



# Occupational Exposure to AI

NABE Annual Meeting – September 29, 2024

Rob Seamans – NYU Stern School of Business

# High-level Points

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- AI will create jobs, destroy jobs, and (mostly) change jobs...
- ... just in the way that the computer and internet did.
  - We can learn a lot by studying prior technologies, but keep in mind current social and economic backdrop (e.g., declining labor force participation, increasing firm concentration, increasing political polarization)
- AI will mostly affect “white collar” occupations (following slides).
- There will be lots of within-occupation heterogeneity
  - Recent experiments show less experienced workers gain more from AI...
  - ... but we need a better understanding of how AI re-allocates work across people, and
  - how people re-allocate themselves (don't forget that humans are agentic!)

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*What I'll discuss today*

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*Where we need  
lots more research*

# How to measure which jobs will be affected?

## A Method to Link Advances in Artificial Intelligence to Occupational Abilities

Edward W. Felten

Manav Raj

Robert Seamans

AEA PAPERS AND PROCEEDINGS  
VOL. 108, MAY 2018  
(pp. 54-57)



RESEARCH ARTICLE | Open Access |

## Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses

Edward Felten , Manav Raj , Robert Seamans

First published: 28 April 2021 | <https://doi.org/10.1002/smj.3286> | Citations: 3

## How will Language Modelers like ChatGPT Affect Occupations and Industries?

36 Pages

Posted: 6 Mar 2023

Last revised: 17 Apr 2023

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New York University (NYU) - Leonard N. Stern School of Business

Date Written: March 1, 2023

SSRN

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## Occupational Heterogeneity in Exposure to Generative AI

69 Pages

Posted: 19 Apr 2023

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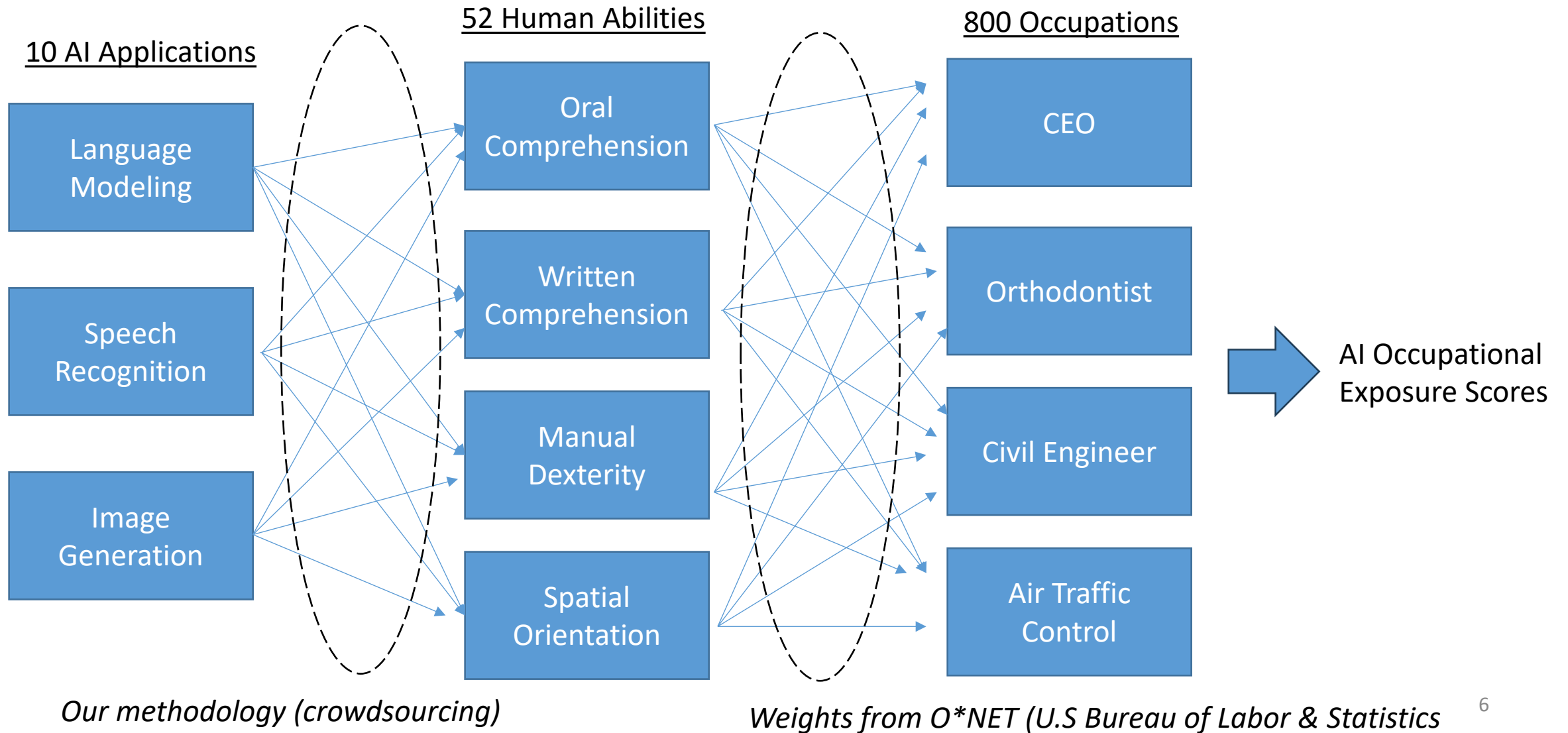
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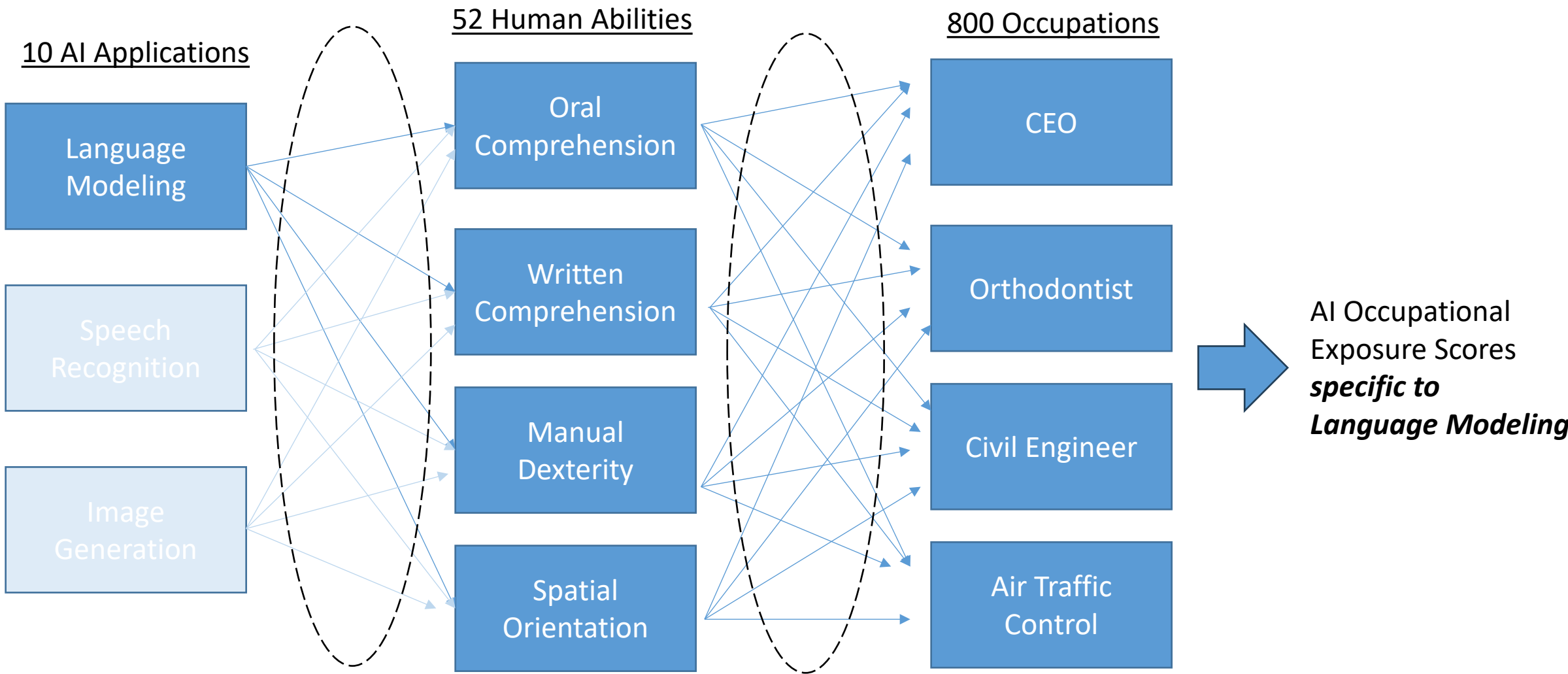
New York University (NYU) - Leonard N. Stern School of Business

