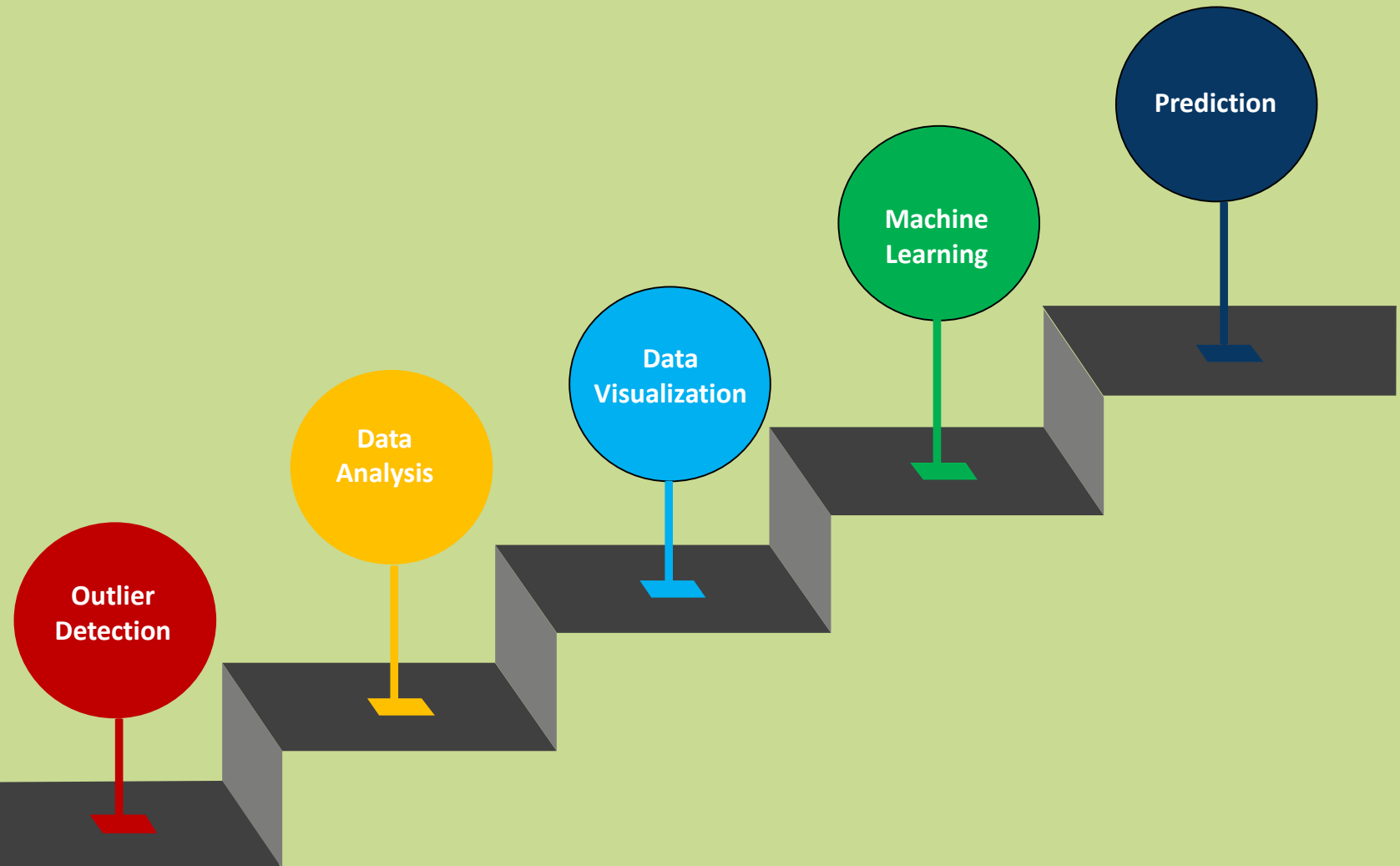


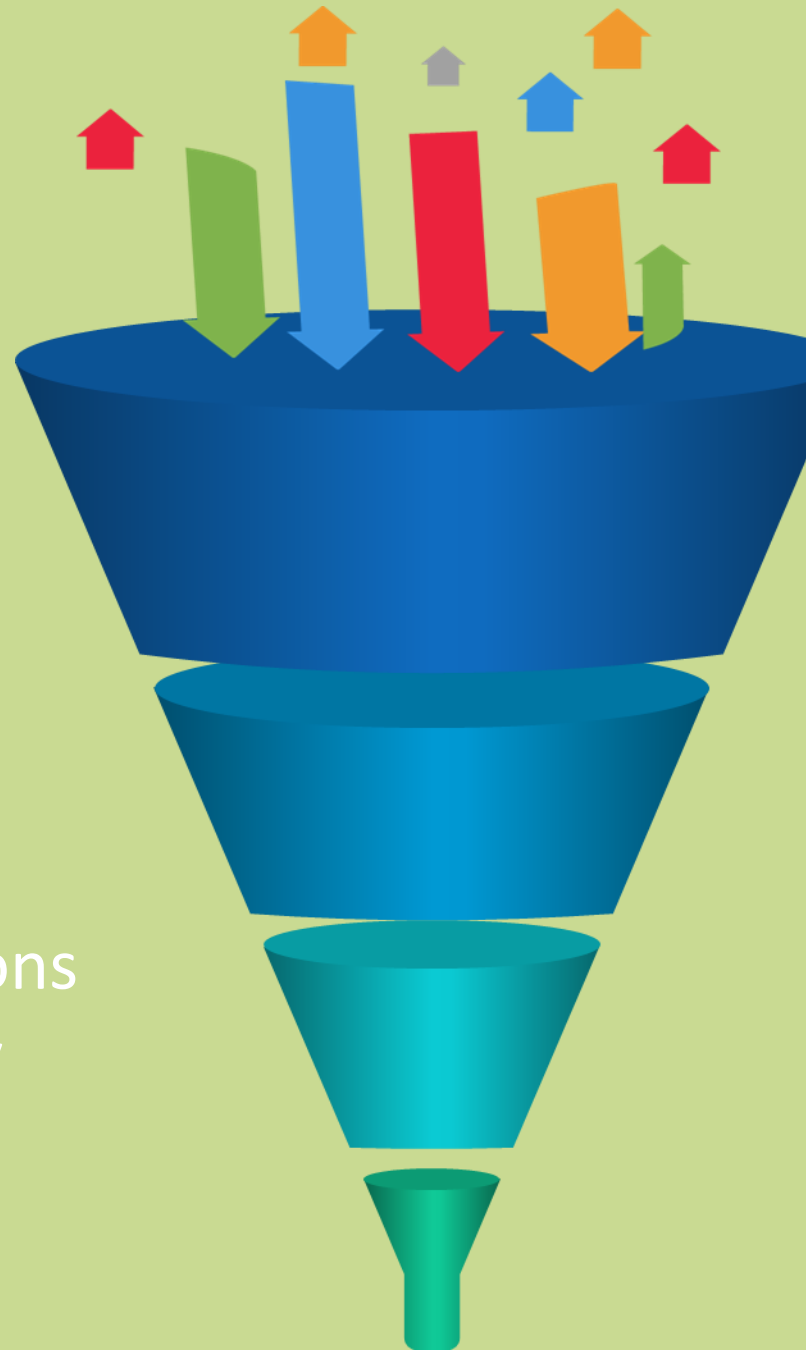
US CONSUMER TIME SPEND Analysis



PROJECT OUTLINE



OUTLIER REMOVAL



Does it make sense for an individual to have no weekly hours but still earn??

Or..does it make sense for an employed individual to work but have no weekly earnings??

How about person who spends more than 14 hours of sleeping on average basis??

The extreme observations that does not make any sense on average

USING THE 98th
PERCENTILE AS A THRESHOLD, REMOVED ALL
OUTLIERS...



