

Abstract

Focusing on small and mild shifts, we suggest a repetitive and multiple dependent state control chart using difference in difference estimator presented by Awan et al. (2014). The auxiliary information can play a vital role in prediction theory. Using auxiliary information including the quality variable, it is observed that our proposed control charts are much efficient in detecting the shifts with respect to average run length (ARL). The proposed charts are of Shewart type which don't require a very large sample size for monitoring the system. It is important to elaborate that proposed chart using repetitive and multiple dependent state sampling procedures for difference in difference estimator are highly recommended for such processes which use auxiliary information and about which reference sample can easily be traceable.