

SUSTAINABLE AND RESILIENT SUPPLY CHAIN

ADVANCES IN ENVIRONMENTAL ACCOUNTING & MANAGEMENT

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ADVANCES IN ENVIRONMENTAL ACCOUNTING &
MANAGEMENT VOLUME 12

**SUSTAINABLE AND
RESILIENT SUPPLY CHAIN:
ENVIRONMENTAL
ACCOUNTING AND
MANAGEMENT FOCUS**

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INVESTOR IN PEOPLE

Arun A. Elias dedicates this book to his wife Preetha and his children Ananya and Alaap.

*Matt Pepper dedicates this book to Alison, Camilla, Abigail and Buffy.
Anand Gurumurthy dedicates this book to his gurus, parents (Gurumurthy and Lalitha) and family (Sowmiya, Raghav, Nandhana and Soundarya).*

Avanish K. Shukla dedicates this book to Professor Arun Elias, Abha and Kushagra.

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ABOUT THE EDITORS

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Anand Gurumurthy is a Professor in the area of Quantitative Methods and Operations Management (QM and OM) at the Indian Institute of Management Kozhikode (IIMK), Kerala, India. He has over 20 years of teaching experience, with almost 13 years at IIMK. He teaches courses related to Operations, Supply Chain and Quality Management. He recently designed new courses such as Humanitarian Supply Chain Management, Readings in Operations Excellence,

etc. He was recently awarded the 'Outstanding Professor in Lean Six Sigma' by the Industrial Engineering and Operations Management (IEOM) Society, USA. His research interests include Operational Excellence (through Lean thinking, Six Sigma, Total Quality Management, Total Productive Maintenance, Industry 4.0, etc.) and Humanitarian Supply Chain Management (HSCM). Prof Anand has published more than 70 papers in high-impact peer-reviewed journals. His articles are widely cited. He is also on the editorial board of the International Journal of Lean Six Sigma and the Journal of Manufacturing Technology Management. He has trained over 1000 executives from different corporations in India, such as Reliance India Limited, Nokia, SBI Life Insurance, etc., to name a few. Similarly, he was the coordinator for a collaboration platform between IIM Kozhikode and HELP Logistics, Switzerland. Through this collaboration, he has provided training on HSCM to international participants and executives from international non-governmental organisations (INGOs) such as the World Food Programme (WFP) Bhutan, World Vision Bangladesh, etc. Before joining academia, he worked as an industrial engineer with the TVS Group of companies. He played a crucial role in establishing the production line for a new product – an integrated point-of-sale terminal. Prof. Anand is a Mechanical Engineer who completed his Master's in Manufacturing Systems Engineering and his PhD in Lean Manufacturing from the prestigious Birla Institute of Technology and Science (BITS), Pilani, Pilani Campus, Rajasthan, India.

Avanish K. Shukla is the Associate Dean of Research at the College of Business, Hospitality and Tourism Studies, Fiji National University, Fiji. He is also an Assistant Professor in Accounting with the School of Accounting and Law in the same college. He holds a PhD in Budgetary Control Practices in Steel Industry from Banaras Hindu University, India. Dr Shukla is also a qualified Chartered Accountant and a professional member of Certified Practising Accountant (CPA) Australia. He is well connected and active with various business leaders and industry stakeholders in Fiji and is a member of the Professional Development Committee of Fiji Institute of Chartered Accountants. He also serves as a tutor for CPA Australia's professional courses in Fiji. He has done consultancy for many organisations in Fiji like the Office of the Auditor General and Indian High Commission in Fiji. He has successfully supervised one PhD candidate and is currently supervising four PhD candidates. His main research includes management accounting, business ethics, sustainability development goals and also in the area of system thinking. He has published in high-ranked journals like the *Economic Resources* and *Global Journal of Flexible Systems Management*. He is also a reviewer for many reputed peer-reviewed journals and an examiner for PhD thesis for different universities.

