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WHAT MOST AFFECTS THE PROBABILITY OF RECEIVING PUBLIC ASSISTANCE?

Examining the Effect of Family Background and Educational Attainment on Receiving Public Assistance with Multivariate Regression Analysis

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Federal Committee on Statistical Methodology
(FCSM) 2022 Research & Policy Conference



Oregon State
University

*"Great Expectations: New Directions and Innovations
for Sustainable Federal Statistics"*

October 25-27, 2022

About the Presenter



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Overview

BACKGROUND

METHODS

RESULTS

CONCLUSIONS & IMPLICATIONS

Q&A

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BACKGROUND



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What is poverty?

A state of being poor, being unable to meet basic needs (water, food, clothes, shelter, and essential services inclusive of sanitation, health, and education)



OPM

1964

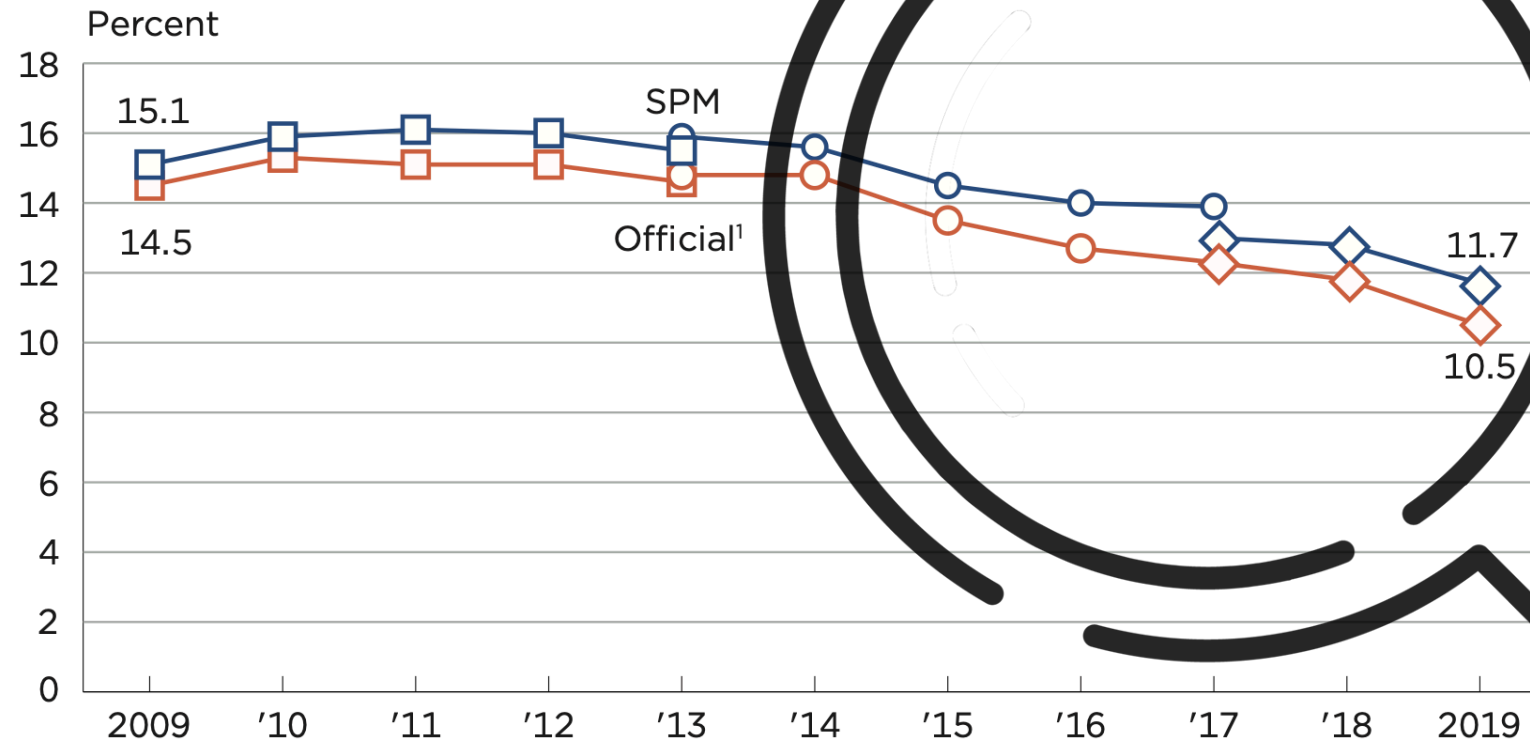
SPM

2009

2021

Poverty Rates Using the Official and Supplemental Poverty Measures: 2009 to 2019

□ Traditional income questions ○ Redesigned income questions ◇ Updated processing system



¹ Includes unrelated individuals under the age of 15.

Note: The data for 2017 and beyond reflect the implementation of an updated processing system. The data for 2013 and beyond reflect the implementation of the redesigned income questions. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see <<https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf>>.

Source: U.S. Census Bureau, Current Population Survey, 2010 to 2020 Annual Social and Economic Supplements (CPS ASEC).

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METHODS



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Quantitative analysis

“This project grew from examining the effect of two variables on household poverty status with a Chi-square analysis in SPSS using nationally representative data from a panel study sponsored by the U.S. Census Bureau to examining the effect of 18 variables on receiving public assistance, a proxy for poverty, with multivariate regression analysis in STATA using nationally representative data from a panel study sponsored by the National Center for Education Statistics (NCES).”



