The Costs of Workplace Favoritism: Evidence from Promotions in Chinese High Schools

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Outline

Introduction

Background and Data

Social-Tie-Based Favoritism and Teachers’ Perceived Unfairness in Promotions

Impacts of Perceived Promotion Unfairness

Transparency reform
Motivation

- The economic costs of discriminative management (favoritism) in organizations
  - Manager discretion vs rules: bias vs private information
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  - Manager discretion vs rules: bias vs private information
- Previous studies mostly about adverse selection (resource (mis-)allocation) consequences of managers’ bias in hiring, task assignment, promotions, etc.
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- The economic costs of discriminative management (favoritism) in organizations
  - Manager discretion vs rules: bias vs private information
- Previous studies mostly about adverse selection (resource (mis-)allocation) consequences of managers’ bias in hiring, task assignment, promotions, etc.
- Little evidence on the incentive effects on workers’ effort choices, esp. in non-experimental settings
  - Direct effect of favoring/discriminating treatment
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  - Manager discretion vs rules: bias vs private information
- Previous studies mostly about adverse selection (resource (mis-)allocation) consequences of managers’ bias in hiring, task assignment, promotions, etc.
- Little evidence on the incentive effects on workers’ effort choices, esp. in non-experimental settings
  - **Direct** effect of favoring/discriminating treatment
  - **Indirect** effect of unfair/non-meritocratic workplace “culture” (Benson et al 2019)
- Challenges:
  1. Measurement: workers’ effort and perception of bias
  2. Identification: isolate (exogenous) variation in a manager’s biased behavior from her other preferences/management styles
Research Questions

Does exposure to managers’ favoritism affect workers’ incentives and performance at work?

▶ If yes:
  ▶ Direct or indirect? Mechanisms?
  ▶ Implication for organization-wide performance?
  ▶ Any personnel policy tool to help address this problem?
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  ▶ Any personnel policy tool to help address this problem?

This paper

▶ studies the impacts school principals’ biased decisions on teacher promotion (title elevation) on teachers’ value-added (VA) and turnover in Chinese public high schools, making use of
  ▶ newly digitized administrative personnel records
  ▶ a revealed preference type survey designed to retrospectively measure teachers’ fairness notions
1. **Social-connection-based favoritism**: applicants tied to the incumbent school principal via hometown or college had higher promotion rates.
Preview of Findings

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2. **Teachers’ perception of unfairness**: actual promotion results deviated from teachers’ survey-elicited fairness preferences
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   *non-applicant* teachers’ lowered VA and increased quitting probabilities.
   - No evidence on average direct incentive effects on promotion applicants or class re-assignment selection associated w/ promotion unfairness
   - **Substantial harm to school-wide performance** in student test scores and teacher quality
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4. **Mechanisms of adverse incentive spillovers**: VA effect explained by teachers’ *horizontal social preferences* and *fairness norms*, quitting effect by *career concerns* and *employee learning*. 
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2. **Teachers’ perception of unfairness**: actual promotion results deviated from teachers’ survey-elicited fairness preferences.

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4. **Mechanisms of adverse incentive spillovers**: VA effect explained by teachers’ horizontal social preferences and fairness norms, quitting effect by career concerns and employee learning.

5. **Internal information transparency** reduced promotion favoritism and improved student test scores.
Related Literature

1. **Effects of top-down discrimination within organizations:**
   - (Adverse) selection effects of manager bias (e.g. Bandiera 2009, Beaman & Magruder 2012, Hjort 2014, Xu 2017)
   - **Workers’ negative incentive-based responses**

2. **Fairness norms and their workplace implications:**
   - Workplace evidence on fairness violations towards oneself (e.g. Krueger & Mas 2004, Breza et al 2017)
   - Survey evidence on fairness norms for others (Falk et al 2018), workplace evidence on horizontal social preferences bet. co-workers (e.g. Bandiera et al. 2005, Charness & Kuhn, 2007)
   - **Workers’ adverse response to fairness violations suffered by co-workers**

3. **Welfare implications of information transparency**
   - *external* transparency (e.g. media) on corruption and government accountability (e.g. Besley & Burgess 2002, Snyder & Strömberg 2010)
   - *Internal* transparency within organizations as a personnel policy intervention.

