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A process capability index for discrete processes

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Perakis and Xekalaki 2002, A process capability index that is based on the proportion of conformance, *Journal of Statistical Computation and Simulation*, **72**(9), 707–718. introduced a process capability index that is based on the proportion of conformance of the process under study and has several appealing features. One of its advantages is that it can be used not only for continuous processes, as is the case with the majority of the indices considered in the literature, but also for discrete processes as well. In this article, the use of this index is investigated for discrete data under two alternative models, which are frequently considered in statistical process control. In particular, distributional properties and estimation of the index are considered for Poisson processes and for processes resulting in modeling attribute data. The performance of the suggested estimators and confidence limits is tested via simulation.

Keywords:. Process capability indices; Proportion of conformance; Approximate confidence limits; Simulation study; Poisson distribution; Attribute data