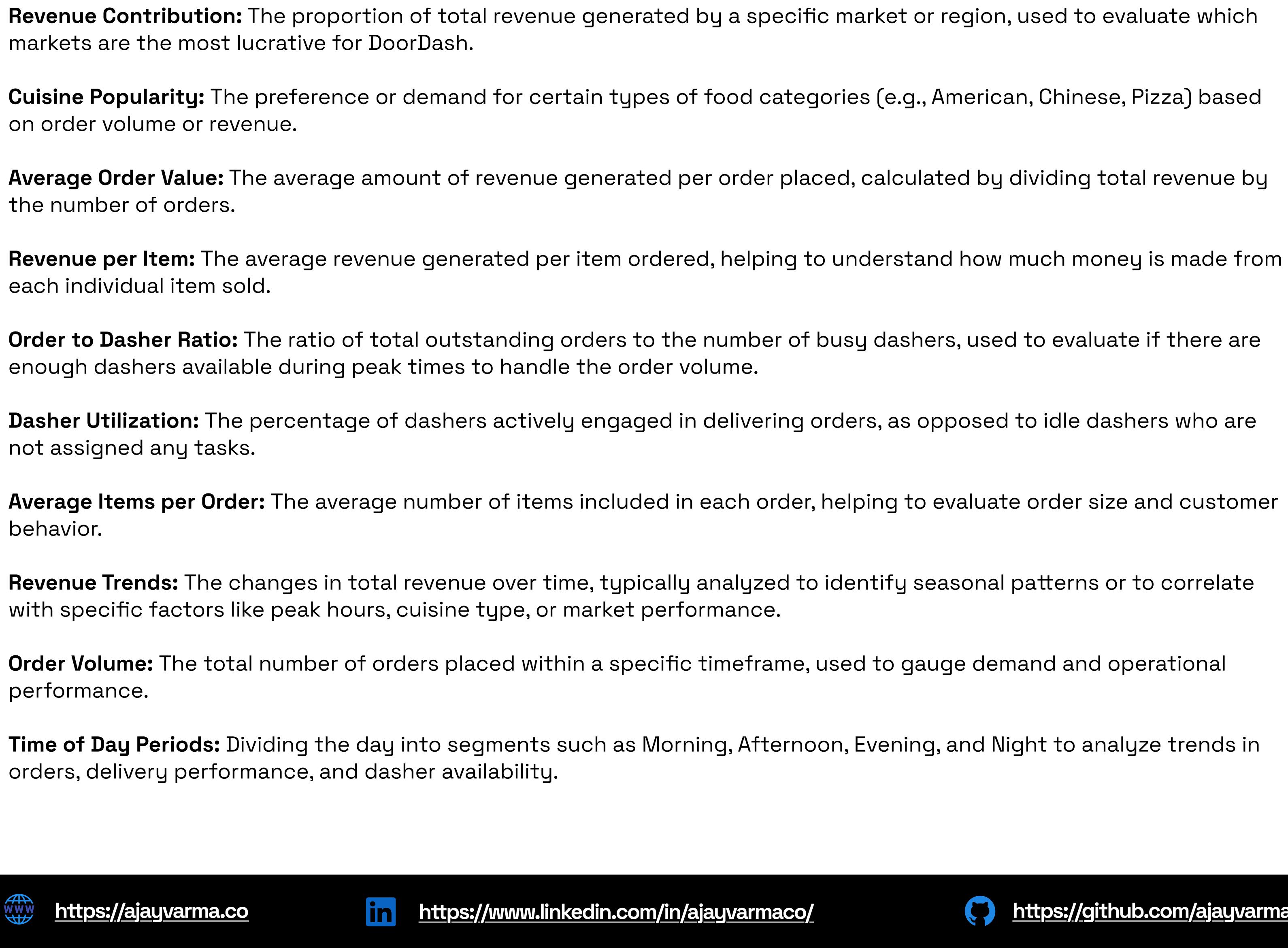
Description: Calculates the total revenue generated from all orders within a given period, which is essential for financial analysis.

