The Demand for Internship Experience

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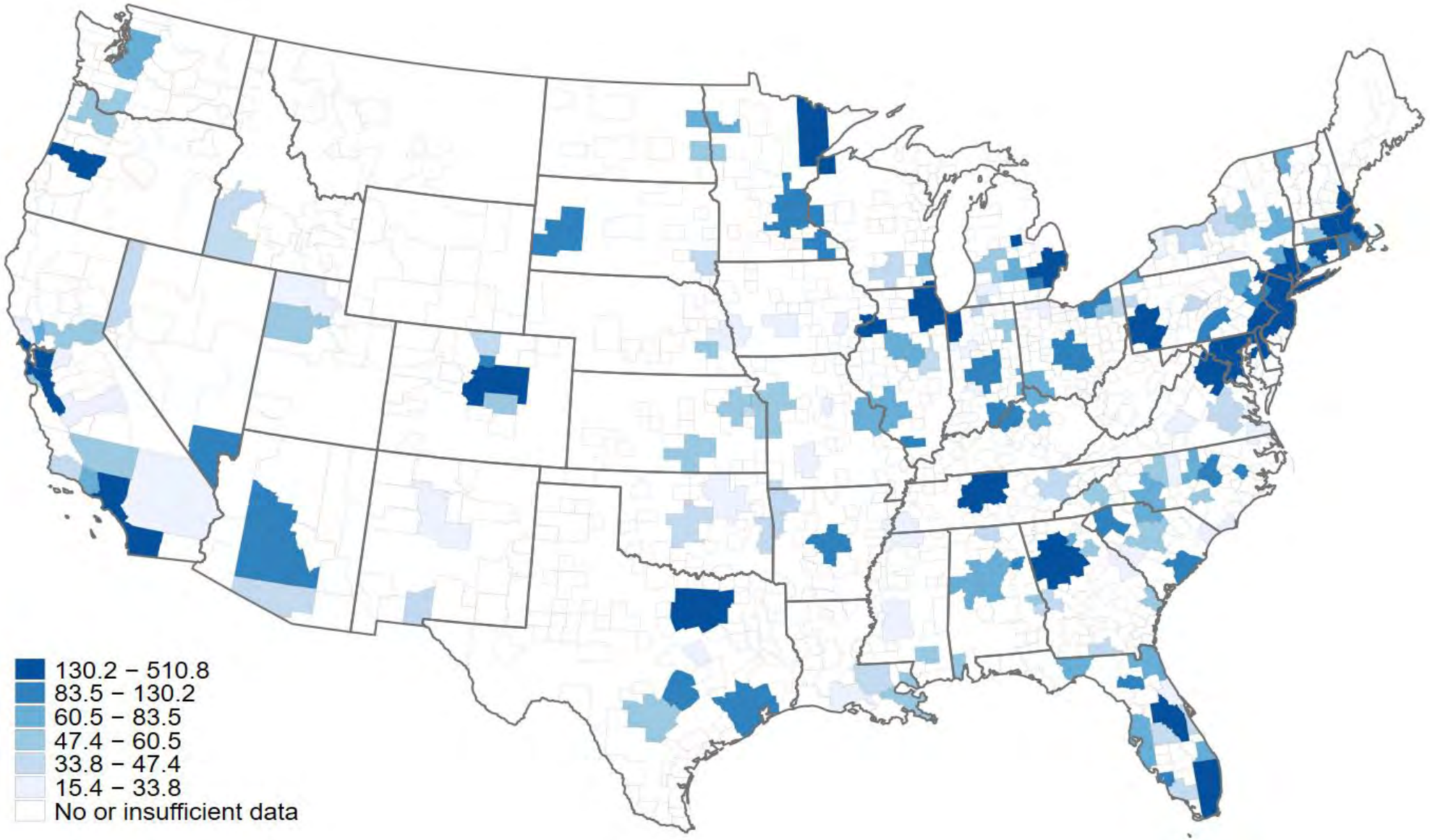
Background on the internship market: Jaeger, Nunley, Seals, and Wilbrandt (2019)

- Internships are increasingly becoming an important part of the labor market.
  - Over half of college students intern
  - Many internships turn into jobs
- Internships tend to be unpaid (62%), and they tend to be part time (72%).
- Strong link between paid/unpaid and part-time/full-time status:
  - Part-time internships tend to be unpaid (75%)
  - Full-time internships tend to be paid (71%)

Internships per 100,000 18-25 year olds



Background on the internship market: Jaeger, Nunley, Seals, and Wilbrandt (2019)

- Internships are more common in the following occupation categories:
  - Business and financial operations
  - Arts, design, entertainment, sports, and media
  - Sales
- The internship market behaves much like the regular labor market.
  - When the internship is more "job-like", firms tend to pay.
  - When unemployment is low, firms are more likely to pay.
  - In areas with higher minimum wages, firms are less likely to pay.

