# M4_Lab3

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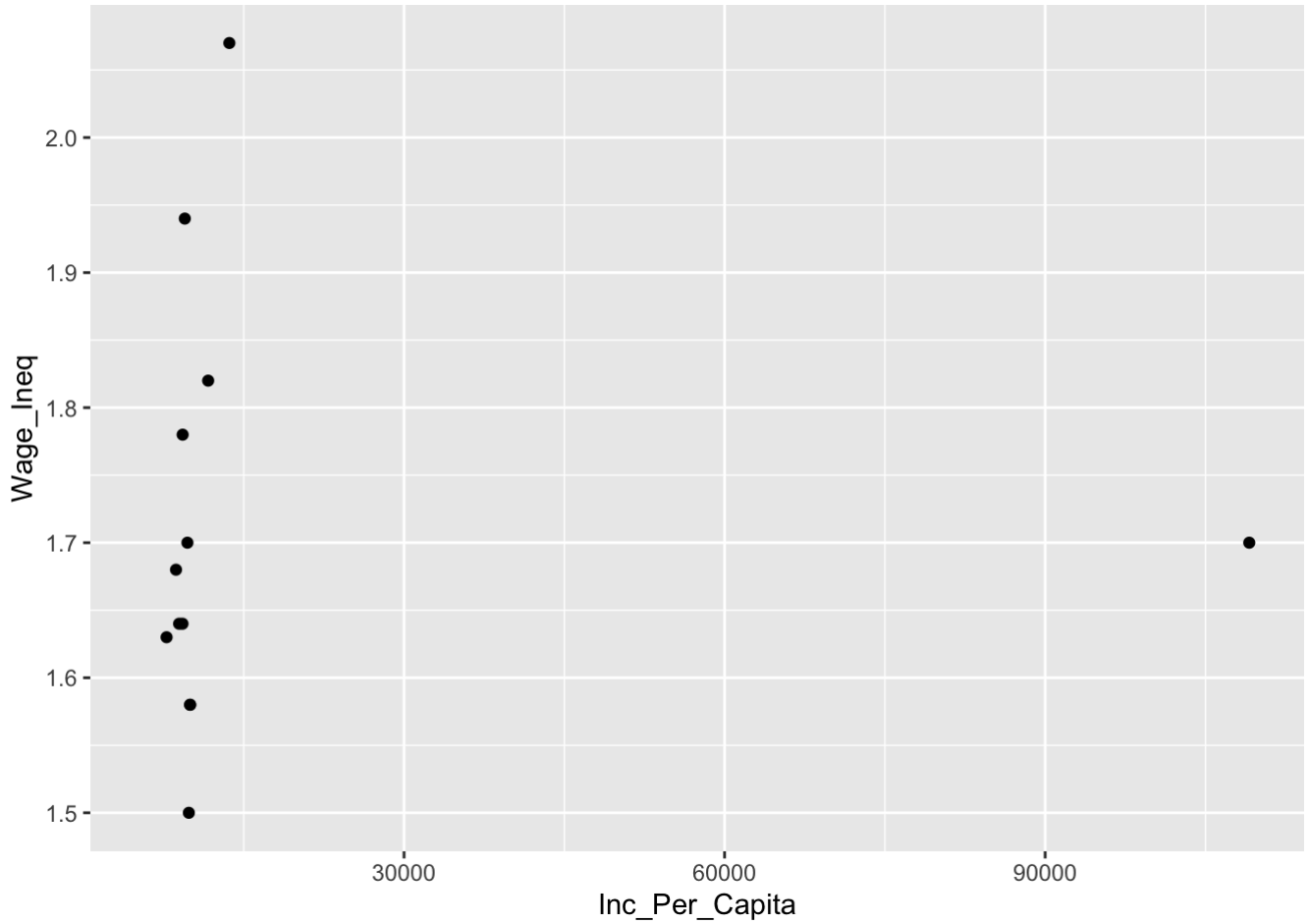
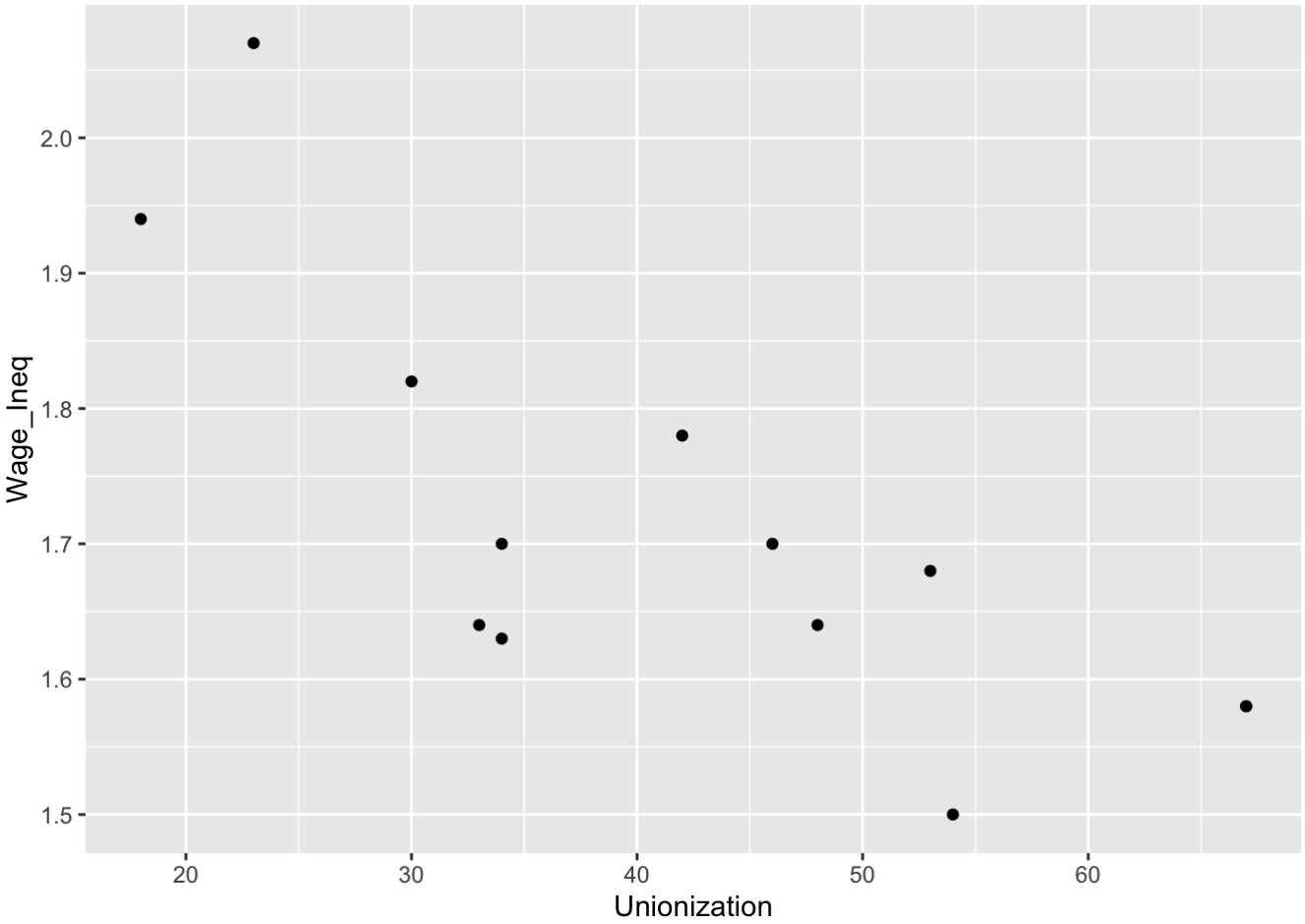
First, I went through the steps in the video to make several simple plots. The first plot that I made explored the relationship between income per capita and income inequality. It did not seem like it was an interesting plot, so I switched variables.