LEFT WITH 43429 OBSERVATIONS
OF THE ORIGINAL 64000

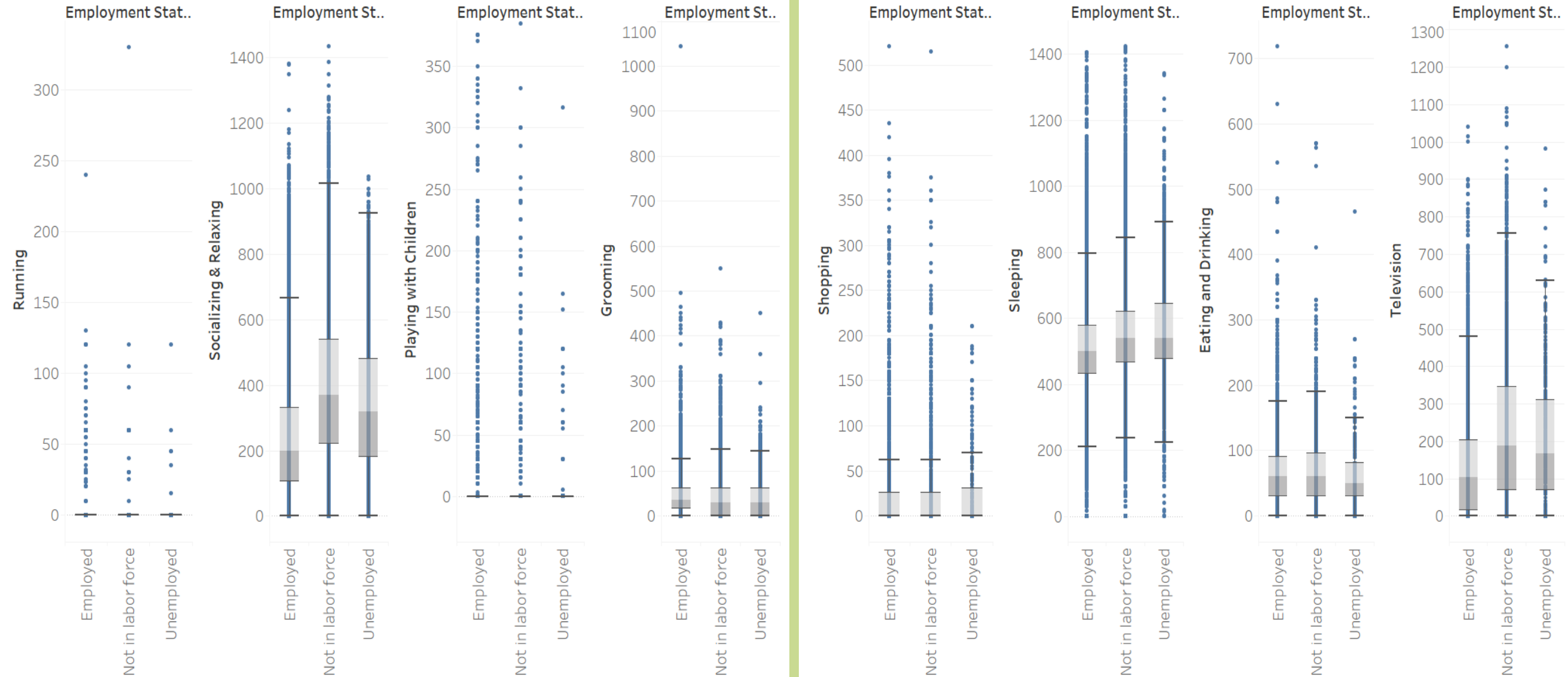
Summary of the time spending pattern in 2012 per activity



Here we are trying to understand how employment status influenced the time spending on various activities...??



Time Spend Pattern Across Activities



2012 Boxplots of Employment

- From visual inspection we can observe that means of each variables are different from each others

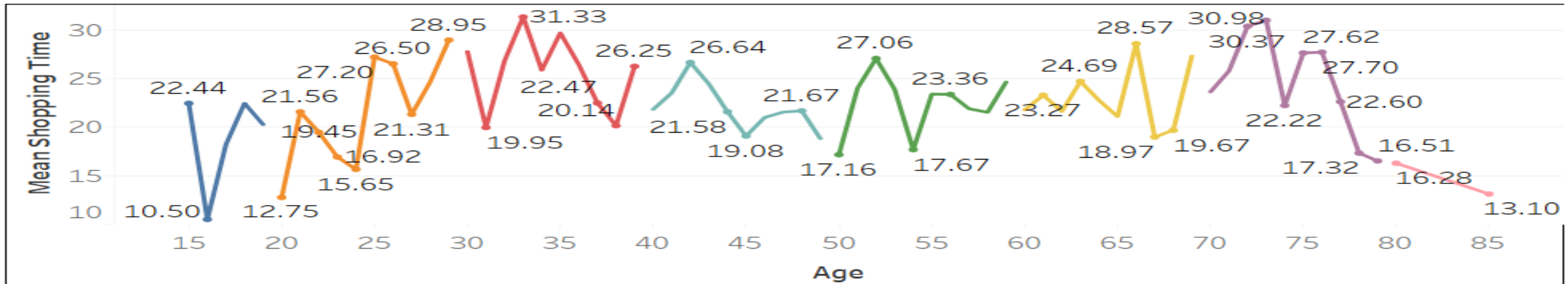
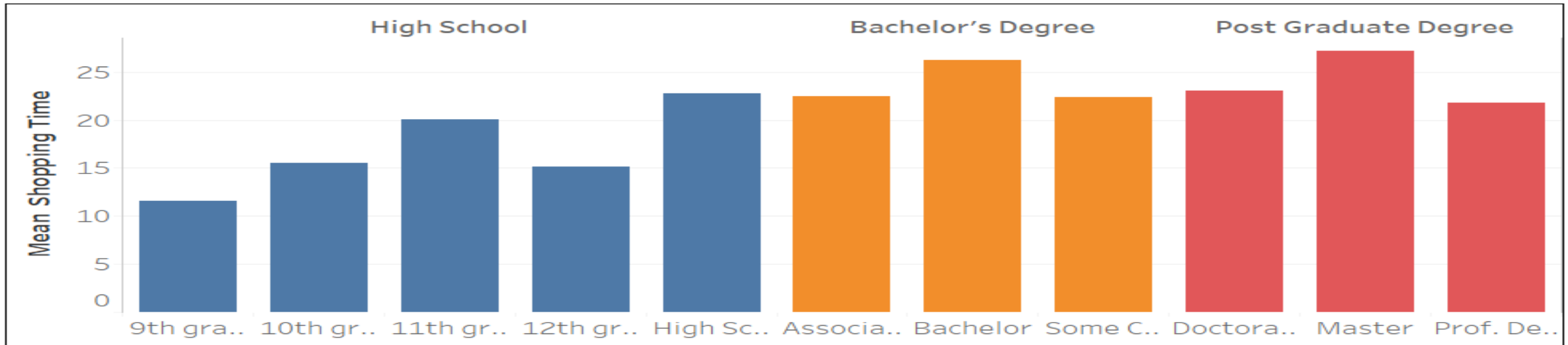
To confirm this ANOVA analysis is performed on time spent activities against Employment Status

