

Rethinking sustainability strategies for resilience in supply chain systems: addressing food sector challenges in the VUCA (vulnerability, uncertainty, complexity, and ambiguity) reality.

Supervisors: [Dr Anna John](#), Department of Strategy and Marketing and [Dr Nicoleta Tipi](#), Department of People and Organisations, The Open University Business School

Project Description

Problem, Focus and Aims:

Recently, many modern societies and organisations have been relentless in developing sustainable food supply systems—those which meet the national and global food security objectives while maintaining the delicate 3P (people-planet-profit) balance— in the face of the VUCA (vulnerability, uncertainty, complexity, and ambiguity) reality (John *et al.*, 2022). Indeed, food supply systems in the UK and abroad have experienced difficulties in attaining sustainability and resilience following such VUCA-driven challenges as the cost-of-living crisis, health crises (e. g. global pandemic Covid-19, an outbreak of Ebola Virus Disease in West Africa in 2014-2016), devastating wars (e. g. Russia-Ukraine war, Palestine-Israel war,), political and military crises (e.g. coups in Niger and Gabon 2023; Nagorno-Karabakh in 2023), and natural disasters (e.g. Turkey-Syria earthquake in 2023, fires in Hawaii in 2023, cyclone Idai in Mozambique in 2019).

In this context, it becomes critical to rethink sustainability strategies for resilience in supply chain systems. Therefore, we invite proposals addressing the following research question:

How can sustainability strategies be made resilient to ensure security and growth in food supply systems in the face of modern challenges (e. g. VUCA reality)?

Possible Research Angles:

A list of possible research angles to finding new ways of working with models may include but is not limited to:

- Growth and survival strategies (John *et al.*, 2022),
- Supply Chain Modelling (Tipi, 2021),
- Meta-modelling (Jahangiri *et al.*, 2023),
- Systems thinking (Driscoll *et al.*, 2022; Hamzah *et al.*, 2022; Esfandabadi *et al.*, 2022; Johnson, 2013),
- Open systems (Grewatsch *et al.*, 2023),
- Heuristic approaches and biases (Ahmad *et al.*, 2022),
- Hypernetworks (Johnson, 2014),
- Liminality (John and Lawton, 2021),
- Wicked problems (Lonngren and Van Peck, 2021; Coyne, 2005).

Empirical scope:

Geographically, proposals may focus on:

- UK food supply,
- International and global food chains,
- Food supply in emerging economies,
- Food supply chains in advanced economies.

In terms of the strategic scope, proposals may include but should not necessary be limited to:

- Survival strategies, or strategies for security of food supply systems (e.g., looking into foods (i.e., potatoes and rice) which are essential for survival of a nation in the conditions of large-scale disruptions);
- Growth strategies, or strategies for developing leadership in food supply systems (e.g., looking into foods (i.e., fruit linked to a particular climate zone) which help a nation to create a competitive advantage on the global market).

Theoretical Perspective and Field:

The future proposals may build an argument by using such theories as institutional theory (John and Vicente, 2020), dynamic based view (DBV), especially a simple rules view of dynamic capabilities (Eisenhardt and Martin, 2000), and resource dependency theory (Pfeffer and Salancik, 2003; John and Lawton, 2018). We also welcome new creative ways of combining theories and developing new theories.

Potential for Theoretical Contribution:

The theoretical value of this research will come from addressing the following emerging paradigmatic shifts:

1. A shift in the supply chain strategy paradigm from centring on some incremental or partial disruptions to considering larger scale disruptions with a greater magnitude of effects;
2. A shift in the supply chain strategy paradigm from seeing sustainability and resilience as two independent or, in the best case, loosely related phenomena to considering potential synergies between sustainability and resilience;
3. A shift in the supply chain strategy paradigm from considering an organisation level decision in isolation from the national security and development priorities to integrating organisational and national decision-making objectives.

Impact:

The research is expected to generate insights which will have short-term, mid-term and long-term implications for the socio-economic development, policy making activity, socio-technical innovations, and sustainability synergies. Additionally, the research will contribute to its doctoral author's professional development and employability.