Date Written: April 10, 2023

# High Level View of the Methodology



# Updating the Methodology for Recent Advances



*Our methodology (crowdsourcing)*

*Weights from O\*NET (U.S Bureau of Labor & Statistics)*

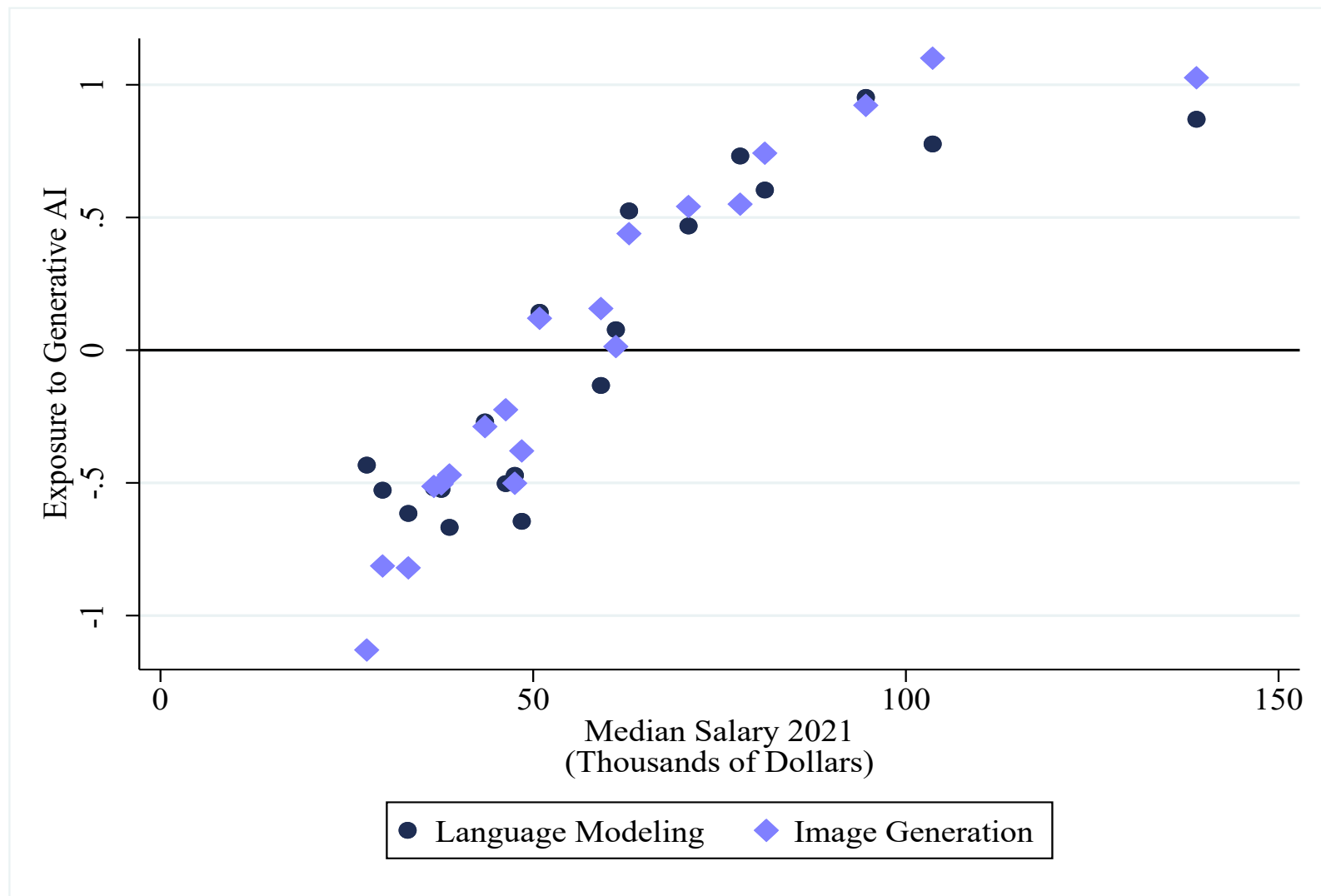
# Occupations: Language Modeling & Image Generation

