

# **2020 IEEE 13th International Colloquium of Logistics and Supply Chain Management (LOGISTIQUA 2020)**

**Fez, Morocco  
2 – 4 December 2020**



**IEEE Catalog Number: CFP2007P-POD  
ISBN: 978-1-7281-9882-8**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2007P-POD
ISBN (Print-On-Demand):	978-1-7281-9882-8
ISBN (Online):	978-1-7281-9881-1
ISSN:	2166-7349

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Table of Contents

<b>Titles and authors</b>	<b>Page</b>
<b>The potential of the blockchain for coordinated border management in developing countries</b> Younes Boumaaz and Mohamed Anouche.....	15
<b>Toward a smart port congestion optimizing model</b> Kamal Lakhmas and Abdelfettah Sedqui.....	22
<b>Dynamic dimensioning of logistics resources: Handling workload calculation Case of Moroccan multinational company</b> Anas Laassiri and Abdelfettah Sedqui.....	27
<b>Improving delivery conditions by dynamically managing the urban parking system: Parking availability prediction</b> Hanae Errouso, Jihane El Ouadi, Siham Benhadou, Hicham Medromi and Nicolas Malhene.....	32
<b>Machine-learning Based Approach for Zoning Urban Area in Consolidation schemes context</b> Jihane El Ouadi, Hanae Errouso, Siham Benhadou, Hicham Medromi and Nicolas Malhene.....	38
<b>The integration of Lean Manufacturing in Supply Chain: principles, wastes and tools</b> Asmae Mohib, Abdelali En-Nadi and Brahim Herrou.....	45
<b>Impact de la digitalisation sur la performance d'une chaîne logistique durable: cas de la filière agro-halieuistique</b> Jalila Bennouri and Zerouali Ouafae.....	51
<b>Calculation of the costs of health care services for road accident victims in TDABC: a systematic review of the literature</b> Zerka Abdelaziz and Jawab Fouad.....	57
<b>Barriers of the GSCM Implementation: A benchmark of studies of AHP and ISM</b> Hamza Fahmy, Mohamed Mazouzi, Ilham Kmichou, Imad Belassiria.....	64
<b>Variable Speed Limit (VSL) system applications in motorways</b> Hanae Lahmiss and Abdellah Khatory.....	72
<b>Study of the maturity of Logistics Service Providers in the Moroccan Context</b> Khaoula Azzouz, Jabir Arif and Mohamed Badr Benboubker.....	77
<b>Management Innovation for Environmental Sustainability in Seaports: Application of sustainable maritime balanced scorecard to the Port of Agadir</b> Mohammed Hicham Hamri and Soukaina Jouad.....	83
<b>Compétences durables : levier de performance de la chaîne logistique « Cas des entreprises industrielles »</b> Fatima Zahra Madhat and Sanae Elmaliki	88

<b>Lean supply chain and designing a customer-oriented dashboard: the case of an aerospace company</b> Lanotte Hervé, Ferreira Antonio and Brisset Pauline.....	95
<b>Application of Eco-driving among logistics service providers in Vietnam: Can the method of Delta International Co. Ltd., be diffused?</b> Lanotte Hervé, Rossi David and Nguyen Giang Truong.....	102
<b>Scheduling Optimization in Logistics 4.0</b> Sarah Elhamdi, Abdellah Abouabdellah and Oudani Mustapha.....	108
<b>The importance of automated cabinets in the management of drug circuits: the case of Hassan II Fez University Hospital Center</b> Abderrahmane Ouddasser, Yassine Belyagou and Anass Mellouki.....	113
<b>The role of collective experience in the process of individual valuation of an object: The case of a serious game on city logistics</b> Erika Allais.....	119
<b>La distribution durable : Quelle relation entre la MDD et le commerce équitable ?</b> Amina Elidrissi Tissafi.....	124
<b>Towards a more Hyperconnected, Smart, and Sustainable Urban Logistics: Development and Applications of Urban Logistics Platforms 4.0</b> Manuel Antonio Fernández-Villacañas Marín.....	129
<b>Contribution of LEAN Management in the Moroccan Ecosystem: Industrial Sector</b> Abdelouahed Boutayeb, Youssef Sabbani, Abdelali Ennadi and Abderrahim Chamat.....	135
<b>The Performance of the Urban Freight Transport Proposal for a Balanced Scorecard</b> Imane Moufad and Fouad Jawab.....	141
<b>Diagnosis of the main issues of extra-hospital medical patient transportation: Case of Morocco</b> Youness Frichi, Fouad Jawab and Said Boutahari.....	146
<b>Analysis of pickup-delivery vehicles movements: A vehicle-observation based freight survey</b> Imane Moufad and Fouad Jawab.....	152
<b>Supply Chain Digitalization Overview: SCOR model implication</b> Es-Satty Asmaa, Lemghari Radouane and Okar Chafik.....	157
<b>Measuring the competitiveness of Mediterranean ports via the Principal Component Analysis and Hierarchical Clustering Analysis methods</b> Rihab Ben Haj Ahmed, Aida Bouzir and Saloua Benammou.....	164
<b>Digitalization of port passage procedures: focus on the transit time of Goods</b> Ahmed BOUKLATA, Chafik BENSFIA.....	170
<b>Amelioration of Reorder Point replenishment method of an unstable production system</b> Abdelaziz Kheireddine and Abdelaziz Bouchelaghem.....	176
<b>Planning and synchronization of supply and demand in a poultry network</b> Tahraoui Nacera, Triqui Sari Lamia and Bennekrouf Mohammed.....	182