Proposed Methodology:

We invite proposals which will use quantitative methods. Where possible and appropriate, researchers may also use approaches assuming linearity. For example, they can make use of structural equation modelling and statistical analysis with the use of multivariate techniques. Mixed methodologies combining quantitative and qualitative approaches are also possible. In all the cases,

the candidates are expected to justify their choices of specific methods and techniques by explaining their appropriateness for addressing the key research question.

A broad range of approaches may be used for performing a project's literature review. Both qualitative (John et al, 2022) and quantitative (Møller and Myles, 2016) systematic reviews may be used for integrating prior research and theorising from it.

About the Supervisors:

Anna John: Having completed post-doctoral research in Strategy (Open University in the UK and IC4 Centre for Cloud Computing and Commerce in Ireland), PhD in Business (Dublin City University, Ireland) and Exec MA in International and European Relations (University of Amsterdam, the Netherlands), Dr Anna John joined the Open University Business School in 2013 and works as Senior Lecturer in Strategic Management for the Department of Strategy and Marketing. Dr Anna John's interests and research projects span strategic decision making; internationalisation by mergers and acquisitions; nonmarket strategy including corporate political activity (e. g. management of political risks), policy making, risk management in the face of VUCA challenges, management of disruptions (e. g. man-made and natural disasters); sustainable capitalism in the post-pandemic era (e.g. sustainable systems of management water and energy resources, and EDI (equality, diversity and inclusion)-driven resilience in strategies); and scholarship research into strategies of higher education institutions (e. g. universities and business schools) and schools (e. g. multi-academy trusts) and their partnership approaches. In 2021, Dr Anna John became Vice-Chair and then Co-Chair of the Strategy SIG of the British Academy of Management.

Nicoleta Tipi: is Senior Lecturer in Operations and Supply Chain, Department for People and Organisations, Faculty of Business and Law, at The Open University Business School (UK) since October 2020.

Prior this, Dr Nicoleta Tipi was a Senior Lecturer at The University of Huddersfield, Huddersfield Business School for over 16 years. During her time at Huddersfield, she gained experience in teaching modules in Management Science Modelling, Statistics and Simulation, Logistics Operations Techniques, Supply Chain Modelling, Quantitative Research Methods, Global Logistics and Business Research Methods. At Huddersfield, Dr Nicoleta Tipi was Course Leader to a range of different courses at Masters and PhD level (CL for MSc Global Logistics and Supply Chain Management, CL for the Post Graduate Certificate in Research Methods for PhD researchers and CL for the MSc in Business Intelligence and Analytics). Dr Nicoleta Tipi acts as a PhD research supervisor for a number of projects in the area of supply chain modelling and simulation, supply chain performance measurement systems, supply chain product design and sustainability.

Dr Nicoleta Tipi's area of research includes topic in: Supply Chain Analytics and Modelling; Supply Chain Modelling using discrete event simulation; Supply Chains Performance Measurement Systems and Sustainable Supply Chain Systems.

Nicoleta has published over 60 articles in journals and conference proceedings. Currently, she has material published in journals such as *European Journal of Operational Research*, *Supply Chain Management: An International Journal*, *Journal of Rural Studies*, *Computers and Industrial Engineering*, *International Journal of Systems Science*, *International Journal of Sustainable Engineering*, *International Journal of Productivity and Performance Management*, *Maritime Policy and Management*, *Maritime Economics and Logistics* journal and others.

For her achievements in PhD supervision, for her successful supervision of multiple PhD projects to completion and for her unique contributions to the professional development and capacity building

of doctoral students, Dr Nicoleta Tipi was awarded Recognised Research Supervisor by the UK Council for Graduate Education.

