



PALGRAVE STUDIES IN CROSS-DISCIPLINARY
BUSINESS RESEARCH, IN ASSOCIATION
WITH EUROMED ACADEMY OF BUSINESS

Business Under Crisis, Volume III

Avenues for Innovation, Entrepreneurship
and Sustainability

Edited by Demetris Vrontis · Alkis Thrassou
Yaakov Weber · S. M. Riad Shams
Evangelos Tsoukatos · Leonidas Efthymiou

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Palgrave Studies in Cross-disciplinary Business
Research, In Association with EuroMed Academy
of Business

Series Editors

Demetris Vrontis
Department of Marketing
University of Nicosia
Nicosia, Cyprus

Yaakov Weber
School of Business Administration
College of Management
Rishon Lezion, Israel

Alkis Thrassou
Department of Marketing
University of Nicosia
Nicosia, Cyprus

S. M. Riad Shams
Newcastle Business School
Northumbria University
Newcastle Upon Tyne, UK

Evangelos Tsoukatos
Department of Accounting and Finance
Hellenic Mediterranean University
Heraklion, Crete, Greece

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School of Business
University of Nicosia
Nicosia, Cyprus

Yaakov Weber
Sch of Business Admin, Research Unit
College of Management
Rishon LeZion, Israel

S. M. Riad Shams
Ural Federal University
Ekaterinburg, Russia

Evangelos Tsoukatos
University of Applied Sciences Crete
Heraklion, Greece

Leonidas Eftymiou
University of Nicosia
Nicosia, Cyprus

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Notes on Contributors

Georgios Afxentiou is the head of research and is a D.B.A. He is Assistant Professor of Business and a member of the College Council at CTL Eurocollege, Limassol, Cyprus. As a certified management consultant (CMC), he also provides consulting services to businesses in Cyprus through the Georgios Afxentiou Research Laboratory. Afxentiou holds a B.A. degree in Graphic Design with specialization in web design from Brescia University, Owensboro, Kentucky; an M.B.A. degree with specialization in global management from the New York Institute of Technology; and a Ph.D. in Business Administration from the University of Gloucestershire, UK. He teaches management, entrepreneurship, innovation strategy, strategic management and operations courses. He is a researcher in business administration with focus on the organizational design of businesses and writes articles and papers in academic and professional journals.

Maria Boile is Professor of Port and Inland Terminal Policy and Management and Director of the M.Sc. in Shipping in the Department of Maritime Studies at the University of Piraeus, Greece, and also Head of Unit on Transport Economics and Environment, Maritime and Air Transport at the Hellenic Institute of Transport (HIT), Centre for Research and Technology Hellas (CERTH). She is an affiliated faculty with the Center for Advanced Infrastructure and Transportation at

Rutgers University, USA, and a visiting lecturer at the Galilee International Management Institute, Israel. She has a Diploma in Civil (Transportation) Engineering from the National Technical University of Athens, Greece; an M.Sc. in Civil and Environmental Engineering from Rutgers University, USA; and a Ph.D. in Transportation Engineering from the New Jersey Institute of Technology, USA. Her research interest and expertise is in the areas of passenger and freight intermodal transport system modeling, freight and maritime logistics, port and inland terminal policy, management and operations. She has participated in over 70 sponsored research projects in the USA and Europe and as a principal investigator in over half of them. She has developed graduate and undergraduate curricula at three academic institutions and she has taught graduate and undergraduate transportation and logistics courses, short courses and seminars at several institutions in Europe, USA, Asia and Africa. She has authored and co-authored over 170 technical articles and 12 books and book chapters.

Ana Pinto Borges holds a Ph.D. in Economics from the Faculty of Economics, University of Porto, Portugal. She is a coordinating professor at ISAG—European Business School and also a scientific coordinator at the Research Center in Business Sciences and Tourism (CICET—FCVC). She is the author of more than 40 publications of papers and book chapters in indexed international scientific journals. She also publishes books of international distribution, namely *Building Consumer-Brand Relationship in Luxury Brand Management* and *New Techniques for Brand Management in the Healthcare Sector*. She has participated in presentations in various national and international congresses and member of the Scientific Committees in academic events. She is the editor and one of the founding members of the *European Journal of Applied Business and Management* (EJABM). She is also a former Accenture consultant in the financial area and an economist at the Health Regulatory Entity since 2010.

Ioannis Bras studied in the UK with a postgraduate specialization in project management and experience in risk management in the closure of nuclear reactors. He has worked in the development of real estate, shop-

ping malls and new investment projects, as well as in the provision of specialized project management consulting services. For six years he was the head of the Heraklion Port Authority SA as President and CEO and also the Vice President of the Hellenic Ports Association. He has significant experience in the field of cruise development and has won 21 awards to date. He is also an external advisor to the Ministry of Tourism for cruise development and has assisted in the development of the Greek cruise health protocols and is actively assisting ports around the world with their ReStart processes. He is the founder of FiveSenses Consulting & Development and also specializes in Digital Destination Marketing Projects. He is also a founding member of the Cruise Professional Advisors Alliance (CPAA).

Ana Brochado is an economist, Professor of Management at the ISCTE—Instituto Universitário de Lisboa, Portugal, and a researcher at DINAMIA'CET—Centre for Socioeconomic and Territorial Studies. She served as the Vice Dean for administrative affairs and Vice Dean for faculty for five years and coordinated the Ph.D. in Tourism Management. She worked for more than 15 years as a senior economist for the Portuguese Competition Authority and the Securities Commission. She joined the Strategic Board of Compete 2020 (Operational Program for Internationalization and Competitiveness). She holds a B.Sc. in Economics, an M.Sc. in Quantitative Methods and a Doctor of Management and Habilitation in Marketing. Her main research interests are market research, hospitality and tourism management, Fintech, sustainability management and innovation. She has authored or co-authored over 70 publications in top international journals in these fields, wrote over 40 book chapters and presented over 200 talks at international conferences. Her research received over 1500 citations.

Sheshadri Chatterjee is a post-doctoral research scholar at Indian Institute of Technology Kharagpur, India. He has completed his Ph.D. from Indian Institute of Technology Delhi, India. He has work experience in different multinational organizations such as Microsoft Corporation, Hewlett Packard Company, IBM and so on. Chatterjee has written research articles in several reputed journals such as *Government Information Quarterly*, *Information Technology & People*, *Journal of Digital Policy, Regulation and*

Governance and so on. He is also a certified project management professional (PMP) from Project Management Institute (PMI), USA, and completed PRINCE2, OGC, UK and ITIL v3 UK.

Ranjan Chaudhuri is Associate Professor of Marketing at National Institute of Industrial Engineering (NITIE), Mumbai, India. He was a Fulbright Fellow to USA in 2012. Chaudhuri also served as an associate professor at Vinod Gupta School of Management, Indian Institute of Technology Kharagpur, and in the Department of Management Studies at Indian Institute of Technology Delhi. He has over 18 years of industrial, teaching and research experience. Chaudhuri's teaching and research interests are in the areas of business-to-business marketing, global marketing and retail management.

Aleksandra A. Chudaeva holds a Ph.D. in Economics and is an associate professor in the Department of Economy, Organization and Strategy of Enterprises Development at Samara State Economic University (SSEU), Russia. She regularly organizes trainings for students of SSEU on team building, leadership and creativity. She actively participates in the training of employees of JSC (joint-stock company) "Rosneft", JSC "Novokuibyshevsk oil refinery", "Kuibyshev refinery", JSC "Samaraneftegaz", JSC "Novokuibyshevsk plant of oils and additives", group of companies "Rosrazvitie", JSC "Sberbank", LLC "Samara Stroyfarfor" and others. Among her author's projects there are training courses such as "Creation, Implementation and Management of Projects" and "Effective Communication as a Development Tool for Young Specialists". In 2015, she took part as a lecturer and regional expert in the section "Small Motherland—Great Opportunities" of the youth forum of the Volga Federal District "Ivolga-2015". In 2011–2016, she took part in the organization of the all-Russian Olympiad on the economy of the enterprise: "Future of the City is in the Professional Competencies of Young People".

Andrea Ciacci is a Ph.D. student in Management and Security in the Department of Economics and Business Studies at the University of Genoa, Italy. He is a member of Centro de Investigaciones en Econometría

(C.I.E.), Universidad de Buenos Aires, Argentina and scientific societies such as Italian Society of Management (SIMA), Italian Society of Marketing (SIM), Academy of Business Administration (AIDEA) and Italian Society of Statistics (SIS). His main research interests are focused on business, business and economic crisis, entrepreneurship, social entrepreneurship, strategic management, tourism management, smart city and social statistics. He is the author of several papers published in international journals.

Paraskevi (Evi) Dekoulou is a lecturer at the School of Business, University of Nicosia, Cyprus, teaching modules such as strategic marketing, marketing communications, consumer behavior and global marketing. In the past, she has worked as an adjunct lecturer at the Aristotle University of Thessaloniki, the Hellenic Open University, the Cyprus University of Technology and the Open University of Cyprus. Moreover, she has been involved in many EU-funded projects and she has worked as a communication officer for European and private organizations. She holds a Ph.D. degree in Organizational Learning and Knowledge Management from Aristotle University of Thessaloniki, Greece. She received an M.Sc. in Media Management from University of Stirling, UK, a Master's in Business Administration and a Bachelor's Degree (Hons.) in Journalism and Mass Media Communication from Aristotle University of Thessaloniki, Greece. Her research work has been published in international academic journals and presented in international conferences.

Kapnisi Dimitra is a Ph.D. Candidate in the Department of Sports Organization and Management at the University of Peloponnese, an economist, who graduated from the University of Piraeus, and holds a Master's Degree in Sport Management from the University of Peloponnese, Greece. She has always been interested in research, especially in the scientific field of Total Quality Management (TQM). She is a research associate at the University of Peloponnese, collaborating with academics from the Department of Management Science and Technology to perform research oriented in TQM and aspiring to complete her academic studies with a Ph.D. in this scientific area.

Leonidas Efthymiou is Assistant Professor of Organization, Tourism and Hospitality Studies at the University of Nicosia, Cyprus. He previously worked at Unicaf University, Intercollege, Pearson Education and the University of Leicester. He has also taught online for Universities in Europe, Africa and the USA. He also travels frequently to Africa, in his capacity as an instructional designer. He has co-edited and written several books, articles, media reports, policy papers and encyclopedia articles. His research output lies at the intersection of employment, digitization and education. He has received a number of awards, including the best Ph.D. Thesis award, by the Academy of Management in 2011, Boston, Massachusetts. Prior to this, he trained at the universities of Leicester (Ph.D., M.Sc.), Derby (B.A.) and the Higher Hotel Institute Cyprus (Dip. Hons.).

Mariantonietta Fiore is Associate Professor of Agricultural Economics in the Department of Economics at University of Foggia, Italy. She is a member of the Doctoral School of Warsaw University of Life Sciences, Poland, and is a fellow of the EuroMed Academy of Business (EMRBI). She held the positions of Expert of Ministry of Agriculture-Food and Expert of Italian Ministry of Environment, Land and Sea. She was the vice-scientific coordinator of the SKIN project (H2020) and is a scientific member responsible for several EU and national projects. She took part in many international conferences as a keynote speaker, presenter and discussant and acted as a visiting professor in several universities. Fiore has gained over ten scientific awards, for example “Best relevant paper”, “Best reviewer”, “Honorary scientific distinction at Warsaw University of Life Sciences” and so on. She is the author of over 100 scientific publications and acts as a judge, guest editor and member of Editorial Boards and Committees; she is one of the Directors of the International Food and Agribusiness Management Association (IFAMA) and a member of the IFAMA Europe chapter. Research interests include agriculture, environment, agriculture economics and sustainability.

Rui Frago holds an Undergraduate in Animal Science Engineering, an M.Sc. in Agricultural Economics and a Ph.D. in Business Management and Habilitation in Management. He is an associate professor in the

Department of Management at the University of Évora, Portugal, where he teaches courses of entrepreneurship, operations management and agribusiness. His research interests include entrepreneurship, operations management, supply chain management, agribusiness and water economics. He is the author of several scientific articles and has supervised several Ph.D. theses and master dissertations. Now, he is a full member and the director of the Centre for Advanced Studies in Management and Economics.

Mónica Gómez-Suárez is Associate Professor of Marketing at Universidad Autónoma de Madrid, Spain. She coordinates the TECHNOCONS UAM research group (Consumer Behavior and Technology) and has written more than 150 articles, book chapters, handbooks and conference papers, mostly in retailing, consumer behavior and branding areas. Her articles are published in prestigious journals such as the *Journal of Product and Brand Management*, *Journal of Retailing and Consumer Services*, *International European Journal of Management*, *Journal of Business and Economics Management*, *International Journal of Retail and Distribution Management* and *European Journal of Marketing*, among others. She has supervised 102 doctoral, master or bachelor theses, receiving nine awards in recognition of her guidance to students in their research works. Her collaboration in the Spanish edition of the Handbook *Multivariate Data Analysis* by Hair et al. (1999) has 6678 citations in Google Scholar (date: 2021-01-05). She has been a visiting researcher or faculty member in more than ten prestigious American and European universities. She is a member of the Board of Organizational Psychology (Frontiers in Psychology & Communication). Her current research interests are sustainable consumer decision-making process, virtual emerging technologies and smart shopping and retailing.

Yannis Hajidimitriou is Professor of International Business in the Department of Business Administration at University of Macedonia, Thessaloniki, Greece, and Director of the Master's Program in International Business. Hajidimitriou served as Chairman of the Department of Business Administration, Rector of the University of Macedonia, Chairman of the M.B.A. Program and Chairman of the

Department of Marketing and Operations Management. His research focuses on internationalization of family SMEs in times of crisis, international partner selection in exporting family SMEs, trust in international strategic alliances, knowledge transfer in international joint ventures and critical success factors in exports. His articles appear in the *European Journal of International Management*, *Global Business and Organizational Excellence Journal*, *Journal of International Consumer Marketing*, *European Journal of Operational Research*, *European Business Review*, *WSEAS Transactions on Business and Economics*, *Operations & Supply Chain Management*, *Eastern Journal of European Studies*, *East West Journal of Economics and Business*, *Scientific Bulletin—Economic Sciences International Journal*, *Procedia Journal* and *American Business Review*. Hajidimitriou also worked for the American Telephone and Telegraph (AT&T), USA, in the Market Analysis and Forecasting Department and served as an assistant professor at the University of Kansas, USA, and a visiting lecturer at Sheffield University Management School, UK.

Enrico Ivaldi is Research Fellow in Social Statistic and holds a Ph.D. in Applied Economics and Quantitative Methods from the University of Genoa, Italy; he has participated in several national research projects—Ministry of Health, Ministry of Education and the National Agency for Regional Health Services. He is in the editorial board of *Revista de Estudios Andaluces* (REA) and is a member of the Scientific Committee of the National Nautical Observatory, C.I.E.L.I.—Italian Center of Excellence on Logistics, Transport and Infrastructure, Centro de Investigaciones en Econometría—C.I.E., University of Buenos Aires and member of the Royal Statistic Society.

Katerina Kampouri is an adjunct lecturer in the Department of Accounting & Finance and a post-doctoral researcher in the Department of Business Administration at the University of Macedonia, Greece. She holds a Ph.D. in International Business and an M.Sc. in Informatics and Management from the School of Economics, Aristotle University of Thessaloniki, Greece. She also holds an M.B.A. from the School of Social Science, Hellenic Open University, Greece. Her research interests focus on family firms, family firm internationalization, family SMEs interna-

tional behavior in times of crisis, international partner selection and emotion research. Kampouri's research appears in peer-reviewed academic journals, including the *Journal of Business and Industrial Marketing* and the *Marketing Intelligence and Planning Journal*; in peer-reviewed scientific volumes in high-level publishers, including Palgrave Macmillan; and in various conference proceedings.

Athanasios Kriemadis is a professor teaching strategic planning, Total Quality Management in services and principles of management in the Department of Management Science and Technology at the University of Peloponnese, Greece. He is Deputy Head of the Department, President of the Innovation and Entrepreneurship Committee and former Deputy Rector of Financial Management and Infrastructure. He received his B.Sc. in Management from the American College of Greece; his M.B.A. in Strategic Management and International Business from the United States International University, San Diego, California, USA, under the guidance of Ansoff (the Father of Strategic Management); his M.A. in Sport Management and Marketing from Springfield College, Massachusetts, USA; and his Ph.D. from The University of New Mexico, USA, specialized in Strategic Planning in Sport Organizations and Business Administration. He was an active member of the San Diego Deming User Group, where he was introduced to Total Quality Management (TQM) by Deming's disciples (Deming is considered as the Father of TQM and Transformation of organizations worldwide). Research interests include TQM and strategic management issues applied to service organizations. He has written 7 books on management, 60 papers published in international journals and 200 papers presented in international conferences.

Ana Marta-Costa holds a Ph.D. in Agri-social Sciences and is an assistant professor in the Department of Economy, Sociology and Management at University of Trás-os-Montes and Alto Douro (UTAD), Portugal. She is a full member of CETRAD—Centre for Transdisciplinary Development Studies—where she develops research on the sustainability, management and planning of the farming systems. She has participated in funded research projects and written several papers and books on these fields. She

is the Director of Agribusiness and Sustainability Doctoral Program, member of the Direction of APDEA—Portuguese Association of Agrarian Economy—and integrates the Steering Committee of the International Farming Systems Association (IFSA) and the General Council of UTAD.

Álvaro Matias is a senior consultant in the Statistics Department at the Portuguese National Central Bank (Banco de Portugal), Portugal. Previously, he was Director General of the Office of Economic Policy and International Relations of the Ministry of Finance of Portugal between May 2014 and December 2017. As for his banking career, Matias has held several positions at the Bank of Portugal, namely as a Senior Economist at the International Relations Department, and served also as an Expert Economist at the International and European Relations Directorate of the European Central Bank in 2005. He holds a Ph.D. in Economics from the University of Lisbon and has taught in a number of universities in Portugal. He has several scientific publications in peer-reviewed journals, namely on tourism economics' related issues, alongside with an extensive experience in the coordination of research projects and international conferences.

Yioula Melanthiou an associate professor at the University of Nicosia, Cyprus, and holds a Ph.D. in Marketing from the University of Manchester, UK. She joined the University of Nicosia in 2004 and is the Head of the Department of Marketing (School of Business) and the Director of Doctoral Programs in the School of Business. Since joining the university, she has been teaching several marketing courses at the undergraduate and postgraduate levels and has extensive experience in supervising students for theses at all levels including Ph.D. and D.B.A. level. Her primary research interests are in the areas of social media marketing and consumer behavior and she has presented her work at numerous conferences and written extensively on related topics. She is a Chartered Marketer, a certified trainer of the Human Resource Development Authority (Cyprus), as well as an expert evaluator for the European Commission. Prior to joining Academia, she has worked in the industry as a research executive, research account manager and marketing consultant.

Eva Mouratidou is a Ph.D. candidate in the Department of Business Administration, University of Macedonia, Greece. She holds an M.Sc. in International Business from the Department of Business Administration and a Bachelor in International and European Studies, School of Social Sciences, Humanities and Arts, University of Macedonia, Greece. Her research focuses on international business, international marketing strategies in periods of crisis and digital marketing. The last few years she has been working as a digital marketing specialist in well-known Greek digital marketing firms.

Yianna Orphanidou is Associate Head of the Hospitality, Tourism and Sports Management Department at the University of Nicosia, Cyprus. She served as chairperson for the Institute of Hospitality Cyprus between 2010 and 2018, and she is a board member of the Cyprus Sustainable Tourism Initiative since 2009. She is a founding member and the general secretary of Cypria Filoxenia. She is also an accredited trainer for adult learners from the Cyprus Human Resource Department Authority and serves as a member of various technical committees. She is part of several EU-funded tourism projects.

Jurgita Paužuolienė is a Doctor of Social Sciences and a lecturer in the Management Department at Klaipėda University, Lithuania. She teaches subjects like sustainable business development and business communication. She has research experience working on international and national projects. She is an expert of non-formal competency evaluation and became qualified through various international trainings. She provided management skills and experience at CDA College, Cyprus; University of Latvia, Riga; the Polytechnic Institute of Guarda, Portugal; and also business companies in the Lithuania, UK. She is a co-author of one monograph. She has over 50 publications in both local and foreign scientific journals. Some works have appeared in other types of books. Research interests include organizational culture, sustainable development and corporate social responsibility.

Lara Penco is Full Professor of Business Strategy and Strategic Management & Corporate Strategy in the Department of Economics

and Business Studies at the University of Genoa, Italy. She holds a Ph.D. in Service Management from the same university. She is a coordinator of the Master Course of Management at the University of Genoa. She is member of C.I.E.L.I., the Italian Center of Excellence on Logistics Transports and Infrastructures. She is a member of the Board of SIMA (the Italian Society of Management). Her research interests lie in strategic management, corporate strategy and entrepreneurship. She is Track Chair of Euram Conference—SIG “Entrepreneurship” and member of the editorial board of several international journals and author of books and papers on academic national and international journals.

Vasiliki-Maria Perrá graduated from the Department of Planning and Regional Development at the University of Thessaly (UTh), Greece, in 2014. She received her M.Sc. Degree in Environmental Protection & Sustainable Development and in Organization and Management of Resources and Development Projects from the School of Rural and Surveying Engineering of Aristotle University of Thessaloniki (AUTh) in 2015 and 2018, respectively. In the same year, she obtained a certification in Data Science & Data Engineering from the Technology College of Athens. Since July 2018, she is a research associate in the Center for Research and Technology Hellas in Sector C “Non-Land Transport, Environmental and Economic Issues” of the Hellenic Institute of Transport. She speaks English (C2), German (B1) and Italian and is a proficient user of software specialized in Statistical Analysis (SPSS), Computer-aided Design (AutoCAD) and Geospatial Data Analysis and Management (ArcGIS, AutoCAD Map, QGIS, ERDAS Imagine). Her research interests are relevant to marine spatial planning and maritime transport as well as she has contributed to the writing of several scientific papers presented in scientific conferences and related to sustainable urban mobility, maritime transport and the enhancement of skills in the maritime transport sector.

Elsa Patricia Orozco Quijano is Professor of Marketing and Management in the Faculty of Management at Laurentian University, Canada. She has taught over 100 courses at Laurentian University in Marketing and other areas of management and she is the author of several

Work Integrated Learning (WIL) programs in the Faculty of Management. In 2019, she was selected as the first Laurentian University Teaching Fellow in Experiential Learning. She is well known in the world of experiential learning in Canada and internationally for her research contributions to the field along with her research related to the future of work.

Paula Rodrigues holds a Ph.D. in Management from the Faculty of Economics, University of Porto, Portugal. She is Associate Professor of Brand Management at the School of Economics and Management, Universidade Lusíada—Norte, Portugal, and a researcher at COMEGI (Center for Research in Organizations, Markets and Industrial Management). Since 1995, she teaches brand management, consumer behavior, econometrics, statistic and quantitative methods at the Universidade Lusíada—Norte. She has written several scientific papers, chapters and books. Her ongoing research projects concern consumer-brand relationships in the field of luxury, tourism and hospitality and consumer goods.

Georgios Sainis is an assistant professor at The American College of Greece (Deree College), teaching accounting and finance courses, and his interests in teaching and research activities concentrate on finance and quality management. He received his B.Sc. in Business Administration, majoring in Finance from the American College of Greece, his M.A. in Operations Management from the University of Kent, Canterbury, and his Ph.D. from the University of Hertfordshire, UK. He has written in international journals and presented papers in international conferences on Total Quality Management (TQM) level of implementation on SMEs and its effect on their financial performance. He has been awarded two professional certificates, one as an Internal Quality Auditor for ISO standards and another as Security Auditor for ISPS Security Code from Bureau Veritas. As a consultant since 1985, he has participated in a number of projects including EU projects and projects related to the development of business plans on SMEs and the implementation of quality assurance models and Total Quality Management systems on SMEs. He has also worked with a number of companies in the public and private sectors as well as with a number of Greek academic institutions as a consultant and as a tutor.

Eleftherios Sdoukopoulos is an associate researcher at the Hellenic Institute of Transport (HIT) of the Centre for Research and Technology Hellas (CERTH) and a Ph.D. candidate at the Department of Maritime Studies of the University of Piraeus, Greece. In 2018, he received a Fulbright Scholarship for conducting part of his doctoral research in the Department of Civil Engineering at the University of Memphis, Tennessee, USA. His doctoral dissertation focuses on port-hinterland relationships and interactions within global supply chains, while his research interests extend to shipping, port and maritime terminal management and operation, port-city relationships and interactions and environmental and energy assessment of freight transport systems. Within the aforementioned fields, he has participated in 18 research projects and studies funded under different European, regional and national programs, and has authored and co-authored 1 book and 38 scientific papers published in international journals, edited books and conference proceedings. He holds a B.Sc.-M.Eng. in Rural and Surveying Engineering and an M.Sc. in Transport Engineering both from the Aristotle University of Thessaloniki, Greece, while for his master studies he received an Award of Excellence for graduating first in his class.

S. M. Riad Sham is a lecturer at the Newcastle Business School, Northumbria University, UK. He has written 11 books, contributed articles to top-tier international journals and guest-edited for various reputable journals, including the *Journal of Business Research*, *Journal of International Management*, *International Marketing Review* and *Technological Forecasting and Social Change*. He is the founder and co-editor of the *Annals of Business Research* and the *Palgrave Studies in Cross-Disciplinary Business Research*. His research interests are in the areas of organizational identity; brand and reputation management; strategic management and sustainable development; stakeholder relationship management focusing on people, planet and profit; strategic agility in international business and pedagogic management. He obtained a second place in the Cambridge-Kent-Czinkota Competition for Excellence in International Business Research in 2019 and is entered into the Kent Business School's Book of Honour. He received the Emerald Literati Award (Outstanding Paper) in 2019, the Emerald

Literati Award (Outstanding Reviewer) in 2018 and the EuroMed Research Award in 2014.

Ligita Šimanskienė is a professor in the Management Department at Social Science and Humanities Faculty, Klaipeda University, Lithuania. She has over 25 years' experience in management: teaching, consulting organizations and doing research. She has a long-lasting publishing experience: her works have appeared in seven different monographs and various methodical guidelines for students. Her articles appeared in more than 100 publications in both local and foreign scientific journals. She is a scientific editor of "Regional Formation and Development Studies" which is published by Klaipeda University since 2007 and is a member of scientific board of nine different scientific journals in Lithuania and abroad (Poland, Latvia, Czech Republic). She is a member of joint Doctoral Council in Management since 2011 and participates in Ph.D. defenses as an official reviewer in Lithuania and Latvia. She is a welcome guest in international conferences at Central Europe and is a strong believer in international cooperation—that is why she has repeatedly organized conferences at her Alma Mater. She is an expert in LAVA (Lithuanian Corporate Social Responsibility network), member of ERRA, EUROFUR networks. Her research interests are corporate social responsibility, organizational culture, teamwork, cultural differences, sustainability and leadership.

Irina A. Svetkina holds a Ph.D. in Economics. She is an associate professor, has got 20 years of auditing activity experience and 12-year experience of teaching and research in the issues of economic security, auditing and internal organizational control. She has been regularly invited as an expert for qualification assessment of financial market specialists. She is the owner and CEO of the auditing agency. For the period of 2019–2020 she has been involved into the applied training project "LEAN PRODUCTION" at the industrial enterprises of Samara region.

Alkis Thrassou is a professor at the School of Business, University of Nicosia, Cyprus, EU. He holds a Ph.D. in Strategic Marketing Management from the University of Leeds (UK), as well as a B.Eng. (LU) and an M.Sc. (UNic) in Engineering. He is also a Chartered

Marketer (FCIM), a Chartered Construction Manager (FCIOB), a Chartered Management Consultancy Surveyor (MRICS) and a senior research fellow of the EuroMed Academy of Business (SFEMAB/EMRBI). He is an associate editor of the *EuroMed Journal of Business* and the managing editor of the *Palgrave Studies in Cross-disciplinary Business Research* (Book Series). He has extensive academic and professional/industry experience, he has written over 160 works in the fields of strategic marketing and management and he retains strong ties with industry, acting also as a consultant.

Ana Trigo is an Undergraduate in Biology, holds a Master's Degree in Viticulture and Oenology and is now a third-year Ph.D. student in Agribusiness and Sustainability program (conjointly with University of Trás-os-Montes and Alto Douro [UTAD] and University of Évora, both in Portugal). Her research interests include sustainable agriculture, sustainability assessment and sustainability indicators. After her research fellow under the R&D Project INNOVINE & WINE (Vineyard and Wine Innovation Platform), she has kept her close collaboration with CETRAD—Centre for Transdisciplinary Development Studies at UTAD—and continues to develop relevant studies on the field of sustainability. She holds a position as project officer at the Sustainability Team of CoLAB VINES&WINES (the National Collaborative Laboratory for the Portuguese Wine Sector led by ADVID—the Association for the Development of Viticulture in the Douro Region) where she is also engaged in developing R&I projects related to sustainability in the wine industry.

Evangelos Tsoukatos is Associate Professor of Management at the Hellenic Mediterranean University, Greece, and adjunct faculty at the University of Nicosia, Cyprus, and the Hellenic Open University. He holds a Ph.D. in Management Science from the Lancaster University Management School (LUMS), UK; a B.Sc. in Mathematics from the “Aristotle” University of Thessaloniki, Greece; a Postgraduate Diploma and an M.Sc. in Operational Research from LUMS, UK. Tsoukatos holds the position of Vice President for Operations and Development at the EuroMed Research Business Institute. He authored and edited books

and journal special issues and his work has been heavily published internationally in scholarly journals and presented in academic conferences. For his published research, he has gained wide recognition from his peers. He is an associate editor of the *EuroMed Journal of Business* (EMJB) and editorial board member in a number of international scholarly journals.

