Decision Making in Logistics Management in the Era of Disruptive Technologies

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Abstract

Purpose: The purpose of this editorial is to first review the published research at the intersection of logistics management, decision making and disruptive technologies, and second present the review process adopted for this special issue, and then finally summarize the list of articles accepted for publication.

Design/Methodology/Approach: For the review, we identified relevant articles by searching for keywords related to logistics, disruptive technology, and decision making together. We only included the literature published in operations management, production management, supply chain management, logistics management, technology management, and information management related journals. After excluding the articles that were purely focussing on logistics management, decision-making and disruptive technologies, and those discussing decision making in logistics management without the integration of a disruptive technology were excluded from the review, leading to 21 relevant articles. In addition to the review, we also documented the entire process of receiving, reviewing and accepting articles for publication in this special issue.

Findings: In the results section, we document the review of shortlisted 21 articles by presenting their objectives, disruptive technologies considered, decision-making context in logistics, and their findings. We finally summarize the seven individual articles accepted for publication by capturing their research objective, method, and contribution.

Originality/Value: We believe this to be one of the initial special issue editorial linking disruptive technologies to the domain of operations, logistics and supply chain management. In addition to reviewing the relevant literature on the topic, we list the avenues for future research.

Keywords: Disruptive technologies, logistics management, decision making, literature review.
Decision Making in Logistics Management in the Era of Disruptive Technologies

Introduction
During the past century, logistics as an industry and academic discipline has been experiencing revolutionary growth and development (Liao-Troth et al., 2012). Literature in the domain of decision making in logistics management has been focussing on understanding the role logistics and logistics managers play in creating value for the customer and other associated stakeholders (Walters, 1999). To achieve the desired objectives, logistics managers are often seen to undertake mainly three strategic decisions at the firm level (Wanke and Zinn, 2004). The first stream of decision making involves resolving the dilemma between make to order versus make to stock decisions. Process technology, obsolescence, lead-time ratio, delivery time and perishability are some of the key variables affecting this decision-making (Soman et al., 2004; Van Donk, 2001). The second stream of decision making is whether the manager would deploy push or pull inventory logic as a strategic decision. The push decision is based on the basic of demand planning and forecasting whereas the pull decision is based on the demand itself (Davis et al., 2014). Different studies have tried to explain the factors behind the logic and its possible implications to strategic decision making in logistics management (Abad, 2003). The third strategic decision is whether to adopt a centralized inventory system or a decentralized one. Freight considerations, transportation costs, location node issues and inventory turnover are some of the relevant variables that may affect inventory decentralization decisions (Abdul-Jalbar et al., 2003; Zinn et al., 1989). Based on these strategic decisions, logistics system across the supply chain get configured. This configuration of logistics systems makes a critical contribution towards managing disruptions such as COVID-19 and recovery of supply chains post such disruptions (Singh et al., 2020; Choi, 2020).

Scholars have stressed the importance of investigating and understanding the evolution of logistics with digital revolution that is being currently experienced due to the emergence of disruptive technologies (Daduna, 2019; Liu et al., 2020). Christensen (1997) first termed disruptive technology and explained it as a type of technology to replace the existing mainstream technology in unexpected ways (Liu et al., 2020). These disruptive technologies have often been simpler and usually easier to use and handle (Dhillon et al., 2001), making them economically and operationally appealing to managers. Big Data (Nagendra et al., 2020a&b), Artificial Intelligence (Rodriguez-Espindola, et al., 2020), Blockchain (Wamba et al., 2020), 3D Printing (Mohr and Khan, 2015), Internet of Things (IoT) and Smart Robots for Automation (Goldsby and Zinn, 2016) are different examples of the disruptive technologies. These disruptive technologies are expected to dominate the industries and transform the value delivery process with their new and exciting features at affordable prices (Aryal et al., 2018).