Do internships help students in the labor market?

- Lots of anecdotal evidence that internships lead to regular employment.
- Studies tend to find a positive correlation between interning and employment outcomes.
- Only two studies rely on randomized or natural experiments to measure the causal effect of interning:
  - Nunley et al. (2016)
    - 14% higher probability of receiving callbacks from employers
  - Saniter et al. (2018)
    - 6% rise in earnings over the life cycle

Our study

- Study initial employment prospects for new college grads using a résumé audit study.
  - Identical audits in 2016 and 2017 (March – July).
  - Submitted 37,872 unique, randomly generated resumes to 9,468 job openings.
  - Résumé characteristics were randomly assigned to fictive applications, which includes 60 different types of internship experience.
  - Outcome of interest is employer callbacks (interview requests, positive responses)
- Use machine-learning algorithm to classify student internships and job openings into detailed occupation categories.
- Link audit data with the data from the Occupational Information Network (O*NET) to examine task content of internships and jobs and how they might interact.

Applicant characteristics

- The fictive applicants were randomly assigned the following:
  - Name
  - Address
  - University
  - Major
  - Grade point average
  - Work experience during college
  - Basic computer skills (e.g., Microsoft Applications).
- Portions of the fictive applicants were assigned the following:
  - Minors
  - Different types of internship experience
  - Volunteer experience
  - Ability to speak Spanish
  - Receipt of study-abroad scholarships
  - Skills associated with data management, manipulation and analysis.

What can our data tell us?

- A large percentage of interns end up working for that same firm as an employee.
- But some do not place with the same firm.
- Some answerable questions:
  - Do internships help these students?
  - Do the characteristics of the student internships matter?
  - Do student internship characteristics interact with the tasks required by jobs?
  - Does the intensity of the tasks completed as part of the student internship afffect employer demand?

The Effects of Internship Experience on Callback Rates

	(1)	(2)
Internship	0.006**	--
	(0.003)	--
Social Internship	--	0.011***
	--	(0.003)
Analytical Internship	--	0.000
	--	(0.003)

Notes: The full sample of 37,872 observations is used, which creates 9,468 unique clusters. Standard errors with one-way clustering on job advertisements are in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Effect sizes

- Overall, the effect of interning appears to be small.
  - Callback rate rises by about 4-5% (0.6 percentage points)
- However, the overall estimate masks some heterogeneity:
  - Overall effect is driven solely by greater returns for internships that require social interaction (e.g., persuasion, coordination, social perceptiveness).
  - These types of internship experiences raise the callback rate by about 9% (1.1 percentage points).
  - Analytical internships do not appear to affect callback rates.

Tasks Required by Employers

- Using the occupation codes assigned to the ads, we incorporate the tasks required by firms.
- To do this, we follow Deming (2017).
- Three measures:
  - Social skill task intensity
  - Nonroutine cognitive task intensity
  - Routine task intensity
- Group these into "high" and "low" bins.
- Examine these subsamples.