- Turns out means of all variables are significantly different from each other **EXCEPT** for **SHOPPING** Employment



The Average Shopping time is unaffected by employment status.

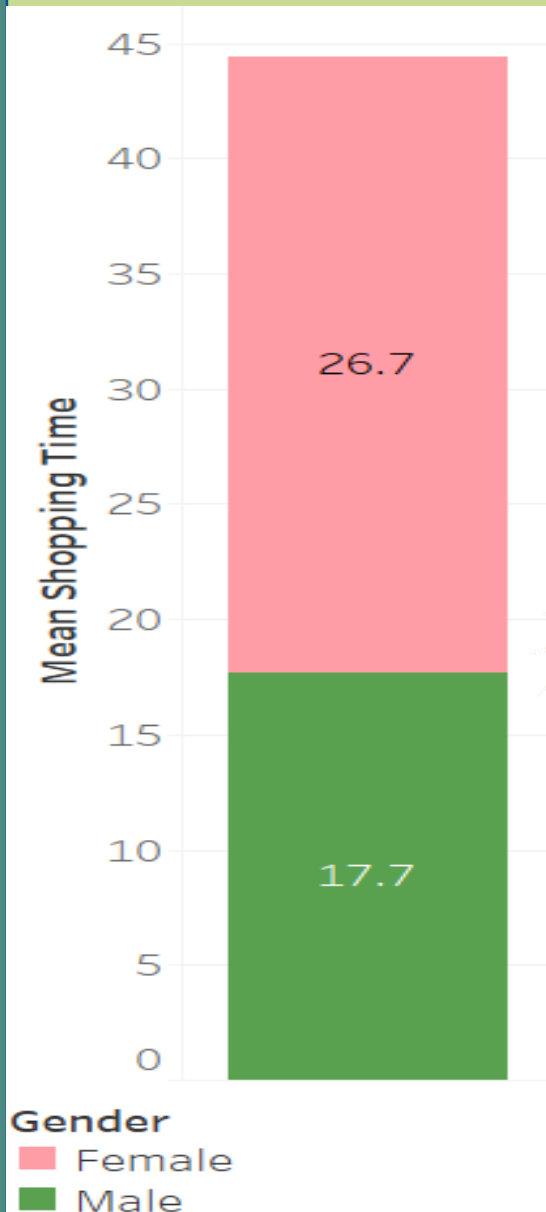
Does any factors impacts Shopping..??



Age Range

0-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

Does any factors impacts the Shopping..??



Visually it can be analyzed that mean of the shopping pattern for Gender, Age and Education level is different.