Disruptive Technology constitutes one of the most important developments applied in the logistics sector as it significantly disrupts and shifts established operating models and decision-making systems (Wamba et al., 2020). Disruptive technologies are influencing the way logistics managers are making the three strategic decisions discussed above along with
several other new decisions which are crucial in this new normal era (Forbes Insights, 2018; Singh et al., 2020; Choi, 2020). For instance, disruptive technologies enable real-time sharing of information across the supply chain (Gammelgaard, 2019) and thereby question the applicability of earlier adopted processes in logistics management including the traditional demand forecasting techniques and inventory management approaches. The volume of data that is available at the disposal of logistics managers for decision-making is growing exponentially, especially with integration of digital production technologies and IT-enabled management processes. The processing capacity to conduct advance analytics on the large datasets for making intelligent decisions are also becoming available to logistics managers. Artificial intelligence and machine learning algorithms are being deployed to automate decisions that were earlier made by logistic managers based on their limited past experience. Blockchain introduces decentralised digital ledger that increases the certainty and security of data available for decision making in logistics management. These disruptive technologies are completely changing the nature of competitive advantage that a supply chain can attain by working on its logistics and the associated decisions. Further, addressing multiple strategic decisions in logistics related problems involve multiple rules, which require an integrated and smart approach to achieve better results (Petrović et al., 2018). Therefore, the transformation introduced by these disruptive technologies to decision making in logistics management have to be researched for achieving the following three objectives:

- falsify previous results that are not applicable after the introduction of disruptive technologies in logistics management,
- confirm the validity of already existing results in this disruptive technologies context, and
- develop new approaches/frameworks for decision making in logistics management by incorporating the features offered by disruptive technologies

To encourage research focusing on these objectives, we announced in early 2019 a call for papers for the special issue to be published in International Journal of Logistics Management (IJLM) focussing at the intersection of logistics management and disruptive technologies for making intelligent decisions. Through the call for papers titled ‘Decision Making in Logistics Management in the Era of Disruptive Technologies’, we invited conceptual and empirical papers that were using a variety of methods to answer research related to one of the indicative themes listed below:

1. What are the drivers and barriers of adopting disruptive technologies in logistics management for decision-making?
2. What are the prerequisites that the logistics function in a supply chain should satisfy before embracing disruptive technologies for efficient and effective decision-making?
3. What are the quantitative and qualitative inputs that disruptive technologies for decision-making in logistics management can offer? How can they improve the decisions made?
4. How is the decision making in logistics management impacted by implementation of disruptive technologies?

5. What are the risks and uncertainties in relying on disruptive technologies for decision making in logistics management?

6. How should the existing decision-making frameworks in logistics management be adapted to capture the changes and transformations introduced by disruptive technologies?

7. What can these disruptive technologies offer for decision-making in inventory management between the point of origin and the point of consumption?

8. What can these disruptive technologies offer for improving the decision-making in reverse logistics?

9. How are these disruptive technologies enabling the shift from linear way of thinking about supply chains to complex adaptive ecosystems and networks consisting of nodes and links?

10. How can disruptive technology driven decision-making in logistics management contribute towards achieving sustainability dimensions?

Call for papers also clarified that the above themes/questions were only indicative and not exhaustive in any manner. We expected the submissions received in response to call for papers to develop or challenge existing literature or theories, so that it adds new knowledge on this topic and fall in line with the IJLM’s focus. In this editorial, we capture the review process adopted and summarize the final set of papers that were accepted for publication as part of this special issue.

**Review of Related Literature**

Until recently, logistics decision-makers heavily relied on businesses’ past internal and external data as well as managers’ tacit knowledge for making predictions. Due to the intense global competition and the uncertainty, logistics sector has started deploying a variety of disruptive technologies and mechanisms, aiming to become more efficient and effective (Hofmann and Rusch, 2017). Experts claim that disruptive and data-driven technologies are implemented faster in transport and logistics rather than other sectors (Deloitte, 2015; Balan, 2018), forcing significant changes and improvements by transforming them into digital forms. Hence, the logistics sector and their corresponding supply chain have altered their operations in ways never predicted, to deal with the variety of complexities of the contemporary business environment (Özemre and Kabadurmus, 2020).

