



Wage and Value

A TALE OF GENDER, RACE, EDUCATION & AGE

LETS GET STARTED!

1
WAGE DATA WAS
WRANGLERD
FROM KAGGLE

2
STATISTICAL INFERENCES AND
PREDICTIONS WERE MADE USING RSTUDIO

3
DATA
VISUALIZATIONS
WERE CREATED
USING RSTUDIO
LIBRARIES &
PACKAGES

4
METHODS:

- DECISION TREE
- LINEAR REGRESSION
- K-NEAREST NEIGHBORS



LETS TAKE A MOMENT TO EXPLORE
THE VARIATION

SPRING 2020
DATA VISUALIZATION CHALLENGE



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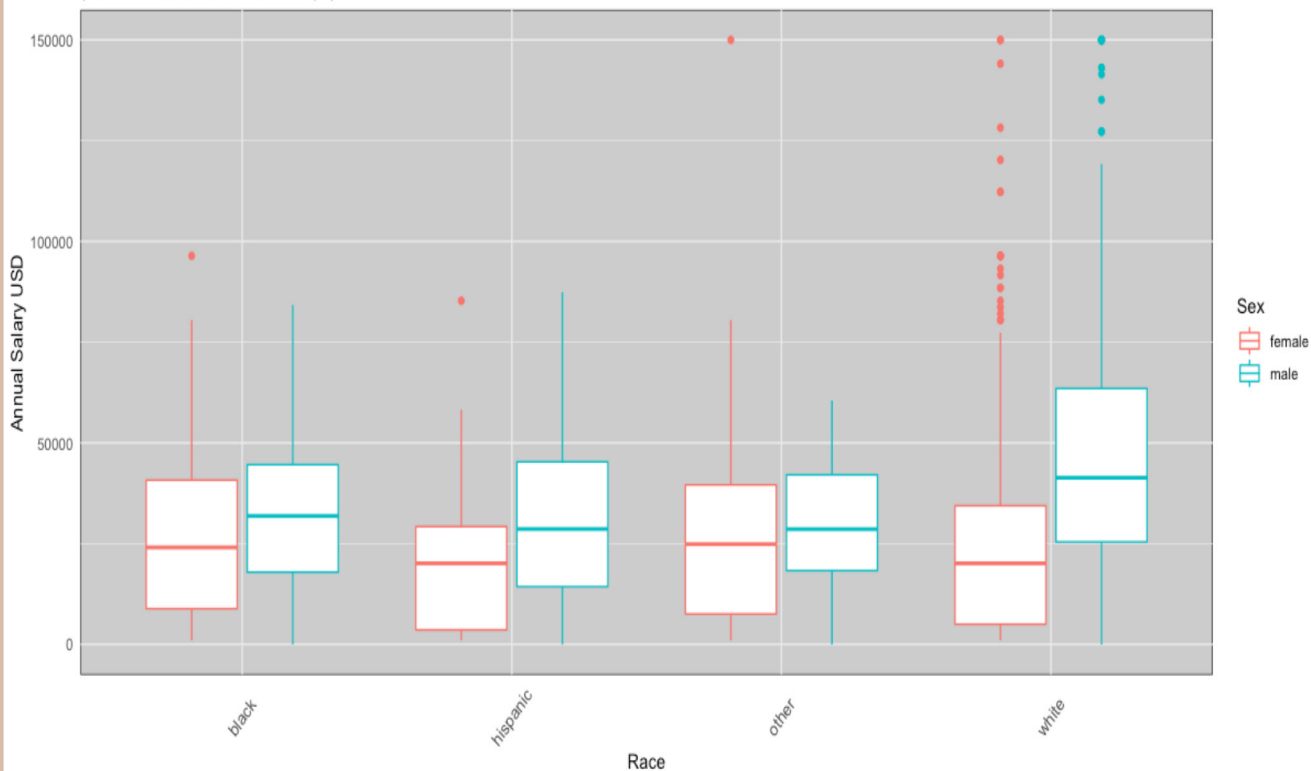
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SALARY, RACE & SEX

Annual Salary by Race

(Gender Included Between Groups)



