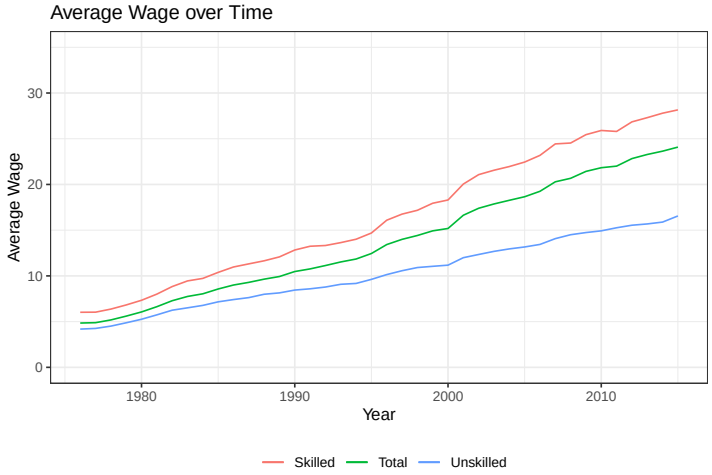
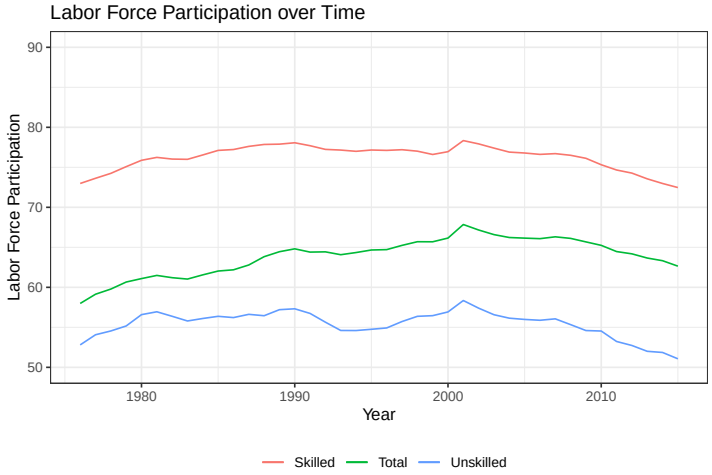
Labor Market Analysis Task

(a) Please summarize the key trends for wages and labor force participation.

Looking at the graphs below, we can see that, as a general trend, wages have been increasing and labor force participation has been on the decline. The upward trajectory of average wages is likely driven by inflation; therefore, the use of the below wage graph comes from the relative increases in skilled and unskilled wages. Starting in 1990, and then more in 2000, skilled workers' wage growth rapidly outpaced that of unskilled workers.

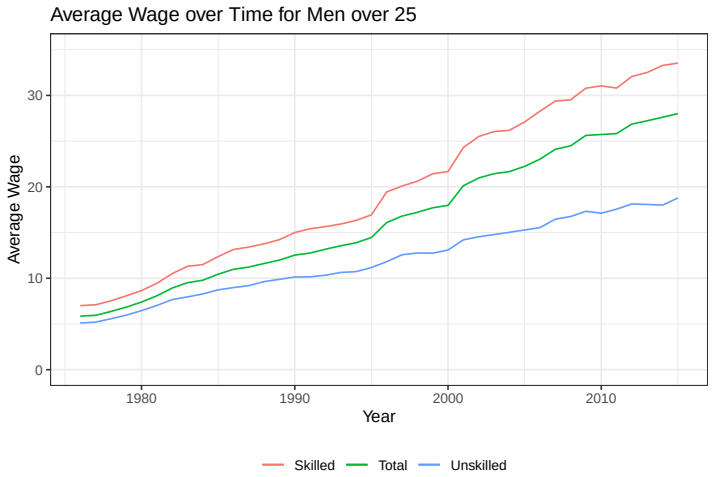
Changes in labor force participation over time seem to be consistent across skilled and unskilled workers. What is notable is that skilled laborers have consistently higher labor force participation than unskilled laborers - this is to be expected. As evidenced by the first graph, skilled workers tend to earn higher wages than unskilled workers. Therefore, their opportunity cost for dropping out of the labor market is comparably higher.

