

Part 4: The Triangular Distribution

The big advantage of the triangular distribution over the uniform distribution is that it incorporates a modal value, or outcome that is thought to be most likely to occur. The triangular distribution is widely used in business and project management, and is often referred to as 'three-point estimation' as it is based off three values, a minimum, a maximum, and a mode. Because it is based just off the three values it is sometimes also called the 'lack of knowledge' distribution, as it is often used when the cost of collecting data is high, so we only know these three values, and often in business the modal value is only an estimate.

The pdf for the triangular distribution is shown below, both as a function and a graph. The minimum value is 'a' the maximum value is 'b' and the modal value, or the point most likely to occur, is 'c'.

$$f(x) = \begin{cases} 0, & x < a \\ \frac{2(x-a)}{(b-a)(c-a)} & a \leq x \leq c \\ \frac{2(b-x)}{(b-a)(b-c)} & c \leq x \leq b \\ 0, & x > b \end{cases}$$