HISPANIC
FEMALES
HAVE
THE
LOWEST
MEDIAN
SALARY
BETWEEN
GROUPS

WHITE MALES HAVE THE HIGHEST
MEDIAN SALARY BETWEEN GROUPS

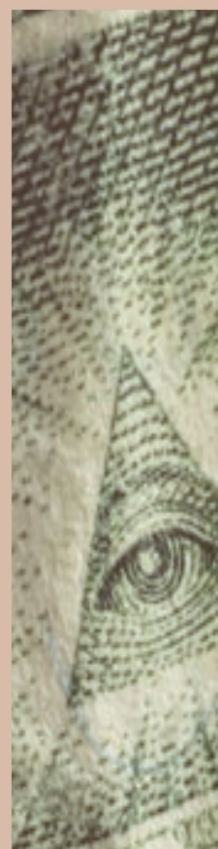
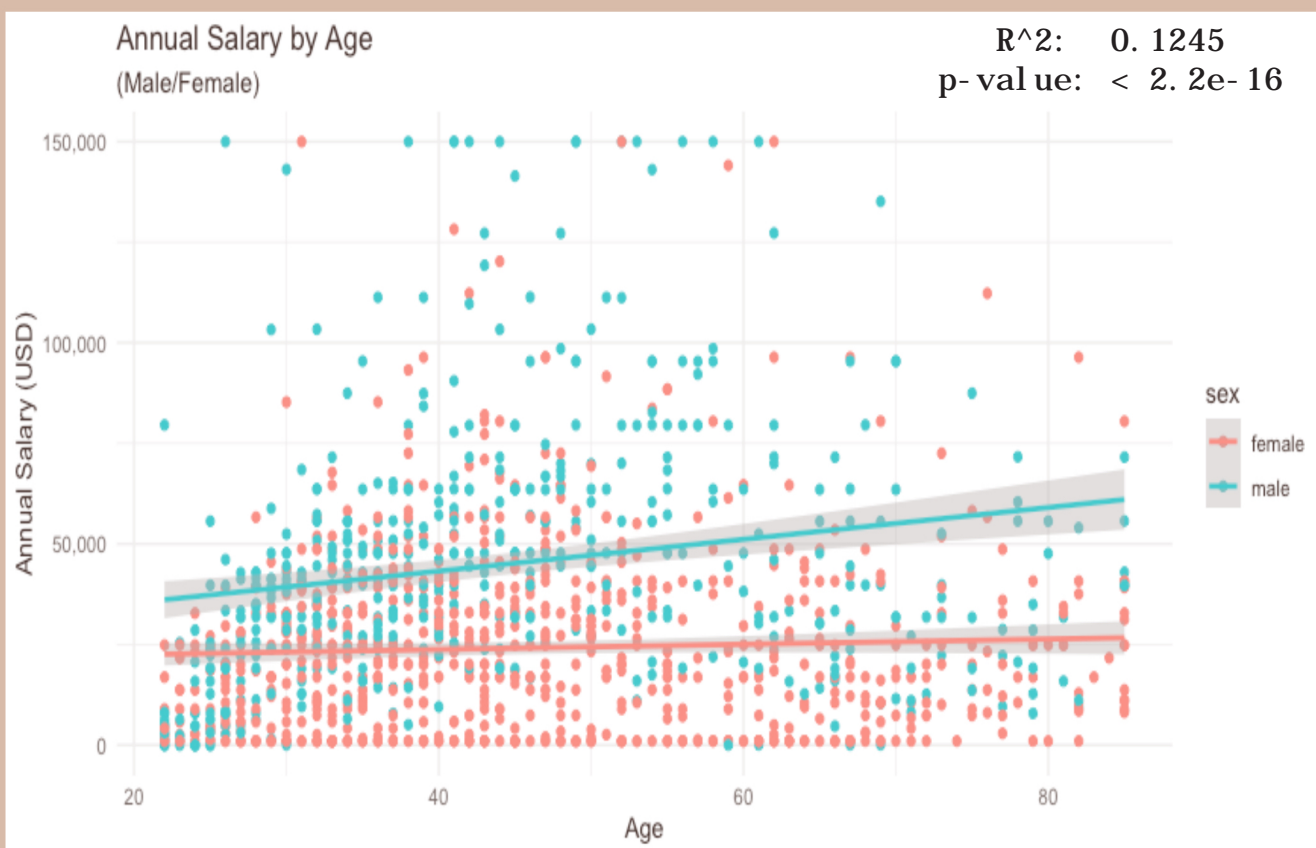
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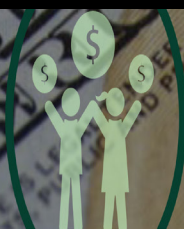
AGE VERSUS WAGE