Naziyet Uzunboylu received her B.A. in Events Management from Manchester Metropolitan University, UK, and an M.B.A. in Marketing from University of Nicosia, Cyprus. She worked as a senior event manager in The Academic Events Group (TAEG) and social activities coordinator in Cyprus International University. She is a third-year doctoral student of School of Business at University of Nicosia. Her research area covers social media marketing, user-generated content and branding. She presented her work at the European Marketing Academy Conference (EMAC) 2018, and recently got her paper published in *Qualitative Market Research: An International Journal*.

José G. Vargas-Hernández is a research professor at University Center for Economic and Managerial Sciences, University of Guadalajara, Mexico. He is a member of the National System of Researchers of Mexico. Vargas-Hernández holds a Ph.D. in Public Administration and a Ph.D. in Organizational Economics. He has been a visiting scholar at Carleton University, Canada; University of California Berkeley, USA; and Laurentian University, Canada. He holds a Ph.D. in Economic from Keele University, UK; Ph.D. in Public Administration from Columbia University; studies in Organizational Behavior at Lancaster University and an M.B.A. He has written 9 books and more than 300 papers in international journals and reviews (some translated to English, French, German, Portuguese, Farsi, Chinese, etc.) and more than 300 essays in national journals and reviews. He has obtained several international awards and recognitions. He has also experience in consultancy. His main research is in organizational economics and strategic management. He teaches for several doctoral programs.

Mónica Veloso is Assistant Professor of Marketing at Universidad Autónoma de Madrid, Spain. Her research topics include sustainable

tourism, consumer behavior and experience. She is conducting a doctoral research on customer experience in the hospitality industry. She has recently participated as a speaker in the International Marketing Trends Conference and in the I International Forum on Circular Economy, Eco-innovations and Tourism and has written papers in academic journals, such as *Spanish Journal of Marketing*.

Demetris Vrontis is a professor and vice rector for Faculty and Research and Professor of Strategic Marketing Management at the University of Nicosia, Cyprus. He is the founder and editor-in-chief of the *EuroMed Journal of Business*, an associate editor of the *International Marketing Review* and *Journal of Business Research* and a consulting editor of the *Journal of International Management*. He has wide editorial experience and has successfully edited over 60 guest editions in top-tier journals. He is the president of the EuroMed Academy of Business, which serves as an important and influential regional academy in the area of business and management, and the managing director of Gnosis: Mediterranean Institute for Management Science. He has widely written about 300 refereed journal articles, 45 books and 60 chapters in books, and has presented papers to over 80 conferences around the globe. He is a fellow member and certified Chartered Marketer of the Chartered Institute of Marketing and a Chartered Business Consultant. He is also serving as a consultant and is a member of the board of directors to several international companies.

Yaakov Weber is a professor and teaches courses on strategic management, mergers and acquisitions management, strategic alliances, corporate strategy, cross cultural management and global strategic management. He lectures in various universities in the United States (e.g. New York University [NYU]), Western and Eastern Europe and China; in graduate schools of business administration as well as executive programs; and in private and public organizations as well as industrial associations for CEOs and Directors. He also participates and conducts international Ph.D. seminars, is part of Ph.D. committees and is a referee in international Ph.D. exams. Weber's studies were published in top leading international academic journals, such as *Strategic Management Journal*, *Journal*

of *Management*, *Management Science*, *Journal of Business Research*, *California Management Review* and *Human Relations*, among others. His papers received more than 7000 citations in leading journals and books. Several papers were selected by various academic collections and were described as representing “the most significant new material” and “most important works published in Sociology” (in 1996). Other papers were described as “2nd most cited in last 5 years (2010–2015)” and “most read” (2011–2015) or “most download” in 2017 in leading journals. He serves as an associate editor in editorial boards of several journals and acts as a referee for numerous leading journals. He is the guest editor for special issues in leading journals, such as *California Management Review*, *Human Resource Management* and *Journal of World Business*. Recently Weber won the Outstanding Author Contribution Award. His recent book *A Comprehensive Guide to Mergers & Acquisitions*, which was invited by *Financial Times*, was published in 2014. This and his other books can be seen in AMAZON. Also, he is the co-editor of three book series at EMERALD, Routledge and Palgrave Macmillan. Weber is the co-founder and co-president (for the last ten years) of the EuroMed Business Research Institute (www.emrbi.org), the EuroMed Academy of Business and the EuroMed Research Centre. He has been a senior consultant to CEOs, top executives and directors in leading domestic and international companies such as Coca-Cola, Dead Sea Works, Society of Israel Plastics & Rubber Manufacturers, largest International Engineering company in Israel, Health-care Organizations, The USA-Israel Chamber of Commerce, large and small organizations in Chemical industry, High-Tech industry and many others in various industries as well as to the largest international consulting firm in Israel. His recent large project of international consulting was to an international merger in Moscow, Russia. He conducted numerous workshops to top executives in many countries. Recently he conducted a workshop to the senior executives of one of the four largest investment companies in China.

Anna S. Zotova holds a Ph.D. in Economics, is an associate professor in the Applied Management Department and has participated as a researcher in several international projects concerning the issues of entrepreneurship and smart cities development. From 2012 to 2016 she made researches

for two state tasks of the Ministry of Education and Science of the Russian Federation: “Knowledge Management Methodology and Theory Development in Macro-, Micro-Economy on the Basis of Modern Information and Communication Technologies” and “Formation of the Organizational and Economic Mechanism for Managing Changes in Socio-economic Systems in the Context of Globalization and the Development of the Information-Knowledge Economy”. She is also a teacher in two international master programs (courses related to change management and information resources in management), and has written more than 60 papers related to using modern digital technology methods in education and digital transformation of industrial enterprises, change management and higher education institutions (HEIs) functioning.

Erika Župerkienė is a Doctor of Social Sciences and an associate professor in the Management Department at Klaipėda University (KU), Lithuania. She has 20 years of experience in teaching and more than 20 years of practical experience in business as an entrepreneur. Her research field is management: entrepreneurship, leadership, human resource management, corporate social responsibility, organizational resilience and sustainability. She has a long-lasting publishing experience: her works have appeared in five different monographs and various methodical guidelines for students. Her articles appeared in more than 30 publications. She is an organizer and a program manager of the Long-Term Research Program “The Diversity of Welfare Society in the Baltic Region: a Lithuanian Imperative” 2015–2020. She is a scientific vice editor of a journal *Regional Formation and Development Studies* of Klaipėda University since 2017. She is a member of scientific borders of four different scientific journals in Lithuania, Poland, Check Republic and Moldova. Being an organizer and deputy of international conferences and seminars at KU, she provides training for staff of Lithuanian private and public sector organizations. Her research interests are HRM, CSR, leadership and entrepreneurship.

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1

Editorial Introduction: Business Under Crisis—Avenues for Innovation, Entrepreneurship and Sustainability

Demetris Vrontis, Alkis Thrassou, Leonidas Efthymiou, Naziyet Uzunboylu, Yaakov Weber, S. M. Riad Shams, and Evangelos Tsoukatos

1.1 Book Context and Theoretical Foundations

‘A crisis can devastate an organization, even kill it, or at best, leave it badly wounded’ (Crandall et al., 2014, p. 3). Currently, the world is in the midst of a global crisis. The COVID-19 is an ongoing pandemic (Kuckertz et al., 2020), with an unknown duration (Brown & Rocha, 2020). It creates economic (Maritz et al., 2020) and social disruption (Brown &

D. Vrontis

Vice Rector for Faculty and Research, University of Nicosia, Nicosia, Cyprus
e-mail: vrontis.d@unic.ac.cy

A. Thrassou • L. Efthymiou (✉) • N. Uzunboylu
School of Business, University of Nicosia, Nicosia, Cyprus
e-mail: thrassou.a@unic.ac.cy; efthymiou.l@unic.ac.cy

Rocha, 2020) of extraordinary scale. Local businesses, global trade (Simon-Moya et al., 2016) as well as foreign investments are suffering (Sabatino, 2016). However, is this something new to businesses? Or, let us phrase it differently: can you recall a time where the world was free of major disrupting events? From recurring episodes of great depression, oil crises, political crises, wars, debt crises, to the ongoing climate change (Koh et al., 2020; Coppola et al., 2021), there is a constant pressure on businesses to cope with economic, environmental, political, legal and social forces.

But, as Albert Einstein once said, ‘[i]n the midst of every crisis, lies great opportunity’ (Kim et al., 2020). It’s important to remember that throughout history, crises have been pivotal in developing societies (Cuculelli & Peruzzi, 2020). Wars have fuelled technological innovations (Sarkar & Osiyevskyy, 2018), pandemics have helped advance health-care systems (Liu et al., 2020) and the global financial crises have helped advance technology companies (Brem et al., 2020). In this book, we approach crisis not simply as a source of problems, but also as a set of choices. We seek to explore critical events as possible opportunities for sustainability, through process improvement, creativity, innovation and entrepreneurship.

Y. Weber

School of Business Administration, College of Management,

Rishon Lezion, Israel

e-mail: yweber@bezeqint.net

S. M. R. Shams

Newcastle Business School, Northumbria University,

Newcastle Upon Tyne, UK

e-mail: riad.shams@northumbria.ac.uk

E. Tsoukatos

Department of Accounting and Finance, University of Applied Sciences Crete
(T.E.I. of Crete), Heraklion, Greece

e-mail: tsoukat@staff.teicrete.gr

1.2 Value Creation at Time of Crisis

Innovation is the main ingredient of value creation (Bresciani et al., 2013). Also, its role becomes increasingly important at times of crisis. Besides, innovation is itself a complex, uncertain and somewhat disorderly process, which drives and is driven by crisis (Rosenberg, 2010). However, an important ingredient of crisis is so-called creativity. Before we proceed any further, let us distinguish between the two.

Innovation is about conceiving and translating an idea into a new product and/or service that creates value. It ‘involves some combination of problem/opportunity identification’ (Hughes et al., 2018, p. 551), whereas, at times of crisis, it often results to the introduction, adoption or modification of new products, services or processes. It could be an invention that never existed, a conversion of a byproduct into something profitable or an extension of a product’s scope, among others (HSBP, 2021). Also, innovations can be categorised according to the degree of their impact. Some innovations are incremental, while others are radical. We categorise innovation under three main categories, as follows:

- **Efficiency innovations** produce the same product or service more cheaply. For example, during the COVID-19 crisis, several innovations emerged (Hartmann & Hartmann, 2020), including software applications that automated the stock-taking of vaccines in the health-care sector.
- **Sustaining innovations** turn good products into better ones, such as the continual development of ever-faster microprocessors, and the creation of higher-powered, higher-resolution medical scanning devices (HSBP, 2021).
- **Disruptive innovations** transform expensive, complex products or services into affordable ones, or even, re-structure entire sectors. For example, the sharing economy rose out of the 2009 financial crisis as technology enabled the creation of marketplaces for underutilized assets, while the masses were desperate for new sources of income (Bar Am et al., 2020).

Creativity, on the other hand, concerns deliberate processes, applied when attempting to generate novel ideas that are likely to be useful (Hughes et al., 2018). Creativity in organisations is not an abstract cognitive or behavioural process. On the contrary, it is a managed (Thrassou et al., 2018), goal-oriented process, designed to solve a particular problem or satisfy a specific need (HSBP, 2021). Taken together, creativity and innovation are two distinct but closely related concepts (Anderson et al., 2014).

In today's non-linear and globalised environment, crisis cannot be separated from value creation. On the contrary, critical events are themselves part of and interconnected with creativity, innovation and entrepreneurship. To some companies, innovation is a response to a crisis. For others, innovation is the crisis itself. Product life cycles become shorter than ever, process innovations disrupt entire sectors, whereas, new rivals emerge unexpectedly. Within this ever-changing landscape, the process of innovation is vital not only for multinational corporations but also for SMEs (e.g. Thrassou et al., 2018) and newcomers. As we explain below, innovation at times of crisis is a trigger of entrepreneurship.

1.3 Crises as Opportunities for Entrepreneurship?

Crises are usually considered as dangerous (Branicki et al., 2018; Dushnitsky et al., 2020), expensive (Dahles & Susilowati, 2015; Devece et al., 2016) and divert attention from agendas and priorities (Brem et al., 2020). There's no doubt that a crisis creates problems (Doern et al., 2019) and can be perceived as a threat (Kuckertz et al., 2020; Liu et al., 2020). However, a look back in history illustrates that times of crisis are not only a challenge (Nastase & Kajanus, 2010; Bacq et al., 2020; Ratten, 2020), but also provide new and unique opportunities for entrepreneurs (Liu et al., 2020; Brown & Rocha, 2020) to come up with creative interruption (Castro & Zermeno, 2020) for the benefit of organisations, industries and society. Rather than running from crises, entrepreneurs embrace certain elements of risk (Abdullah et al., 2018; Branicki et al., 2018) and

see possible opportunities (Liu et al., 2020), while others solely focus on the negative aspects of a crisis. In fact, transforming those risks into business opportunities can create long-lasting ventures (Bacq et al., 2020),

Existing literature suggests that, times of crisis are also times of new start-ups (Kuckertz et al., 2020), innovation (Linan & Jaen, 2020), resilience (Dahles & Susilowati, 2015; Sabatino, 2016), organisational change and revitalisation (Sarkar & Osiyevskyy, 2018). Crises may induce persistent changes in societies (Efthymiou et al., 2020; Sarkar & Osiyevskyy, 2018; Efthymiou, 2018) and consumer habits or needs (Ratten, 2020). In turn, they could uncover valuable business opportunities (Kim et al., 2020) for start-ups that are able to help address the constraints created by difficult conditions (Kuckertz et al., 2020), and which respond to these changes (Ratten, 2020).

For example, digital commerce received a major boost during the coronavirus shutdown (Bacq et al., 2020). People who previously had inhibitions about buying online (Ratten, 2020) are suddenly forced to do so. This inspires them to see the benefits of digital commerce (Bacq et al., 2020) and the convenience this brings to their lives (Cuculelli & Peruzzi, 2020). This massive shift in consumer comfort and confidence with digital commerce (Bacq et al., 2020) is a game changer in many ways. On the one hand, it potentially means the annihilation of certain industries and segments (Cuculelli & Peruzzi, 2020), and on the other hand, it offers a once-in-a-lifetime opportunity (Kuckertz et al., 2020) for many start-ups. In fact, even as the number of new business registrations generally falls during recessions (Linan & Jaen, 2020), many successful innovative businesses or start-ups have arisen from periods of crisis (Bacq et al., 2020). To highlight some examples, Uber, Dropbox, Airbnb and Pinterest were all founded during or just after the global financial crisis (Brem et al., 2020), and Alibaba's chaeli Taobao was founded during the SARS crisis in China in 2003 (Nastase & Kajanus, 2010). Within the context of digitisation, it is also important to mention that economic crises were reasons for governments to impose digital payments in an attempt to reduce their shadow economy (Batiz-Lazo & Efthymiou, 2016a, b; Efthymiou & Michael, 2013, 2016).

Although, times of crisis tend to disclose real vulnerabilities (Doern, 2016) and entrenched challenges (Devece et al., 2016; Bacq et al., 2020)

in organisations and entire industries, opportunity may declare itself in the form of new systems or technologies (Sarkar & Osiyevskyy, 2018) that may not have come to fruition as quickly (Simon-Moya et al., 2016), or at all, in the absence of the crisis. In other words, a crisis can bring to attention issues (Sabatino, 2016; Dushnitsky et al., 2020) that have been neglected (Doern, 2016), as well as present possibilities for innovation and improvements (Bacq et al., 2020).

For instance, the current crisis has created a forced opportunity—like no other—for businesses to become more innovative (Brown & Rocha, 2020; Bacq et al., 2020). In this vein, businesses are forced to improve their digital customer service (Bacq et al., 2020) and online experiences (Liu et al., 2020). During lockdowns (limiting person-to-person contact) (Maritz et al., 2020), businesses are strengthening their global team reviews and workshops (Ratten, 2020) to digitalise every aspect of business (Bacq et al., 2020) from product information and initial customer outreach (Cuculelli & Peruzzi, 2020) to after-sale support services (Dushnitsky et al., 2020). For many companies, accelerating their digital transition (Cuculelli & Peruzzi, 2020) is the only way forward during the current crisis. However, exponential technologies (Brem et al., 2020) play a leading role in this digital transformation (Cuculelli & Peruzzi, 2020), allowing businesses to gain a competitive edge (Doern, 2016), improving not only operational resilience (Dahles & Susilowati, 2015), but enabling flexibility in a new reality (Sabatino, 2016) characterised by rapidly changing market dynamics (Branicki et al., 2018).

Furthermore, many businesses transform crisis into opportunity by considering new collaboration (Abdullah et al., 2018) and service delivery models (Cuculelli & Peruzzi, 2020). Partnering with or buying firms with strong (Sarkar & Osiyevskyy, 2018), complementary digital offerings (Dushnitsky et al., 2020) or capabilities (Sabatino, 2016), can enable to outmanoeuvre peers and competitors in digital innovation and value creation (Brem et al., 2020; Thrassou et al., 2020). Consequentially, entrepreneurs consider innovation (Brem et al., 2020), cooperation and strategic alliances (Linan & Jaen, 2020) as the opportunities ahead as the storm passes. They need to innovate in all processes (Brem et al., 2020) and work together (Dushnitsky et al., 2020). Sharing resources and

knowledge (Linan & Jaen, 2020) through the creation of networks seems an attractive option (Castro & Zermeno, 2020) in the context of crisis.

According to Dushnitsky et al. (2020), actions taken during a crisis shape firms in the long run. The measures taken to survive and eventually end a crisis often make an organisation or country stronger (Simon-Moya et al., 2016; Cuculelli & Peruzzi, 2020) and more resilient for future events (Dahles & Susilowati, 2015; Branicki et al., 2018; Castro & Zermeno, 2020). Apparently, a crisis also has the potential to be a catalyst for positive organisational change (Sarkar & Osiyevskyy, 2018) and if handled appropriately, it may leave the organisation or its citizens better off than they were beforehand (Cuculelli & Peruzzi, 2020). It is understandable that making changes not only lead entrepreneurs out of this economic crisis (Devece et al., 2016) but, more importantly, lead them to a more sustainable future (Sabatino, 2016; Maritz et al., 2020).

The world has experienced several crises that have had major impacts on global economy (Maritz et al., 2020). However, history has shown that serious crises have been followed by economic prosperity (Devece et al., 2016) and even offered unexpected benefits (Kim et al., 2020; Liu et al., 2020) for organisations, countries, and even the world. In the short-term, there will be opportunities arising from the COVID-19 crisis (Brown & Rocha, 2020), such as developing hygiene or digital work solutions. The long-term consequences of the COVID-19 pandemic are, however, not yet foreseeable (Brown & Rocha, 2020), but it seems predictable that broader opportunities will arise. Entrepreneurs that become competent (Abdullah et al., 2018; Brown & Rocha, 2020) and move quickly in seizing the opportunities ahead (Castro & Zermeno, 2020) will have a strategic advantage over their competitors in the post-pandemic economy.

1.4 From Crisis to 'Krisis' for Sustainability

When John Elkington coined the term 'Triple Bottom Line' (Elkington, 1994), the purpose was to enrich the traditional measures of profits, return on investment and shareholder value with a more societal and environmental orientation. The Triple Bottom Line (TBL) entails that

corporate performance has to stem out of three interrelated dimensions: profits, people and the planet—also known as the three Ps. A healthy performance on all three Ps is a prerequisite for sustainable development. In other words, economic success is not going to last, unless the needs of the environment and its people are taken into consideration. Likewise, no matter how much we respect social capital and the environment, our operations will not be sustainable without a sound economic performance. All dimensions are interconnected and complimentary to each other.

However, sustainability is vulnerable to critical events, begging the question: how do organisations remain sustainable when the three Ps are stroked by internal or exogenous forces? Usually, businesses under crisis prioritise short-term goals, such as survival through downsizing and lay-offs. But, despite the conventional view, sustainability often becomes a reaction to critical events. There are indications that new structural conditions result to different models of growth and development, such as new green investments, energy efficiency, social and cultural inclusion (Petar, 2012).

At this point, it is helpful to introduce another interpretation of crisis; one that contributes to the discussion of sustainability. The word crisis is usually used interchangeably—or as synonymous—for various critical events, including disasters, catastrophe or other emergencies (Herbane, 2010). But, originally, the word derives from the ancient Greek verb ‘*kri-nein*’, meaning to judge in order to take a decision. Its noun, ‘*krisis*’, means a judgement and/or a decision. In this spirit, we suggest that emergency responses require decisions that are capable of changing crisis into ‘*krisis*’ towards survival and success.

‘*Krisis for sustainability*’ requires decision-making that is based on managerial preparedness, in liaison with a firm’s stakeholders (Leonidou et al., 2018). It’s a circular process of constant environmental scanning, evaluation of information, integrating assumptions into decision-making, making adjustments to previous decisions and recalibrating them (Brown & Kline, 2020). Within this process, sustainability stems out of the ability to recognise, foresee and deal with crisis patterns. It also becomes an extension of creativity and innovation, as discussed earlier.

Therefore, examining crisis is not simply about communicating narratives of single critical events. It is not just about single responses to unfortunate situations (Crandall et al., 2014). It's rather about exploring the possibilities and deciding on changes towards a more sustainable future. As the chapters of this book convey, it's about using the lessons stemming out of a crisis for developing 'krisis-readiness' and a long-term operational effectiveness. As Bar Am et al. (2020) suggest, it's about prioritising innovation during the crisis, to unlock post-crisis growth and sustainability.

1.5 Structure of the Book

Within the wider attempt to explore avenues for Innovation, Entrepreneurship and Sustainability at times of crisis, the book is loosely organised in three thematic sections. The first part looks at organisational responses to crisis, along with attempts to develop resilience through strategic sustainability. The second part focuses on digitisation, and how technology facilitates or hinders sustainability under conditions of crisis. The third part focuses on SMEs, Family Firms (FF), Entrepreneurship and how critical events offer opportunities for innovation.

Chapter 2 is titled 'Business Under Crisis: Strategic Organisational Sustainability—A Contextual Transformation'. Traditional organisations face a lot of challenges posed by the new global economic context, confronting contradictory patterns of globalisation and des-globalisation processes. Within this complex environment, the authors (José G. Vargas-Hernández and Elsa Patricia Orozco-Quijano) propose a model based on designing and implementing strategic organisational sustainability. They reject the narrow focus on economic growth and profits, towards embracing social inclusion, equity and environmental sustainability.

Then, Chap. 3 looks at agrarian section (titled: Sustainability Assessment: A Tool to Build Resilience in the Face of Future Crisis). Ana Trigo, Ana Marta-Costa and Rui Frago argue that the increasing crisis of the climate, food, fuel and the economy call for a more sustainable agriculture. Corporations need to be equipped with proper assessment methods, capable of building business resilience. This kind of knowledge

is important in the light of future crisis and continuous needs for adaptation (Santoro et al., 2018). By reviewing current practices amongst the agrarian sector, the chapter illuminates the fundamental role of context comprehensiveness when assessing sustainability. It also provides information on micro-level performance evaluations, to support decision and application of assessment tools.

Subsequently, Chap. 4 examines and suggests strategies for 'Reengineering the Organisation Design of Wine Businesses'. The globalisation of wine businesses depends on several internal factors, such as abilities, attitudes, managerial perceptions, organisational culture, resources and capabilities. Wine businesses face crises and obstacles in penetrating the global market with evidence of limited export revenues. Therefore, Georgios Afxentiou and Yioula Melanthiou identify the factors influencing the formulation of a successful export strategy by wine businesses. The analysis draws on a qualitative method, along with a review of national statistical reports, surveys, articles and papers.

Moreover, the next three chapters in the book explore the impact of technology as well as the arising opportunities for sustainability. Chapter 5, titled 'Crisis, Adaptation and Sustainability: Digital System Interoperability in the Cruise Industry', explores the ongoing crisis in the Cypriot Cruise Industry and the opportunities for sustainability which stem by digital system interoperability. Drawing on research workshops and in-depth interviews with several stakeholders, the findings reveal a number of wrongdoings, resulting in a decade-long decline. Also, the findings report on the implementation of a National Maritime Single Window (NMSW), and its harmonisation through the European Maritime Single Window (EMSW). Within this framework, the chapter introduces a platform called 'NAYS'. The digital platform aims at facilitating a more inclusive and sustainable supply-chain. The study makes an original contribution to literature on system interoperability and utilisation of shipping information in the cruise industry.

Within the digital context, Chap. 6 (Adoption of Artificial Intelligence Integrated Customer Relationship Management in Organisations for Sustainability) explores Artificial Intelligence for Customer Relationship Management (CRM). CRM is considered as a strategic initiative of a business organisation. To develop CRM activities, a huge volume of

customer data is analysed, which helps the organisations identify customers' purchase intentions. But without an automated system, an accurate and fast analysis of such a huge volume of customer data is difficult for humans and organisations who face numerous challenges and sometimes crisis situations. Thus, the authors (Sheshadri Chatterjee and Ranjan Chaudhuri) suggest that Artificial Intelligence (AI), integrated with CRM, could be a solution to overcome such challenges. It can provide a solution for overcoming such a crisis, often without human intervention. AI-CRM could provide sustenance to the organisations in terms of consistent decision-making. The chapter also discusses the security and privacy issues related to usage of customers' personal data and how to overcome such challenges.

Also in the field of technology, Chap. 7, titled 'COVID Crisis and the Impact on Smart Tourism, Sustainable Development and, Local Communities', examines the impact of crisis on Smart Tourism, sustainability and local communities. Tourism, a great contributor to Spain's and Portugal's Gross Domestic Product (GDP), is one of the industries most affected by COVID-19 crisis worldwide. The chapter details how the local communities have been affected by the pandemic. It also identifies the positive and negative factors influencing residents' wellbeing. The state-of-the-art of research on smart and sustainable tourism is examined, as well as on local communities' resilience. Secondary data was gathered on Spain and Portugal to develop a fuller understanding of the phenomena under study and the ways the COVID-19 crisis has affected these two countries' vision of tourism.

Furthermore, the next four chapters focus on SMEs, Family Firms (FF) and Entrepreneurship under crisis. The chapters explore the impact of crisis, how critical events offer opportunities for innovation and possible strategies for sustainable resilience. For example, Chap. 8, titled 'Russian Economy in Risk Zone: The Most Affected Industries (Regional Analysis Case Study)', explores the impact of COVID-19 on Russian entrepreneurship. The authors (Anna Zotova, Aleksandra Chudaeva and Irina Svetkina) examine the consequences of the crisis in the Samara region, prior to discussing opportunities for recovery and sustainable development.

In a similar vein, Chap. 9 (titled COVID-19 and the Strategic Responses to Crises in the Italian Entrepreneurial Firms: An Explorative Research) examines the impact of COVID-19 on workers' confidence in Italy. More specifically, Lara Penco, Enrico Ivaldi and Andrea Ciacci, look at a possible negative correlation between the crisis and a change in confidence. The analysis focuses on entrepreneurial and strategic orientation in Italian family firms and SMEs.

Chapter 10 ('The Impact of Sustainability and Total Quality Management on SMEs Financial Performance Under Crisis Conditions' by Georgios Sainis, Athanasios Kriemadis, and Dimitra Kapnisi) focuses on sustainability and Total Quality Management (TQM) on SMEs. The analysis suggests that contemporary organisations should implement strategies and make investments that will avail the planet and the society—as a means of economic growth and long-term survival. The analysis further suggests that TQM and sustainability practices are the key factors for organisations to overcome a crisis successfully.

Chapter 11—Innovation Tendencies in Internationalised Family Firms During Periods of Crisis: A Conceptual Framework, by Kampouri, Katerina; Hajidimitriou, Yannis and Mouratidou, Eva—examines innovation in an emerging field within the Family Firm (FF) literature. The chapter advances the FF internationalisation literature by developing a conceptual framework that provides new explanations on the tendencies of internationalised FFs to innovate, especially in periods of crisis. To develop the proposed conceptual framework, we integrate and discuss papers published in International Business and FF journals and develop nine propositions based on the family governance heterogeneity logic. The implications of this integrative conceptual framework are discussed.

The final chapter of the book looks at the impact of the pandemic on customer consumption. Chapter 12, titled 'Responsible Consumption: Society Habits in Time of Crisis', draws on the Lithuanian and wider EU context. The account is a valuable resource to entrepreneurs, small and large businesses, as it conveys the latest changes in the field of responsible consumption and sustainability. The authors (Ligita Šimanskienė, Jurgita Paužolienė, Mariantonietta Fiore and Erika Župerkienė) explain how the habits of consumers have changed, whereas, a comparison is made between European countries and the Lithuanian population.

To conclude, through its chapters, this book illuminates the impact of crises in different settings, along with possibilities for creativity, innovation, sustainability and entrepreneurship. The book in essence is nothing more than a tool. The reader is advised to use it selectively (e.g. by navigating to specific chapters based on thematic interest), or perhaps, from cover to cover, towards accumulating a fuller knowledge of the different manifestations of crisis.

References

- Abdullah, N., Hadi, N., & Dana, L. (2018). The Nexus Between Entrepreneur Skills and Successful Business: A Decompositional Analysis. *International Journal of Entrepreneurship and Small Business*, 34(2), 249–265.
- Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and Creativity in Organizations: A State-of-the-Science Review and Prospective Commentary. *Journal of Management*, 40(5), 1297–1333.
- Bacq, S., Geoghegan, W., Josefy, M., Stevenson, R., & Williams, T. A. (2020). The COVID-19 Virtual Idea Blitz: Marshaling Social Entrepreneurship to Rapidly Respond to Urgent Grand Challenges. *Business Horizons*, 63(6), 705–723.
- Bar Am, J., Furstenthal, L., Jorge, F., & Roth, E. (2020, June 17). *Innovation in a Crisis: Why It Is More Critical Than Ever*. McKinsey & Company. Retrieved March 3, 2021, from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/innovation-in-a-crisis-why-it-is-more-critical-than-ever>
- Batiz-Lazo, B., & Efthymiou, L. (2016a). Introduction: The 360 Degrees of Cashlessness. In B. Batiz-Lazo & L. Efthymiou (Eds.), *The Book of Payments: Historical and Contemporary Views on the Cashless Economy* (pp. 1–10). Palgrave Macmillan.
- Batiz-Lazo, B., & Efthymiou, L. (2016b). *The Book of Payments: Historical and Contemporary Views on the Cashless Economy*. Palgrave Macmillan.
- Branicki, L., Sullivan-Taylor, B., & Livschitz, S. (2018). How Entrepreneurial Resilience Generates Resilient SMEs. *International Journal of Entrepreneurial Behavior and Research*, 24(7), 1244–1263.
- Brem, A., Nylund, P., & Viardot, E. (2020). The Impact of the 2008 Financial Crisis on Innovation: A Dominant Design Perspective. *Journal of Business Research*, 110, 360–369.

