

Visualizations

1. The following chart illustrates the relationship between the number of hours worked last week and the number of hours a person's spouse worked last week through a scatter plot. The graph presents a generally weak correlation between the two variables. There is an immense variation between the points plotted, therefore making it difficult to observe a trend between the studied variables. However, it is visible that for both variables, 40 is the most commonly worked number of hours, with less points being plotted the further away from 40.
2. The following chart illustrates the relationship between the number of hours worked last week and the number of hours a person's spouse worked last week by divorce status. The chart presents a linear regression model utilizing two regression lines, an orange one displaying the trend for those who are divorced, and a blue one displaying the trend for those who are not divorced. A positive relationship is observed for the divorced group, indicating that the more hours a divorced participant works, the more hours their respective previous spouse typically worked. For the non-divorced group, a negative relationship is observed, as the more hours a non-divorced participant worked, the less hours their respective spouse typically worked. It is calculated that the correlation coefficient for the divorced individuals is 0.098, while that of non-divorced individuals is -0.025, revealing a particularly weak relationship between the two variables. However, although weak, these results still hint at the trend that non-divorced folks work more than their respective spouses, while in contrast, under the divorced status, a positive trend is illustrated.
3. The following graph illustrates the distribution of highest degree achieved grouped by marital status through a group bar chart. It is visible that for all marital statuses, "high school" is the most common level of education attained, with "less than high school" coming in second, and the other three groups displaying smaller populations. For the "less than high school" bars, widowed folks appeared as the most frequently occurring marital status, with never married and divorced as the least frequent. For the "high school" bars, widowed divorced folks appeared as the most frequently occurring marital status, with widowed as the least frequent. For the "Associate/junior college" bars, divorced folks appeared as the most frequently occurring marital status, with widowed as the least frequent. For the "Bachelor's" bars, never married folks appeared as the most frequently occurring marital status, with widowed as the least frequent. Lastly, for the "Graduate" bars, married folks appeared as the most frequently occurring marital status, with separated as the least frequent. Such infrequencies in the mode for education levels make it difficult to establish a general trend among marital status.
4. The following graph illustrates the relationship between a participant's number of hours worked last week and the highest degree achieved, grouped by marital status, through a grouped bar chart. For all levels of education achieved, widows appear to be working the least number of hours. Other marital status groups presented weekly working hours between roughly 39 and 44, with minimal differences between one another for all levels of education attained.
5. This plot presents the number of hours a spouse worked last week and the highest degree achieved for married folks, though a bar chart. Based on the graph, it is clear that spouses with an "Associate/junior college" degree tend to work the most hours, with an average of roughly 42 weekly working hours. In contrast, spouses with a "Less than high school" level of education appear to work the least amount of hours weekly, with a mean of approximately 39. While such

differences are visible through the bar plot, it is also important to consider that their mean difference is quite small, with only 3 hours of distinction.

6. The following chart is a kernel density plot for the number of hours worked last week, grouped by marital status. The graph reveals that all marital status groups form a bell curve, each with one major peak, and most distribution near their respective peaks. All of the marital status curves had a peak near 40 for hours worked last week, with “divorced/single” having a significantly lower density peak than the other curves.
7. The following chart is a histogram distribution of the number of hours worked last week, grouped by marital status. The graph reveals that all marital status groups have one major peak near 40 for hours worked last week. Additionally, it also highlights married folks having the highest frequency near 40 weekly working hours compared to other groups, with divorce coming in second.
8. The following graph compares work status density based on marital status, through a stacked bar chart. It is clear that among all marital statuses, full-time employment is the most common type of work status, as it contains by far the highest density among all working status groups. Additionally, it is also noted that the married marital status group tends to have significantly higher density across all work status groups. This portrays married and full-time as the most common status groups across marital status and work status, respectively.
9. The following graph compares work status density based on spouse work status, through a stacked bar chart. The trend of full time employment being the most popular form of work status continues, as it is seen for both a participant’s work status as well as that of their respective spouse. This trend is observable across all participant work status bars.
10. The following graph shows the highest level of education achieved by a participant to that of their spouse, through a stacked bar chart. It highlights that for the most part, people tend to marry those with their same level of education, with most of the density being under the high school bar.

Appendix

11. The distribution of the number of hours worked in the previous week for someone who is married is displayed through a boxplot on this chart. The graph indicates that married individuals have a median average of weekly working hours of approximately 40, with 50% of married folks working between roughly 38 and 50 hours a week, seeing an overall range variation of about 50 weekly hours, excluding outliers.
12. The distribution of the number of hours worked in the previous week for someone who is single is displayed through a boxplot on this chart. The graph indicates that single individuals have a median average of weekly working hours of approximately 40, with 50% of single folks working between roughly 35 and 47 hours a week, seeing an overall range variation of about 47 weekly hours, excluding outliers.
13. The distribution of the number of hours worked in the previous week for those who are previously divorced and single is displayed through a boxplot on this chart. The graph indicates that these individuals have a median average of weekly working hours of approximately 40, with 50% of these folks working between roughly 25 and 44 hours a week, seeing an overall range variation of about 70 weekly hours, excluding outliers.
14. The distribution of the number of hours worked in the previous week for those who have always been single is displayed through a boxplot on this chart. The graph indicates that these individuals

have a median average of weekly working hours of approximately 40, with 50% of these folks working between roughly 35 and 46 hours a week, seeing an overall range variation of about 43 weekly hours, excluding outliers.

15. The distribution of the number of hours worked in the previous week for those who have been previously divorced and have remarried is displayed through a boxplot on this chart. The graph indicates that these individuals have a median average of weekly working hours of approximately 40, with 50% of these folks working between roughly 40 and 50 hours a week, seeing an overall range variation of about 41 weekly hours, excluding outliers.
16. The distribution of the number of hours worked in the previous week for someone who is divorced is displayed through a boxplot on this chart. The graph indicates that divorced individuals have a median average of weekly working hours of approximately 40, with 50% of these folks working between roughly 38 and 50 hours a week, seeing an overall range variation of about 48 weekly hours, excluding outliers.