Exploring Inequitable Trends in Education Staff Turnover

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What are the Educator Labor Market Data Gaps?

- Unstandardized Data:
  - State definitions of labor market conditions vary widely (NCTQ, 2023).

- Lack of Granular Estimates:
  - Local estimates are more useful (Edwards et al., 2024).

- Data not Available by Educator Characteristics:
  - Educator labor data is not available by race/ethnicity, educational attainment, or gender.

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Exploring Educator Labor Markets with QWI

- Research Question:
  - How do education labor markets vary across time, region, and educator characteristics?

- Data:
  - Quality Workforce Indicators (QWI) for employees in Elementary and Secondary Schools from 2000 to 2024.

- Methods:
  - We examine whether QWI measures are correlated with state records.
  - We describe variation in turnover and Net Negative Job Flow (NNJF) across time and counties.

- Results:
  - QWI can be used to construct valid education labor market measures.
  - Turnover and NNJF vary more between counties than across time.

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QWI Definitions

- We construct annual school year measures from changes in quarter-to-quarter counts of labor market measures.

$$Turnover_t = \frac{Hires_t - (Emp_t - Emp_{t-1})}{Emp_{t-1}}$$

$$NNJF_t = \sum_{q=1}^{4} Emp_q - Emp_{q-1}$$

- Heterogeneity by Employees Characteristics
  - Race: White; Black; Asian; American Indian or Alaska Native; Native Hawaiian or Pacific Islander
  - Ethnicity: Hispanic; Not Hispanic
  - Educational Attainment: Less than HS; HS or equivalents; Some college of Associate's degree; Bachelors or advanced degree
- Confidentiality of the QWI is protected using a system of "multiplicative noise infusion" (Abowd, et. al., 2006).

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QWI Includes a Near Census of Counties and States

QWI Educator Data is Predominantly Teachers

Proportion of Census Occupations in the Elementary and Secondary Schools Industry

Validating QWI Education Labor Market Measures

r=0.89   r=0.84

QWI Describes Local Variation in Educator Labor Markets

Median=25.06   Median=108

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Turnover and NNJF have Declined from Pandemic Peak

Higher Turnover and NNJF for Minoritized Educators

High Turnover for Educators without College Degree

Regional Differences in Pandemic Labor Markets (2020 to 2024)

Turnover

- 14.8%-18.7%
- 18.8%-21.0%
- 21.1%-23.3%
- 23.4%-24.9%
- 25.0%-26.9%
- 27.0%-28.2%
- 28.3%-29.4%
- 29.5%-36.9%

NNJF

- 4.6-7.7
- 7.8-8.7
- 8.8-9.3
- 9.4-10.6
- 10.7-11.2
- 11.3-12.3
- 12.4-13.9
- 14.0-18.8

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Conclusion and Discussion

- Summary
  - Turnover and NNJF vary more between counties than across time.
  - Turnover and NNJF have declined from pandemic highs.

- Implications
  - QWI can be used to construct valid education labor market measures.

- Future Work
  - Develop our understanding of the relationship between NNJF and shortages.
  - Identify meaningful patterns worth describing.

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Thanks!

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Leavers Across Time

Negative Job Flows Across Time

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Higher Turnover for Marginalized Educators

Validating QWI Turnover: Leavers and Total Employment

r=0.83

r=0.91

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Pandemic Labor Markets by Census Region

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