

Box 9.1 Visualizing Multiple Regressions with Many Independent Variables

If your multiple regression model has more than two independent variables, you should think about which relationships are the most important to visualize because you are generally limited to visualizing relationships in three dimensions (i.e., one dependent variable and two independent variables).

Although you can sometimes use the size and/or color of plotting characters to represent varying values of additional independent variables, such complicated visualizations may be more confusing than helpful. Generally, you want to focus your work on the variables you have hypothesized about. You might want to make some simplifying assumptions about the expected values of other explanatory variables in order to plot a regression line with a realistic and appropriate intercept. You rarely want to assume that the values of all other independent variables are zero; assuming that other independent variables have their mean values is more realistic. Consider using the `scale` function discussed in Chapter 3 to mean-center independent variables that appear in your multiple regression model that you don't want to feature in your visualization of results; your plot will then show how the two featured independent variables affect the dependent variable when other independent variables are at their mean values.