To understand the adaptations that logistics management and its associated decision-making has undergone due to the intervention of disruptive technologies, we reviewed the relevant literature published in operations management, production management, supply chain management, logistics management, technology management, and information management related journals. The relevant articles were identified by searching for keywords “logistics, logistics management” AND “disruptive technology/ies, big data, big data analytics, Internet of Things, IoT, blockchain, AI, Artificial Intelligence, Industry 4.0” AND “decision or decision-making”. After the initial screening, articles that were purely focussing on logistics
management, decision-making and disruptive technologies, and those discussing decision making in logistics management without the integration of a disruptive technology were excluded from the review. Table 1 summarizes the shortlisted 21 articles by presenting their objectives, disruptive technologies considered, decision-making context in logistics, and their findings.

“Insert Table 1 here”

Articles in the Special Issue
We received 19 full paper submissions and evaluated the individual submissions for their fit to the scope of the special issue by specifically checking if their contribution were at the intersection of three literature sets - logistics management, decision-making and disruptive technologies. One submission was desk rejected by the guest editors, as it was not fitting to the scope of the special issue. Each of the remaining 18 submissions were sent out to at least two reviewers for evaluation. After receiving the review reports from the reviewers, the guest editors carefully read the individual submissions in the light of review reports and made a decision to reject five submissions and invite the remaining 13 submissions to incorporate the suggestions made by the reviewers. Out of these 13 submissions, seven were accepted for publication in this special issue. We believe that these seven accepted articles, with their varying research objectives and methods, advance the field of research at the intersection of logistics management, decision making and disruptive technologies. We also feel that they open up several interesting new avenues for future research in this exciting domain. We have summarized the keywords, research objective, method and contribution of all the accepted articles in Table 2.

“Insert Table 2 here”

Final remarks & Avenues for future research
The articles in this special issue addresses multi-faceted decision-making challenges and presents solution approaches for logistics management in the era of disruptive technologies. We believe this to be one of the initial special issues linking disruptive technologies to the domain of operations, logistics and supply chain management. The special issue offers new insights on the impact disruptive technologies can have on decision making in logistics management that opens up interesting avenues for future research, as listed below:

- Disruptive technology related
  - What are the values/capabilities offered by different types of disruptive technologies to decision making in logistics management (i.e. mapping the value to decisions)?
  - How and when can the capabilities offered by different disruptive technologies enable the implementation of transparency in making decisions related to logistics management across the supply chain?
  - What can be the impact of enhanced tracking and monitoring of shipments using disruptive technologies on decision making related to logistics management?
• **Logistics/Transportation related**
  - How can disruptive technologies be used to decide between optimal modes of logistics across the supply chain?
  - What role can disruptive technologies play in decision making associated with last-mile logistics?

• **Logistics manager related**
  - What are the behavioural attitudes of logistics managers that restricts the adoption of different types of disruptive technologies?
  - Why are certain specific disruptive technologies less adopted by logistics managers in comparison to others?

• **Green logistics related**
  - What and how much impact disruptive technologies can have on decision making associated with the reduction of logistics carbon footprint?
  - How can disruptive technologies contribute towards sustainable performance measurement/management of logistics?

• **Context related**
  - How does the preference towards the adoption of different types of disruptive technologies for decision making in logistics management change between industries, countries, mode of logistics, product characteristics, and businesses (B2B to B2C)?
  - How can global logistics and its associated supply chain benefit by adopting disruptive technologies, especially when the countries involved in the supply chain are at different levels of maturity in infrastructure and institutions?

These avenues for future research are indicative and we believe answering such important questions by anchoring to disruptive technologies will contribute towards making logistics and its associated management decisions more intelligent.

