

Managers, Hierarchies, Authority, and Delegation

Organizations, Personnel, and Internal Labor Markets
Week 5

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Performance improves after replacement: what did the manager change?

Central question

What do managers contribute, and how should organizations assign authority and discretion?

- The incoming manager may teach, reassign work, obtain resources, replace workers, or change reporting.
- The firm may send a manager to a team already about to recover.
- Even a causal gain may depend on the team, span, information, or decision rights.

Benson–Shaw (2025). Week 3 supplies measurement discipline; Week 4 supplies incentive discipline. This week studies managers and vertical authority.

Learning goals: identify the person, match, and organizational rule

- Distinguish a manager effect, worker–manager match, practice effect, and authority-policy effect.
- Interpret personnel panels, rotations, manager experiments, and field authority reforms.
- Use information/conflict and attention models with assumptions beside their predictions.
- Design a transition comparison with a remaining matching threat, independent quality, and worker welfare.

Core points

Manager fixed effects are not automatically causal skill or portable rankings. Reporting lines do not fully reveal information or exercised authority.

Start with reporting, decisions, and outcomes

Ledger	Minimum records	Essential distinction
Reporting	Worker, manager, site, dates, acting and shared appointments	Current chart versus historical exposure
Decisions	Initiation, recommendation, approval, veto, appeal, timestamps	Formal rights versus actual control
Outcomes	Quantity, quality, delay, hours, experience, exits	Operational performance versus welfare

A worker–manager spell is useful but may not be the analysis unit. Team treatments, decision logs, and firm reforms require different aggregation.

Audit merge keys: a many-to-many join can duplicate workers, decisions, and output. Retain denied and withdrawn requests.

Measure authority for a decision rather than a job title

Decision	Formal right	Exercised control
Staff scheduling	Who may propose a shift?	Who approves or overrides it?
Procurement	Which amount needs approval?	Who chooses the supplier and timing?
Task assignment	Who may move a worker?	Who actually sets the assignment?

- **Setting/variation:** Bloom–Sadun–Van Reenen's cross-country organizational survey.
- **Outcome:** authority over particular tasks, elicited from firms.
- **Limitation:** institutions and trust are not randomized; titles alone do not recover decision rights.

Bloom, Sadun, and Van Reenen (2012). A reporting change and a permission change need not coincide.

A performance ledger makes confounding and mediation visible

$$y_{it} = \alpha_i + \phi_{s(i,t)} + \lambda_t + \mu_{m(i,t)} + \xi_{i,m(i,t)} + \psi_{q(i,t)} + \gamma h_{it} + \varepsilon_{it}.$$

- i, t : worker and time; s, m, q : site, manager, and task assignments.
- α : worker attributes; ϕ : site conditions; λ : time shocks; μ : common manager contribution.
- ξ : worker–manager complementarity; ψ : task difficulty; h : accumulated skill; ε : other shocks.
- Manager and site can be inseparable. Task changes and skill growth can mediate a manager's total effect.

Diagnostic teaching ledger, not a claim that every term is jointly identified. Controlling for post-arrival skill or tasks can remove part of the contribution of interest.

Four estimands require different interventions

Target	What changes?	What remains distinct?
Manager assignment	The person leading a given team	Match and context can matter
Manager selection rule	Who becomes or is assigned manager	Not the causal production of skill
Managerial practice	Coaching, feedback, or allocation rule	Person may stay fixed
Authority policy	Who approves, decides, or vetoes	Not a ranking of people

An additive manager fixed effect does not automatically identify any policy on the last three rows.

The matched-effects framework of Abowd–Kramarz–Margolis (1999) provides statistical foundations, not exogenous managerial appointments.

Comparative advantage can dominate a common manager ranking

Team	Manager A	Manager B
Technical	14	12
Customer service	9	13

A technical, B customer: $14 + 13 = 27$, opposite: $12 + 9 = 21$.

- A's advantage is +2 on one team and -4 on the other.
- A single ranking hides worker-manager or task-manager complementarity.
- One manager per team; staffing and resources held fixed.