Proxying poverty



Receiving Public Assistance



Completing a multivariate regression analysis

One
DV

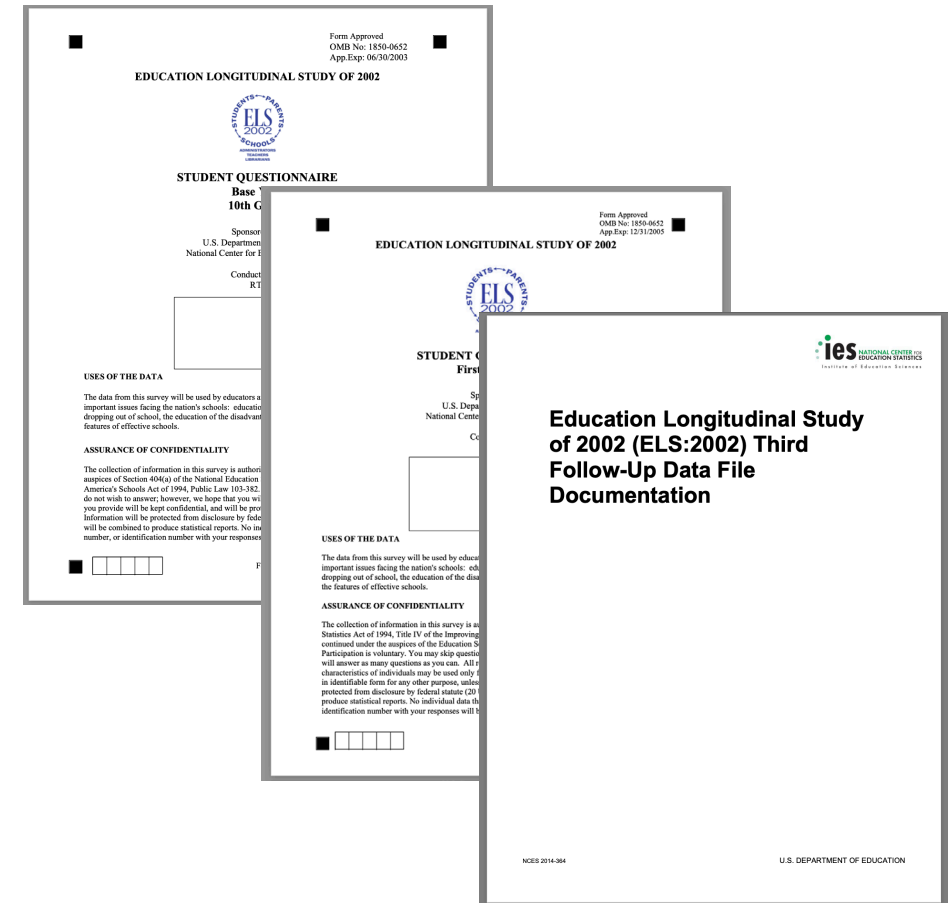
Receiving public
assistance

18
IVs

Demographic details,
family background,
and school
background

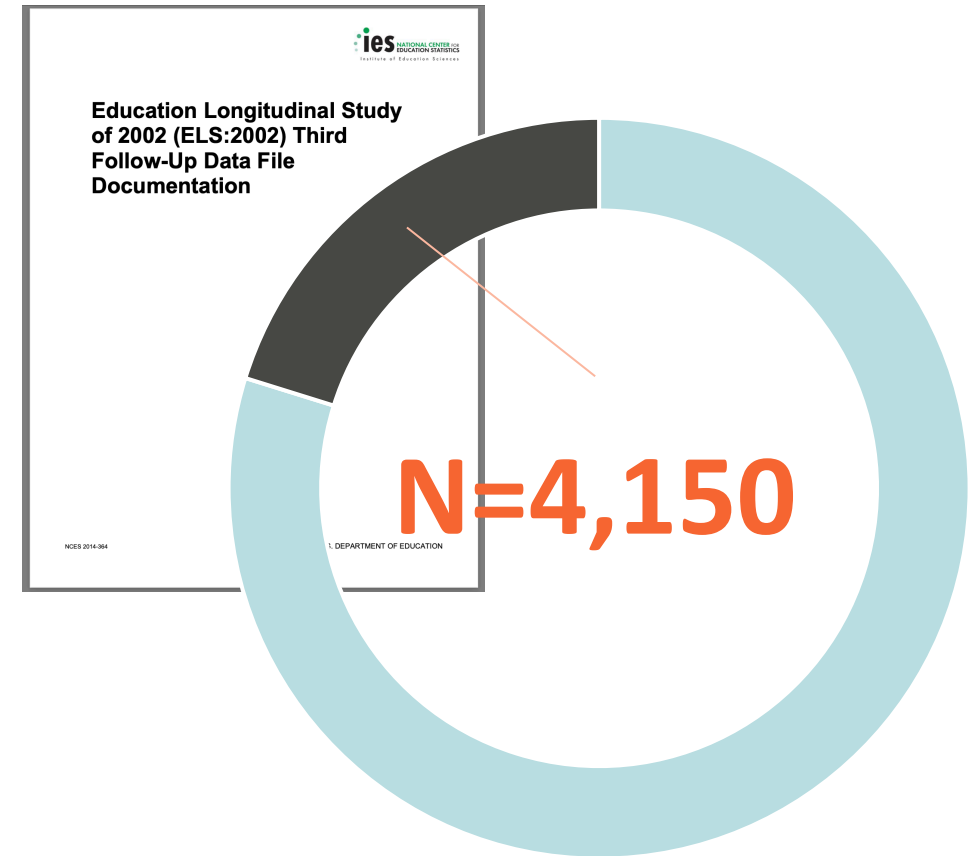
Nationally representative data

“The data for this project comes from the 2002 and 2012 Education Longitudinal Study (ELS), a federal panel study sponsored by the National Center for Education Statistics (NCES). The 2002 ELS consists of a nationally representative sample of ‘10th graders in 2002’ (NCES 2021). ‘Surveys of students, their parents, math and English teachers, and school administrators’ are collected and ‘students [are] followed throughout [their] secondary and postsecondary years’ (NCES 2021).”