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ABOUT THE CONTRIBUTORS

Sheetal Deo has obtained her PhD (Accounting) from the University of Wollongong and holds a Bachelor of Honours (Accounting) and Bachelor of Commerce (Accounting and Business Law) from the University of Wollongong. Sheetal has been head hunted and held various senior-level positions in tax accounting roles which has given her an insight of accounting from a practical viewpoint. During her PhD work, she has worked closely with the industry for her dissertation maintaining the links to accounting professional bodies Chartered Accountants Australia and New Zealand (CAANZ) and Certified Public Accountant (CPA). Currently, Sheetal's research outputs have centred on curriculum development in tertiary in the light of Sustainable Development Goals (SDGs), carbon accounting, environmental accounting and continual work in accounting education and the accounting professional worlds.

Rohit G is a PhD scholar specialising in network design and its application to last-mile delivery optimisation. His research focuses on developing innovative algorithms and methodologies to improve efficiency, sustainability and customer satisfaction in last-mile delivery systems. Before obtaining a PhD, Rohit gained industry experience as a Senior Engineer in the Production department of Larsen and Toubro Ltd.

Lijo John did his postdoctoral research at HUMLOG Institute at Hanken School of Economics, Helsinki. His research focuses on various aspects of humanitarian and disaster supply chain management including coordination between various humanitarian agencies, vaccine pricing, aid material procurement and their pricing, etc. He holds a Bachelor's and Master's in engineering with a specialisation in Mechanical (Production) Engineering and Industrial Engineering and Management, respectively, and a doctoral degree from the Indian Institute of Management Kozhikode in Operations and supply chain management with a special focus on mathematical modelling in designing contracts on humanitarian supply chain management. He was also a Visiting researcher at Sauder School of Business, University of British Columbia (UBC, Vancouver), and a lifetime Fellow of Shastri Indo-Canadian Institute. In his previous research, he explored the vaccine pricing models in the wake of epidemics motivated by the Yellow Fever outbreak in the Democratic Republic of Congo, Kenya and Angola. He has developed vaccine pricing models that can help address the supply chain issues between humanitarian agencies such as UNICEF and vaccine manufacturers.

George Joseph, an Assistant Professor specialising in entrepreneurship, operations management, sustainability and strategy, brings a wealth of experience from both academic and industrial sectors. Renowned for innovative pedagogy and curriculum design, Dr Joseph has made significant research contributions and demonstrates a strong commitment to community service. Poised for a senior academic role, he aims to leverage his capabilities to significantly contribute to organisational development and enhance student learning. His notable achievements include leading the Institutional Innovation Council and Incubation Centre at Rajagiri Business School, being a member of the AACSB and NBA core teams, and volunteering with Alison with several others to create a widely translated, free certifiable course on COVID-19. This team effort led to Alison receiving the EESC Civil Solidarity Prize 2020 from the European Union. Additionally, as a Round 1 online judge in the 2021 Milken-Penn GSE Education Business Plan Competition, Dr Joseph supported emerging EdTech ventures. He has also won a start-up grant under the RUSA Scheme by CUSAT TBI, played a crucial role in securing a significant grant for the DDUKK Centre for Vocational Education at CUSAT and received the Young Researcher Award in 2013 from the Service Research Institute, USA, along with the Best Technical Paper Award from PMI, Kerala Chapter in 2013 and 2015. In 2016, he was certified as an Online Faculty and Master Research Supervisor at the University of Roehampton online, UK.

Ramesh Krishnan is an Assistant Professor in the Quantitative Methods and Operations Management area at the Indian Institute of Management Kozhikode. He has completed Joint PhD in Operations Management from the Department of Management Studies of the Indian Institute of Technology Madras, India, and Business School of the University of Technology Sydney, Australia. His broad research interest includes Supply Chain Network Optimisation, Supply Chain Analytics, Sustainability, Industry 4.0 and Digital Transformation. He has published several research articles in journals like *Computers & Industrial Engineering*, *International Journal of Production Research*, *Journal of Cleaner Production*, *Journal of Manufacturing Technology Management*, etc. He has also presented his work in several international conferences and symposiums.

