Understanding the life expectancy trends in Indian population

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Dataset(s)

The data set that was used for this analysis is **“World Development Indicators Dataset”** . The 3 main factors (indicators) considered to understand the data are

1. Life expectancy at birth (male and female)
2. Employment to population ratio (male and female)
3. Female to male labor force participation rate

Link to my jupiter notebook PDF

https://drive.google.com/file/d/1GTVtn9qy-DzC0Da2v9RbTpJQjCeKsuLI/view?usp=sharing

Motivation & research question

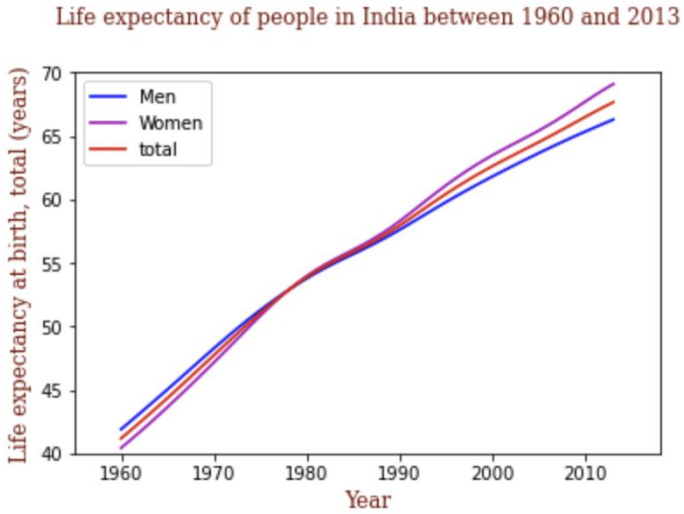
As I was navigating through the data, one indicator that caught my eye was the life expectancy of people. As a person who was always curious about understanding what makes some people live longer and healthier than others, I quickly tried to understand the factors that affect our longevity.

One fact I recently learnt about working out, stress etc is that people who experience much less stress in their life, both mentally and physically, have higher chances of living longer. I now wondered if that's the same case with people being employed. One way I decided to understand this is by comparing men and women from different decades, their employment rates, life expectancy etc.

This analysis' goal is to provide new insights on life expectancy, understanding on how the employment levels were during different ages and hopefully understand if there is a connection between employment and longer/ happier life.

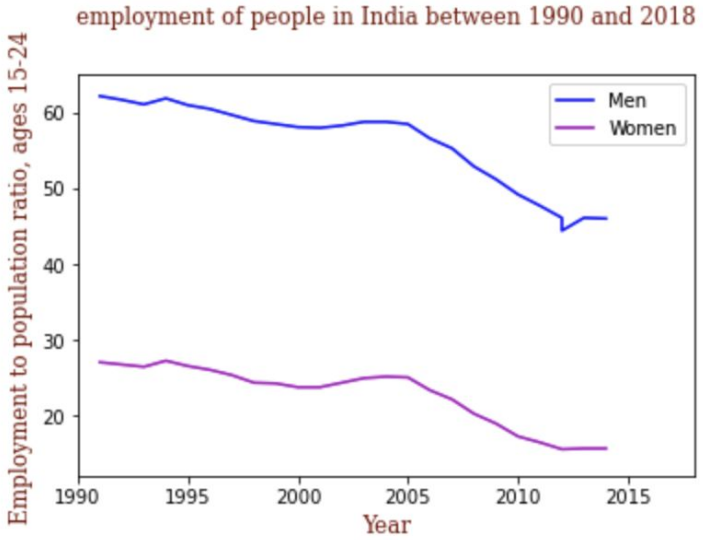
Life expectancy of people in India between 1960 and 2013

- Looks like the women were the ones with less life expectancy at the beginning of the data, but eventually had the most life expectancy by around 2013
- Inversely, men had higher life expectancy and the trend was reversed by having lower life expectancy than women by 2013
- 1980 was the time when both women and men were living to the same age (No more lonely elders! ;))