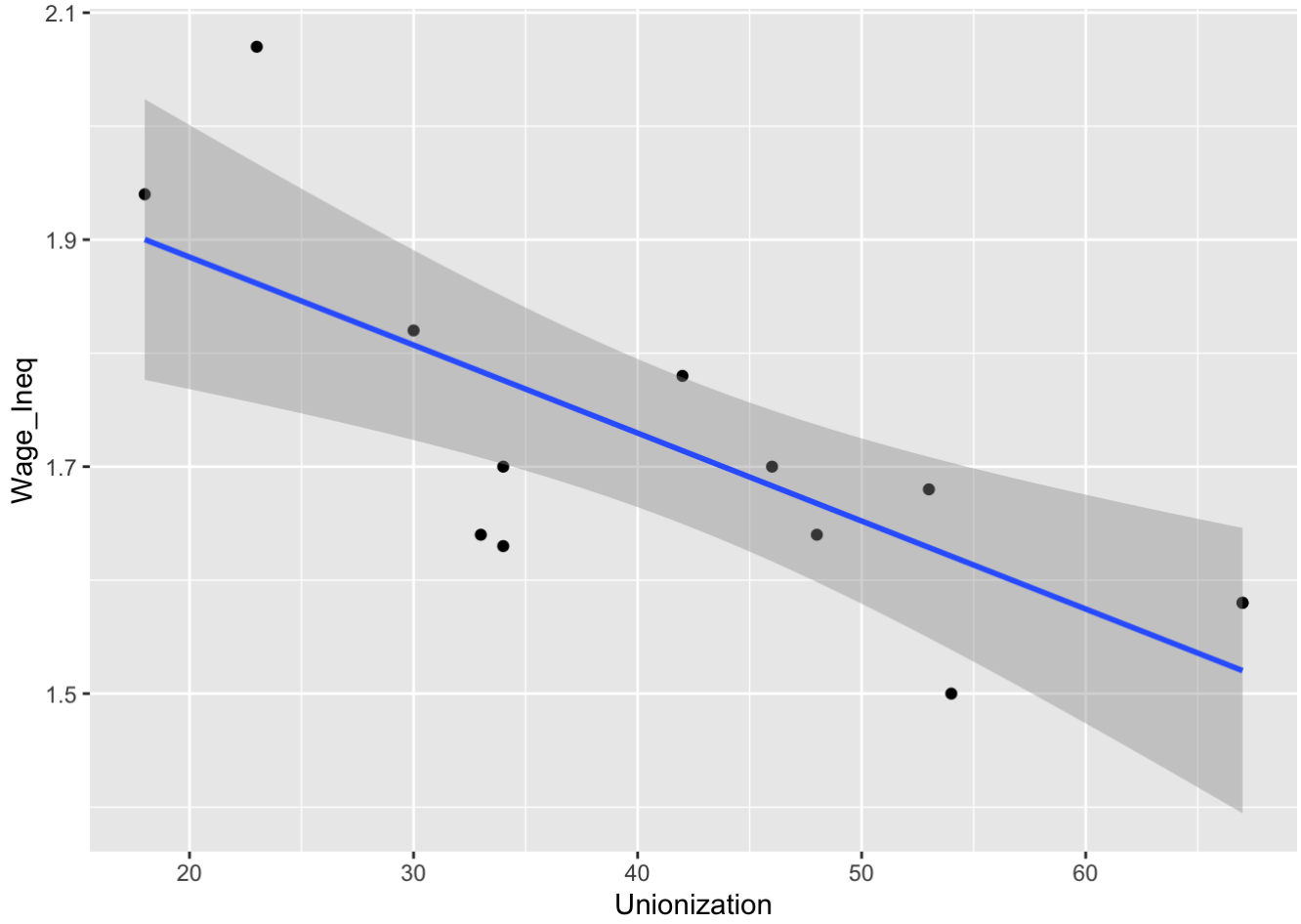



Next, I created a simple plot of wage inequality versus unionization.