- Bresciani, S., Thrassou, A., & Vrontis, D. (2013). Change Through Innovation in Family Businesses: Evidence from an Italian Sample. *World Review of Entrepreneurship, Management and Sustainable Development*, 9(2), 195–215.
- Brown, R., & Rocha, A. (2020). Entrepreneurial Uncertainty During the Covid-19 Crisis: Mapping the Temporal Dynamics of Entrepreneurial Finance. *Journal of Business Venturing Insights*, 14, 1–10.
- Brown, R. S., & Kline, W. A. (2020). Exogenous Shocks and Managerial Preparedness: A Study of U.S. Airlines' Environmental Scanning Before the Onset of the COVID-19 Pandemic. *Journal of Air Transport Management*, 89(10), 1–9. <https://doi.org/10.1016/j.jairtraman.2020.101899>
- Castro, M. P., & Zermeno, M. G. G. (2020). Being an Entrepreneur Post-COVID-19 – Resilience in Times of Crisis: A Systematic Literature Review. *Journal of Entrepreneurship in Emerging Economies*. <https://doi.org/10.1108/JEEE-07-2020-0246>
- Coppola, M., Krick, T., & Blohmke, J. (2021). *Feeling the Heat?* Deloitte Insights. [Online]. Retrieved February 16, 2019, from <https://www2.deloitte.com/us/en/insights/topics/strategy/impact-and-opportunities-of-climate-change-on-business.html>
- Crandall, W. R., Parnell, J. A., & Spillan, J. E. (2014). *Crisis Management: Leading in the New Strategy Landscape* (2nd ed.). Sage.
- Cuculelli, M., & Peruzzi, V. (2020). Post-Crisis Firm Survival, Business Model Changes, and Learning: Evidence from the Italian Manufacturing Industry. *Small Business Economics*, 54(2), 459–474.
- Dahles, H., & Susilowati, T. P. (2015). Business Resilience in Times of Growth and Crisis. *Annals of Tourism Research*, 51, 34–50.
- Devece, C., Peris-Ortiz, M., & Rueda-Armengot, C. (2016). Entrepreneurship During Economic Crisis: Success Factors and Paths to Failure. *Journal of Business Research*, 69(11), 5366–5370.
- Doern, R. (2016). Entrepreneurship and Crisis Management: The Experiences of Small Businesses During the London 2011 Riots. *International Small Business Journal: Researching Entrepreneurship*, 34(3), 276–302.
- Doern, R., Williams, N., & Vorley, T. (2019). Special Issue on Entrepreneurship and Crises: Business as Usual? An Introduction and Review of the Literature. *Entrepreneurship and Regional Development*, 31(5/6), 400–412.
- Dushnitsky, G., Graebner, M. E., & Zott, C. (2020). Entrepreneurial Responses to Crisis. *Strategic Entrepreneurship Journal*, 14(4), 537–548.

- Efthymiou, L. (2018). Worker Body-Art in Upper-Market Hotels: Neither Accepted, Nor Prohibited. *International Journal of Hospitality Management*, 74, 99–108.
- Efthymiou, L., & Michael, S. (2013). *When Cards and ATM's Are the Only Choice: A Fortnight in Cyprus with No Banking System, Nor Trust*. MPRA Paper. Retrieved June 20, 2019, from <https://mpr.ub.uni-muenchen.de/50646/>
- Efthymiou, L., & Michael, S. (2016). The Cyprus Cash Crash: A Case of Collective Punishment. In B. Batiz-Lazo & L. Efthymiou (Eds.), *The Book of Payments: Historical and Contemporary Views on the Cashless Economy* (pp. 131–140). Palgrave Macmillan.
- Efthymiou, L., Orphanidou, Y., & Panayiotou, G. (2020). Delineating the Changing Frontstage and Backstage Segregation in High-End and Luxury Hotels. *Hospitality & Society*, 10(3), 287–312. https://doi.org/10.1386/hosp_00025_1
- Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review*, 36(2), 90–100.
- Hartmann, M. R. K., & Hartmann, R. K. (2020, December). Frontline Innovation in Times of Crisis: Learning from the Corona Virus Pandemic. *Policing: A Journal of Policy and Practice*, 14(4), 1092–1103. <https://doi.org/10.1093/police/paaa044>
- Herbane, B. (2010). Small Business Research – Time for a Crisis Based-View. *International Small Business Journal*, 28(1), 43–64.
- HSBP – Harvard Business Publishing. (2021). *Harvard Manage Mentor: Innovation and Creativity*. Retrieved March 3, 2021, from <https://hbsp.harvard.edu/product/7160-HTM-ENG>
- Hughes, D., Lee, A., Tian, A., Newman, A., & Legood, A. (2018). Leadership, Creativity, and Innovation: A Critical Review and Practical Recommendations. *The Leadership Quarterly*, 29(5), 549–569.
- Kim, D. D., Ollendorf, D. A., Neumann, P. J., & Fendrick, A. M. (2020). Crisis into Opportunity: Can COVID-19 Help Set a Path to Improved Health Care Efficiency? *The American Journal of Managed Care*, 26(9), 369–370.
- Koh, W. C., Kose, M. A., Nagle, P. S., Ohnsorge, F. L., & Sugawara, N. (2020). *Debt and Financial Crisis*. Policy Research Working Paper 9116. World Bank Group. Retrieved March 2, 2021, from <http://documents1.worldbank.org/curated/en/560291579701550183/pdf/Debt-and-Financial-Crises.pdf>

- Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Morales Reyes, C. A., Prochotta, A., Steinbrink, K. M., & Berger, E. S. C. (2020). Startups in Times of Crisis – A Rapid Response to the COVID-19 Pandemic. *Journal of Business Venturing Insights*, 13, e00169.
- Leonidou, E., Christofi, M., Vrontis, D., & Thrassou, A. (2018). An Integrative Framework of Stakeholder Engagement for Innovation Management and Entrepreneurship Development. *Journal of Business Research*, 119(10), 245–258.
- Linan, F., & Jaen, I. (2020). The Covid-19 Pandemic and Entrepreneurship: Some Reflections. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-05-2020-0491>
- Liu, Y., Lee, J. M., & Lee, C. (2020). The Challenges and Opportunities of a Global Health Crisis: The Management and Business Implications of COVID-19 from an Asian Perspective. *Asian Business & Management*, 19, 277–297.
- Maritz, A., Perenyi, A., de Waal, G., & Buck, C. (2020). Entrepreneurship as the Unsung Hero During the Current COVID-19 Economic Crisis: Australian Perspectives. *Sustainability*, 12(11), 1–9.
- Nastase, C., & Kajanus, M. (2010). The Impact of the Global Crisis on SME and Entrepreneurship: Romania and Finland Cases. *Amfiteatru Economic*, 12(27), 751–762.
- Petar, D. (2012). Sustainable Development Under Impact of the Crisis: Global and National Dimensions. *Economic Analysis*, 45(1–2), 1–18.
- Ratten, V. (2020). Coronavirus (Covid-19) and Entrepreneurship: Changing Life and Work Landscape. *Journal of Small Business & Entrepreneurship*, 32(5), 503–516.
- Rosenberg, N. (2010). *World Scientific Publishing Company*. World Scientific.
- Sabatino, M. (2016). Economic Crisis and Resilience: Resilient Capacity and Competitiveness of the Enterprises. *Journal of Business Research*, 69(5), 1924–1927.
- Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a Knowledge Management System for Open Innovation and Knowledge Management Capacity. *Technological Forecasting and Social Change*, 136, 347–354.
- Sarkar, S., & Osiyevskyy, O. (2018). Organizational Change and Rigidity During Crisis: A Review of the Paradox. *European Management Journal*, 36(1), 47–58.

- Simon-Moya, V., Revuelto-Taboada, L., & Ribeiro-Soriano, D. (2016). Influence of Economic Crisis on New SME Survival: Reality or Fiction? *Entrepreneurship & Regional Development*, 28(1–2), 157–176.
- Thrassou, A., Orfanos, D., & Tsoukatos, E. (2018). Linking Motivational Leadership with Creativity. In D. Vrontis, Y. Weber, A. Thrassou, S. Shams, & E. Tsoukatos (Eds.), *Innovation and Capacity Building* (Palgrave Studies in Cross-disciplinary Business Research, in Association with EuroMed Academy of Business). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-90945-5_5
- Thrassou, A., Uzunboylu, N., Vrontis, D., & Christofi, M. (2020). Digitalization of SMEs: A Review of Opportunities and Challenges. In A. Thrassou, D. Vrontis, Y. Weber, S. M. R. Shams, & E. Tsoukatos (Eds.), *The Changing Role of SMEs in Global Business* (Palgrave Studies in Cross-disciplinary Business Research, in Association with EuroMed Academy of Business) (pp. 179–200). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-45835-5_9
- Thrassou, A., Vrontis, D., & Bresciani, S. (2018). The Agile Innovation Pendulum: Family Business Innovation and the Human, Social, and Marketing Capitals. *International Studies of Management & Organization*, 48(1), 105–120. <https://doi.org/10.1080/00208825.2018.1407086>



2

Business Under Crisis: Strategic Organizational Sustainability— A Contextual Transformation

José G. Vargas-Hernández
and Elsa Patricia Orozco Quijano

2.1 Introduction

Organizational sustainability is undergoing a crisis as contemporary business and society is going through rapid dynamic changes in the new global economy. Business organizations are facing new opportunities and threats as they work towards sustainable organizational development at their own pace and speed (United Nations Global Compact, 2019). Besides organizational policies and beyond what's written in employee job descriptions, workers have different backgrounds and personal

J. G. Vargas-Hernández (✉)
Posgraduate and Research Department, Tecnológico Mario Molina, Unidad
Zapopan, Zapopan, Mexico
e-mail: jose.vargas@zapopan.tecnmm.edu.mx

E. P. Orozco Quijano
Faculty of Management, Laurentian University, Sudbury, ON, Canada
e-mail: porozco@laurentian.ca

histories. This creates a more comprehensive work environment and organizations that are embedded within uncertain and complex economies and societies (Roblek et al., 2017).

The global economy has penetrated and changed business organizations whose work processes and practices are lagging behind those of organizational structures. This problem requires immediate organizational solutions. On a global scale, there have been many economic and technological changes under which organizations must develop and adapt to specific environmental conditions.

Sustainability is increasingly relevant when it comes to the contextualization and transformation of organizations in the face of a global crisis. Today, business organizations and consumers are concerned with ecological and social issues and are becoming more aware of their responsibility to develop strategic and sustainable organizations and to maintain environmental management. Organizations may have different approaches to achieve these goals because of their varying capabilities, resources, knowledge, expertise and so on (Haanaes, 2016).

Business organizations engage in operational relationships and interactions between individuals, group organizations and institutions and make decisions that are channelled for sustainable organizational and personal development. Organizational changes in cultural, structural and individual behaviours have had a significant impact on community development. The organizational structure states the responsibilities of all workers and manages communication to facilitate the exchange of knowledge, organizational changes and progress, cooperation and collective bargaining (Brown & Eisenhardt, 1997). It also ensures the implementation of employment policies, the agreement for procedures and the settlement of disputes and grievances. Traditional organizational structures are struggling with new internal, external and environmental demands.

Business organizational sustainability is affected by global and local sustainability challenges and issues that need to be assessed and analysed for designing policies, strategies and practices that may have broader economic, social and environmental impact (Danciu, 2013).

The study begins with the analysis of sustainability and organizations. It aims to create a link between both elements in the conceptualization of organizational sustainability and its components: economic growth and

efficiency, social justice, equity and inclusion and environmental sustainability. Finally, this study relates all of these components and analyses elements from strategic organizational development before elaborating the final conclusions.

2.2 Literature Review

Around the world, more organizations are taking responsibility for sustainability and environmental management (Rondinelli & Berry, 2000). Sustainability has become a relevant issue because today's consumers are more concerned about ecological and social issues when consuming and using products and services.

Originally, sustainability was defined as the element that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Commission on Environment and Development, 1987; Brundtland Report to the United Nations, 1987). Sustainability is critical for the organizations that are concerned with meeting the current needs of society without compromising the ability to meet the needs of future generations. (I took out this sentence because it was quite redundant.)

Sustainability is an ecological concept and environmental development that focuses on environmental stewardship, economic growth and social justice, all of which are essential factors when characterizing sustainable organizational development. Sustainable organizational development is a concept that leads to the promotion of growth and development (Sev, 2009). The framework that leads to environmental sustainability (Hill & Bowen, 1997) revolves around the management of organizational development and life cycle synergies and involves workers in long-term development and decision-making processes. Environmental sustainability is feasible with the development of the internal competencies. The ability of organizations to create and manage sustainable core competencies allow them to implement interventions and initiatives on biophysical, economic, social, environmental and technical sustainability (Hill & Bowen, 1997).

Individuals are interrelated in a system of organizations that are in turn connected within units and workplaces with varying characteristics. Thus, they are constantly interested in finding the best methods to organize them (Scott, 1992). As Senge (1999) stated in order to create and develop a sustainable organizational solution, it is required to invest in resources and skills that create a systemic thinking pattern on all organizational levels (Senge, 1999).

Individuals are beginning to join the organizations that meet their needs and demands such as the development of human relations. By rewarding the work and contributions to the production of goods and services with the best working conditions, these organizations also generate a feeling of satisfaction within their community (Androniceanu, 2009). Individuals working in organizations are encouraged to develop relationships and connections in the workplace and to share their ideas more freely and democratically, regardless of their position (Dombrowski et al., 2007).

It is essential to cultivate trust within organizations when it comes to handling information and operational communication between individuals. This will be reflected in higher levels of motivation and a better sense of commitment, which in turn will reduce instability in the outcomes of the organization (Elving, 2005; Mahal, 2009). Although it has been taken for granted that organizations operate under stable and predictable conditions, we now know that it is not the case. Organizations constantly find themselves in complex, uncertain, ambiguous and discontinued environments (Nonaka & Takeuchi, 1995; Weick, 1995; March, 2006).

The organizations give individuals and other organizations the opportunity to develop creative management skills and use the resources of power structures and distribution of authority, thus enabling the purposes and goals of the organization (Kanter, 2008; Leana, 1987).

Sustainable organizations are created by groups of individuals working together (Postmes, 2003). Organizations can be analysed with the core competence of in-out and out-in analysis (Han et al., 2010), which brings importance to the usage of knowledge and identifies the courses of action taken to diversify strategies, to develop the workforce and to enable new organizational positions and sustainable growth.

Interaction among organizational stakeholders increases the potential of networked structures to achieve sustainable organizational development initiatives (Flyvbjerg et al., 2003). Organizational networking that includes collaboration among academic and research institutions, government agencies and business make up the triple helix (Etzkowitz & Leydesdorff, 2000). A sustainable work system is one that meets the needs of the wellbeing of all the stakeholders involved and develops their creative potential in continuous individual and organizational development.

Through continuous improvement of organizational processes, appropriate working climates can be created and sustainable growth and development can be implemented to respond to environmental challenges. The development of low-carbon products was possible thanks to environmental training focused on climate change mitigation (Saturnino Neto et al., 2014). Organizational development requires specialized training (Perron et al., 2006) in order to achieve higher performance levels within environmental management systems (Sarkis et al., 2010).

Organizations must develop leadership strategies centred on sustainability practices, pervading every functional area within the organization and submitting it to sustainable development systems and processes. Finally, this process requires a greater involvement and commitment from all the stakeholders. Macke and Genari (2019) analyse state-of-the-art elements drawn from sustainable leadership, human resources management and environmental sustainability embedded in principles, organizational values, processes and practices.

Green organizations have the social and corporate responsibility to create value for the common good and should be measured in terms of their impact on economic growth, environmental sustainability and social development, thus benefitting the various stakeholders involved (Freeman, 1984).

In order to overcome the many challenges that arise from environmental changes, organizations must focus on their development (Han et al., 2010). Organizational management plays a critical role in promoting innovative sustainability by creating adequate behaviours, values and attitudes engaged towards the organization's visions. Organizations set out long-term strategic plans that aim to achieve specific goals, increase

quality and profitability and reduce risks, costs and time (Garrido & Martos, 2016).

Organizations are implementing management systems based upon international principles and standards, organization strategies and objectives, business processes and optimization as well as resource management, all of which are implemented in a systematic and structured way. Continual and sustainable organizational development requires internal structures and systems (Hill & Bowen, 1997). Organizational structures, norms, rules, regulations, communication processes and values are based upon an organizational bureaucratic model. Organizational structure is defined as the relationship between the authorities and the tasks that must be completed in an organization. It directly affects its sustainable development and use of resources through the coordination of its employees who are working together to achieve the organization's goals (Martin, 2014).

Sustainable organizational development needs an internal structure to provide motivation and opportunities, to harness positive behaviour and to help balance power dynamics (Kanter, 2008). The organizational structure is a hierarchical arrangement of communications and authorities formulated around the organization's objectives and strategies. Coordination of activities is an essential factor amongst the organization's set of skills, as it facilitates communication and develops social identity within the organization (Postmes, 2003).

Organization and communication are dependent on one another in corporate or organizational environments as they aid in developing advantages, competitiveness and can help an organization find and maintain proficient, motivated and talented employees (Balmer & Gray, 1999). The communication channels of the organization must focus on empowering the workers to improve the level of development, motivation and commitment of its individuals and to enable sustainable organizational growth.

Organizational communication develops the structure and processes that are necessary for sustainable growth. Organizational communication is a tool that helps raise awareness within the stakeholders and conveys the concept of organizational proudness, purpose, goal and most importantly, of community ties. Organizational communication is the

foundation of all interactions among individuals. It sets the group's norms and social identity, promotes social cohesion, improves communication, collaboration and individual commitment (Elving, 2005; Haslam, 1997; Postmes, 2003; Tucker et al., 1996).

Organizational communication also helps employees develop their sense of commitment, motivation and involvement, as well as their general quality of life (Elving, 2005; Mahal, 2009). Organizational communication enables interpersonal relationships between all agents and stakeholders who play a role in attaining of the strategic goals of the organization (Postmes, 2003). Organizational communication creates, expands and continuously transfers knowledge within a workforce. It promotes the feeling of community within individuals that are active in their communities and contributes to the overall wellbeing of local and regional communities.

The organizational models of Barley and Tolbert (1997) and Crossan & Berdrow (2011) contradict each other. On one hand, there is the organizational setting, and on the other, there is the work put in place to promote societal changes and develop current processes, challenge the institutions and organizations and adopt post-bureaucratic designs. Various models for organizations across different contexts tend to duplicate organizational structures and processes. Although these models are sometimes presented as autonomous, the analysis suggests that they have similar norms and decision-making processes and engage in the well-known method of organizational isomorphism (Meyer & Rowan, 1977).

The post-bureaucratic characteristics and problems of work systems can be linked to traditional bureaucratic workplaces and occupations that are subject to internal and external factors. Some elements of organizational post-bureaucratic structures can co-exist beyond its formal structures and within the bureaucratic environment, making it more stable. The nature of organizational work is changing rapidly and drastically with the transitional emergence of post-bureaucratic systems. This poses new challenges to traditional organizational structures, although certain elements of post-bureaucratic organizations may still be found in more traditional bureaucratic frameworks (Howard, 1995).

Human resources motivation and job satisfaction are relevant behavioural factors that support sustainable organizational development and

maintain the priorities of long-term management (Deal & Jurkins, 1994; Erez & Early, 1993). Human resources motivation, job satisfaction and wage policies are critical factors for economic and social activities (Ciocoiu, 2011; Colesca, 2010; Sims & Veres, 2007), supporting sustainable organizational development (Deal & Jurkins, 1994; Erez & Early, 1993). Workers hope that the wage policy of the organization can meet their personal needs as they demand a salary, duties, functions, benefits and cash rewards (Tyson, 2006) in exchange of work performance and contribution to production.

The development of human relations at work is a result of existing work conditions and welfare state benefits (Androniceanu, 2009). Organizational motivation is possible when the organizational climate maintains open communication and improves performance among the members involved (Patterson et al., 2005). Organizational communication plays an important role in the attainment of the workforce's commitment (Elving, 2005) to develop a sustainable and competitive advantage within the organization's strategic core competencies (Tucker et al., 1996). Organizational communication allows members to interact and participate in solving problems and making decisions. It also gives them the tools to feel empowered and to innovate.

Empowerment has a significant positive impact on organizational sustainable development (Mumford et al., 2017) as it can help motivate employees to make informed decisions and act upon them. It also has an impact on organizational and sustainable development, all while creating citizenship behaviour by giving moral, ethical, psychological, social and financial support (Bandura, 2002). Trust and accuracy of information lead to better organizational decisions across the hierarchical structure and have a significant impact on the overall performance (Roberts & O'Reilly, 1974). Many decision-making issues and details that exist in management groups vanish by the time they make their way to the top of the organization's management pyramid. This is only one of the deteriorated symptoms of bureaucracy (Heckscher, 1994). Top management is responsible for making the organizational work system more comprehensible and manageable at every level of the organization.

As stated by Ann Brands (2021), "Pride is the most important human emotion for motivating social behaviour. Organizational pride

contributes to a good and respectful collaboration with other respected colleagues, and in the end organizational pride contributes to a better team performance.”

The quality of information transmitted between individuals hinges on their level of trust, organizational behaviour and satisfaction (Roberts & O’Reilly, 1974). Trust development among individuals emerges from interpersonal relationships and interactions through communication, both of which are directly linked to the organizational behaviour and structure that creates a cohesive work environment and enables organizations to facilitate the transfer of information (Roberts & O’Reilly, 1974).

The organizational structure correlates with its behaviour, motivation, communication and its overall cohesion through the organizational climate. Organizational climate refers to the representation of events that affect the level of motivation and performance on both individual and organizational levels (Patterson et al., 2005; James et al., 2008).

Organizational climate is the symbol of organizational ambitions and refers to the collective opinions on regulations, processes, protocols and methods applied to attain objectives (Elving, 2005). Organizational climate allows all the stakeholders and actors to reach a consensus regarding the methods that are used to achieve the goals of the organization. Actions that are consistent with these goals and objectives have the power to improve relationships and lead to an overall higher level of performance (James et al., 2008). The organizational climate has many effects within the organization and has a high impact on the workforce.

The organizational climate enhances positive motivation, balances the structure of power and improves overall performance (Patterson et al., 2005). It must be adjusted to and satisfy the needs of all stakeholders; it leads to consistent and continual sustainable organizational development (Cummings & Worley, 2014). Organizational behaviour refers to the proportionate structure and alignment of individuals vis-à-vis their organization in different situations. It is used as a tool to determine various social types. These differences in proportions are caused by individual attitude and by the specific needs of the organization (Kanter, 2008). Although environmental management systems as independent variables present many challenges, they offer opportunities mediated by the

combination of empirical-environmental training, employee involvement and the organization's environmental performance (Daily et al., 2012).

The organization's performance is measured in terms of the balance it maintains between economic, social and environmental outcomes. These outcomes show the organization's ability to attain organizational growth and to protect, conserve and maintain the natural resources for our future generations (Daily & Huang, 2001; Jennings & Zandbergen, 1995; Ramus, 2002).

2.3 Research Methods: Holistic, Humanistic and Critical Analysis

Holistic, humanistic and critical analysis are the basic conditions for a correct interpretation of the argumentation presented in any organizational research. The methodology of critical analysis instrumented in this organizational development research is based on various levels of analysis of texts that report theoretical and empirical research on the subject in question. The first level of this critical analysis is constituted by the perceived discrimination in the topic of this research, where segments of the theoretical and empirical research reports are selected and the arguments that support the topic are presented in such a way that the established analytical categories proposed are incorporated into the analysis.

The gathering and selection of information segments is contextualized as an indicator and is assigned to the corresponding category, making it possible to find similarities and disparities that lead to discrimination and surveying of the topics followed by the recorded analysis.

On the second level of critical analysis, the argumentation of the different authors is reviewed in order to identify where the sequence begins and where it ends. Then, it is circumscribed in the context and environment in which the authors develop their arguments. The argumentative sequences are recorded in a way that allows inferring and reconstructing the argumentative structure. The argumentation of the academic work is

built on the basis of the argumentative analysis of the authors, identifying the possible reasons that determine the strength of the argument.

At a more advanced level, the argumentation strategies developed by the authors are analysed to develop a meta-argumentative level that serves as the basis for the preparation of the research report. These strategies provide greater legitimation of the facts, judgments and arguments that are intended to develop awareness of the implications of the topics discussed. This argumentative critical analysis scheme serves as the basis for the preparation of the final research report, emphasizing the findings produced by the analysis to be specified in the discussion, the implications and the conclusions.

In this critical analysis, a reflection within the findings of the research is established as well as its relation to the works analysed from the theoretical, conceptual and methodological perspectives. The convergences and differences are carefully observed, taking into account the type of research conducted and the context in which it was completed. After the findings are finalized, major criticism, potential improvements and academic concerns are established (Fig. 2.1).

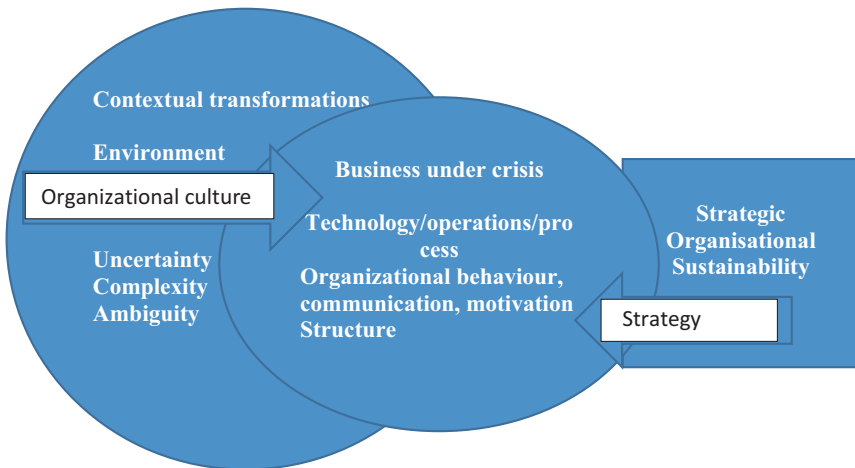


Fig. 2.1 Theoretical-analytical framework (own elaboration)

2.4 Presentation and Analysis of Findings

A holistic approach to organizational sustainability enhances reputation, reduces costs and places organizations in a leading position. Holistic green organizations should use recycled and re-used materials for the design of new green products and packaging. Naudé (2012) has proposed a tridimensional approach to sustainable development that combines economic, social and environmental dimensions with initiatives and strategies. Organizational sustainable development has an economic, social and environmental advantage that can be managed by strategies focused on socio-economic development and environmental protection and maintenance.

Sustainability is an organization's ability to achieve its goals, thus improving long-term shareholder value by integrating economic, environmental and social opportunities into its organizational sustainable strategies (Symposium on Sustainability, 2001). The organizational sustainability framework (Hill & Bowen, 1997) analyses the biophysical, economic, technical and social elements of sustainability.

Sustainable development in organizations is guided by the following principles: active ownership, cooperation among actors and learning through ongoing evaluation. The principles of organizational sustainability provide the foundations for the managerial strategies and policies aimed to attain sustainable organizational growth and development (Sev, 2009). A sustainability organizational agenda designs and implements sustainability strategy and operational planning on all levels to manage the initiatives, practices and activities led by top management with the strategic support of professionals who oversee facilitation and agency. Sustainability strategic imperatives are present in most of the organizational agendas (Cho & Pucik, 2005).

Corporate and organizational communication refers to the organizational reputation and identity developed by the stakeholders (Balmer & Gray, 1999). The development of organizational leadership and corporate communication requires investments in order to reap the benefits it can offer (Balmer & Gray, 1999). The quality of information transmitted between individuals hinges on their level of trust, organizational

behaviour and satisfaction (Roberts & O'Reilly, 1974). Trust among individuals emerges from interpersonal relationships, interactions and communication, which are linked to organizational behaviour and structures that create a cohesive work environment, enabling organizations to facilitate the transfer of information (Roberts & O'Reilly, 1974).

Organizational sustainability is the result of a congruent ideology of economic, societal and ecological concerns that greatly influence human resources management. Organizational growth is the natural expansion of an organization. Development, on the other hand, is the ability to seize new opportunities when they present themselves (Daly, 1996). Sustainable regenerative work systems are built upon individual and organizational sustainable organizations (Docherty et al., 2002) and are contextualized within economic growth, social equity and justice and environmental sustainability.

Organizational ethics has a direct link with environment sustainability, economic growth and social justice in sustainable organizational development practices. The relationship between organizational ethics and sustainable development in terms of the organizational economic and social goals is the equitability (equity?) that ensures a balance between pricing, quality and health factors of the products. The ethical principles are applied to analyse the economic growth, social inclusion and equity, environmental sustainability, technological innovation, policies and regulation and branding of organizations. All of these factors are crucial as they influence the organization's ability to grow and become more self-sufficient; they must be considered when identifying the organization's strategic focus.

As for corporate ethics and according to Lăzăroiu et al. (2020), "Corporate ethics triggers the deployment of sustainable business practices in organizations".