Sub-sample

“Because this project focused on the joint effect of family background and educational attainment on receiving public assistance, the third follow-up data collection from ELS:2012 was used, resulting in a sub-sample of 4,150 respondents.”



Dependent variable tested

“Poverty was proxied with receiving public assistance and coded as a nominal variable using the following binary: 1=yes and 0=no.”

Response retrieved from the third follow-up questionnaire,
where respondents were asked:

“During 2011, did [you/you or your spouse/you or your partner] receive any of the following benefits: Supplemental Security Income (SSI); SNAP (the Food Stamp Program); TANF (the Temporary Assistance for Needy Families Program); the Free and Reduced-Price School Lunch Program; or WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?”

Independent variables tested

Demographic Details

- Sex
- Race
- Native English speaker
- Educational attainment
- Student federal loan debt
- Marital status
- Number of dependents
- Employment status
- Recent unemployment

Family Background

- Family composition
- Number of in-home siblings
- Parents' educational attainment
- Parents' income
- Parents' English language fluency

School Background

- School type
- School urbanicity
- School free-lunch rate
- School college-going rate

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RESULTS



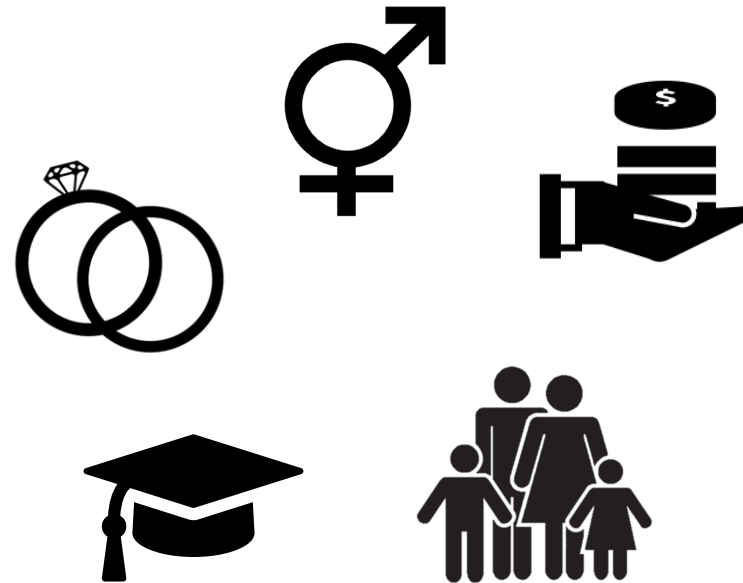
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FINDING #1

What predicts receiving public assistance?

A majority of our variables!

($p < 0.001$ level)