Rank	Language Modeling AIOE	Image Generation AIOE
1	Telemarketers	Interior Designers
2	English Language and Literature Teachers, Postsecondary	Architects, Except Landscape and Naval
3	Foreign Language and Literature Teachers, Postsecondary	Chemical Engineers
4	History Teachers, Postsecondary	Art Directors
5	Law Teachers, Postsecondary	Astronomers
6	Philosophy and Religion Teachers, Postsecondary	Mechanical Drafters
7	Sociology Teachers, Postsecondary	Mining and Geological Engineers, Incl Mining Safety Engineers
8	Political Science Teachers, Postsecondary	Civil Engineers
9	Criminal Justice and Law Enforcement Teachers, Postsecondary	Commercial and Industrial Designers
10	Sociologists	Film and Video Editors
11	Social Work Teachers, Postsecondary	Graphic Designers
12	Psychology Teachers, Postsecondary	Mathematicians
13	Communications Teachers, Postsecondary	Social Scientists and Related Workers, All Other
14	Political Scientists	Architectural and Civil Drafters
15	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	Air Traffic Controllers
16	Arbitrators, Mediators, and Conciliators	Environmental Engineers
17	Judges, Magistrate Judges, and Magistrates	Construction Managers
18	Geography Teachers, Postsecondary	Multimedia Artists and Animators
19	Library Science Teachers, Postsecondary	Desktop Publishers
20	Clinical, Counseling, and School Psychologists	Statistical Assistants

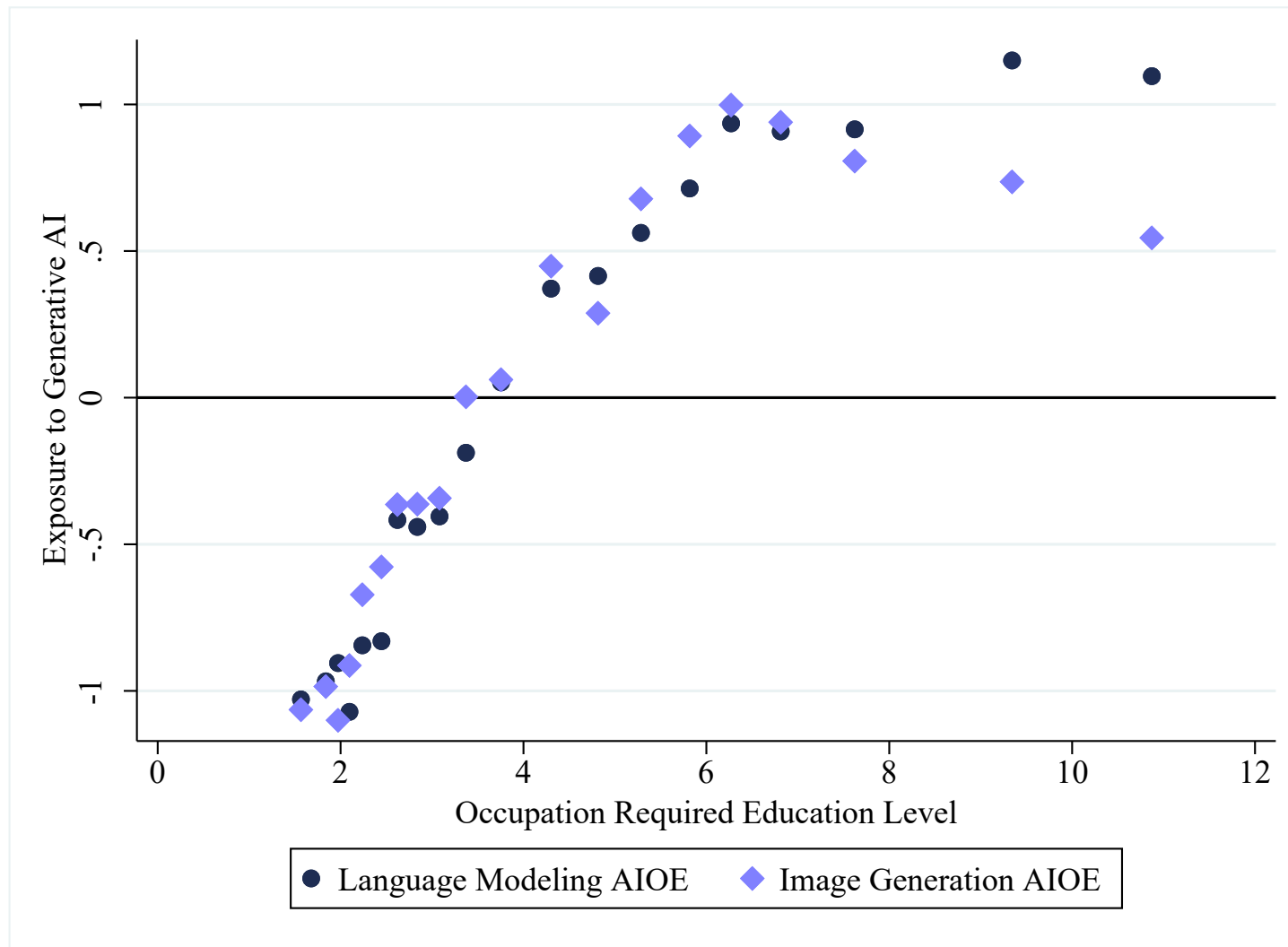
# Industries: Language Modeling & Image Generation