To confirm this ANOVA analysis is performed on shopping time spent against Gender, Education Level and Age



Highly educated individual spent more time in shopping

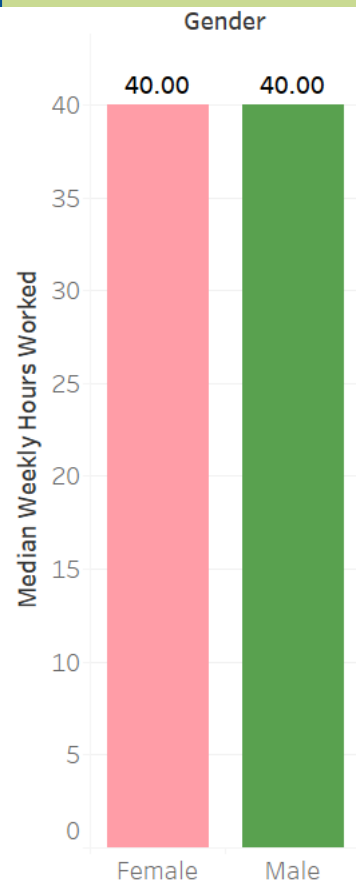
On an average female spent 50% more time on shopping than male

Individuals between age 30 to 60 spend more time on shopping compared to other age groups

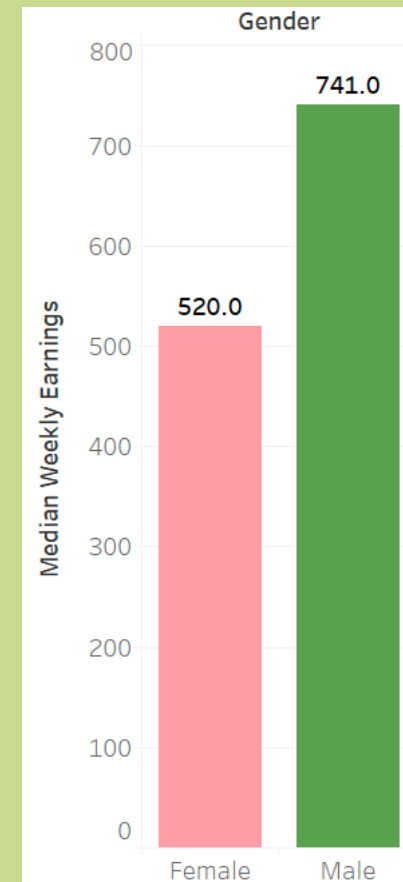
Is weekly earnings independent of Gender..??

As per the US labor bureau, a disparity exists between male and female earnings

To Confirm this ANOVA analysis is performed on Weekly earnings against gender



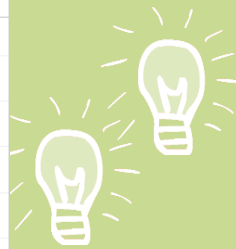
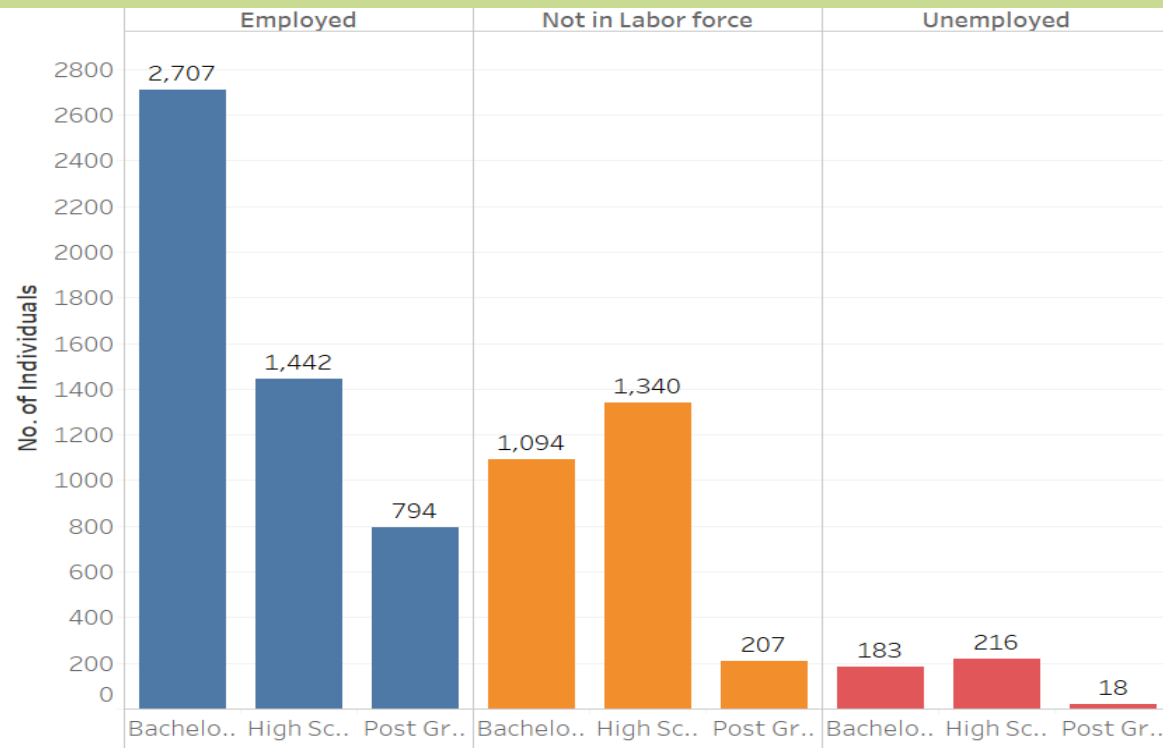
Despite of the fact that, male and female individuals work equally, male earn 42% more than the female counterparts



Is there any relationship between Employment Status and Education Level?

