Executive Summary: Implications of Demographics on Income

This research aims to understand how demographics affects the median income of a group of people in major labor industries during the period 2015-2020. We utilized the CPS (Current Population Survey) to extract the demographic factors mentioned above and income for the years 2015 – 2020. The CPS collects data about employment status and other population related variables.

From 2015 to 2019, the unemployment rate appeared to be decreasing; but, in 2020, we saw an increase in unemployment in almost all industry sectors, except for agriculture, forestry, fishing, and hunting. The mining industry's unemployment peaked in 2016, although it appears to have recovered till 2019. Although it appears to be dropping from 2017 to 2019, the overall median income has risen in recent years, and has continued to climb during the pandemic year, implying that lower-paying jobs are more likely to be terminated during the outbreak. Over time, the mining industry has paid the most, while leisure and hospitality has paid the least. Furthermore, the median income in the Mining business has fluctuated the most over the years, although most other sectors have remained consistent.

Although there is a salary disparity between men and women, this tendency does not apply to all industries. Females of the Asian-Pac-Islander racial group earn more than males of other races, whereas males of the Asian-Pac-Islander group earn less. The largest salary disparity is in the information and professional and business services industries, not in agriculture, forestry, fishing, and hunting, construction, or mining. In practically every sector, Asian-Pacific Islanders earn the most, whereas American Indian-Aleut-Eskimos earn the least, with Asian-Pacific Islanders earning much more in Mining, Professional and Business Services, Manufacturing, and Information.

In all industries, median income appears to climb with age, with Information and Mining having the highest salary age depending on age, implying that experience is valued more in those industries. Across all industries, age groups, genders, and races, those with a higher education are more likely to earn.

Race, gender, age, and educational attainment all play a substantial impact in determining median income across all industries and may be well predicted using a linear model rather of more complex modeling such as loess. Interactions between major industries and gender, race, age, and educational attainment, as well as interactions between age groups and race and gender, improve model regression.

The fitted model's predictions are consistent with the analysis, indicating that a salary difference exists between men and women. Furthermore, Asian-Pacific Islanders, both male and female, earn much more in the mining business than other racial groupings in other industries.