# Call for Papers- Decision Sciences

## Data Analytics for Operational Risk Management

*Decision Sciences Journal* seeks submissions for a special issue on **Data Analytics for Operational Risk Management.** The deadline for submission is **March 15, 2019**.

According to World Economic Forum Global Risks Report (2018), extreme weather events and natural disasters are the top two likely risks that have the potential to significantly affect the global economic system and they are also among the top ten risks that would have large scale global impact along with food and water crises, spread of infectious diseases and failure of climate change mitigation. While catastrophic disasters including hurricanes, tsunamis, earthquakes, fires, among many, continue to affect massive populations, and global public health is becoming more vulnerable to emerging diseases caused by novel pathogens, e.g., pandemics of influenza, Zika and Ebola outbreaks etc. (Huang et al. 2017), response planning activities to deal with these events are critical in designing resilient global supply chains (Speier et al. 2011). As the analytics capabilities of organizations are rapidly growing, the value of emerging data in predicting the future disruptions on global activities and supply chains is more than ever (Paul et al. 2016). Not only for-profit companies, but also non-profit organizations are looking for ways to utilize their databases to enhance operations (especially at the global scale), in terms of exploring the ways they can utilize large volumes of data to predict risks and assess vulnerability (Choi and Lambert 2017), support humanitarian operations (Ataseven et al. 2018), and improve resilience of supply chain operations (Choi et al. 2017) and infrastructure networks (Gunnec and Salman 2011, Yücel, Salman and Arsik 2018).

Analytical methods are being used in various ways, e.g., to predict geospatial spread of diseases, to understand emerging trends in consumer behavior during natural disasters such as hurricanes, to analyze social networks and the role of social media on public behavior, to manage traffic flow during these catastrophic events and optimize locations of relief facilities for maximum coverage and safety (Morrice et al. 2016, Araz et al. 2013, Yücel et al. 2015, Oded et al. 2007, Choi et al. 2018). Operations in supply chains are directly affected by these events, and can be disrupted, which then would increase the severity of these events not only economically but also in terms of number of lives and regions at risk (Apte et al. 2016, Jahre et al. 2016). This is especially true for larger scale supply chain systems such as the global supply chains. Therefore, supply network design, emergency response and preparedness activities, in governmental or public agencies and also in corporations should incorporate data analytics by leveraging real time emerging data and surveillance systems, predicting future impact and reactions, optimizing strategic and logistical decisions for effective plan execution (Battara et al. 2018).

In this special issue we are looking for **novel and timely studies** that address operational risk management enhancing the value of **analytics for explanatory, predictive and decision optimization purposes.** We are especially interested in exploring issues in complex operational settings and presenting robust emergency response plans for a variety of catastrophic events and operational disruptions. Papers including case studies, theoretical modeling and empirical research are encouraged for submission, although specific interest is on novel contributions presenting design of management information systems that integrate data management and data driven analytical models which are generalizable for problem solving in a broader context.

**The related topics would include:**
- Innovative applications of emerging information technologies (e.g., IoT and blockchain) for disaster response operations
- Big data analytics for operations management and decision sciences in the context of global supply chains risk and emergency logistics
- General risk modeling and analysis of global supply chains with data
- Risk modeling and analytics for humanitarian operations
- Robust supply network design for natural disasters and large scale emergencies
- Use of emerging data in predictive or prescriptive models for public health emergencies
- Data driven models for supply chain risk management and reliability analysis

- Data-driven disruptive incident control in supply chains
- Food safety and delivery in food supply chains with information updating
- System of systems approaches for operations risk analysis
- Transportation network safety using traffic data and functionality prediction
- Improving social welfare by safety and risk related data-driven analytics

**Methods can include but are not limited to:**
- Empirical exploratory models that incorporate real time emerging data
- Predictive models and decision support systems
- Data mining and statistical learning incorporated prescriptive analytics
- Complex systems modeling and simulation
- Simulation-optimization techniques
- Game-theoretic analytical modeling
- Data-driven mathematical modeling and optimization algorithms
- Geospatial analytics and computations

**Timeline and process:**
- Deadline for submission: March 15, 2019
- First-round decision and feedback: August 15, 2019
- Second-round submission (for those papers invited to revise): December 15, 2019
- Final decisions (subject to minor revisions): March 15, 2020

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3. Ataseven C, Nair A, Ferguson M. An examination of the relationship between intellectual capital and supply chain integration in humanitarian aid organizations: a survey-based investigation of food banks. *Decision Sciences* (2018), in press.

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