**Acknowledgements**
We thank all the reviewers who spent their invaluable time to review the articles on time, which enabled us to complete this special issue successfully. Authors would also like to thank Dr. Tuhin Sengupta and Ms. Elena Koumi for sharing feedback on the initial call for papers and offering support on the literature review respectively. Finally, we thank the Editor-in-Chief of International Journal of Logistics Management, Prof. Britta Gammelgaard and journal’s senior associate editors and associate editors for accepting our special issue proposal and offering clear guidance in the review and publication process.

**References**


### Table 1 – Review of Related Literature

<table>
<thead>
<tr>
<th>Year</th>
<th>Author(s)</th>
<th>Logistics Decision-making</th>
<th>Disruptive Technologies</th>
<th>Research Objective</th>
<th>Disruptive Technology</th>
<th>Decision-making context in Logistics</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Ilie-Zudor et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Examination of challenges and potential of big data in heterogeneous business networks and their implementation on a logistics solution</td>
<td>Big Data</td>
<td>Decision-making based on a new predictive-analysis based model called 'ADVANCE', for hub and depot operations</td>
</tr>
<tr>
<td>2016</td>
<td>Goldsby and Zinn</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Encourage logistics research community to get involved and research business actions, inform strategy and shape the next generation of competition</td>
<td>3D Printing, IoT</td>
<td>Business models development of companies to leverage opportunities from disruptive technologies</td>
</tr>
<tr>
<td>2017</td>
<td>Hofmann and Rusch</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Define &quot;Industry 4.0&quot; and discuss its impact and implications in the context of logistics management</td>
<td>Cyber-physical systems, IoT, Internet of Services, Smart factory</td>
<td>Implications on logistics management concept slide Kanban systems and Just-in-Time/Just-in-Sequence</td>
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<tr>
<td>Year</td>
<td>Author(s)</td>
<td>Logistics</td>
<td>Decision-making</td>
<td>Disruptive Technologies</td>
<td>Research Objective</td>
<td>Disruptive Technology</td>
<td>Decision-making context in Logistics</td>
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<tr>
<td>2017</td>
<td>Witkowski</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Presentation of 'smart' solutions which could be considered as 'innovative' in areas like technology and organisation in logistics companies, and in entire supply chains</td>
<td>IoT, Big Data, Industry 4.0</td>
<td>Implementation of innovative IT solutions in Logistics</td>
</tr>
<tr>
<td>2017</td>
<td>Kache and Seuring</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Contribute to theory development in SCM by investigating the potential impacts of Big Data Analytics on information usage in a corporate and supply chain context</td>
<td>Big Data</td>
<td>Challenges and opportunities provided by Big Data Analytics application in supply chains and the effect on their management</td>
</tr>
<tr>
<td>2018</td>
<td>Balan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>To examine in what contexts and by what means of different mechanisms the implementation of future advanced ICTs might have a disruptive impact on maritime transport sector</td>
<td>IoT, Big Data, Cloud Computing, Autonomous ships/vessels</td>
<td>ICT maritime opportunities</td>
</tr>
<tr>
<td>2018</td>
<td>Hopkins and</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Document the role and</td>
<td>Big Data, IoT</td>
<td>Implementation and gained</td>
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</tbody>
</table>