SALARY CAN
DEPEND ON THE
PERSONS AGE

WITH MALES DEMONSTRATING
A POSITIVE CORRELATION BETWEEN GROUPS

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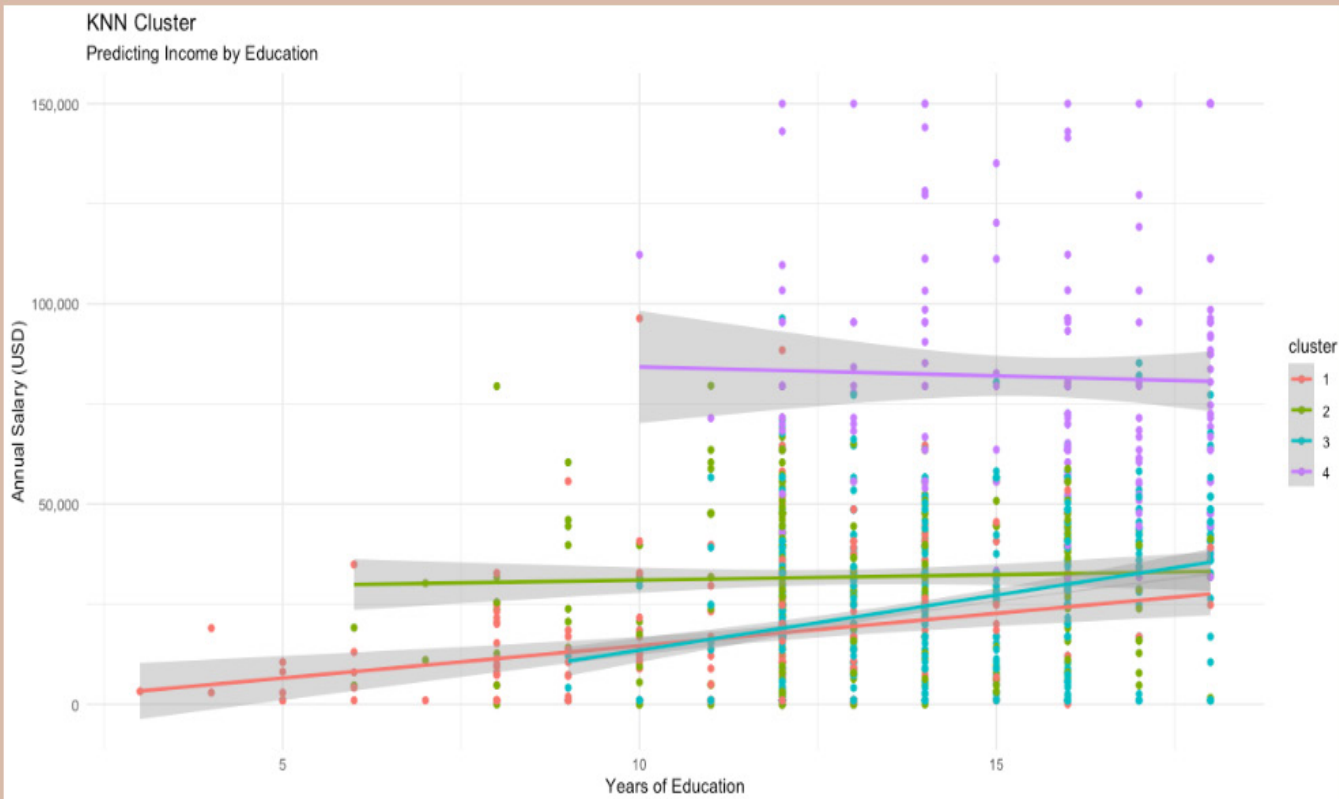
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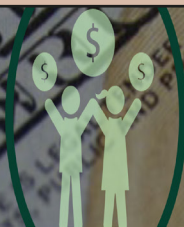
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TIME IS
MONEY

There's A Positive Correlation Between Salary & Years of Education for Clusters 1 & 3 Suggesting Education & Income are Correlated