Rank	Language Modeling	Image Generation
1	Legal Services	Architectural, Engineering, and Related Services
2	Securities, Commodity Contracts, and Other Financial Investments	Specialized Design Services
3	Agencies, Brokerages, and Other Insurance Related Activities	Accounting, Tax Preparation, Bookkeeping, and Payroll Services
4	Insurance and Employee Benefit Funds	Scientific Research and Development Services
5	Nondepository Credit Intermediation	Software Publishers
6	Agents and Managers for Artists, Athletes, Entertainers, and Others	Computer and Peripheral Equipment Manufacturing
7	Insurance Carriers	Computer Systems Design and Related Services
8	Other Investment Pools and Funds	Insurance and Employee Benefit Funds
9	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	Legal Services
10	Business Support Services	Securities, Commodity Contracts, and Other Financial Investments
11	Software Publishers	Management, Scientific, and Technical Consulting Services
12	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	Insurance Carriers
13	Business Schools and Computer and Management Training	Other Investment Pools and Funds
14	Credit Intermediation and Related Activities	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)
15	Grantmaking and Giving Services	Radio and Television Broadcasting
16	Travel Arrangement and Reservation Services	Monetary Authorities-Central Bank
17	Junior Colleges	Other Information Services
18	Computer Systems Design and Related Services	Data Processing, Hosting, and Related Services
19	Management, Scientific, and Technical Consulting Services	Navigational, Measuring, Electromedical, and Control Instruments Mfg.
20	Other Information Services	Newspaper, Periodical, Book, and Directory Publishers

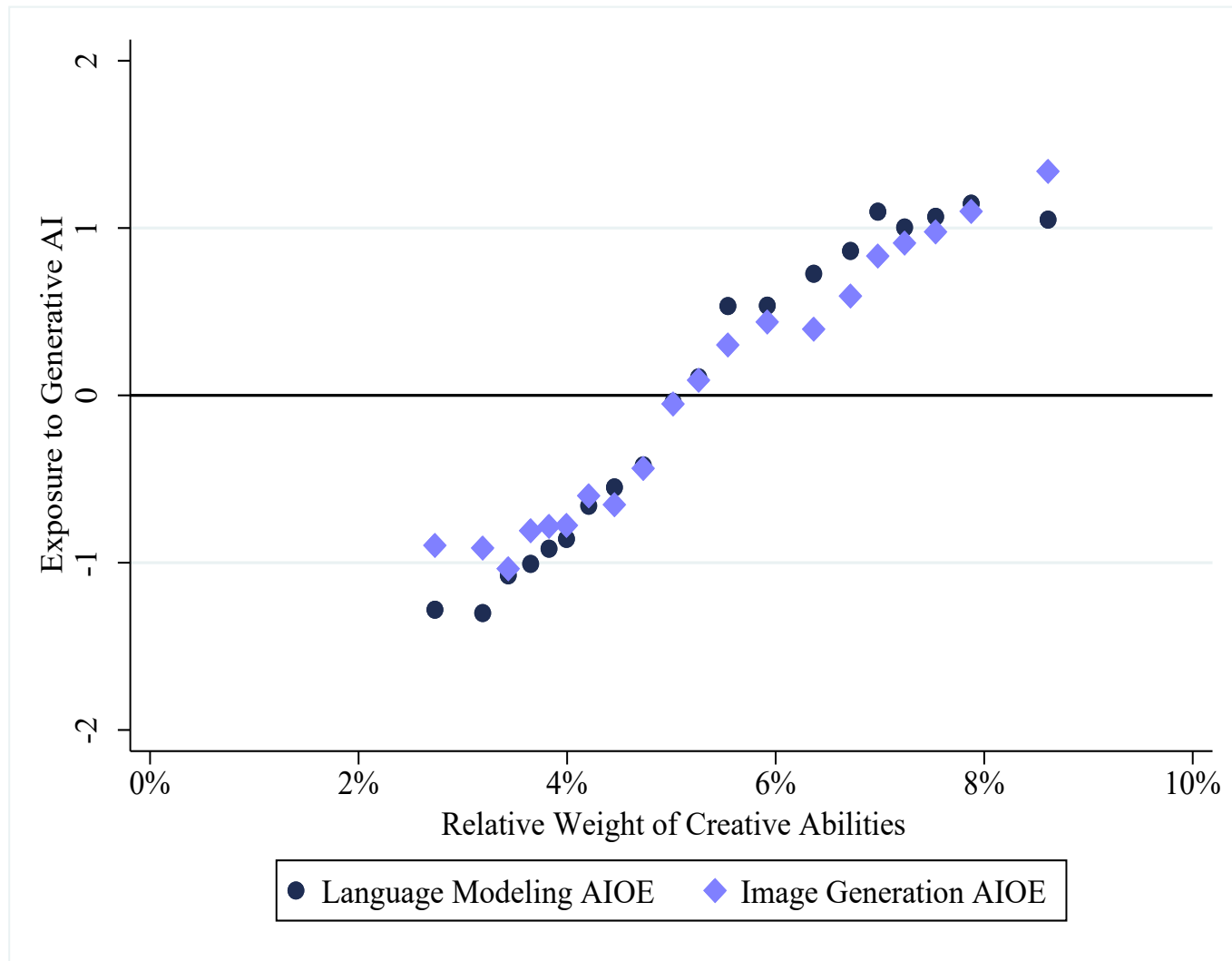
# Exposure to Generative AI and Median Salary