The Effects of Internship Experience on Callback Rates by Task Intensity

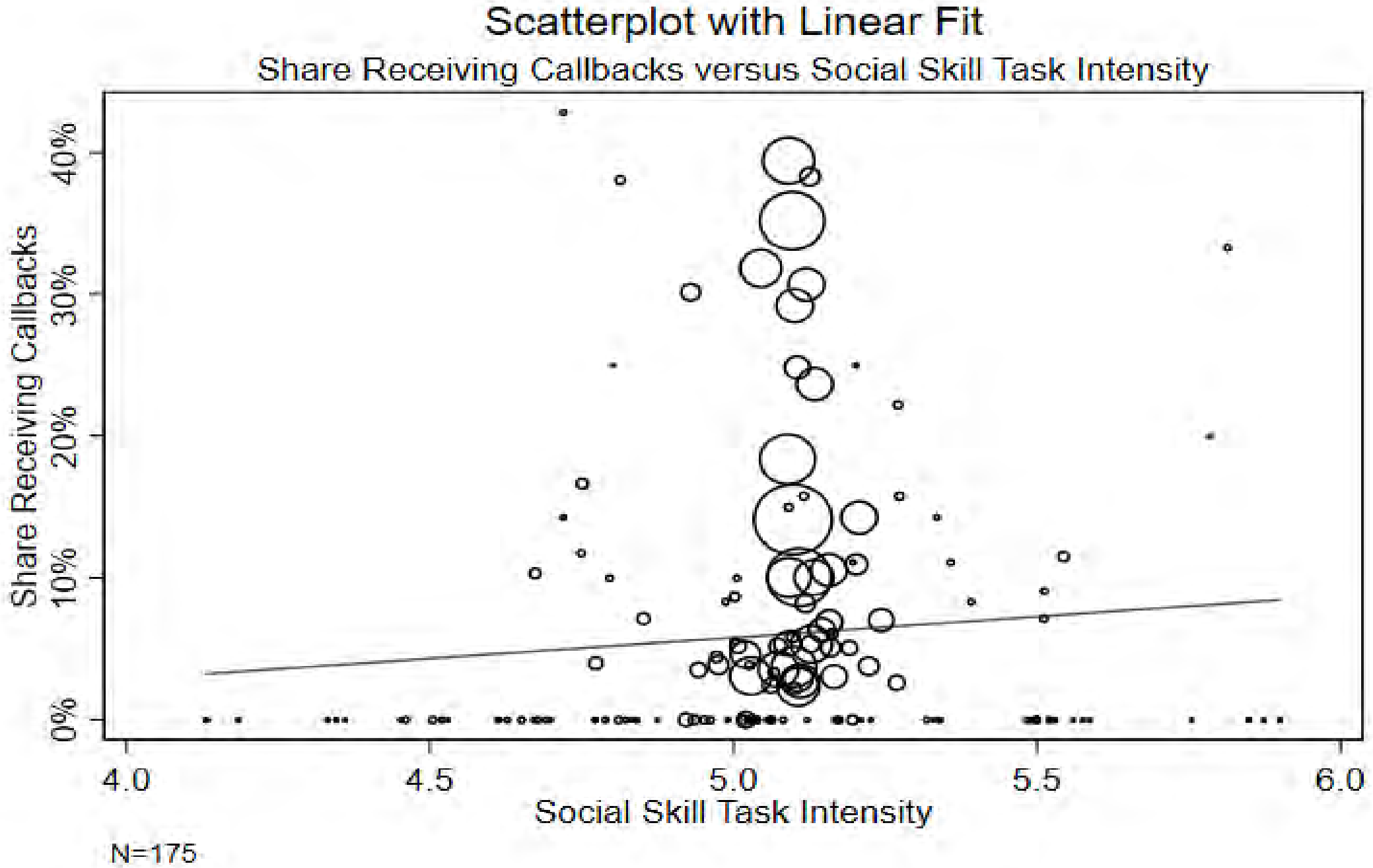
	Social Skills	Nonroutine Cognitive	Routine
	(1)	(2)	(3)
High Task Intensity			
Social Internship	0.012***	0.010**	0.014***
	(0.004)	(0.005)	(0.004)
Analytical Internship	-0.000	-0.001	0.003
	(0.004)	(0.005)	(0.004)
N	27,804	21,100	23,416
Low Task Intensity			
Social Internship	0.008*	0.012**	0.007
	(0.005)	(0.005)	(0.006)
Analytical Internship	0.001	0.001	-0.005
	(0.005)	(0.005)	(0.006)
N	10,068	16,772	14,456