4. **Other related literature**
   - Important role of hometown and college ties in Chinese bureaucracy (Jia et al 2015) and academia (Fisman et al 2018)
   - Management matters in public sector (Bloom et al 2015, Bloom et al 2019)
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Transparency reform
Institutional Background

Professional title evaluation system in Chinese public schools:

- Annual evaluation, 3 titles (2 elevations) for high school teachers (junior, middle and senior), “promotion" defined as middle-to-senior title elevation
- Increase in fixed wage following promotion
- Recommendation of school principals crucial for final decisions made by city-level committee
- Promotion competitive among applicants w/in school × year due to quota
- Teachers can apply multiple times after fulfilling mandatory tenure requirement
- Promotion results does not instantaneously affect class assignment & workload

Transparency reform in sample cities:

- Mandatory disclosure of promotion application profiles (formatted CVs) to peer teachers w/in school
- Across-city policy roll out from 2005-2015
Administrative Data

- **Sample:**
  - 112 public high schools in the 4 largest cities in a Chinese province in 2001-2017

- **Data:**
  1. Newly digitized records of teachers’ promotion application CVs and promotion results
     - Control for applicants qualifications, construct “promotability scores"
  2. Personnel records of teachers and principals
     - Construct social ties (hometown and college) bet. school principals and teachers
  3. Student test scores (class×subject) in city-level end-of-year exams
     - Estimate (time-varying) value-added of each teacher
Survey Data and Teachers’ Perceived Promotion Unfairness

Sample:

- 6 schools in 2 cities in 2018

Survey Design:

- Presented the de-identified application CVs of 2017 applicants in a school to teachers in another school, asked them to evaluate the CVs and pick \( N \) (\# actual promotees) applicants they thought should be promoted

- Simulated teachers’ post-transparency-reform info. set and decision to make about their applicant colleagues, eliciting revealed preferences

- Estimating respondents’ preferences over virtual applicant characteristics (fairness notion), applying them to actual applicant characteristics in the past to infer perceived fair promotion results  

- Contrasting the inferred fair promotion results with the actual results, the applicants can be grouped into 4 types: deserving (undeserving) promoted (denied)

- Constructing measure of perceived promotion unfairness \( \text{Undeserving\%}_{it} \): % promotees regarded as undeserving by teacher \( i \) in her school in year \( t \)
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Social-Tie-Based Favoritism and Teachers’ Perceived Unfairness in Promotions

Impacts of Perceived Promotion Unfairness

Transparency reform
Hometown Ties and Promotion Prospects

- Identification: event studies exploiting school principal turnover
- Average effect of hometown tie is around 80%

Panel (A): Principal Hometown Change

Notes: This graph plots event studies of the applicants’ promotion rates before and after the entry of a new principal of different hometown background from the previous one. \( \phi_{\text{never-tied}, -1} = 0 \) by construction. Application CV characteristics \( \mathbf{X} \), applicants’ school-average VA, school-year FE, share of same-subject applicants are controlled for.
College Ties and Promotion Prospects

- Identification: event studies exploiting school principal turnover
- Average effect of college tie (hometown or college tie) is around 60% (100%)

**Panel (B): Principal College Change**

Notes: This graph plots event studies of the applicants’ promotion rates before and after the entry of a new principal of different hometown background from the previous one. $\phi_{\text{never-tied, } -1} = 0$ by construction. Application CV characteristics X, applicants’ school-average VA, school-year FE, share of same-subject applicants are controlled for.
More on Teachers’ Perceived Unfairness

- Surveyed teachers value teaching awards more and social ties less
  - Undeserving promotees are mainly low-quality applicants socially connected to the principal

- 60% variation in Undeserving% is within school-principal×teacher
  - Driven mainly by variation in composition of applicants (wrt qualifications and social ties) across different promotion rounds
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Social-Tie-Based Favoritism and Teachers’ Perceived Unfairness in Promotions

Impacts of Perceived Promotion Unfairness

Transparency reform
Average Incentive Effects on Applicants (Quitting)

- Identification: w/in school × principal × teacher event studies of different promotion rounds
- Trivial average direct effects of perceived promotion unfairness on applicants’ quitting probability

Impacts of Perceived Promotion Unfairness on Applicants’ Quitting Probability
Average Incentive Effects on Applicants (VA)

- Trivial *average direct* effects of perceived promotion unfairness on applicants’ VA

Impacts of Perceived Promotion Unfairness on Applicants’ Quitting Probability

![Graph showing impacts of perceived promotion unfairness on quitting probability.](image)
Unpacking Average Incentive Effects on Applicants

Promotion unfairness

- motivates the favored (undeserving vs. deserving promoted)
- disincentivizes the biased against (undeserving vs. deserving denied)
- The two offset each other
Indirect Incentive Effects on Non-Applicants (Quitting)

- Non-applicants 78% of teachers
- Avg. quitting rate of *non-applicants* under avg. level of unfairness is 16% higher than the “fair” counterfactual in year 0