Organizational performance management, which is supported by organizational ethics and governance, fosters sustainable organizational development. This concept is defined as the radical changes made by an organization to become more self-sufficient in every one of its economic, social and environmental functions. In other words, sustainable organizational development must be efficient, equitable and green. Sustainable organizational development is concerned with environmental issues and

engages with the so-called triple bottom line measures that direct their energy towards natural resources, social impact, organization welfare, health and safety, protection of human rights and so on. The economic wellbeing and labour productivity depend on proper training, efficiency and growth. “Organizations act sustainably when they simultaneously support all the dimensions of the triple bottom line (TBL)—ecological, social, and economic” (Braccini & Margherita, 2018).

The core competencies of organizations are the foundations for sustainable growth and development such as the capabilities to create intangible resources like knowledge and innovation (Egbu, 2004; Spence & Mulligan, 1995), both of which focus on benefitting the economy and encompassing environmental sustainability (Vanegas et al., 1996; Ortiz et al., 2009; Presley & Meade, 2010). Human motivation considers the effective organizational wages policies within the organization’s own policy to stimulate sustainable economic efficiency (Ciocoiu, 2011; Sims & Veres, 2007).

Organizational development is a regulated, integrated and planned approach designed to cope with challenges and difficulties and boost an organization’s efficiency. Organizational development is a response to environmental changes. It is carefully planned and tries to encourage organizations to revolutionize their values, attitudes, beliefs and so on, in order to improve their overall efficiency and wellbeing (Bennis, 1994). The prevalent attitudes within the organization are directly linked to motivation and output (Mahal, 2009). The efficiency management principles are based upon the equilibrium between flexibility and labour time (full devotion and attention towards the organization’s activities).

Organizational development indexes are used to diagnose and identify problems, steer the interventions and plan the actions towards improving the organization’s development. This is achieved through the implementation of corrective measures by units and groups that focus on organizational efficiency and health. The worker is able to perform more efficiently and cohesively when working in a stable workplace environment that allows them to maintain the standards and codes of conduct of the organization. Working in teams can also help the worker maintain initiative and show better overall performance (Mahal, 2009).

The institutional environmental development of any economic system has an impact on its economic growth, social justice and environmental sustainability. The organizational management and property structure, distribution of income and so on can increase the level of institutional development, and the economic growth also increases (IMF, 2017 World Economic Outlook Database). High institutional quality is related to the negentropic processes in economic systems of developed economies while low institutional quality creates entropic processes in less developed economies where the environment is dissipative in economic growth and human capital (The Human Development Report, 2014).

The dissipative system follows a certain order within the organization. It is determined by the order of the economic system and characterized as an open non-equilibrium system that maximizes the organization's efficiency with a minimum of entropy and energy dissipation. The organizational entropy is measured by its orderliness and is based on the system's structure and its impact on the economic system in terms of syncretic and entropic synergies (Prigozhin & Stengers, 1986).

Organizational development has an impact on the qualitative economic growth in national and global economic systems. Regional economic growth, competition and technological innovation networks are some external factors that can be standardized for organizational growth and development (Miyatake, 1996; Tan et al., 2011).

Social sustainability in organizations refers to sustainable human resources management practices that have an impact on the wellbeing of workers (Pfeffer, 2010). Social sustainability as a system may have institutionalized factors that provide some inertia to change. Organizational social systems are in a process of continuous change, in which people can be more aware of their environment and participate in the process of growth and development of their organization's journey to sustainability (French & Bell, 1973).

Organizational power is shown in the hierarchical domination, where individuals have the necessary skills to structure resources and get their desired results (Kanter, 2008). When a select group of individuals has total monopoly of power, they tend to make decisions about the methods put forth to manage resources. This leads to inevitable conflict within the organization; it should be managed and minimized to ensure

organizational harmony. Measurement of human development takes into account physical, psychological and social variables such as quality of life, living standards as well as health and education levels.

Organizational sustainability is a critical concern in designing and implementing strategies and practices and leveraging management vision and leadership activities for organizational sustainable development. Organizational sustainability is a competitive strategy that enhances the ability to develop sustainable change (Moore & Manring, 2009). Organizations adopt different approaches and initiatives for achieving environmental sustainability and protecting the environmental growth. In doing so, it helps avoid possible disruptions by managing internal factors such as the causal role of human behaviour (Davis & Challenger, 2013; Ones & Dilchert, 2012; Oskamp, 1995, 2000). Finally, organizational sustainability undertakes other environmental development initiatives outside the boundaries of the organization (Uzzell & Moser, 2009).

Organizational development planning and interventions for change in practices, processes, procedures and actions regarding environmental and contextual factors to design, formulate and execute organizational structures, strategies and policies are put in place to help organizations achieve their goals (Cummings & Worley, 2014). “Transformational leadership and organizational learning capability are important indicators of the internal conditions that firms require in order to innovate. The readiness of a CEO to recognize risks and failures is certainly also one of the first steps of the innovation” (Begum et al., 2020).

The planning and control approach for sustainable organizational development projects and programmes can be supplemented with an open process and by learning to promote long-term sustainability (Lindkvist & Söderlund, 2002; Morris et al., 2011; Brulin & Svensson, 2012; Svensson & Brulin, 2013). Strategic organizational planning for the formulation and implementation of long-term sustainability strategies guide all stakeholders through theory involvement in sustainable development initiatives and practices across all levels of the organization to reap the best benefits.

Sustainable organization is the catalyst of sustainable human resources management strategy (Fairfield et al., 2011). Environmental and internal analysis of the organization is needed to link environmental management

and human resources management and to formulate sustainable strategies that contribute to greater environmental sustainability of the organization.

Change facilitation and agency must take into consideration the development of structures and systems to support sustainability initiatives according to the organization's agenda. It must also align with the organizational culture and environmental strategy development. Organizational strategies should be aligned with the human resource system in order to link workforce capabilities with environmental sustainability growth management systems and sustainable development (Ichniowski et al., 1997; Mendelson & Pillai, 1999; Collins & Clark, 2003; Boselie et al., 2001; Paauwe & Boselie, 2003; Jiang et al., 2012; Daily & Huang, 2001; Renwick et al., 2013).

Organizational leaders must recognize that the human resources function is in charge of implementing sustainable strategy (Harmon et al., 2010). Organizational sustainability strategies must meet the short-term needs and obligations all while sustaining long-term profit and economic growth, social justice and inclusion and environmental sustainability.

2.5 Conclusions and Recommendations

The impact of economic globalization on sustainable business organizations has impacted on a business crisis by shortening the cycles of change to keep the pace of environmental sustainability through the design and implementation of more holistic organizational business models. Furthermore, strategic management systems and policies are implemented to improve the use of organizational and technological knowledge, processes and practices. However, while organizational change may not always be in action to solve organizational crisis at the level of the economic structure, organizational work activities and practices are constantly evolving and developing a closer relationship with the qualitative growth and efficiency of the economic system and the global economy.

The development of a sustainable organizational vision and mission to solve the crisis is facilitated by the incorporation of a sustainable agenda within the core values of the organization. Shaping the organizational

sustainability in alignment with the vision and values of the organization requires the assessment of the stakeholder's impact on local communities and the consideration of issues around cultural diversity, intercultural dialogue and organizational climate in order to improve the overall performance. Sustainable organizational development implements innovation knowledge and processes in human resource management and development practices and aims to develop infrastructure and increase knowledge and innovation.

As stated by Ewing et al. (2018), technology will continue to transform internal communication and employee engagement practices, including the evolution towards being more social, personal, participative, mobile and behaviour-driven.

The individual and organizational adaptability to environmental change relies on their ability to develop organizational leadership and managerial effectiveness through adaptive processes in continuous developing stages. They must gather information, diagnose and design interventions and implement new practices. Organizational leadership must be aligned with sustainable initiatives, lead the example for other organizations and maintain close contact with external environmental communities. They should also volunteer with non-profit organizations and offer organizational and supervisory support. Organizational management is responsible for the motivation and communication between the individuals of the organization and establishes what is expected from them within their workforce; how they can improve the functions of the organization and encompass their community as a whole.

Communication is the intrinsic organizational competency that can retain the workforce and as stated by Ghislandi, in the HDI, the level of human development is conceptualized as having three components: health, education and economic conditions (2019).

Organizational sustainable development supports regenerative and collaborative working processes to develop embedded organizational roles, practices and tasks within organizations. Creating collaborative and regenerative work allows for individual and organizational development to be incorporated in post-bureaucratic working practices and contribute to organizational structures, behaviours and technological processes, over a long period of time.

In order to develop and transform organizational strategies, sustainable organizational practices must consider the needs of current economic, social and environmental needs as well as those of all future stakeholders involved in sustainable activities.

Key Terms and Definitions Economic growth: It is understood as the positive evolution of the living standards of a territory, usually countries, measured in terms of the productive capacity of its economy and its income within a specific period of time.

Organization: An organization is a system designed to achieve certain goals and objectives.

Organizational sustainability: It is the link that unites the physical environment to economic activities and policies, which could occur through the proper performance of companies.

Social inclusion: It is the tendency to allow people at risk of poverty or social exclusion to have the opportunity to participate fully in social life, and thus enjoy an adequate standard of living.

Strategy: It is the direction or orientation that is given to the internal resources of an organization depending on the demands of its environment and surroundings to develop a competitive advantage that allows it to survive, lead and so on.

Sustainability: It is a term linked to the action of man in relation to his environment. Within the ecological discipline, sustainability refers to biological systems that can conserve diversity and productivity over time.

Sustainable organizational development: Sustainable organizational development focuses on value creation, environmental management, environmentally friendly production systems and the formation of human capital, social responsibility is linked to transparency, dialogue with stakeholders and care for the environment and the social inclusion.

References

- Androniceanu, A. (2009). New Public Management Model Based on an Integrated System Using the Informational and Communication Technologies. *Administration and Public Management Review*, 13, 13–25.
- Balmer, J. M., & Gray, E. R. (1999). Corporate Identity and Corporate Communications: Creating a Competitive Advantage. *Corporate Communications: An International Journal*, 4(4), 171–177.
- Bandura, A. (2002). Social Cognitive Theory in Cultural Context. *Applied Psychology: An International Review*, 51(2), 269–290.
- Barley, S. R., & Tolbert, P. S. (1997). Institutionalization and Structuration: Studying the Links Between Action and Institution. *Organization Studies*, 18(1), 93–117.
- Begum, S., et al. (2020, October 18). The Impact of CEOs' Transformational Leadership on Sustainable Organizational Innovation in SMEs: A Three-Wave Mediating Role of Organizational Learning and Psychological Empowerment. *MDPI*. Multidisciplinary Digital Publishing Institute. www.mdpi.com/2071-1050/12/20/8620/htm
- Bennis, W. (1994). *On Becoming a Leader*. Addison-Wesley.
- Boselie, P., Paauwe, J., & Jansen, P. (2001). Human Resource Management and Performance: Lessons from the Netherlands. *International Journal of Human Resource Management*, 12(7), 1107–1125.
- Braccini, A. M., & Margherita, E. G. (2018, December 21). Exploring Organizational Sustainability of Industry 4.0 Under the Triple Bottom Line: The Case of a Manufacturing Company. *MDPI*. Multidisciplinary Digital Publishing Institute. www.mdpi.com/2071-1050/11/1/36/htm
- Brands, A. (2021). *The Impact of Organizational Pride on the Experienced Meaningfulness of Work for Blue Collar Jobs*. Radboud University. www.theses.ubn.ru.nl/handle/123456789/8890
- Brown, K., & Eisenhardt, M. (1997). The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42, 1–34.
- Brunlin, G., & Svensson, L. (2012). *Managing Sustainable Development Programmes: A Learning Approach to Change*. Gower Publishing.
- Brundtland, G. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. United Nations General Assembly Document A/42/427.

- Cho, H., & Pucik, V. (2005). Relationship Between Innovativeness, Quality, Growth, Profitability, and Market Value. *Strategic Management Journal*, 26, 555–575.
- Ciocoiu, N. C. (2011). Integrating Digital Economy and Green Economy: Opportunities for Sustainable Development. *Theoretical and Empirical Researches in Urban Management*, 6(1), 33–43.
- Colesca, S. (2010). Online Consumer. Theories of Human Relativism. *Amfiteatru Economic Journal*, 12(28), 694–699.
- Collins, C. J., & Clark, K. D. (2003). Strategic Human Resource Practices, Top Management Team Social Networks, and Firm Performance: The Role of Human Resource Practices in Creating Organizational Competitive Advantage. *Academy of Management Journal*, 46(6), 740–751.
- Commission on Environment and Development. (1987). *World Commission on Environment and Development* (Brundtland Report). [Cited 2010 May 14]. http://www.ace.mmu.ac.uk/eae/Sustainability/Older/Brundtland_Report.html
- Crossan, M., Lane, H. W., & White, R. E. (1999). An Organizational Learning Framework: From Intuition to Institution. *Academy of Management Review*, 24, 522–537.
- Crossan, M. M., & Berdrow, I. (2011). Organizational Learning and Strategic Renewal. *Strategic Management Journal*, 24(11), 1087–1105.
- Cummings, T. G., & Worley, C. G. (2014). *Organization Development and Change*. Cengage Learning.
- Daily, B. F., Bishop, J. W., & Massoud, J. A. (2012). The Role of Training and Empowerment in Environmental Performance: A Study of the Mexican Maquiladora Industry. *International Journal of Operations & Production Management*, 32(5), 631–647.
- Daily, B. F., & Huang, S. C. (2001). Achieving Sustainability Through Attention to Human Resource Factors in Environmental Management. *International Journal of Operations & Production Management*, 21(12), 1539–1552.
- Daly, H. E. (1996). 14 Sustainable Growth: An Impossibility Theorem. *Valuing the Earth: Economics, Ecology, Ethics*, 267.
- Danciu, V. (2013). The Sustainable Company: New Challenges and Strategies for More Sustainability. *Theoretical and Applied Economics*, 9(586), 7–26.
- Davis, M. C., & Challenger, R. (2013). Environmentally Sustainable Work Behaviors. In P. C. Flood & Y. Freney (Eds.), *Encyclopedia of Management Organizational Behavior* (Wiley Encyclopedia of Management: Organizational Behavior) (Vol. 11, 3rd ed.). Wiley.
- Deal, T., & Jurkins, W. (1994). *Managing the Hidden Organization Strategies for Empowering Your Employee* (pp. 24–38). Oxford University Press.

- Docherty, P., Forslin, J., Shani, A. B., & Kira, M. (2002). Emerging Work Systems: From Intensive to Sustainable? In P. Docherty, J. Forslin, & A. B. Shani (Eds.), *Creating Sustainable Work Systems: Perspectives and Practices* (pp. 3–14). Routledge.
- Dombrowski, C., Kim, J. Y., Desouza, K. C., Braganza, A., Papagari, S., Baloh, P., & Jha, S. (2007). Elements of Innovative Cultures. *Knowledge and Process Management, 14*(3), 29–202.
- Egbu, C. O. (2004). Managing Knowledge and Intellectual Capital for Improved Organizational Innovations in the Construction Industry: An Examination of Critical Success Factors. *Engineering, Construction and Architectural Management, 11*(5), 301–315.
- Elving, W. J. (2005). The Role of Communication in Organisational Change. *Corporate Communications: An International Journal, 10*(2), 129–138.
- Erez, M., & Early, C. (1993). *Culture, Self-Identity and Work* (pp. 310–316). Oxford University Press.
- Etzkowitz, H., & Leydesdorff, L. (2000). The Dynamics of Innovation: From National Systems and ‘Mode 2’ to a Triple Helix of University–Industry–Government Relations. *Research Policy, 29*(2), 109–123.
- Ewing, M., et al. (2018, August 20). Using Social Media to Enhance Employee Communication and Engagement. *The Arthur W. Page Center*, Arthur Page Centre. www.bellisario.psu.edu/page-center/article/using-social-media-to-enhance-employee-communication-and-engagement
- Fairfield, K., Harmon, J., & Behson, S. (2011). Implementing Sustainability Strategies: An Integrative Model. *Organization Management Journal, 8*(1), 1–17.
- Flyvbjerg, B., Bruzelius, N., & Rothengatter, W. (2003). *Megaprojects and Risk: An Anatomy of Ambition*. Cambridge University Press.
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman.
- French, W. L., & Bell, C. H. (1973, 1984). *Organization Development: Behavioral Science Interventions for Organization Improvement*. Prentice-Hall.
- Garrido, A., & Martos, M. (2016). Influence of Customer Quality Perception on the Effectiveness of Commercial Stimuli for Electronic Products. *Frontiers in Psychology, 7*, 336–342.
- Ghislandi, S., et al. (2019, March). A Simple Measure of Human Development: The Human Life Indicator. *Population and Development Review*. John Wiley and Sons Inc. www.ncbi.nlm.nih.gov/pmc/articles/PMC6472489/
- Haanaes, K. (2016). *Why All Businesses Should Embrace Sustainability Some Top Companies Are Leading the Way*. IMD – International Institute for Management Development.

- Han, S. H., Kim, D. Y., Jang, H. S., & Choi, S. (2010). Strategies for Contractors to Sustain Growth in the Global Construction Market. *Habitat International*, 34(1), 1–10.
- Harmon, J., Fairfield, K. D., & Wirtenberg, J. (2010). Missing an Opportunity: HR Leadership in Sustainability. *People and Strategy*, 33(1), 16–21.
- Haslam, S. A. (1997). Stereotyping and Social Influence: Foundations of Stereotype Consensus. In R. Spears, P. J. Oakes, N. Ellemers, & S. A. Haslam (Eds.), *The Social Psychology of Stereotyping and Group Life* (pp. 119–143). Blackwell.
- Heckscher, C. (1994). Defining the Post-Bureaucratic Type. In C. Heckscher & A. Donnellon (Eds.), *The Post Bureaucratic Organization: New Perspectives on Organizational Change*. Sage.
- Hill, R. C., & Bowen, P. A. (1997). Sustainable Construction: Principles and a Framework for Attainment. *Construction Management & Economics*, 15(3), 223–239.
- Howard, G. (1995). *Between Justice and Beauty: Race, Planning, and the Failure of Urban Policy in Washington, D.C.* Johns Hopkins University Press.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines. *The American Economic Review*, 87(3), 291–313.
- IMF. (2017, April). *World Economic Outlook Database*. International Monetary Fund. Retrieved March 29, 2018, from <http://www.imf.org/external/pubs/ft/weo/2017/01/weodata/weorept.aspx>
- James, L. R., Choi, C. C., Ko, C. H. E., McNeil, P. K., Minton, M. K., Wright, M. A., & Kim, K. I. (2008). Organizational and Psychological Climate: A Review of Theory and Research. *European Journal of Work and Organizational Psychology*, 17(1), 5–32.
- Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically Sustainable Organizations: An Institutional Approach. *Academy of Management Review*, 20(4), 1015–1052.
- Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How Does Human Resource Management Influence Organizational Outcomes? A Meta-Analytic Investigation of Mediating Mechanisms. *Academy of Management Journal*, 55(6), 1264–1294.
- Kanter, R. M. (2008). *Men and Women of the Corporation* (New ed.). Basic Books.
- Lăzăroiu, G., et al. (2020, September 18). Sustainability Management and Performance in the Urban Corporate Economy: A Systematic Literature Review. *MDPI*, Multidisciplinary Digital Publishing Institute. www.mdpi.com/2071-1050/12/18/7705/htm

- Leana, C. R. (1987). Power Relinquishment Versus Power Sharing: Theoretical Clarification and Empirical Comparison of Delegation and Participation. *Journal of Applied Psychology*, 72(2), 228.
- Lindkvist, L., & Söderlund, J. (2002). What Goes on in Projects? On Goal-Directed Learning Processes. In K. Sahlin-Andersson & A. Söderholm (Eds.), *Beyond Project Management: New Perspectives on the Temporary – Permanent Dilemma* (pp. 278–291). Liber.
- Macke, J., & Genari, D. (2019). Systematic Literature Review on Sustainable Human Resource Management. *Journal of Cleaner Production*, 208, 806–815. <https://doi.org/10.1016/j.jclepro.2018.10.091>
- Mahal, P. K. (2009). Organizational Culture and Organizational Climate as a Determinant of Motivation. *IUP Journal of Management Research*, 8(10), 38.
- March, J. G. (2006). Rationality, Foolishness, and Adaptive Intelligence. *Strategic Management Journal*, 27(3), 201–214.
- Martin, G. C. (2014). The Effects of Cultural Diversity in the Workplace. *Journal of Diversity Management*, 9(2), 89–95.
- Mendelson, H., & Pillai, R. R. (1999). Information Age Organizations, Dynamics and Performance. *Journal of Economic Behavior and Organization*, 38(3), 253–281.
- Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, 83(2), 340–363.
- Miyatake, Y. (1996). Technology Development and Sustainable Construction. *Journal of Management in Engineering*, 12(4), 23–27.
- Moore, S. B., & Manring, S. L. (2009). Strategy Development in Small and Medium Sized Enterprises for Sustainability and Increased Value Creation. *Journal of Cleaner Production*, 17(2), 276–282.
- Morris, P. W. G., Pinto, J. K., & Söderlund, J. (Eds.). (2011). *The Oxford Handbook of Project Management*. Oxford University Press.
- Mumford, M. D., Michelle, E., Higgs, T. C., & McIntosh, T. (2017). Cognitive Skills and Leadership Performance: The Nine Critical Skills. *The Leadership Quarterly*, 28(1), 24–39.
- Naudé, M. (2012). Sustainable Organizational Development and Reflection: A Good Combination? *Corporate Ownership & Control*, 9(2).
- Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. Oxford University Press.
- Ones, D. S., & Dilchert, S. (2012). Environmental Sustainability at Work: A Call to Action. *Industrial and Organizational Psychology*, 5(4), 444–466.

- Ortiz, O., Castells, F., & Sonnemann, G. (2009). Sustainability in the Construction Industry: A Review of Recent Developments Based on LCA. *Construction and Building Materials*, 23(1), 28–39.
- Oskamp, S. (1995). Resource Conservation and Recycling: Behavior and Policy. *Journal of Social Issues*, 51(4), 157–177.
- Oskamp, S. (Ed.). (2000). *Reducing Prejudice and Discrimination*. Lawrence Erlbaum Associates Publishers.
- Paauwe, J., & Boselie, P. (2003). Challenging ‘Strategic HRM’ and the Relevance of the Institutional Setting. *Human Resource Management Journal*, 13(3), 56–70.
- Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., Robinson, D. L., & Wallace, A. M. (2005). Validating the Organizational Climate Measure: Links to Managerial Practices, Productivity and Innovation. *Journal of Organizational Behavior*, 26(4), 379–408.
- Perron, G. M., Côté, R. P., & Duffy, J. F. (2006). Improving Environmental Awareness Training in Business. *Journal of Cleaner Production*, 14(6), 551–562.
- Pfeffer, J. (2010). Building Sustainable Organizations: The Human Factor. *Academy of Management Perspectives*, 24(1), 34–45.
- Postmes, T. (2003). A Social Identity Approach to Communication in Organizations. Social Identity at work. *Developing Theory for Organizational Practice*, 81, 191–203.
- Presley, A., & Meade, L. (2010). Benchmarking for Sustainability: An Application to the Sustainable Construction Industry. *Benchmarking: An International Journal*, 17(3), 435–451.
- Prigozhin, I., & Stengers, I. (1986). *Order out of Chaos: Man’s New Dialogue with Nature*. Translation from English/Under the General Editorship of Arshinov, V. I., Klimontovich, Y. L., Sachkov, Y. V. (p. 432). Progress.
- Ramus, C. A. (2002). Encouraging Innovative Environmental Actions: What Companies and Managers Must Do. *Journal of World Business*, 37(2), 151–164.
- Renwick, D., Redman, T., & Maguire, S. (2013). Green Human Resource Management: A Review, Process Model, and Research Agenda. *International Journal of Management Reviews*, 15(1), 1–14.
- Roberts, K. H., & O’Reilly, C. A. (1974). Failures in Upward Communication in Organizations: Three Possible Culprits. *Academy of Management Journal*, 17(2), 205–215.
- Roblek, V., Erenda, I., & Meško, M. (2017). The Challenges of Sustainable Business Development in the Post-Industrial Society in the First Half of the

- 21st. In R.-D. Leon (Ed.), *Managerial Strategies for Business Sustainability During Turbulent Time*. IGI Global. <https://doi.org/10.4018/978-1-5225-2716-9>
- Rondinelli, D. A., & Berry, M. A. (2000). Environmental Citizenship in Multinational Corporations: Social Responsibility and Sustainable Development. *European Management Journal*, 18(1), 70–84.
- Sarkis, J., Gonzalez-Torre, P., & Adenso-Diaz, B. (2010). Stakeholder Pressure and the Adoption of Environmental Practices: The Mediating Effect of Training. *Journal of Operations Management*, 28(2), 163–176.
- Saturnino Neto, A., Chiappetta Jabbour, J. C., & Lopes de Sousa Jabbour, B. A. (2014). Green Training Supporting Eco-Innovation in Three Brazilian Companies: Practices and Levels of Integration. *Industrial and Commercial Training*, 46(7), 387–392.
- Scott, W. R. (1992). *Organizations: Rational, Natural and Open Systems* (3rd ed.). Prentice Hall.
- Senge, P. (1999). *Changing Dance, Spellbacks for Sustainable Change in Learner Organizations* (1st ed.). Trans. Mashayekhi, A. N., et al. Ariana Industrial Research Group.
- Sev, A. (2009). How Can the Construction Industry Contribute to Sustainable Development? A Conceptual Framework. *Sustainable Development*, 17(3), 161–173.
- Sims, R., & Veres, J. (2007). *Keys to Employee Success in Coming Decades* (pp. 179–264). Quorum Books, Greenwood Publishing Group.
- Spence, R., & Mulligan, H. (1995). Sustainable Development and the Construction Industry. *Habitat International*, 19(3), 279–292.
- Svensson, L., & Brulin, G. (2013). Effects of Programmes and Projects. In L. Svensson, G. Brulin, S. Jansson, & K. Sjöberg (Eds.), *Capturing Effects of Projects and Programmes* (pp. 15–33). Studentlitteratur.
- Symposium on Sustainability. (2001). *Profiles in Leadership*.
- Tan, Y., Shen, L., & Yao, H. (2011). Sustainable Construction Practice and Contractors' Competitiveness: A Preliminary Study. *Habitat International*, 35(2), 225–230.
- The Human Development Report. (2014). *Ensuring a Sustainable Progress of Mankind: Decreasing Vulnerability and Forming Resilience*. The Entire World.
- Tucker, M. L., Meyer, G. D., & Westerman, J. W. (1996). Organizational Communication: Development of Internal Strategic Competitive Advantage. *The Journal of Business Communication*, 33(1), 51–69.
- Tyson, S. (2006). *Essential of Human Resource Management* (5th ed.). Butterworth – Heinemann.

- United Nations Global Compact. (2019). *Impact Transforming Business Changing the World*. The United Nations Global Compact.
- Uzzell, D., & Moser, G. (2009). Introduction: Environmental Psychology on the Move. *Journal of Environmental Psychology*, 29(3), 307–308.
- Vanegas, J. A., DuBose, J. R., & Pearce, A. R. (1996, November). Sustainable Technologies for the Building Construction Industry. In *Proceedings, Symposium on Design for the Global Environment*, Atlanta, GA.
- Weick, K. E. (1995). *Sensemaking in Organizations*. SAGE Publications.



3

Sustainability Assessment: A Tool to Build Resilience in the Face of Future Crisis

Ana Trigo, Ana Marta-Costa, and Rui Fragoso

3.1 Introduction

Intensive agricultural production is responsible for the incremental consumption of limited natural resources, contributing significantly to contemporary concerns such as climate change, water pollution and loss of biodiversity (De Olde et al., 2016; Hayati, 2017). Beyond environmental issues, several agrarian activities play a significant role in human wellbeing, territorial development and business growth, having as well an

A. Trigo (✉) • A. Marta-Costa
CETRAD, University of Trás-os-Montes and Alto Douro (UTAD),
Vila Real, Portugal
e-mail: anatrigo@utad.pt; amarta@utad.pt

R. Fragoso
CEFAGE, University of Évora (UÉVORA), Évora, Portugal
e-mail: rfragoso@uevora.pt

impact on social and economic-related affairs. On this account, today sustainable agriculture is finally perceived as a vital precondition to achieve the Sustainable Development Goals (SDGs) on a global level (Hayati, 2017). Such remark caused both concepts of food security and sustainable agriculture to become the most spoken topics of this millennium (Dantsis et al., 2010; Hayati, 2017; Herath & Rathnayake, 2019; United Nations, 2019; Kirchmann et al., 2016; Schrama et al., 2018).

Nevertheless, these are not by far coherent and unambiguous contemporary topics. Even though urgent action towards sustainable development and sustainable agriculture is necessary, there are still several concerns and limitations pointed out by specialists in regard to our sustainability-oriented knowledge-gap and subsequent methodologies developed to assess such topics. With respect to sustainability assessment tools, the most prevailing shortcomings comprise the predominant focus either on environmental concerns, or on assessing specifically certain impact categories. It also pointed to the neglecting of other fundamental categories which continue until today to remain under-represented among sustainability appraisals—such as social, economic, institutional, political and ethical (Binder et al., 2010; Bockstaller et al., 2008; De Olde et al., 2016; Hayati, 2017; Rosnoble et al., 2006; Thiollet-Scholtus & Bockstaller, 2015; United Nations, 2007). Another frequent claim is in regard to the grand majority of tools being expressly developed to assess arable crops or livestock production when context-specific (Hayati, 2017; Thiollet-Scholtus & Bockstaller, 2015). Thereupon, a considerable shortage of suitable assessment frameworks designed specifically to evaluate other cultures such as permanent crops is also observed (Christ & Burritt, 2013; Flores, 2018; Thiollet-Scholtus & Bockstaller, 2015).