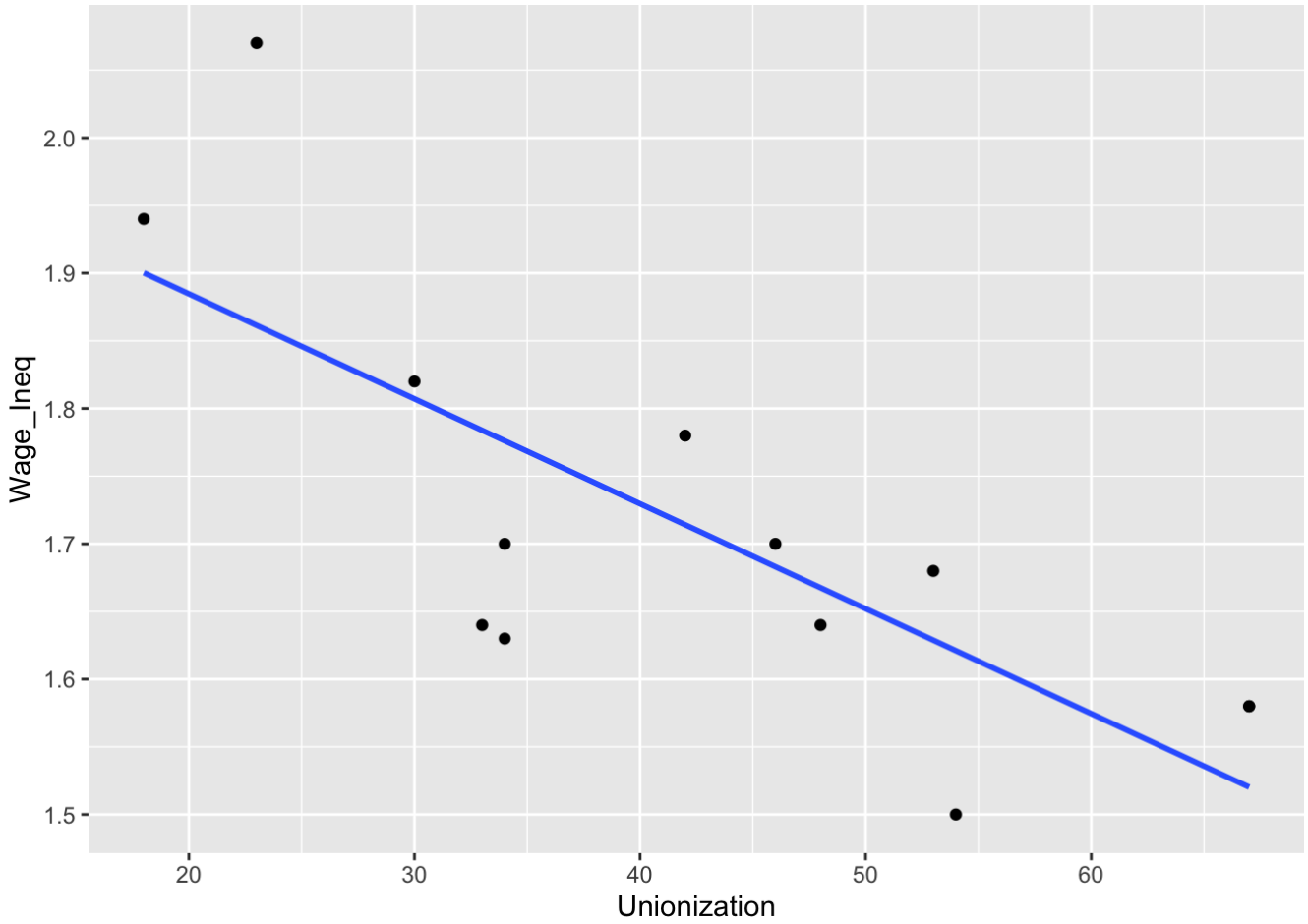



The plot displayed a much more interesting relationship, so I decided to plot the regression line on the scatterplot. I created two different plots. One that showed the standard error and the other did not.