As per the economic theory, a higher education can help in getting job

To confirm this CHI-SQUARED analysis is performed on Employment Status against Gender and Education Level

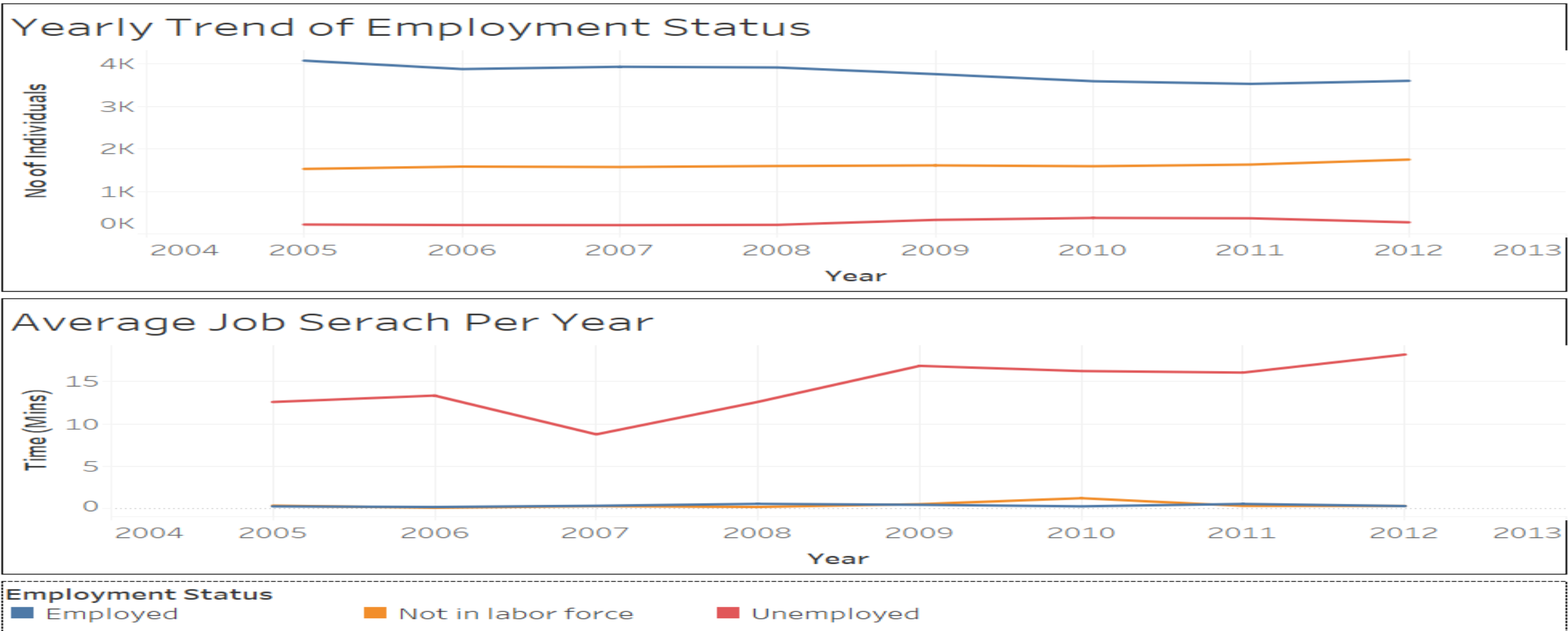


More than 60% of the employed individuals have at least bachelors degree

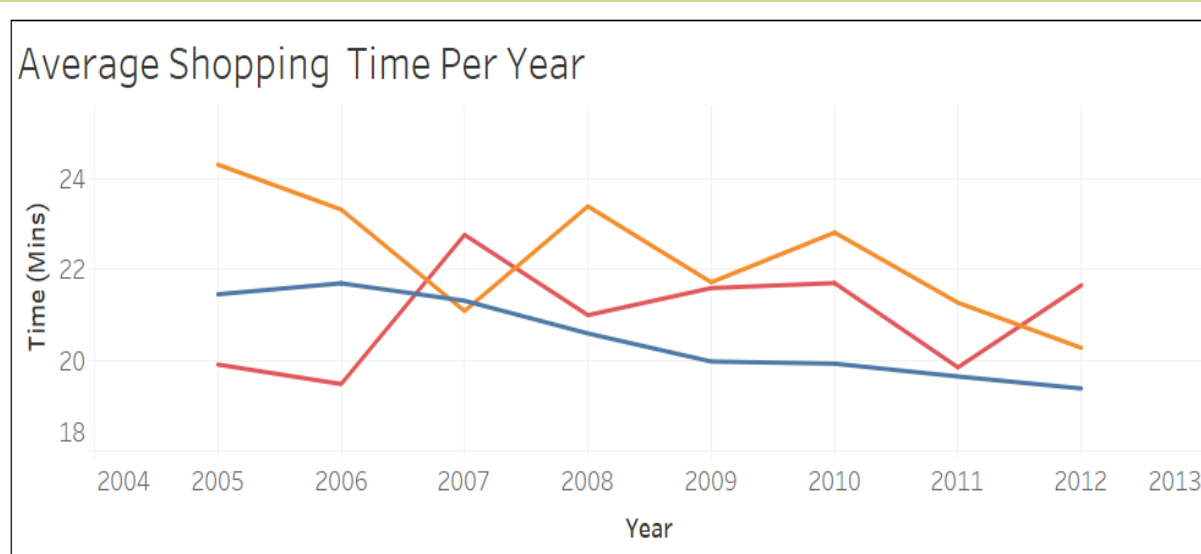
More than 50% of the individuals having at most high school education are not employed