Invented conditional output matrix. It neither identifies real match effects nor proves a welfare-optimal assignment.

The Value of Bosses starts from workers and supervisor spells

- **Setting:** Lazear–Shaw–Stanton, personnel records linking worker output to supervisors within a firm.
- **Variation:** supervisor assignments and worker transitions connecting bosses.
- **Outcomes:** worker performance and its persistence.
- **Limitation:** this is a personnel-panel design, not randomized reassignment of all managers to all workers.
- Ask who switches, which bosses can be compared, and when performance remains observed.

Lazear, Shaw, and Stanton (2015), *The Value of Bosses*, required reading. A contribution in one setting is not automatically a universally portable trait.

Connectedness permits comparisons; it does not make moves exogenous

Teaching assignment pattern	Columns	Rank	Implication
Four managers fixed to four sites	7	4	Manager and site effects confounded
Connected manager rotations	7	7	Additive comparisons supported

- Seven columns: intercept, three site indicators, three manager indicators after normalization.
- Report connected components, movers, tenure support, and fragile bridging observations.
- A connected graph can still send managers to teams facing unobserved recovery or decline.

Original design-matrix illustration. Abowd–Kramarz–Margolis (1999) motivates support checks; endogenous assignment remains a separate problem.

The appointment chronology can reveal a rescue story

Vacancy → appointment decision → announcement → arrival → work and outcomes

- Record concurrent staffing, budgets, customer mix, and task changes.
- A temporary collapse can trigger replacement; natural recovery then resembles a manager effect.
- **Synthetic diagnostic:** four of eight sites fall from 50 to 40 just before replacement and return to 50.
- The true manager effect is zero, yet last-pre/first-post DiD is +10 against stable comparison sites.

Invented mean-reversion example. A nominal control group, worker fixed effects, or a favorable before/after graph does not establish the assignment argument.

Compare similar transitions and state the baseline

$$\beta_k = (\bar{y}_{L \rightarrow H, k} - \bar{y}_{L \rightarrow H, -1}) - (\bar{y}_{L \rightarrow L, k} - \bar{y}_{L \rightarrow L, -1}).$$

- H, L : higher/lower ex ante manager scores; k : time since arrival; bars use declared group weights.
- Compare $L \rightarrow H$ with $L \rightarrow L$; separately compare $H \rightarrow L$ with $H \rightarrow H$.
- Baseline $k = -1$ is shown here. Specify histories, anticipation, windows, overlapping events, and worker/team/event weights.
- A causal reading needs no anticipation, parallel untreated changes, and no relevant spillovers. A nonsignificant pretrend proves none of these.

Illustrative common-event contrast, not a generic repeated-switch TWFE prescription. Roth (2022). The later synthetic figure uses the mean of three pre-periods as its declared baseline.

Freeze manager scores before explaining the focal outcomes

- A score built from the focal team's future output can predict that output mechanically.
- Fix construction periods and exclude focal workers, teams, or events as the dependence structure requires.
- Row-level random splits can leak the same team, worker, or shared shock across folds.
- Independent traits avoid one leakage problem but can reflect prior opportunities and selection.

Separate the problems

Independent score construction addresses overlap. Assignment evidence addresses who receives that manager. Neither task substitutes for the other.

Minni's promotion-speed proxy and Weidmann et al.'s skill measures require substantive interpretation beyond avoiding mechanical leakage.

Independent score errors separate noise from reliable variation

$$\hat{\mu}_m^A = \mu_m + e_m^A, \quad \hat{\mu}_m^B = \mu_m + e_m^B.$$
$$\text{Var}(\hat{\mu}^A) = \text{Var}(\mu) + \text{Var}(e^A), \quad \text{Cov}(\hat{\mu}^A, \hat{\mu}^B) = \text{Var}(\mu).$$

- Mean-zero independent errors, orthogonal to the latent manager component μ .
- Balanced teaching grid: $\mu \in \{-1.5, -0.5, 0.5, 1.5\}$; each error independently takes ± 0.6 .
- Single-score population variance: $1.25 + 0.36 = 1.61$; cross-half covariance: 1.25.