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Quitting Probability
Indirect Incentive Effects on Non-Applicants (VA)

- Non-applicants 78% of teachers
- Avg. VA of non-applicants under avg. level of unfairness is 0.28SD lower than the “fair” counterfactual in year 0

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants’ Quitting Probability
Robustness Checks

- Sample choices (in the VA analysis)
  - (i) Balanced panel (2) drop teachers w/ re-assigned to new classes

- Instrumenting for Undeserving\%_{it}:
  - Using predicted promotion decisions from principal-specific estimates of principals’ preferences on qualifications and social ties. IV def.
  - Using difference in avg. promotability/qualifications bet. applicants tied to current and previous principals (and its higher-order terms). IV def.

- Observable job characteristics do not correlate w/ Undeserving\%_{it} figures

- No immediate selection to middle-level leaders following title promotions
Mechanisms: VA

Suggestive evidence on the mechanisms of adverse incentive spillovers on non-applicants:

- VA effect likely driven by fairness norms and horizontal social preferences between peers at work
  1. Limited evidence of learning about principals
     - Effect not decreasing with principal’s length of term, persistent even after principal has left
  2. Effect most pronounced among the already promoted
  3. Effect does not vary by whether socially connected to the principal (among all non-applicants and prospective applicants)
  4. Effect most pronounced among those who interact a lot with perceived victims of promotion unfairness
  5. Among already promoted teachers, those who were deservingly promoted in the past respond more harshly in VA
Mechanisms: Empirical Patterns (VA)

- Effect not decreasing with principal’s length of term.
- Effect persistent when principal has left.

Spillover Impacts on Non-Applicants' VA: Principal’s Presence
Mechanisms: Empirical Patterns (VA)

- Effect most pronounced among senior-ranked (already promoted) teachers.

Spillover Impacts on Non-Applicants’ VA: Professional Ranks
Mechanisms: Empirical Patterns (VA)

- Effect does not vary by whether socially connected to the principal (among all non-applicants and prospective applicants).

Spillover Impacts on Non-Applicants’ VA: Social Ties w/ Principal

Panel (A): All Non-Applicants

Panel (B): Middle-Ranked Non-Applicants
Effect most pronounced among those who interact a lot with perceived victims of promotion unfairness.

Spillover Impacts on Non-Applicants’ VA: Interactions w/ Victims

Panel (A): Whether Teaching the Same Cohort

Panel (B): Whether Teaching the Same Subject
Mechanisms: Empirical Patterns (VA)

- Effect most pronounced among those who interact a lot with perceived victims of promotion unfairness.

Spillover Impacts on Non-Applicants’ VA: Interactions w/ Victims
Mechanisms: Empirical Patterns (VA)

- Among already promoted teachers, those who were deservedly promoted in the past respond more harshly in VA.

Spillover Impacts on Non-Applicants’ VA: Self Past Promotion Experience
Mechanisms: Quitting

Suggestive evidence on the mechanisms of adverse incentive spillovers on non-applicants:

- Quitting effect likely driven by career concerns and learning about principal
  1. Evidence of information updating about principals
     - Effect decreasing with principal’s length of term, disappearing after principal has left
  2. Effect most pronounced among the prospective applicants who are socially unconnected to the principal
  3. Effect more pronounced among high-value-added prospective applicants
Mechanisms: Empirical Patterns ( Quitting )

- Effect decreasing with principal’s length of term.
- Effect disappears when principal has left.

Spillover Impacts on Non-Applicants' Quitting: Principal’s Presence

![Graph showing spillover impacts on quitting rates with different principals]
Mechanisms: Empirical Patterns (Quitting)

- Effect most pronounced among middle-ranked (prospective applicant) teachers.

Spillover Impacts on Non-Applicants’ Quitting: Professional Ranks
Mechanisms: Empirical Patterns (Quitting)

- Effect more pronounced among prospective applicants socially unconnected to the principal.

Spillover Impacts on Non-Applicants’ Quitting: Social Ties w/ Principal
Mechanisms: Empirical Patterns ( Quitting )

- Effect more pronounced among high-value-added prospective applicants.

Spillover Impacts on Middle-Ranked Non-Applicants’ Quitting: Social Ties w/ Principal
Impacts on School-Wide Performance: Teacher Quality

- Identification: within school × principal event studies of different promotion rounds

Impacts of Perceived Promotion Unfairness on Teacher Quality Change

Panel (C): School-Level Change in Total Teacher VA

Change$_{ht}^{VA} := N_{ht}^{New} VA_{ht}^{New} - N_{ht}^{Retired} VA_{ht}^{Retired} - N_{ht}^{Quit} VA_{ht}^{Quit}$. 