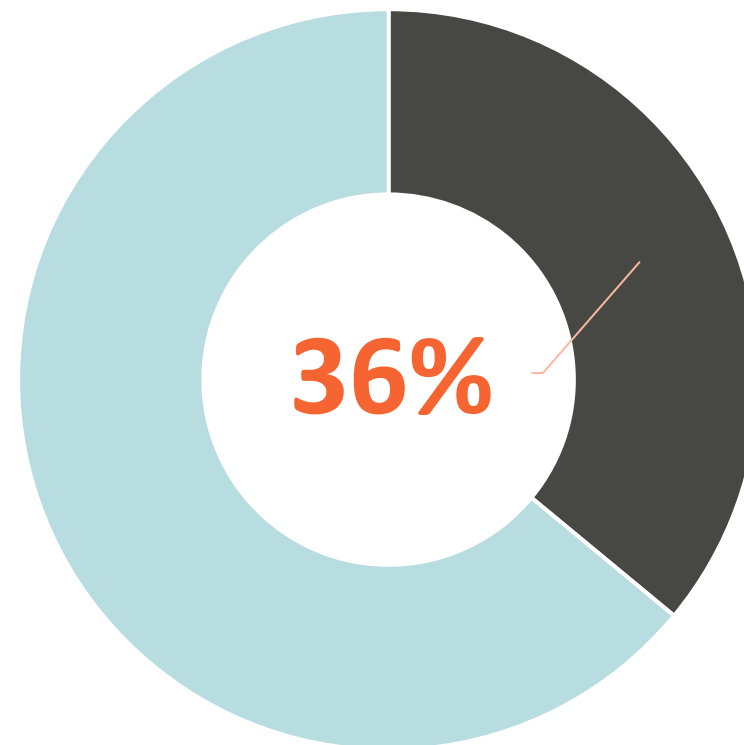


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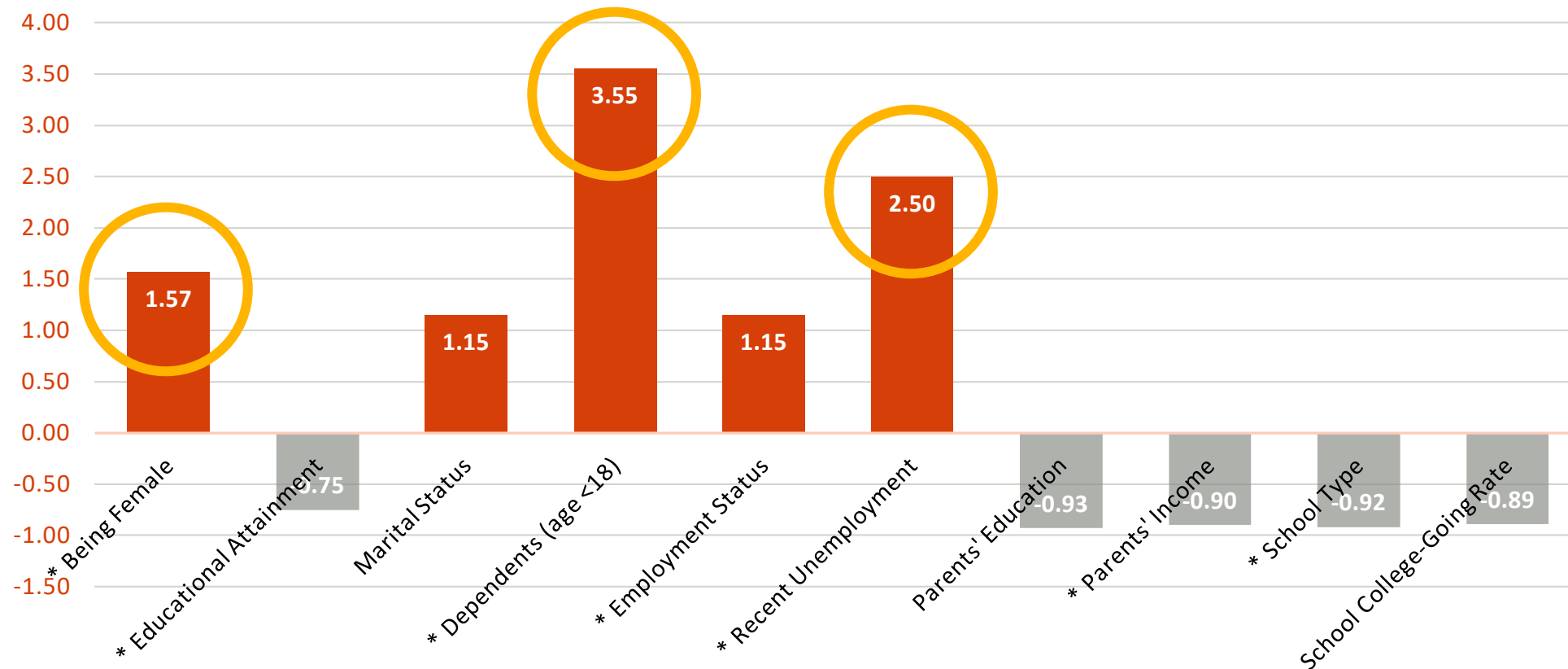
Variation

“Roughly 36% of the variation in receiving public assistance is explained by the 18 independent variables tested...”