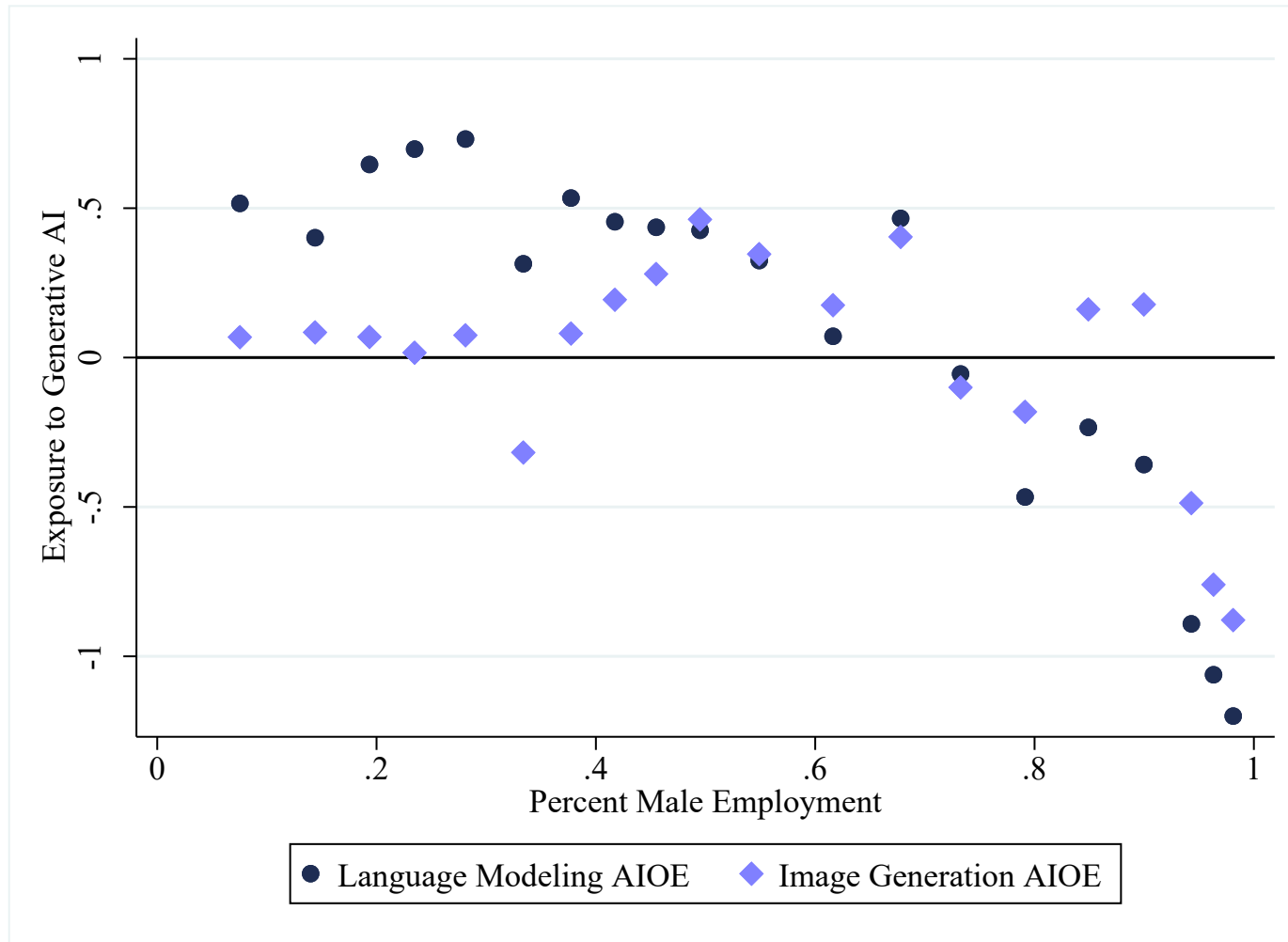
# Exposure to Generative AI and Education



