

EDA: Exploratory Data Analysis


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OUTLINE

- Dataset Overview
 - Analytical Questions
 - Data Visualization
 - Insights and Interpretations
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DATASET OVERVIEW

- The dataset contains 26 features describing Ride Context, Location and time information with 500,000 rows.
- It combines spatial (location), temporal (time), and environmental (weather/traffic) features to analyze and predict trip fares and patterns.



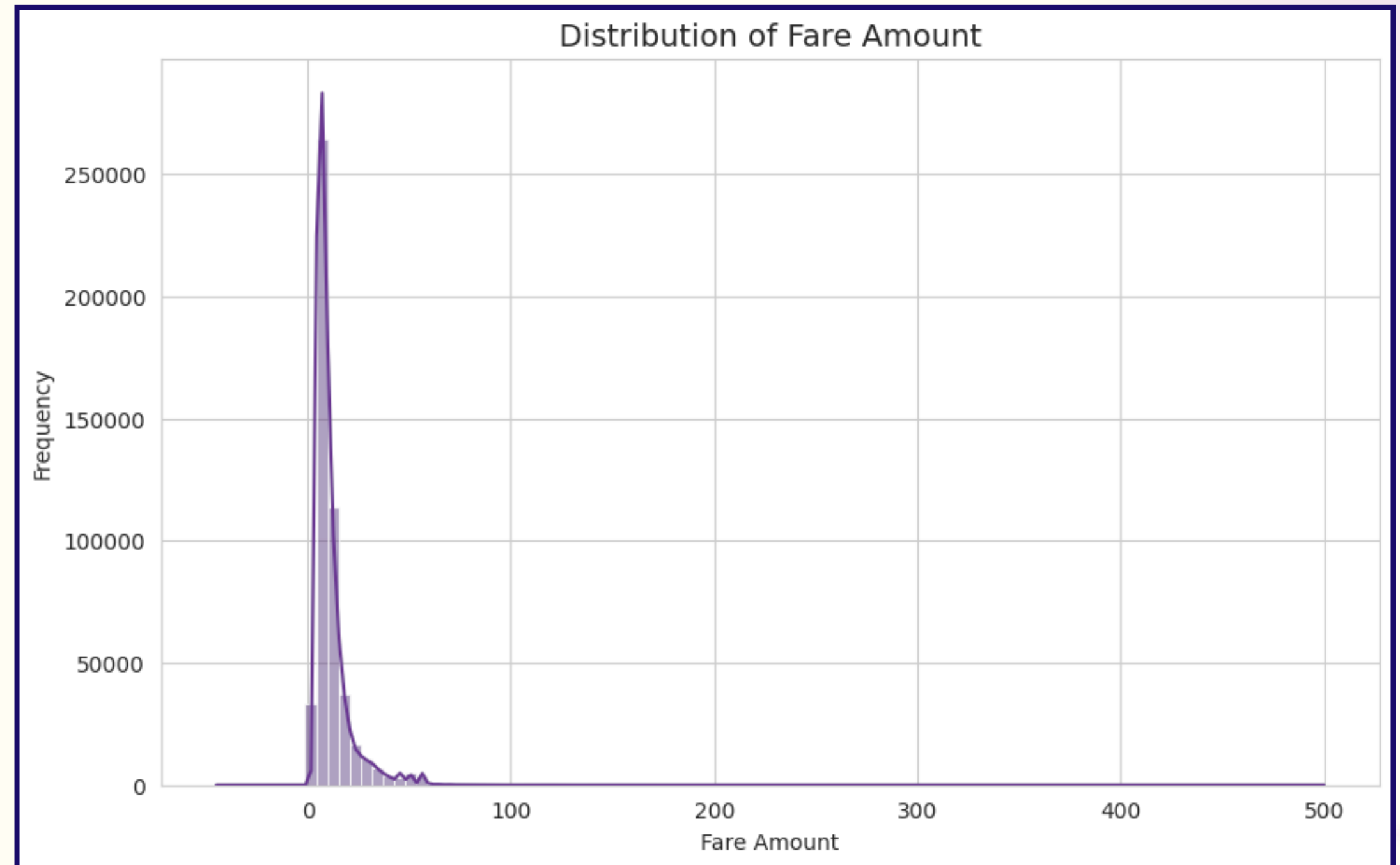
COLUMN DICTIONARY

Numerical features	Categorical features
<div>pickup_longitude</div> <div>pickup_latitude</div> <div>dropoff_longitude</div> <div>dropoff_latitude</div>	<div>User ID</div> <div>username</div> <div>Driver Name</div>
<div>key(unique)</div> <div>fare_amount(target)</div> <div>passenger_count</div> <div>weekday</div>	<div>Car Condition</div> <div>Weather</div> <div>Traffic Condition</div>
<div>distance</div> <div>bearing</div>	<div>hour</div> <div>day</div> <div>month</div> <div>year</div>

ANALYTICAL QUESTIONS

Is the fare distribution normal or skewed?