Breaking down
Impacts on School-Wide Performance: Student Test Scores

Impacts of Perceived Promotion Unfairness on Students’ Graduation Exam and Entrance Exam Scores

- Avg. (cumulative) decrease in CEE scores of a fully affected graduation cohort of 0.25SD
- Avg. decrease in HEE scores of the most affected enrollment cohort of 0.11SD
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Transparency reform
Impacts of Information Transparency

- Identification: DiD, DDD exploiting different timing of reform in each city

- Findings:
  1. (Non-applicant) teachers’ response to (a given level of) promotion unfairness is around 40% harsher post-reform
  2. Teachers’ perceived promotion unfairness dropped by around 50% post-reform
  3. Student test scores in provincial-level graduation exam raised by 0.19 SD post-reform
Information Transparency on Promotion Unfairness

-3 -2 -1 0 1 2 3
Year Relative to Reform Start Year

Undeserving%

-4 -2 0 2

Promotion Unfairness (Perceived by Teachers Post-Reform)
Information Transparency on Graduation Test Scores

Class-Subject Avg. CEE Scores of Graduating Cohort

specification
Wrap-Up

- Take-away findings:
  2. As a response, *non-applicant* teachers shirk and quit, leading to worsened school-wide performance.
  3. Internal information transparency within schools can (partially) correct favoritism and its adverse consequences.

- Implications:
  1. Global workplace "culture"/environment generated by local bad management practices has far-reaching worker incentive and productivity consequences.
  2. Important to consider the incentive margin and 3rd-party co-workers in evaluation.
Take-away findings:

2. As a response, *non-applicant* teachers shirk and quit, leading to worsened school-wide performance.
3. Internal information transparency within schools can (partially) correct favoritism and its adverse consequences.

Implications:

1. *Global* workplace “culture”/environment generated by *local* bad management practices has far-reaching worker incentive and productivity consequences.
2. Important to consider the incentive margin and 3rd-party co-workers in evaluation.
Application profiles

CVs include information on demographics and work performance measures within the past 6 years.

1 **Demographics**: Gender, ethnicity, city of birth, year of birth, Communist Party membership status, college/grad school attended, subject taught, etc.

2 **Experience**: Career teaching experience, years as middle-ranked, years in current school.

3 **Workload**: Avg. # sessions taught per week, years as a class head teacher, etc.

4 **Research**: Publications on national/provincial-level journals, etc.

5 **Teaching**: (Value-added-based) teaching awards of different levels.

6 **Other**: Awards from teaching demonstration contests, extra-curriculum activities, etc.
Estimation of Fairness Preferences

- Matching surveyed subsample to administrative sample based on rank (junior, middle, senior) and within-school-year-rank VA (above/below median), $f \in \mathbb{F}$.

- Estimating respondents' preferences $\{ (\hat{\gamma}_f, \hat{\alpha}_H^f, \hat{\alpha}_C^f, \hat{\beta}^f) \}_{f \in \mathbb{F}}$.

- For virtual applicant $l$ evaluated by survey respondent $j'$ in group $f(j')$:

$$
\Pr[\text{Yes}_{j' l}] = F \left( \mathbf{X}_l \gamma^f(j') + \alpha^f_H(j') \text{Home Tie}_{j' l} + \alpha^f_C(j') \text{College Tie}_{j' l} + \beta^f(j') \text{Controls}_l \right).
$$

- Controls$_l$ includes a fixed effect for the virtual school ($\lambda_h(l)$), the share of same-subject applicants ($\text{share}_{k(l), h(l)}$).
- Logit model.
Exploiting entry of a new principal to a school who comes from a different hometown or college than the old one, and dividing applicants into 3 types:

\[ Q = \{ \text{Tied before \& untied after, Untied before \& tied after, Untied before \& after} \} \]

Estimating:

\[
\text{Promoted}_{j,t+s} = \sum_{\tau=-3}^{3} \sum_{q \in Q} \mu_q \tau I[q(j) = q, s = \tau] + X_{j,t+s} \gamma^\mu + \beta^\mu \text{Controls}_{j,t+s} + \epsilon_{j,t+s}^\mu.
\]

where Controls_{j,t+s} include school-year fixed effects (\( \lambda_{h(j),t} \)), share of same-subject applicants (\( \text{share}_{k(j),h(j),t} \)) and applicant’s VA_{jh}.
Estimation of Individual Incentive-Based Responses