Employment of people in India between 1990 and 2018

- Contrary to the popular belief that the employment rates of people around the world have improved in the 21st century, the chart above states otherwise. The employment ratio of both men and women has declined simultaneously between 1990 and 2015.
- This could also mean that more and more young people aged between 15 and 24 went to school, which is a good sign.
- If we looked at the data of employment of people aged 25 and above, alongside their income levels between 1990 and 2015, we might be able to understand if there was a positive impact of lower employment between age 15-24 on their overall quality of life.
- I wanted to understand the reason for improvement in life expectancy in women between 1969 and 2010 and decline of the same for men, in relation to the employment levels.



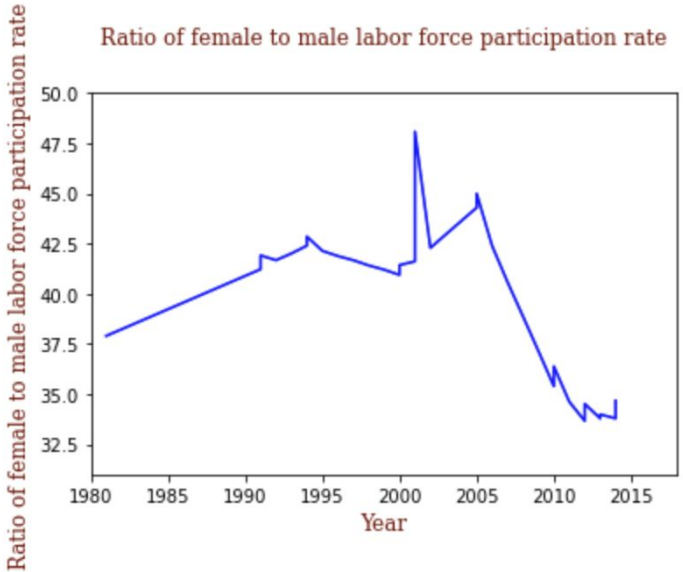
Unfortunately due to lack of data from 1960 to 1990 (especially) during 1980's when the life expectancy trend has reversed), we were not able to find any correlation between the employment levels and life expectancy.

Female to male labor force participation rate

- Labor force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period. Ratio of female to male labor force participation rate is calculated by dividing female labor force participation rate by male labor force participation rate and multiplying by 100.

- We are mainly interested in the data / trend between 1970 and 1990 to be able to understand the decline men's life expectancy. As we see from the graph above, the number of women working during the time period only went up. Though we can see a decline in this ratio around 1995 and there was a sudden spike of the ratio between 2000 and 2005, this did not translate into any meaningful trend on the life expectancy chart.

- 2005 seem to be a direction changing year to this ratio. We can see a sudden and continuous decline in the ratio, which again did not show any effect on the life expectancy.



Conclusion

The graphs above tried to find a correlation between the employment levels of people from different decades and their relevant life expectancy. A specific comparison was also made between men and women.

Based on graphs 1 and 3, one thing can be concluded. Men were not working themselves to death. This could be found by looking at the reverse trend of more women going to work but lesser life expectancy men had as time passed. However, this is too narrow of a conclusion for such a huge concept.

Looks like the topic chosen “Life expectancy” is huge and needs a lot more factors to be considered to completely understand the way it’s driven.

Acknowledgements

Got some basic understand of the indicators from the following sources:

https://tradingeconomics.com/united-states/ratio-of-female-to-male-labor-participation-rate-percent-wb-data.html#:~:text=Ratio%20of%20female%20to%20male%20labor%20force%20participation%20rate%20(%25),compiled%20from%20officially%20recognized%20sources.

https://ourworldindata.org/life-expectancy

Unfortunately, I could not get my work reviewed by any of my friends, as none of them is proficient with python or analytics.

References

All the work was done by myself. For understanding of terminology, I referred to several websites, few of which I mentioned in the references section.

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