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DATA VISUALIZATION CHALLENGE



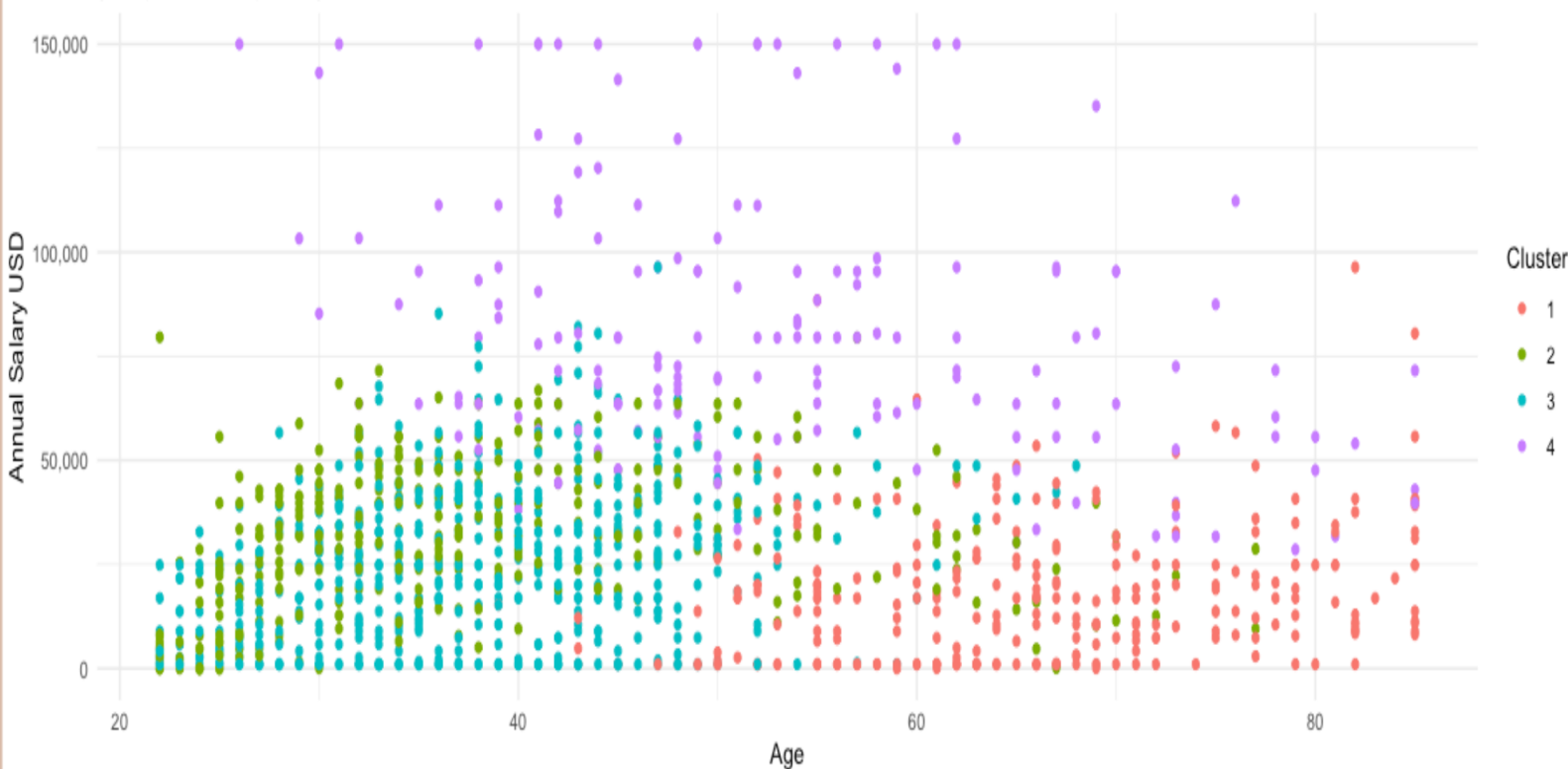
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USING UNSUPERVISED LEARNING

Predicting Annual Salary Within Groups
(Using KMeans Algorithm)