How Recession Affects the activities..?

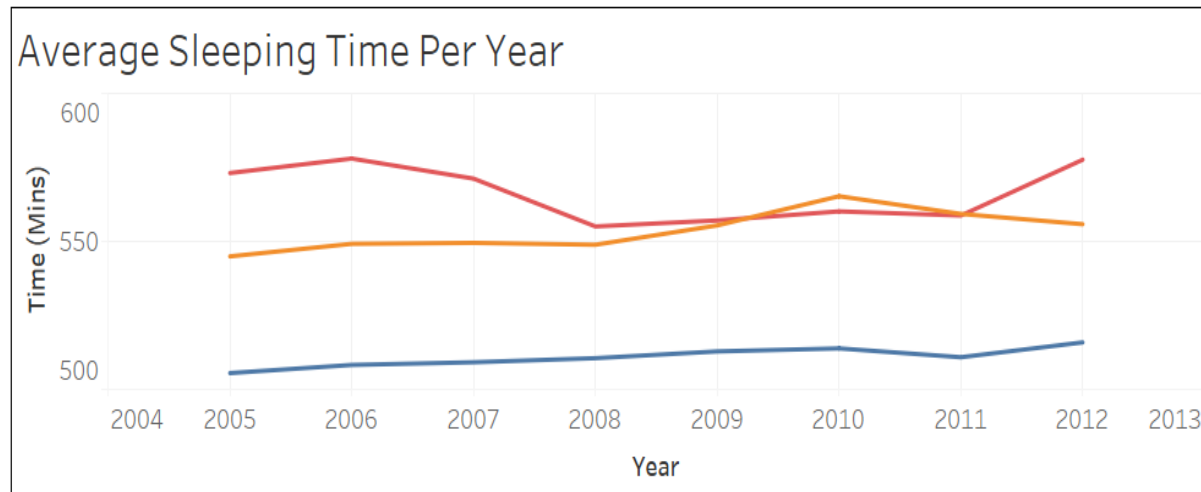
We can observe that there is decrease in the employment status and increase in the job search activities between the year 2008 and 2010



How Recession Affects the activities..?



There is a increase in the average time spend on the shopping by unemployed individuals as compared to employed.