Original measurement-error identity, not the Kline–Saggio–Sølvsten (2020) leave-out estimator or a general finite-sample correction for personnel panels. Shared shocks invalidate the simple argument.

Weidmann isolates manager assignment in a laboratory setting

- **Setting:** a preregistered team-production laboratory environment.
- **Variation:** repeated randomized manager–team assignments with individual task skill measured.
- **Outcomes:** managerial contributions to team performance under the experimental rules.
- **Limitation:** identified assignment effects depend on these tasks, stakes, teams, and horizon.
- The research template combines baseline skill, repeated assignments, and performance outside the estimation sample.

Weidmann et al. (2026), *How Do You Identify a Good Manager?*, required reading. This experiment is not our synthetic 12-pair lab protocol.

Weidmann's selection, prediction, and field validation are distinct

Evidence layer	What is compared or observed?	Interpretation limit
Selection into roles	Session-randomized lottery versus strongest-desire selection regimes	Randomizing a selection rule does not randomize a skill
Skill prediction	Measured characteristics predicting managerial performance	A trait's predictive value is not its causal return
Two field validations	LinkedIn promotions of lab participants; retailer skill, sales, and rotations	Neither is a field randomized manager appointment

The laboratory randomization strengthens the contribution without making every component of the paper experimental evidence about skill production.

Weidmann et al. (2026). State the setting, variation, outcome, and boundary for each evidence layer separately.

Minni uses lateral rotations and an ex ante promotion-speed proxy

- **Setting:** a multinational firm's worker and manager records; the published 2026 version covers 11 years.
- **Variation:** first lateral manager rotations; ex ante age at first managerial promotion proxies for quality.
- **Outcomes:** worker productivity, job moves, careers, and persistent gains.
- **Interpretation:** the paper emphasizes allocation; the rotation institution and score proxy need scrutiny.
- **Limitation:** restrict to lateral manager rotations; exclude manager promotions and worker-driven team moves. Do not call every move random.

Minni (2026), *Making the Invisible Hand Visible*. Full training and internal-mobility analysis belongs in Week 6.

Persistence after departure has several durable explanations

Mechanism	Additional measure	Competing explanation to test
Teaching	Skill and comparable-task performance	Gains disappear on comparable tasks
Better allocation	Task changes and transfer destinations	New work, rather than skill, persists
Resources	Budgets, capital, staffing	Persistent resources explain performance
Composition	Baseline roster, exits, entrants	Different people remain observed
Recording	Stable independent output and software versions	Scores change while production does not

Timing helps discriminate when combined with measurement and credible variation. Persistence alone does not establish teaching.

Lazear–Shaw–Stanton (2015); Minni (2026). Candidate mechanism tests are proposals, not findings imposed on either paper.

People-management scores and attrition measure a particular margin

- **Setting:** Hoffman–Tadelis, survey-linked personnel data in a technology firm.
- **Variation:** people-management ratings, new-hire evidence, and supervisor switches.
- **Outcomes:** attrition and other personnel outcomes.
- **Limitation:** rating timing, response selection, and endogenous assignment can matter; workers' experiences can affect both ratings and departures.
- Better people management need not affect every performance outcome in the same way.

Hoffman and Tadelis (2021), *Journal of Political Economy*. Survey scores, retention, universal productivity, and worker welfare are distinct objects.

Fenizia makes workforce composition part of the manager question

- **Setting/variation:** managerial changes in Italian public offices.
- **Outcomes:** office productivity, workforce composition, and retirement.
- **Limitation:** office effects need not be faster effort by every incumbent; reallocation counterfactuals require further assumptions.

Invented workforce	Total output	Workers	Mean output
Six produce 10; four produce 5	80	10	8
Four lower-output workers exit	60	6	10

Fenizia (2022). The table is original arithmetic, not her empirical result. A higher mean can coexist with lower service capacity.

