How Many Missouri Graduates are Expected to Get a Job Out-of-State?

Team 1

RESEARCH QUESTION
What are the characteristics of Missouri’s bachelor’s degree graduates that seek employment outside of the state?

Cohort:
Due to the nature of the problem requiring training and testing sets, this group defined their cohort as 2011 and 2013 graduates for their training and testing sets, respectively.

Outcome of Interest
Post-secondary education graduates from Indiana with bachelor’s degrees that left Indiana for full-time employment within one year of graduation.

Metrics:
• The group started measuring employment five quarters after the individual’s graduation term.
• Full-time employment: Full-quarter employment, the presence of wages with the same employer for three consecutive quarters.

Key Findings
Of this cohort:
• Missouri bachelor’s degree graduates who were minorities, internationals, out-of-state students, and those with STEM degrees were likely to be employed out-of-state.
• In-state graduates and those aged 23-39 were most likely to be employed in Missouri.

Caveats
The group made a key assumption that individuals not found in the Missouri wage data were employed out of state.

Possible Extensions
Conduct a similar analysis using Unemployment Insurance wage records from other states, particularly bordering states, which would nullify the caveat of this project by accurately identifying out-of-state workers.

SPONSORS
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Data Providers/Sources
Missouri Department of Higher Education
• Post-Secondary Education Completion data

Missouri Division of Employment Security
• Unemployment Insurance wage records

Open-source Datasets
• American Community Survey
• QWI Explorer
• Cross Domestic Product by State
• Industry Wages
• Median and Annual Average Income by state
• Public University Research & Development funding by state

Example: Employment Location Determination

Percent Employed/Not Employed in Missouri 1 Year After Graduation by Race

Percent Employed/Not Employed in Missouri 1 Year After Graduation by Age Group

Machine Learning Model Comparison: Precision at 1 percent

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