```
## `geom_smooth()` using formula 'y ~ x'
```

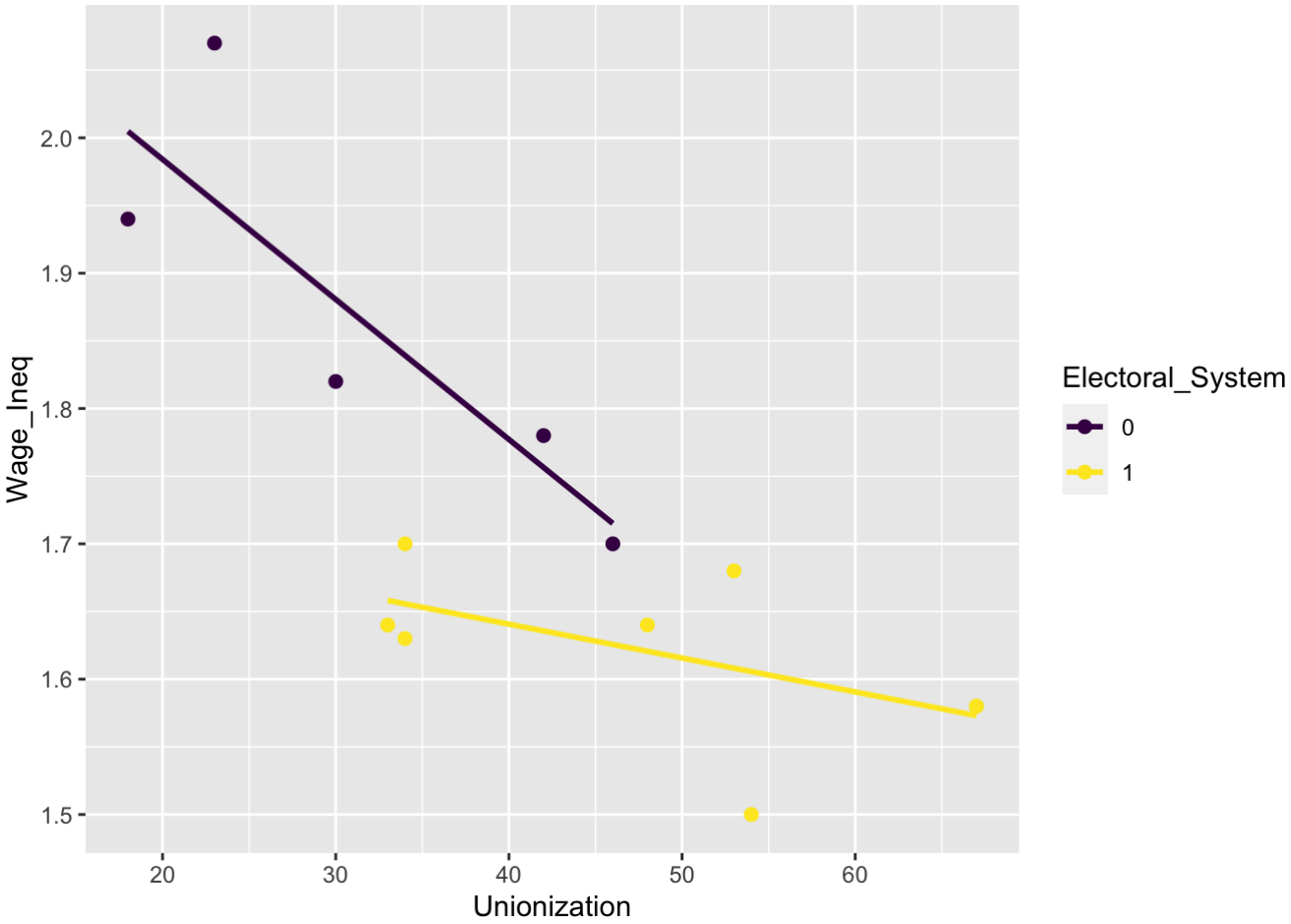



```
## `geom_smooth()` using formula 'y ~ x'
```



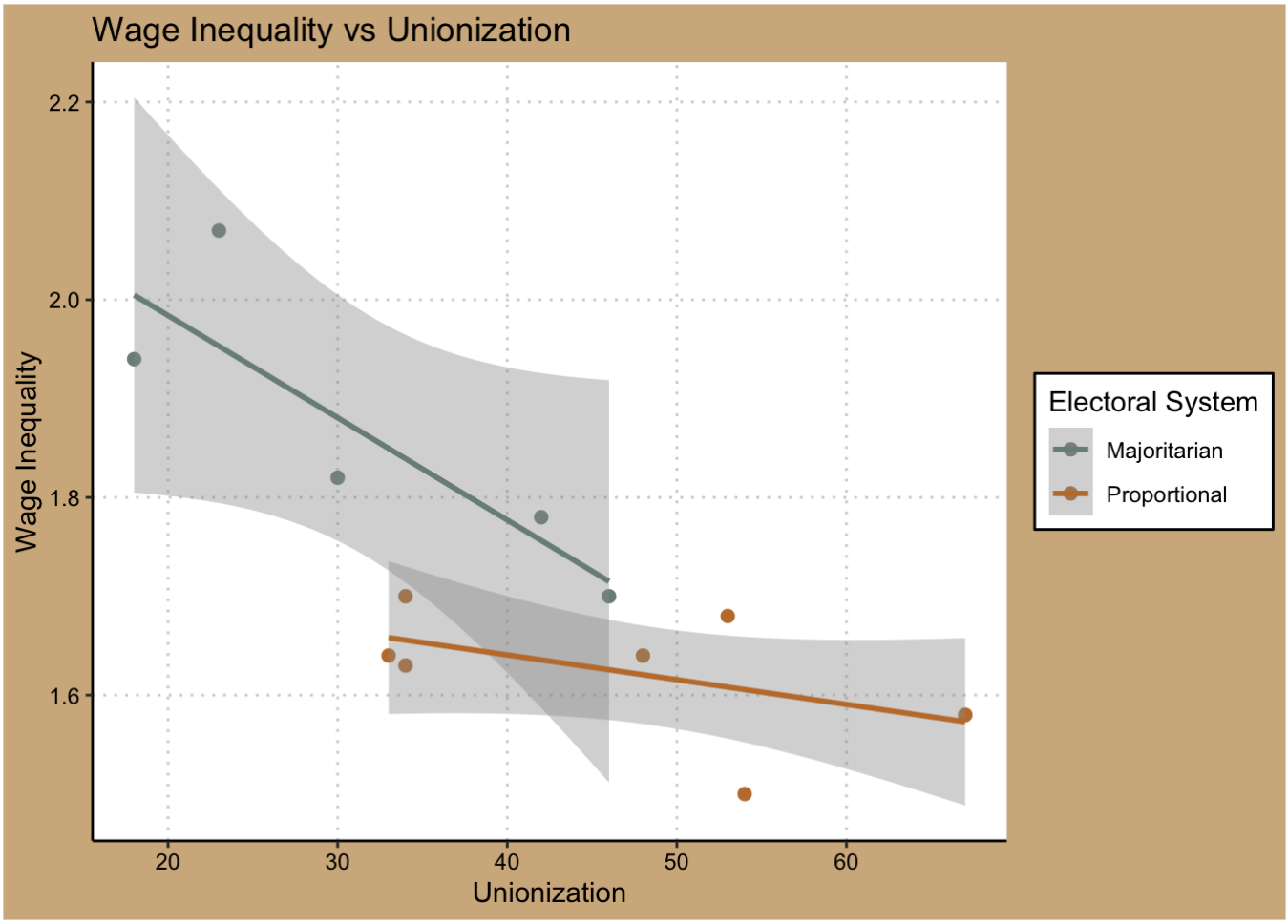

I wondered if there was a difference in countries based on their electoral system. I decided to color the plots based on whether the countries had majoratarian or proportional rule. I decided to use the Viridis color scheme, because it is useful for people who are color blind. However, I felt that the yellow was hard to see compared to the purple.