<b>Intermodal Terminal Location Problem under fuzzy restrictions</b> Mustapha Oudani.....	188
<b>Modeling the severity of road accidents at intersections</b> Meriem Allouch and Fedy Ouni.....	193
<b>Assessment of impacts from the transition to electric mobility in Morocco</b> Faissal Jelti, Rachid Saadani and Miloud Rahmoune.....	198
<b>Rail transport as a service for sustainable mobility Case: ONCF Morocco</b> Kadiri Mohamed and Ait Hammouch Haytham.....	203
<b>Assessing healthcare waste treatment technologies in Tunisia within fuzzy ARAS-H method</b> Maroua Ghram and Hela Moalla Frikha.....	209
<b>Parallel machines scheduling problem with skilled operators in a pottery handicraft firm</b> Sekkai Nor, Belkaid Fayçal and Triqui Lamia.....	215
<b>Solving the Production-Routing Problem with energy consideration: A case study from the furniture industry</b> Besma Zeddani, Fayçal Belkaid and Mohammed Bennekrouf.....	222
<b>The application of the AHP-TOPSIS for evaluation and selection the agriculture farms in the tomato processing industry: Algerian case study</b> Mohamed Amine Cherier, Mohammed Bennekrouf and Sidi Mohammed Meliani.....	228
<b>Towards a New Approach for Developing Patient Flow in Emergency Department: Sahloul and Hached Hospitals Case Study</b> Imen Hamzaoui, Aida Bouzir and Saloua Benammou.....	233
<b>Minimizing energy consumption in a Job Shop problem with unidirectional transport constraint</b> Abdelkader Hadri, Fayçal Belkaid and Aimade Eddine Bougloula.....	239
<b>Audit of Authorised Economic Operators (AEO): A new risk management approach based on Logistics Information System (LIS) analysis</b> Frikha Mohamed Amine and Mraïhi Râfaa.....	245
<b>Impact of 3D Loading on VRP Solutions: Simulation evaluation</b> Youssef Meliani, Yasmina Hani, Saad Lissane El Haq and Abderahman El Mhamedi.....	250
<b>Trade-offs among lean, green and agile paradigms in supply chain management: Literature review</b> Fadwa Bouhannana and Akram Elkorchi.....	255
<b>Les déterminants transactionnels et relationnels de la relation inter organisationnelle dans l'amélioration de la fidélité inter-acteurs:cas du secteur agroalimentaire au Maroc.</b> Zineb Youbi Idrissi.....	260
<b>Tolerance analysis with the 1D angular dimension chain: Application</b> Mouhssine Chahbouni, Mustapha Elmouden, Meryem Miskin, Said Boutahari and Driss Amegouz.....	266
<b>Competencies Assessment Approach based on Multiple Criteria Decision Making</b> Ikram Bensouana, Chahinaze Fikri Benbrahim, Hamid Azzouzi and Naoufal Sefiani.....	272
<b>Sustainable Supply Chain Management Practices and Firm Performance: Evidence from Small and Medium Enterprises of Pakistan</b>	

