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Probit Analysis of the Effect of COVID-19 Job Characteristics on Unemployment

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EFFECT OF COVID-19 JOB CHARACTERISTICS ON UNEMPLOYMENT

Research Question:

After most businesses have opened back up, what effect do job characteristics have on the probability of unemployment?

Do teleworkability and classification of businesses still play a significant role?

Review of the literature:

1. An Intersectional Analysis of COVID-19 Unemployment

◇ Hispanic then black women most disadvantaged. Still incorporate with teleworkable jobs.

2. Employment recovery in the wake of the COVID-19 pandemic

◇ After falling sharply in March and April 2020, employment recovered quickly from May through August. Then, the recovery slowed.

◇ Women and Hispanics rebounded, less educated workers still struggling

3. Employment recovery in the wake of the COVID-19 pandemic

◇ Percentage of tasks done from home (telework) and industry is highly predictive of job loss.

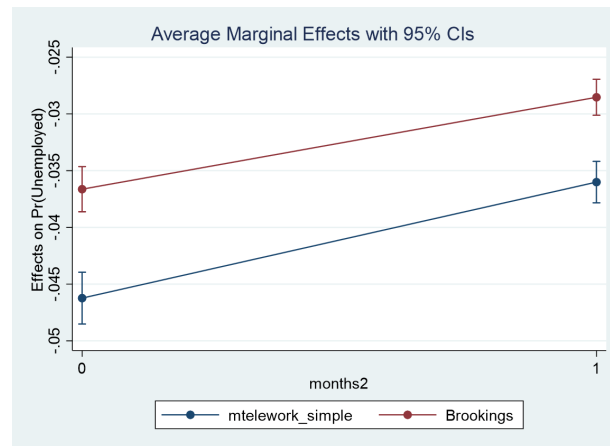
◇ Women and workers without a college degree are significantly more likely to lose their jobs.

$$\text{MODEL: } \Pr(Y=1 | X) = \Phi (\beta_0 + \beta_1(\text{telework}) + \beta_2(\text{Brookings}) + \beta_3(\text{female}) + \beta_4(\text{highschool}) + \beta_5(\text{urban}) + \beta_6(\text{black}) + \beta_7(\text{asian}) + \beta_8(\text{hispanic}) + \beta_9(\text{other_race}))$$

- CPS 2020 Data
- April, May, June (months2=0)
 - Unemployment highly effected
 - Shutdowns and restrictions
- October, November, December (months2=1)
 - Most to all business reopened
 - Most restrictions lifted
- Merged from ONET Data:
 - Telework (m_telework_simple)
 - Job Able to be done from home (1)
 - Business Classification(Brookings) Essential(1) Non-Essential(0)
- Controls for Race, Gender, Education, Location

Results

- Significant in both periods
- In the later months of 2020, being able to work from home lowered someone's probability of becoming unemployed.
- In the later months of 2020, working for an essential business lowered someone's probability of being unemployed.
- Female becomes negative and not significant
- All other groups still increase the probability of being unemployed.



Variable	months2=0	months2=1
mtelework_simple	-0.3498***	-0.2702***
marginal	-0.0462***	-0.036***
Brookings	-0.2826***	-0.2048***
marginal	-0.0366***	-0.0285***
female	0.0806***	-0.006
highschool	0.1867***	0.1703***
urban	0.1077***	0.1653***
black	0.1701***	0.2769***
asian	0.1022***	0.1135***
hispanic	0.0959***	0.1176***
other_race	0.2007***	0.3068***
_cons	-1.3984***	-1.6496***
Significance: p-value < 0.01***		

CONCLUSIONS AND POLICY IMPLICATIONS

Telework and Business Classification are still contributing to the probability of being unemployed even after reopenings and reduced restrictions. Both characteristics significantly reduced the likelihood of being unemployed. Since Telework and Classification continue to be factors, people can take this information and try to get remote and essential jobs to combat the likelihood of being unemployed.

Women along with all racial groups increase the probability of unemployment, but, in the later months, Female become negative and insignificant. This is similar to the findings in the second source where the authors mentioned females seemed to rebound and recover from being unemployed. However, this change in significance and sign could also be due to women exiting the workforce to care for children or other reason which has been another effect of the pandemic. Further research can be conducted to analyze this difference.