“Ten variables were found to have a statistically significant effect on the probability of receiving public assistance...”



Factor Change in Predictive Probabilities of Receiving Public Assistance

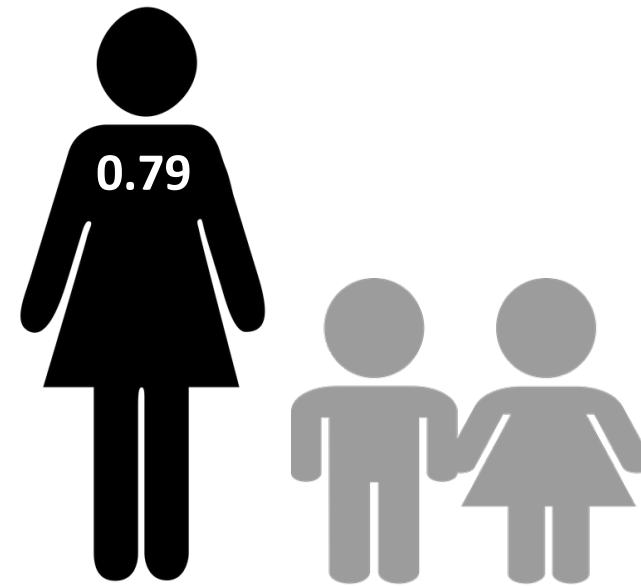


* All variables statistically significant at the $p < 0.001$ level except for marital status ($p = 0.019$), parents' educational attainment ($p = 0.003$), and school college-going rate ($p = 0.013$) that are statistically significant at the $p < 0.05$ level.

Source: National Center for Education Statistics (NCES), Education Longitudinal Study (ELS), 2002 and 2012.

FINDING #2

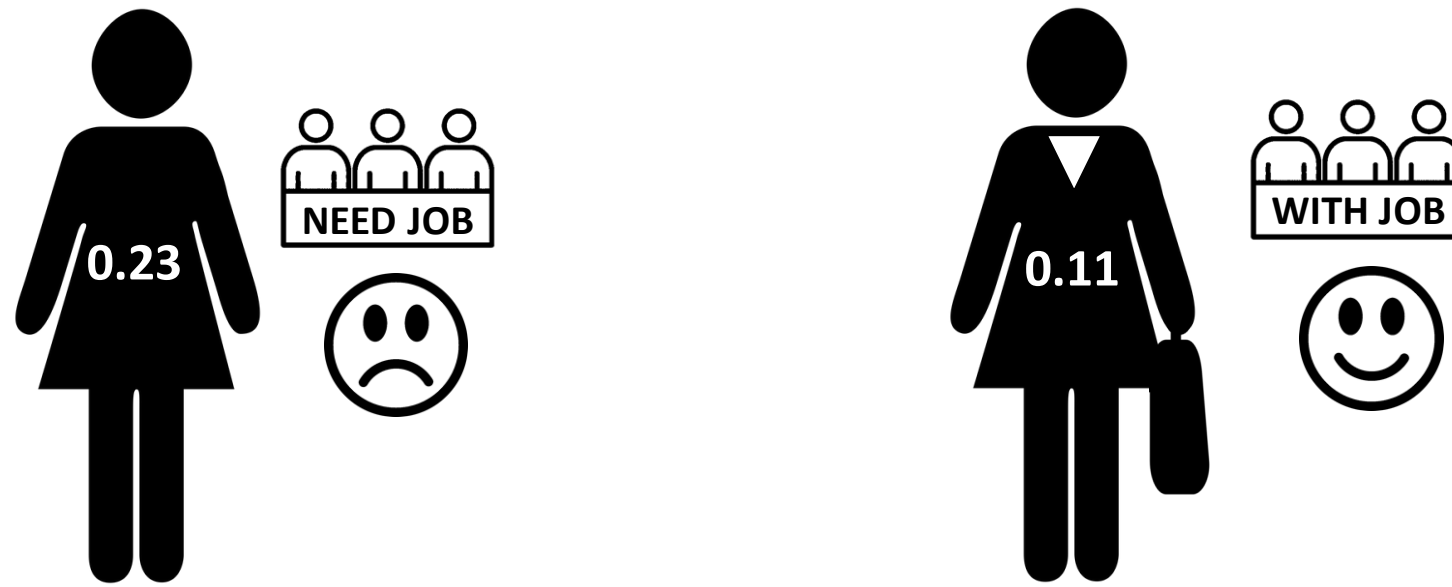
What is the impact of having dependents (age <18)?



