

2024 IEEE 15th International Colloquium on Logistics and Supply Chain Management (LOGISTIQUA 2024)

**Sousse, Tunisia
2-4 May 2024**



**IEEE Catalog Number: CFP2407P-POD
ISBN: 979-8-3503-8392-8**

**Copyright © 2024 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:	CFP2407P-POD
ISBN (Print-On-Demand):	979-8-3503-8392-8
ISBN (Online):	979-8-3503-8391-1
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
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Preamble

Committee

Authors

Titles and authors	Pages
A Combined AHP-GP model for optimizing physician scheduling: A case study Khadija WERGHI, Jihène JLASSI, Ines REKIK, Abderrahmane ELMHAMEDI	15
A decision-making tool for assessing CSR and Logistics performance within a company's supply chain Zakaria CHEKOUBI	22
A theoretical framework to guide decision-making in adopting supply chains collaborative practices Zainab SAJID, Imane IBN EL FAROUK, Fatima Zahra MAJIDI, Amine EL ASRI	33
An Improved population-based Simulated Annealing algorithm for solving a Green Vehicle Routing Problem Abir AMIRA, Ali HELALI, Najeh BEN GUEDRIA	42
Analysis of disruptions and adaptations in the insurance supply chain in response to the COVID--19 crisis Ines NASRI, Aida BOUZIR Saad, Saloua BENAMMOU	49
Analysis of the impact of biodiesel on the energy transition in the transport sector Safa SOUARA, Anyssa TRIMECH, Saloua BENAMMOU	58
Analysis of the insurance supply chain in the context of geopolitical risks and economic uncertainty in France Khaoula MAHMOUD, Saloua Benammou	65
Application of machine learning techniques for ambulance coverage prediction Raja MANAA, Maroua BEN TALHA, Lina ABOUELJINANE, Asmaa BENGHABRIT, Youness FRICHI	73
Artificial Intelligence and Supply Chain Management: Implications for the Smart Cities of Tomorrow Nabil ARZOU, Ikram AIT HAMMOU, Miloudi KOBİYH, Marouane MKIK, Ali HEBAZ	82
Artificial Intelligence Integration in Transportation Marketing: A Literature Review Sanae EL MALIKI, Wiam BEN ABBOU	91
Artificial intelligence use in urban logistics and transport activities : Overview and research trends Imane MOUFAD, Fouad JAWAB, Manal EL YADARI, Hafssa RIDAOUI	99

Artificial Intelligence: a Key to Smart and Sustainable Urban Freight Transport Hafssa RIDAOUI, Imane MOUFAD, Fouad JAWAB, Jabir ARIF.....	106
Assignment of patients within a hospital department: case of pediatric department of Hedi Chaker Sfax hospital Oumaima FERSI, Mohamed Ali ELLEUCH, Jihène JLASSI ELMABROUK	114
Blockchain an era for enhancing trust, collaboration and Logistics Performance Laila ZEROUAL, Ghizlane ERRABI	121
Blockchain and the new vendor-managed inventory: proposal of a conceptual model based on innovation in inter-organisational supply chain management practices Kawtar BELLANY, Youssef DHIBA, Adil LOULID	128
Brand management in supply chain 4.0: Building a Sustainable Development Brand for Service Providers Qianru Cong, Shan Zhang, Chunwei Lyu	137
Building Resilient and Sustainable Supply Chains through ESG Integration Giannis T. TSOULFAS	145
Cocreating Sustainability in the Circular Supply Chain: A Qualitative Exploration among Moroccan SMEs Youssra LAZRAK , Amina EL IDRISSE TISSAFI.....	154
Contribution of Geomatics in the improvement of road traffic in Algeria (Oran) Sofiane ADJLOUT, Driss DJAOUAD RAHAL, Miloud DRISS	161
Courier, Express, Parcel market with a complex system interpretation – The Hungarian case Csilla Bartucz, Edit Süle	168
Critical Analysis of Logistics Transformation in Morocco Under The Auspices of Artificial Intelligence: Government Perspectives From the perspective of Innovative and Technology-Driven Public Management Abdelhamid AMMAR, Hanan AMAHMOUD, Kaoutar EL MENZHI, Marouane MKIK, Ali HEBAZ, Alaa Eddine EL MOUSSAOUI	178
Cryptocurrencies and Environmental Sustainability: A Complex Challenge and Emerging Positive Trends for Logistics Transactions Anyssa TRIMECH, Roua MILI, Saloua BENAMMOU	185
Current trends in scientific research on managerial innovations in healthcare supply chain: A bibliometric analysis Nouhaila BEN KHIZZOU, Mourad AARABE, lhussaine ALLA.....	195
Data Modeling Review: the case of Vaccine Lifecycle Management Sanae ALLAM, Adiba EL BOUZEKRI EL IDRISSE, Aicha SEKHARI SEKLOULI.....	203
Decided bus lanes and the attractiveness of public transport Souhir BENNAYA, Moez KILANI	212