According to the scientific body, one fateful hamper for such reluctance to progress towards sustainability is the fact that to date there is not a widely accepted definition of sustainability concept, due to its underlying ambiguity and blurred web of meanings amongst specialised literature (Christ & Burritt, 2013; Hayati, 2017; Keichinger & Thiollet-Scholtus, 2017; Martins et al., 2018; Pomarici & Vecchio, 2019; Santiago-Brown et al., 2014, 2015; Thiollet-Scholtus & Bockstaller, 2015; Velten et al., 2015). In fact, such ambiguousness is also alleged as the foundation for recurrent inadequate sustainability assessment

research, often characterised with biased design, erroneous interpretations, flawed conclusions and serious incompatibility issues due to data comparison difficulties (Gafsi & Favreau, 2013; Iyer & Reczek, 2017; Martins et al., 2018; Santiago-Brown et al., 2014).

A formal effort with integrated methodologies is therefore necessary to consistently express the theories and frameworks developed either in sustainability science or within other disciplines, which represent the body of knowledge. However, and as defended by Flores (2018), to truly understand and improve our sustainability-oriented knowledge, we must deep-review current assessment practices, beyond only trying to comprehend and identify related definitions and sustainability principles.

Against this background, and by recognising the inherent complexity of sustainability concept per se, the aim of this work is to enlighten foremost major understandings and to recognise main differences or commonalities between evaluation methodologies, in order to better comprehend the idea of sustainable agriculture and improve its assessment procedures. An exploratory review was therefore conducted to provide a structured search in the body of literature, within the final goal to benchmark major sustainability assessment tools identified amidst the process. This work aspires to better comprehend what we already know, and what are our major gaps and limitations when attempting to evaluate such complex systems as modern world cropping systems. For that matter this study is also based on a categorisation and comparison analysis to systematise evidences over the most distinguished and available sustainability assessment tools developed till date. Such research approach was seen as appropriate once, despite the existence of several articles already reviewing and analysing assessment instruments, these are generally labelled as too narrow or too conceptual mostly for focusing on a single sustainability domain, or solely on a few spotted tools (Ferrara & De Feo, 2018; Rosnoble et al., 2006; Van Der Werf & Petit, 2002).

By reviewing different assessment typologies—as peculiar types or approaches used to appraise sustainability credentials, we also expect to enhance either research or practices of this nature since key advantages and disadvantages of each are identified upon analysis. Several observations already pointed by other specialists were also confirmed, and the fundamental role of context comprehensiveness when assessing

sustainability advocated—apropos to a specific location, a particular time-frame or a practice taking place. Thus, by performing a structured exploratory review of a representative number of the most distinguished and currently available sustainability assessment methods, we could provide a primary source of elucidation and guidance for those researchers who aim to make sustainability more measurable and less ambiguous. Finally, as sustainability assessment is starting to be perceived among the corporative world as a powerful performance evaluation tool, and an opportunity to monitor emerging needs and boost competitiveness (Qiang et al., 2013; Ramos, 2019), our findings may also guide decision-makers to build resilience at a micro-level, so businesses will know how to well adapt, evolve or transform in the face of any future crisis.

3.2 Methodological Proceedings

Similar to the approach used by Rosnoble et al. (2006), the categorisation process was foremost justified by literature review, followed by a comparative analysis to deliver the main characteristics of scrutinised data. Hence, this exploratory analysis was structured by first reviewing specialised literature on sustainability assessment and its measurement effectiveness.

Peer-reviewed scientific journal volumes and issues published until 2020 were tracked using major online citation databases—Science Direct/Scopus, Web of Science and Google Scholar. The search was focused over the keywords “sustainab* assess*” and “agri*” and gathered 621 publications. Afterwards, each title and abstract were overlooked to verify if they fit the scope of this study in addition to identify key authors and references. From here, after selecting only published work validating or testing any kind of sustainability assessment methodology, a snowball sampling strategy was mostly used. By deep reviewing 138 of the most relevant cited references, the entire process of revision over the most recent research on this given topic was enhanced. To complement review insights, after this first step an exploratory analysis over a representative amount of distinguished sustainability assessment methods identified in the course of the review was performed. A categorisation analysis was

therefore conducted by observing pivotal content, common grounds and differentiating features regarding spotted tools.

Such exploratory approach and review work over specialised literature on sustainability meaning and ways to assess it not only allowed us to explore and compare several evaluation instruments on the same basis, but also to confirm former statements regarding such heterogeneity and diversity of developed tools. The full list provided in the appendices (see Appendix) shows 105 different sustainability assessment tools proposed by a plethora of sectors, identified after scrutinising major cited references on this subject. All 105 instruments—from individual indicators, to indicators-set, composite index and frameworks—were afterwards listed and catalogued for further analysis to complement review insights.

3.3 Mapping the Multitude of Sustainability Tolls: Assessment Typologies

This section reviews the body of knowledge over sustainability tools heterogeneity, along with an overview regarding assessment methods' complexity and ways to categorise them into different groups. The goal is to better understand the extent to which we have access to sustainability assessment tools and ways to reorganise the manifold powerful instruments.

In regard to different assessment typologies, we can find diverse levels of complexity between tools. For simple arrangements, we have groups of *Monetary Tools*—such as the Cost Benefit Analysis, the Index of Sustainable Economic Welfare and the Genuine Savings; groups of *Biophysical Models*—such as emergy analysis or exergy, and the ecological footprint (Hayati, 2017; Van Passel & Meul, 2012). As for more complex arrangements, we can find from *Reference Systems*—which are mostly used when assessing ecological sustainability in an ecosystem perspective (López-Ridaura et al., 2002; Marta-Costa & Silva, 2013a), to *Sustainability Assessment Frameworks*. According to Marta-Costa and Silva (2013b) the conceptual and practical efforts of such frameworks tend to be qualitatively differentiated from the other groups, as they have a more complex

and rigorous structure. Such structural frameworks are based on systematic approaches and disciplinary contents. The development of such approaches came from the challenge on selecting and designing proper assessments. Therefore, the intention for creating these so necessary guidelines was for their capacity to guide the entire process of assessing sustainability—from the analytical-conceptual design to the indicators' selection, data analysis and results interpretation (Cândido et al., 2015; United Nations, 2007). There are five official conceptual frameworks: (1) the Driving Force-State-Response frameworks (DSR)—originally named Pressure-State-Response Model (PSR); (2) the Issue-based or Theme-based Frameworks; (3) Capital Frameworks; (4) Accounting Frameworks; and finally (5) Aggregated Indicators (OECD, 2004; Sopilko et al., 2019; United Nations, 2007).

While the Driving Force-State-Response frameworks (DSR) tend to focus on the positive or negative impacts created by any human activity on the environment (OECD, 2004), the Theme-based Frameworks allow to group sustainability indicators into various different issues (or themes) typically determined on the basis of policy relevance related to national development goals (United Nations, 2007). Capital Frameworks, on the other hand, are used mostly to calculate national wealth as a function of the interaction of different capitals. These allow to express all forms of capital—from the financial capital, to natural, human, social or institutional capital, in common terms. Usually monetary terms are the ones being used, despite often creating intrinsic challenges (United Nations, 2007). As for Accounting Frameworks, these are receiving a lot of attention due to their capacity for sectoral aggregation. By designing and selecting indicators from a constructed common database, these allow to use consistent classifications and definitions at sectoral levels (United Nations, 2007). Finally, in regard to aggregated indicators, despite inherent challenges related to the aggregation process and incompatibility issues due to difficulties for data comparison between assessments, these are often acclaimed for their capacity to simplify and facilitate communication amongst interested parts (Sopilko et al., 2019).

Indicator-Based Assessments

Indicator-based assessments are often described as a widespread tool capable of reducing descriptions and integrating information from complex systems when evaluating sustainability (Parent et al., 2013). Regardless of mixed opinions, its notoriety is such that this type of assessment tool has been the most widely used platform since the Sustainability Indicators Phenomenon in the 1990s—translated as an explosion of sustainability indicators among the scientific body and published literature (Abdul Murad et al., 2019; Christ & Burritt, 2013; De Olde et al., 2016; Hayati, 2017; Ramos, 2019; Rosnoble et al., 2006). These are not only entitled as capable of reflecting complex and difficult-to-access information of a particular system, but also of providing models and simulations with a predictive function (Bockstaller et al., 2008).

Nonetheless, the decision to use a certain indicator-based method is often determined regarding several operational choices—as these selected parameters can vary from simple or isolated indicators, to indicators-set or composite indicators (Bélanger et al., 2015). Thus, beyond the scale at which evaluations were developed for, other practical affairs must also be considered and weighted such as if the assessment should be treated individually, as part of a weighted set or combined into a composite index (Hayati, 2017).

Composite indicators translate sustainability measurements into a single sustainability index by aggregating into a distinct and integrated numerical value of relevant information from various indicators (López-Ridaura et al., 2002; Marta-Costa & Silva, 2013a). In such cases results tend to be presented in an aggregated way, mostly with a simple sum or mean of values (Rosnoble et al., 2006). However, despite often suggested that in order to improve assessment's accuracy single indicators should be combined into composite indicators, for other authors the use of multiple indicators can be indeed confusing in practice. Also, regardless of general knowledge-gap issues on efficient integration methods or aggregation procedures when dealing with various factors (Bockstaller et al., 2008) or frequent critiques on how single indicators tend to present low quality of prediction, according to literature these continue to be the

most used method when evaluating sustainability of a specific practice (Hayati, 2017).

The bottom line here is the fact that, despite the acknowledged importance of standardisation for the formation of any business sustainability (Zhanna & Yana, 2020), the evaluation of production systems' performance or its associated impacts still remains surrounded by controversy till date. A remarked reason for this is precisely the appearance of many modelling approaches with a wide variety of tools being generated to evaluate sustainability, but a widely accepted methodology for a scientifically substantiated system of assessment hasn't yet been developed (Dantsis et al., 2010; Koochafkan et al., 2011). The emergence of this panoply of instruments is now aggravated due to a recent accession of multidisciplinary and cooperation initiatives among academia and research centres from different fields (Abdul Murad et al., 2019).

3.4 Reorganising Sustainability Assessment Tools: Categorisation Process

Usually in consonance with each author's interpretation of the sustainability concept meaning, assessment tools can vary widely in many different aspects being categorised into different models or families—despite being represented on a general basis according to their scope, content and structure (Flores, 2018).

According to reviewed literature, contrasting groups of assessment methodologies were organised regarding: (a) *assessment goals and principles*—from a goal concept that interprets agrarian sustainability as an ideological approach, to a system-oriented basis concept (Marta-Costa & Silva, 2013b); (b) *implementation approach*—from elementary top-down and bottom-up approach mentioned in Abdul Murad et al. (2019), to more complex families as the ones identified in Binder et al. (2010) since top-down farm assessments focus on field or farm assessment, to top-down regional assessment addresses both on-farm and regional effects, or bottom-up integrated participatory or transdisciplinary approaches focus on a regional scale; (c) *typology of results*—there are plentiful different family types, since monetary tools, to biophysical models, environmental

assessments, sustainability indicators, indicator-set indexes, reference systems, frameworks, eco points, linear programming models, trade-off models for production alternatives, and many more (Binder et al., 2010; Hayati, 2017; López-Ridaura et al., 2002; Van Passel & Meul, 2012). As mentioned, their level of complexity also varies according to the integration methods or aggregation procedures used in the results. While aggregation is the result of combining different components or indicators into one single unit, integration, it is basically a means by which individual and different indicators are somehow linked in order to provide a holistic view of sustainability (Bélanger et al., 2015; Van Passel & Meul, 2012).

Several more approaches and categories outside the ones just pointed exist in the literature—since family-groups generated according to their geographical coverage, data collection, data analysis, scale and levels, assessment methodology, stated purpose, final goals, sectoral comprehensiveness, target groups, typology of indicators, suitable data, applicability, analysis, the degree of stakeholder participation, resources needed, costs, purpose and the time required for its implementation, among many others (Dantsis et al., 2010; De Olde et al., 2016; Hayati, 2017).

Aside from its fluctuation, sustainability is starting to be accepted as a dynamic concept which can be translated into a continuous attempt that seeks to achieve balance in a particular space and time. Also, the chosen assessment method should be capable of contemplating levels where it is possible to identify a significant integration of all sustainability core components (Hayati, 2017; Marta-Costa & Silva, 2013b).

For that matter, and by recognising crises as situations capable of reforming the context in which organisations operate—either on a micro or on a macro level—we complemented reviewed information by systematically evaluating each sustainability tool scope. The goal was to confirm preeminent statements defended amongst the body of knowledge, intertwined at some extent with businesses operational context and their capacity to respond to future crisis. Three main categories were therefore considered upon analysis: (1) spatial level covered; (2) fundamental dimensions of sustainability; and (3) sectorial comprehensiveness. All explored categories and variables are presented in Fig. 3.1. One fourth class, (4) peer review, was added for additional compliance, and in order to support further validation opportunities.

Categories	Importance
(i) Scale and Levels	<p>Scale concept refers to the spatial, temporal, quantitative or analytical dimensions used by scientists to measure and analyze objects and processes, while levels on the other hand refer to locations in the scale. The perception of scale is decisive when dealing with sustainability assessment, and nowadays it is already possible to measure and monitor agricultural sustainability at different scales and levels.</p> <p>Spatial scale: (1) farm-level; (2) regional-level; (3) national-level; (4) global-level — Production scale: (5) product-level; (6) farm-level; (7) sector-level</p>
(ii) Sustainability Dimensions	<p>Sustainability is considered a dynamic concept - seeking to achieve a balance in space and time; and normally involves at least three independent but interrelated dimensions – ecological, social and economic.</p> <p>(1) Environmental — (2) Social — (3) Economic — (4) Institutional</p>
(iii) Sectorial Levels	<p>Sustainability assessment methods are being developed and proposed all over the world, to a plethora of sectors. It is important to use consistent classifications and definitions at sectoral levels.</p> <p>(1) Universal — (2) Agrifood — (3) Permanent crops — (3.1) Viticulture — (3.2) Coffee — (3.3) Cocoa — (3.4) Fruit trees (4) Smallholders — (4.1) Peasant farming — (5) Horticulture — (5.1) Greenhouse production — (6) Annual crops — (6.1) Rice farming (6.2) Arable farming — (6.3) Sugar cane — (7) Livestock — (7.1) Poultry — (7.2) Dairy (8) Manufacturing — (8.1) Bioenergy — (8.2) Biofuel — (8.3) Oil companies — (8.4) Palm Oil — (9) Forestry</p>
(iv) Peer Review	<p>The validity of Sustainability Assessment Tools based on journal peer review is seen as critical once it constitute true performance indicators that such are capable of evaluating a reasonably valid assessment of a certain production system.</p> <p>(1) Yes — (2) No</p>

Fig. 3.1 Categories and variables used to categorise identified sustainability assessment tools

Scale and Levels

The perception of scale and levels is not only decisive when aiming to accurately assess sustainability, but also influential when categorising tools into different classes. Scale concept refers to the spatial, temporal, quantitative or analytical dimensions used by scientists to measure and analyse objects or processes. Levels on the other hand make reference to locations in a particular scale (Van Passel & Meul, 2012). Hence, different scales can assess at different levels, despite each assessment taking place at a specific level. When assessing at production scale for example, measurements can be held at farm-level or sector level, while if assessing on a spatial scale distinct levels can be measured. We already have assessment tools capable of measuring and monitoring agricultural sustainability from the farm gate, to regional, national or even at the global level (Dantsis et al., 2010).

Despite any scale of assessment being to some extent relevant to the evaluation outcome, it is recognised how fewer data starts being available from regional to higher scales. As mentioned in Hayati (2017), as we move to higher levels of the hierarchy such as regional, national and global levels, the process and the capacity of weigh up and trade-off in a meaningful way becomes increasingly difficult. Exposing why assessments at farm-level continue until today to be the most studied one,

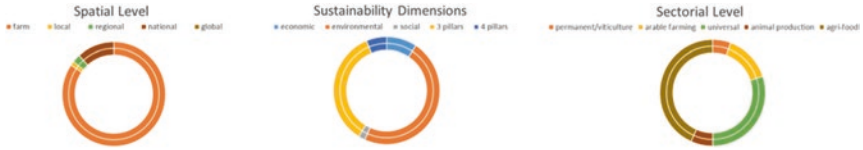


Fig. 3.2 Illustration comparing five of the most common features being covered by all 105 identified assessment tools

followed by the regional and national scales—although to a lower degree (Rosnoblet et al., 2006). Subsequently, a grand majority of sustainability assessment tools developed to estimate the productivity, stability, resilience and adaptability of particular production systems has been designed to evaluate at lower levels. Such methodologies tend to use farm-level data, farmers as target groups and the farm as the system to be evaluated (Hayati, 2017; Koohafkan et al., 2011).

According to exploratory analysis, it was clear that the majority of the 105 tools considered for this study continue to assess sustainability at farm-level scale. In fact, our comparative scrutiny confirmed several particular affairs already observed and defended in the literature, such as the dominance of environmental evaluations at farm-level scale. In Fig. 3.2, we show five of the most common features covered by all identified tools for each of the three main categories explored.

Still in regard to our impression over spatial-levels outcomes, our comparative analysis showed a notable supremacy of tools capable of assessing sustainability at farm-level, with 62% of tools designed to solely assess at farm-level and 75% of the 105 tools capable of assessing at least at farm-level. Such findings are in concordance with previous deductions stated in literature, such as in Hayati (2017) and Rosnoblet et al. (2006) as both remarked how assessments at farm-level continue to be the most studied ones for allowing a better weigh up and trade-off process in a significant way.

Dimensions of Sustainability

Despite finally perceiving sustainable agricultural practices as a prerequisite for the attainment of the SDGs (Hayati, 2017), there is still a clear reluctance regarding such transition. Although a much debated concept

with a wide range of implications, the fateful hamper is that to date there is not a widely accepted definition for sustainability (Christ & Burritt, 2013; Hayati, 2017; Keichinger & Thiollet-Scholtus, 2017; Martins et al., 2018; Merli et al., 2018; Pomarici & Vecchio, 2019; Santiago-Brown et al., 2014, 2015; Thiollet-Scholtus & Bockstaller, 2015; Velten et al., 2015). From Our Common Future report published in 1987 by the Brundtland Commission defining sustainable development as the ability to meet the needs of the present without compromising future generations to meet their own needs (World Commission on Environment and Development, 1987), to the most recent 2030 Agenda for Sustainable Development relaunched by the United Nations (United Nations General Assembly, 2015), both perception and meaning of the concept have gradually evolved over the years (Hayati, 2017; Herath & Rathnayake, 2019; Ramos, 2019). Only among specialised literature, a multitude of distinct sustainability definitions can be identified. In fact, even in today's work different conceptions of sustainable agriculture continue to be discussed in parallel (Goldman, 1995; Hansen, 1996; Hayati, 2017; Velten et al., 2015).

Beyond this conceptual vagueness and diverseness, sustainable development and sustainability per se are mostly considered today in a Triple Bottom Line (TBL) perspective (Hayati, 2017). Such an approach emerged when Elkington (1994) projected the United Nation's sustainability recommendations to business level. The TBL theory defends that People, Planet and Profit pillars are imperative and crucial sustainability principles, supporting the idea that development occurs when organisations show responsibility towards environmental health, social equity and economic viability (Graça et al., 2017; Hayati, 2017; Iyer & Reczek, 2017; Renton et al., 2002; Santiago-Brown et al., 2014). For that reason, it is finally recognised that it is when attempting to thrive between all sustainability fundamental components, that the evaluation methodology being used can play a key role (Kirchmann et al., 2016; Marta-Costa & Silva, 2013b; Schrama et al., 2018).

Notwithstanding, it is also claimed that in certain situations the TBL theory may defend two conditions often contradictory and hard to overcome when reinforcing the idea that socio-economic performance must be

maximised without jeopardising both the environment and natural resources (Marta-Costa & Silva, 2013a).

In regard to our comparative analysis on sustainability dimensions covered by all 105 tools, it was revealed that despite considerable support among specialists either in the conceptualisation of sustainability through a TBL perspective, or among methodologies being developed to assess such, there is still a single-domain prevalence and preference for environmental scope. Our results showed that an affinity towards environmental concerns continues to endure over a more holistic perspective with 44% of the 105 tools being designed to only evaluate environmental affairs, against 32% of tools presented as capable of covering all three fundamental pillars—economic, social and environmental.

By indicating that a representative 88% of all 105 tools analysed were able to assess at least some kind of environmental affair, the statement defended in literature by Binder et al. (2010), Bockstaller et al. (2008), Rosnoblet et al. (2006) and Thiollet-Scholtus and Bockstaller (2015) over the fact that most of the measurements conducted so far tend to focus predominantly on environmental concerns was here too confirmed. On the other hand, claims from Rosnoblet et al. (2006) appealing that other sustainability-related categories such as social and economic started to be gradually introduced by academia since 1995 were not totally validated in this study. Results only spotted two designated sustainability tools of the full list as being specifically developed to evaluate social-related evidences, in addition to nine designed to assess economic domains (see Appendix). In Fig. 3.2, the *3 pillars* variable in the category of dimensions of sustainability is regarding the three fundamental TBL components, where the *4 pillars* variable adds the institutional component.

Thus, in consonance with the fact that the most common and often found methodologies applied among research of this nature tend to use Life Cycle Assessment (LCA) with a vibrant focus on assessing environmental impact categories (Binder et al., 2010; Bockstaller et al., 2008; Ferrara & De Feo, 2018; Rosnoblet et al., 2006; Thiollet-Scholtus & Bockstaller, 2015; United Nations, 2007), it can be established that despite a manifold sustainability assessment tools developed till date, an engagement towards environmental concerns continues to endure over a more holistic perspective.

Context Comprehensiveness

Sustainability per se is starting to be seen as a dynamic concept, continuously seeking to achieve a balance in space and time between all fundamental pillars (Marta-Costa & Silva, 2013b). For that matter, when choosing a specific assessment tool to measure sustainability in a particular moment, its evaluation effectiveness generally depends on more factors than just the available data, time and budgetary constraints. In order to properly evaluate complex systems in our ever changing modern world, assessment tools must undertake certain criteria and specifications to be capable of accurately translating such complexity and dynamic nature into a comprehensive, realistic and comparable result (Binder et al., 2010; Hayati, 2017).

One critical point while using indicator-based tools is the determination of the indicators' thresholds. Sustainability indicators as context-dependent also compel to the necessity to specify certain dynamics in order to establish practical and wide enough system boundaries (Björklund & Johansson, 2013; Santiago-Brown et al., 2015). It can therefore be endorsed that any sustainability evaluation must be linked to the context in which the system operates in order to respect the inherent complexity and dynamics of this modern world (Flores, 2018).

When analysing all identified tools in regard to their sectorial comprehensiveness, some results were unforeseen due to the lack of information found in literature regarding a particular situation. Regardless a considerable number of sustainability assessment tools being expressly developed to assess arable crops or livestock production (Hayati, 2017; Thiollet-Scholtus & Bockstaller, 2015), the reality is that even though that statement was confirmed to some extent by our comparative results, it does not represent the majority of all analysed tools. More than 60% of the 105 identified tools were indeed considered non-context-specific or even generic tools. Although amongst the instruments characterised as context-specific a representative chunk was actually developed to assess arable crops (12%), 38% of all analysed methods were primarily presented as capable of evaluating agri-food systems in general, plus 25% being labelled as universal.

By recognising the fundamental role of context comprehensiveness upon assessment, these results may point to one possible explanation for recurrent bias and inadequacy among research of this nature (Gafsi & Favreau, 2013; Iyer & Reczek, 2017; Martins et al., 2018; Santiago-Brown et al., 2014). Such considerable lack of context-specificity, or even this preeminent idea of a context comprehensiveness polarity between generic tools versus tools expressly developed to assess arable crops, may be linked to some extent to our ineffectiveness to properly evaluate any certain good, service or activity, in regard to their sustainability level.

3.5 Conclusions

By conducting an extended and structured literature review we were not only able to identify key essentialities, potentialities and gaps regarding our knowledge on sustainability assessment, but also to corroborate results obtained upon further analysis on 105 different assessment tools. Findings from our comparative analysis were coherent with several evidences already defended by specialists. It was for example advocated for the extensive number and heterogeneity of tools developed until this date, either on scope, content or structure, to a clear domain of farm-level assessments over environmental domains (Binder et al., 2010; Bockstaller et al., 2008; De Olde et al., 2016; Hayati, 2017; Rosnoble et al., 2006; Thiollet-Scholtus & Bockstaller, 2015; United Nations, 2007).

On the other hand, results related to a clear dominance of generic tools amongst all analysed instruments presented unexpected outcomes not often mentioned in literature. Such pre-eminence opposes former statements endorsing higher specificity amongst assessment tools particularly designed to assess arable crops or livestock production (Hayati, 2017; Thiollet-Scholtus & Bockstaller, 2015). Between tools identified as context-specific, the ones designed to assess arable crops were indeed the most distinguished ones. However, results indicated that more than 60% of all analysed instruments could be labelled as generic or even universal.

If we accept sustainability as a dynamic concept built over a perpetual search for balance and equilibrium at a particular time and location (Hayati, 2017; Marta-Costa & Silva, 2013b), it also implies that it is

imperative for any assessment tool designed to appraise such sustainability to assure specific-context comprehensiveness. If we correlate this lack of context-specificity to our still recurrent ineffectiveness to properly evaluate sustainability, such ubiquitous results may be the inception of the so proclaimed unconformity and unreliability among research of this nature—often characterised as flawed and with biased design (Gafsi & Favreau, 2013; Iyer & Reczek, 2017; Martins et al., 2018; Santiago-Brown et al., 2014). Thus, beyond the significant impact over the final evaluation diagnosis of the integration level of all sustainability core components or even the scale in which the assessment is being taken, according to our results an assessment tool with an adequate context comprehensiveness may be likewise an essentiality to perform a proper and holistic sustainability evaluation.

This study is therefore seen as pertinent to guide decision-makers to build resilience at a micro-level, as sustainability assessment is finally perceived among the corporative world as a powerful performance evaluation tool and an opportunity to boost competitiveness (Qiang et al., 2013; Ramos, 2019). Also, to understand and develop proper context-specific assessment tools capable of evaluating sustainability holistically is more needed than ever. As exposed by the pandemic we are presently facing, any type of crisis can promptly bludgeon different businesses on a global scale. Promoting sustainable agriculture must for that matter not only be perceived as a marketing strategy, but rather a necessity to overcome, evolve or transform in the face of future crisis.

Lastly, this work contributes to engage stakeholders to embrace the importance and weight of social and economic pillars. Focusing on environmental affairs is simply not sufficient in our modern world, and regardless of the field of business it is imperative to apply a multidisciplinary perspective when measuring or promoting sustainable development. Hence, we must integrate and link economic models to assessment systems based on natural and human wellbeing, in order to succeed in our incessant search for sustainability.

The authors of this work acknowledge the limitations associated with research of this nature—mostly regarding generalisation of findings.

Further empirical work is therefore encouraged to clarify the significance of dimensions discussed here, such as applying multivariate methods with statistical tests over spotted tools to complement our data analysis. Nevertheless, this study can be seen as a first-glance guideline for providing relevant insights into common grounds over 105 distinguished sustainability assessment tools. Despite this long-lasting concern by the scientific community on how to assess sustainability, former research of this nature is often criticised for being either too narrow or too conceptual (Ferrara & De Feo, 2018; Rosnoble et al., 2006; Van Der Werf & Petit, 2002). However, through a preliminary attempt to comprehend the dynamics and limitations of the area of sustainability assessment, expectantly we have overcome such problem in providing an accessible comparative review.

Also, by sharing relevant information on sustainability assessment with companies willing to create positive impact, this work is also pertinent to encourage micro-level performance evaluations as our results may support stakeholders and business managers to recognise, understand or apply any of the benchmarked tools. Finally, by improving sustainability evaluations and consequently the sustainability credentials of any good or activity, the response efficiency of companies may be optimised against contemporary difficulties such as climate change impacts, restrictive legislation and any crisis or even outbreak capable of substantially affecting our society.

