Working but Still Poor: The Role of Regional Occupational Structure in Low-Income Work
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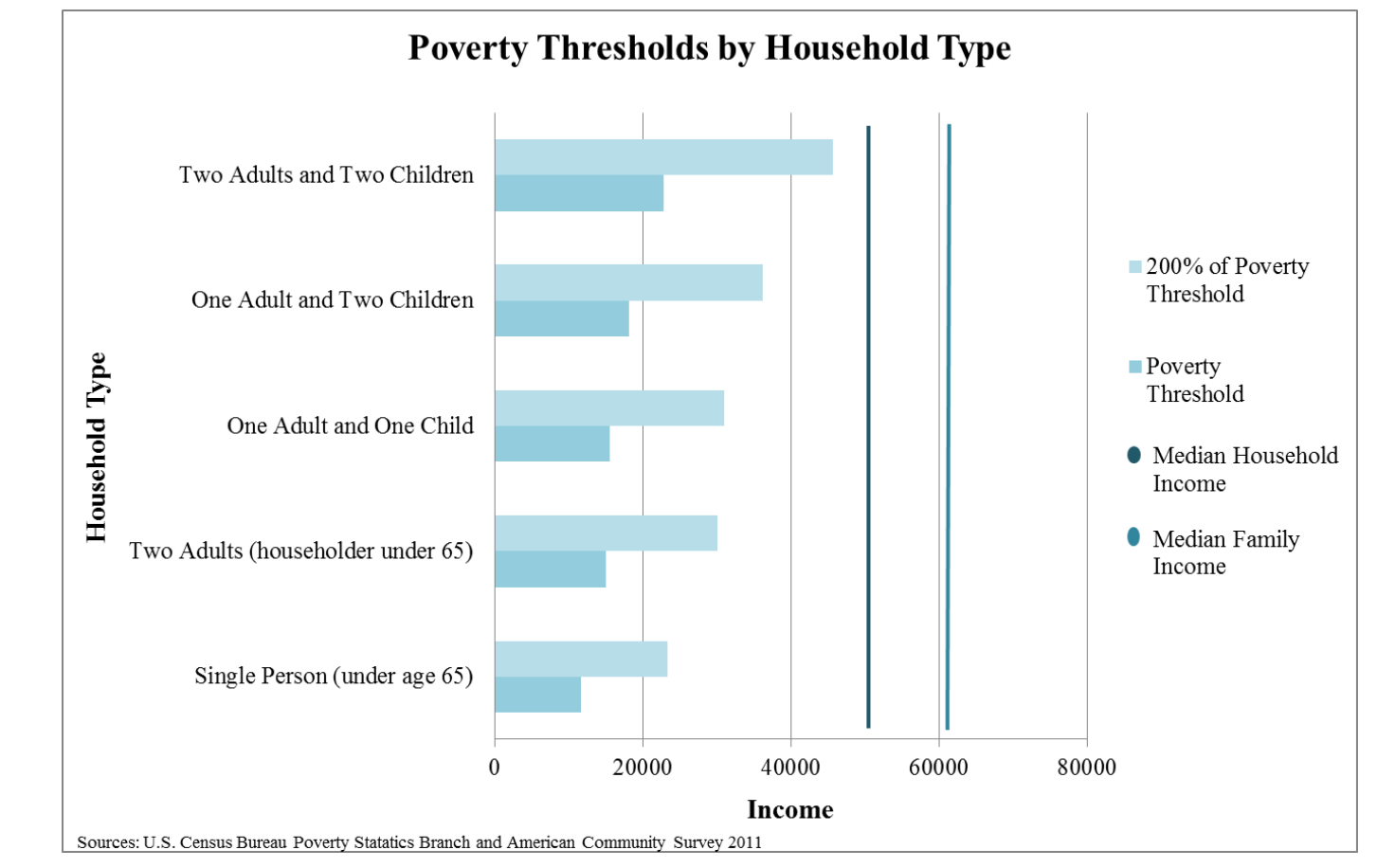
Introduction

Research in Brief

➢ Workers in certain occupations are much more likely to be working poor or near poor.

➢ Workers are more likely to be working poor or near poor in certain areas of the country than others.

➢ Differences in areas' occupational composition help explain the geographic variation in working poverty.

Data

•American Community Survey (ACS) 2011, 1-year Public Use Micro Sample (PUMS) file.
 –A nationally representative survey of 3 million household addresses each year

•For the occupation composition variables discussed below, the universe includes:
 –Civilian residents age 16 or older,
 –Employed at the time of the interview,
 –In each of the 2,057 local areas and the United States total.

•The 2011 survey period covers a year early in the recovery after the Great Recession (National Bureau of Economic Research, 2014).

•Local Areas: Public Use Micro Areas (PUMA) are contiguous geographies of at least 100,000 people that do not cross state boundaries.

Defining The Local Area's Occupational Composition

•In this research, we conceptualize the local area's occupational composition in two ways:
 –**Primary Occupation Concentration**, i.e., the occupation group in which the local area is most specialized, and
 –**Occupation Diversity**, i.e., how many different occupation groups in which the local area is specialized.

•Both of these aspects of occupation composition are measured using **location quotients**.

•**Location quotients** compare the share of a local area's workforce employed in a specific occupation group to the share of the nation's workforce in this same occupation group (Blakely and Green Leigh, 2010).

•Location Quotient$_{OL}$ = $(E_{OL} / E_{TL}) / (E_{ON} / E_{TN})$

 ▪Where: E = Employed, and subscripts O = Occupation, L = Local Area, T = Total Workforce, and N = Nation.

•A location quotient equal to or greater than 1.25 denotes an occupation concentration that is at least moderately strong.

•A local area's **primary occupation concentration** is the occupation group with the largest Location Quotient value.