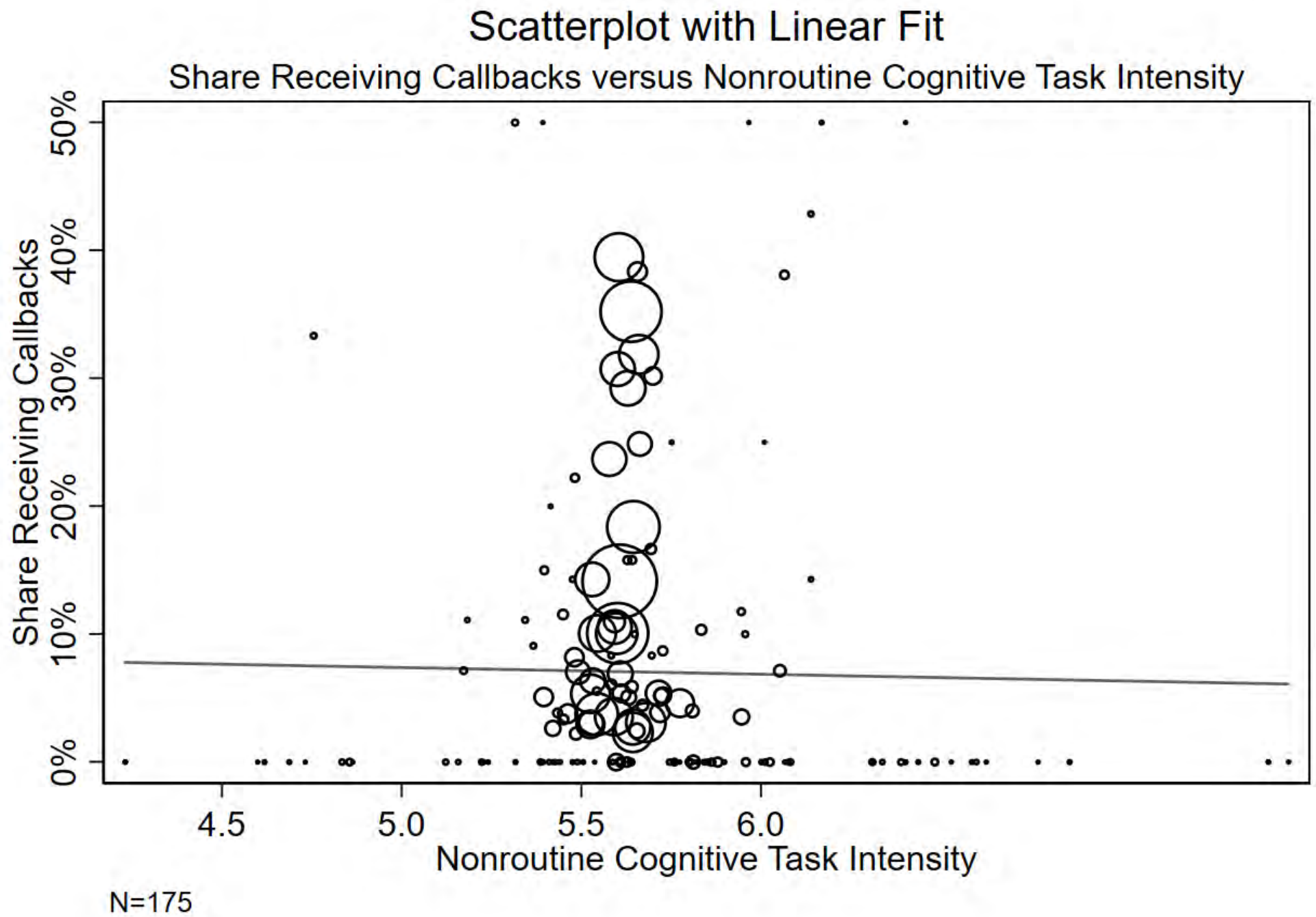
Notes: The top panel examines a subsample of jobs assigned high values for social skill task intensity, nonroutine cognitive task intensity, and routine task intensity, while the bottom panel examines a subsample of jobs assigned low values for the task content variables. Standard errors with one-way clustering on job advertisements are in parentheses.