B. POWER BI DASHBOARD COMPONENTS:

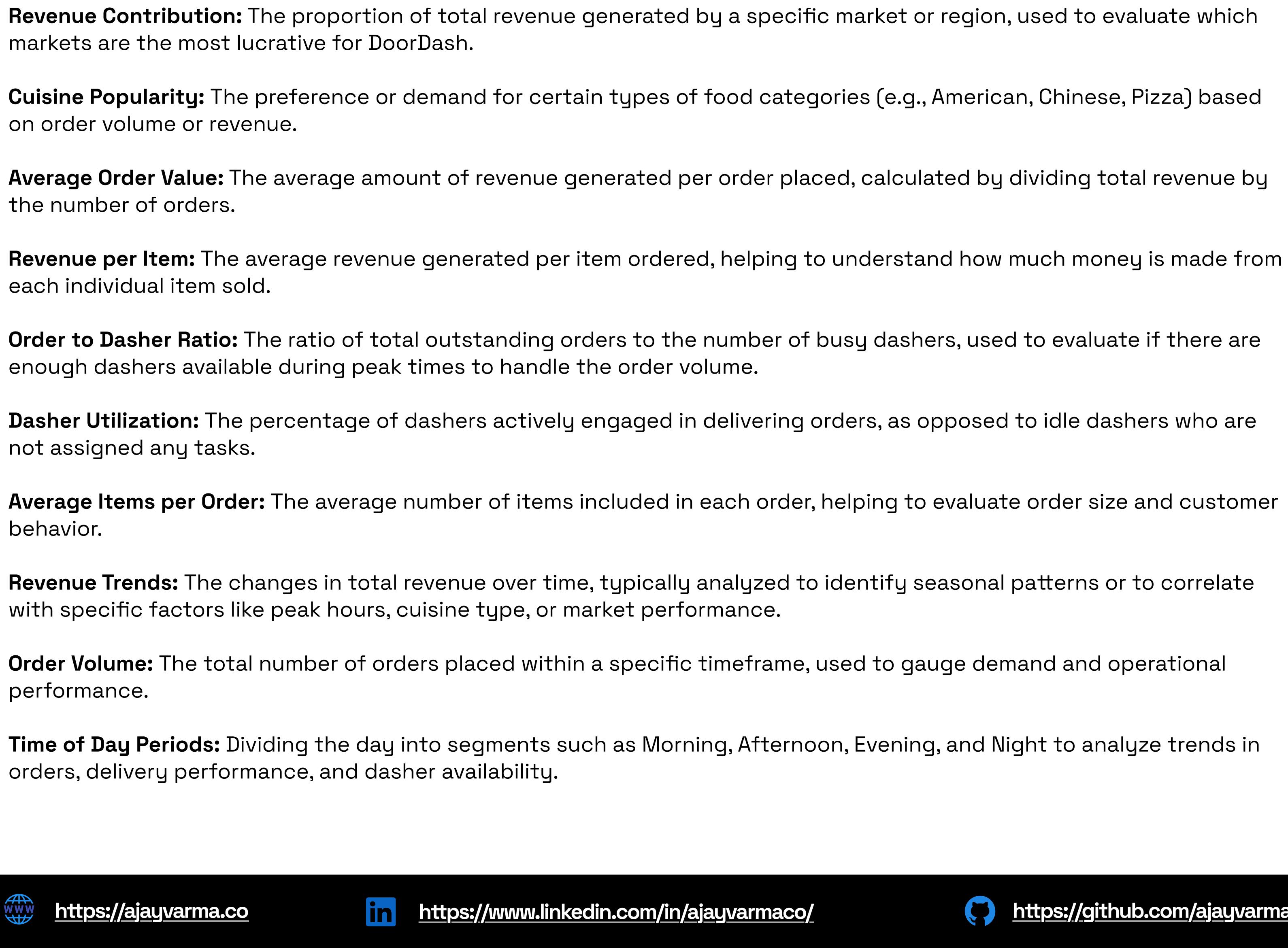
Dasher Insights Page:



Delivery Insights Page:



Revenue Insights Page:



C. TOOLS AND TECHNOLOGIES USED

Google Cloud Platform (GCP):

- Data storage and processing.
- Used for hosting the raw dataset extracted from Kaggle.

