Multiscale Quality

Pedro Saraiva
University of Coimbra, Chemical Engineering, Coimbra, Portugal

Abstract

In our presentation we will share some of our personal experience in the application of statistical and quality based reasoning approaches to scales/contexts that are less commonly found.

In particular we will describe how we have been applying such tools to model and evaluate quality performances achieved in a particular region, measure employee satisfaction or forecast the quality future at a country level.

Furthermore, we will also testimony how some basic statistical concepts can be used and/or misused by politicians, as well as illustrate some very simple examples of such situations, and describe how basic tools can lead to more evidence based thinking when addressing public policy decisions.

Specific examples that we will cover are the following: i) development of regional quality strategic plans; ii) quality monitoring through regional excellence barometers; iii) national employee satisfaction barometers; iv) national models for predicting and building the future of quality; v) market shares and trends of quality in the world; vi) some experiences derived from the national parliament of Portugal; vii) a Bayesian view of politicians behavior.

In the end, we will thus explain how by combining quality engineering with quality management tools one can address issues that do cover a wide variety of situations, including several different orders of magnitude in space (from nm to km) and time (fom ns to years), within the same basic underlying quality principles, under what we have been doing for the past decades and called as being "Mutiscale Quality".

We believe that quality professionals will have a lot to gain if they nurture skills for easily moving between all the different scales at which quality can be defined and applied, as will be shown with specific examples.