P N Ram Kumar is a Professor in the operations area at the Indian Institute of Management Kozhikode, India. His research interests are developing mixed integer linear programming (MILP) models and heuristics/meta-heuristics-based solution methodologies for solving combinatorial optimisation problems arising in supply chain network optimisation, drone-based logistics and other routing and scheduling problems. His work has been published in reputed A* and A category journals such as *Transportation Research Part E*, *Annals of Operations Research*, *Journal of Scheduling*, *Journal of the Operational Research Society*, *Computers and Industrial Engineering* and *International Journal of Production Research*, to name a few.

Shalendra Satish Kumar serves as an Assistant Professor in the Department of Management at Fiji National University, having earned his PhD and Master of

Arts in Human Resource Management and Organisational Behaviour from Chungnam National University in South Korea through the prestigious Korean Government Scholarship. His professional journey commenced as a primary school teacher and evolved through roles including secondary school teacher, manager of human resources for the Ministry of Education in Fiji and lecturer, culminating in his current position as an assistant professor at FNU. His expertise lies in Human Resource Management, organisational behaviour, corporate venture capital, stock market, SME and MME. He is actively engaged in teaching postgraduate and Master's students. As a trained supervisor, he plays a pivotal role for Master's and PhD candidates who are doing higher degrees by research. Beyond the confines of academia, He is a founder of the Nasinu Junior Chamber, an NGO reflecting my dedication to community service. Furthermore, his commitment extends beyond his professional responsibilities and his involvement in community development during my spare time. His well-rounded profile as an academician and community leader, coupled with diverse research interests, underscores his dedication to advancing knowledge and effecting positive change both within and beyond the academic realm.

Avisekh Asish Lal serves as an Assistant Lecturer in Industrial Arts Education in the Department of Secondary Education at Fiji National University. He obtained his Master of Education from the University of the South Pacific, Fiji, and Bachelor's from the Fiji National University. His professional journey commenced as a Secondary School Teacher and evolved as an Assistant Lecturer at FNU. His research interest lies in sustainable education practices in Fiji relating industrial practices. His work involves liaising with industries, relevant stakeholders and improving courses to meet the industry's needs, providing training and reviewing courses to meet industry needs and standards. I am a co-founder of the Nasinu Junior Chamber, an NGO reflecting his dedication to community service and leading many projects for the community. Community service has allowed him to reach to the people from a different background and ethnicity, which inspired me to understand their needs better and provide necessary trainings for lifelong skills.

Shiu Lingam is currently working as a Lecturer at the Department of Accounting, Fiji National University, Fiji. He obtained a Master of Commerce in Accounting and a Master of Commerce in Forensic Accounting from Fiji National University. He is a Chartered Accountant in Fiji registered with Fiji Institute of Chartered Accountants. His professional career began as a Secondary School Teacher teaching in Western, Central and Maritime Zones of Fiji. While being a Teacher in secondary school, He was actively involved in authoring accounting textbooks for years 11, 12 and 13. His proficiency lies in Public Sector Accounting, Taxation, Business Ethics, SME, Corporate Accounting and Forensic Accounting teaching undergraduate students at my current employment and supervising them writing their graduation projects. Further to this, He was involved in reviewing courses to meet local industry needs and having the Fiji National University accounting programs get accreditation from Fiji Institute of

Chartered Accountants (FICA), CPA Australia and CAANZ. With my experience in accounting, He had been appointed as the treasurer of community serving organisations in Fiji. Moreover, in my spare time, he is actively involved in community outreach programs improving the lives of people with special abilities.

Jonathon Mackay is an interdisciplinary academic interested in exploring the interconnections between organisations, supply chains and risk.

Dr Mackay's research areas specifically look at the areas of supply chain risk and resilience, modern slavery and sustainability, individual decision-making and ethics. His current projects explore labour exploitation within supply chains (including modern slavery) and worker attitudes towards sustainability initiatives. Dr Mackay has published works across a wide range of fields within the area of supply chain management, including supply chain risk, humanitarian relief supply chain and food supply chains. He was awarded his PhD in 2019 which explored how individual agents perceive and react to disruptions in workplace settings.

In terms of teaching, Dr Mackay has a wealth of experience teaching across undergraduate and postgraduate courses within supply chain management, management and systems thinking. He is a passionate educator, with current interests exploring the role of ethics within business education from a Deweyan lens and incorporating systems thinking into course and curriculum design.