Demand-Driven Supply Chain Harmonizing Digitalization, Resilience, and Sustainability: Exploring the Synergy through a Bibliometric Literature Review Majda BOUALAM, Imane IBN EL FAROUK	220
Diagnosis and quantification of heating and cooling energy needs of a residential home in Algeria Hicham KADRAOUI, Nacéra TAHRAOUI	227
Digital Transformation in Maritime Safety Management: Optimizing HSQE Processes for Efficiency and Resilience Ioannis FILIPPOPOULOS, Carlos CABALLERO, Andreas CHRISTOFI, Yiannis KIOUVREKIS.....	234
Digitalization and Business Automation for an Effective Supply Chain Integration: A literature review Najat TOUFAH, Alaa Eddine EL MOUSSAOUI	242
Driving Green Innovation: The Nexus of Green Intellectual Capital and Supply Chain Integration: A Comprehensive Literature Review Sanae EL MALIKI, Fadela TAZI	249
Elective surgery prioritization criteria and tools: A literature review Safaa BAMAAROUF, Fouad JAWAB, Youness FRICHI	255
Empowering Digital Supply Chains with PLM 4.0 and Emerging Technologies Hala HMAMED, Chaimae ELBELIDI, Heba MALIKI, Imane BOUHADDOU	262
Energy optimization approach for the Single-Row Facility Layout Problem Amel Nihel DEBBAL, Amina OUHOUD, Fayçal BELKAID	269
Enhancement of Human Capital: Pillar of Supply Chain Resilience Rajae OUBELLA, Miloudi KOBIYH	276
Enhancing Pharmaceutical Supply Chain Management: A Blockchain-Based Model Nehal ETTALOUI, Sara AREZKI, Taoufiq GADI	283
Enhancing Supply Chain Performance through Production Planning: A Model for Moroccan Aerospace Companies Soumaya IDRISSE JAZOULI, Oumaima OULLADA, Mohamed BEN ALI, Ahmed ADRI, Said RIFAI	289
Enhancing Supply Chain Resilience and Sustainability through Robustness and Agility Attributes Fatma LEHYANI, Hanen MESSAOUD, Alaeddine ZOUARI	299
Enhancing Supply Chain Resilience through Collaborative Logistics Pooling: A Case Study in the Retail Sector Mourad MAKACI, Iskander ZOUAGHI	306
Enhancing sustainable supplier evaluation: A comprehensive system integrating sentiment analysis and objective criteria Imen RAIES, Mouna REKIK	316