Local Area Primary Occupation Concentration
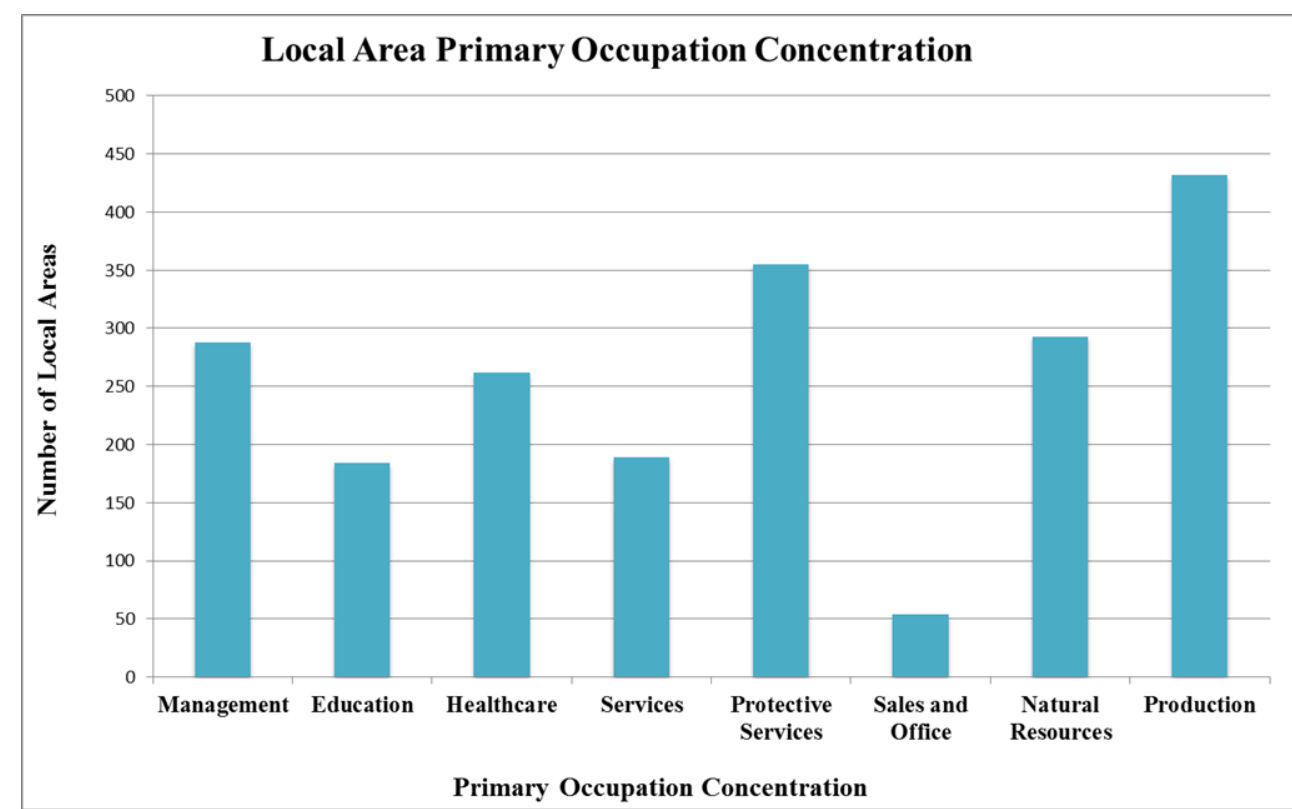
•In this research, we measure a local area's **occupation diversity** in four categories:

•**Unspecialized** - No occupation concentrations

•**Unipolar** – One occupation concentration

•**Bipolar** – Two occupation concentrations

•**Diverse** – Three or more occupation concentrations

Local Area Occupation Concentration Diversity

Occupation Specialization and Poverty Rates by State, 2011

Nearly half of all local areas with a specialization in management have a unipolar occupational structure.

Local Area Occupation Diversity by Primary Concentration

Measuring Poverty

•Poverty status is measured by comparing annual income to a set of poverty thresholds that vary by:
 - family size,
 - number of children, and
 - age of the householder
  (for 1 and 2 person households)
   (U.S. Census Bureau, 2014).

•If a family's before-tax money income is less than the threshold, then each person in the family is considered to be poor.

•Poverty thresholds are updated annually to allow for changes in the cost of living using the Consumer Price Index (CPI-U).

•Poverty thresholds do not vary across regions.

•We consider **workers who are poor** (income up to 100% of the poverty threshold) and **those who are "near poor"** (income from 101% to 200%).

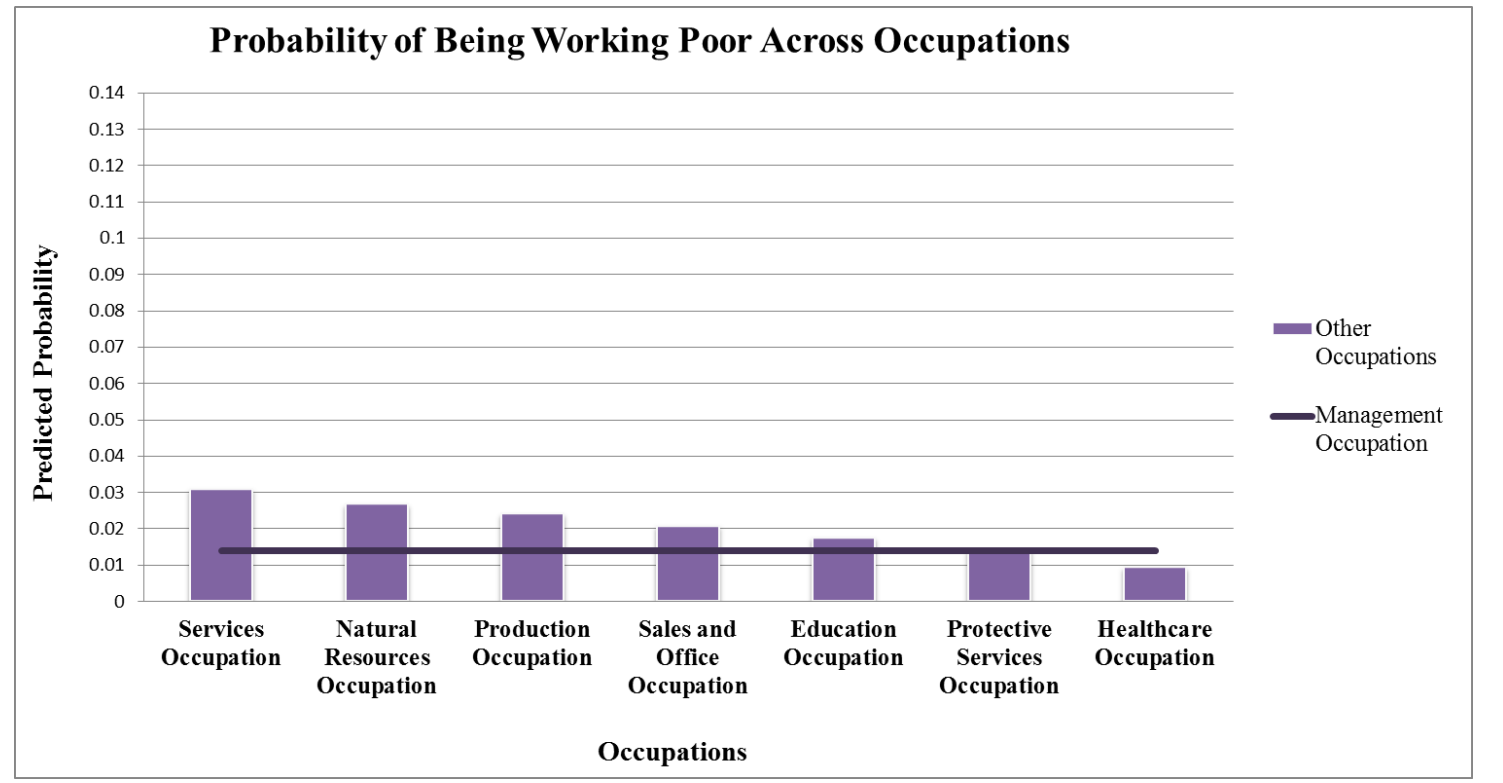Poverty Thresholds by Household Type

Analysis Results

Model Sample and Methods

•The analysis sample includes residents of all 2,057 local areas (PUMAs) in the United States who are:
 –at least 16 years of age,
 –of any race and ethnicity, and
 –employed.