A manager evaluation needs totals, quality, and worker outcomes

Outcome family	Useful records	Interpretive boundary
Operations	Total output, hours, staffing, delay	Match numerator and denominator populations
Independent quality	Errors, service audit, rework, safety	A supervisor's second rating may share the same bias
Workers	Schedules, strain, autonomy, exits	Lower quits need not mean higher welfare
Participation	Baseline workers, entrants, transfers, retirement	Stayers are a selected population

Outside options and switching costs can reduce exits. A nonsignificant rating effect is not equivalence in production or well-being.

Formal authority and real authority can move separately

- **Formal authority:** who has the right to decide, approve, reject, or appeal.
- **Real authority:** who effectively determines the decision given information and initiative.
- Headquarters may retain a veto while an informed frontline manager shapes the only feasible proposal.
- Delegation can affect initiative and information acquisition; cheaper communication can change the alternative to delegating.

Data request

Observe proposals, recommendations, approvals, overrides, and available information. A policy memo establishes assigned rights, not implementation.

Aghion–Tirole (1997); Dessein (2002). These theories are richer than the fixed-information loss calculation that follows.

A compact delegation model separates information from conflict

$$L_C = v_H + c_H, \quad L_D = v_F + b^2 + c_D.$$

Delegation lowers principal loss if $v_H - v_F > b^2 + c_D - c_H$.

- Action a should match state θ ; principal loss is $(a - \theta)^2$.
- v_H, v_F : headquarters/frontline posterior-error variances; b : frontline action bias; c_H, c_D : expected decision costs.
- Quadratic loss, posterior-error orthogonality, fixed information, and no cross-team externalities.
- Frontline action equals its posterior mean plus b ; headquarters chooses its own posterior mean.

Original teaching benchmark, not the full Aghion–Tirole or Dessein equilibrium. The criterion concerns principal loss, not social welfare.

Better local information can lose to a large objective conflict

$$v_H = 0.64, \quad v_F = 0.16, \quad c_H = c_D = 0.$$

Hypothetical bias	Central loss	Delegated loss	Lower loss
$b = 0.3$	0.64	$0.16 + 0.09 = 0.25$	Delegation
$b = 0.8$	0.64	$0.16 + 0.64 = 0.80$	Centralization

- Improving headquarters' information narrows the information gain from delegation.
- Improving frontline information can widen it under the fixed-information benchmark.
- Endogenous information acquisition, strategic reporting, standards, and externalities can change the comparison.

Invented loss arithmetic under the preceding assumptions; neither a universal delegation rule nor a welfare optimum.

A laboratory authority experiment does not explain all centralization

- **Setting:** Fehr–Herz–Wilkening, controlled delegation experiment.
- **Variation:** authority and incentive rules in the laboratory environment.
- **Outcomes:** delegation, motivation, and information effort.
- **Limitation:** observed refusal to delegate in a firm does not uniquely identify an intrinsic taste for power.
- Responsibility, liability, career concerns, and institutional restrictions can produce similar field behavior.

Fehr, Herz, and Wilkening (2013), *The Lure of Authority*. Controlled mechanism evidence and interpretation of field choices require different arguments.

Bandiera–Best–Khan–Prat changes authority in the field

- **Setting:** procurement officers and monitors in a bureaucratic organization.
- **Variation:** experimental reallocation of authority alongside financial incentives.
- **Outcomes:** procurement prices, measured quality, and timing in the monitor environment.
- **Limitation:** the treatment is a rule change, not a comparison of high- and low-performing officers.
- Preserve the original assignment units and strata in replication. Our synthetic manager pairs are a different design.

Bandiera, Best, Khan, and Prat (2021), required reading. Effects in this institution do not establish that removing oversight is universally desirable.

