

Experimental Economics

Martín Brun

Public Sector Economics
Faculty of Economics and Business Studies
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[Link to updated version](#)

Learning objectives

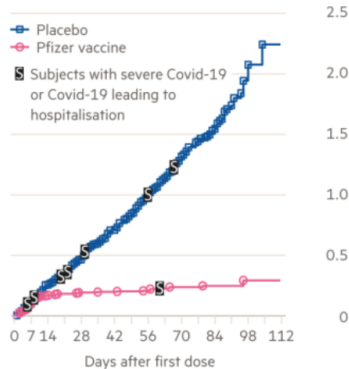
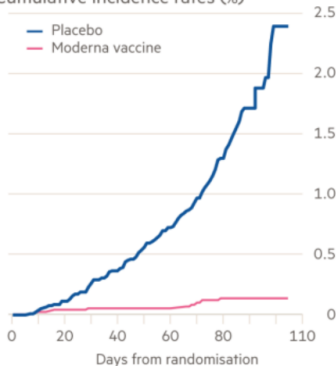
We will:

- ① collect data from an experiment
- ② produce summary statistics and descriptive graphs
- ③ estimate and interpret a p-value
- ④ discuss the usefulness and limitations of experiments

Introduction

Covid-19 cases in the placebo group overtake the vaccine group soon after first dose

Cumulative incidence rates (%)



Sources: FDA; Pfizer/BioNTech

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Introduction

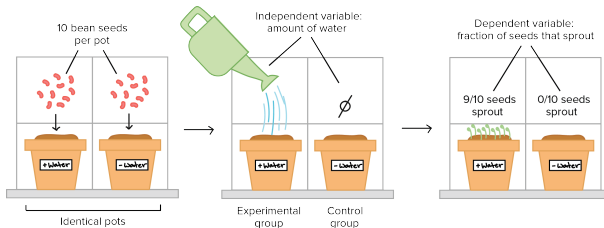


- Control group: vaccinated with **placebo** dose
- Treatment group: vaccinated with Moderna/Pfizer dose

Introduction

Experiments:

- provide a **controlled environment**
 - **isolates** the effects of a **given change**
 - allows to **identify specific reasons** for observed behavior
- *Examples:* vaccine trials, incentivized games, ...



Public Goods

What are they?

Public Goods:

- **individual agents carry cost** of providing it
- **everyone** can **enjoy** them
- *Examples:* road maintenance, street lighting, ...



Public Goods

Free-ryder problem

- Theory: self-interested people **prefer to benefit** from the goods, **without paying for them**. We call this 'free-ryding'
- Observation: there are **real-world** examples of **succesfull public-good provisioning**
- Possible explanations:
 - people do care about others well-being
 - people believe 'free-ryding' is bad
 - people fear being punished for 'free-ryding'

⇒ [Herrmann, Thöni & Gächter \(2008\)](#)

Public Goods

Public Goods Game

Herrmann, Thöni & Gächter (2008) run the following experiments:

- First experiment: in each of 10 rounds,
 - ① each person is given €20
 - ② subjects are **randomly sorted** into four-person groups
 - ③ each person **decides on a contribution** to a common pool
 - ④ for every €1 contributed, each person receives €0.40
 - ⑤ **everyone is told** how much others contributed
- Second experiment: likewise first experiment, with an additional step
 - ⑥ each person can anonymously **pay €1 to punish other**, making pay a fine of €3

Learning objectives

Research questions

- Were there any differences in behavior between experiments?
- Can we attribute them to the change in conditions?

We will:

- ① collect data from an experiment
- ② produce summary statistics and descriptive graphs
- ③ estimate and interpret a p-value
- ④ discuss the usefulness and limitations of experiments

Experiment

Accessing the experiment

- Direct access
- If above fails, following steps:
 - 1 Access: <https://classex.uni-passau.de>Select the following:
 - 2 Universitat Autonoma de Barcelona
 - 3 Public Sector Economics
 - 4 participant
 - 5 password: uab2021

class

EX

version 3.6.1
information on classex
classex@school (DE)

Universidad Autonoma de Barcelona

Public Sector Economics

participant

login

classex was just updated to [version 3.6.1](#). If you have any problems, please write to classex@uni-passau.de or visit <https://groups.google.com/forum/#!forum/classex>.