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FINDING #3

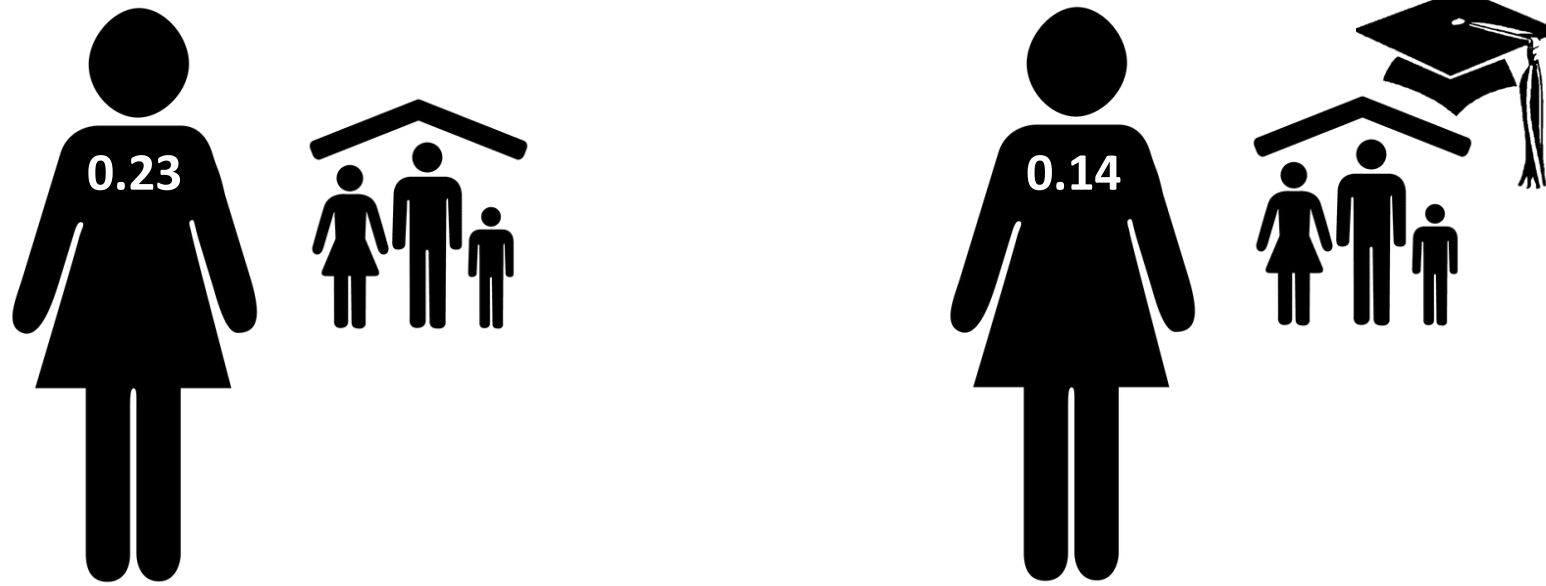
What is the impact of experiencing unemployment (at least once in the past three years)?



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FINDING #4

What is the impact of parents' educational attainment?



