

# A fully Bayesian approach for sample size determination

Nasser Safaie\*

*Department of Industrial and Manufacturing Engineering, Wichita State University*

**Abstract.** The sample size determination has a significant role in the design and analysis of many engineering problems and data sampling projects. There are a number of sampling techniques that can be utilized to quantify the impact of engineering efforts and verify their effect on performance of a process. These include both traditional as well as Bayesian techniques and only some of them consider the economical aspect. The objective of this paper is to offer an economic Bayesian approach for determination of sample size. Utilizing the sequential sampling, this method shows whether the changes were successful to affect on process performance or not. Illustrative example depicts that the economic Bayesian approach calculates a smaller sample size compared to traditional methods