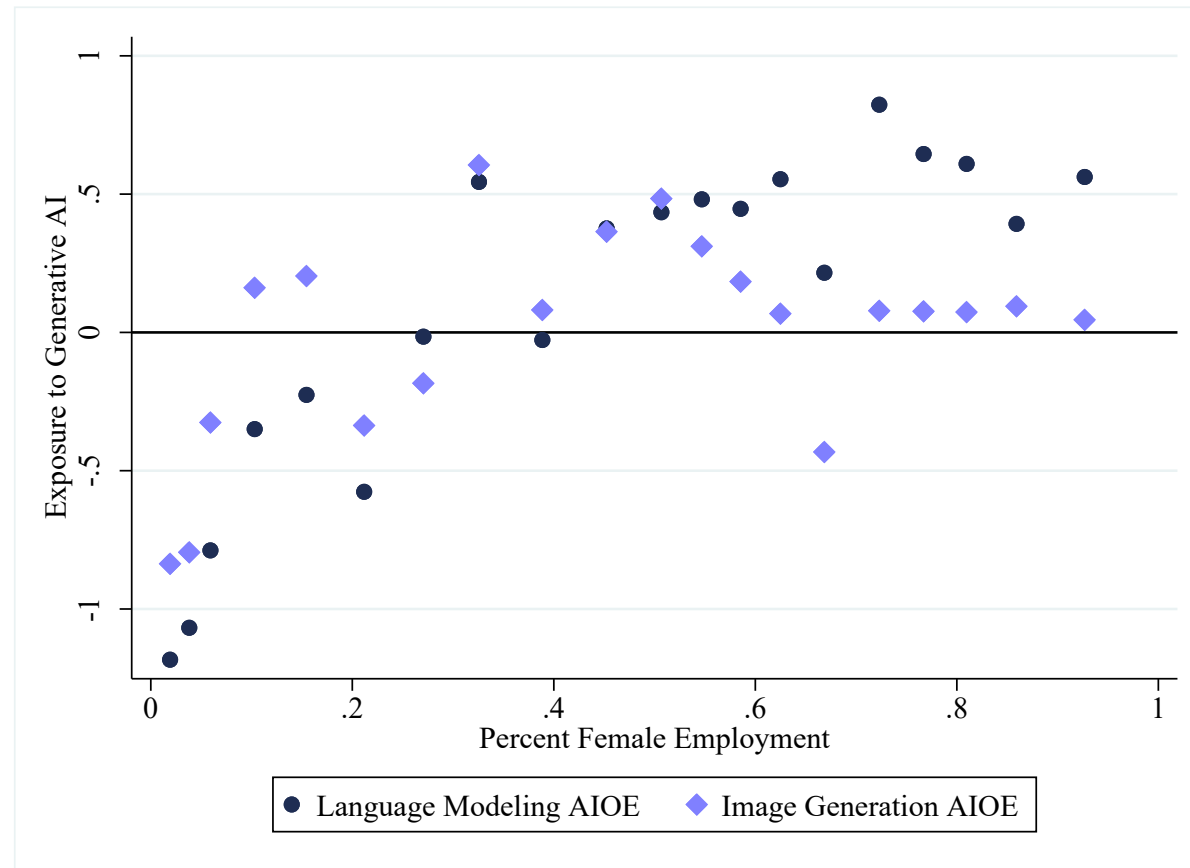
# Exposure to Generative AI and Creativity