•To model a person's likelihood of being working poor or near poor, we use two two-level, logistic, random-intercept models where:
 –1,351,228 worker observations are nested within the 2,057 local areas, and
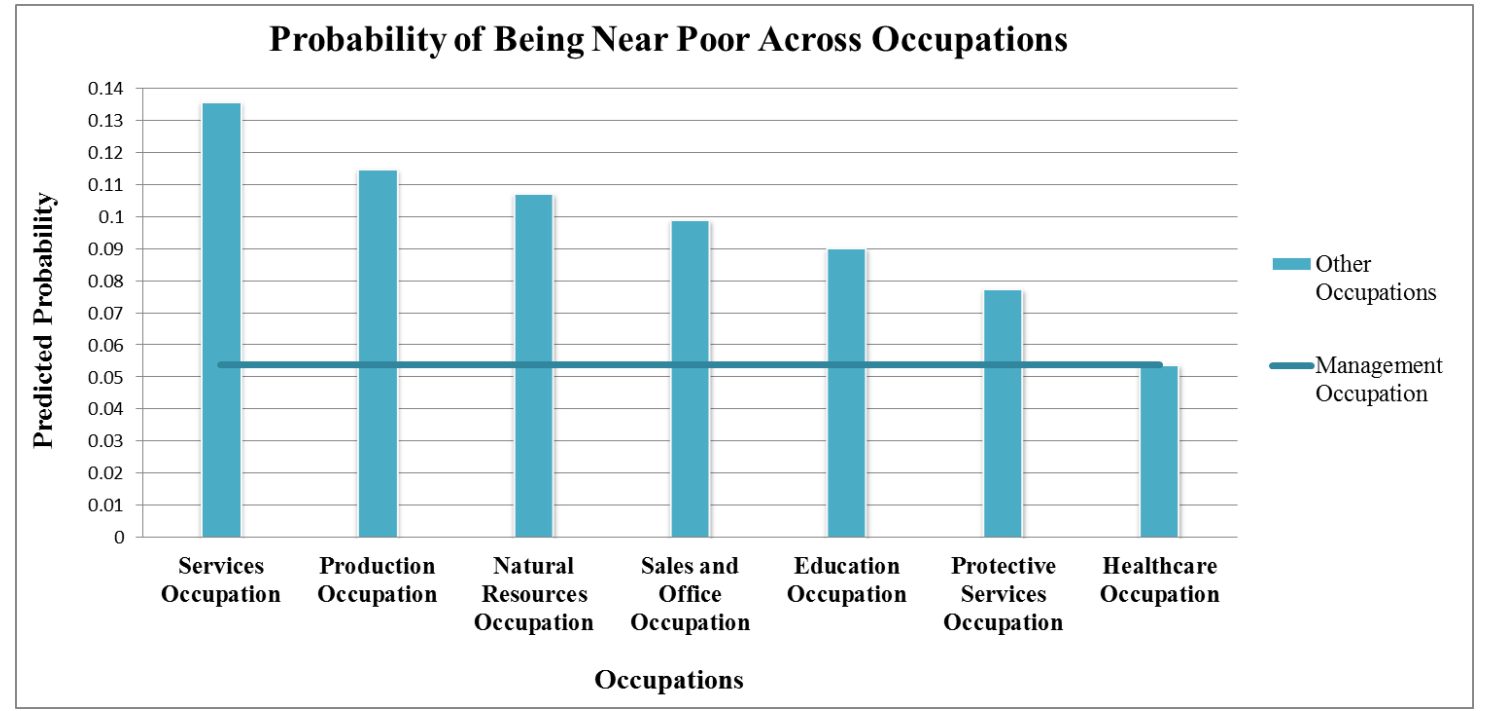 –a person's likelihood of being working poor or near poor is allowed to vary randomly across local areas.

In this research, we group the occupations into eight categories, similar in type of work and earnings.

Occupation Groups	2010 Census Occupation Codes	Example Occupations
Management, business, science, and arts occupations (except Education and Healthcare)	0010 - 1965	Chief Executives, Accountants, Engineers
Education, legal, community service, arts, and media occupations	2000 - 2960	Lawyers, Teachers, Reporters
Healthcare practitioners and technical occupations	3000 - 3540	Doctors, Nurses, Physical Therapists
Service occupations (except Protective)	3600 - 3655; 4000 - 4650	Nursing Assistants, Waiters, Janitors
Protective service occupations	3700 - 3955	Firefighters, Police Officers, Security Guards
Sales and office occupations	4700 - 5940	Cashiers, Real Estate Agents, Bookkeepers
Natural resources, construction, and maintenance occupations	6005 - 7630	Loggers, Carpenters, Mechanics
Production, transportation, and material moving occupations	7700 - 9750	Machinists, Assemblers, Pilots

A person's occupation strongly affects their likelihood of being working poor or near poor
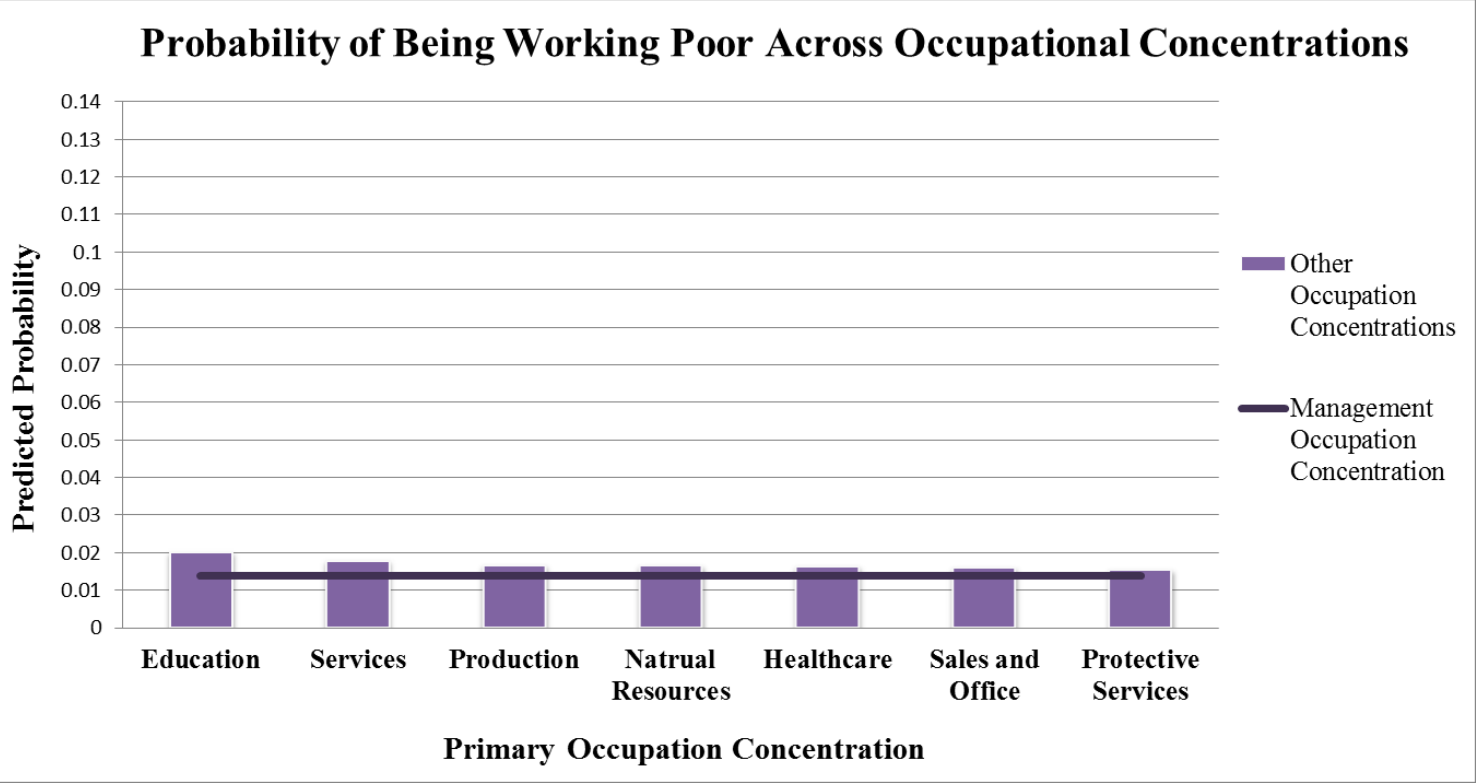