A proposed factorial design distinguishes authority and information

$$Y_s = \alpha + \beta_A A_s + \beta_I I_s + \beta_{AI} A_s I_s + \zeta_{b(s)} + \varepsilon_s.$$

- s : assigned unit; A : authority treatment; I : information treatment; ζ : block effects.
- Under balanced 2×2 randomization within every block, β_A is the authority effect when $I = 0$; with information, it is $\beta_A + \beta_{AI}$.
- β_{AI} is the causal interaction of assigned interventions, not a unique psychological mechanism.
- Show all cells, implementation, and spillovers. Unequal block probabilities or different target weights require explicitly standardized cell means.

Proposed 2×2 teaching design, not the original Bandiera et al. protocol. Specify which approvals, amount limits, audits, and information actually change.

Knowledge hierarchies allocate common and exceptional problems

- Common problems can be solved close to production; rarer problems can be escalated to specialists.
- Specialization economizes on learning but consumes communication and coordination capacity.
- The relevant span depends on the problem distribution, local capability, and manager processing capacity.
- A hierarchy can become congested even when its reporting chart is unchanged.

Economic object

Measure what workers solve locally, what they escalate, and what managers resolve.
Headcount alone does not measure managerial workload.

Garicano (2000). The following M/M/1 arithmetic isolates attention congestion; it does not reproduce the full knowledge-hierarchy model.

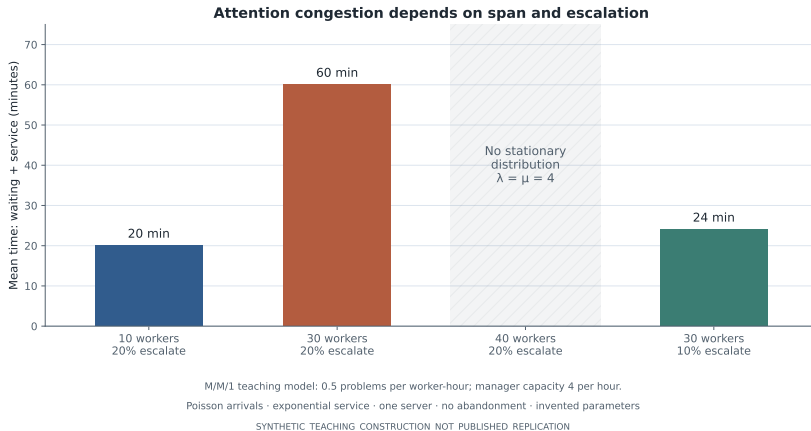
A stable queue links reporting load to waiting plus service

$$\lambda = n\nu p_e, \quad \rho = \lambda/\mu, \quad \mathbb{E}[T] = \frac{1}{\mu - \lambda} \quad \text{only if } \lambda < \mu.$$

- n : workers; ν : problems per worker-hour; p_e : fraction escalated; λ : request arrival rate.
- μ : manager service rate; ρ : utilization; T : time waiting *plus* time in service.
- M/M/1 assumptions: independent Poisson arrivals, exponential service, one server, and stationary stable conditions.
- At $\lambda \geq \mu$, this model has no finite stationary mean sojourn time.

Original queue illustration. Requests in real organizations can be prioritized, discouraged, delayed, or abandoned.

Congestion is nonlinear, and local problem-solving changes the load



Synthetic M/M/1 arithmetic: $\nu = 0.5$, $\mu = 4$. With $p_e = 0.2$, spans 10 and 30 give 20 and 60 minutes; 40 is nonstationary. At span 30, $p_e = 0.1$ gives 24 minutes. No empirical optimal span is estimated.

Observed request counts can fall when congestion gets worse

Process stage	Record	Otherwise missing
Problem encountered	Sampled task/problem audits	Demand never submitted
Attempted request	Attempts, channel, timestamp	Discouraged requests
Queue entry	Priority, recipient, resources	Rerouting and eligibility
Resolution	Start/end times, decision quality	Waiting versus service
Abandonment	Withdrawal, timeout, reason	Slow difficult cases

A shorter average among completed requests can reflect selective abandonment. Include manager hours and subordinate workload.

Proposed attention measurement plan. A fitted queue is not evidence that Poisson arrivals, exponential service, or exogenous demand hold.

