

Public Abstract**First Name:**Ashkan**Middle Name:****Last Name:**Mirzaee**Adviser's First Name:**Ronald**Adviser's Last Name:**McGarvey**Co-Adviser's First Name:****Co-Adviser's Last Name:****Graduation Term:**SP 2017**Department:**Industrial Engineering**Degree:**MS**Title:**ALTERNATIVE METHODS FOR CALCULATING OPTIMAL SAFETY STOCK LEVELS

This work considers the problem of safety stock levels for the production of multiple items, each with random demand, across multiple facilities. The traditional methodology for calculating safety stock is discussed and an alternative method for improving service levels is offered. Normal and Gamma distributions are considered to estimate safety stock levels, and the performance of both models, along with a hybrid approach, are tested on a large-scale case study example. The results of this case study indicate that a better inventory policy with less underage and overage cost can be achieved by using the proposed model and solution procedure.