

About lies and other statistics

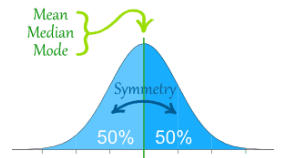
Everything you need to know about statistics in Project Management and Control



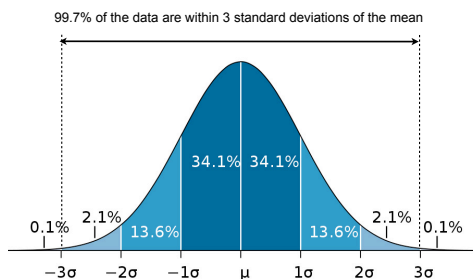
"There are three types of lies - lies, damn lies, and statistics." (Benjamin Disraeli)

Normal distribution

The normal (or Guassian) distribution is the most well-known distribution in statistics. It has a bell-shaped curve and a symmetrical structure and is used in Project Management to estimate the **probability of time and cost overruns**.



http://en.wikipedia.org/wiki/Normal_distribution



Three sigma intervals

Three sigma (3σ) intervals are used to calculate the interval between the average value of the distribution plus and minus three times its standard deviation (σ). It is known as the 68-95-99.7 rule since "nearly all" values are taken to lie within three standard deviations of the mean. This rule is used in Project Management to describe that all possible real durations of project activities lie with **almost 100% certainty** within an interval defined by the project manager and his/her team.



http://en.wikipedia.org/wiki/68-95-99.7_rule

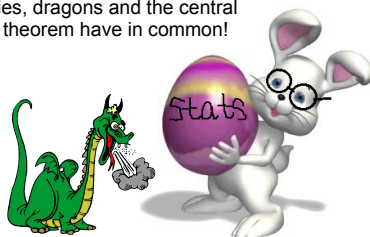
Sampling

Sampling is the selection of a subset of individuals from a statistical population to estimate characteristics of the whole population. In Project Management, a sample of a project can be the subset of the activities lying on the **critical path**.



[http://en.wikipedia.org/wiki/Sampling_\(statistics\)](http://en.wikipedia.org/wiki/Sampling_(statistics))

Go to YouTube and find out what bunnies, dragons and the central limit theorem have in common!



Central limit theorem

The central limit theorem is the foundation for many statistical procedures, including quality control charts and PERT calculations in Project Management, because the distribution of the phenomenon under study does not have to be normally distributed because its average will be. In PERT, this theorem is used to calculate a **service level** or **risk prediction** for the expected project duration.



http://en.wikipedia.org/wiki/Central_limit_theorem

This theorem is beautifully explained using bunnies, dragons and the "normal" world on YouTube at <https://www.youtube.com/watch?v=jvoxEYmQHNM>.