Probability of Being Working Poor Across Occupations

Services workers are much more likely to be working poor or near poor than management workers.

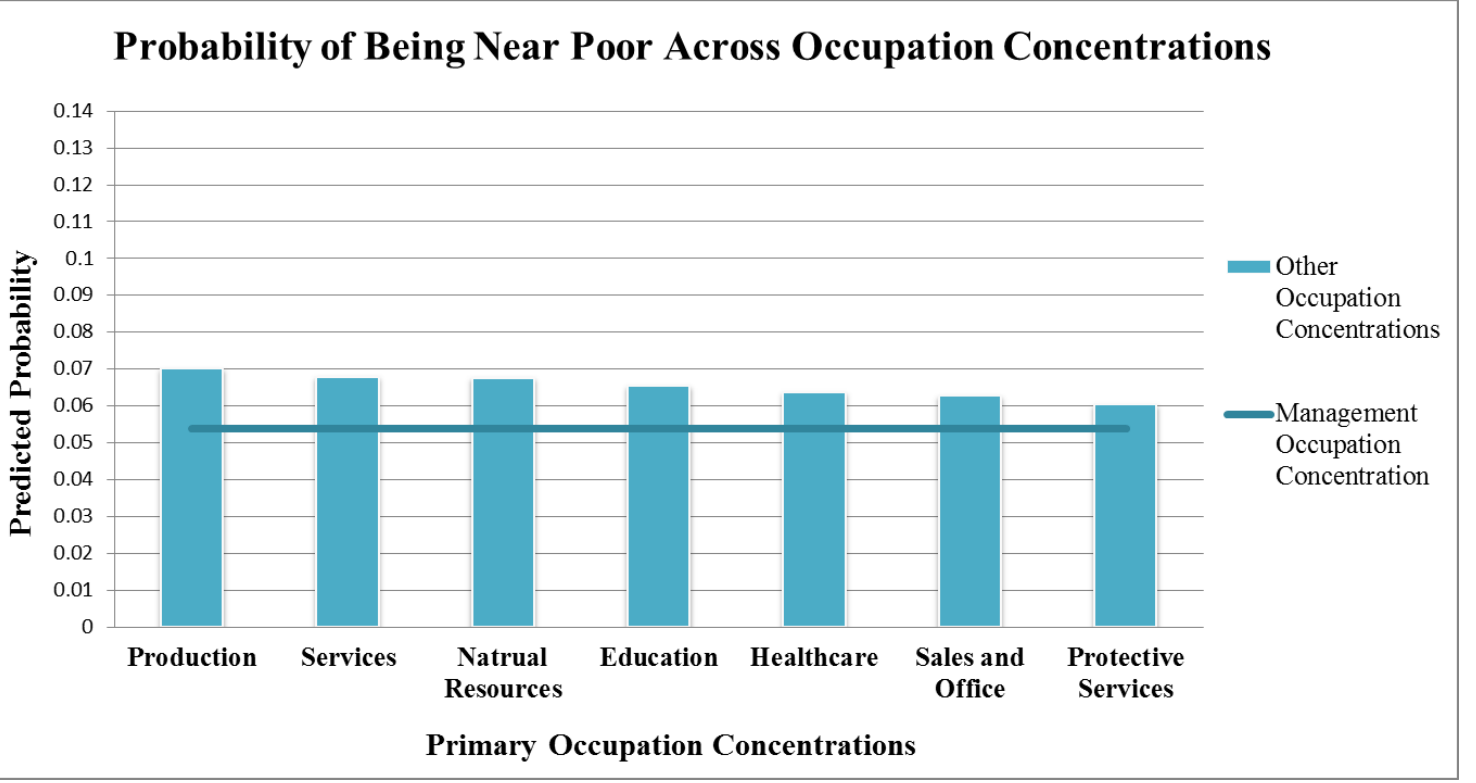Probability of Being Near Poor Across Occupations

•A person's likelihood of being near poor is much higher than their likelihood of being working poor.

Overall, where a person lives matters to their likelihood of being working poor or near poor.

Distribution of Variance for Working Poor and Near Poor

•A small, but significant, share of the total variance in a person's likelihood of being working poor or near poor is related to where the person lives.

•Where a person lives is **more** important to their likelihood of being working poor.

•Controlling for occupational composition helps explain some of the total variance related to where the person lives.

Probability of Being Near Poor by Occupation and Occupation Concentration

Probability of Being Near Poor by Occupation and Occupation Concentration

•Living in a local area that specializes in services rather than management adds to the likelihood that a worker in a low income occupation will be working poor or near poor.

A local area's primary occupation concentration also affects a person's likelihood of being working poor or near poor.