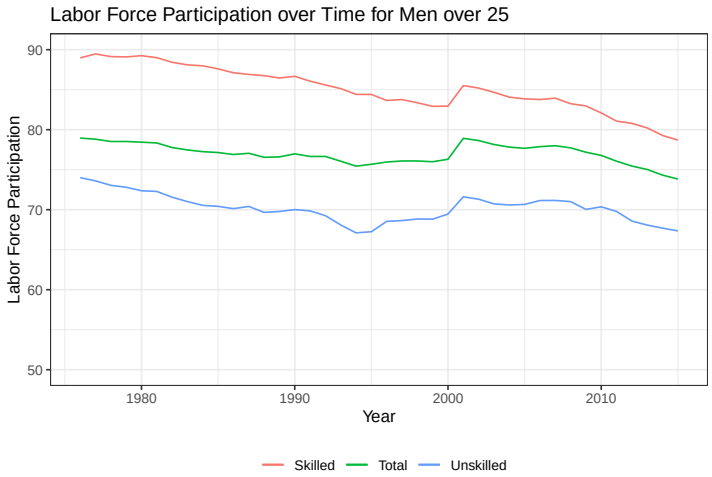




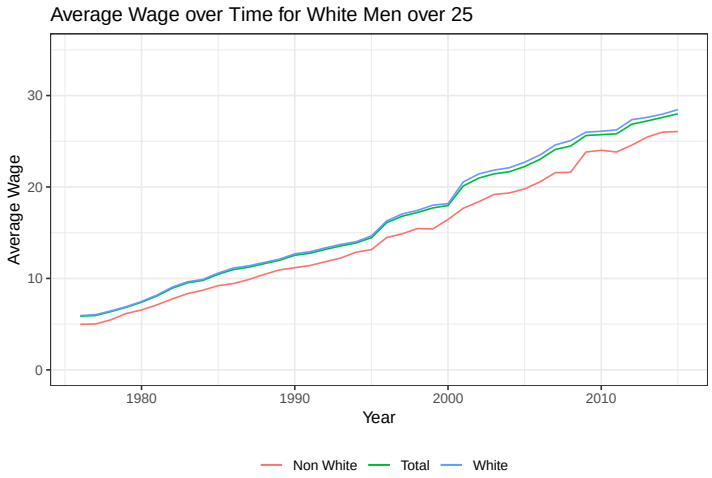
(b) Among men older than age 25, which groups of people have had the biggest changes in labor force participation?

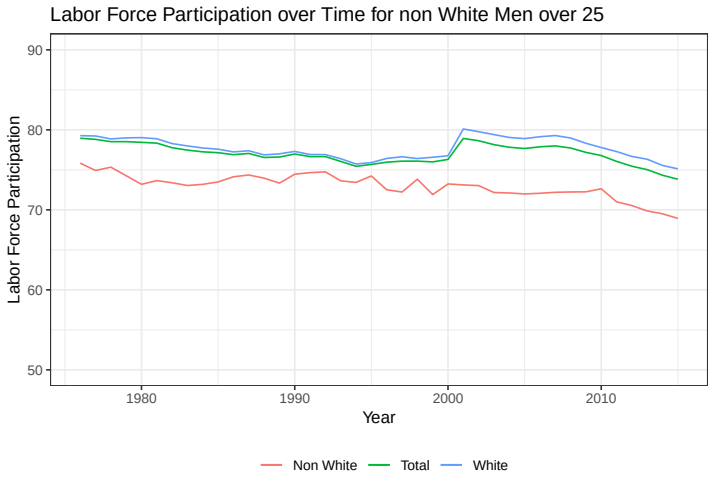
To answer this question, let's first look at if our findings above still hold. The wage graph below tells a similar story to the previous one, so this demographic has had similar wage growth as the general population. The labor force participation graph shows a similar overall trend as above. These data say that men over 25, regardless of skill level, participate in the labor force at a higher percentage then the total population. However, the drop in labor force participation for skilled men in this time period is notable. They start with a close to 90% participation rate and have since dropped over 10 percent which is much more dramatic than other groups.





It is worth checking to see if this large drop in skilled workers can be seen in another demographic breakdown. Below are similar types of graphs as above, but this time the breakdown is for white and non-white workers instead of skilled and unskilled. The wage graph shows that there is not the same kind of wage divergence that we saw before. White men tend to earn more than non-white men, but that amount appears roughly constant. This carries over to the labor force participation graph where there is a comparatively small difference between subgroups. Additionally, none of the subgroups here display the rapid drop we saw above with the skilled workers, making the drop a little more notable.





c) What factors do you think are driving these patterns? What evidence might you want to assemble to test these hypotheses if you were to investigate them further?

When comparing labor force participation and wages among different demographics, we see that a divergence in wages seems to be associated with a divergence of labor force participation rate. We can see this effect most clearly in the first set of graphs showing the differences between skilled and unskilled workers and in the third set of graphs showing the breakdown by race for men over 25.

General microeconomic theory tells us that less wage growth should lead to lower labor force participation rates, and this does hold true for most of the data looked at. However, wages for skilled workers have risen comparatively more than other demographics, yet skilled labor force participation has fallen the most in the past 50 years. Granted, it still remains well above the general average, but much less so than it used to.

The general downward slope could be due to more people acquiring college degrees and entering the skilled work force. Thus, increasing the percentage of the workforce that is skilled.

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## `summarise()` ungrouping output (override with `.groups` argument)
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The graph above confirms at least this part of the theory with skilled workers going from barely above 25% to almost 55% of the workforce. The first effect of this is to make the skilled worker population more similar to the general population, thus pulling down their participation rate. Second, even with the increase of more high skill jobs, increased competition likely causes skilled workers to become discouraged and more likely to drop out of the workforce.

Another separate driver could be that as more women join the skilled work force, non-single men have less pressure to stay in the labor market and would be more likely to drop out if their partner could support them.

I suspect that the frustration effect is likely what drove the sharp drop after the 2008 recession. High unemployment rates for college graduates make it more tempting than before to leave the labor market despite the possibility of growing wages.

Given more time, I would like to further investigate the linkage between wage growth and labor force participation among different demographics. One way to do this is to build a regression model which models the likelihood of a person being in the labor market given the year, the wage growth at that time, and numerous demographic variables.

The above model might help explain the drop in labor force participation among male workers, but more analysis will likely be required. If more men are being supported by their partners, we would need to see how skilled womens' participation in the labor force has changed. To more rigorously test this hypothesis, it would be helpful to get labor data for married couples and test if having a highly skilled working wife makes a man more likely to drop out of the labor force. To test the frustration effect, we should track how labor force participation changes next to unemployment. This could help determine if people not in the labor market left out of choice or left because they were unemployed and gave up.

The graphical analysis done here is only a cursory look at what could be several interesting trends in the data and further, rigorous work would be required to make any strong claims about this data.