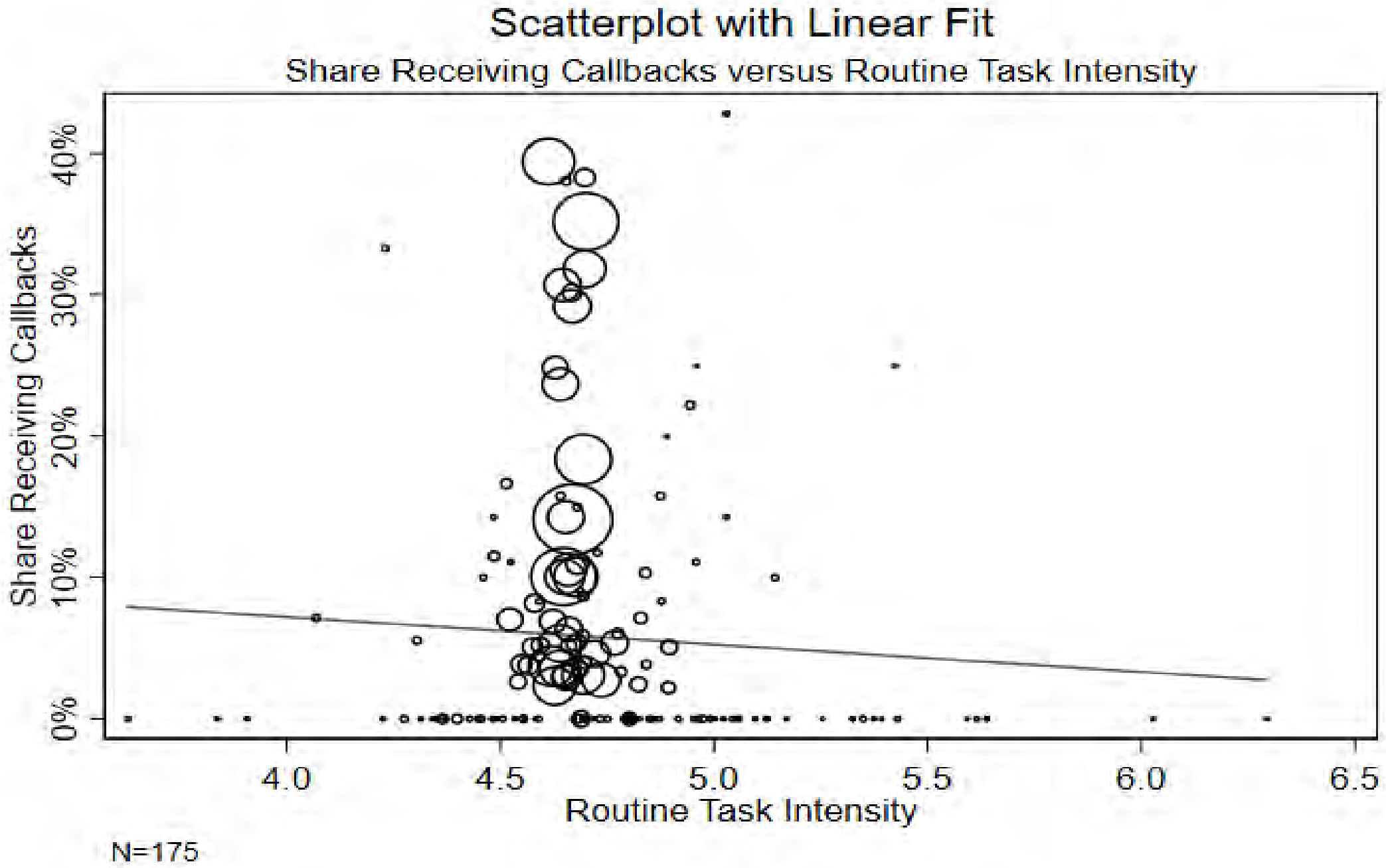
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Examining employer responses to task intensity

- Examine a subset of the data that includes only applicants with internship experience.
- For each detailed occupation, we compute share of applicants receiving callbacks and the average of each task intensity measures for the student internships.
- Measure employer responses (i.e. callback rates) against increases in task intensity.


Scatterplot with Linear Fit
Share Receiving Callbacks versus Social Skill Task Intensity
Share Receiving Callbacks
0%
10%
20%
30%
40%
4.0
4.5
5.0
5.5
6.0
Social Skill Task Intensity
N=175


Scatterplot with Linear Fit
Share Receiving Callbacks versus Nonroutine Cognitive Task Intensity
Share Receiving Callbacks
0%
10%
20%
30%
40%
50%
4.5
5.0
5.5
6.0
Nonroutine Cognitive Task Intensity
N=175


Scatterplot with Linear Fit
Share Receiving Callbacks versus Routine Task Intensity
Share Receiving Callbacks
0%
10%
20%
30%
40%
4.0
4.5
5.0
5.5
6.0
6.5
Routine Task Intensity
N=175

Conclusions

- Internships tend to improve job prospects for new college grads.
- The type of internship matters
  - Internships emphasizing social and interpersonal skills generate higher callback rates, but analytical internships do not.
- The type of job does not seem to matter very much
  - "Social" internships have robust, positive effects across jobs requiring different levels of task intensity.
- Employers appear to respond to the task content of students' internship experiences:
  - Callback rates rise with social skill task intensity.
  - Callback rates do not seem to vary with nonroutine cognitive task intensity.
  - Callback rates fall with routine task intensity.