Management workers in local areas that specialize in Education or Services are more likely to be working poor.
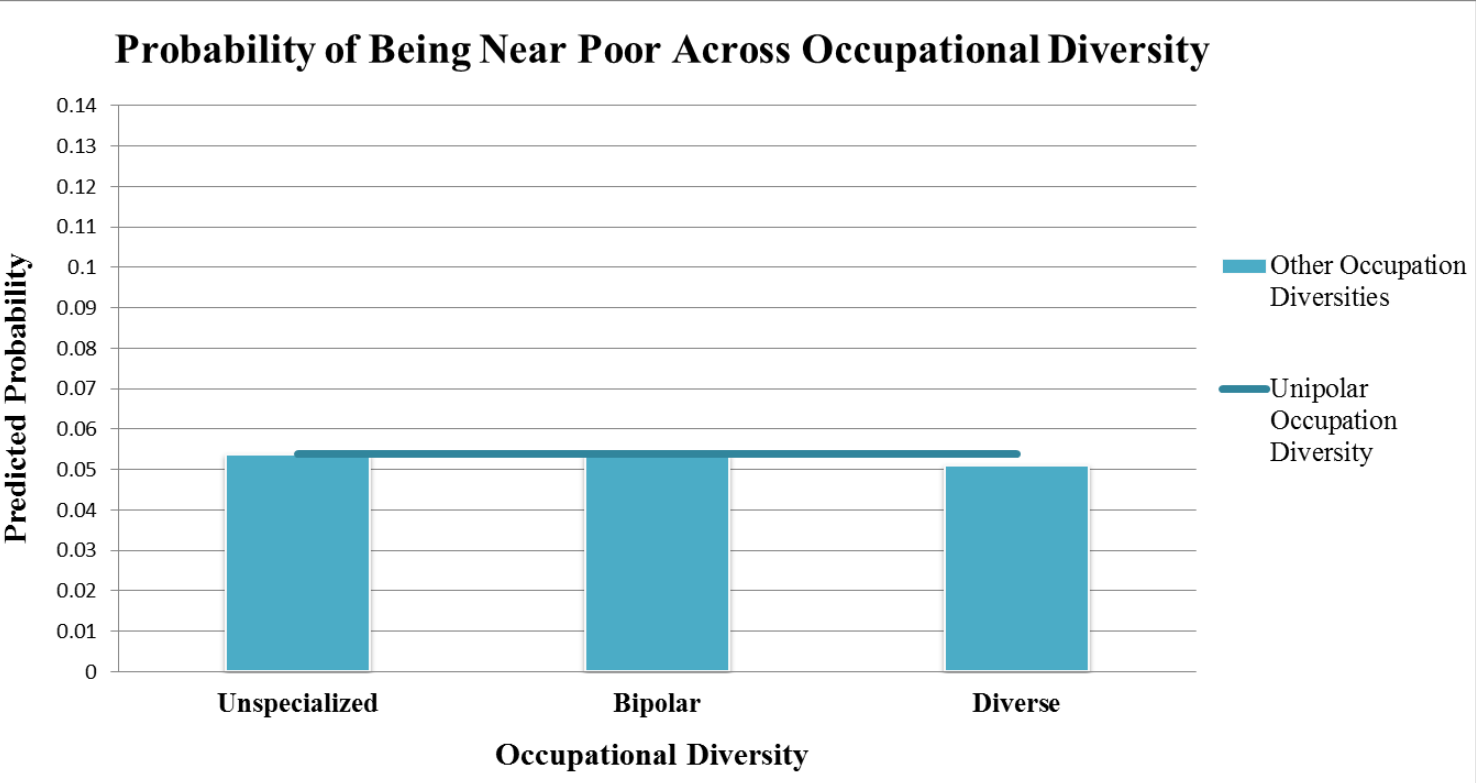

Probability of Being Working Poor Across Occupational Concentrations

Management workers in local areas that specialize in Production, Services, or Natural Resources are more likely to be near poor.

Probability of Being Near Poor Across Occupation Concentrations

•The effects of local area occupational composition are similar for the likelihoods of being working poor and near poor.

A local area's occupational diversity has a much weaker effect on a person's likelihood of being working poor or near poor.

Management workers in local areas with several occupation specializations are less likely to be near poor.