Occupational layers and reporting charts measure different structures

	Caliendo–Monte–Rossi-Hansberg	Rajan–Wulf
Setting	French firms	Corporate hierarchy panel
Variation	Changes in occupation-based production layers	Changing depth and senior reporting spans
Outcomes	Measured production hierarchy	Flatter charts and broader senior spans
Limitation	Occupations proxy for layers; not literal reporting links or randomized redesign	Chart flattening does not establish greater frontline discretion

Caliendo, Monte, and Rossi-Hansberg (2015); Rajan and Wulf (2006). Pair structural proxies with actual decision-rights records.

Managerial capacity has a cost that differs across settings

- **Setting:** Hjort–Malmberg–Schoellman, cross-country managerial compensation and firm structure.
- **Variation:** measured manager-cost patterns plus a calibrated organizational model.
- **Outcomes:** management-intensive structures and model-based adoption counterfactuals.
- **Limitation:** measured costs and calibrated policy counterfactuals are different evidence; this is not a randomized subsidy to managers.
- A feasible hierarchy depends on the price and supply of managerial capacity.

Hjort, Malmberg, and Schoellman (2026), published *American Economic Review: Insights* version; DOI 10.1257/aeri.20250149.

Information and communication tools can move authority differently

- **Setting/variation:** Bloom et al., firm organization and different information/communication technologies.
- **Outcomes:** the allocation of decisions and organizational structure.
- **Limitation:** the empirical comparisons are not a generic randomized technology treatment.

Proposed tool mechanism	Organizational margin
Help frontline workers solve problems	Less need to escalate
Summarize requests for headquarters	Cheaper centralized oversight
Generate additional reports	Larger managerial queue

Bloom, Garicano, Sadun, and Van Reenen (2014). The tool examples are hypotheses for new research, not findings that every AI deployment shifts authority in one direction.

CEO time use becomes informative when related to firm needs

- **Setting:** CEO activity information linked to firm performance.
- **Variation:** observed behavioral patterns and modeled CEO–firm matching.
- **Outcomes:** time use, behavior categories, and firm performance.
- **Limitation:** meeting patterns do not identify the causal benefit of changing a CEO's schedule.
- Minutes in meetings can reflect coordination, preparation, bottlenecks, or task requirements.

Bandiera, Hansen, Prat, and Sadun (2020), *CEO Behavior and Firm Performance*. The 2020 erratum corrects author order, not reported estimates.

The value of coordination can differ across project phases

- **Setting:** Dessein–Lo–Shangguan–Owan, knowledge and project work.
- **Variation:** project organization and the timing of coordination versus execution.
- **Outcomes:** work organization and coordination across task phases.
- **Limitation:** time-use associations require a selection argument; this is a 2024 RIETI working paper.

Data request

Combine diaries or calendar categories with decision audits and project stages. Distinguish attendance from authority and meeting duration from preparation.

Dessein et al. (2024), *The Management of Knowledge Work*. A communication network's centrality can reflect coordination or a bottleneck.

Adaptation evidence and modeled learning make different claims

	Adhvaryu–Kala–Nyshadham	Adhvaryu–Nyshadham–Tamayo
Setting	Manufacturing production	Production and managerial quality
Variation	Productivity shocks and managerial response	Productivity dynamics and modeled matching/learning
Outcomes	Task allocation and productivity	Dynamic productivity and model implications
Limitation	Shock exposure and measured attention are not the same randomized treatment	Structural channels require model assumptions beyond reduced-form moments

Adhvaryu, Kala, and Nyshadham (2022); Adhvaryu, Nyshadham, and Tamayo (2023). Ask what changes immediately, accumulates, and remains after departure.

Common practices and repeated moves do not remove matching

	Metcalfe–Sollaci–Syverson	Bertrand–Schoar
Setting	Retail chains with common practices	Executives moving across firms
Variation	Personnel movements and manager assignment	Executive movements in a firm panel
Outcomes	Productivity and manager–unit matching	Persistent firm policies associated with managers
Limitation	Common chain practices do not eliminate selective assignment	Movement and persistent style do not randomize appointments

Metcalfe, Sollaci, and Syverson (2023), selected NBER working paper; Bertrand and Schoar (2003), published executive-panel study.