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Appendix: Categorisation Tool's List

N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
1	ANS	Adjusted Net Saving	National	Economic	Universal	Yes	United Nations (2007)
2	AEMBAC	European Analytical Framework for the Development of Local Agri-Environmental Programmes	Local	Environmental	Agri-food	Yes	Bastian et al. (2007)
3	AESIS	Agro-Environmental Sustainability Information System	Farm	Environmental	Agri-food	Yes	Pacini et al. (2009)
4	Agro-Eco-Index	-	Farm	Environmental	Agri-food	Yes	Viglizzo et al. (2006)
5	ANCA	Annual Nutrient Cycle Assessment	Farm	Environmental	Dairy	Yes	Aarts et al. (2015)
6	APOIA-NOVORURAL	System for Weighted Environmental Impact Assessment of Rural Activities	Farm	Environmental	Agri-food	Yes	Rodrigues et al. (2010)
7	ARBRE	Arbre de l'Exploitation Agricole Durable	Farm	Environmental, social, economic	Agri-food	Yes	Pervanchon (2004)
8	AUI	Agrarumweltindikatoren	Farm	Environmental	Agri-food	No	www.blw.admin.ch
9	Avibio	AViculture Biologique	Farm, sector	Environmental, social, economic	Poultry	Yes	Pottiez et al. (2012)
10	BioSTAR	Bioenergy Sustainability Target Assessment Resource	Sector, regional, national	Environmental, social, economic	Bioenergy, biofuel	Yes	Pollesch (2016)

11	BROA	Biodiversity Risk and Opportunity Assessment	Landscape	Environmental	Agri-food	No	www.batbiodiversity.org/broa
12	CALM	Carbon accounting for land managers	Farm	Environmental	Agri-food	Yes	www.calm.cla.org.uk
13	CaneLCA	-	Farm, regional	Environmental	Sugarcane	Yes	Renouf (2018)
14	CCAFS-MOT	Climate Change, Agriculture and Food Security Mitigation Option Tool	Farm, regional	Environmental	Agri-food	Yes	Feliciano (2016)
15	COMET-Farm	Carbon Reporting Tool indicator	Farm	Environmental	Agri-food	Yes	http://cometfarm.nrel.colostate.edu/
16	Cool Farm Tool	-	Farm	Environmental	Agri-food	Yes	Hillier et al. (2011)
17	COSA	Committee On Sustainability Assessment Indicator	Farm	Environmental, social, economic	Coffee, cocoa	Yes	COSA (2013)
18	Cost Benefit analysis	-	Product	Economic	Universal	Yes	Costanza et al. (1997)
19	Coteur et al. (2014)	-	Farm	Environmental, social, economic	Fruit production, arable farming, greenhouse cultivation	Yes	Coteur et al. (2014)
20	Crop.LCA	-	Farm	Environmental	Arable farming	Yes	Goglio et al. (2018)
21	Dairy Farms+	-	Farm	Environmental	Dairy	Yes	AGECO (2016)
22	DairyGEM 3.3	-	Farm	Environmental	Dairy	Yes	Rotz et al. (2016)

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N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
23	DSAI	Dairy Stewardship Alliance initiative	Farm	Environmental	Dairy	Yes	Matthews (2010)
24	DairySAT	Dairy Self-Assessment Tool	Farm	Environmental	Dairy	Yes	www.dairysat.com.au
25	Dantsis et al. (2010)	Multi-criteria Analysis Tool	Regional	Environmental, social, economic	Arable farming	Yes	Dantsis et al. (2010)
26	DELTA	-	Farm	Environmental, social, economic	Dairy	Yes	Parent et al. (2013)
27	DEXIPM	DEXi Pest Management	Farm	Environmental, social, economic	Arable farming	Yes	Pelzer et al. (2012)
28	DIAGE	DIagnostic Global d'Exploitation	Farm	Environmental	Agri-food	Yes	FRCA Centre (2002)
29	DIALECTE	DIagnostic Agri-Environnemental Liant Environnement et Contrat Territorial d'Exploitation	Farm	Environmental	Agri-food	Yes	Solagro (2000)
30	DIALOGUE	Diagnostic Agri-Environnemental de l'Exploitation Agricole	Farm	Environmental	Agri-food	Yes	Solagro (2001)
31	DLG	DLG Zertifikat Nachhaltige Landwirtschaft	Farm	Environmental	Agri-food	No	www.nachhaltige-landwirtschaft.info

32	DMC	Direct Material Consumption	Regional, national	Environmental	Universal	Yes	Commission of the European Communities (2001)
33	DSI	Dairyman Sustainability Index	Farm, regional	Environmental, social, economic	Dairy	Yes	Elsaesser et al. (2015)
34	EASI	Energy/emissions/ecology and agricultural systems integration project	Farm	Environmental	Agri-food	Yes	Smith (2010)
35	EF	Ecological Footprint	Product, farm, regional	Environmental	Universal	Yes	Wackernagel et al. (1999)
36	EIOVI	Environmental Impact of an Organic Viticulture Indicator	Farm	Environmental	Viticulture	Yes	Fragoulis et al. (2009)
37	EMA	Environmental management for agriculture	Farm	Environmental	Agri-food	Yes	Lewis & Bardon (1998)
38	Emergy EPI	Emergy analysis Environmental Performance Index	Farm National	Environmental	Universal	Yes	Odum (1996)
39	ESI	Sustainability Index	National	Environmental	Universal	Yes	United Nations (2007)
40	EU SDG	Sustainable Development Goals indicator-set	National	Environmental, social, economic, institutional	Universal	Yes	United Nations (2007)
41	Exergy	Exergy Analysis	Farm	Environmental	Universal	Yes	Commission of the European Communities (2005)
42						Yes	Bastianoni et al. (2005)

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N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
43	EP	Ecopoints	Farm	Environmental	Universal	No	www.oekopunkte.at
44	FARMSMART	–	Farm	Economic	Agri-food	Yes	Tzivilivakis & Lewis (2004)
45	FESLIM	Framework for the Evaluation of Sustainable Land Management	Regional, national	Environmental, social, economic	Agri-food	Yes	FAO (1993)
46	FieldPrint Calc.	FieldPrint Calculator	Farm	Environmental	Arable farming	No	https://calculator.fieldtomarket.org/
47	FSA	Farm Sustainability Assessment	Farm	Environmental, social, economic	Agri-food	Yes	SAI (2014)
48	FSRT	Farm Sustainability Readiness Tool	Farm	Environmental, social, economic	Arable farming	Yes	https://www.farmsustainability.ca/en
49	Full-Cost Calc.	Full-Cost Calculation	Farm, regional	Economic	Permanent crops	Yes	Mouron et al. (2006)
50	GA	Green Accounts for Farms	Farm	Environmental	Agri-food	No	www.landbrugsinfo.dk
51	GPI	Genuine Progress Indicator	National	Economic	Universal	Yes	United Nations (2007)
52	Genuine Savings	–	National	Economic	Universal	Yes	Pearce & Atkinson (1993)
53	GDP	Gross Domestic Product	National	Economic	Universal	Yes	OECD (2004)
54	HDI	Human Development Index	National	Social	Universal	Yes	OECD (2004)
55	HOLOS	–	Farm	Environmental	Livestock production	Yes	Little et al. (2008)

56	IDEA	Indicateur de Durabilité des Exploitations Agricoles	Farm	Environmental, social, economic	Arable farming livestock production, agro-ecosystems	Yes	Vilain (2000)
57	IFSC	Illinois Farm	Farm	Environmental, economic	Agri-food	No	www.ideals.illinois.edu
58	IFSM	Integrated Farm Simulation Model	Farm	Environmental, economic	Agri-food	Yes	Rotz et al. (2016)
59	IMPACCT	Integrated management options for agricultural climate change mitigation	Farm	Environmental	Agri-food	Yes	Tziliivakis et al. (2014)
60	indicIADes	Sustainability Indicators from the Institute de l'Agriculture Durable	Farm	Environmental, social, economic	Agri-food	No	www.indiciades.fr
61	ISEW	Index of Sustainable Economic Welfare	National	Economic	Universal	Yes	Daly & Cobb (1989)
62	INDIGO	Indicateurs de Diagnostic Global à la Parcelle	Farm	Environmental	Arable farming, viticulture	Yes	Bockstaller & Van Der Werf (1997)
63	INSPIA	Initiative for Sustainable Productive Agriculture	Farm	Environmental, social, economic	Annual crops, permanent crops, viticulture	Yes	Trivino-Tarradas et al. (2019)
64	ISAP	Indicator of Sustainable Agricultural Practice	Farm	Environmental, social, economic	Horticulture	Yes	Rigby et al. (2001)

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N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
65	KSNL	Kriteriensystem Nachhaltige Landwirtschaft Kriterien	Farm	Environmental, social, economic	Agri-food	No	Breitschuh et al. (2009)
66	KUL	Umweltverträglicher Landbewirtschaftung	Farm	Environmental	Arable farming	Yes	Reinsch (2001)
67	LCA	Life Cycle Assessment	Product	Environmental	Universal	Yes	Haas et al. (2000)
68	LPI	Living planet index	National, global	Environmental	Universal	Yes	Loh et al. (2005)
69	MASC 2.0	Multi-criteria Assessment of the Sustainability of Cropping Systems	Farm	Environmental, social, economic	Agri-food	Yes	Craheix et al. (2012)
70	MESMIS	Marco para Evaluación de Sistemas de Manejo de Recursos Naturales Incorporando Indicadores de Sustentabilidad	Farm, regional	Environmental, social, economic	Smallholder, forestry, livestock production	Yes	Masera et al. (2000)
71	MINAS	Mineral accounting software tool	Farm	Environmental	Universal	Yes	Halberg et al. (2005)
72	MMF	Multiscale Methodological Framework	Farm, regional	Environmental, social, economic	Smallholder, peasant farming	Yes	López-Ridaura et al. (2002)
73	MOTIFS	Monitoring Tool for Integrated Farm Sustainability	Farm	Environmental, social, economic	Dairy	Yes	Meul et al. (2008)

74	OCDE CEI	Core Set of environmental indicators	Local, regional, national	Environmental, socio-economic	Universal	Yes	OECD (2003)
75	Opt'INRA	-	Farm	Economic	Livestock production	Yes	Veyset et al. (2005)
76	PalmGHG	-	Farm	Environmental	Palm	Yes	Chase et al. (2012)
77	PG	Public Goods Tool	Farm	Environmental, social, economic	Universal	Yes	Gerrard et al. (2012)
78	PLANETE	Méthode Pour L'Analyse Energétique de l'Exploitation	Farm	Environmental	Agri-food	Yes	Bochu (2002)
79	RAD	Diagnostic de durabilité of Réseau de l'Agriculture Durable	Farm	Environmental, social, economic	Dairy	Yes	Le Rohellec & Mouchet (2008)
80	REPRO	Reproduction of Soil Fertility	Farm	Environmental	Agri-food	Yes	Rücknagel et al. (2015)
81	RISE	Response-Inducing Sustainability Evaluation	Farm	Environmental, social, economic	Agri-food	Yes	Häni et al. (2003)
82	Roy et al. (2013)	-	Farm	Environmental, social, economic	Rice farming	Yes	Roy et al. (2013)
83	SAEMETH	Sustainable Agri-Food Evaluation Methodology	Farm	Environmental, social, economic	Smallholder, peasant farming	Yes	Peano et al. (2015)

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N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
84	SAFA	Sustainability Assessment of Food and Agriculture Systems	Farm, sector	Environmental, social, economic, institutional	Agri-food	Yes	FAO (2013)
85	SAFE	Sustainability Assessment of Farming and the Environment	Farm, regional, national	Environmental, social, economic	Agri-food	Yes	Van Cauwenbergh et al. (2007)
86	SAI—SPA	Farmer Self-Assessment	Farm	Environmental, social, economic	Agri-food	No	www.standardsmap.org/fsa
87	SALCA	Swiss Agricultural Life Cycle Assessment	Product, farm, sector	Environmental	Agri-food	Yes	Nemecek et al. (2011)
88	SARN	Sostenibilidad de la Agricultura y los Recursos Naturales: Bases para Establecer Indicadores	Farm	Environmental, economic	Agri-food	Yes	Camino V & Müller (1993)
89	SeeBalance	–	Product, sector	Environmental, social, economic	Universal	Yes	Schmidt et al. (2004)
90	SENSE Tool	–	Farm	Environmental, social, economic	Agri-food	Yes	Ramos et al. (2016)

91	SLCA	Social Life Cycle Assessment	Product	Social	Universal	Yes	Benoît & Mazijn (2009)
92	SMART Farm Tool	Sustainability Monitoring and Assessment Routine	Farm	Environmental, social, economic, institutional	Agri-food	Yes	Schader et al. (2016)
93	Socio-economic FP survey	Socio-economic footprinting survey	Farm, regional	Socio-economic	Universal	Yes	Lobley et al. (2005)
94	SOECO	Socio-economic indicators for viticulture	Farm	Social, economic	Viticulture	Yes	Keichinger & Thiollent-Scholtus (2017)
95	SoilandMore-Flower	Sustainability Flower Quick Assessment	Farm	Environmental, social, economic	Agri-food	No	www.soilandmorefoundation.org/projects
96	SOSTARE	-	Farm	Environmental, economic	Rice cultivation, arable farming, livestock production	Yes	Paracchini et al. (2015)
97	SSP	Sustainability Solution Space	Regional	Environmental, social, economic	Agri-food	Yes	Wiek & Binder (2005)
98	SYNOPS	-	Farm, regional	Environmental	Arable farming	Yes	Gutsche & Strassemeier (2007)

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N	Tool	Name	Spatial level (i)	Sustainability dimensions (ii)	Sectorial levels (iii)	Peer review (iv)	Main reference
99	DS	Sustainability Dashboard	Sector, national	Environmental, social, economic, institutional	Universal	Yes	OECD (2004)
100	SVA	Sustainable Value Approach	Farm, sector, regional	Environmental, social, economic	Agri-food, oil companies, manufacturing industry, arable farming	Yes	Figge & Hahn (2004)
101	TFI	Treatment Frequency Index	Farm	Environmental	Fruit production, arable farming	Yes	Pujol (2017)
102	UN CSD	Core Indicators of Sustainable Development	National, global	Environmental, social, economic, institutional	Universal	Yes	United Nations (1996)
103	UN MDG	Millennium Development Goals indicators	National, global	Environmental, social, economic, institutional	Universal	Yes	United Nations (2007)
104	van Calker et al. (2006)	–	Farm	Environmental, social, economic	Dairy	Yes	van Calker et al. (2006)
105	WI	Wellbeing index	Regional, national	Environmental, social	Universal	Yes	Prescott-Allen (2001)

References

- Aarts, H. F. M., De Haan, M. H. A., Schröder, J. J., Holster, H. C., De Boer, J. A., Reijs, J. W., & Meerkerk, B. (2015). Quantifying the Environmental Performance of Individual Dairy Farms: The Annual Nutrient Cycling Assessment. In *Proceedings of the 18th Symposium of the European Grassland Federation. Grassland Science in Europe* (Grassland and Forages in High Output Dairy Farming Systems) (Vol. 20, pp. 377–380). Wageningen Academic Publishers.
- Abdul Murad, S. M., Hashim, H., Jusoh, M., & Zakaria, Z. Y. (2019). Sustainability Assessment Framework : A Mini Review of Assessment Concept. *Chemical Engineering Transactions*, 7, 379–384. <https://doi.org/10.3303/CET1972064>
- AGÉCO. (2016). *DAIRY FARMS+ The Canadian Dairy Production Sustainability Assessment Tool*. Québec.
- Bastian, O., Corti, C., & Lebboroni, M. (2007). Determining Environmental Minimum Requirements for Functions Provided by Agro-Ecosystems. *Agronomy for Sustainable Development, Springer Verlag (Germany)*, 27(4), 279–291. <https://doi.org/10.1051/agro>
- Bastianoni, S., Nielsen, S. N., Marchettini, N., & Jørgensen, S. E. (2005). Use of Thermodynamic Functions for Expressing Some Relevant Aspects of Sustainability. *International Journal of Energy Research*, 29(1), 53–64. <https://doi.org/10.1002/er.1036>
- Bélangier, V., Vanasse, A., Parent, D., Allard, G., & Pellerin, D. (2015). DELTA: An Integrated Indicator-Based Self-Assessment Tool for the Evaluation of Dairy Farms Sustainability in Quebec, Canada. *Agroecology and Sustainable Food Systems*, 39, 1022–1046. <https://doi.org/10.1080/21683565.2015.1069775>
- Benoît, C., & Mazijn, B. (2009). *Guidelines for Social Life Cycle Assessment of Products* (Catherine Benoît & B. Mazijn, Eds.), UNEP/SETAC Life Cycle Initiative (Vol. 15). United Nations Environment Programme.
- Binder, C. R., Feola, G., & Steinberger, J. K. (2010). Considering the Normative, Systemic and Procedural Dimensions in Indicator-Based Sustainability Assessments in Agriculture. *Environmental Impact Assessment Review*, 30(2), 71–81. <https://doi.org/10.1016/j.eiar.2009.06.002>
- Björklund, J., & Johansson, B. (2013). Assessing Multifunctionality in Relation to Resource Use: A Holistic Approach to Measure Efficiency, Developed by Participatory Research. In A. A. Marta-Costa & E. Silva (Eds.), *Methods and*

- Procedures for Building Sustainable Farming Systems* (pp. 161–174). Springer Netherlands.
- Bochu, J.-L. (2002). PLANETE: Methode pour l'analyse energetique de l'exploitation agricole et l'évaluation des émissions de gaz à effet de serre. In *texte colloque SOLAGRO* (Vol. 3, pp. 68–80). SOLAGRO.
- Bockstaller, C., & Van Der Werf, H. (1997). Use of Agro-Ecological Indicators for the Evaluation of Farming Systems. *European*, 7, 261–270. [https://doi.org/10.1016/S0378-519X\(97\)80032-3](https://doi.org/10.1016/S0378-519X(97)80032-3)
- Breitschuh, G., Eckert, H., & Matthes, I. (2009). *Kriteriensystem Nachhaltige Landwirtschaft (KSNL). KTBL-Schrift* (Vol. 466). Kuratorium für Technik und Bauwesen in der Landwirtschaft e.V. (KTBL).
- Camino, V. R., & Müller, S. (1993). *Sostenibilidad de la agricultura y los recursos naturales: bases para establecer indicadores. Serie Documentos de Programas/ IICA 38*. Instituto Interamericano de Cooperación para la Agricultura.
- Cândido, G., Nóbrega, M., Figueiredo, M., & Souto Maior, M. (2015). Sustainability Assessment of Agroecological Production Units: A Comparative Study of IDEA and MESMIS Methods. *Ambiente & Sociedade*, 3, 99–120.
- Chase, L., Henson, I., Abdul-Manan, A., Agus, F., Bessou, C., Canals, L. M. I., & Sharma, M. (2012). *The PalmGHG Calculator: The RSPO Greenhouse Gas Calculator for Oil Palm Products, Beta-Version*. The Roundtable for Sustainable Palm Oil – RSPO.
- Christ, K. L., & Burritt, R. L. (2013). Critical Environmental Concerns in Wine Production: An Integrative Review. *Journal of Cleaner Production*, 53, 232–242. <https://doi.org/10.1016/j.jclepro.2013.04.007>
- Commission of the European Communities. (2001). *Economy-Wide Material Flow Accounts and Derived Indicators: A Methodological Guide* (2000th ed.). Office for Official Publications of the European Communities.
- Commission of the European Communities. (2005). *Sustainable Development Indicators to Monitor the Implementation of the EU Sustainable Development Strategy*.
- COSA. (2013). *The COSA Measuring Sustainability Report: Coffee and Cocoa in 12 Countries*.
- Costanza, R., D'Arge, R., de Groot, R., Farber, S., Grasso, M., Hannon, B., ... van den Belt, M. (1997). The Value of the World's Ecosystem Services and Natural Capital. *Nature*, 387(15), 253–260. [https://doi.org/10.1016/s0921-8009\(98\)00020-2](https://doi.org/10.1016/s0921-8009(98)00020-2)
- Coteur, I., Marchand, F., Debruyne, L., Bijttebier, J., Triste, L., & Lauwers, L. (2014). Development and Evaluation of an On-Demand Sustainability

- Tool in Flanders. In *11th European IFSA Symposium, Farming Systems Facing Global Challenges: Capacities and Strategies, Proceedings, Berlin, Germany, 1–4 April 2014* (pp. 38–48). International Farming Systems Association, Europe; Leibniz Centre for Agricultural Landscape Research; Humboldt-Universität zu Berlin.
- Craheix, D., Angevin, F., Bergez, J.-E., Bockstaller, C., Colomb, B., Guichard, L., & Omon, B. (2012). Multicriteria Assessment of the Sustainability of Cropping Systems: A Case Study of Farmer Involvement Using the MASC Model. In *10th European IFSA Symposium: Producing and Reproducing Farming Systems. New Modes of Organisation for Sustainable Food Systems of Tomorrow* (pp. 1–9).
- Daly, H. E., & Cobb, J. B. J. (1989). *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future*. Beacon Press.
- Dantsis, T., Douma, C., Giourga, C., Loumou, A., & Polychronaki, E. A. (2010). A Methodological Approach to Assess and Compare the Sustainability Level of Agricultural Plant Production Systems. *Ecological Indicators, 10*, 256–263. <https://doi.org/10.1016/j.ecolind.2009.05.007>
- De Olde, E. M., Oudshoorn, F. W., Sørensen, C. A. G., Bokkers, E. A. M., & De Boer, I. J. M. (2016). Assessing Sustainability at Farm-Level: Lessons Learned from a Comparison of Tools in Practice. *Ecological Indicators, 66*, 391–404. <https://doi.org/10.1016/j.ecolind.2016.01.047>
- Elsaesser, M., Jilg, T., Herrmann, K., Boonen, J., Debruyne, L., Laidlaw, S., & Aarts, F. (2015). Quantifying Sustainability of Dairy Farms with the DAIRYMAN-Sustainability-Index (DSI). *European Grassland Federation. Grassland Science in Europe, 20*(2007), 637–640.
- FAO. (1993). *FESLM: An International Framework for Evaluating Sustainable Land Management*. World Soil Resources Report.
- FAO. (2013). *Sustainability Assessment of Food and Agriculture Systems (SAFA): Guidelines, Version 3.0*. Food and Agricultural Organization of the United Nations.
- Feliciano, D. (2016). *The CGIAR Research Program on Climate Change, Agriculture and Food Security Mitigation Option Tool (CCAFS-MOT): Guidelines for Users*. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). <https://doi.org/10.13140/RG.2.2.27947.18729>
- Ferrara, C., & De Feo, G. (2018). Life Cycle Assessment Application to the Wine Sector: A Critical Review. *Sustainability (Switzerland), 10*(395) <https://doi.org/10.3390/su10020395>

- Figge, F., & Hahn, T. (2004). Sustainable Value Added: Measuring Corporate Contributions to Sustainability Beyond Eco-Efficiency. *Ecological Economics*, 48(2), 173–187. <https://doi.org/10.1016/j.ecolecon.2003.08.005>
- Flores, S. S. (2018). What Is Sustainability in the Wine World ? A Cross-Country Analysis of Wine Sustainability Frameworks. *Journal of Cleaner Production*, 172, 2301–2312. <https://doi.org/10.1016/j.jclepro.2017.11.181>
- Fragoulis, G., Trevisan, M., Di Guardo, A., Sorce, A., van der Meer, M., Weibel, E., & Capri, E. (2009). Development of a Management Tool to Indicate the Environmental Impact of Organic Viticulture. *Journal of Environmental Quality*, 38, 826–835. <https://doi.org/10.2134/jeq2008.0182>
- FRCA Centre. (2002). *Diage: manuel d'utilisation et logiciel*.
- Gafsi, M., & Favreau, J. L. (2013). Indicator-Based Method for Assessing Organic Farming Sustainability. In A. A. Marta-Costa & E. Silva (Eds.), *Methods and Procedures for Building Sustainable Farming Systems* (pp. 175–187). Springer Netherlands. <https://doi.org/10.1007/978-94-007-5003-6>
- Gerrard, C., Smith, L. G., Pearce, B., Padel, S., Hitchings, R., & Measures, M. (2012). Public Goods and Farming. In E. Lichtfouse (Ed.), *Farming for Food and Water Security, Sustainable Agriculture Reviews* (Vol. 10, pp. 1–22). Springer Science+Business Media Dordrecht. <https://doi.org/10.1007/978-94-007-4500-1>
- Goglio, P., Smith, W. N., Grant, B. B., Desjardins, R. L., Gao, X., Hanis, K., ... Williams, A. G. (2018). A Comparison of Methods to Quantify Greenhouse Gas Emissions of Cropping Systems in LCA. *Journal of Cleaner Production*, 172, 4010–4017. <https://doi.org/10.1016/j.jclepro.2017.03.133>
- Goldman, A. (1995). Threats to Sustainability in African Agriculture : Searching for Appropriate Paradigms. *Human Ecology*, 23(3), 291–334.
- Graça, A. R., Simões, L., Freitas, R., Pessanha, M., & Sandeman, G. (2017). Using Sustainable Development Actions to Promote the Relevance of Mountain Wines in Export Markets. *Open Agriculture*, 2, 571–579.
- Gutsche, V., & Strassemeier, J. (2007). SYNOPSIS: A Model to Assess the Environmental Risk Potential of Pesticides. *Nachrichtenblatt des Deutschen Pflanzenschutzdienstes*, 59(9), 197–210.
- Haas, G., Wetterich, F., & Geier, U. (2000). Framework in Agriculture on the Farm Level. *The International Journal of Life Cycle Assessment*, 5(6). <https://doi.org/10.1007/BF02978669>
- Halberg, N., Van Der Werf, H. M. G., Basset-Mens, C., Dalgaard, R., & De Boer, I. J. M. (2005). Environmental Assessment Tools for the Evaluation and Improvement of European Livestock Production Systems. *Livestock*

- Production Science*, 96(1 SPEC. ISS.), 33–50. <https://doi.org/10.1016/j.livprodsci.2005.05.013>
- Hansen, J. W. (1996). Is Agricultural Sustainability a Useful Concept ? *Agricultural Systems*, 50(95), 117–143.
- Häni, F., Braga, F., Stämpfli, A., Keller, T., Fischer, M., & Porsche, H. (2003). RISE, a Tool for Holistic Sustainability Assessment at the Farm Level. *International Food and Agribusiness Management Review*, 6(4). <https://doi.org/10.22004/ag.econ.34379>
- Hayati, D. (2017). *A Literature Review on Frameworks and Methods for Measuring and Monitoring Sustainable Agriculture*. Technical Report n.22. Global Strategy Technical Report: Rome.
- Herath, H. M. T. R., & Rathnayake, R. M. P. S. (2019). A Critical Approach Towards Sustainable Development Models – A Review. *International Journal of Agriculture Innovations and Research*, 7(4), 2319–1473.
- Hillier, J., Smith, P., Bandel, T., Malin, D., Hamilton, H., & Walter, C. (2011). Farm-Scale Greenhouse Gas Emissions Using the Cool Farm Tool: Application of a Generic Farming Emissions Calculator in Developing Countries. In *Climate Change Mitigation and Agriculture* (pp. 217–226). Taylor and Francis.
- Iyer, E. S., & Reczek, R. W. (2017). The Intersection of Sustainability, Marketing, and Public Policy: Introduction to the Special Section on Sustainability. *Journal of Public Policy & Marketing*, 36(2), 246–254. <https://doi.org/10.1509/jppm.36.250>
- Keichinger, O., & Thiollet-Scholtus, M. (2017). SOECO: Indicateurs socio-économiques pour la viticulture et les systèmes de culture innovants. *BIO Web of Conferences*, 9, 04012. <https://doi.org/10.1051/bioconf/20170904012>
- Kirchmann, H., Kätterer, T., Bergström, L., Börjesson, G., & Bolinder, M. A. (2016). Flaws and Criteria for Design and Evaluation of Comparative Organic and Conventional Cropping Systems. *Field Crops Research*, 186, 99–106.
- Koohafkan, P., Altieri, M. A., & Gimenez, E. H. (2011). Green Agriculture: Foundations for Biodiverse, Resilient and Productive Agricultural Systems. *International Journal of Agricultural Sustainability*, 37–41. <https://doi.org/10.1080/14735903.2011.610206>
- Le Rohellec, C., & Mouchet, C. (2008). Efficacité économique de systèmes laitiers herbagers en agriculture durable (RAD): une comparaison avec le RICA. *Fourrages*, (193), 107–113.
- Lewis, K. A., & Bardon, K. S. (1998). A Computer-Based Informal Environmental Management System for Agriculture. *Environmental*

- Modelling and Software*, 13(2), 123–137. [https://doi.org/10.1016/S1364-8152\(98\)00010-3](https://doi.org/10.1016/S1364-8152(98)00010-3)
- Little, S., Lindeman, J., Maclean, K., & Janzen, H. (2008). *Holos: A Tool to Estimate and Reduce GHGs from Farms. Methodology and Algorithms for Version 1.1.x*. Agriculture & Agri-Food Canada.
- Lobley, M., Reed, M., & Butler, A. (2005). *The Impact of Organic Farming on the Rural Economy in England*.
- Loh, J., Green, R. E., Ricketts, T., Lamoreux, J., Jenkins, M., Kapos, V., & Randers, J. (2005). The Living Planet Index: Using Species Population Time Series to Track Trends in Biodiversity. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 360(1454), 289–295. <https://doi.org/10.1098/rstb.2004.1584>
- López-ridaura, S., Masera, O., & Astier, M. (2002). Evaluating the Sustainability of Complex Socio-Environmental Systems: The MESMIS Framework. *Ecological Indicators*, 2, 135–148.
- Marta-Costa, A. A., & Silva, E. (2013a). Approaches for Sustainable Farming Systems Assessment. In A. A. Marta-Costa & E. Silva (Eds.), *Methods and Procedures for Building Sustainable Farming Systems* (pp. 21–29). Springer Netherlands.
- Marta-Costa, A. A., & Silva, E. (2013b). Methodologies for Building Sustainable Farming Systems: The Main Critical Points and Questions. In A. A. Marta-Costa & E. Silva (Eds.), *Methods and Procedures for Building Sustainable Farming Systems* (pp. 273–277). Springer Netherlands. https://doi.org/10.1007/978-94-007-5003-6_19
- Martins, A. A., Araújo, A. R., Graça, A., Caetano, N. S., & Mata, T. M. (2018). Towards Sustainable Wine: Comparison of Two Portuguese Wines. *Journal of Cleaner Production*, 183, 662–676. <https://doi.org/10.1016/j.jclepro.2018.02.057>
- Masera, O. R., Astier, M., & López-Ridaura, S. (2000). *Sustentabilidad y manejo de recursos naturales: El marco de evaluación MESMIS*. Grupo Interdisciplinario de tecnología rural apropiada, A.C.
- Matthews, A. (2010). *Dairy Stewardship Alliance Sustainability Indicators for Dairy Farms*.
- Merli, R., Preziosi, M., & Acampora, A. (2018). Sustainability Experiences in the Wine Sector: Toward the Development of an International Indicators System. *Journal of Cleaner Production*, 172, 3791–3805. <https://doi.org/10.1016/j.jclepro.2017.06.129>

