Does Covid-19 have a more significant influence on the employments in the developing countries compare with the developed countries?

DH 100 Theory and Methods | Student: Jiayi Zhou (Joy) | May 30, 2021

Project Descriptions:

Introduction: Since the start of the Covid-19, there were debates that concentrated on how the health conditions of the developing countries are less influenced by the pandemic compare with the developed world, leading to their lower mortality rates. According to the report produced by International Labour Organization, such reversed health conditions are the results of demographic (younger population), geographic(large rural area), and technological(disconnectivty) factors.

While the developing countries seem to do better, would this pattern persist with the economic activities? **To find out the answer, this project would focus on the employment aspect by evaluating the percentage loss of weekly working hours in each country.**

Jupyter Notebook Link:
https://datahub.berkeley.edu/user/jiayizhou/notebooks/DIGHUM%20100.ipynb

Course Title: Digital Humanities 100
Instructor: Dr, Adam Anderson
Student: Jiayi Zhou(Joy)
Date: 05/31/2021

Dataset:

The main dataset used in this project is titled “Impact of Covid-19 on Employment- ILOSTAT,” which was found on Kaggle. I have added an additional dummy variable called “Developing Country” based on the country categorization published by the United Nation. All of the transitioning countries are categorized as developing country.

Link: https://www.kaggle.com/vineethakkinapalli/impact-of-covid19-on-employment-ilostat

Methodology:

- Simple mean comparison

Used the where function in python to select the developing and developed countries in the dataset (dummy variable either equals to 1 or 0). And compute the average by using np.average.

```
employment_developing = employment.where('Developing Country', are.equal_to(1))
developing_percentage_working_hours_lost = np.average(employment_developing.column('percentage_of_working_hrs_lost'))
developing_percentage_working_hours_lost
```

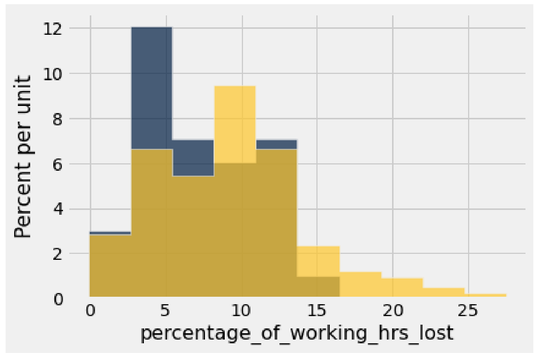
```
9.169281045751635
```

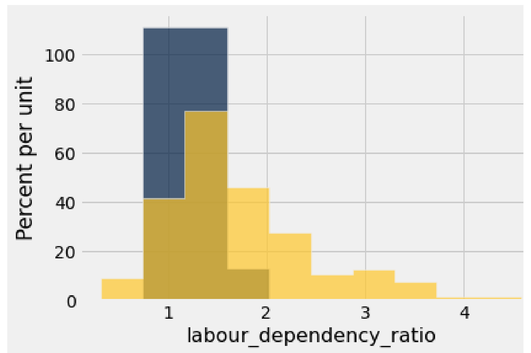
```
employment_developed = employment.where('Developing Country', are.equal_to(0))
developed_percentage_working_hours_lost = np.average(employment_developed.column('percentage_of_working_hrs_lost'))
developed_percentage_working_hours_lost
```

```
7.319444444444445
```

- AB Testing

The primary goal of this test is to investigate whether the percentage of working hours lost in the developed countries come from the same underlying distribution with the developing countries. Our test-statistic would be the difference between the mean of percentage working hour loss in the developing countries and developed country. The null hypothesis would be these averages have no difference; while the alternative hypothesis would be the percentage working hour loss is higher in the developing countries. Positive test statistic favors the alternative hypothesis.





Discussion and Result Interpretations:

The histogram above displays different distributions of the percentage loss of the weekly working hours in the developed and developing countries. The tail of the yellow bars, which represent the developing countries, have further spread to the right. The tail of the blue bars, which represent the developed countries, concentrate more on the left. It confirms that the some developing countries tend to lose more working hours – and it also implies that citizens have a larger wage loss.

Since I’ve categorized all the transitioning countries as developing country to construct the dummy variable, the negative effect of the pandemic on the true developing countries may be underestimated.

(I tried in my jupyter notebook, but I got a bit confused by the code of AB testing. I need to go back to ask help for this, so I won’t be interpreting the results of AB testing in this week).

Conclusions

From above, there are evidence to show that the employments in the developing world are more negatively influenced by the Covid-19 pandemic. Furthermore, the developing countries has a higher labor dependency ratio, which suggests that the influence of working hour loss could be amplified through this demographic feature.