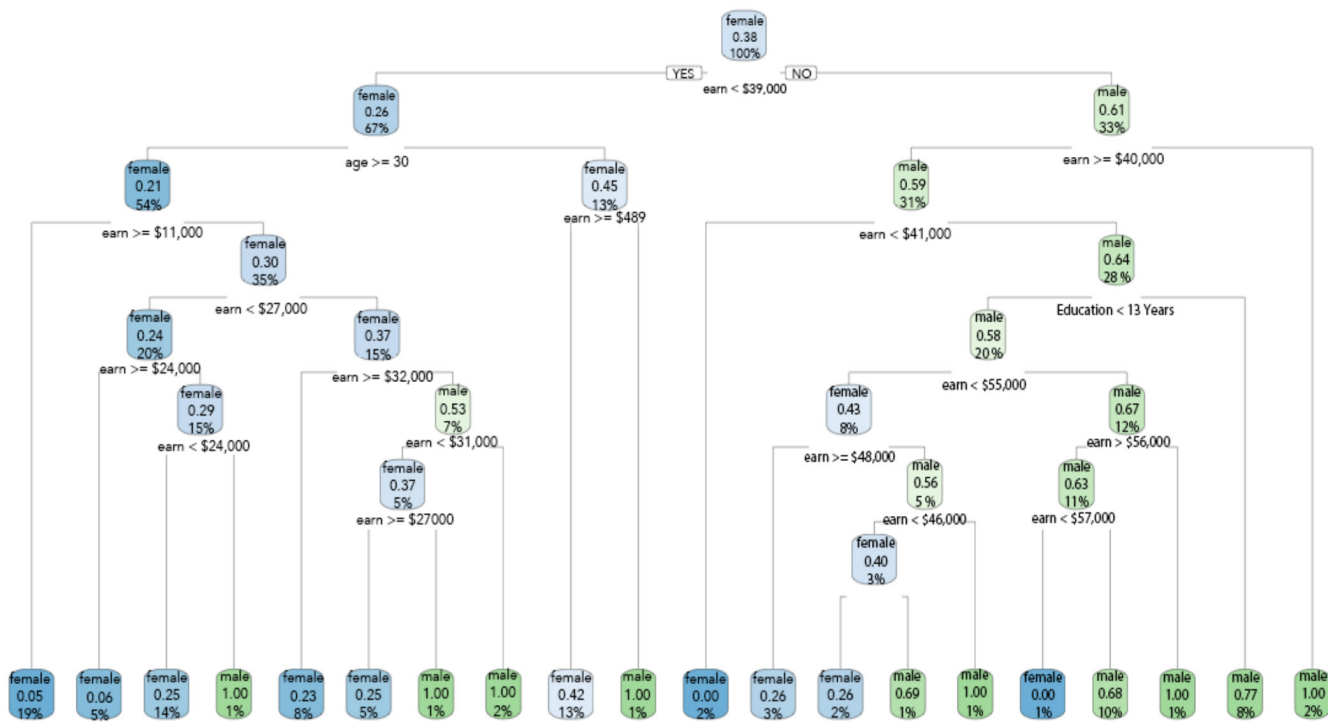
4 GROUPS
WITHIN
CLUSTER

- (1) COLLEGE GRADUATES-MID CAREER EARNERS
- (2) YOUNG EARNERS/HIGH SCHOOL GRADUATES
- (3) RETIREES
- (4) HIGHLY SPECIALIZED LABORERS

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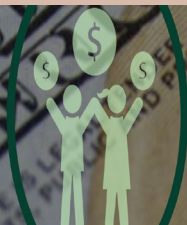
WOULD YOU BELIEVE THIS TREE?



USING MACHINE
LEARNING

WE CAN DETERMINE WAGES USING
SEX, AGE, AND EDUCATION AS QUALIFIERS

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CONCLUSION

HERE'S WHAT MATTERS:



Men tend to earn
more than women

**WHITE MALES EARN
MORE THAN EACH OF
THE GROUPS LISTED**



Salary Favors Age

**POSITIVE CORRELATION
BETWEEN
AGE & WAGE
AMONG MALES**



YEARS OF EDUCATION AND
INCOME ARE POSITIVELY
ASSOCIATED

**YEAR 13 IS WHERE TWO
GROUPS STRONGLY
INTERSECT**



WE CAN USE MACHINE
LEARNING TO
PREDICT INCOME

**OUTCOME CAN BE
DETERMINED BETWEEN
GROUPS**