- Meul, M., Van Passel, S., Nevens, F., Dessein, J., Rogge, E., Mulier, A., & Van Hauwermeiren, A. (2008). MOTIFS: A Monitoring Tool for Integrated Farm Sustainability. *Agronomy for Sustainable Development*, 28(2), 321–332. <https://doi.org/10.1051/agro:2008001>
- Mouron, P., Scholz, R. W., Nemecek, T., & Weber, O. (2006). Life Cycle Management on Swiss Fruit Farms: Relating Environmental and Income Indicators for Apple-Growing. *Ecological Economics*, 58(3), 561–578. <https://doi.org/10.1016/j.ecolecon.2005.08.007>
- Nemecek, T., Dubois, D., Huguenin-Elie, O., & Gaillard, G. (2011). Life Cycle Assessment of Swiss Farming Systems: I. Integrated and Organic Farming. *Agricultural Systems*, 104(3), 217–232. <https://doi.org/10.1016/j.agsy.2010.10.002>
- Odum, H. T. (1996). *Environmental Accounting: EMERGY and Environmental Decision Making* (2nd ed.). Wiley. <https://doi.org/10.5860/choice.34-0412>
- OECD. (2003). *OECD Environmental Indicators. OECD Environmental Indicators: Development, Measurement and Use* (Vol. 25). OECD Publications. <https://doi.org/10.1787/9789264193499-en>
- OECD. (2004). Statistics, Knowledge and Policy: Composite Indicators of Environmental Sustainability. In *OECD World Forum on Key Indicators*. OECD Publications.
- Pacini, C., Lazzarini, G., Migliorini, P., & Vazzana, C. (2009). An Indicator-Based Framework to Evaluate Sustainability of Farming Systems: Review of Applications in Tuscany. *Italian Journal of Agronomy*, 4(1), 23–39. <https://doi.org/10.4081/ija.2009.1.23>
- Paracchini, M. L., Bulgheroni, C., Borreani, G., Tabacco, E., Banterle, A., Bertoni, D., ... De Paola, C. (2015). A Diagnostic System to Assess Sustainability at a Farm Level: The SOSTARE Model. *Agricultural Systems*, 133, 35–53. <https://doi.org/10.1016/j.agsy.2014.10.004>
- Parent, D., Bélanger, V., Vanasse, A., Allard, G., & Pellerin, D. (2013). Method for the Evaluation of Farm Sustainability in Quebec, Canada: The Social Aspect. In A. A. Marta-Costa & E. Silva (Eds.), *Methods and Procedures for Building Sustainable Farming Systems* (pp. 239–250). Springer Netherlands.
- Peano, C., Tecco, N., Dansero, E., Girgenti, V., & Sottile, F. (2015). Evaluating the Sustainability in Complex Agri-Food Systems: The SAEMETH Framework. *Sustainability (Switzerland)*, 7(6), 6721–6741. <https://doi.org/10.3390/su7066721>

- Pearce, D. W., & Atkinson, G. D. (1993). Capital Theory and the Measurement of Sustainable Development: An Indicator of “Weak” Sustainability. *Ecological Economics*, 8, 103–108. <https://doi.org/10.4324/9781315241951-34>
- Pelzer, E., Fortino, G., Bockstaller, C., Angevin, F., Lamine, C., Moonen, C., ... Messéan, A. (2012). Assessing Innovative Cropping Systems with DEXiPM, a Qualitative Multi-Criteria Assessment Tool Derived from DEXi. *Ecological Indicators*, 18, 171–182. <https://doi.org/10.1016/j.ecolind.2011.11.019>
- Pervanchon, F. (2004). L’arbre de l’exploitation agricole durable: Construire en groupe son projet d’agriculture durable. *Travaux & Innovations*, 110, 5–8.
- Pollesch, N. L. (2016). *Mathematical Approaches to Sustainability Assessment and Protocol Development for the Bioenergy Sustainability Target Assessment Resource (Bio-STAR)*. University of Tennessee.
- Pomarici, E., & Vecchio, R. (2019). Will Sustainability Shape the Future Wine Market? *Wine Economics and Policy*, 8(1), 1–4. <https://doi.org/10.1016/j.wep.2019.05.001>
- Pottiez, E., Lescoat, P., & Bouvarel, I. (2012). AVIBIO: A Method to Assess the Sustainability of the Organic Poultry Industry. In *Proceedings of the 10th European International Farming Systems Association (IFSA) Symposium* (pp. 1–7).
- Prescott-Allen, R. (2001). *The Wellbeing of Nations: A Country-by-Country Index of Quality of Life and the Environment*. Island Press.
- Pujol, J. (2017). *Apports de produits phytosanitaires en viticulture et climat: une analyse à partir des enquêtes pratiques culturelles*. Agreste Les Dossiers 39.
- Qiang, W., Qile, H., & Yanqing, D. (2013). Explicating Dynamic Capabilities for Corporate Sustainability. *EuroMed Journal of Business*, 8(3), 255–272. <https://doi.org/10.1108/EMJB-05-2013-0025>
- Ramos, T. B. (2019). Sustainability Assessment: Exploring the Frontiers and Paradigms of Indicator Approaches. *Sustainability (Switzerland)*, 11(824) <https://doi.org/10.3390/su11030824>
- Ramos, S., Larrinaga, L., Albinarrate, U., Jungbluth, N., Ingolfsdottir, G. M., Yngvadottir, E., ... Perez-Villareal, B. (2016). SENSE Tool: Easy-to-Use Web-Based Tool to Calculate Food Product Environmental Impact. *International Journal of Life Cycle Assessment*, 21(5), 710–721. <https://doi.org/10.1007/s11367-015-0980-x>
- Reinsch, M. (2001). Aperçu des méthodes allemandes d’évaluation des prestations environnementales des exploitations agricoles. In ITADA (Ed.), *Actes du Forum ITADA Agriculture Durable: Peut-on Mesurer les Prestations Environnementales des Exploitations Agricoles?* (pp. 42–45).

- Renouf, M. A., Poggio, M., Collier, A., Price, N., Schroeder, B. L., & Allsopp, P. G. (2018). Customised Life Cycle Assessment Tool for Sugarcane (CaneLCA): A Development in the Evaluation of Alternative Agricultural Practices. *International Journal of Life Cycle Assessment*, 23(11), 2150–2164. <https://doi.org/10.1007/s11367-018-1442-z>
- Rigby, D., Woodhouse, P., Young, T., & Burton, M. (2001). Constructing a Farm Level Indicator of Sustainable Agricultural Practice. *Ecological Economics*, 39(3), 463–478. [https://doi.org/10.1016/S0921-8009\(01\)00245-2](https://doi.org/10.1016/S0921-8009(01)00245-2)
- Rodrigues, G. S., Rodrigues, I. A., de Buschinelli, C. C. A., & Barros, I. (2010). Integrated Farm Sustainability Assessment for the Environmental Management of Rural Activities. *Environmental Impact Assessment Review*, 30(4), 229–239. <https://doi.org/10.1016/j.eiar.2009.10.002>
- Rosnoblet, J., Girardin, P., Weinzapfen, E., & Bockstaller, C. (2006). Analysis of 15 Years of Agricultural Sustainability Evaluation Methods. In *IX ESA Congress*, Warsaw, Poland.
- Rotz, C. A., Skinner, R. H., Stoner, A. M. K., & Hayhoe, K. (2016). Evaluating Greenhouse Gas Mitigation and Climate Change Adaptation in Dairy Production Using Farm Simulation. *American Society of Agricultural and Biological Engineers*, 59(6), 1771–1781. <https://doi.org/10.13031/trans.59.11594>
- Roy, R., Chan, N. W., & Rainis, R. (2013). Development of Indicators for Sustainable Rice Farming in Bangladesh: A Case Study with Participative Multi-Stakeholder Involvement. *World Applied Sciences Journal*, 22(5), 672–682. <https://doi.org/10.5829/idosi.wasj.2013.22.05.2890>
- Rücknagel, J., Hofmann, B., Deumelandt, P., Reinicke, F., Bauhardt, J., Hülsbergen, K. J., & Christen, O. (2015). Indicator Based Assessment of the Soil Compaction Risk at Arable Sites Using the Model REPRO. *Ecological Indicators*, 52, 341–352. <https://doi.org/10.1016/j.ecolind.2014.12.022>
- SAI. (2014). *Sustainability Performance Assessment (Version 2.0): Towards Consistent Measurement of Sustainability at Farm Level*.
- Santiago-Brown, I., Metcalfe, A., Jerram, C., & Collins, C. (2014). What Does Sustainability Mean? Knowledge Gleaned from Applying Mixed Methods Research to Wine Grape Growing. *Journal of Mixed Methods Research*, 1(20), 232–251. <https://doi.org/10.1177/1558689814534919>
- Santiago-Brown, I., Metcalfe, A., Jerram, C., & Collins, C. (2015). Sustainability Assessment in Wine-Grape Growing in the New World: Economic, Environmental, and Social Indicators for Agricultural Businesses. *Sustainability (Switzerland)*, 7, 8178–8204. <https://doi.org/10.3390/su7078178>

- Schader, C., Baumgart, L., Landert, J., Muller, A., Ssebunya, B., Blockeel, J., ... Stolze, M. (2016). Using the Sustainability Monitoring and Assessment Routine (SMART) for the Systematic Analysis of Trade-Offs and Synergies Between Sustainability Dimensions and Themes at Farm Level. *Sustainability (Switzerland)*, 8(3). <https://doi.org/10.3390/su8030274>
- Schmidt, I., Meurer, M., Saling, P., Kicherer, A., Reuter, W., & Gensch, C. O. (2004). SEEbalance[®]: Managing Sustainability of Products and Processes with the Socio-Eco-Efficiency Analysis by BASF. *Greener Management International*, (45), 79–94.
- Schrama, M., De Haan, J. J., Kroonen, M., Verstegen, H., & Van Der Putten, W. H. (2018). Crop Yield Gap and Stability in Organic and Conventional Farming Systems. *Agriculture, Ecosystems and Environment*, 256, 123–130. <https://doi.org/10.1016/j.agee.2017.12.023>
- Smith, L. (2010). *The Energy, Emmissions, Ecology and Agricultural System Integration Programme (EASI): Conclusions and Recommendations*. Organic Research Centre.
- Solagro. (2000). *DIALECTE: Diagnostic Liant Environnement et Contrat Territorial d'Exploitation*. Manuel d'utilisation et logiciel.
- Solagro. (2001). *DIALOGUE: Diagnostic Agri-environnemental Global d'exploitation agricole*. Manuel et logiciel.
- Sopilko, N., Myasnikova, O., Shamseev, S., & Kubasova, E. (2019). Modern Methods to Sustainable Development Assessment. In M. Markovic, B. Dukanovic, & N. Vukovic (Eds.), *Economy and Ecology: Contemporary Trends and Contradictions*. Moscow, Russia.
- Thiollet-Scholtus, M., & Bockstaller, C. (2015). Using Indicators to Assess the Environmental Impacts of Wine Growing Activity: The INDIGO[®] Method. *European Journal of Agronomy*, 62, 13–25. <https://doi.org/10.1016/j.eja.2014.09.001>
- Trivino-Tarradas, P., Gomez-Ariza, M. R., Basch, G., & Gonzalez-Sanchez, E. J. (2019). Sustainability Assessment of Annual and Permanent Crops : The Inspia Model. *Sustainability (Switzerland)*, 11(738), 1–21. <https://doi.org/10.3390/su11030738>
- Tzilivakis, J., & Lewis, K. A. (2004). The Development and Use of Farm-Level Indicators in England. *Sustainable Development*, 12, 107–120. <https://doi.org/10.4135/9780857020215.n1>
- Tzilivakis, J., Lewis, K., Green, A., & Warner, D. (2014). Identifying Integrated Options for Agricultural Climate Change Mitigation. *International Journal of Climate Change Strategies and Management*, 6(2), 192–211. <https://doi.org/10.1108/IJCCSM-09-2012-0053>

- United Nation. (1996). *Indicators of Sustainable Development: Framework and Methodologies*. CSD Work Programme.
- United Nations. (2007). *Indicators of Sustainable Development : Guidelines and Methodologies*. (U. N. Publication, Ed.) (Third). New York.
- United Nations General Assembly. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/RES/70/1. <https://doi.org/10.1201/b20466-7>
- United Nations. (2019). *Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development*. New York: United Nations publications.
- van Calster, K. J., Berentsen, P. B. M., Romero, C., Giesen, G. W. J., & Huirne, R. B. M. (2006). Development and Application of a Multi-Attribute Sustainability Function for Dutch Dairy Farming Systems. *Ecological Economics*, 57(4), 640–658. <https://doi.org/10.1016/j.ecolecon.2005.05.016>
- Van Cauwenbergh, N., Biala, K., Biolders, C., Brouckaert, V., Franchois, L., Garcia Ciudad, V., ... Peeters, A. (2007). SAFE – A Hierarchical Framework for Assessing the Sustainability of Agricultural Systems. *Agriculture, Ecosystems and Environment*, 120, 229–242. <https://doi.org/10.1016/j.agee.2006.09.006>
- Van Der Werf, H. M. G., & Petit, J. (2002). Evaluation of the Environmental Impact of Agriculture at the Farm Level: A Comparison and Analysis of 12 Indicator-Based Methods. *Agriculture, Ecosystems and Environment*, 93, 131–145.
- Van Passel, S., & Meul, M. (2012). Multilevel and Multi-User Sustainability Assessment of Farming Systems. *Environmental Impact Assessment Review*, 32, 170–180. <https://doi.org/10.1016/j.eiar.2011.08.005>
- Velten, S., Leventon, J., Jager, N., & Newig, J. (2015). What Is Sustainable Agriculture? A Systematic Review. *Sustainability (Switzerland)*, 7, 7833–7865. <https://doi.org/10.3390/su7067833>
- Veyssset, P., Bebin, D., & Lherm, M. (2005). Adaptation to Agenda 2000 (CAP reform) and Optimisation of the Farming System of French Suckler Cattle Farms in the Charolais Area: A Model-Based Study. *Agricultural Systems*, 83(2), 179–202. <https://doi.org/10.1016/j.agsy.2004.03.006>
- Viglizzo, E. F., Frank, F., Bernardos, J., Buschiazzo, D. E., & Cabo, S. (2006). A Rapid Method for Assessing the Environmental Performance of Commercial Farms in the Pampas of Argentina. *Environmental Monitoring and Assessment*, 117(1–3), 109–134. <https://doi.org/10.1007/s10661-006-7981-y>
- Vilain, L. (2000). *La méthode IDEA: Guide d'utilisation*. Éducagri éditions.
- Wackernagel, M., Onisto, L., Bello, P., Linares, A. C., & Guerrero, M. G. S. (1999). National Natural Capital Accounting with the Ecological Footprint Concept. *Ecological Economics*, 29, 375–390.

- Wiek, A., & Binder, C. (2005). Solution Spaces for Decision-Making: A Sustainability Assessment Tool for City-Regions. *Environmental Impact Assessment Review*, 25(6), 589–608. <https://doi.org/10.1016/j.eiar.2004.09.009>
- World Commission on Environment and Development. (1987). *Our Common Future*. Oxford University Press. https://doi.org/10.9774/gleaf.978-1-907643-44-6_12
- Zhanna, B., & Yana, L. (2020). The Impact of Digitalization and Sustainable Development Goals in SMEs' Strategy: A Multi-Country European Study. In A. Thrassou, Y. Weber, S. M. R. Shams, & E. Tsoukatos (Eds.), *The Changing Role of SMEs in Global Business* (pp. 15–38). Palgrave Studies in Cross-disciplinary Business Research, In Association with EuroMed Academy of Business.



4

Reengineering the Organisation Design of Wine Businesses

Georgios Afxentiou and Yioula Melanthiou

4.1 Introduction

This chapter focuses on the organisation design and sustainability of wine businesses during the pandemic crisis and investigates the elements of organisation design that support wine businesses to export wines globally. Wine businesses face an unprecedented challenge from the global crisis caused by the COVID-19 pandemic. The economic instability created financial difficulties to businesses and households around the world, with the pandemic inflicting high and rising human costs worldwide, and the necessary protection measures are severely impacting economic activity. As a result of the pandemic, the global economy is projected to contract

G. Afxentiou (✉)
CTL Eurocollege, Limassol, Cyprus
e-mail: afxentioug@ctleuro.ac.cy

Y. Melanthiou
University of Nicosia, Nicosia, Cyprus
e-mail: melanthiou.y@unic.ac.cy

sharply by -3% in 2020, much worse than during the 2008–2009 financial crisis (International Monetary Fund, 2020). The financial system has faced an economic shock of enormous scale, speed and global breadth in the wake of the coronavirus pandemic. Wide-ranging policy measures, including monetary, fiscal and prudential policies, helped prevent a seizing-up of the financial system and support the recovery. But medium-term vulnerabilities have risen and pose challenges to the recovery (European Central Bank, 2020).

This chapter will present a number of questions which seek to be addressed, followed by a thorough literature review on issues pertaining to organisation design, internal management characteristics, business crisis and export strategy. It will further introduce the research methodology used, followed by the findings supported by the statistical report from Eurostat and the responses from interviewees. The chapter will conclude with the final section that summarises the outcomes of this investigation.

4.2 Literature Review

Organisation Design

The organisation designs of most wine businesses are not engineered to absorb the turbulence of serious crises in the global financial markets. Family businesses especially have limited resources and access to financial aid in order to overcome these challenges. A question arises concerning the efficiency of the organisation design of small and medium size wineries withstanding the economic crisis and sustaining their competitiveness in the markets. The European Commission has approved funds and low interest loans for small and medium size businesses at times of crises (European Commission, 2020), and the wine businesses are expected to rise up to the challenge and use intelligent methods to strengthen their structures and export strategy to survive and to thrive in a turbulent economic environment. Additionally, a further question remains as to whether wine businesses invest resources to develop and promote their

wines in the global market. Gulati et al. (2010) indicate that firms “that master the delicate balance between cutting costs to survive today and investing to grow tomorrow” greatly outperform their rivals both during the crisis and in subsequent years (Lim et al., 2020, p. 64).

Lynch (2012) described some basic principles associated with the different types of organisational structure. Essentially, it is possible to identify six basic types of organisational structure that can serve to implement the chosen strategy: The first type is the organisational structure that consists of the owner/proprietor and the immediate small team surrounding that person. In small organisations, there will often only be limited resources. Individuals will need to be flexible and undertake a variety of tasks. The informality of the structure will allow fast responses to market opportunities and customer service requirements. However, problems may be caused by the duplication of roles, confusion of responsibilities and muddled decision-making, and it may not be realistic to draw up a clear organisational structure. Depending on the management style of the owner/leader, there may be many people or only the leader contributing to the organisation’s strategy. The functional organisation as the second type of organisational structure is based on locating the structure around the main activities that have to be undertaken by the organisation, such as production, marketing, human resources, research and development, finance and accounting. As the organisation grows from being a small company, the functional organisation structure is often the first structure that is adopted. It allows experts in a functional area to be grouped together and economies of scale to operate.

Lynch (2012) stated that the third basic type of organisational structure is the Multidivisional structure (M-form). The multidivisional organisation is structured around separate divisions formed on the basis of products, markets or geographical areas. This form of organisational structure was developed in the early 1920s by the future head of General Motors, Alfred Sloan, and was recorded by Alfred Chandler (Lynch, 2012). As organisations grow, they may need to subdivide their activities in order to deal with the great diversity that can arise in products, as well as the geographical location or other aspects of the business. Chandler argued that strategy was decided at the centre, but in modern companies it is often partially determined by the divisions.

The fourth basic type of organisational structure is the holding or corporate company structure. A holding company is a company that owns various individual businesses and acts as an investment company with shareholdings in each of the individual enterprises. The holding company strategy is often referred to as a corporate strategy across the range of individual businesses. Further growth in organisations may lead to more complex arrangements between different parts of the organisation and outside companies. For example, joint ventures with totally new companies outside the group, alliances, partnerships and other forms of cooperation may be agreed. As a result, the original company may take on the role of a central shareholder for the various arrangements that may be set up: it becomes a holding company. Its role becomes one of allocating its funds to the most attractive profit opportunities. The holding company structure became more prominent in the period from 1970 onwards and was explored by Williamson.

The matrix organisation structure as the fifth type is a combination of two forms of organisation, product and geographical structures, which operate jointly on major decisions. In some cases, it may be advantageous for a large company to arrange for its separate divisions or product groups to cooperate on business strategy using a different method of organising the company, often a geographical one. It may be necessary to set up an organisation which has responsibilities along both product and geographical dimensions. Such dual-responsibility decision-making organisation structures are known as matrix organisations. The sixth type is innovative organisation structures that are characterised by their creativity, lack of formal reporting relationships and informality. In some cases, large organisations need to lay special emphasis on their creativity and inventiveness. For example, advertising agencies, some service companies and innovative design companies do this. In these circumstances, there is a case for having strong teams that combine experts with different skills and knowledge, who can work without much hierarchy and have an open style of operation. The free-flowing nature of the group and its ideas may be important in the development of some aspects of strategy.

Internal Management Characteristics

According to Heyler and Martin (2018) and Liden et al. (2013) global trends such as the increasing size of the service sector as well as increased competition to the point that managers need to utilise leadership approaches that develop employees to their full potential make it imperative to move away from autocratic leadership styles and towards leadership styles that are “more personal, individualised, and cooperative” (Liden et al., 2013, p. 1447). Robbins et al. (2013) explained that autocratic leadership style can be identified with the early, classical approach to management.

The term “servant leadership” was first created by Robert Greenleaf in the early 1970s, and his thoughts and a definition of the theory were published later in the decade (Greenleaf, 1977). Servant leadership has been described as an altruistic calling due to “a leader’s deep-rooted desire to make a positive difference in others’ lives” (Barbuto & Wheeler, 2006, p. 318). The servant leader is one who chooses first to serve and then as an outpouring of that desire comes an aspiration to lead others (Greenleaf, 1977). Heyler and Martin (2018) and Greenleaf (1977) described that the servant leader is focused on showing subordinates the rightness of their way of thinking and convincing, rather than coercing them, to that way of thinking. The ability to persuade requires patience, persistence and confidence that the leader’s way is the best approach to a given situation. When a servant leader is able to persuade the subordinates to their way of thinking, the changes that are made are much more likely to be enduring since subordinates will accept it as their own (Greenleaf, 1977).

Toufaily (2018) and Kirkpatrick and Locke (1991) supported that transformational leadership involves challenging the status quo and assuming risks that require a high degree of courage. Moreover, it was explained that the transformational leader recognises and exploits a necessity or demand from a potential person to follow (Burns, 1978). The transformational leader tries to find out what motivates subordinates and involves all those concerned in the process. The result of transformational leadership is a relationship of mutual stimulation and development that transforms subordinates into leaders, and leaders into moral agents.

Walker and Miller (2010) explained that transactional leadership is the leadership that motivates workers by appealing to their self-interest. Its principles are to motivate through the exchange process and focuses on the accomplishment of tasks and good employee relations in exchange for desirable rewards.

Transformational and transactional leadership are often presented as being at opposite ends of a spectrum (Bilal et al., 2017). Wang et al. (2013) noted that transactional leadership better predicted individual task performance (behaviour prescribed by the job role), while transformational leadership predicted better contextual performance (organisational citizenship behaviour, which describes performance above and beyond what is delineated by job requirements alone). Both styles of leadership augment each other to achieve higher levels of employee performance but the difference lies in goal setting and motivation methods (Tyssen et al., 2014). As such, followers are inspired and intrinsically motivated to reach the highest levels of achievement and self-identification and to strive beyond the call of duty rather than thinking about rewards or punishments.

Business Crisis

Doern et al. (2018) described a crisis as an extreme, unexpected or unpredictable event that requires an urgent response from organisations and creates challenges for them—by interfering with its operations, creating ambiguity in its decision-making processes, threatening its goals and values and damaging its public image and bottom line (Hermann, 1963; Fink, 1986; Quarantelli, 1988). Pearson and Clair's (1998) definition of a crisis, and variations of it, is most commonly used in general business and management, organisational and entrepreneurship research (e.g., Herbane, 2010; Doern, 2016). Similar to their predecessors, Pearson and Clair (1998, p. 66) defined a crisis as “a low probability, high-impact situation that is perceived by critical stakeholders to threaten the viability of the organisation”.

Crises can provide the impetus for developing new opportunities and resource gains (Brünjes & Revilla-Diez, 2012). While crises such as

conflict situations have been mostly found to impact negatively on entrepreneurial intentions (Bullough et al., 2014), in some cases they can lead to resource voids that create opportunities for starting a business or “disaster entrepreneurship” (Linnenluecke & McKnight, 2017). They can further promote ingenuity and the development of alternative products/services (Irvine & Anderson, 2004) or even fuel business expansion (Doern, 2016). Importantly, crises can uncover opportunities and fulfil goals for entrepreneurs that are not only commercial in nature but social as well, focused on alleviating the suffering of victims (Williams & Shepherd, 2016; Grube & Storr, 2014).

According to Linnenluecke (2017), “crisis management” and “resilience” within business and management research were developed around the same time (e.g., through the work of Shrivastava, 1994; Pearson & Clair, 1998; Weick, 1993; Weick & Roberts, 1993; Wildavsky, 1988; Perrow, 1999; Staw et al., 1981; Meyer, 1983). Crisis management has focused on how actors go about minimising the impact of a crisis (Spillan & Hough, 2003; Caponigro, 2000). It involves actors’ attempts (i.e., individuals, organisations, communities) to bring a disrupted or weakened system at any stage of crisis back into alignment (Williams et al., 2017).

Whereas a crisis entails a sudden or gradual disruption to an organisation and crisis management is about bringing the organisation back to normal functioning, resilience captures the organisation’s ability to maintain “reliable” functioning throughout the disruption (Williams et al., 2017). Resilience takes into account the processes by which different actors build up and utilise resources before, during and after a crisis (Williams et al., 2017; Hobfoll, 2001). Resilience enables organisations and employees to respond to adversity or recover more quickly following adversity, to develop more “unusual” ways of doing business and bounce back (Sutcliffe & Vogus, 2003; Vogus & Sutcliffe, 2007; Luthans et al., 2010; Shin et al., 2012; Linnenluecke, 2017). Another aspect of resilience is embodied in the notion of bricolage, the ability to create order out of disorder and fashion a solution on the spot, from the resources available (Levi-Strauss, 1962; Weick, 1993; Mallak, 1998). Simón-Moya et al.’s (2016) research on new firm survival, for example, revealed that greater training, experience and resources made opportunity-driven

entrepreneurs more likely to manage during periods of crisis and resilient than their counterparts, necessity entrepreneurs.

Export Strategy

Export strategy is a vital part of a long-term business plan to trade goods and services on the global market. According to a wealth of researchers (e.g. Dosoglu-Guner, 2001; Aaby & Slater, 1989; Katsikeas & Piercy, 1993; Andersen & Rynning, 1994; Zou & Stan, 1998) for the last three decades there has been considerable interest in studying the export behaviour of firms for reasons of public policy and to assess a firm's competitiveness. The export of wines impacts positively on companies by increasing profit margins, using idle capacity, extending the life of products, and helping them compete more effectively on the domestic market. Businesses hire highly skilled individuals who can take on tasks and jobs related to export activities. In order to successfully initiate the exportation of wine to the global market, large wine businesses in Cyprus deploy a robust hierarchical organisation design and employ specialised teams of skilled workers to manage the export activities.

Greece, Italy, Spain and Portugal faced problems with the cultivation of vines and exportation of wines globally. They designed an export strategy to cultivate local vine varieties in different regions in their countries to reduce production costs and to establish market channels which allowed them to successfully export wines globally. An example of this export strategy was the island of Santorini, Greece, and the local vine white variety of Assyrtiko. The wine producers managed to produce quality white wines and to build a brand name for the local variety of Assyrtiko globally. The wineries penetrated the United States wine market by convincing retail shops, restaurants, hotels and wholesalers about the quality and value of Assyrtiko. The same strategy had been implemented by Italy, Spain and Portugal with regards to the cultivation of local vine varieties, production of quality wines and promotion of the wines globally. All of these countries designated different regions in their countries as Appellation of Origin for specific vine varieties in order to protect the vine growers, wine producers and also to build a strong brand identity in

the global market. The export strategies of the above mentioned countries could be adopted by the wine businesses in Cyprus and the export strategy of wineries from Greece, Italy, Spain and Portugal could be used as reference.

4.3 Research Methodology

Saldana (2015), Shank (2008) and Bryman (2004) stated that unlike quantitative research, with its statistical formulas and established hypothesis-testing protocols, qualitative research has no standardised methods of data analysis. The primary heuristics (or methods of discovery) you apply during a study are deductive, inductive, abductive and retroductive reasoning. Deductive approach supports the development of a theory that is subjected to a rigorous test. Saunders et al. (2007) and Robson (2002) list five sequential steps that deductive research progresses; deducing a hypothesis, expressing the hypotheses in operational terms, testing the operational hypotheses, examining the specific outcome and modifying the theory. This approach is highly controlled and it uses quantitative methods to test the hypotheses. Inductive approach is theory driven due to the fact that the researcher develops a theory from the research findings. This approach is closer to social science and uses qualitative methods to gather data. Leavy (2014) stated that induction is what we experientially explore and infer to be transferable from the particular to the general, based on an examination of the evidence and an accumulation of knowledge. Bazeley (2013) supported that in inductive research, conclusions are “grounded” in data, as the researcher starts from data and works to develop empirical generalisations that can then be applied to similar situations. If adopting an inductive approach on the other hand, theory is the outcome of research and it involves using the observations of the empirical world to allow the construction of explanations and theories about what has been observed (Carson et al., 2001). The deductive approach has been criticised because of its tendency to construct a rigid methodology that does not permit alternative explanations of what is going on (Saunders et al., 2003), and the inductive approach requires considerable experience of the researcher. The research

approach used for this study follows both approaches to benefit from the advantages of each and counter each one's limitations. The deductive approach is used to develop a conceptual framework after having reviewed the existing literature on the organisation design and their impact on export strategies, and the results of the study inductively allowed new insights to emerge and add on to existing theory.

Leavy (2014) explained that the first of the major forms of mixed methods research is qualitatively driven mixed research. A qualitatively driven mixed research occurs when the mixed researcher aims to address one or more research questions using any lens associated with the qualitative research paradigm (e.g., constructivist, critical theorist) while simultaneously believing that adding quantitative research approaches (particularly the use of quantitative data and analysis) can help to address the research questions to a greater extent (Johnson et al., 2007). The qualitative and quantitative approaches can be combined because they share the goal of understanding the world in which we live (Haase & Myers, 1998; Clark & Creswell, 2008). King et al. (1994) claim that both qualitative and quantitative research shares a unified logic and that the same rules of inference apply to both. They are also united by a shared commitment to understanding and improving the human condition, a common goal of disseminating knowledge for practical use and a shared commitment for rigour, conscientiousness and critique in the research process (Reichardt & Rallis, 2004; Clark & Creswell, 2008). The qualitative method is used as a synonym for any data collection technique (interview) or data analysis procedure (categorising data) that generates or uses non-numerical data (Saunders et al., 2007, p. 145).