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CONCLUSIONS & IMPLICATIONS



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A key take-away

“Combining the top three predictors found to significantly increase the probability of receiving public assistance at the 0.001 level...results highlight **single mothers who have experienced recent unemployment** (within the past three years) as one of the most vulnerable groups in the United States, gravely needing public assistance to meet basic needs.”



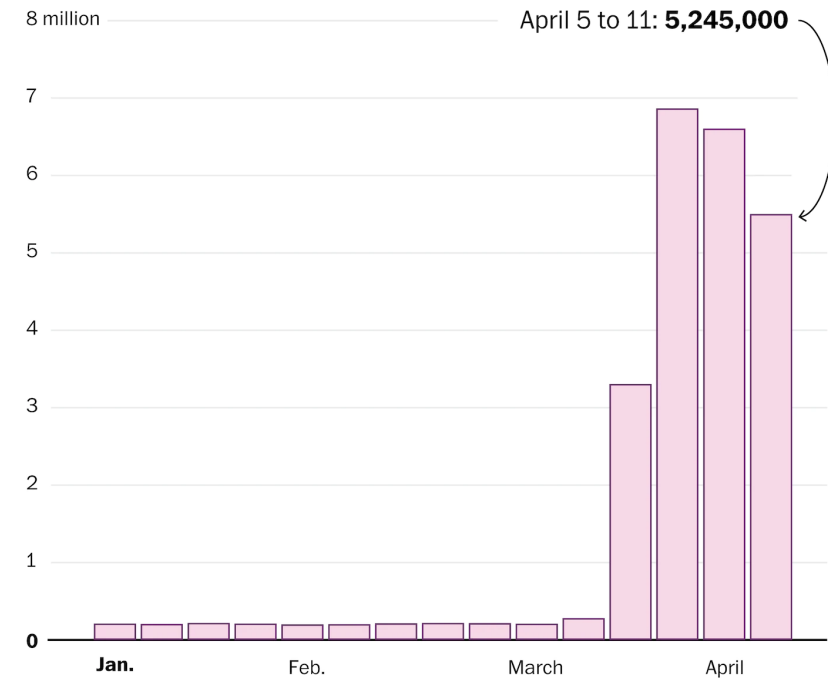
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Why does this matter?

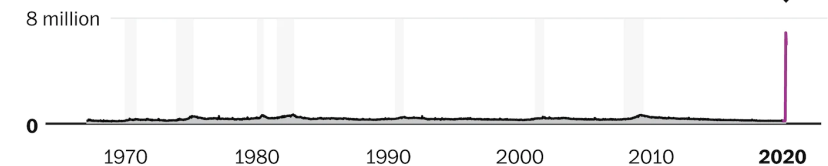
We can project societal needs

With COVID-19, unemployment skyrocketed in 2020. However, with fine-tuned methodologies and metrics from nationally representative datasets like those from the U.S. Census Bureau and the National Center for Education Statistics, analyses can help assess the impact of global challenges like COVID-19 to ensure a thriving society.

U.S. initial claims for unemployment insurance in 2020



and here's 2020 in historical context



Note: Seasonally adjusted
Source: Labor Department

THE WASHINGTON POST

Implications

Recent unemployment stands as the second strongest predictor of receiving public assistance. The probability of receiving public assistance more than doubles if someone has experienced unemployment even just once in the past three years.

Given the record number of unemployment claims filed during the 2020 year, we can infer that there will continue to be an increase in the number of people receiving public assistance through at least 2023.



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ACKNOWLEDGEMENTS



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Thank you to...

- **Dr. Shelley Nelson** for her mentorship during the Spring 2020 term. I am grateful for the time spent introducing me to quantitative analyses and encouraging me to pursue my passions within research.
- **Dr. Brian Fuller** for creating a welcoming learning environment in a former course where this project began during the Winter 2020 term.
- **FCSM 2022** for organizing this year's three-day conference.
- **Friends, family, and my former educators** for sharing words of encouragement throughout my academic and life journey.

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Q&A



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Q&A

THANK YOU

for listening and engaging

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REFERENCES



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