

Title

The Use of Statistics in the Legal System

Abstract

Many standard statistical procedures require that the underlying distribution follows a bell-shaped normal curve. However, if such procedures are blindly applied to non-normal data, unjustified or incorrect conclusions can be reached. In legal cases, this can impact the outcome of a trial. Such a problem occurred in a security law case for which I served as a statistical consultant. For the same data set, completely different results were obtained, depending on whether normality was assumed or not.

The talk concentrates on a new graphical method to check normality – the Robust Quartile-Quartile plot (RQQ plot). Applying the RQQ plot to data sets arising from two actual law cases—the aforementioned security law case and a drug smuggling case—I'll show that the RQQ plot provides a better indication of non-normality than existing methods. At the end of the talk, I'll introduce a new robust test of normality which was also motivated by the security law case.