

Accepted Manuscript

A Mathematical Definition and Basic Structures for Supply Chain Reliability:
A Procurement Capability Perspective

Chunghun Ha, Hong-Bae Jun, Changsoo Ok

PII: S0360-8352(18)30180-3
DOI: <https://doi.org/10.1016/j.cie.2018.04.036>
Reference: CAIE 5185

To appear in: *Computers & Industrial Engineering*

Received Date: 2 October 2016
Revised Date: 7 February 2018
Accepted Date: 18 April 2018

Please cite this article as: Ha, C., Jun, H-B., Ok, C., A Mathematical Definition and Basic Structures for Supply Chain Reliability: A Procurement Capability Perspective, *Computers & Industrial Engineering* (2018), doi: <https://doi.org/10.1016/j.cie.2018.04.036>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



A Mathematical Definition and Basic Structures for Supply Chain Reliability: A Procurement Capability Perspective

Chunghun Ha, Hong-Bae Jun and Changsoo Ok*

Department of Industrial Engineering, Hongik University
94 WAUSAN-RO, MAPO-GU, SEOUL, 04066, KOREA
okcs@hongik.ac.kr

Abstract Supply chain reliability has been receiving increasing attention in recent years, as it might provide a theoretical background for quantifying supply chain risks and uncertainties. However, most previous researches on supply chain reliability only focus on some reliability issue for limited supply chain structure without any general definition of supply chain reliability. This limitation makes it difficult to apply the theoretically well-established reliability engineering methodologies to various assessment and optimization problems related to supply chain reliability and risk. To tackle the issue, this paper provides a mathematical definition on supply chain reliability and relevant functions based on the traditional reliability theory, and subsequently, the basic structural reliability models for various types of supply chains. This paper also verifies that the proposed functions and structural reliability models are applicable to various types of supply chain with a case study of a computer assembly company.

Keywords: Supply chain risk management, Supply chain reliability, Reliability theory, Structural reliability, Series system, Parallel system, k-out-of-n system

* Corresponding author

Download English Version:

<https://daneshyari.com/en/article/7541229>

Download Persian Version:

<https://daneshyari.com/article/7541229>

[Daneshyari.com](https://daneshyari.com)