Public documentation is not a worker–manager experiment

Resource	Useful object	Access / interpretation limit
WMS	Questionnaires and survey design	Download route reported maintenance at pack research date
Census MOPS	Practice definitions and tabulations	Not a matched worker–manager panel
Weidmann archive	Original experiment reproduction route	Archive contents and license not inspected here
Authority repository	Original rules and replication code	Preserve its actual units and strata
Minni code pointer	Rotation-study implementation	Confidential firm data are not thereby public

Use the chapter's resource ledger. The guaranteed lab requires no original microdata, live download, access application, or provider contact.

Methods Box: match the correction to the actual problem

Problem / anchor	Required design or data	What remains
Assignment / rotations	Event histories and institution; Minni	Time-varying matching threats
Support / additive effects	Mobility graph and matrix rank; AKM	Connectedness does not imply exogeneity
Score noise / dispersion	Appropriate quadratic-form method; KSS	Own support and error assumptions
Authority / field reform	Actual permissions and assignment; Bandiera et al.	Implementation and bundled channels
Dependence / few teams	Assignment-aware inference; Cameron–Miller	More rows do not add independent assignments

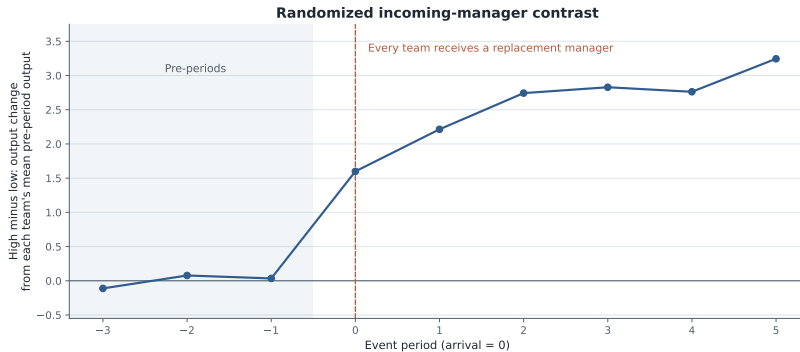
Abowd–Kramarz–Margolis (1999); Kline–Saggio–Sølvsten (2020); Cameron–Miller (2015). Independent scores, cross-fitting, and leave-out variance correction solve different problems.

Research Lab: every team switches, incoming type is randomized

- **Mode A:** original offline synthetic matched-pair teaching construction.
- Twelve pairs, 24 teams, eight continuing workers per team: 192 workers and 1,728 worker-periods.
- Nine periods, -3 through 5 ; all teams receive a replacement manager at period 0 .
- Within each pair, one team receives the higher independently fixed incoming score and one the lower score.
- Potential outcomes precede assignment; the main panel holds the worker roster fixed.

Weidmann et al. motivates the design question; none of these units, tasks, allocation rules, or effects reproduce the published experiment. Optional original Mode B is separate.

The event-time plot compares assigned incoming types



24 invented teams · 12 matched pairs · fixed roster · equal pair weights

Reference: mean of three pre-periods, not period -1. Points only; no empirical confidence bands.

SYNTHETIC_TEACHING_CONSTRUCTION_NOT_PUBLISHED_REPLICATION

Synthetic design: high minus low incoming type within 12 randomized pairs. Baseline is the three pre-period mean; everyone switches at time 0. The contrast does not estimate a pure manager-replacement effect or the return to creating managerial skill.

The assignment effect is an equally weighted mean of pair contrasts

$$\Delta_s = \bar{y}_{s,0:5} - \bar{y}_{s,-3:-1}, \quad d_p = \Delta_{p,H} - \Delta_{p,L}, \quad \hat{\tau} = \frac{1}{12} \sum_{p=1}^{12} d_p.$$

- First average the eight workers within each team-period; s : team; p : pair.
- Target: the team-average assignment effect over six post periods among these synthetic teams.
- The sample SD of the 12 contrasts divided by $\sqrt{12}$ is a pair-level SE summary.
- It is not an exact small-sample 95% interval, and 1,728 rows do not provide 1,728 independent assignments.