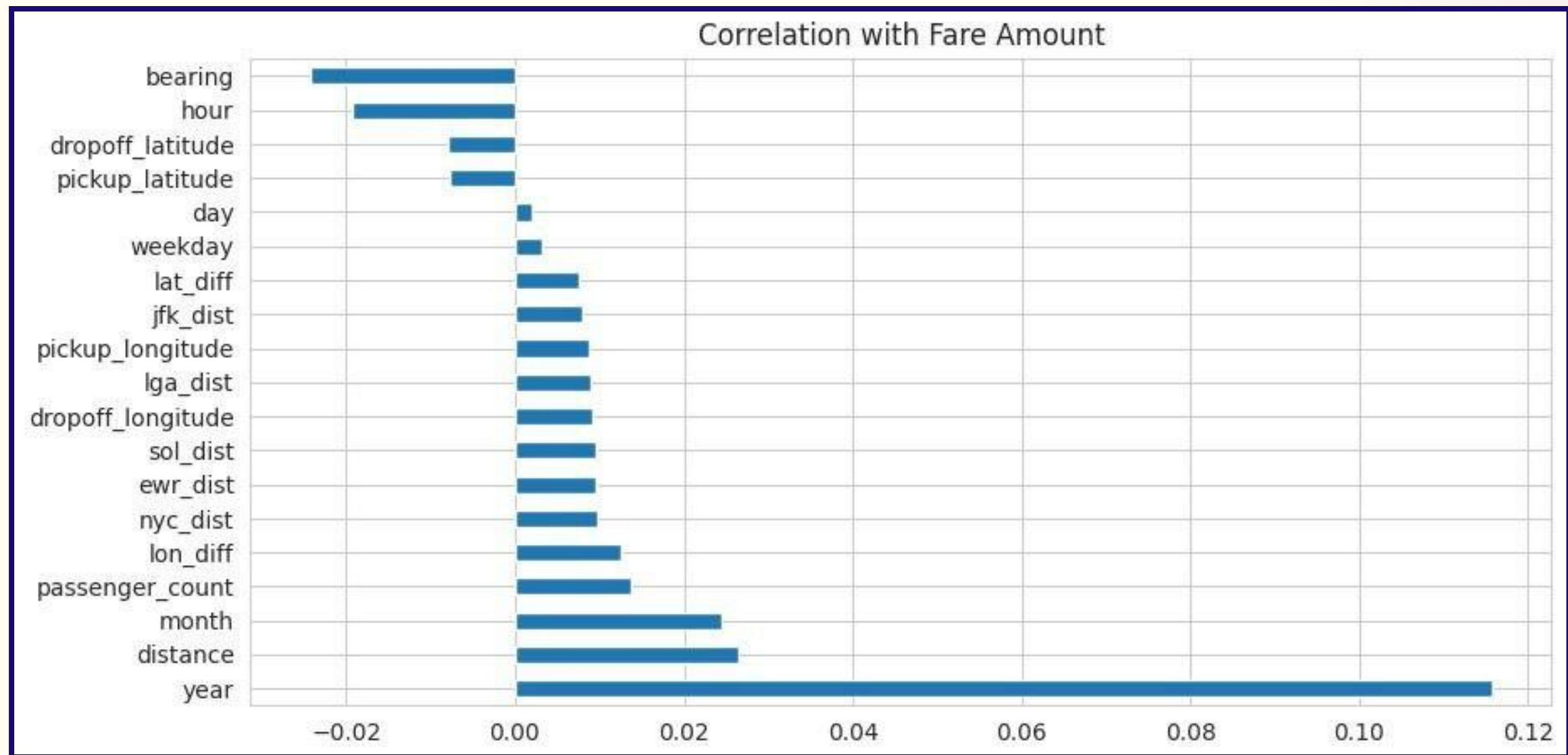
- Right-skewed
- Most rides have relatively low fares



ANALYTICAL QUESTIONS

How are the features related to the fare amount?