Main estimation equation:

\[ Y_{i,t+s} = \sum_{\tau=-3}^{2} \theta_{\tau} \text{Undeserving}_{it}^{\%} \times \mathbb{I}[s = \tau] + \sigma^\theta Y_{i,t-1} + g_{h(i,t)}^{\theta}(t+s) + Z_{i,t+s} \beta_i^\theta + \lambda_{i,P(i,t)}^\theta + \lambda_{i,P(i,t+s)}^\theta + \varepsilon_{i,t+s}, \]

- \( Y_{i,t+s} = VA_{i,t+s}, \text{ Leave}_{i,t+s}. \)
- **Teacher-current-principal FEs:** \( \lambda_{j,P(j,t+s)}^\theta. \)
- **Teacher-promoting-principal FEs:** \( \lambda_{j,P(j,t)}^\theta. \)
- **School-specific time trends:** \( g_{h}^{\theta}(t+s). \)
- **Lagged outcome variable (when } Y = VA): \( Y_{i,t-1}. \)
- **Interaction bet. teacher FEs and job characteristics:** \( Z_{i,t+s} \beta_i^\theta \)

\[ Z_{j,t+s} = \left\{ \lambda_{g(j,t+s)}, \text{ workload}_{j,t+s}, \text{ headteacher}_{j,t+s}, \text{ break}_{j,t+s}, \text{ \( \bar{A}^j_{(c,k,t+s)=j} \)) \right\}, \]

(grade(s) taught, # sessions taught/week, headteacher, unexpected class assignment change, end-of-last-year test scores).

- Post-reform sample only, unbalanced panel (applicant-year obs. where the applicant works in the same school as the application year).
Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants' Job Characteristics: Professional Ranks

Panel (A): Teaching Workload

Panel (B): Being A Class Head Teacher

Panel (C): Leaving Current Classes Before Graduation

Panel (D): End-of-Last-Year Average Test Scores

robustness
Spillover Incentive Effects on Non-Applicants (VA): Robustness

Spillover Impacts of Perceived Promotion Unfairness on Non-Applicants’ Value-Added

![Diagram showing impacts of perceived promotion unfairness on non-applicants' value-added over years relative to promotion application year. The diagram includes line plots for OLS, IVed by estimated preferences of current principal, and IVed by difference in average quality of currently and previously tied applicants.]

- OLS
- IVed by Estimated Preferences of Current Principal
- IVed by Diff. in Avg. Qual. of Currently and Previously Tied Applicants
Impacts on School-Wide Performance: Teacher Quality

Impacts of Perceived Promotion Unfairness on Teacher Turnover

Panel (A): # Turnover Teachers

Panel (B): Average Individual-School-Specific VA
Transparency and Treatment Effect of Unfairness on VA

1 (Non-applicant) teachers’ response to (a given level of) promotion unfairness (DDD):

\[ VA_{it} = \theta_{Post} \times Post_{r(i,t),t} \times Undeserving\%_{it} + \theta_{Pre} \times (1 - Post_{r(i,t),t}) \times Undeserving\%_{it} + \pi_{Post} \times Post_{r(i,t),t} + \sigma_{VA} \times VA_{i,t-1} + g_{h(i,t)}(t) + Z_{it} \beta_{i} + \lambda_{i,P(i,t)} + \varepsilon_{it}, \]

- \( \hat{\theta}_{Post} = -0.953^{***} \) (SE=0.029), \( \hat{\theta}_{Pre} = -0.673^{***} \) (SE=0.024).
- Adverse VA response to principal’s bias around 40% harsher post-reform.
2 Teachers’ perceived promotion unfairness (DD, event studies):

\[
\text{Undeserving}_{it} \% = \sum_{\tau=-3}^{3} \chi_{\tau} \mathbb{I}[t - t_{r(i,t)}^0 = \tau] + g_{h(i,t)}^{\chi}(t) + \lambda_{i,P(i,t)}^{\chi} + \varepsilon_{it}^{\chi},
\]

- The reform reduced perceived promotion unfairness (Undeserving\%) by half (around 40\% to 20\%).
3 Student test scores in provincial-level CEE (DD, event studies):

\[
A_{ckt}^{\text{CEE}} = \sum_{\tau=-3}^{3} \chi_{\tau} \mathbb{I} \left[ t - t_r(c) = \tau \right] + g_{h(c)}^\chi(t) + \lambda_{P(c,t),h(c)}^\chi + \varepsilon_{itr}^\chi.
\]

▶ The reform raised the CEE scores of the 1st fully affected cohort by 0.19SD (class) or 0.06SD (individual).