13.6: Multiple Regression and Other Extensions

Simple linear regression as presented here is only a stepping stone towards an entire field of research and application. Regression is an incredibly flexible and powerful tool, and the extensions and variations on it are far beyond the scope of this chapter (indeed, even entire books struggle to accommodate all possible applications of the simple principles laid out here). The next step in regression is to study multiple regression, which uses multiple X variables as predictors for a single Y variable at the same time. The math of multiple regression is very complex but the logic is the same: we are trying to use variables that are statistically significantly related to our outcome to explain the variance we observe in that outcome. Other forms of regression include curvilinear models that can explain curves in the data rather than the straight lines used here, as well as moderation models that change the relation between two variables based on levels of a third. The possibilities are truly endless and offer a lifetime of discovery.