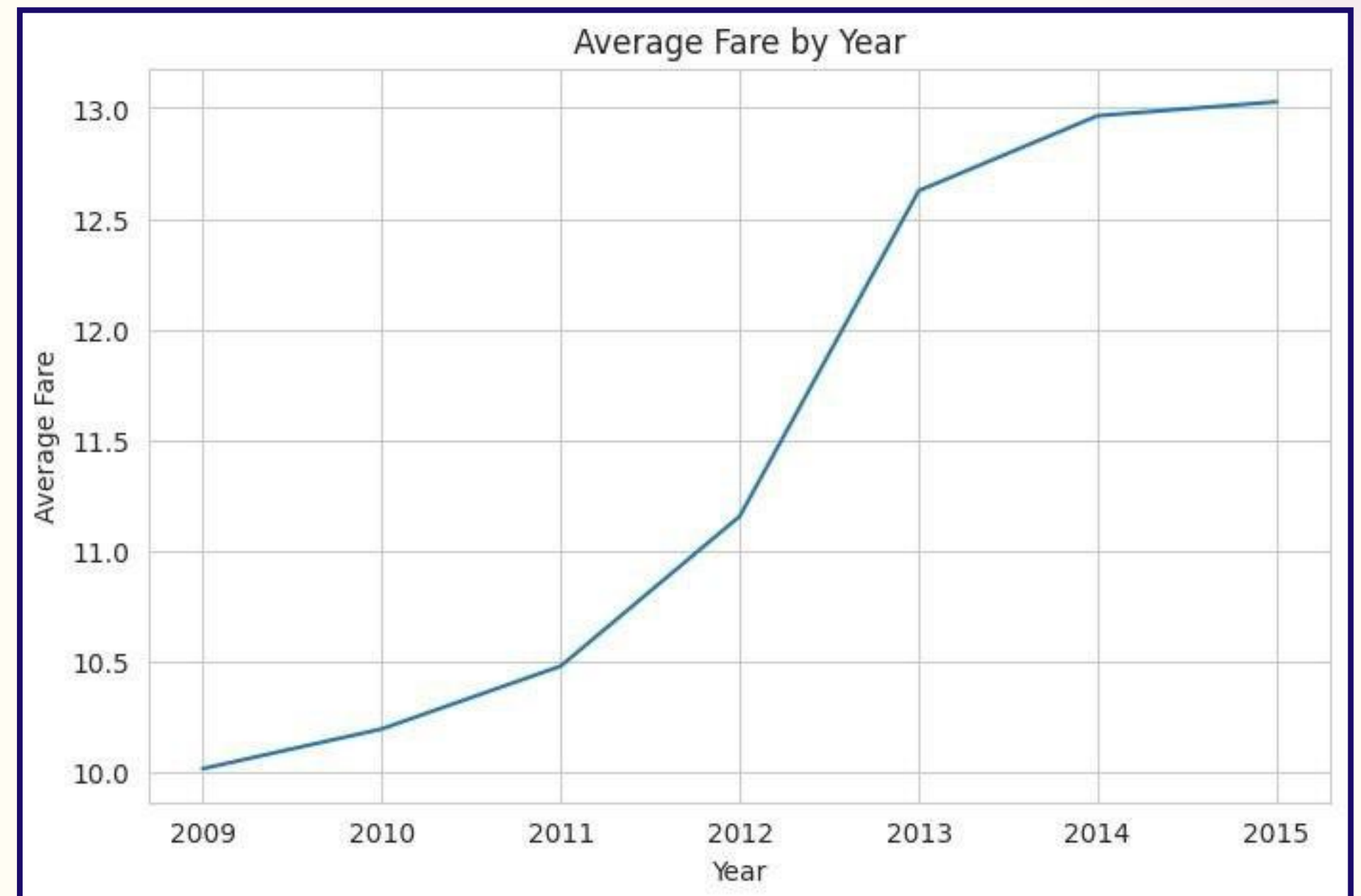
- There is a strong correlation between year and the fare amount.
- Airport distances contribute almost equally to the fare amount.