- **Level of logistics management**: (real-time information flows, improvements in flexibility)
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<tr>
<th>Year</th>
<th>Author(s)</th>
<th>Logistics</th>
<th>Decision-making</th>
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<th>Disruptive Technology</th>
<th>Decision-making context in Logistics</th>
<th>Findings</th>
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<tbody>
<tr>
<td></td>
<td>Hawking</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>impact of Big Data Analytics and the Internet of Things of large logistics firms' strategies to improve driver safety, lower operating costs, and reduce their vehicles' environmental impact</td>
<td>Big Data</td>
<td>benefits of Big Data Analytics and Internet of Things to obtain benefits in the Logistics sector</td>
<td>like camera-based technologies and remote control centres that capture live data enable improved driving behaviours, driving safety and efficiency</td>
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<td>2018</td>
<td>Queiroz and Telles</td>
<td>X</td>
<td></td>
<td></td>
<td>Recognition of the current state of big data analytics on different organisational and supply chain management levels in Brazilian firms</td>
<td>Big Data</td>
<td>Analysis of the implementation of BDA projects in Brazilian firms in logistics and supply chain management</td>
<td>Identification of knowledge of Brazilian firms regarding BDA, difficulties and barriers to BDA projects adoption, and the relationship between supply chain levels and BDA knowledge</td>
</tr>
<tr>
<td>2018</td>
<td>Wamba et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Provide a significant opportunity to the logistics and supply chain management community to affect practices through the research of how BDA capabilities can be exploited by organisations to provide appropriate insights</td>
<td>Big Data</td>
<td>Big Data Analytics investigation on how it impact logistics and supply chain management</td>
<td>BDA (big data analytics) is one of the most promising topics and can provide plenty opportunities for academic and practitioners research</td>
</tr>
<tr>
<td>2019</td>
<td>Winkelhaus and Grosse</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>To stringently unify diverse approaches in research to a Logistics 4.0-framework to generate a new picture of the state of logistics research</td>
<td>IoT, Cyber-physical systems, Big data, Cloud-based systems, Mobile-based systems, Social media-based systems, Blockchain,</td>
<td>Role of logistics in the development towards individualisation</td>
<td>Mass customisation and associated trends lead to rising complexity and higher demands on logistics systems; picture of the state of the art of the research conducted regarding Logistics 4.0; humans are important in</td>
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<td>Year</td>
<td>Author(s)</td>
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<td>Disruptive Technologies</td>
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<tr>
<td>2019</td>
<td>Daduna</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Identification of potential blockchain applications and present a framework to categorise the identified areas of application according to their effects on companies’ organisational structures and processes; resulting structural changes in logistics processes</td>
<td>Additive manufacturing, Autonomous driving, Use of humanoid, semi-humanoid and mobile robots</td>
<td>Interdependencies arising in the current developments associated with the Fourth Industrial revolution</td>
<td>Economic, technical and ecological advantages with the use of additive manufacturing (reduced material consumption); reduction of market entry barriers for new entrants due to low required capital expenditure; limited potential investment risks etc</td>
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<tr>
<td>2019</td>
<td>Pournader et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Contribute to researching hidden transformative powers of blockchain technology such as increased supply chain transparency and freight tracking by reviewing the latest academic debates, industry use cases and possible future trends that might emerge in logistics and transport domain</td>
<td>Blockchain, IoT, RFID</td>
<td>Application of blockchain technologies on transport management and logistics regarding the 4T model: trade, technology, trust, traceability/transparency</td>
<td>Elaborate discussion and findings regarding blockchain and production, procurement, sustainable supply chain management, supply chain risk management and opportunism (existing research), using the proposed 4T structure and identified its implications for the supply chain, logistics and transport literature</td>
</tr>
<tr>
<td>2019</td>
<td>Boldosova and Luoto</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Explore the role of storytelling in data and interpretation decision-making and individual-level adoption of business analytics</td>
<td>Big Data</td>
<td>Companies’ BDA adoption and their interrelation with the behaviour of individuals within the company</td>
<td>BA (business analytics) data-driven storytelling is a narrative sense making heuristic which has a positive influence on human behaviour towards</td>
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<td>Year</td>
<td>Author(s)</td>
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<td>2019</td>