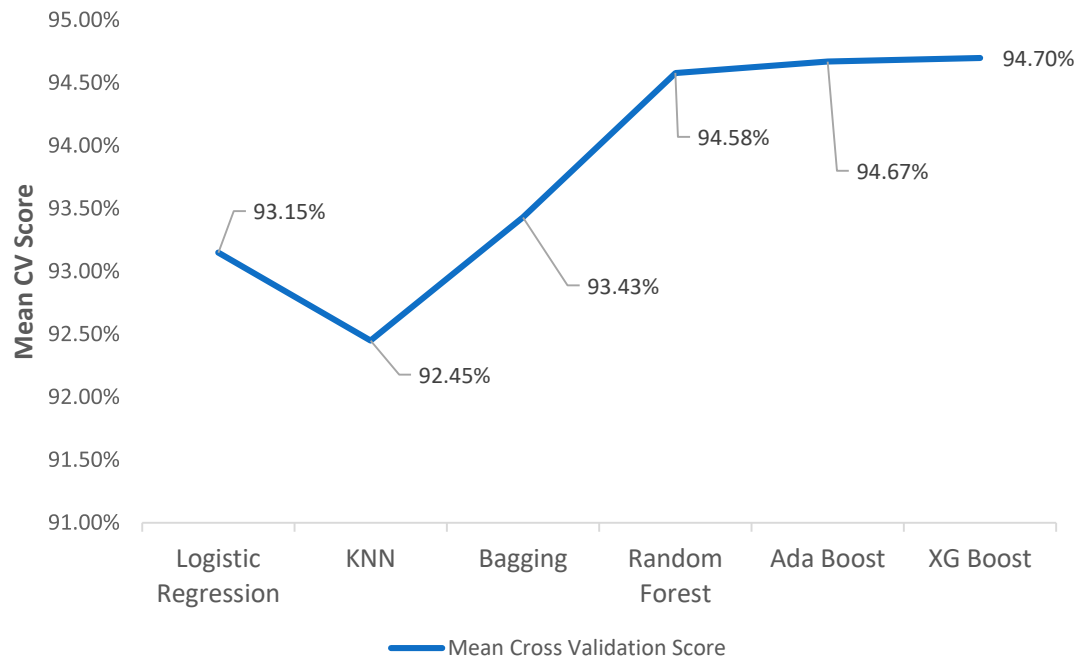
However, we can see decrease in the daily average sleeping hours of the unemployed individuals compared to employed

Employment Status

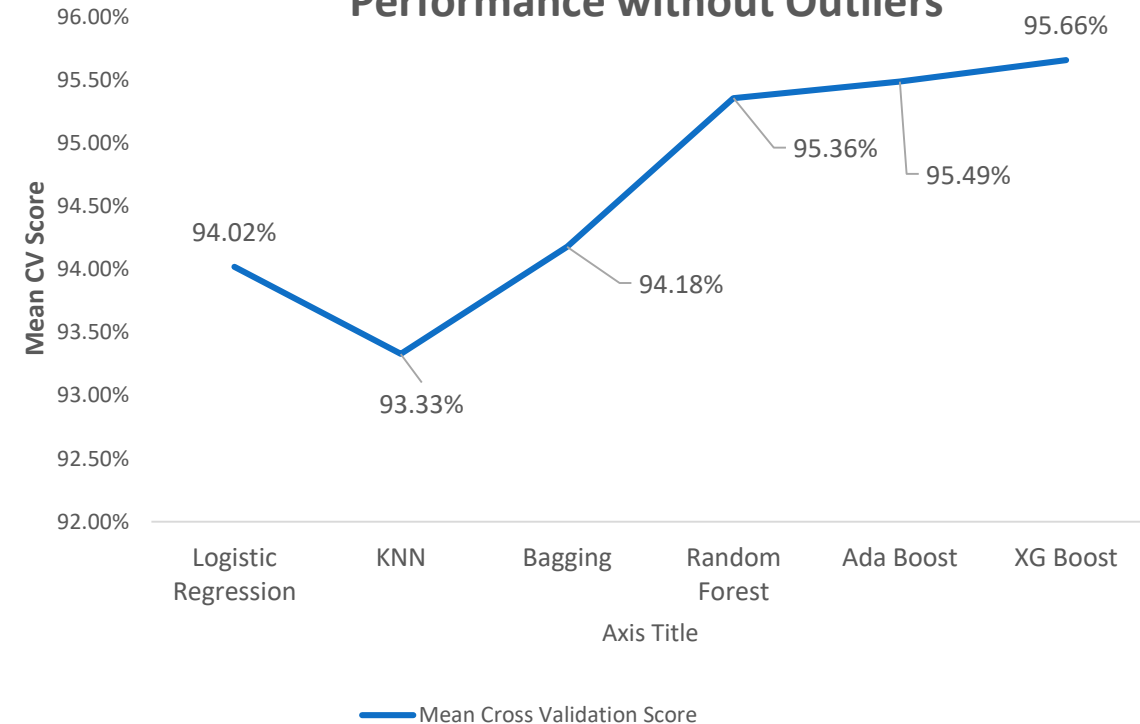
■ Employed ■ Not in labor force ■ Unemployed

Predicting Employment Status

Performance with Outliers



Performance without Outliers



Choose XG Boost Classifier over other models because, of high mean cross validation score and model performs better in terms of misclassifications (by almost 30% in False Positive)



THANK YOU!!!