ANALYTICAL QUESTIONS

The variation of average fare price by year

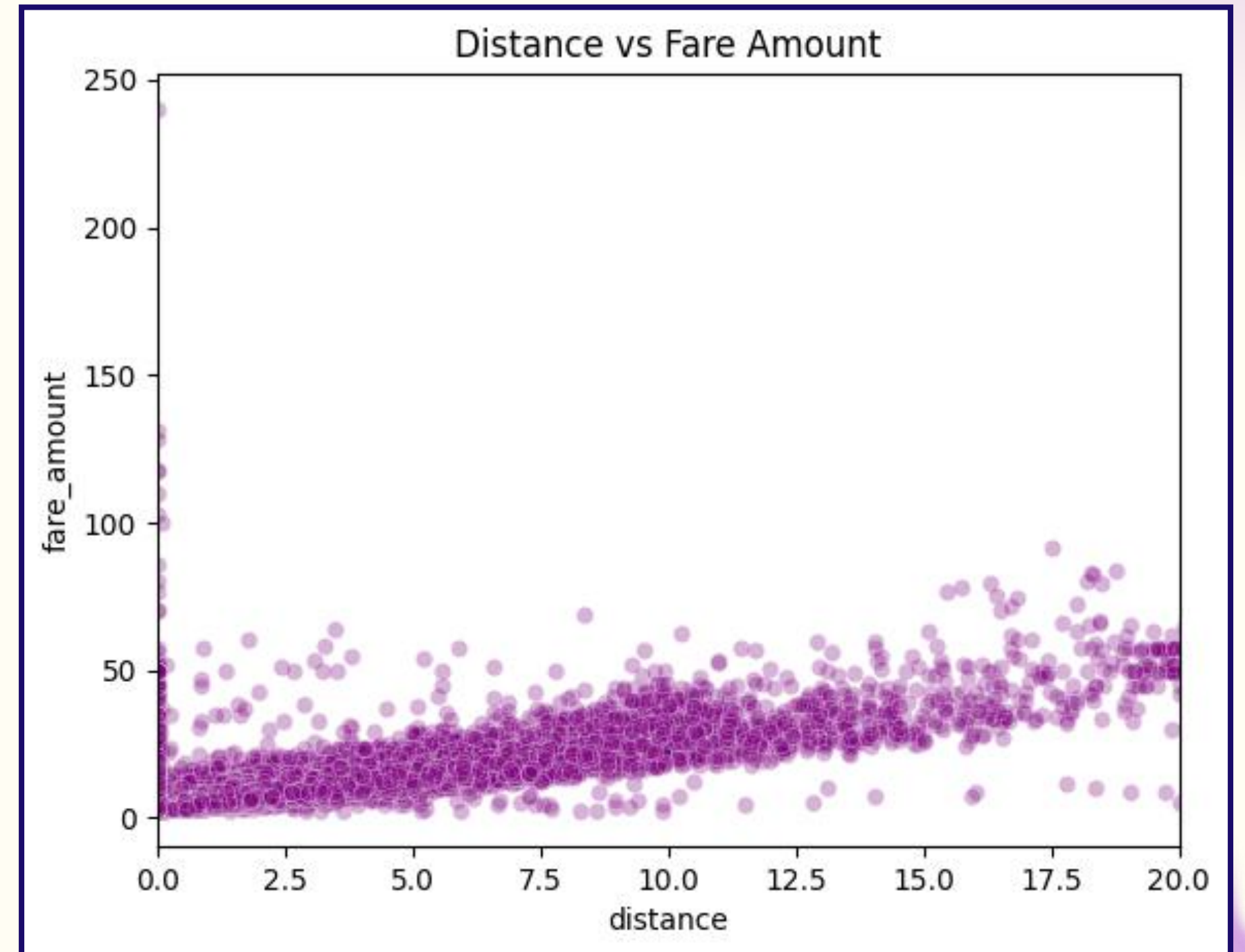
- The graph shows consistent growth in the average price over the years.



ANALYTICAL QUESTIONS

Does distance affect fare amount?

