Recitation 9: Social Preferences

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Outline

1. Hjort (2014)
2. Problem Set 4
Another good example of field research on social preferences in the workplace

Complements our discussion in lecture of Bandiera et al. (2005), Beza et al. (2018), Rao (2019), Lowe (2019)

Highlights the importance of employers’ compensation and personnel policies when workers have social preferences
Setting

- Flower packaging plant in Kenya
- Workers are drawn from two rival tribes (Kikuyu and Luo)
- Workers must collaborate in teams of three to produce packages of flowers
- One “supplier” prepares roses and passes them to two downstream “processors”
Production Teams

Figure 1a: Organization of team production

Input flowers

Supplier

Processor 1

Output processor 1

Processor 2

Output processor 2

Courtesy of Jonas Hjort. Used with permission.
Possible Team Configurations

Homogenous teams

Horizontally mixed teams

Vertically mixed teams

Courtesy of Jonas Hjort. Used with permission.
Compensation Policy and Timeline of Events

Initial compensation policy at beginning of sample period:
- Suppliers are paid a piece rate $w$
- Processors are paid a piece rate $2w$

December 2007:
- Presidential election takes place
- Leads to political and violent conflict between the tribes
- Firm continues to operate

February 2008:
- Firm changes its compensation policy for processors
- Processors are now paid $w$ per package produced by the team, rather than $2w$ per package produced individually
Simple Model

- Let \( y \) denote income and \( e \) denote effort
- Let \( s \) denote the supplier, \( p_1 \) denote the first processor, and \( p_2 \) denote the second processor
- Allow the supplier have social preferences:
  - Attaches weight \( \alpha_y \) to utility of processors from the same tribe
  - Attaches weight \( \alpha_n \) to utility of processors from a different tribe
- Assume for simplicity that the processors do not have social preferences
Supplier Utility

Supplier’s utility given by:

\[ u(y_s, e_s) + \alpha_1 u(y_{p_1}, e_{p_1}) + \alpha_2 u(y_{p_2}, e_{p_2}), \]

where

\[ \alpha_i = \begin{cases} 
\alpha_y & \text{if processor } i \text{ is from same tribe} \\
\alpha_n & \text{if processor } i \text{ is from different tribe} 
\end{cases} \]
Effects of the Election and Compensation Change

- Within the model, how might we account for the heightened conflict caused by the presidential election?
- How do we think the presidential election would affect the productivity of:
  - Homogenous teams?
  - Horizontally mixed teams?
  - Vertically mixed teams?
- How do we expect the ensuing compensation change to affect:
  - Homogenous teams?
  - Horizontally mixed teams?
  - Vertically mixed teams?
Observed Effects

Figure 2: Output in homogeneous and mixed teams across time

Average number of roses produced

Election day Conflict begins Team pay introduced

Homogeneous teams Horizontally mixed teams Vertically mixed teams

Courtesy of Jonas Hjort. Used with permission.
Hjort (2014): What Did We Learn?

- Workers have social preferences
- Compensation policies interact with social preferences; employers’ optimal compensation policies depend on their workers’ preferences
- Employers can also affect productivity with non-compensation personnel policies:
  - What if the firm reassigned its workers so that all teams were homogenous?
  - Short-run vs. long-run effects of worker segregation?
Outline

1. Hjort (2014)

2. Problem Set 4
Problem Set 4

- With just one paper to cover in recitation this week, we thought it would be helpful to address any questions and talk through the general approach to each part
- Any particular questions?
Part 1: General Approach

- Workers have utility
  
  \[ u_i(y_i, q_i) = y_i - c(q_i) + \alpha \sum_{j \neq i} u_j(y_j, q_j) \]

- Workers can be:
  - Selfish: \( \alpha = 0 \)
  - Altruistic: \( \alpha > 0 \)

- Compensation can be:
  - Piece-rate: \( y_i = pq_i \)
  - Relative: \( y_i = pq_i - \gamma \sum_{j \neq i} \frac{q_j}{N-1} \)

- So four possible cases. Before doing any math:
  - Should we expect the workers’ optimal effort to be different in each of the four cases?
  - If not, which subset(s) of the four cases have the same solutions?
Part 2: Setup

- Alex’s payoff is $x_1$ and Aaron’s payoff is $x_2$. Aaron’s utility is:

$$u_2(x_1, x_2) = \begin{cases} \rho x_1 + (1 - \rho) x_2 & \text{if } x_2 \geq x_1 \\ \sigma x_1 + (1 - \sigma) x_2 & \text{if } x_2 < x_1 \end{cases}$$
Part 2: General Approach

How do we interpret $\rho$ and $\sigma$?

- $\sigma \leq \rho < 0$
  - Simple competitive preferences; Aaron’s utility always increasing in his own payoff and always decreasing in Alex’s payoff.
  - Aaron becomes more competitive when his own payoff is smaller than Alex’s.

- $\sigma < 0 < \rho < 1$
  - Aaron becomes altruistic only when his own payoff is larger than Alex’s.

- $0 < \sigma \leq \rho \leq 1$
  - “Social-welfare preferences” (Charness and Rabin 2002): Aaron’s utility is always increasing in both his and Alex’s payoff.
  - Aaron cares more about Alex’s payoff when his own payoff is larger than Alex’s.

- $\sigma = \rho = 0$
  - Simple self-interest; Alex’s payoff never matters to Aaron.