<td>Calatayud et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Bridge the gap between practitioner and academic literature on topics like ICT developments (will be autonomous and have predictive capabilities), and contribute to both practice and theory by seeking to understand how such developments will help to address key supply chain challenges and opportunities</td>
<td>Artificial intelligence, IoT</td>
<td>Applications and benefits of ICT technologies (AI and IoT) on supply chains - self-thinking supply chains</td>
<td>IoT and AI are the most frequently associated technologies with the anticipated autonomous and predictive capabilities of future supply chains; demonstration of their capabilities in aiding supply chain challenges and opportunities</td>
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<tr>
<td>2019</td>
<td>Hsiao and Chang</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Explore the value of DVA (digital voice assistants) in logistic service</td>
<td>Digital voice assistants, Artificial intelligence</td>
<td>DVA practices and applications in logistics industry and trasportation</td>
<td>Implied common problems and expectations of current operators in the delivery of goods and their expectations of DVA</td>
</tr>
<tr>
<td>2020</td>
<td>Ghadge et al.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Analysis of the impact of Industry 4.0 implementation on supply chains and the development of an implementation framework by considering drivers and barriers for the Industry 4.0 paradigm</td>
<td>Big Data, Autonomous robots, Cloud technology, IoT, Additive manufacturing, Augmented reality, Business intelligence, Cybersecurity</td>
<td>Implementation of Industry's 4.0 technologies on traditional supply chains and logistics</td>
<td>Industry 4.0 is predicted to bring new challenges as well as opportunities for the future supply chains</td>
</tr>
<tr>
<td>Year</td>
<td>Author(s)</td>
<td>Logistics</td>
<td>Decision-making</td>
<td>Disruptive Technologies</td>
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<td>2020</td>
<td>Ozemre and Kabadurmus</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Presentation of a novel framework for strategic decision making using Big Data Analytics methodology</td>
<td>Big Data</td>
<td>Decision-making using a proposed Big Data Analytics methodology (CRISP-DM: CRoss Inustry Standard Process for Data Mining)</td>
<td>By using a hypothetical case, the proposed methodology is validated as the results show that the methodology makes accurate trade forecasts and helps to conduct strategic market analysis effectively; RF (random forest) performs better than the ANN (artificial neural networks) regarding forecast accuracy</td>
</tr>
<tr>
<td>2020</td>
<td>Tönnissen and Teuteberg</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Examine whether blockchain leads to the removal of intermediaries in supply chains, thus lead to disintermediation or reintermediation; examine which tasks of an intermediary in a supply chain will be replaced by blockchain or become superfluous; what effects does disintermediation and reintermediation have on a supply chains</td>
<td>Blockchain</td>
<td>Blockchain's interaction with an operational supply chain and intermediaries' tasks possible replacement</td>
<td>Blockchain does not lead to the removal of intermediaries in operational supply chains; intermediation is more likely where a new central intermediary determines the rules; number of actors in the operational supply chain will possibly increase; a logistics blockchain service provider could develop into a new intermediary; impact of blockchain technology on logistics industry etc</td>
</tr>
<tr>
<td>2020</td>
<td>Wamba et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Examination of the potential influence of blockchain on supply chain performance</td>
<td>Blockchain</td>
<td>Relationship between blockchain and supply chain performance and its adoption</td>
<td>Knowledge sharing and trading partner pressure play an important role in blockchain adoption and that supply chain performance is</td>
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<td>Year</td>
<td>Author(s)</td>
<td>Logistics</td>
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<tr>
<td>2020</td>
<td>Wamba-Taguimdje et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Analysis of the influence of Artificial Intelligence on firm performance, notably by building on the business value of AI-based transformation projects</td>
<td>Artificial intelligence</td>
<td>Business value of AI-enabled transformation projects in organisations</td>
<td>AI's technologies like chatbots and self-learning algorithms allow individuals to better understand their environment and act accordingly; AI can optimise existing processes and improve automation, information and transformation effects, and also detect and interact with humans; enhanced business value through AI use</td>
</tr>
<tr>
<td>2020</td>
<td>Jain et al</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Explore the much talked but less understood issue of &quot;blockchain in logistics industry&quot; in modern perspective</td>
<td>Blockchain</td>
<td>Understanding of blockchain technologies and customer's acceptance of blockchain technologies in logistics and supply chain</td>
<td>Customers' testing of acceptance of blockchain technology reveal model fit where PEOU (perceived ease of use), PU (perceived usefulness) and attitude are the major constructs of the model that realise the substantial gains in logistics process efficiency</td>
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</tbody>
</table>
### Table 2 - Summary of research articles accepted for publication in this special issue