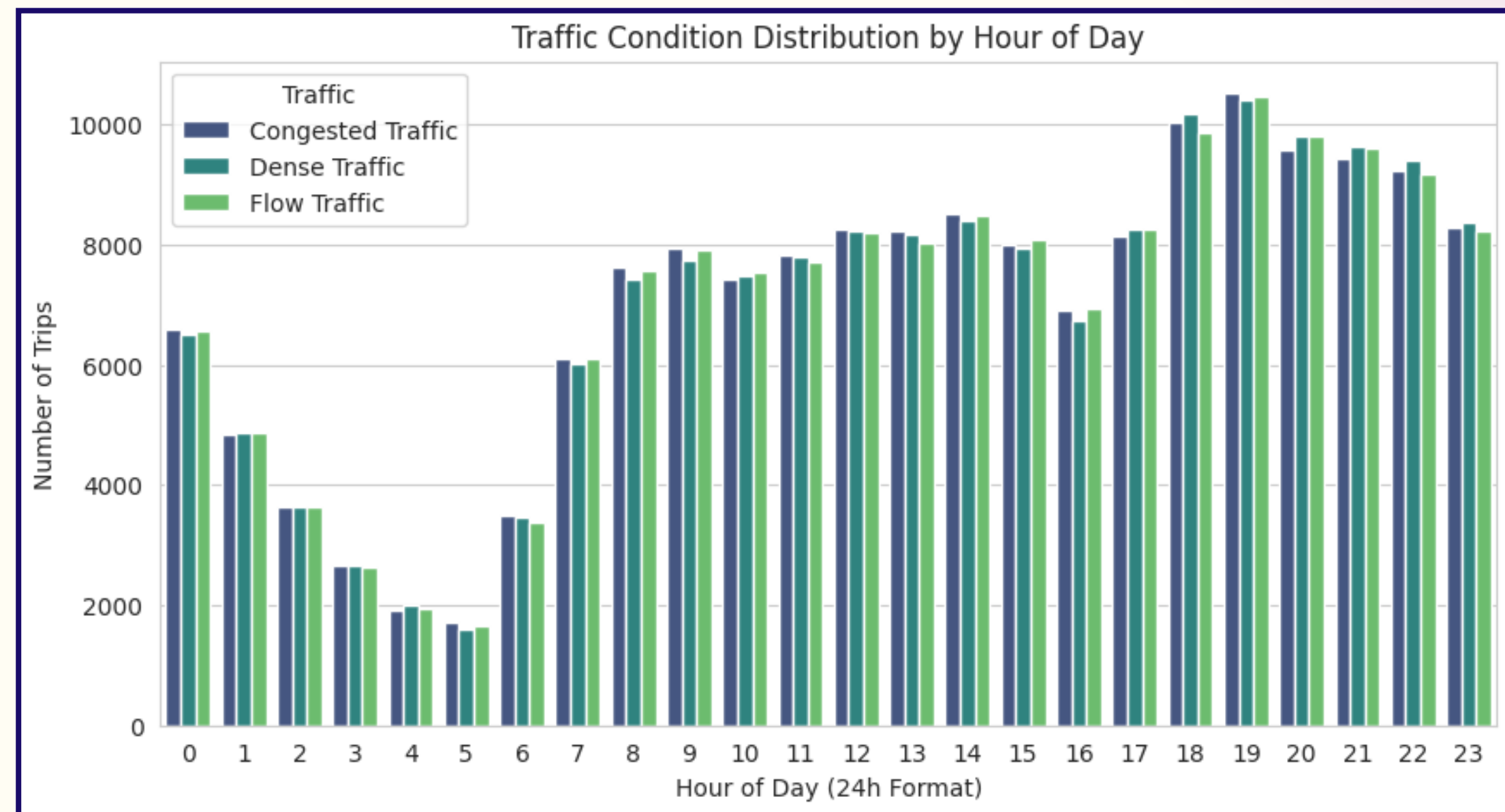
- A strong positive relationship between distance and fare.
- Almost linear.



ANALYTICAL QUESTIONS

Does traffic changes during the day?

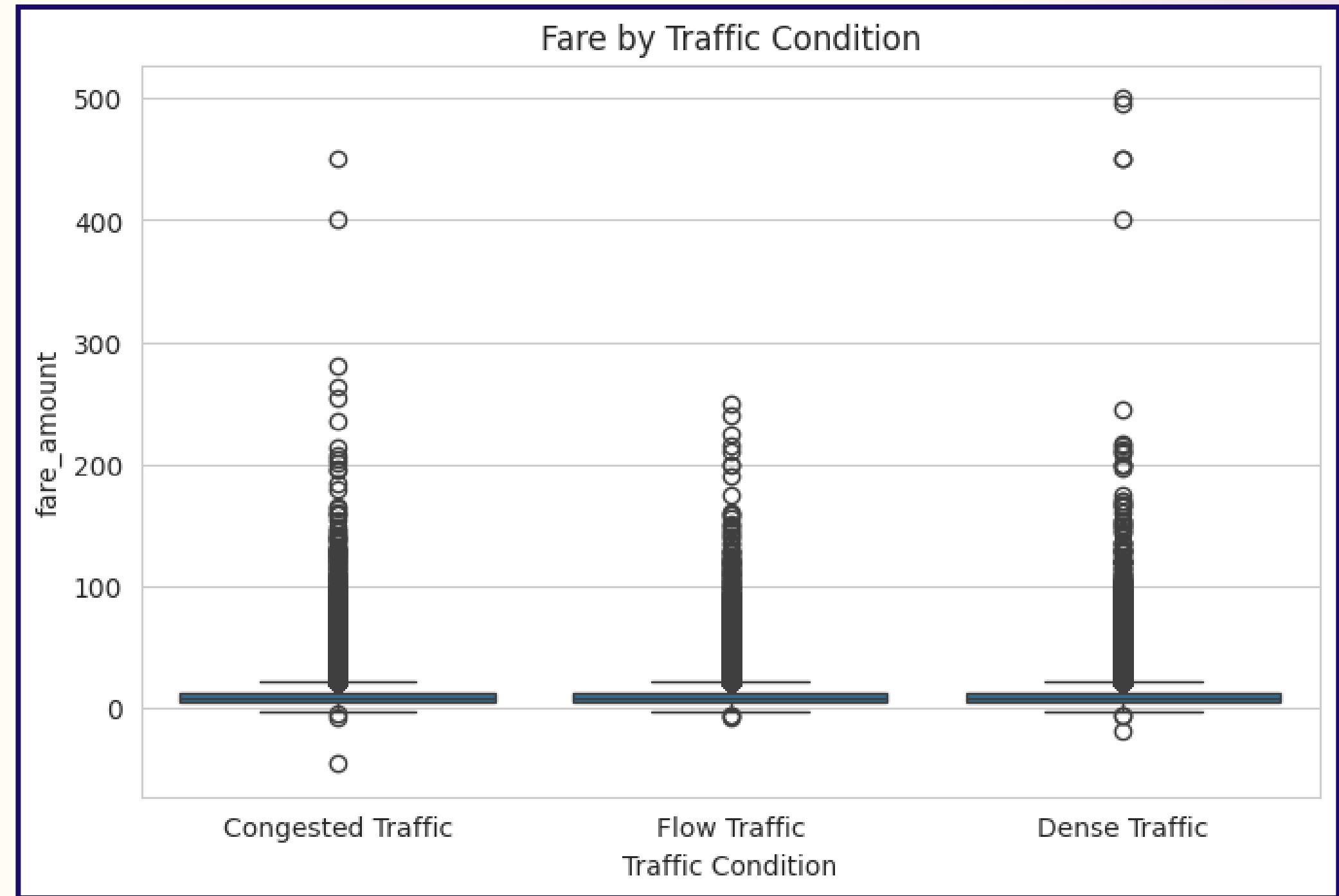
- Traffic and hour of the day influences ride duration that influences fare.
- Time of day may indirectly affect pricing.