No turnover in the main construction. Assignment to an incoming type differs from the effects of manager training, manager headcount, or authority reform.

Two enumerations answer different questions

Calculation	Hold fixed / vary	Interpretation
Exact sharp-null test	Realized team changes fixed; swap labels within each pair	Test no assignment effect on any team under the stated design
Instructor truth check	Both potential outcomes known; enumerate assignment and resulting observations	Verify expected estimator equals the synthetic team-average effect

Each enumeration uses $2^{12} = 4096$ allocations. Only the first is the sharp-null reference distribution; the second uses unavailable counterfactual truth.

Two-sided exact p-values count absolute statistics at least as large as observed, including ties. Do not shuffle worker rows or test a heterogeneous zero-average null as if it were sharp.

Diagnose assignment, measurement, and interpretation separately

Teaching module	Known result	Lesson
Rescue appointment	DiD +10; true effect zero	Nominal controls can share the wrong trajectory
Connectedness	Seven columns; rank 4 or 7	Support is not exogeneity
Noisy score grid	Variance 1.61; covariance 1.25	Error assumptions matter; not KSS
Composition	Mean 8 to 10; total 80 to 60	Population and denominator matter
Matching	Total 27 versus 21	Comparative advantage is not a common rank

Every number is synthetic. Delegation and queue modules add model diagnostics. Instructor truth stays separate from learner predictors; tests never require a significant estimate.

Three required papers teach three different comparisons

Required reading	Preparation
Lazear–Shaw–Stanton (2015)	Define the manager comparison, supported population, and residual assignment threat
Bandiera–Best–Khan–Prat (2021)	Draw changed decision rights and separate assigned components from mechanisms
Weidmann et al. (2026)	Separate manager randomization, role selection, trait prediction, and field validation

Selected theory: Benson–Shaw, Aghion–Tirole, Dessein, Garicano. Rotate papers on outcomes, hierarchy, adaptation, and time use.

The broader reference list supports projects and presentations; it is not 27 required weekly readings.

Research opportunities begin with a competing explanation

Proposed design	Target mechanism	Comparison that could disagree
Frontline help versus central triage	Information versus communication	Escalation, quality, overrides, delay
Managers assigned to new task types	Portable skill versus match	Independent ranking stability across tasks
Exogenous reporting-load change	Attention congestion	Attempts and abandonment, not only completions
Manager transition with fixed survey timing	Worker conditions	Output gains with unwanted hours or strain
Task-specific approval reform	Discretion versus delay	Actual decision-maker and service quality

Proposed projects, not declarations of empty literatures. A common headline output gain can support several mechanisms without these additional observations.

Transfer: specify the transition, comparison, and remaining threat

Two-page field proposal plus data dictionary

Choose one person, match, practice, or authority estimand. State appointment/announcement/arrival dates, treatment history, comparison group, and largest residual matching threat.

- Provide reporting and decision-rights records, independent quality, and a worker-welfare outcome.
- Define baseline and current populations; explain task/resource mediation and exits.
- State score construction, inference unit, and two competing predictions.
- End with the precise claim your comparison would justify and a claim it would not.

Reproduce → Diagnose → Transfer. Do not combine distinct field institutions into a fictional common assignment design.

Week 6 follows how managers and rules shape careers

- A manager can change production, allocation, learning, selection, and the ability to get a decision made.
- Better information and more discretion have effects that depend on conflict, capacity, and implementation.
- Measure operational outcomes, independent quality, and worker conditions before interpreting a manager's contribution.

Bridge forward

Training, internal mobility, promotions, and career ladders: when a worker advances, did the organization build skill, learn about skill, allocate it better, or change access to opportunities?

Carry the transition chronology and remaining matching threat into the next week's career panel.