Probability of Being Near Poor Across Occupational Diversity

•A person's occupation has a stronger effect on their likelihood of being working poor or near poor than does the local area occupational composition.
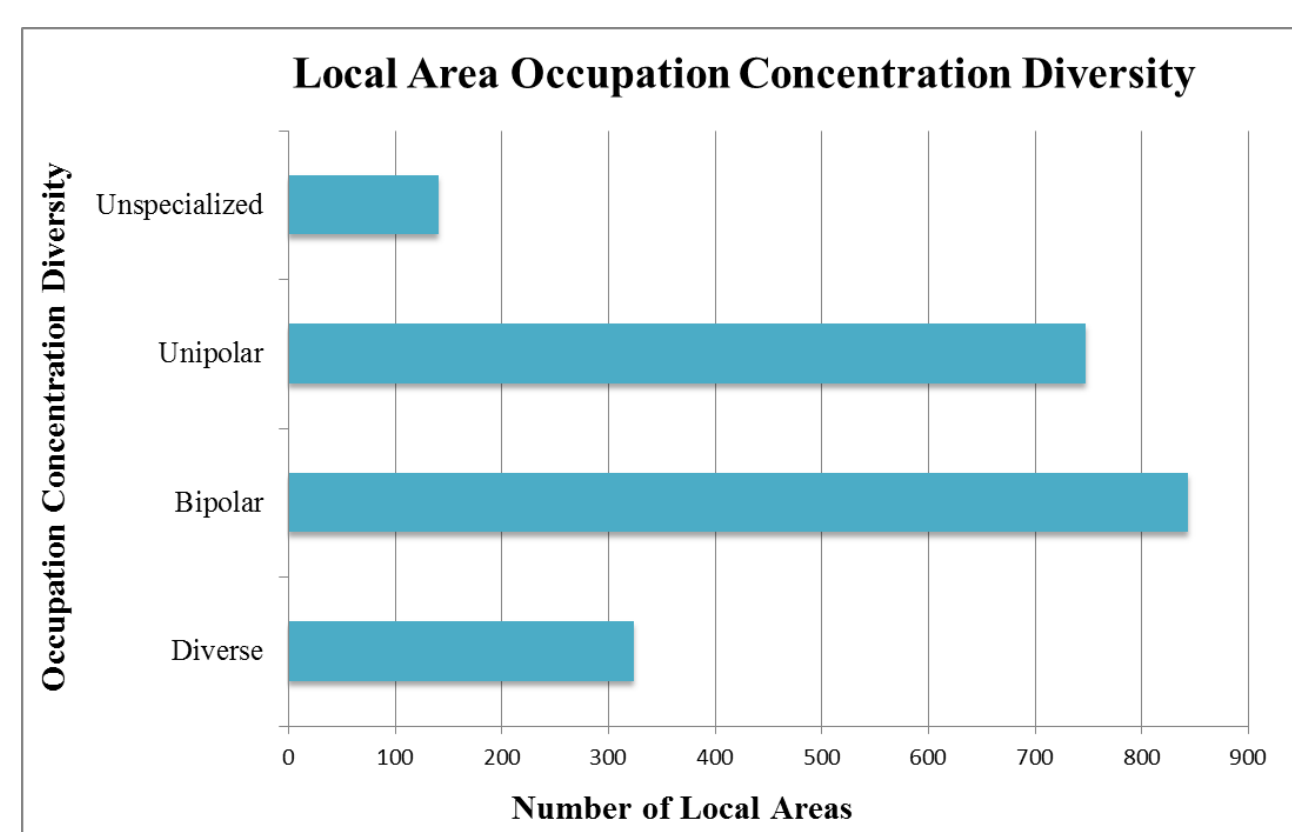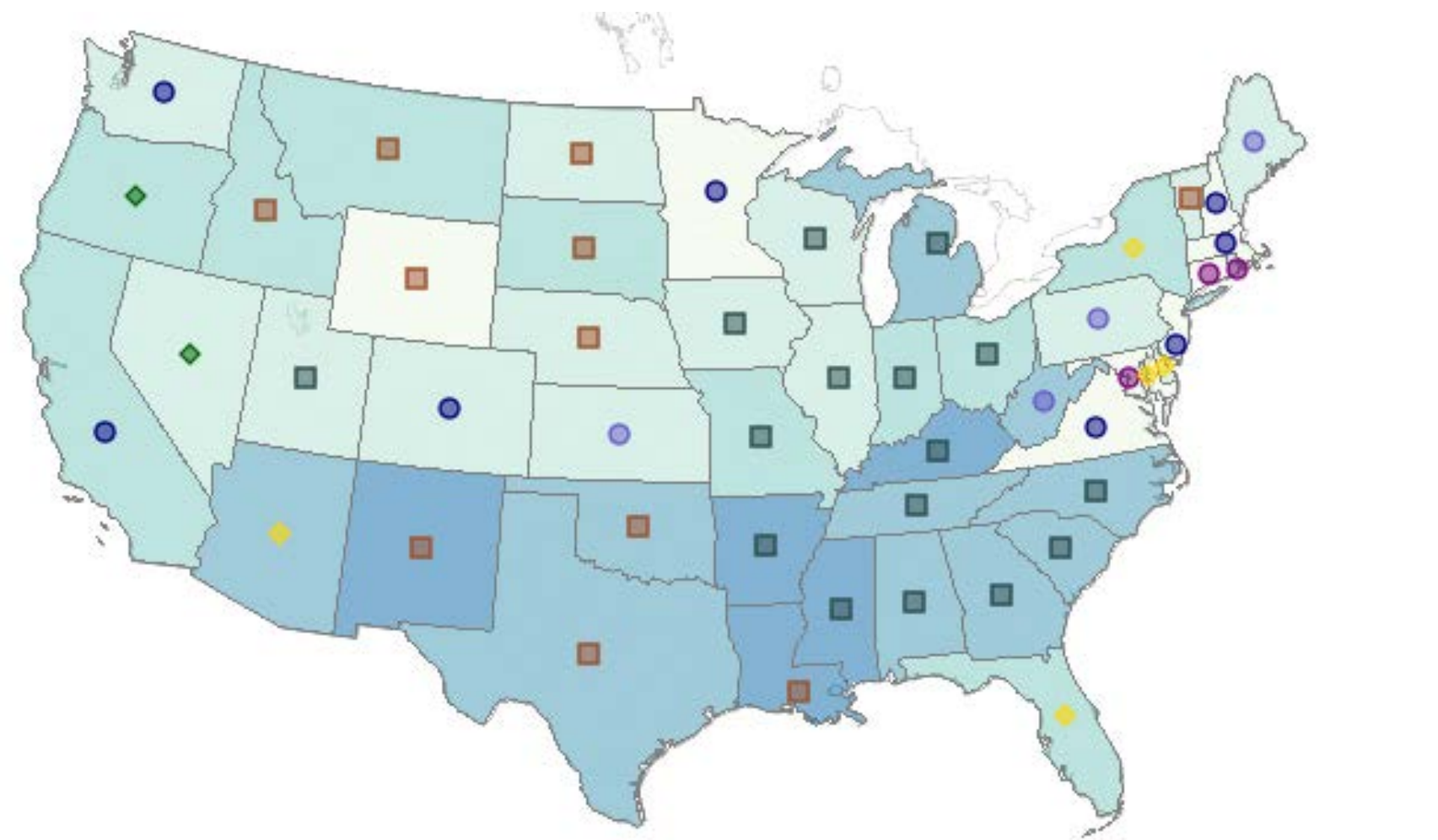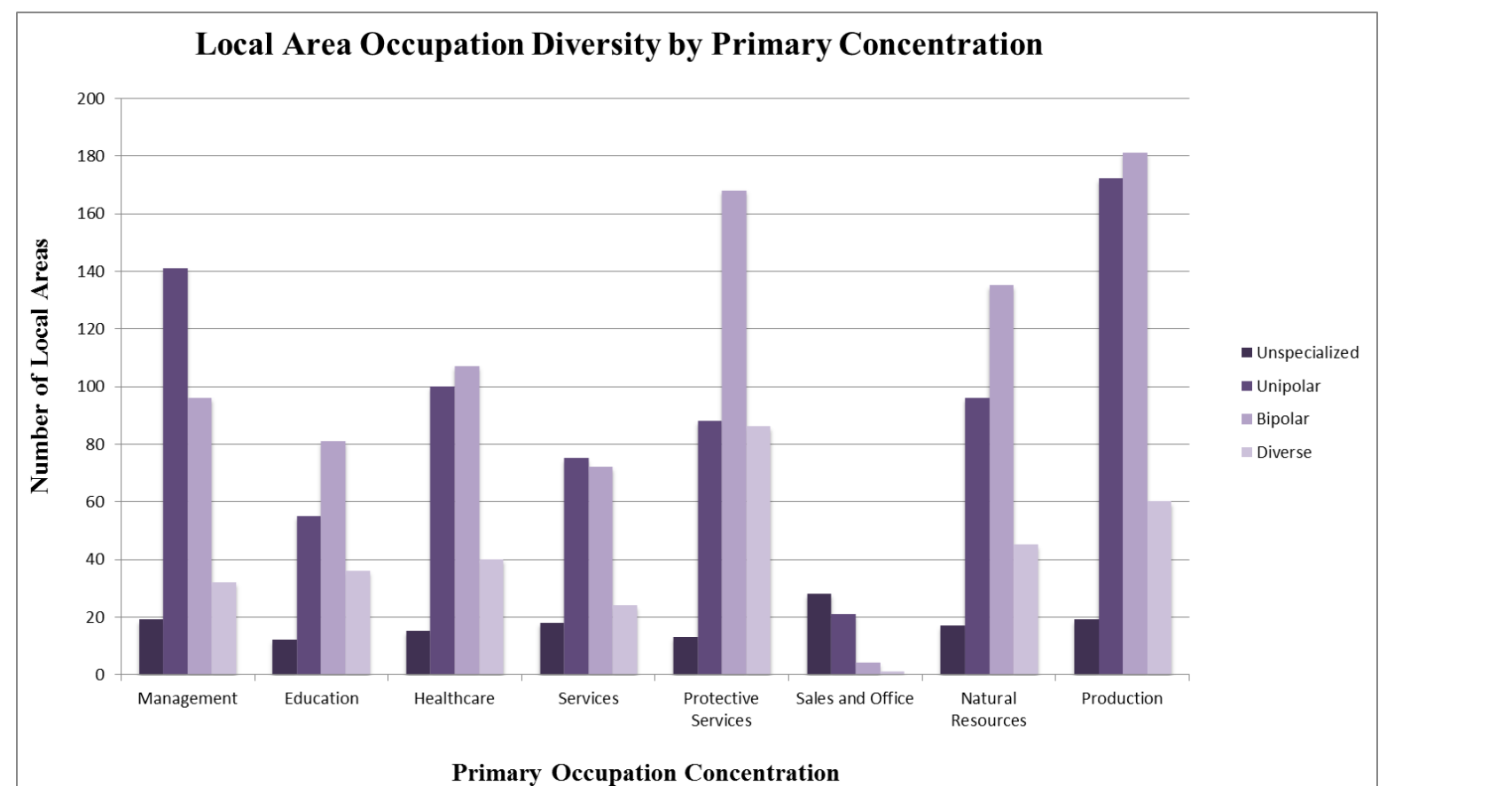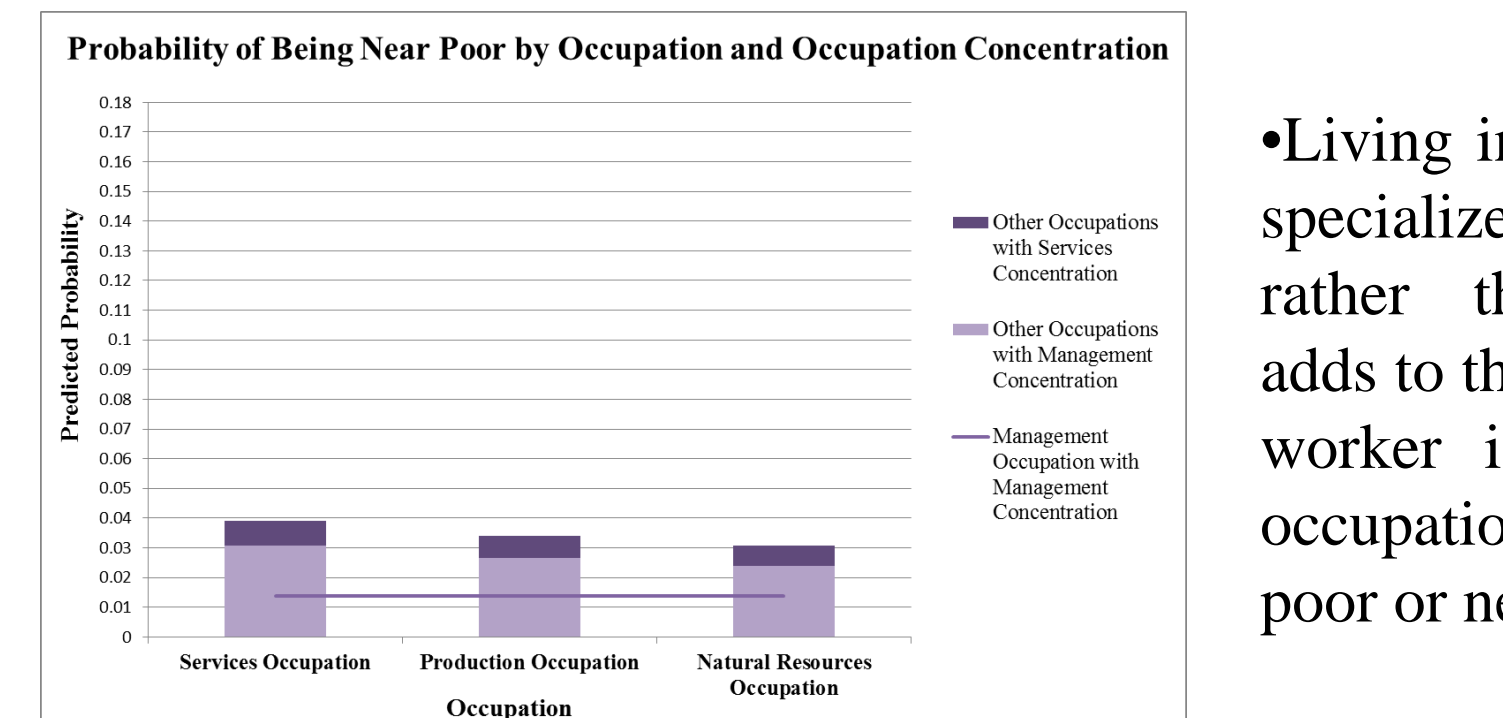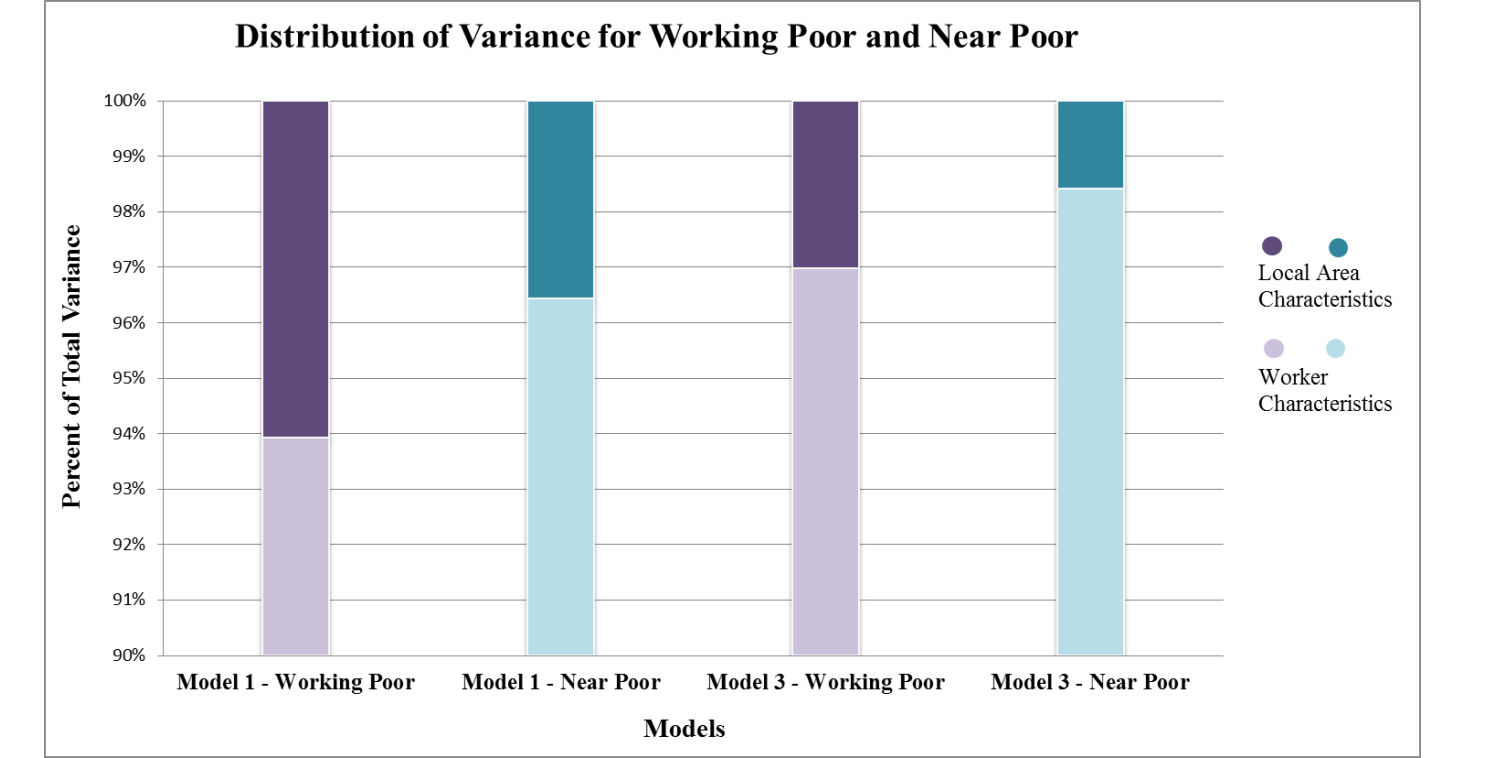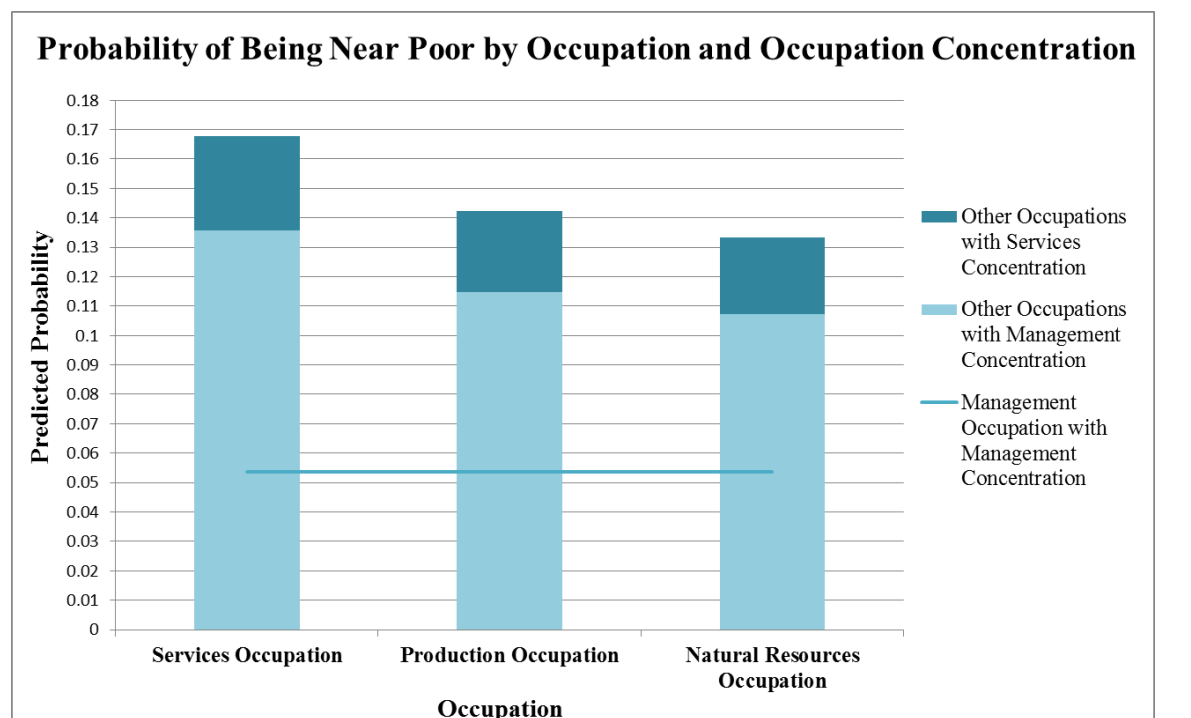
Model Results