ANALYTICAL QUESTIONS

Does traffic condition affect fare?

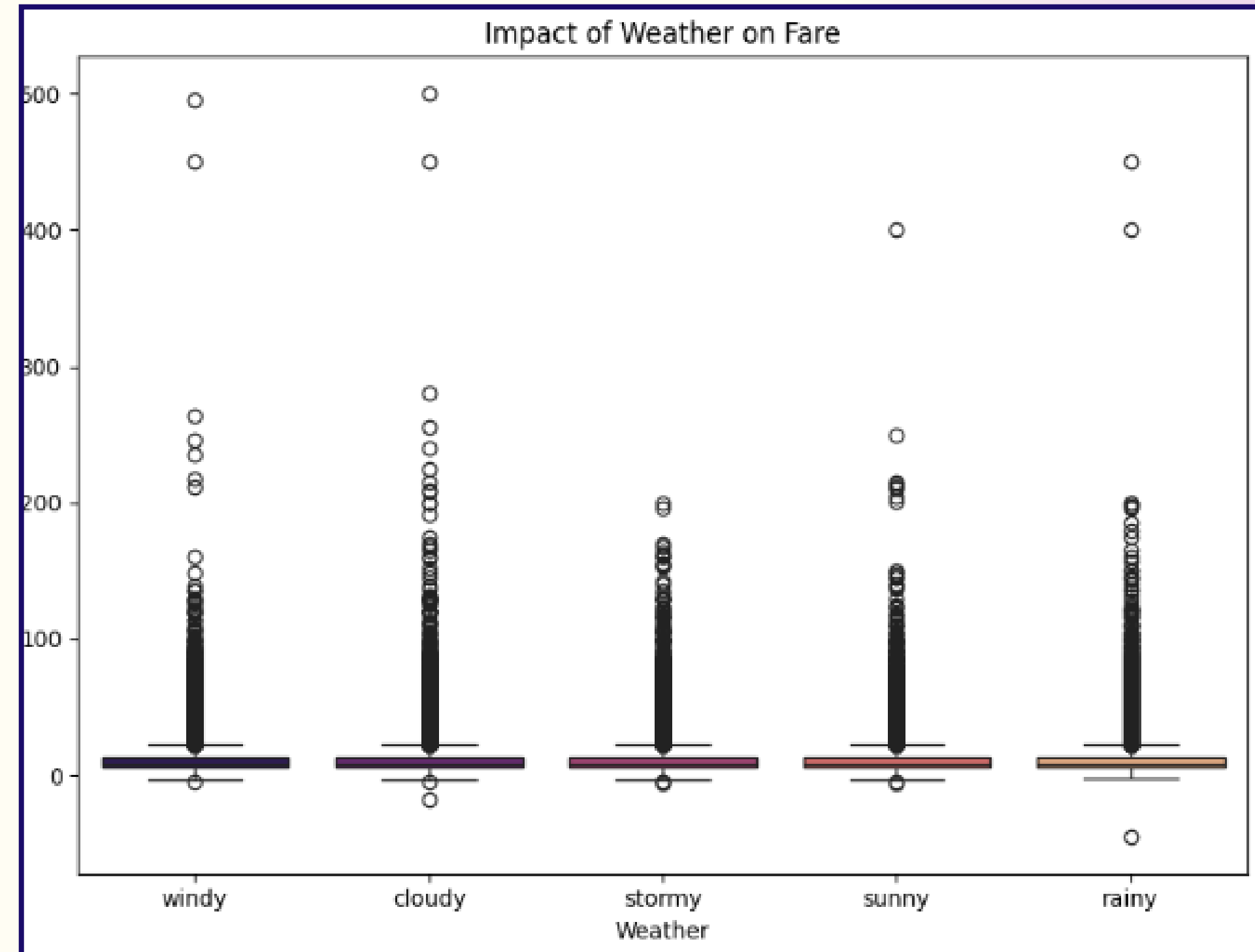
- Traffic congestion may increase ride duration, which can influence pricing.
- Box plots show that the effect of different traffic conditions is quite similar.