Works Cited & Acknowledgements:

This project has referenced the employment studies in the report titled “Covid-19: Tracking the Jobs Crisis in the Least Developed Countries” produced by International Labour Organization. It also referenced codes and statistical knowledge from UC Berkeley Data 8 course demo, taught by Professor Ramesh Sridharan and Swupnil Sahai in Spring 2020.

- Links to the image used:

https://voxdev.org/topic/infrastructure-urbanisation/spacial-structure-cities-developing-countries

https://www.information-age.com/advanced-smart-cities-world-123470745/

FIRST DRAFT: STORY BOARD

DIGHUM 100 | Student: Jiayi Zhou(Joy) | Date: 5/31/2021

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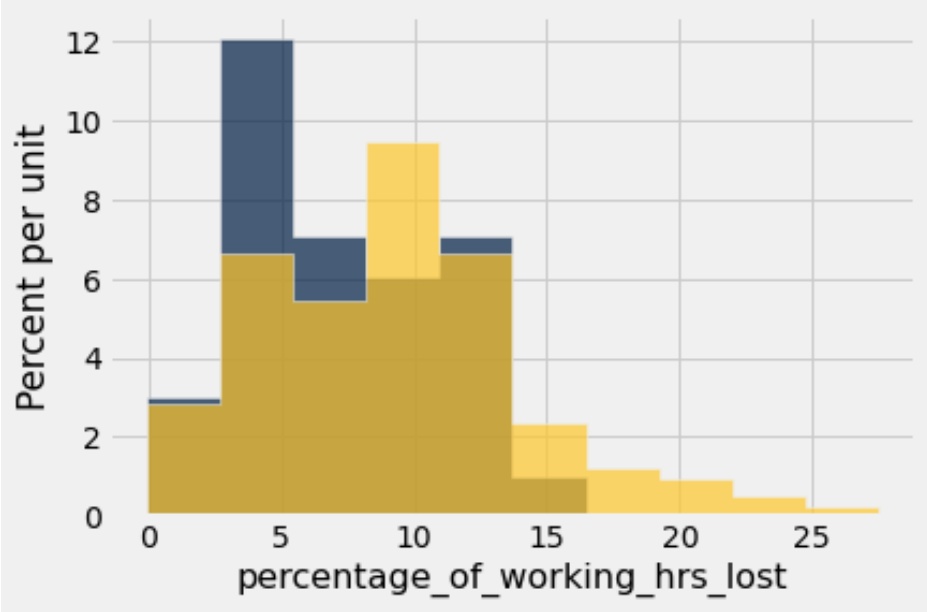

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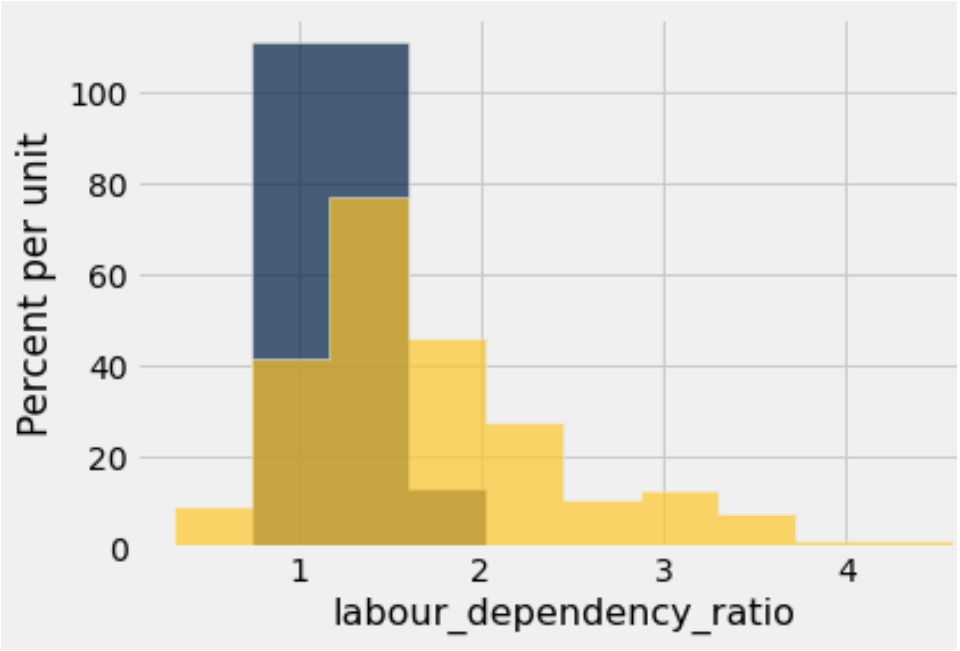

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