```
## `geom_smooth()` using formula 'y ~ x'
```



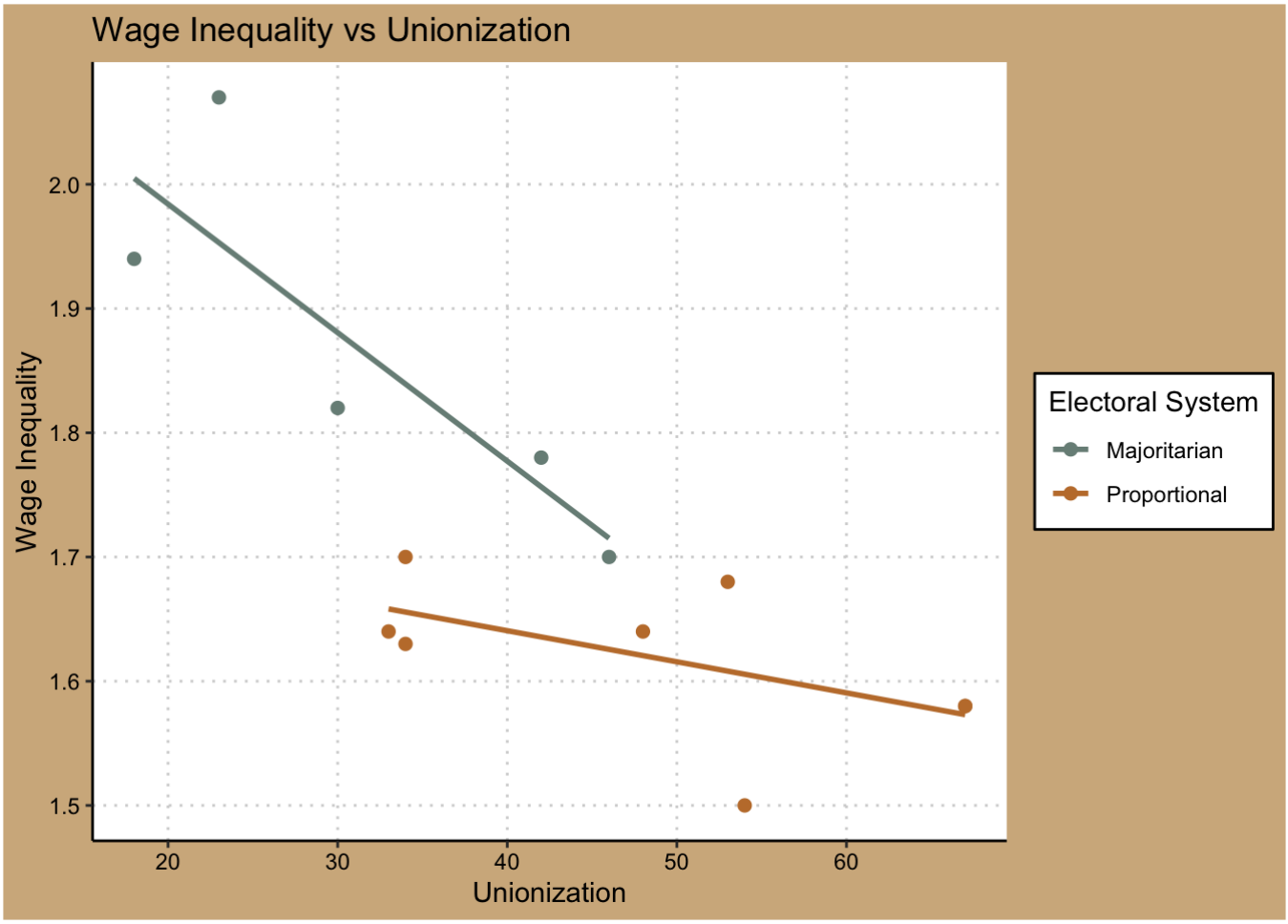

Next, I added lots of different aspects to my graph. I changed the color to moonrise1 from the wesanderson module. This made the two colors a grey and a light brown. I then added a title and changed the labels on the x-axis and y-axis so they reflected the real-world name of the variables, rather than the variable names in r. I made the panel tan, the guidelines light grey and dotted. In the legend, I changed the test to represent what the values stood for, Majoritarian for 0 and Proportional for 1. I went ahead and graphed the standard errors for the regression lines. I also changed the point size to 2, since there are so few data points.

```
## `geom_smooth()` using formula 'y ~ x'
```




Because I had so few data points, the standard errors took up most of the plot, and I felt like my graph was less clear with standard errors shown. My last plot was the same as the previous, but only the regression lines are shown, not the standard errors.

```
## `geom_smooth()` using formula 'y ~ x'
```


Wage Inequality vs Unionization
Wage Inequality
2.0
1.9
1.8
1.7
1.6
1.5
20
30
40
50
60
Unionization
Electoral System
Majoritarian
Proportional