Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Investigation 6: **Are Gender and Pay Related?**

**Worksheet 6.2 Gender and Pay**

**Scenario**

“Did you know that in 2016, women working full time in the United States typically were paid just 80 percent of what men were paid, a gap of 20 percent? The gap has narrowed since the 1970s, due largely to women’s progress in education and workforce participation and to men’s wages rising at a slower rate. Still, the pay gap does not appear likely to go away on its own. At the rate of change between 1960 and 2016, women are expected to reach pay equity with men in 2059. But even that slow progress has stalled in recent years. If change continues at the slower rate seen since 2001, women will not reach pay equity with men until 2119.”

Source: <http://www.aauw.org/research/the-simple-truth-about-the-gender-pay-gap/>

**Statistical Question \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Collection of Data**

Source:<https://www.census.gov/data.html>

|  |  |  |  |
| --- | --- | --- | --- |
| Years since 1970 | Median Income Men ($) | Median Income Women ($) | Earnings ratio |
| 0 | 9,184 | 5,440 |  |
| 5 | 12,934 | 7,719 |  |
| 10 | 19,173 | 11,591 |  |
| 15 | 24,999 | 16,252 |  |
| 20 | 28,979 | 20,591 |  |
| 25 | 32,199 | 23,777 |  |
| 30 | 38,891 | 29,123 |  |
| 35 | 42,188 | 33,256 |  |
| 39 | 49,164 | 37,234 |  |
| 45 | 50,119 | 40,022 |  |

Earnings ratio is the percent that women were paid compared to men.

1. Find each of the earnings ratio.
2. Interpret the earnings ratio for 45 years since 1970.
3. What trends do you observe in the earnings ratio over time?
4. Could the earnings ratio could exceed 1? What would that mean?

**Analyze the Data**

1. Use technology to create a scatter plot of time and earnings ratio. Sketch a copy of the scatterplot below.
2. Describe the relationship between the earnings ratio and time since 1970.
3. Estimate r, the correlation coefficient.
4. Do you think it would be appropriate to draw a line through the data?
5. Use technology to find the value of *r* and interpret this value in terms of the data.

**Interpret the Results in the Context of the Original Question**

Based on the information gathered, write a few sentences to answer the statistical question: *“*To what extent are the median income of males and the median income of females related?*”*