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**Motivation:**

Xi Yan spent his undergraduate study at the University of Washington in Seattle. He served as a dishwasher for almost two years in the campus cafeteria. The hourly rate for a student dishwasher at the University of Washington is $16 dollar, a little bit higher than the Washington State minimum wage. When he begins his graduate study at Carnegie Mellon University, he serves as the Teaching Assistant of one of the Statistics Classes, his hourly rate for being a Teaching Assistant is $15, a dollar less than his previous job - dishwasher. He then found out that the minimum wage of Pennsylvania State is only $7.25. At that moment, Xi Yan was irritated and wanted to rather work as a dishwasher in Washington State.

It is unfair, that we all live in the United States, and the prices for commodities and foods do not vary a lot from state to state. The minimum wage, however, in some states is over 100% than some other states.

However, the State of Pennsylvania persists in keeping the minimum wage to be $7.25 for decades. People are urging an increase in the minimum wage, yet some scholars argue that a minimum wage increase is not necessary or it would not affect labor productivity or it would even make people be lazier.

Therefore, in this project, we want to know how does (increasing) the minimum wage really affects people and the industry? Is it necessary for a state government to increase the minimum wage? If we are able to figure this out, we could draft a policy memo to propose our idea to the state governors so they might be able to return benefits to all hard-working workers.

**Related Work:**

We find out about this topic through our personal experience and also the increasing minimum wage topic is popular in the State of Pennsylvania. We also find many academic articles that discuss minimum wage.

Related news articles: Gov. Wolf Fulfills Commitment to Raise Minimum Wage for Commonwealth Workers (Thanks god! Finally!)<https://www.governor.pa.gov/newsroom/gov-wolf-fulfills-commitment-to-raise-minimum-wage-for-commonwealth-workers/#:~:text=Overall%2C%2030%20other%20states%20have,with%20planned%20increases%20for%202022>.

Franklin & Marshall College Poll: March 2021 that 67% register voters support increasing minimum wage

Related academic articles:

<https://onlinelibrary.wiley.com/doi/10.1111/irel.12267>

**Data:**

State productivity data: <https://www.bls.gov/lpc/state-productivity.htm>

* The data is in one table
* It is yearly data from 2007 to 2020
* By States
* Rows: around 2000
* Columns: 19
* The data is clean and only need a little cleaning then is ready to be analyzed

Unemployment: <https://www.bls.gov/charts/state-employment-and-unemployment/state-unemployment-rates-animated.htm>

* Everything is in one table
* It is unemployment data by year by states
* Columns: 122
* Rows: 53

Minimum Wages: <https://www.kaggle.com/lislejoem/us-minimum-wage-by-state-from-1968-to-2017>

* Everything is in one table
* It is minimum wage data by year by states
* Columns: 15
* Rows: 2863

**Questions:**

Would (increasing) minimum wage affect labor productivity?

Does lower minimum wage associate with higher unemployment rate? Which groups(age, race, sex) are the most harmed by this?

Does region affect the minimum wage? Which party’s states have a higher minimum wage, red or blue?

Does the minimum wage increase align with inflation?

**Possible Findings and Implications:**

Maybe increasing the minimum wage will increase productivity.

Maybe people are less willing to work because of the minimum wage, and then it causes a higher unemployment rate.

Maybe there are associations between the minimum wage and the state-majority party.

Maybe the minimum wage is adjusted based on the inflation rate.

Maybe some states that do not willing to increase the minimum wage are due to some other reasons.

Candidate datasets:

<https://www.bls.gov/lpc/state-productivity.htm>

<https://www.bls.gov/data/#productivity>

<https://www.markdownguide.org/cheat-sheet/>

<https://www.bls.gov/charts/state-employment-and-unemployment/state-unemployment-rates-animated.htm>

<https://www.kaggle.com/lislejoem/us-minimum-wage-by-state-from-1968-to-2017>

| Area Name | Measure | 2007 | … | 2020 |

| ----------- | ----------- | ----------- | ----------- | ----------- |

| Alabama | Employment | -3.2 | … | -4.6 |

| Alabama | Hourly Labor Compensation | 4.7 | … | 6.4 |