	Up to 100% of Poverty	101% to 200% of Poverty
	Odds Ratio	Odds Ratio
Worker Characteristics		
Education Occupation	1.25 ***	1.74 ***
Healthcare Occupation	0.65 ***	0.99
Services Occupation	2.24 ***	2.77 ***
Protective Services Occupation	0.98	1.47 ***
Sales and Office Occupations	1.49 ***	1.93 ***
Natural Resources Occupations	1.93 ***	2.11 ***
Production Occupations	1.73 ***	2.28 ***
Black	1.73 ***	1.50 ***
Asian	1.27 ***	1.48 ***
Hispanic	1.39 ***	1.56 ***
Other Race	1.54 ***	1.35 ***
Age	0.99 ***	1.00 ***
Less than High School Diploma	1.26 ***	1.19 ***
Some College	0.87 ***	0.80 ***
Bachelor's Degree or Higher	0.58 ***	0.48 ***
Not a Citizen	1.89 ***	1.54 ***
Low English Proficiency	1.63 ***	1.36 ***
Married	0.27 ***	0.44 ***
Has a Minor Child	3.38 ***	2.26 ***
Has a Disability	1.42 ***	1.34 ***
Works Fewer Than 35 Hours Per Week	2.80 ***	1.26 ***
Works Fewer Than 50 Weeks Per Year	2.60 ***	1.08 ***
Local Area Control Characteristics		
Residents with Less Than a High School Diploma	1.02 ***	1.01 ***
Part-time and Part-Year Workers	1.02 ***	1.02 ***
Minimum Wage	0.94 *	0.96 *
Union Representation	0.98 ***	0.98 ***
Unemployment Rate	1.01	1.02 ***
New Residents	1.04 ***	1.01 ***
Non-citizens	1.00	0.99 ***
Labor Force Participation Rate	0.98 ***	0.98 ***
Labor Force Size	1.00	1.00
Local Area Primary Occupation Concentration		
Education	1.46 ***	1.23 ***
Healthcare	1.18 **	1.20 ***
Services	1.29 ***	1.28 ***
Protective Services	1.11 **	1.13 ***
Sales and Office	1.15 *	1.18 ***
Natural Resources	1.19 ***	1.28 ***
Production	1.20 ***	1.33 ***
Local Area Occupation Diversity		
Unspecialized	1.02	0.99
Bipolar	1.00	0.99
Diverse	0.99	0.95 **
Constant	0.01 ***	0.06 ***