Enhancing Transparency and Efficiency: Leveraging Blockchain for Overcoming Challenges in Plastic Recycling Industry Mohamed Mounir HARRIR, Lamia TRIQUI-SARI.....	323
Examining the Impact of Maritime Transportation Infrastructure Investment on European Port-Cities' Environmental Degradation: A Scrutiny of the Environmental Kuznets Curve Hypothesis Rabeb KAMMOUN, Chokri ABDENNADHER	330
Exploration of the perception and level of integration of Supply chain resilience criteria in Moroccan companies Hamza ERRAOUI, Miloudi KOBIYH	340
Exploring the Role of Digital Twins in Future Supply Chain Industry: Characteristics, Technologies, and Applications Ibtissem ALGUIRAT, Fatma LEHYANI, Alaeddine ZOUARI	349
Factors Impacting Traffic Crash Severity Of Vulnerable and Non-Vulnerable Road Users in Tunisia Fedy OUNI, Maissa CHAIBI	360
Fuzzy Logic Speed Advisory System for Optimal Energy Efficiency Based on Fuel Consumption and Road Speed Limit Tarek OTHMANI, Samia BOUBAKER, Ferid REHIMI, Souheil EL ALIMI	370
GIS-Based Methodology for Assessing Public Transport Accessibility: A Case Study of Marrakech, Morocco Nouriddine HOURAN, Achraf OUKHADDA, Abdelilah ROCHD, Mohamed BENAYAD, Soufiane MAIMOUNI, Amine ALLOUHI	380
Green purchasing Logistics: A lever for Ecological Performance Saoussen BEN AMMAR, Meycen MESKIN	388
Green supplier selection criteria in automotive industry Imane TRONNEBATI, Fouad JAWAB, Youness FRICHI, Arif JABIR	395
Hospital logistics based on blockchain: A literature review Hanane HALIMI, Fouad JAWAB, Ahmed BOUKLATA, Youness FRICHI	402
Human factor of multi attribute decision aid making system for Supply Chains Gergely Hódosi, Edit Süle, Tamás Bódis.....	410
Human-centric supply chain management towards Industry 5.0 Oumaima ZAID, Jabir ARIF, Fouad JAWAB	418
Hybrid Transport mode selection using machine learning and MCDM Ichrak BENMOHAMED, Mouna REKIK	428
Impact of bitcoin transaction volume and energy consumption on environmental sustainability : evidence through ARDL model Roua MILI, Anyssa TRIMECH, Saloua BENAMMOU	436

Impact of Industry 4.0 technologies on logistics function: A case study on warehouse operations management in the automotive sector Ibrahim ROUIDI, Driss SERROU, Fayçal MIMOUNI, Ismail LAGRAT, Adnane ESSEHMOUDI, Abderrahman ELMHAMED, David TCHOFFA	443
Impact of the use of RFID technology in the sustainable management of the Supply Chain: case of Moroccan industrial companies Najoua FELLAHI, Zakia ERRABIH	450
Improvement of the Maintenance's Performance through the Assignment of Human Resources Ayoub CHAKROUN, Yasmina HANI, Abderrahmane ELMHAMED, Faouzi MASMOUDI	458
Improvement of the supplier selection process in the Automotive Industry: Case study with a Moroccan Tier 1 Company Ismail OUAHABI, Wiam AYRIR, Oulaid KAMACH.....	466
Improving operator health and safety through logistics automation in the mining sector: An Overview Wafaa BIADI, Adiba EL BOUZEKRI EL IDRISSE, Safaa ASSIF	474
Lean management in public hospital medicines supply chain: a literature review Bouchra BOUTERFAS, Imane IBN EL FAROUK	483
Lean Six Sigma in Higher Education: Systematic Review Siham ALAMI CHENTOUFI, Abdelali ENNAD	492
Literature Review on Cost Management and Profitability in E-Supply Chain: Current Trends and Future Perspectives Hamza EL KEZAZY, Yassine HILMI, Mounia AMER, Haj hocine IBN ZIYAT	499
Logistic 4.0 Implementation For Efficient Urban Freight Transport: A Systematic Literature Review Manal EL YADARI, Imane MOUFAD, Fouad JAWAB, Jabir ARIF.....	508
Logistics Service Provider: Literature review, perspectives, and opportunities Haifa JRIBI, Abdessalem JERBI, Hatem BENTAHER	516
Maintenance Strategy Selection based on Medical Equipment Prioritization Youness FRICHI, Fouad JAWAB, Abderrahmane BENKACEM, Lina ABOUELJINANE.....	524
Mathematical modelling of the one-to-one Pickup and Delivery Problem with time Windows with a single vehicle Hanen AYDI, Sameh CHTOUROU.....	531
Mediating the role of Internet of Things in Sustainable Automotive Supply Chain: Empirical Evidence from a Delphi Analysis Asmae EL JAOUHARI, Jabir ARIF, Fouad JAWAB	538
Multilayer perception neural networks method-based supply chain performance prediction by a new augmented of SCOR® metrics: SCOR®4.0 Mariem MRAD, Younès BOUJELBÈNE	547