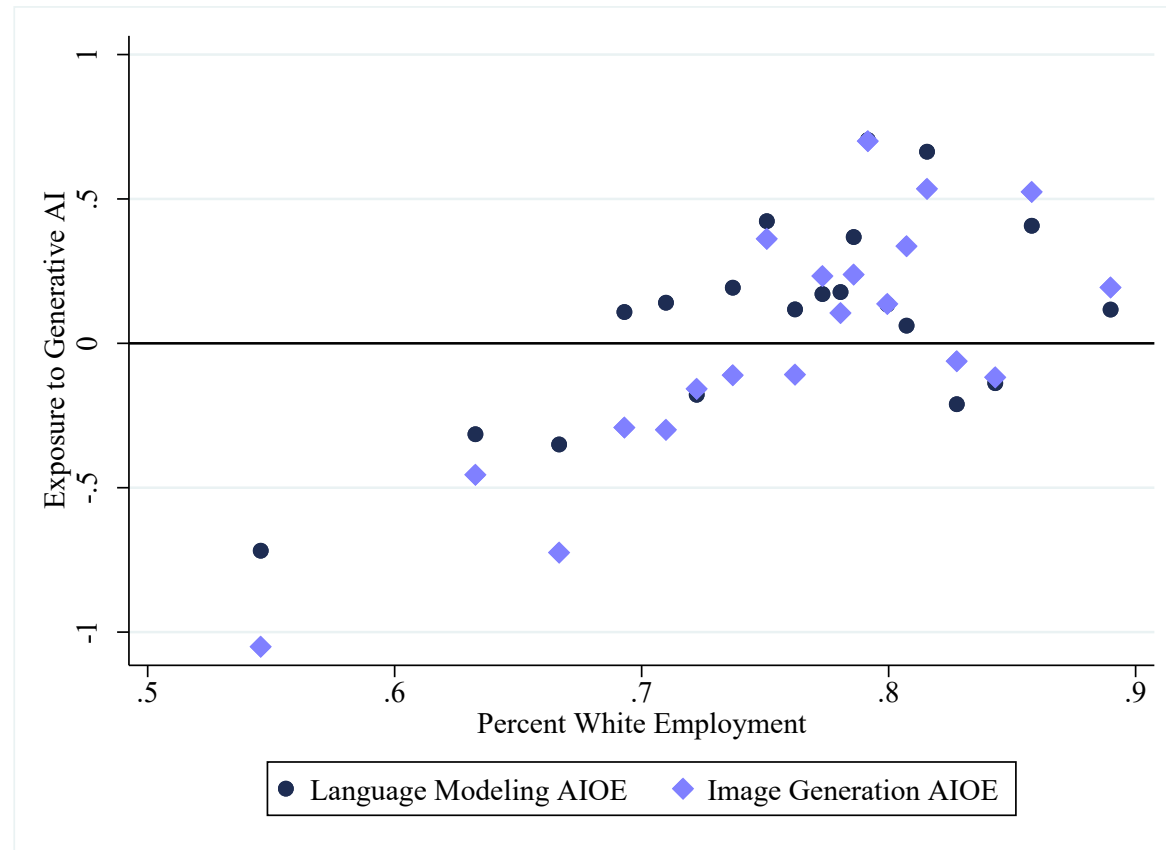
# Exposure to Generative AI and Male



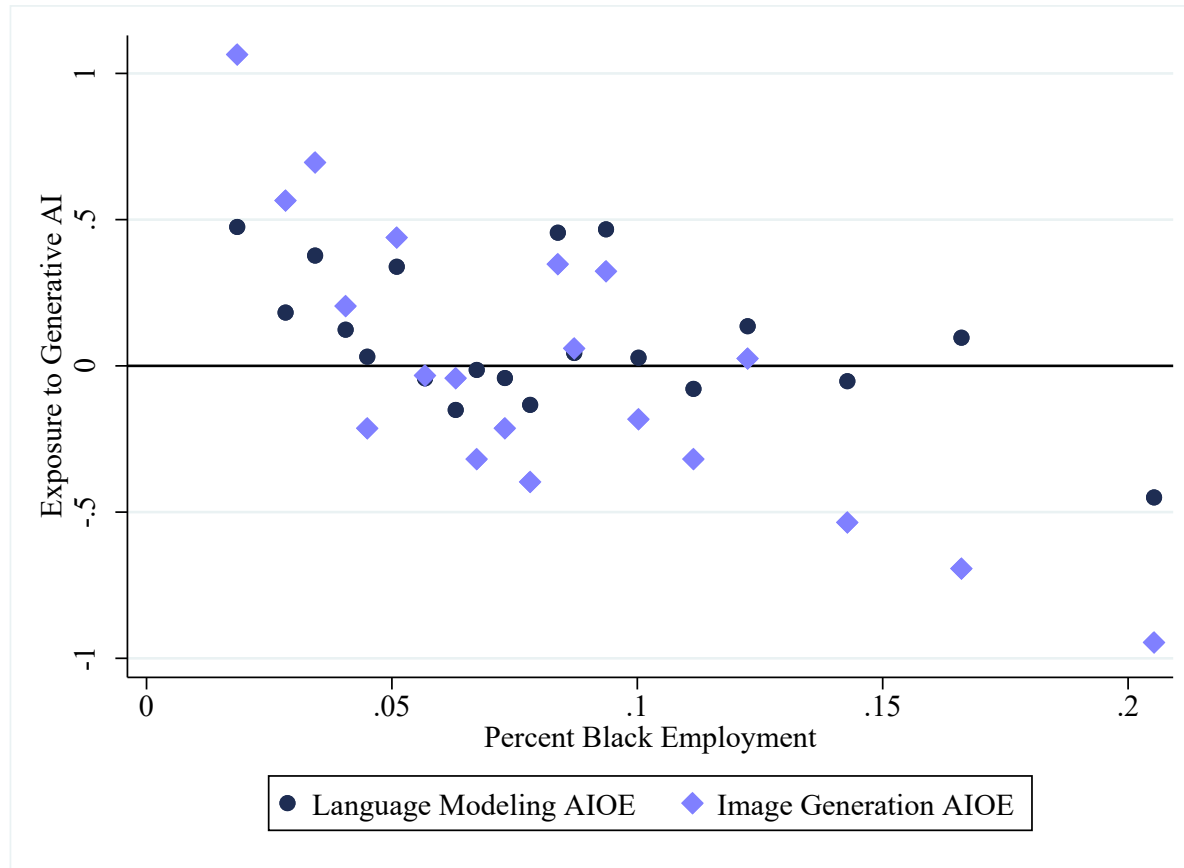
# Exposure to Generative AI and Female



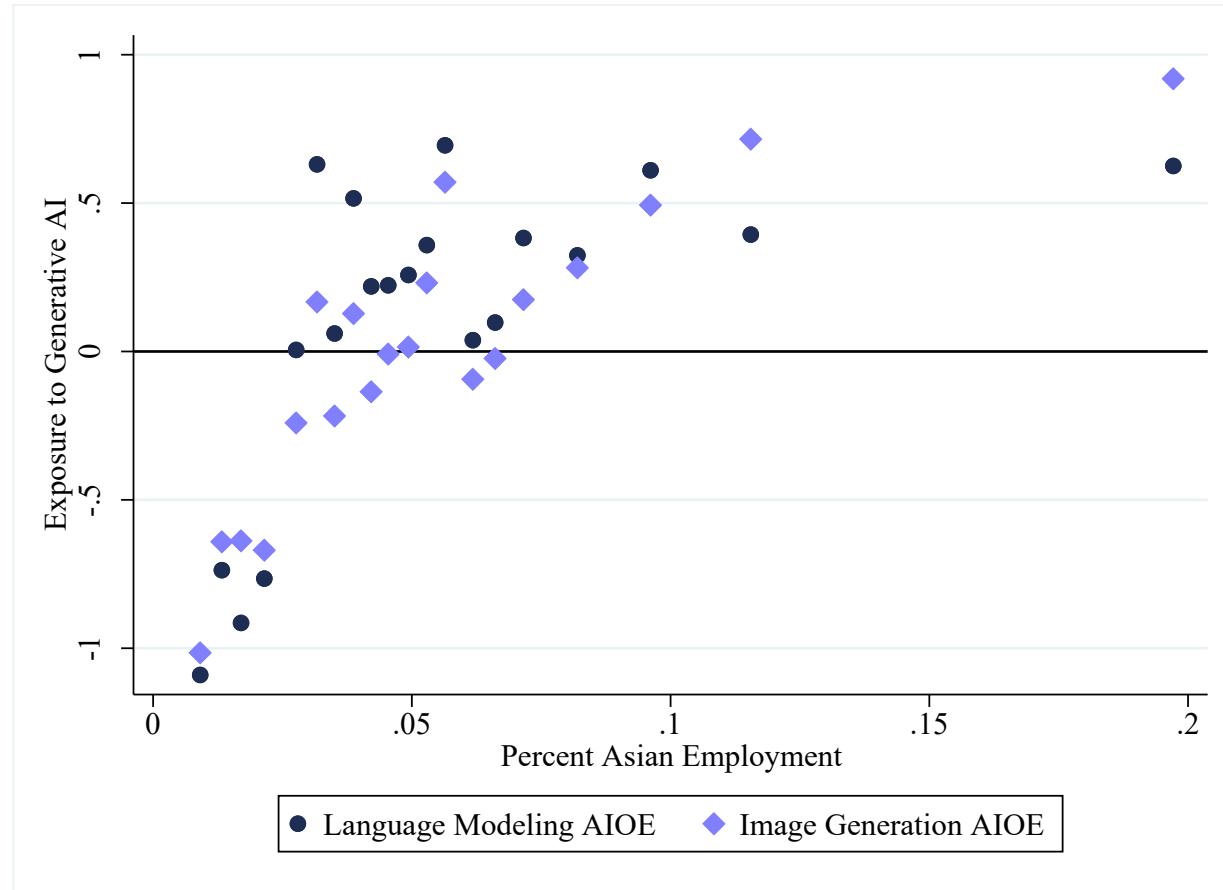