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development. His teaching field lies in business sustainability, risk management, internal control and financial reporting. He is an active member of Fiji Institute of Accountants. His professional engagements in non-profit organisation include as a vice president for local youth club named as Cobo Youth Club for 6 years, and volunteer member for Fiji Red Cross Society. Detailed roles in NGOs includes planning and delivering a youth work programme for children between Year 3 and Year 13. Working with young people in accordance with the core values of youth work is his passion. Taking responsibilities and initiatives in terms of organising, general operational issues, building a rapport with young people, listening to their concerns and assisting in rebuilding the communities are always my core priorities in times of crisis. Hence, as an academician, he is dedicated to bringing positive change beyond academic expertise.

Aino Ruggiero serves as a Postdoctoral Researcher at Hanken School of Economics, Humanitarian Logistics and Supply Chain Research Institute, in Helsinki, Finland. She received her PhD from the University of Jyväskylä focusing on crisis communication in the context of terrorism. She is currently engaged with the EU-funded H2020 project CORE (sCIence & human factOr for Resilient sociEty). Her ongoing research delves into various aspects of crisis management, including governmental crisis communication, disaster risk governance, security of supply and societal preparedness and resilience. Ruggiero's contributions to the field have been published, among others, in the *Journal of Contingencies and Crisis Management*. She is committed to societal problem-solving by aiming to advance our understanding of crisis management and resilience in the face of complex crises.

Ciorstan Smark is a Senior Lecturer in Accounting and Finance with over 20 years' experience at both undergraduate and postgraduate levels. Her publications cover a wide range of accounting, finance and business ethics issues. Ciorstan currently has three major areas of research interest: the role of accounting in government policy and decision-making, the social and ethical impact of accounting analysis and the role of government and private sector financial reporting in society. Ciorstan is affiliated with two professional accounting bodies: Chartered Accountants Australia and New Zealand (CAANZ) and the Institute of Certified Management Accountants, Australia (ICMA). Ciorstan is also on the Founder and Managing Editor of Australasian Accounting Business and Finance Journal (AABFJ).

Karalaini Tubuna is a Principal Lecturer in Office Administration, Business Process Outsourcing and Management at the Fiji National University. She obtained a Master of Commerce in Management and Public Administration at the University of the South Pacific, Fiji, in 2005. Her research interests are TVET, how Fiji can fill the gaps created by labour migration, how training institutions can understand the needs of the industries and how collaborations between these two parties can better assist in meeting the needs of the industries. Skills anticipation and green technology are new areas of interest. My involvement with Outsource Fiji has enabled her to better understand the Outsourcing landscape.

This has also enabled a positive working relationship with Outsourcing providers in Fiji to allow for guest speakers, student visitations, review of lecture notes and provision of other relevant information which are important to students. Her work involves liaising with industries and developing courses to meet industry's needs, providing training and reviewing courses to meet industry needs and standards. She has also worked with the Ministry of Education and Fiji Higher Education Commission to review curriculum for Office Technology taught in Secondary schools. Her community involvement allows her to better understand the village and informal settlements needs for training.

Anura De Zoysa holds the position of Associate Professor and serves as the Deputy Discipline Leader in the Accounting discipline at the University of Wollongong in Australia. He earned his PhD (Accounting) from the University of Wollongong, and he also holds an MEd (Hons) from Wakayama University in Japan, as well as a BCom (Hons) degree from the University of Sri Jayewardenepura in Sri Lanka. Anura's scholarly achievements include publishing his work in top-tier international journals, such as the *International Journal of Accounting*, *American Business Review*, *Meditari Accountancy Research*, *Industrial Management & Data Systems* and the *Journal of Small Business Management*. Also, Anura is affiliated with three professional accounting bodies: the Certified Public Accountant (CPA), the Fellow Chartered Accountant (FCA) and the Certified Management Accountant (CMA). His ongoing research pursuits are centred on several areas, including cost management, carbon accounting, considerations of Corporate Social Responsibility (CSR) and Environmental, Social and Governance (ESG) factors, performance management and sustainability.