Wage Ranking

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**Introduction**

For our project we wanted to figure out what the paying occupations were in the state of Washington. Our group found a data set of 2020 occupational employment and wage estimates for the state of Washington. The data was categorized by 25th percentile which is 25 percent of all wage earners who earn below wage rate. 50th percentile (median) of all wage earners who earn below wage rate. 75th percentile which is 75 percent of wage earners who earn below wage rate. Annual wage which is the calculated by multiplying hourly rate by 2080 hours. That is the equivalent of working fulltime at 40 hours per week. Average wage which is the sum of all reported wage rates divided by the number of rates. Employment which is the estimated total number of workers for that occupation. Standard Occupational Classification (SOC) code which is used to sort and define each occupation. Year which is the year the data was collected. Area name which is the state and cities in Washington. The questions we wanted to answer were what is the highest paying occupation in Washington? What city has the highest employment totals? What occupations in Washington pay the least? What are the highest and lowest annual wages?

**Methods and Results**

Our data set had to be cleaned there were many empty cells and random errors in the data set. The data set originally had 12 columns and 6,563 observations. After cleaning the data set, we ended up with 5,437 observations. There were 1,090 observations removed when cleaning. There are 16 different area names and 756 different occupations in the data. The first question we wanted to answer was occupation has the highest number of individuals employed. We found out that the occupation of a Retail Salesperson with 106,073 people employed. The average wage for a Retail Salesperson is $17.79 an hour with an annual wage of $36,988.

The next question we wanted to answer was what occupation had the least amount of people employed. We found that there are 16 different occupations that each had 10 people employed. These occupations were Postal Service Mail Sorters( Processors, and Processing Machine Operators), Emergency Management Directors, Judges (Magistrate Judges, and Magistrates), Stationary Engineers and Boiler Operators , Judicial Law Clerks , Farm and Home Management Educators, Photographers, Financial & Investment Analysts, Financial Risk Specialists, Broadcast Technicians, Purchasing Managers, Nuclear Medicine Technologists, Health and Safety Engineers (Except Mining Safety Engineers and Inspectors), Credit Authorizers (Checkers, and Clerks), Editors, Occupational Therapy Assistants, and Credit Counselors.

The next question we wanted to answer was what the minimum average wage is and what occupation has the lowest average wage. We found out that the minimum average was $10.60 an hour. The occupation with the minimum average wage were bartenders. Bartenders also had the most employed individuals with 89 at the lowest wage of $10.60 an hour. The next question we had was the maximum average wage in Washington and what occupation had the maximum average wage. We found the maximum average wage to be $94.5 an hour. The occupation for this average was Nurse Anesthetists. Nurse Anesthetists also had the highest employment for the maximum average wage with 624 employed individuals.

The next question we wanted to answer was what the maximum annual wage in the state of Washington is. We found that the maximum annual wage is $196,568. That wage belongs to Nurse Anesthetists. We also found the minimum annual average to be $22,043. That salary belonged to bartenders.





Another question that we came across was what is the distribution of employment when the average annual wage is greater than $150,000. We concluded that majority of the high earning occupations have less than 1000 individuals employed who earn more than $150,000. There are still a handful of occupations that have over 1000 employed who earn over $150,000. We also wanted to see the distribution of employment who earned an annual wage of less than $28,000. We can conclude that most of the employed occupations who earn less than $28,000 have less than 1,000 individuals employed.



The final question that we had was what areas in the state of Washington have the highest number of employment and have the highest average wages. We found that the Seattle-Tacoma-Bellevue, WA area and Spokane-Spokane Valley, WA area have the highest areas of employment. The Spokane – Spokane Valley area has 219,698 people employed in its area. The Seattle-Tacoma-Bellevue area has 1,896,626 people employed in its area. The average wage in the Spokane area is $28.23 an hour. For the Seattle-Tacoma-Bellevue area there is am average wage of $32.93 an hour. In conclusion we found that Seattle-Tacoma-Bellevue has the highest amount of employed individuals and the highest wages in the state.

**References**

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