Optimization of Port Logistics performance through Innovative Technology Management	
Ouail El IMRANI	555
Optimizing Berth Allocation in the Port of Rades: A Discrete Timetabling Approach	
Sirine ISSAOUI, Abderrahmen ELMHAMEDI, Souhir ABBES	564
Overcoming Barriers of Sustainable Agrifood Supply Chain Through Conservation Agriculture and Multi-Capital Sustainability	
Khouloud DAMMAK, Alaeddine ZOUARI, Lilia SIDHOM	572
Predictive Modeling of Carbon Dioxide Emissions from Gasoline-Powered Vehicles Using an Artificial Neural Network	
Abdessalem JBARA, Najah KECHICHE, Ahmed KOMTI, Khalifa SLIMI.....	581
Procurement improvement process based on industry 4.0 & lean manufacturing: A case study	
Aicha ELAMMARI, Jabir ARIF, Fouad JAWAB	588
Purchasing Portfolio Modeling with Kraljic Matrix, Application in the Moroccan Construction Sector	
Fatima Zahra MAJIDI, Imane IBN EL FAROUK, Amine EL ASRI, Zineb SAJID	598
Quality Prediction in Injection Molding Using Machine Learning Methods	
Omayma EZ-ZAHRAOUY, Oualid KAMACH.....	606
Quantitative analysis of the main causes of road insecurity around schools in the city of Sousse	
Yasmine AMMAR, Ahmed DERBEL	613
Quantitative Study of Electricity Consumption: Regression on the Main Components	
Leila LOUHICHI, Saloua BENAMMOU.....	622
Regional transport disparities in Tunisia :Development of a Social Transport Sustainability Index STSI	
Emna KHAMMASSI, Ferid REHIMI, Adel KALBOUSSI	630
Resilience Championship: Innovative Strategies for Supply Chain Management in the Face of Global Storms	
Salah-Eddine TALHA, Jabir ARIF, Fouad JAWAB	639
Responsible sourcing: a context analysis study of the case of Morocco	
Adil CHERKAOUI, Marouane ALIAT	649
Reverse logistics: research background and topic trends	
Soukaina DNAYA, Adiba EL BOUZEKRI EL IDRISSE	657
Rising transport costs: a major challenge for logistics management	
Mariam LAZRAK, Hamid EL AMRANI	666
Road insecurity: towards the development of a new proactive strategy in Tunisia	
Besma SOUISSI, Saoussen BEN AMMAR, Hana MOSBAHI	673
Smart city implementation of electric vehicles: Challenges and Opportunities	