*** < 0.001, ** < 0.01, * < 0.05

Outcome Variance Information	Estimate	Std. Error	Estimate	Std. Error
Variance of Constant	0.102	0.004	0.053	0.002
Pseudo Intra-Class Correlation (Model 3)	0.030	0.001	0.016	0.001
Pseudo Intra-Class Correlation (Model 1)	0.061	0.002	0.036	0.001
Proportionate Reduction in Variance (Model 1 to 3)	50.8%		55.6%	

Model Fit Statistics	Estimate		Estimate	
BIC (Model 3)	513115.5		945615.1	
BIC (Model 1)	514099.6		946858.3	
LR vs. Logistic Regression Test - DF(1) (Model 1)	8649.24	0	9826.84	0

Conclusions

Discussion

➢A worker's occupation has large effects on their likelihood of being working poor or near poor.

➢Where a person lives also affects their likelihood of being working poor or near poor.

➢Specifically, a local area's occupational composition affects a person's likelihood of being working poor or near poor.
 ➢Workers in local areas that specialize in Services or Education are more likely to be working poor.
 ➢Workers in local areas that specialize in Services, Production, or Natural Resources are more likely to be near poor.
 ➢Workers in local areas with several occupation specializations are less likely to be near poor.

➢Development officials should consider the effects of local economic policies on broader employment outcomes, including low-income work.

References

•Blakely, E. J., and N. Green Leigh. 2010. *Planning Local Economic Development: Theory and Practice* (4th ed.). Thousand Oaks: Sage.
•National Bureau of Economic Research "US Business Cycle Expansions and Contractions" accessed at: http://www.nber.org/cycles.html
•U.S. Census Bureau "How the Census Bureau Measures Poverty" accessed at: http://www.census.gov/hhes/www/poverty/about/overview/measure.html
•U.S. Census Bureau "Poverty Thresholds" accessed at: http://www.census.gov/hhes/www/poverty/data/threshld/index.html

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For more information on the American Community Survey (ACS), see:
http://www.census.gov/acs/www