Course Four

From Data to Insight: The Power of Statistics



Instructions

Use this PACE strategy document to record decisions and reflections as you work through this end-of-course project. As a reminder, this document is a resource that you can reference in the future, and a guide to help you consider responses and reflections posed at various points throughout projects.

Course Project Recap

Regardless of which track you have chosen to complete, your goals for this project are	∋:
☐ Computing descriptive statistics	
☐ Conducting a hypothesis test	
☐ Articulate findings in an executive summary for external stakeholders	

Relevant Interview Questions

Completing this end-of-course project will empower you to respond to the following interview topics:

- How would you explain an A/B test to stakeholders who may not be familiar with analytics?
- If you had access to company performance data, what statistical tests might be useful to help understand performance?
- What considerations would you think about when presenting results to make sure they have an impact or have achieved the desired results?
- What are some effective ways to communicate statistical concepts/methods to a non-technical audience?
- In your own words, explain the factors that go into an experimental design for designs such as A/B tests.

Reference Guide

This project has four tasks; the visual below identifies how the stages of PACE are incorporated across those tasks.



Data Project Questions & Considerations



PACE: Planning Stage

What is the main purpose of this project?

Determine whether the total fare of the trips have a relationship with the payment method.

• What is your research question for this project?

Is there a relationship between total fare amount and payment type?

What is the importance of random sampling?

Random Sampling is important because it reduces the chance of misrepresentation.



PACE: Analyzing & Constructing Stages

• In general, why are descriptive statistics useful?

Because it helps to understand the main trends and values of a group of data.

How did computing descriptive statistics help you analyze your data?

It eases the mathematical process by making it faster and more precise at the moment of calculating trends.

• In hypothesis testing, what is the difference between the null hypothesis and the alternative hypothesis?

The null hypothesis considers that an observation can be due to the azar while the alternative hypothesis empirically supports that it is not due to the azar.

What conclusion can be drawn from the hypothesis test?

There is a difference between payment types in terms of the total fee paid.



PACE: Execute Stage

What key business or organizational insight(s) emerged from your A/B test?

Persuading clients to use credit as payment method would generate a higher revenue for taxi drivers.

What recommendations do you propose based on your results?

There are several assumptions related to the data collected that can cause an imprecision in the analysis. For instance, usually higher fares are paid with credit cards, so the mean tends to get higher. Thus, it is important to consider the limitations of the reached conclusions.