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Title</th>
<th>Keywords</th>
<th>Research Objective</th>
<th>Method</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Chen &amp; Lu (2020)</td>
<td>Shipment sizing for autonomous trucks of road freight</td>
<td>Logistics strategy, Logistics industry, Logistics cost</td>
<td>To provide relevant information on autonomous truck technology and to help logistics managers gain insight into assessing optimal shipment sizes for autonomous trucks.</td>
<td>Review and Numerical experiments</td>
<td>Examined AT cost estimates and theoretically revised the conceptual models to illustrate the implications of ATs on shipment sizing problems.</td>
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<td>Del Giudice, Chierici, Mazzucchelli &amp; Fiano (2020)</td>
<td>Supply chain management in the era of circular economy: the moderating effect of big data</td>
<td>Supply chain processes, Sustainability</td>
<td>To explore the moderating role of big-data-driven supply chain on the relationship between circular economy practices and firm performance for a circular supply chain.</td>
<td>Online survey and Multiple regression</td>
<td>Inferred that three categories of circular economy practices (design, relationship management, and HR management) play a crucial role in enhancing firm performance and clarified the moderating role of big data in those relationships.</td>
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<td>Dong, Akram, Andersson, Arnas &amp; Stefansson (2020)</td>
<td>The impact of emerging and disruptive technologies on freight transportation in the digital era: current state and future trends</td>
<td>Emerging technologies, Disruptive technologies, Logistics, Freight transportation, Systematic literature review, Digital era, Decision making</td>
<td>To provide a systematic literature review of the current state of affairs as well as future trends and aims to support stakeholders’ decision-making in logistics management in the era of disruptive technologies.</td>
<td>Systematic literature review of published research on the topic in the past twelve years</td>
<td>Identified 3D printing, artificial intelligence, automated robots, autonomous vehicles, big data analytics, blockchain, drones, electric vehicles, and the Internet of Things as the emerging technologies.</td>
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<td>El-Kassar, Ishizaka, Temouri, Sagheer &amp; Vaz (2020)</td>
<td>An Economic Production Model with Imperfect Quality Components and Probabilistic Lead times</td>
<td>Economic production quantity, Probabilistic lead time, Imperfect quality components, Reorder point</td>
<td>To investigate a production process that requires N kinds of components for the production of a finished product, where the components are received from different suppliers at varying lead times and are of perfect and imperfect quality.</td>
<td>Mathematical modelling</td>
<td>Developed the model to determine optimal production/ordering policy by considering the probabilistic nature of lead times and quality of components.</td>
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<td>Hecker (2020)</td>
<td>Implementation of 3D printing and the effect on decision making in logistics management</td>
<td>Logistics services, Management research, Decision-making, Logistics competences</td>
<td>To present a conceptual service development methodology showing the impact of 3D printing as a disruptive technology to the service portfolio.</td>
<td>Expert surveys and Case study</td>
<td>Designed a methodology for logistics managers to identify the potential of 3D printing and to implement its potential by modifying the current service portfolio.</td>
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<td>Ozdemir, Erol, Ar, Peker, Asgary, Medeni &amp; Medeni (2020)</td>
<td>The Role of Blockchain in Reducing the Impact of Barriers to Humanitarian Supply Chain Management</td>
<td>Blockchain, Humanitarian supply chain management, Barriers to humanitarian supply chain management, Intuitionistic fuzzy multi-criteria decision making</td>
<td>To investigate the role of blockchain in reducing the impact of barriers to humanitarian supply chain management using a list of blockchain benefits.</td>
<td>Intuitionistic Fuzzy Decision Making Trial and Evaluation Laboratory (IF-DEMATEL) and Intuitionistic Fuzzy Analytic Network Process (IF-ANP)</td>
<td>Proposed a multi-criteria decision framework to explain the role of blockchain in decreasing the impact of barriers in humanitarian supply chain management.</td>
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<td>Sundarakani, Pereira &amp; Ishizaka (2020)</td>
<td>Robust Facility Location Decisions for Resilient Sustainable Supply Chain Performance in the Face of Disruptions</td>
<td>Robust optimisation, Facility relocation, Global supply chain network, COVID-19 disruptions, Digital twin, Disruptive technologies</td>
<td>To investigate establishing or moving distribution facilities in the global supply chain by considering costs, fulfilment, trade uncertainties, risks under environmental trade-offs, and disruptive technologies</td>
<td>Robust Optimisation and Mixed Integer Linear Programming (ROMILP) method with a case study application</td>
<td>Examined sustainable dimensions along the global logistics corridor and investigated the global container traffic perspective.</td>
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Guest Editors Biography

