Agency in Hierarchies: Middle Managers and Performance Evaluations

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    - Sales

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    - Why subjective performance reports are so coarse?
    - When are subjective evaluations valuable?

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- Unobservable worker's effort: $a \in \{0, 1\}$
- Effort generates 2 signals:
  - Output: $\mathbf{y} \sim P(a)$ — **Public and Verifiable**
  - Manager's perception: $\mathbf{z} \sim Q(a)$ — **Manager's Private Information**
- P and Q satisfy MLRP

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- Worker's payoff:

$$u_W(\pi_W) - c \cdot a$$

with $\mathbf{c} \sim G \in \Delta(\mathbb{R}_+)$

Timing

- t=0, the principal offers contracts
- t=1, the manager and the worker accept/reject contracts
- t=2, the manager announces her evaluation strategy σ to the worker
- t=3, the worker observes c and chooses effort
- t=4, the manager observes y and z
- t=5, the manager chooses a performance report $e \in E$
- t=6, payments are realized.

Contracts and Player's Actions

- Contracts (E, π_W, π_M):
  - E is a finite set of performance ratings
  - $\pi_W : Y \times E \to \mathbb{R}_+$, increasing in y
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  - Accept or reject contracts
  - W chooses effort $a \in \{0, 1\}$
  - M chooses evaluation: $\sigma : Y \times Z \to \Delta(E)$

Solution Concept

- For each (E, π_W, π_M) manager and worker play a game
- Equilibrium:
  - Manager announces her preferred evaluation evaluation strategy
  - Worker chooses her preferred effort
  - Manager is willing to evaluate as announced

Worker's Effort

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Worker's Effort

- Fix contracts (E, π_W, π_M) and manager's evaluation strategy
- Worker's effort choice is a cutoff rule:

$$a(\hat{c}) = \begin{cases} 1 \text{ if } \hat{c} \leq c \\ 0 \text{ otherwise} \end{cases}$$

- Refer to c as the worker's effort level

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- Given a cost cutoff c, minimize cost:

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- Given a cost cutoff c, minimize cost:

$$\min_{(E,\pi_M,\pi_W,\sigma)} \mathbb{E}\left[\pi_W(\mathbf{y},\mathbf{e}) + \pi_M(\mathbf{y},\mathbf{e}) \middle| c, \sigma\right]$$

subject to

- Manager and worker want to participate;
- Worker's optimal cutoff is c;
- Manager's optimal evaluation strategy is σ.
- σ is sequentially rational.

Benchmark - Public and Verifiable $\mathbf{z}$

- Suppose the principal directly observes $\mathbf{z}$
- Canonical Moral Hazard Problem:

$$\frac{1}{u'\left(\pi_W(y,z)\right)} = \lambda + \mu \cdot s(y,z)$$

- Different payments for each z

Manager's Optimal Evaluation Strategy

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Proposition

Consider any mechanism (E, π_W, π_M) such that π_M does not depend on manager's reports. Then, the manager's preferred evaluation strategy is

- *Report the highest-paying message if $p(y|1)q(z|1) > p(y|0)q(z|0)$;*
- *Report the lowest-paying message if $p(y|1)q(z|1) < p(y|0)q(z|0)$.*

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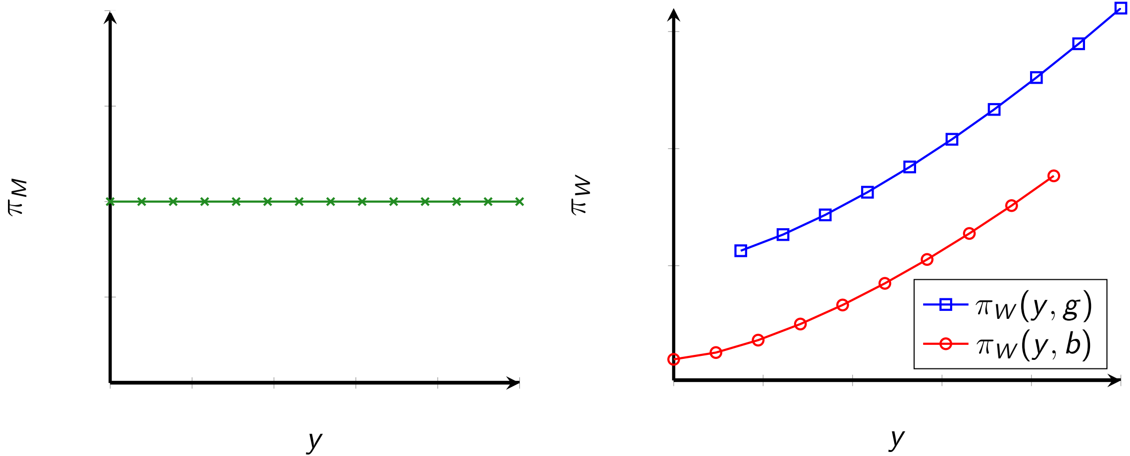
- Manager benefits from higher output
- Manager benefits from higher worker's effort
- Principal cannot pay the manager conditional on her report
- Manager does not pay the worker from her own pocket
- Manager wants powerful incentives but does not care about risk-sharing
- She uses only extreme reports

Optimal Mechanism

- Binary performance ratings: $E^* = \{g, b\}$
- Performance evaluation strategy σ^*
  - Report b if $z < z^*(y)$
  - Report g if $z > z^*(y)$
- Payments
  - Manager: π^*_M constant
  - Worker: $\pi^*_W(y, b)$ and $\pi^*_W(y, g)$

Optimal Compensation



Additional Results

- Binary ratings even in a setting with continuous efforts
- Manager is more lenient when output is higher
- Characterize when subjective evaluations are valuable
  - Valuable $\iff$ $\mathbf{z}$ is sufficiently more informative then $\mathbf{y}$
- Principal benefits from reducing the manager's information about effort

Multiple workers

- Principal wants to force the manager to use more ratings
- How about forced rankings?
- Forced rankings (FR) vs. Individual Performance Evaluations (IP)
  - IP is better if $\mathbf{z}$ is sufficiently informative
  - FR is better if $\mathbf{z}$ is sufficiently noisy

Related Literature

- **Endogenous Monitoring:** Alchian & Demsetz (1972); Strausz (1997); Rahman (2012); Gershkov & Winter (2015); Georgiadis & Szentes (2020); Li & Yang (2020)...
- **Agency in hierarchies:** Tirole (1986); Laffont (1990); Faure-Grimaud et al. (2003); Mookherjee (2012)...
- **Subjective Performance Evaluations:**
  - Principal conducts SPE:
    - MacLeod (2003); Levin (2003); Fuchs (2007); Lang (2019)...
  - Manager conducts SPE:
    - Prendergast & Topel (1996); Letina, Liu & Netzer (2020); Frederiksen, Lange & Kahn (2021)...

Summary

- Profit-maximizing principals are far removed from rank-and-file
  - Important to understand incentives of intermediate agents
- This paper:
  - Manager cares about the worker's action, but not about worker's payments
  - Binary Performance Evaluation Systems
  - Full-transparency is not optimal
  - Forced ranking vs Individual Performance

Thank you!