# Exposure to Generative AI and White



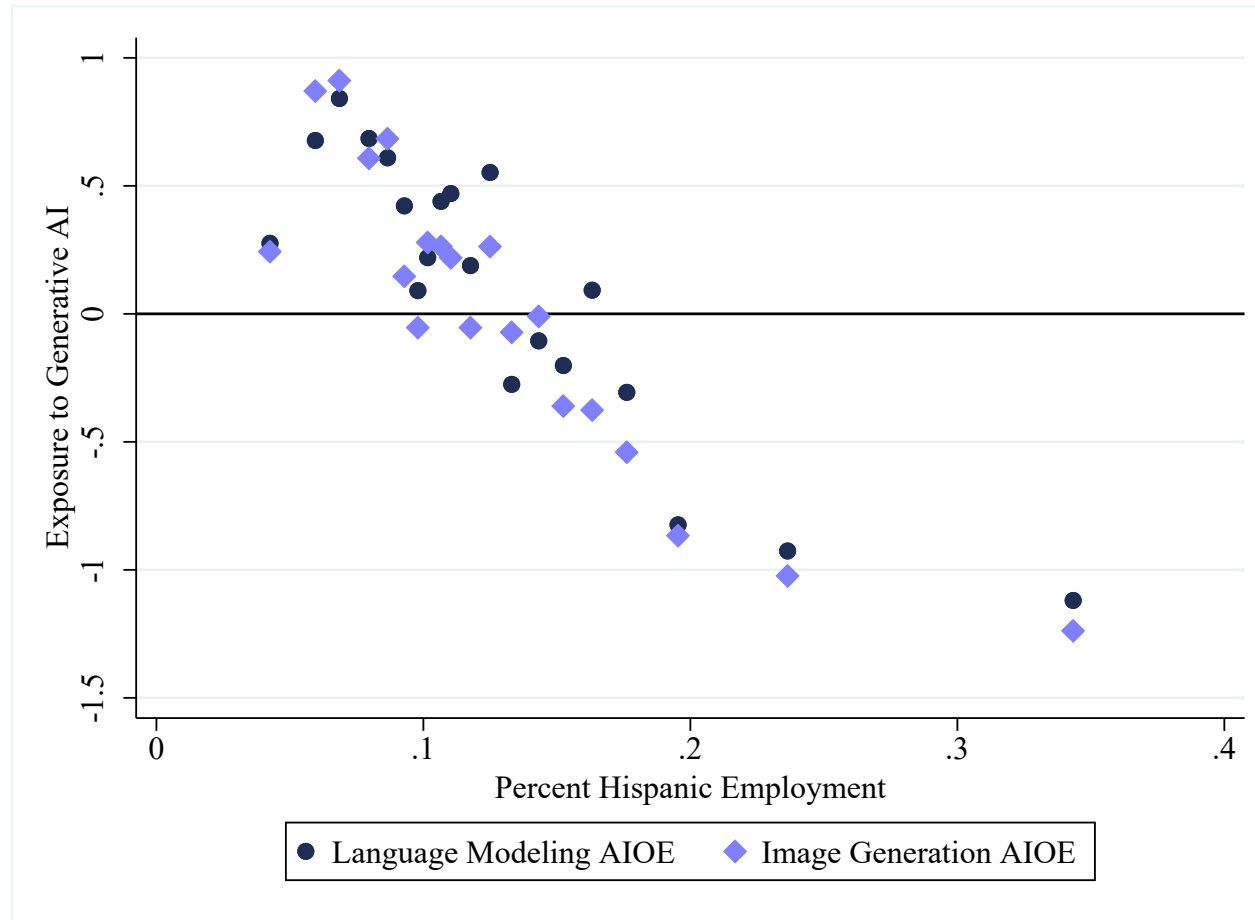
# Exposure to Generative AI and Black



# Exposure to Generative AI and Asian



# Exposure to Generative AI and Hispanic





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