

# Availability Design of Supply Chain Distribution System

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Distribution system is an important supply chain component which significantly impacts profitability and speed of delivery. This paper presents a simplified approach to help practitioners design a supply chain distribution system or evaluate the availability of an existing one. The research develops a multiple regression model which connects the supply chain distribution design parameters with the overall system availability. The approach used the demand forecast to identify the minimum number of vehicles that must be in operating conditions daily for the system to perform its anticipated work. Three alternatives courses of action were identified, the cost associated with each alternative was estimated, and decision tree was employed to identify the least cost alternative. Regression analysis results reveal that the factors impacting the steady state system availability are: selecting drivers with excellent driving history, increasing the \_ vehicle ratio, increasing the rate of body repair, and the rate of mechanical/electrical repair, respectively.

**Keywords:** Supply chain, Design of distribution system, Availability, Reliability, Regression Model

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