Experiment

Instructions

Priors:

- This experiment consists of 10 rounds
- You will be in a group of four students all rounds
- You will **not know who the other three members are**
- You **cannot communicate** with each other during the experiment

Experiment

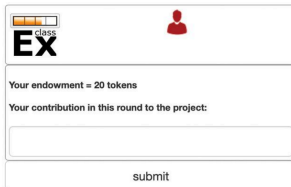
Instructions

Each round:

- ① you will be given 20 tokens
- ② you **decide on a contribution** (from 0 to 20 tokens) to a common pool
- ③ you keep the remaining tokens
- ④ for every 1 token contributed to the common pool, each person receives 0.40 token
- ⑤ you get feedback:
 - your total income in the round
 - contributions done by other members

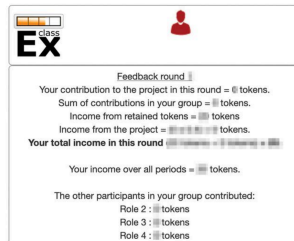
Experiment

Instructions



The contribution screen features a header with a progress bar (3/4 full), the text "class", and a large "EX" logo. A red person icon is in the top right. The main text area contains "Your endowment = 20 tokens" and "Your contribution in this round to the project:" followed by a text input field. A "submit" button is at the bottom.

Figura 1: Contribution screen



The feedback screen features a header with a progress bar (4/4 full), the text "class", and a large "EX" logo. A red person icon is in the top right. The main text area contains the following information: "Feedback round 1", "Your contribution to the project in this round = 0 tokens.", "Sum of contributions in your group = 0 tokens.", "Income from retained tokens = 20 tokens", "Income from the project = 0 tokens", "Your total income in this round 0 tokens + 20 tokens = 20 tokens.", "Your income over all periods = 20 tokens.", and "The other participants in your group contributed: Role 2 : 0 tokens, Role 3 : 0 tokens, Role 4 : 0 tokens".

Figura 2: Feedback screen

Experiment

Test your understanding of the experiment

- 1 Each group member has 20 tokens. Suppose that the other three members of your group contribute nothing to the project.
 - I What is your income if you contribute nothing?
 - a 0 tokens
 - b 10 tokens
 - c 16 tokens
 - d 20 tokens
 - II What is your income if you contribute 20 tokens?
 - a 0 tokens
 - b 8 tokens
 - c 10 tokens
 - d 20 tokens

Experiment

Test your understanding of the experiment

- 1 Each group member has 20 tokens. Suppose that the other three members of your group contribute nothing to the project.
 - I What is your income if you contribute nothing?
 - a 0 tokens
 - b 10 tokens
 - c 16 tokens
 - d 20 tokens
 - II What is your income if you contribute 20 tokens?
 - a 0 tokens
 - b 8 tokens
 - c 10 tokens
 - d 20 tokens

Experiment

Test your understanding of the experiment

- 2 Each group member has 20 tokens. Suppose that the other three members contribute 12 tokens in total to the project (excluding your own contribution).
- I What is your income if you contribute 20 tokens?
- a 4.8 tokens
 - b 12.8 tokens
 - c 14.8 tokens
 - d 24.8 tokens
- II What is your income if you contribute 0 tokens?
- a 0 tokens
 - b 4.8 tokens
 - c 12.8 tokens
 - d 24.8 tokens

Experiment

Test your understanding of the experiment

- ② Each group member has 20 tokens. Suppose that the other three members contribute 12 tokens in total to the project (excluding your own contribution).
- Ⅰ What is your income if you contribute 20 tokens?
- a 4.8 tokens
 - b 12.8 tokens
 - c 14.8 tokens
 - d 24.8 tokens
- Ⅱ What is your income if you contribute 0 tokens?
- a 0 tokens
 - b 4.8 tokens
 - c 12.8 tokens
 - d 24.8 tokens

Experiment

Test your understanding of the experiment

- 3 Each group member has 20 tokens. Suppose that you contribute five tokens to the project.
- I What is your income if the total contribution to the project (including yours) is 12 tokens?
- a 4.8 tokens
 - b 15 tokens
 - c 19.8 tokens
 - d 20 tokens
- II What is your income if the total contribution to the project (including yours) is 48 tokens?
- a 0 tokens
 - b 4.8 tokens
 - c 12.8 tokens
 - d 24.8 tokens

Experiment

Test your understanding of the experiment

- 3 Each group member has 20 tokens. Suppose that you contribute five tokens to the project.
- I What is your income if the total contribution to the project (including yours) is 12 tokens?
- a 4.8 tokens
 - b 15 tokens
 - c 19.8 tokens
 - d 20 tokens
- II What is your income if the total contribution to the project (including yours) is 48 tokens?
- a 15 tokens
 - b 19.2 tokens
 - c 34.2 tokens
 - d 48 tokens