References

- Ahmad, M., Wu, Q., Naveed, M., & Ali, S. (2022). Probing the impact of cognitive heuristics on strategic decision-making during the COVID-19 pandemic: evidence from an emerging economy. *International Journal of Social Economics*, 49(10), 1532-1550.
- Coyne, R. (2005). Wicked Problems revisited. *Design Studies* 26 (1), 5-17.
- Di Guilmi, C. (2023). Agent-based modelling. In *Elgar Encyclopedia of Post-Keynesian Economics* (pp. 4-6). Edward Elgar Publishing Limited.
- Driscoll, P. J., Parnell, G. S., & Henderson, D. L. (Eds.). (2022). *Decision making in systems engineering and management*. John Wiley & Sons.
- Eisenhardt, K. and Martin, J. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, Vol. 21, Issue 10-11, pp. 1105-1121.
- Esfandabadi, Z. S., Ranjbari, M., & Scagnelli, S. D. (2022). The imbalance of food and biofuel markets amid Ukraine-Russia crisis: A systems thinking perspective, 1640-1651.
- Grewatsch, S., Kennedy, S., & Bansal, P. (2023). Tackling wicked problems in strategic management with systems thinking. *Strategic Organization*, 21(3), 721-732.
- Hamzah, H., Hamzah, M. I., & Zulkifli, H. (2022). Systematic Literature review on the elements of metacognition-based Higher Order Thinking Skills (HOTS) teaching and learning modules. *Sustainability*, 14(2), 813.
- Jahangiri, S., Abolghasemian, M., Ghasemi, P., & Chobar, A. P. (2023). Simulation-based optimisation: analysis of the emergency department resources under COVID-19 conditions. *International journal of industrial and systems engineering*, 43(1), 1-19.
- John, A. and Lawton, T. (2018). International Political Risk Management: Perspectives, Approaches and Emerging Agendas, *International Journal of Management Reviews*, 20(4), pp. 847-879.
- John, A. and Lawton, T. (2021) Political Risk Management in Bailey, K., & Breslin, D. (2021). The COVID-19 pandemic: what can we learn from past research in organizations and management? *International Journal of Management Reviews*, 23(1), 3-6.
- John, A. and Vicente, G. J. (2020) Institutional foundations of management of natural disasters: Lessons from the recent cyclones in Mozambique. In Leite da Silva, Oliveira da Silva, Eduardo Sol and Vilar Lopes, Gills eds. *Questões humanitárias e poder aeroespacial. Comunicação, Arte & Cultura* (pp. 63-86).
- John, A., Coetsee, J. and Flood, P. (2022). Understanding the mechanisms of sustainable capitalism: the 4S model, *The Business Ethics, the Environment & Responsibility* (early access).
- Johnson, J. (2013). *Hypernetworks in the science of complex systems* (Vol. 3). World Scientific.
- Johnson, Jeffrey; Denning, Peter; Delic, Kemal and Bromley, Jane (2020). COVID-19 and computation for policy. *Ubiquity*, 2020 (October) pp. 1–14.

- Lonngren, J. and Van Peck, K. (2021). Wicked problems: A mapping view of the literature. *International Journal of Sustainable Development and World Ecology*, 28(6), 481-502.
- Møller, A. M., & Myles, P. S. (2016). What makes a good systematic review and meta-analysis? *BJA: British Journal of Anaesthesia*, 117(4), 428-430.
- Pfeffer, J., & Salancik, G. R. (2003). *The external control of organizations: A resource dependence perspective*. Stanford University Press.
- Tipi, Nicoleta (2021) [Supply Chain Analytics and Modelling: Quantitative Tools and Applications](#), Kogan Page, ISBN: 9780749498627, UK.
- Yang, Y., Bremner, S., Menictas, C., & Kay, M. (2022). Modelling and optimal energy management for battery energy storage systems in renewable energy systems: A review. *Renewable and Sustainable Energy Reviews*, 167, 112-671.
- Zha, D., Bhat, Z. P., Lai, K. H., Yang, F., & Hu, X. (2023). Data-centric ai: Perspectives and challenges. In *Proceedings of the 2023 SIAM International Conference on Data Mining (SDM)* (pp. 945-948). Society for Industrial and Applied Mathematics.