ANALYTICAL QUESTIONS

Does weather directly affect fare?

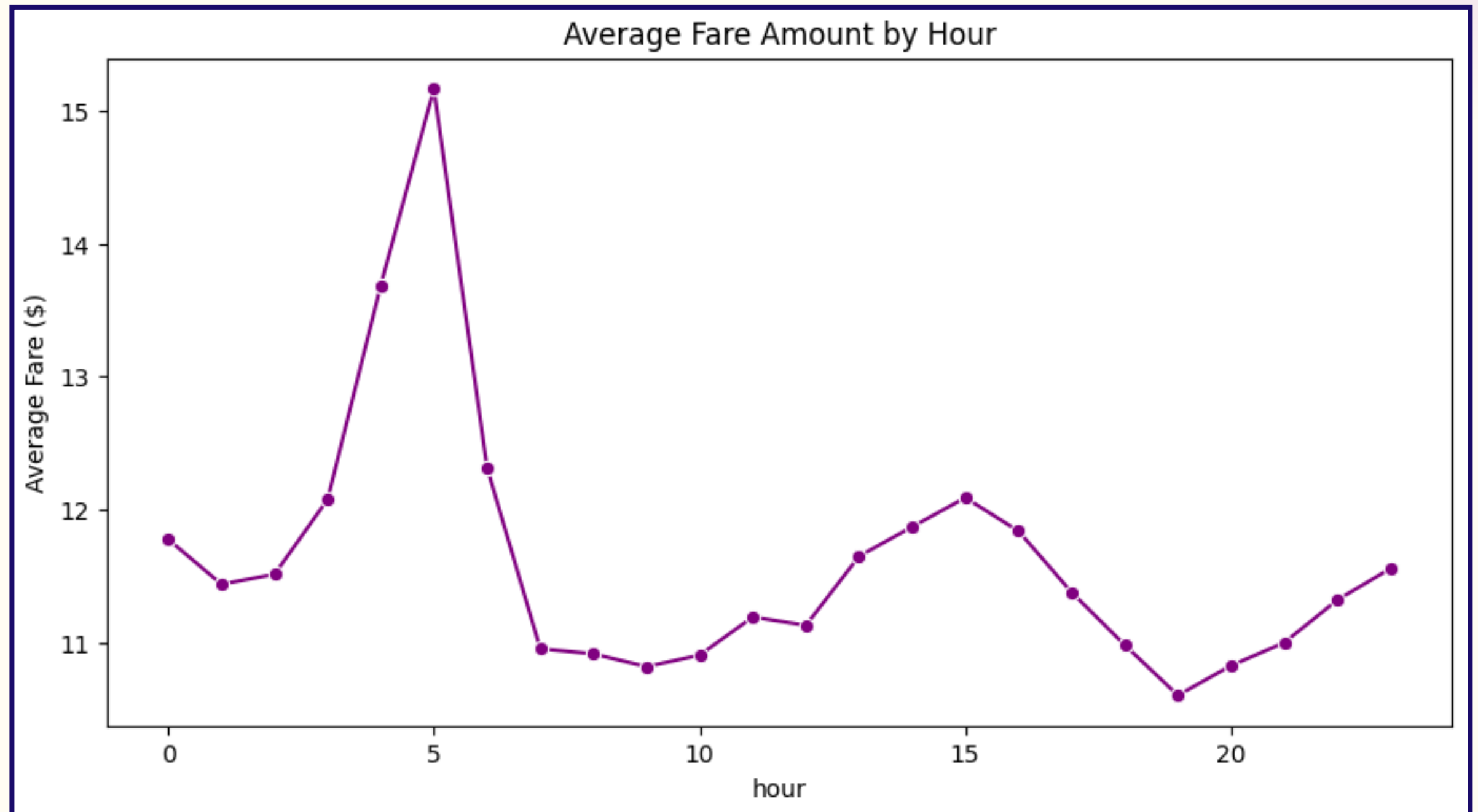
- The effect appears smaller compared to traffic.
- Weather may influence fare indirectly through traffic congestion.