MySQL Database:

- Data management and retrieval.
- Imported data from Google Cloud into MySQL for data preprocessing and EDA.

Power BI:

- Data visualization and reporting tool.
- Used to create interactive dashboards and reports to provide insights into delivery operations.

Kaggle Datasets:

- Data source for the DoorDash delivery data.
- Datasets provided the raw data used for the analysis and report generation.

Figma:

- Used for designing and creating the documentation and presentation slides for the project.
- Allowed for efficient design of both the report layout and presentation deck, ensuring the final output was visually appealing and easy to follow.

D. ASSUMPTIONS AND LIMITATIONS

Assumptions:

- The data from Kaggle is assumed to be accurate and representative of the real-world delivery operations.
- Metrics calculated are based on the assumption that the underlying data quality is correct and clean.
- The project assumes that all Dashers are uniformly trained and equipped to handle deliveries in the same way.

Limitations:

- The dataset is historical and may not fully represent current conditions or operational changes in DoorDash's delivery systems.
- Market-specific nuances, such as local regulations or weather conditions, are not included in the analysis.
- The data does not include real-time information, which may affect the timeliness of insights.

E. GLOSSARY OF TERMS

Dasher: A DoorDash delivery driver responsible for picking up and delivering orders.

Dasher Workload: The amount of work assigned to a dasher, typically measured by the number of orders they are responsible for delivering within a given timeframe.

Dasher Load Factor: The ratio of busy dashers (those on delivery) to total on-shift dashers in a given market, helping to identify resource utilization.

Delivery Time: The total time taken from when an order is placed to when it is successfully delivered to the customer.

Actual Delivery Time: The real-time duration it takes for an order to be delivered from restaurant to customer, measured from order placement to delivery completion.

Estimated Delivery Time: The predicted duration, often based on historical data, that DoorDash expects an order to take from restaurant to delivery.

Delivery Delay: The difference between the actual delivery time and the estimated delivery time. It helps to identify any discrepancies or inefficiencies in the delivery process.

Outstanding Orders: Orders that are still pending delivery and have not yet been completed.

Order Density: The number of outstanding orders assigned to each dasher at a given time, reflecting the workload per dasher.

Peak Hours: The times of day with the highest volume of orders, typically during lunch (12 PM - 2 PM) and dinner (6 PM - 9 PM) periods, which impact delivery times and dasher performance.

Revenue Contribution: The proportion of total revenue generated by a specific market or region, used to evaluate which markets are the most lucrative for DoorDash.

Average Order Value: The average amount of revenue generated per order placed, calculated by dividing total revenue by the number of orders.

Revenue per Item: The average revenue generated per item ordered, helping to understand how much money is made from each individual item sold.

Order to Dasher Ratio: The ratio of total outstanding orders to the number of busy dashers, used to evaluate if there are enough dashers available during peak times.

Average Items per Order: The average number of items included in each order, helping to evaluate order size and customer behavior.

Revenue Trends: The changes in total revenue over time, typically analyzed to identify seasonal patterns or to correlate with specific factors like peak hours, cuisine type, or market performance.

Order Volume: The total number of orders placed within a specific timeframe, used to gauge demand and operational performance.

Time of Day Periods: Dividing the day into segments such as Morning, Afternoon, Evening, and Night to analyze trends in orders, delivery performance, and dasher availability.