Meriem AZARI, Jabir ARIF, Hassan MOUSTABCHIR, Fouad JAWAB	680
Studying The Socioeconomic Impacts Of Urban Congestion : An empirical validation on revealed preferences survey data for the city of Sahline Khadija ONS, Khaled BEN ABDALLAH, Bessma SOUISSI	689
Supply Chain Collaboration & Financial Performance – Moroccan Automotive Industry Sara BOUKAIDI LAGHZAOU, Khalid BENMLIH.....	698
Supply Chain Management and Artificial Intelligence: A Bibliometric review Meryem RHOMRI, Khaoula MOUSSAOUI, Youness ZERHOUNI LAQRIB, Nafii IBENRISSOUL.....	705
Supply Chain Management: what innovations in the era of digital transitions? Ikram CHAIB, Mounia CHERKAOU, Khalid MEFTAH	713
Supply Chain Maturity Models Comparative study via a systematic review and illustration in the automotive industry sector Amine EL ASRI, Imane IBN EL FAROUK, Fatima Zahra MAJIDI, Zineb SAJID	723
Supply chain risk management and supply chain resilience under disruption risks: theoretical exploration Soukaina SAHAB, Salah OULFARSI.....	731
Sustainability Indicators for Evaluating the Activities of a Home Delivery Company: a Tunisian Case Study Siwar BELLAHIRICH, Ayla AMAMOU, Lilia SIDHOM, Dhafer MEZGHANI, Abdelkader MAMI	738
Sustainable Practices in Moroccan Citrus Farming: A Case Study on Agri-Food Supply Chains Fatima Zahra BENTALEB, Mounaïm TAKI	745
Sustainable supply chain and governance mechanisms in the agri-food sector Thrycia TITE.....	752
Sustainable Supply Chain Management in Morocco: A Critical Analysis Fatima Zahra BENTALEB, Mounaïm TAKI	760
Sustainable Supply Chain Management: Past Evaluation and Present Analysis for Future Research Perspectives Molk OUKILI GARTI, Jabir ARIF, Fouad JAWAB	768
The Artificial Intelligence and Public Procurement Riyad BERRAIDA, Laila EL ABBADI	775
The dynamic linkage between ecological footprint, foreign direct investment, industrialization, urbanization and airway freight transportation. Evidence from BICS countries Jabeur SALHI, Fedy OUNI, Mohamed DHIBI	783
The Impact of Artificial Intelligence on Supply Chain Resilience: bibliometric analysis and systematic literature review Sara GHOUATI, Lamia RIZI, Salah OULFARSI, Adil EL AMRI.....	792

The Impact of Traffic Lights and Electrification’s Fleet on Energy Consumption and Emissions : A Tunisian Intersections Case of Study Samia BOUBAKER, Tarek OTHMANI, Ferid REHIMI, Souheil EL ALIMI	799
The Importance of the logistics information system "LIS" for the facilitation of customs control: case of authorized economic operators “AEO” Mohamed Amine FRIKHA, Younes BOUJELBEN	807
The local household travel survey: A look into the travel patterns of Sfax city Yasmine AMROUNI, Ahmed DERBEL, Younes BOUJELBEN.....	814
The Multidimensional Impact of Information System Integration on SCM : Evidence from Citrus Packing Stations in Morocco Fatima Zahra BENTALEB, Mounaïm TAKI	821
The Role Of Artificial Intelligence in Enhancing Agility in the Supply Chain of Large Moroccan Companies Meryem BOURAOUD, Hafida BENSEDDIK.....	831
The Role of Reusable Packaging in Supply Chain Management: Insights from Machinery, Aerospace, and Automotive Ivan KUDRENKO, Lindsey HALL	839
The Spiral of Managerial Innovation: Illustration through the Introduction of “Synchronous Logistics” Flow Management in a Moroccan Automotive Salwa HANIF, Imane IBN EL FAROUK	846
Towards Proactive Maintenance : The Implementation of Digitized SCADA Systems for Predictive Maintenance Optimization in Production Environments Mohammed Oussama SEDDINI, Lamia TRIQUI-SARI.....	854
Towards Smart Scheduling in the Era of Industry 4.0 for Sustainable Manufacturing Assiya ZAHID, Patrice LECLAIRE, Lamia HAMMADI, Roberta COSTA AFFONSO, Abdessamad ELBALLOUTI.....	862
Transition to Supply chain 4.0 based on Risk Management and Inventive Design in a Circular Economy environment: State of the art Marwa HAMDEN, Fatma LEHYANI, Alaeddine ZOUARI, Rémy HOUSSIN, Amadou COULIBALY	869
Transport 4.0 tools opportunities and benefits in last mile logistics: Past review and future perspectives Soumaya FELLAHI, Jabir ARIF, Fouad JAWAB	876
Unveiling Medical Transportation Problems: extra-hospital, inter-hospital and intra-hospital challenges Kaoutar ED-DOUICHI, Fouad JAWAB, Youness FRICHI	884
Where are you going, logistics of the future? (Quo vadis logistica futuri?) Mariusz JEDLIŃSKI	892
Women's urban mobility in Tunisian Sahel: Analysis on local and regional scales Mehdi EL KÉBIR, Aymen GHÉDIRA.....	901