Uzair Ahmed Chang, Arifa Bano Talpur, Abeer Chang and Tooba Hashmi.....	281
<b>Control system in the smart grid: State of the art and opportunities</b>	
Meryem Meliani, Abdellah El Barkany, Ikram El Abbassi, Abdel Moumen Darcherif, Morad.....	289
<b>Méthodologie d'évaluation de l'impact du transport de marchandises en ville sur le développement durable : Revue de littérature</b>	
Rihab Ezzaher and Ahmed Bouklata.....	295
<b>The similarities and differences between the green and sustainable supply chain management definitions and factors: A literature review</b>	
Imane Tronnebati and Fouad Jawab.....	302
<b>Service supply chain: A prospective analysis of sustainable management for global performance</b>	
Badr Bentalha, Aziz Hmioui and Lhoussaine Alla.....	308
<b>Adaptation of an Enterprise Resource Planning in a faculty</b>	
Wahiba Fandi, Sihem Kouloughli and Abderahman Bensmaine.....	315
<b>What sustainable development for the automotive industry in Morocco?</b>	
Benchekroun Mohamed Amine and Boumane Abderrazak.....	320
<b>Motivations related to the quality management system and benefits of its implementation in the company: state of the art</b>	
Saida Echour and Taibi Nbigui.....	325
<b>Spatio-temporal hotspots analysis of pedestrian-vehicle collisions in Tunisian coastal regions</b>	
Fedy Ouni, Mohamed Hzami and Harizi Riadh.....	330
<b>The Manufacturing Executing System as a shop floor management system</b>	
Fatima Bennouna, Sarah Adnane and Driss Amegouz.....	336
<b>Optimization of production system with environmental consideration: the effect of worker learning in a metallurgy factory</b>	
Sekkal Djazia Nadjat and Belkaid Fayçal.....	343
<b>Green scheduling of permutation flow shop with tool deterioration and constrained tool replacement: A case study from metalworking industry</b>	
Radhwane Boufellouh and Fayçal Belkaid.....	349
<b>Multi-Periods Production Planning for an Industrial Company</b>	
Djama Asmaa Zohra Asmaa Zohra, Triqui-Sari Lamia and Belkaid Fayçal.....	355
<b>Logistics pooling as a sustainable development service</b>	
Kadiri Mohamed and Mharzi Sanae.....	360
<b>A strategic approach for the optimal location of recycling bins in the city of Boudjlida in Algeria</b>	
Mohammed Bennekrouf, Wassila Aggoune-Mtalaa, Khouloud Benladghem and Hanan Othmane Cherif....	367
<b>Urban logistics: Quantification of delivery bays, levers to optimise last-mile logistics</b>	
Rehioui Mourad.....	373
<b>Industry 4.0 impact on Lean Manufacturing: Literature Review</b>	
Siham Tissir, Anass Cherrafi and Said El Fezazi.....	379

<b>A proposed scale for measuring logistics performance: Case of the Moroccan retail sector</b> Laila Zeroual and Ouafae Zerouali Ouariti.....	384
<b>The potential use of Machine Learning in firms: The evidence of industrial enterprises.</b> Meriem Riad, Chafik Okar and Ayoub Ghaouta.....	389
<b>Contribution to the design of a logistics chain performance measurement system: case of a Moroccan SME group</b> Rachid Ez Zouaq.....	397
<b>Multi- aisle AS/RS dimensions optimization for travel time between the storage bin and the retrieval bin minimization</b> Sihem Kouloughli and Malika Korso Feciane.....	404
<b>Port Performance Indicators: An Exploratory Study in the Moroccan Context</b> El Mehdi Jebrane and Ouafae Zerouali Ouariti.....	409
<b>Blockchain technology in supply chain management: toward blockchain implementation in retail market</b> Manal Hader, Abderrahmane Elmhamedi and Abdellah Abouabdellah.....	417
<b>The impact of congestion on the cost of transport in urban areas Application for the location of an urban distribution center</b> Maha Bennani, Yasmina Hani, Fouad Jawab, Abderrahman El Mhamedi and Amegouz Driss.....	423
<b>Improving sustainability in public hospital through Medicines Supply chain management</b> Imane Ibn El Farouk and Fouad Jawab.....	429
<b>The vehicle routing Problem with Time Window and Stochastic Demands (VRPTW-SD): Review</b> Mariem Boujlil and Saâd Lissane Elhaq .....	434
<b>Decision making process based on Sales and Operations Planning (S&amp;OP): a case study</b> Hamza Samouche, Abdellah El Barkany and Ahmed Elkhalfi.....	440
<b>Modeling and Analysis of Three-Level DC-DC Boost Power Converter Application to Photovoltaic Cells</b> Elmostafa Mahfoudi, Abdelouahed Mesbahi and Abdelhadi Radouane.....	445
<b>Impact of Covid-19 on the Hospital Supply Chain</b> Ahmed Chtioui, Imane Bouhaddou, Asmaa Benghabrit and Abla Chaouni Benabdellah.....	451
<b>Reverse Logistics and Competitivity Of The company: Literature Review</b> Asmaa Bentamar and Omar Ourahou.....	458
<b>Abilities for a successful maintenance digital transformation</b> Youssef Lamdasni and Chafik Okar .....	464
<b>The Balanced Scorecard, what impact on the performance of Supply Chain Management: Case of large business in Morocco</b> Hafida Benseddik.....	470
<b>Modeling the patient journey in a maternity unit of the UHC in Tunisia: an approach to overcrowding analysis</b> Sayda Ben Sghaier and Rafea Mraih.....	476

<b>Sustainable framework of Lean manufacturing implementation during supporting programs</b>	
Fatima Ezzahra Cherqaoui and Saâd Lissane Elhaq.....	483
<b>Impact of electric mobility on the sustainable development of the country, Case study in Morocco</b>	
Taoufiq El Harrouti, Abdellah Abouabdellah and Driss Serrou.....	489