Tutorial

Economics of Social Justice

Session 8: Fairness in public good provision

Goals of this session

- Understand the **use of experiments** to verify the existence of certain kind of preferences
- Learn how an **experiment can be framed**
- Understand the **role of preferences** for equality and proportionality in economic relations
1. Fairness and economic agents

- Do economic agents care about it?

- Outside of economics: various concepts
  - Developmental and social psychology:
    - From childhood people can distinguish between outcomes (fair and own interest)

- Key question of the study:
  - “If people can distinguish between fair and self-serving outcomes, which do they prefer?”
1. Fairness and economic agents

- Far-reaching implications for economic analysis:
  - Public goods (people may be not indifferent to distributional effects)

- Empirically:
  - As scientists: also concerned about evidences
  - Difficult to prove (existence of fairness preferences)

- Experimental literature on fairness preferences:
  - Bargaining (games)
  - Public good voluntary contribution mechanisms (last tutorial)
“While evidence of systemic deviations from self-interest in bargaining games is to find, it is not well understood” (p.710)
2. About the paper

- Investigate fairness preferences through experiments

Objective:
- Distinguish among:
  - Fairness principles
    - Equality
    - Cost/benefit proportionality
  - Fairness and motivations
    - Altruism
    - Envy
    - Rawlsian Difference Principle
2. About the paper

Experiment used to test:

1) Existence of preferences:
   - Do people have preferences for equality or for proportionality?

2) Sensitivity: Are these preferences sensitive to:
   - A) whether decisions are hypothetical or actual (costly)?
   - B) whether differences in incomes or benefits are random or earned?
   - C) whether decisions are framed over gains or losses?
3. Explaining fairness principles and motivations

3.1: Equality:
- Most commonly used measure:
  - Gini coefficient
  - Gini = \( \frac{A}{A + B} \)
  - G=0 (perfect equality)
  - G=1 (perfect inequality)
3. Explaining fairness principles and motivations

- **3.2: Proportionality**
  
  - Prominent principle in social psychology:
    - Costs be proportional to benefits in exchange
    - Maximum fairness is achieved when: each person’s costs are exactly proportional to her benefits
    - For a public good:
      - If J receives x% of the benefits from a project, J should pay for x% of the costs

- **PS:** Several competing „other regarding“ motivations
3. Explaining fairness principles and motivations

- Measuring proportionality:

\[ P = \frac{\sum_{i}^{N} \left| \left( \frac{c_i}{C} \right) - \left( \frac{b_i}{B} \right) \right|}{2} \]

- \( c_i \): cost paid by person \( i \)
- \( b_i \): benefits received by person \( i \)
- \( P \): sums deviations from cost/benefit proportionality over the population and is normalized between 0 and 1
  - \( P=0 \) (perfectly proportional)
  - \( P=1 \) (perfectly non-proportional)
3. Explaining fairness principles and motivations

- Examples of these motivations:

  3.3: Altruism and envy
    - Altruism: Individuals might prefer outcomes that **maximize total or mean income received by others**
      - $A = \sum_{-i} Y_{-i}$
    - Envy: Individuals may care about their **relative position**
      - $E = \sum_h (Y_h - Y_i)$
      - $E$ sums the income gaps between agent $i$ and all individuals with $Y_h > Y_i$. 


3. Explaining fairness principles and motivations

- Further examples of these motivations:

- **3.4: The difference principle**
  - Requires social institutions to adopt measures only in so far as they are to the **benefit the least fortunate**

- **3.5: Three context effects**
  - **Hypothetical** generosity
    - hypothetical x actual situation
  - **Means** by which subjects are assigned differing roles in experiments
    - income assigned by chance x by relative effort
  - **Framing** of trade-offs between fairness and income over gains or losses
    - losses may reduce utility more than equivalent foregone gains
3. Explaining fairness principles and motivations

- Agent i's representative utility function:

\[ U_i = (Y_i, G, P, A, E, Y_{\text{min}}) \]

Y: own income  
G: equality  
P: proportionality  
A: altruism  
E: envy  
\( Y_{\text{min}} \): concerned about the income of the society's poorest
4.1 Group work

- Read and understand one of the experiments below:
  - On equality
  - On proportionality

- Explain
  - Design + Process
  - Results

- Take your conclusions as a group (discussion)
- Present it together
5. Final remarks

- Do you think that such an experiment is helpful for your understanding about preferences for fairness?

- How would you frame such an experiment?

- Which are your critics?