ANALYTICAL QUESTIONS

Does time of day influence pricing?

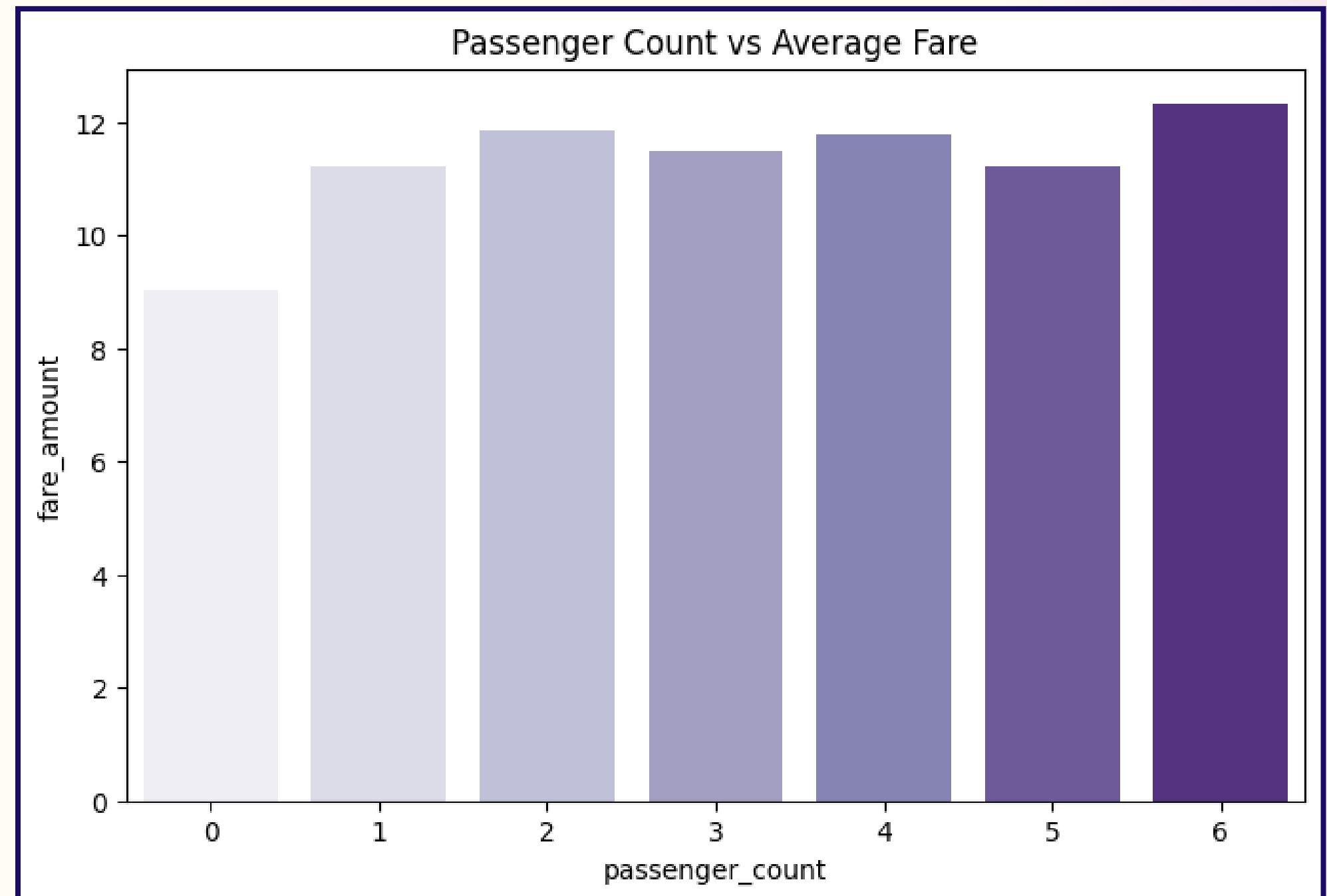
- Time indirectly affects fare through congestion and ride patterns.



ANALYTICAL QUESTIONS

Does the number of passengers influence pricing?

- The fare amount does not vary much.
- It is kind of independent of passenger count.





Thank You!