Dr Vijay Pereira is Associate Professor at Khalifa University, Abu Dhabi, UAE. He was formerly the Associate Dean of Research and Associate Professor of Strategic and International HRM at the Australian University of Wollongong in Dubai, UAE. He is the Associate Editor (Strategic Management and Organization Behaviour), Journal of Business Research. Dr Pereira is a visiting scholar at Manchester and Portsmouth Universities, UK. He has experience and expertise in consulting, industry and academia, globally. Dr Pereira has a track record of attracting funding and has published widely, in over 100 outlets, including in leading international journals such as the HRM US, Journal of World Business, International Journal of HRM, Journal of Business Research, HRM Review, Journal of International Management, and International Journal of Production Research, among others. He is currently on the editorial and advisory board for the journals Production and Operations Management (Listed in Financial Times), International Journal of HRM, Asia Pacific Journal of Management, Asian Business & Management Journal and South Asian History and Culture.

Dr Gopalakrishnan Narayanamurthy is a Senior Lecturer in the Department of Operations and Supply Chain Management at the University of Liverpool Management School, UK. He completed his doctoral studies from Indian Institute of Management Kozhikode, India and postdoctoral studies from University of St.Gallen, Switzerland. During his doctoral studies, Gopal has been a Fulbright-Nehru Doctoral Research Fellow at Carlson School of Management, University of Minnesota. He is an external research partner at India Competence Centre, University of St.Gallen and a visiting faculty at LM Thapar School of Management, India. He researches in the area of transformative service research, sharing economy, healthcare operations management, operational excellence, digitization and decision intelligence. His research has been accepted for publication in Journal of Service Research, International Journal of Operations and Production Management, Journal of Business Ethics, International Journal of Production Economics, Technological Forecasting and Social Change, and Computers & Operations Research among others.

Prof Alessio Ishizaka is Professor in Decision Analysis and research lead at the Portsmouth Business School of the University of Portsmouth. He received his PhD from the University of Basel (Switzerland). He worked successively for the University of Exeter (UK), University of York (UK) and Audencia Grande Ecole de Management Nantes (France). He has been visiting professor at the Politecnico di Torino, Università degli Studi di Trento, INSA Strasbourg, Université de Lorraine, Universität Mannheim, Universität degli Studi di Modena e Reggio Emilia, Universität der Bundeswehr Hamburg, Université d’Aix-Marseille, Università degli Studi di Torino, Università degli Studi della Tuscia and Università degli Studi di Padova. His research is in the area of decision analysis, where he has published more than 80 papers. He is regularly involved in large European funded projects. He has been the chair, co-organiser and guest speaker of several conferences on this topic. Alongside his academic activities, he acts as a consultant for companies in helping them to take better
decisions. He has written the key textbook Multicriteria Decision Analysis: methods and software.

**Dr Noura Yassine** is an Associate Professor of Applied Mathematics at the Mathematics and Computer Science Department, Faculty of Science, Beirut Arab University. She was awarded a PhD in Applied Mathematics from the Beirut Arab University. Her research areas include inventory and production management, operations research, probability theory and applied statistics. She has published more than 20 papers in peer reviewed international journals and conference proceedings. She has participated and presented research studies in numerous international conferences. Moreover, she served as a Statistical Consultant/Data Analyst for academic and non-academic projects including the UNDP Project No. LEB/CO RFP/60/16.