The selection of the qualitative method was used to support the collection of quantitative data from the wine businesses in Cyprus. The samples of this investigation were 14 wine businesses taken from the official list of the Cyprus Wine Products Council, which was used as the sampling frame for this study. These companies provided annual reports concerning their production capacity and grape varieties. Eight of the businesses studied export their wines in the global market but also promote their wines in the local market. The remaining six businesses sell their wines only locally. Prior to the selection of the 14 wineries, all the wine businesses on the island were visited. A preliminary plan was designed to

meet and discuss with the prospective participants before finalising the schedule of interviews. Those participants selected were actively involved in the business organisation, marketing of their wines locally and globally, and were members of business networks and associations.

Interviews were carried out with ten small and four large wine companies, which account for 23.33% of all wine businesses on the island. Interviews were conducted with managers and business owners with a purpose to collect data about the organisation design of wineries, decision-making in periods of crisis, business and marketing practices, development of export strategies by the management team, challenges of wine exportation, production methods and operation practices. The research findings and conclusions of this research were developed from these interviews as well as from statistical reports. Data related to the factors affecting export strategy were collected from various sources (governmental and commercial) and data relating to sales figures of specific wines and the percentage of market share of wine businesses in the local and global wine markets were studied and analysed. Statistical reports taken from Eurostat, Cyprus Statistical Service (2020), Cyprus Ministry of Agriculture, Natural Resources and Environment, Cyprus Wine Products Council, Cyprus Ministry of Energy, Commerce, Industry and Tourism were studied and analysed. All aforementioned public bodies carry out primary research and publish data on a plethora of topics including research relating to the wine industry and specifically with wine executives, business owners, vine growers, oenologists, chambers of commerce and traders, collecting information on the cultivation of vine varieties, wine production, wine importation and exportation to different countries and wine regions. The continuous research of these databases provided valuable information for theory formulation and practical recommendations for wine businesses. Tables and figures were compared with the data from the interviews in order to compliment the research findings.

4.4 Findings and Analysis

Wine Exports

According to the Eurostat (2020), Cyprus exported about €2.57 m of wine and imported €25.6 m in 2018, a fraction compared to €22.7 billion of wine exported and €13.4 billion imported by EU member states overall. Cyprus' exports were €2.57 m of which €1.969 m were to countries outside the EU and €504,779 to EU member states. Most of Cyprus' wine imports, which totalled €25.6 m, were from the EU (€24.07 m) and only €1.55 m were from non-EU states. In 2018, the sold production of wine (including sparkling wine, port and grape must) in the EU was around 15 billion litres. The largest wine producers were Italy, Spain and France, followed by Portugal, Germany and Hungary. France was by far the top exporter of wine, with extra-EU exports worth €5.4 billion in 2018, representing 47% of the EU Member States' extra-EU exports of wine. It was followed by Italy (€3.1 billion, 26%) and Spain (€1.2 billion, 10%). In 2017, Cyprus exported wines with a value of €1.244 m of which €731,639 went to countries outside of the EU and €512,704 to EU member states.

Organisation Design and Export Strategy

Business Models of Wine Businesses

Small and medium sized wine businesses applied a flexible business model. Most of them are family owned businesses with a small number of employees (1–10), limited financial, technological and human resources, few tasks and processes, low wine production and high product price, absence of global customer relations, networking and marketing channels, limited budget for promotion, a small number of customers, suppliers, partners and no global strategy in place. All these factors contributed to the deployment of an organic organisation design in small and medium sized wine businesses.

It is a small family business. There are two members of staff working alongside the director of the winery. The director is responsible for overseeing production and all other activities of the winery. The employees are responsible for receiving the grapes, production and bottling. As for the delivery of wines, we have our own distribution. An independent distribution network could give greater support to our delivery of wines to customers. (Respondent L)

Some small and medium size wine businesses realised that they needed to focus on the quality and the production of wines from indigenous vine varieties. Therefore, the management of these wineries dedicated part of their resources to experts in wine making, accounting, marketing and logistics. This business strategy supports them in establishing their brands on the market for the quality and customer service.

It is a family business. The family business was not profitable but now there is a business strategy and a business model in place. The business model is based on the principle of quality. The distribution of our wines has been taken over by a company that specialises in logistics. We have an oenologist, a director and an accountant. We are a small business but we try to have a robust structure where different people have different duties. (Respondent A)

Infrastructure (Facilities and Technology) for Wine Exports

Most interviewees (business owners, executive managers, sales managers and export managers) are from small family-run businesses whose members perform different tasks such as collection of grapes, production, distribution and promotion of wines. The interviewees recognised the need to allocate resources to the promotion and distribution of wines in the market. Only a few businesses have a business strategy for global market penetration and are able to allocate the necessary financial, technological and human resources to achieve sales in a competitive global market. Cyprus has the infrastructure and freight companies to export wines globally, but Cyprus is an island and thus freight charges are higher compared to other countries. Importing and exporting costs are twice as high due to shipping charges, and as such the shipping cost is a factor that makes exports to other countries prohibitive.

we have the facilities to export small quantities to other countries, but we prefer to sell more wines on the local market (100,000 bottles) than on the global market (50,000 bottles) as the sale of wines on the global market entails some risks, and profits (because of higher costs) are lower. (Respondent H)

Quality, Quantity and Price of Wines

Wine businesses realised that wine exports can be achieved if they develop a business model and business strategy to balance out product quality and price. The cultivation of indigenous wines with a competitive price is the key factor to global export success. Additionally, wine leaders agreed that they had to invest some of their resources to promote wines and to establish their brands in the global market.

In order to be competitive, a business person has to develop a model for a good quality product at a good price, but also the ability of an organisation to promote wines globally. These are the two key aspects in order to compete on the global market. Cyprus cannot compete on price sensitive markets against countries like Chile and Australia. I advise competing on the middle level of the market where good value products at appropriate prices can be justified. (Respondent A)

The quality of wines is a decisive factor to penetrate the global market. Consumers are willing to purchase an unknown brand only if they are convinced about the wine quality. The price of wine, moreover, is too an important factor for consumers to select wines from retail shops due to heavy competition from countries such as Chile, Australia, Spain, France, Italy and Portugal. The quantity of wines sold contributes to the reduction of cost of production, cost of promotion and distribution and finally to the selling price, as a result of economies of scale. Eventually, wine businesses' focus on the wine quality and price leads to the improvement of competitiveness of the local wines in the global market. The pandemic crisis further has forced wine businesses that export wines to improve the quality and the competitiveness of price. The difficulties in exporting wines resurfaced the need to invest heavily in brand building and promotion of wines globally.

the volume of Cyprus wine exports is decreasing because of the quality of the wines; the consumers in the global market do not prefer Cyprus wines because of their quality. Foreign consumers find that wines from Spain, Italy and France are cheaper and probably better than the wines exported from Cyprus. The small wineries in Cyprus that produce quality wines do not have the resources to export wines and definitely their low production volumes are not conducive to exporting wines abroad. It just about satisfies the local market. (Respondent E)

Benefits of Wine Exports

All interviewees agreed that small wineries were not so successful in exporting wines to the global market because of low production volumes, high product price and a lack of resources. Small wineries do not have the knowledge and experience to design a product that could be widely accepted in a foreign market.

As I have said we can build an independent distribution network. At the same time, we need to market our wines and approach customers. The target is the local market. It would be great if we could get a foothold on the foreign market. However, due to the high production costs and the difficulties in exporting Cyprus wines, it would be hard to respond to foreign buyers, unless there is a company that is interested in promoting Cyprus wines. (Respondent L)

They further agreed that a successful market entry was possible with the cooperation (synergies) of many small wineries in shipping, promoting and maintaining market position. Also, a number of respondents mentioned that large wineries have a long history and have formed strong relationships with importers in the countries that have played a major role in their successes on the global market. The corporate culture and history of these large wineries, the large wine quantities, competitive product prices and quality, the financial, technological and human resources, distribution networks, global market knowledge, leadership and decision-making, personnel expertise and marketing channels have contributed to their efforts to sell and promote their wines globally. The leadership and global management culture in large wineries also contribute in their efforts to export wines to the global market. In contrast, small wineries are still struggling to export wines because of lack of resources,

management thinking and attitude, low wine production, high product price, absence of distribution channels, limited budgets for promotion and weak trade relationships with importers.

It was further stated that there are benefits from exporting wines, with some of these benefits including the diversification of the market, increases in sales, increases in revenue and profitability and diversification of risk (Fig. 4.1).

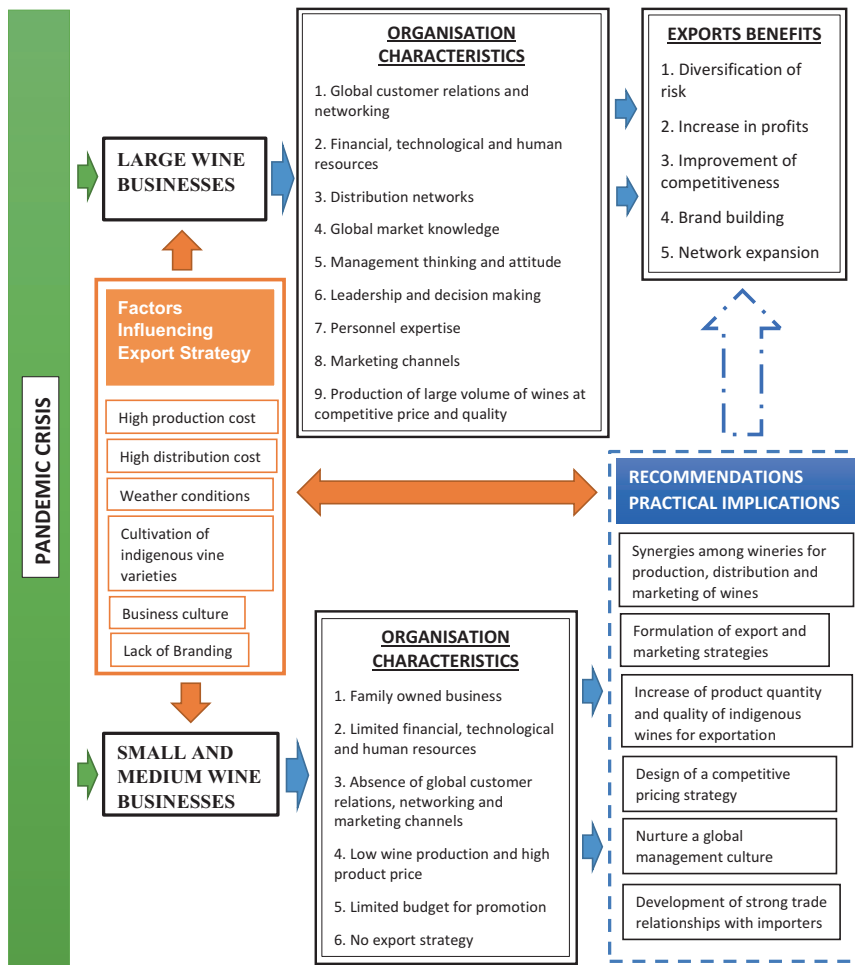


Fig. 4.1 Research findings

4.5 Conclusions

This research set out to address the following questions: (1) Is the efficiency of the organisation design of small and medium size wineries withstanding the economic crisis and sustaining their competitiveness in the markets? And, (2) do wine businesses invest resources to develop and promote their wines in the global market?

The findings suggested that large wine businesses have the financial, technological and human resources to overcome the obstacles caused by the pandemic crisis and the global consumer demand for wines. They produce large volume of wines at competitive prices and quality, while using their marketing channels and distribution networks to promote their products to the global trade markets. The attitudes of management, the expertise of personnel, the applied resources and the strong relations with customers support their efforts in exporting wines successfully, with this all mainly the result of a suitable organisational design and leadership, also addressed by Bryan and Joyce (2007) who stated that hierarchy is efficient for setting aspirations, making decisions, assigning tasks, allocating resources, managing people who need instructions and holding people responsible for their acts. In contrast, small wineries are family owned businesses that have limited resources and access to financial aid unable to overcome the challenges of a pandemic crisis. They have difficulties in exporting wines because of lack of resources, global hesitation management thinking and attitude, low wine production, high product price, absence of distribution channels, limited budgets for promotion and weak trade relationships with importers. Small wineries do not have the knowledge and experience to design a product that could be widely accepted in a foreign market (Fig. 4.1).

The conceptual framework next presents suggestions for how small and medium sized wine businesses should consider improving their structures, business networks, synergies among wineries for production, distribution and marketing of wines, quality, quantity and price of wines, development of strong trade relationships with importers and formulation of export and marketing strategies. These suggestions would greatly support small and medium sized wineries to succeed in exporting wines and benefit from global trade (Fig. 4.1).

The reengineering of the organisation designs of wine businesses will absorb the turbulence of the global markets and it is essential to approach organisation design in a creative and constructive manner. The crisis causes multiple financial problems on businesses and households but it is the resilience of management to crisis which will be the determinant to the survival and future development of businesses. The leadership of wine businesses must take quick and efficient decisions to compact the economic uncertainty by nurturing a global management culture and building on a correct attitude set for a successful entry in the global market. The consumer purchasing power has decreased due to the economy slow down and therefore businesses are fiercely competing to capture a small portion of it. The understanding of the global environment and the impact of the pandemic crisis are two key drivers for wine businesses to reorganise activities and processes and to formulate export and marketing strategies. The sudden change of the economic environment requires leadership, decision-making, resources, partnership with global businesses and promotion of indigenous wines at competitive prices. Finally, the continuous development of the brand identity of local wines will serve as a great asset for wine businesses to succeed in the global market.

Overall, only few wine businesses have the structure and a robust export strategy to penetrate the global market by allocating the necessary human, financial and technical resources to achieve sales. These businesses have the culture, experience, knowledge and resources to manage a crisis and to stay sustainable in a troubled economic environment. Therefore, it is recommended that small and medium size wine businesses create synergies in producing, distributing and promoting local wines and together the management of these businesses must formulate export and marketing strategies to penetrate the global market. Additionally, they need to increase the product quantity and quality of indigenous wines for exportation at competitive prices. Finally, the development of strong trade relationships with importers will strengthen wine businesses' export strategy to succeed in promoting their wines globally.

While this research has provided evidence regarding the organisation designs of small, medium and large size wine businesses, internal characteristics of management and good practices for export strategies, it is limited in exploring the resilience of the organisation design of wine

businesses during the crisis and the dynamic connection to wine exports globally. Hence, future research is suggested to further investigate this degree of resilience of wine businesses in different countries during a crisis and the challenges faced in deploying a successful export strategy. The penetration of the global market in a crisis could support wineries to develop robust structures and strategies to survive in a turbulent economic environment.

References

- Aaby, N., & Slater, S. F. (1989). Management Influences on Export Performance: A Review of the Empirical Literature 1978–1988. *International Marketing Review*, 6(4). <https://doi.org/10.1108/EUM0000000001516>
- Albattat, Ahmad & Mat Som, Ahmad Puad. (2013). Emergency Preparedness for Disasters and Crises in the Hotel Industry. *Sage Open*. 3. 10. <https://doi.org/10.1177/2158244013505604>.
- Andersen, O., & Rynning, M. (1994). Prediction of Export Intentions—Managing with Structural Characteristics? *Scandinavian Journal of Management*, 10(1), 17–27. [https://doi.org/10.1016/0956-5221\(94\)90034-5](https://doi.org/10.1016/0956-5221(94)90034-5)
- Barbuto, Jr, John (Jay) & Wheeler, Daniel. (2006). Scale Development and Construct Clarification of Servant Leadership. *Group & Organization Management-GROUP ORGAN MANAGE*. 31. 300–326. <https://doi.org/10.1177/1059601106287091>.
- Bazeley, Pat. (2013). *Qualitative Data Analysis: Practical Strategies*.
- Brünjes, Jürgen & Revilla Diez, Javier. (2012). ‘Recession push’ and ‘prosperity pull’ entrepreneurship in a rural developing context. *Entrepreneurship and Regional Development - ENTREP REG DEV*. 25. 1–21. <https://doi.org/10.1080/08985626.2012.710267>.
- Bryan, L.L. & Joyce, C.I.. (2007). Better strategy through organizational design. 21–29.
- Bryman, A. (2004). *Social Research Methods* (2nd ed.). Oxford University Press.
- Burns, J. M. (1978). *Leadership*. New York: Harper and Row.
- Bullough A, Renko M, Myatt T. (2014). Danger Zone Entrepreneurs: The Importance of Resilience and Self-Efficacy for Entrepreneurial Intentions. *Entrepreneurship Theory and Practice*. 38(3), 473–499. <https://doi.org/10.1111/etap.12006>

- Carson, D. & Gilmore, Audrey & Perry, Chad & Grønhaug, Kjell. (2001). Qualitative Market Research.
- Caponigro, J. (2000). *The Crisis Counselor: A Step-by-Step Guide to Managing a Business Crisis* (Chicago:Contemporary Books).
- Cyprus Statistical Service. (2020). Intra & Extra EU Trade Statistics (by Commodity and Country), *Foreign Trade Statistics*, January–April 2020, Series III, Report No. 169.
- Doern, Rachel. (2016). Entrepreneurship and Crisis Management: The Experiences of Small Businesses during the London 2011 Riots. *International Small Business Journal*. 34. <https://doi.org/10.1177/0266242614553863>.
- Doern et al. (2018). Special Issue on Entrepreneurship and Crises: Business as Usual? An Introduction and Review of the Literature. *Entrepreneurship & Regional Development*, 31. <https://doi.org/10.1080/08985626.2018.1541590>
- Dosoglu-Guner, B. (2001). Can Organizational Behavior Explain the Export Intention of Firms? The Effects of Organizational Culture and Ownership Type. *International Business Review*, 10(1), p.p 71–89.
- Eurostat (2020). Wine production and trade in the EU. Publication date: 19 November 2020. <https://www.ec.europa.eu/eurostat/en/web/products-eurostat-news/-/edn-20201119-2>
- European Central Bank. (2020). *Financial Stability Review*. Frankfurt, Germany.
- European Commission. (2020). *Wine Production and Trade in the EU*. Eurostat.
- Greenleaf, R. K. (1977). *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness*. Paulist Press.
- Grube, E. L., & Virgil Henry Storr, H. V. (2014). Embedded entrepreneurs and post-disaster community recovery. *Entrepreneurship & Regional Development*. Volume 30, 2018 - Issue 7–8, Pages 800–821.
- Gulati, Ranjay & Nohria, Nitin & Wohlgezogen, Franz. (2010). Roaring Out of Recession. *Harvard Business Review*. 88. 62–69.
- Herbane, B. (2010), “Small business research: time for a crisis-based view”, *Strategic Direction*, Vol. 26 No. 8. <https://doi.org/10.1108/sd.2010.05626had.005>
- Heyler, S., & Martin, J. (2018). Servant Leadership Theory: Opportunities for Additional Theoretical Integration. *Journal of Managerial Issues*. Summer, 2018, 30(2), p230, 15 p.
- Hobfoll, Stevan. (2001). The Influence of Culture, Community, and the Nested-Self in the Stress Process: Advancing Conservation of Resources Theory. *Applied Psychology*. 50. 337–421. <https://doi.org/10.1111/1464-0597.00062>.

- International Monetary Fund. (2020). *World Economic Outlook: The Great Lockdown* Washington, DC, April.
- Irvine, W., & Anderson, A.R. (2004). Small tourist firms in rural areas: agility, vulnerability and survival in the face of crisis. *International Journal of Entrepreneurial Behaviour & Research*, 10, 229–246.
- Johnson, R.B., Onwuegbuzie, A.J. and Turner, L.A. (2007). Toward a Definition of Mixed Methods Research. *Journal of Mixed Methods Research*, 1, 112–133.
- Katsikeas, S., & Piercy, N. (1993). Long-Term Export Stimuli and Firm Characteristics in a European LDC. *Journal of International Marketing*. <https://doi.org/10.1177/1069031X9300100303>
- King, Geoffrey & Stein, Ross & Lin, Jian. (1994). Static Stress Changes and the Triggering of Earthquakes. *Bulletin -Seismological Society of America*. 84.
- Kirkpatrick, Shelley & Locke, Edwin. (1991). Leadership: Do Traits Matter?. *The Executive*. 5. 48–60. <https://doi.org/10.2307/4165007>
- Leavy, P. (2014). *The Oxford Handbook of Qualitative Research*. Oxford University Press.
- Liden, Robert & Wayne, Sandy & Liao, Chenwei & Meuser, Jeremy. (2013). Servant Leadership and Serving Culture: Influence on Individual and Unit Performance. *Academy of Management Journal*. 57. <https://doi.org/10.5465/amj.2013.0034>.
- Lim, S. K., Morse, A. E., & Yu, N. (2020). The Impact of the Global Crisis on the Growth of SMEs: A Resource System Perspective. *International Small Business Journal: Researching Entrepreneurship*, 38(6), 492–503.
- Linnenluecke, Martina. (2017). Resilience in Business and Management Research: A Review of Influential Publications and a Research Agenda. *International Journal of Management Reviews*. 19. 4–30. <https://doi.org/10.1111/ijmr.12076>.
- Luthans, Fred & Avey, James & Avolio, Bruce & Peterson, Suzanne. (2010). The Development and Resulting Performance Impact of Positive Psychological Capital. *Human Resource Development Quarterly*. 21. 41–67. <https://doi.org/10.1002/hrdq.20034>.
- Lynch, R. (2012). *Strategic Management* (6th ed.). Pearson Education Limited.
- Mallak, Larry. (1998). “Putting Organizational Resilience to Work”. 40. 8–13.
- Meyer, Alan. (1983). Adapting To Environmental Jolts. *Administrative science quarterly*. 27. 515–37. <https://doi.org/10.2307/2392528>.
- McKnight B, Linnenluecke MK. (2019). Patterns of Firm Responses to Different Types of Natural Disasters. *Business & Society*. 58(4), 813–840. <https://doi.org/10.1177/0007650317698946>
- Pearson, C.M. and Clair, J.A. (1998). Reframing Crisis Management. *Academy of Management Review*, 23, 59–76.

- PERROW, C. (1999). *Normal Accidents: Living with High Risk Technologies - Updated Edition (REV-Revised)*. Princeton University Press. <https://doi.org/10.2307/j.ctt7srgf>
- Plano Clark, V.L. and Creswell, J.W. (2008). *The Mixed Methods Reader*. Sage Publications, Thousand Oaks.
- Quarantelli E.L. (1988). Disaster Crisis Management: A Summary of Research Findings. *Journal of Management Studies*. Volume 25, Issue 4 Pages: 283–400 <https://doi.org/10.1111/j.1467-6486.1988.tb00043.x>
- Raza Bilal, Dr. Ahmad & Naveed, Muhammad & Anwar, Farooq. (2017). Linking distinctive management competencies to SMEs' growth decisions. *Studies in Economics and Finance*. 34. 00-00. <https://doi.org/10.1108/SEF-10-2015-0236>.
- Reichardt, Charles & Rallis, Sharon. (2004). The relationship between the qualitative and quantitative research traditions. *New Directions for Program Evaluation*. 1994. 5–11. <https://doi.org/10.1002/ev.1663>.
- Robbins, P. S., DeCenzo, A. D., & Coulter, M. (2013). *Fundamentals of Management* (8th ed.). Pearson Education Limited.
- Robson, C. (2002). *Real World Research—A Resource for Social Scientists and Practitioner-Researchers* (2nd ed.). Blackwell Publishing.
- Saldana, J. (2015). *The Coding Manual for Qualitative Researchers*. Sage Publications.
- Saunders, M., Lewis, P., & Thornhill, A. (2003). *Research Methods for Business Students* (3rd ed.). England: Prentice Hall.
- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students* (4th ed.). Pearson Education Limited.
- Searching for Safety Aaron Wildavsky. (1988.) Transaction Books. 252 pages. ISBN: 0-912051-18-3 (P); 0-912051-17-5 (C). \$NA. *Bulletin of Science Technology & Society*, 10(4), 244–244. <https://doi.org/10.1177/027046769001000432>
- Shin, Jiseon & Susan, M. & Seo, Myeong-Gu. (2012). Resources for Change: the Relationships of Organizational Inducements and Psychological Resilience to Employees' Attitudes and Behaviors toward Organizational Change. *Academy of Management Journal*. 55. 727–748. <https://doi.org/10.5465/amj.2010.0325>.
- Shrivastava, P. (1994). Castrated Environment: Greening Organizational Studies. *Organization Studies*, 15(5), 705–726. <https://doi.org/10.1177/017084069401500504>

- Spillan J. & Hough M. (2003). Crisis Planning in Small Businesses: Importance, Impetus and Indifference. *European Management Journal*, 2003, vol. 21, issue 3, 398–407.
- Staw, Barry & Sandelands, Lloyd & Dutton, Jane. (1981). Threat Rigidity Effects in Organizational Behavior: A Multilevel Analysis. *Administrative Science Quarterly*. 26. <https://doi.org/10.2307/2392337>.
- Toufaily, B. (2018). The Influence of Subjective Factors on the Development of the Transformational Style of Leadership. *Review of International Comparative Management*, 19(2) p.p 124–135.
- Tysen, Ana & Wald, Andreas & Heidenreich, Sven. (2013). Leadership in the Context of Temporary Organizations: A Study on the Effects of Transactional and Transformational Leadership on Followers' Commitment in Projects. *Journal of Leadership & Organizational Studies*. 21. 376–393. <https://doi.org/10.1177/1548051813502086>
- Virginia, Simón-Moya & Revuelto-Taboada, Lorenzo & Ribeiro-Soriano, Domingo. (2016). Influence of economic crisis on new SME survival: reality or fiction?. *Entrepreneurship & Regional Development*. 28. 157–176. <https://doi.org/10.1080/08985626.2015.1118560>.
- Vogus, Timothy & Sutcliffe, Kathleen. (2003). Organizing for Resilience. 94.
- Vogus, Timothy & Sutcliffe, Kathleen. (2007). Organizational Resilience: Towards a Theory and Research Agenda. *Conference Proceedings - IEEE International Conference on Systems, Man and Cybernetics*. 3418–3422. <https://doi.org/10.1109/ICSMC.2007.4414160>.
- Walker J. R., Miller J. E. (2010). *Supervision in hospitaliy industry: Leading Human resources*. New Jersey: JohnWiley & Sins,Inc.
- Wang, Changyou & Li, Hongli & Wang, Xiulin & Zhang, Yong. (2013). Wang et al., 2011 BECT.
- Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, 38(4), 628–652. <https://doi.org/10.2307/2393339>
- Weick, K. E., & Roberts, K. H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38(3), 357–381. <https://doi.org/10.2307/2393372>
- Williams, et al. (2017). Organizational Response to Adversity: Fusing Crisis Management and Resilience Research Streams. *Academy of Management Annals*, 11(2). <https://doi.org/10.5465/annals.2015.0134>
- Zou, S., & Stan, S. (1998). The Determinants of Export Performance: A Review of the Empirical Literature between 1987 and 1997. *International Marketing Review*, 15(5), 333–356. <https://doi.org/10.1108/02651339810236290>



5

Crisis, Adaptation and Sustainability: Digital System Interoperability in the Cruise Industry

Leonidas Efthymiou, Paraskevi (Evi) Dekoulou,
Yianna Orphanidou, Eleftherios Sdoukopoulos,
Vasiliki-Maria Perra, Maria Boile, and Ioannis Bras

5.1 Introduction

Cruise tourism in the European Union (EU) is one of the largest growing sectors in the tourism industry. After North America, Europe is the largest cruise market in the world (CLIA, 2019). However, while cruises in Europe were on the rise, the Cypriot cruise industry faced a gradual

L. Efthymiou (✉) • P. (Evi) Dekoulou • Y. Orphanidou
School of Business, University of Nicosia, Nicosia, Cyprus
e-mail: efthymiou.l@unic.ac.cy; dekoulou.e@unic.ac.cy;
orphanidou.y@unic.ac.cy

E. Sdoukopoulos • M. Boile
Hellenic Institute of Transport – Centre for Research and Technology Hellas,
Marousi, Greece

Department of Maritime Studies, University of Piraeus, Piraeus, Greece
e-mail: sdouk@certh.gr; boile@unipi.gr

decline. Since 2005, the Cypriot cruise sector lost about 90% of its cruise passengers. The downturn is mainly attributed to slow adaptation to external forces, such as political instability in the Eastern Mediterranean region (Loizou, 2020).

Lately, an attempt is being made to overcome the crisis, as part of a new governmental vision to establish Cyprus as a major cruise hub in Eastern Mediterranean. International agreements have been signed, infrastructure investments have been made, and port components have been privatised (Hadjiannou, 2019). This collaborative effort is taking place within a wider turn to digitisation, which includes the ongoing harmonisation from the National Maritime Single Window (NMSW) to the European Maritime Single Window (EMSW), and the interoperability between various systems. Within this context, the current chapter is part of an Interreg project, titled ‘*NAYS—Utilisation of Maritime Information in the Interoperability of Supply Chains and Cruise Service*’ (<https://naus-project.eu/>). The main aim of ‘NAYS’ is to develop a digital platform to facilitate sustainability in the supply chain (also see Sdoukopoulos et al., 2020). The platform will network ports, local producers and suppliers with cruise companies—who would gain direct access to the market. The platform will also serve as a database for the collection and analysis of cruise-related market needs. In addition, it will aim at reducing the social cost of environmental pollution, energy consumption and traffic congestion with an emphasis on the areas around ports. This is achieved by exploiting available technology, utilising shipping information, and enhancing knowledge transfer in Cypriot ports.

V.-M. Perra

Hellenic Institute of Transport – Centre for Research and Technology Hellas,
Marousi, Greece

e-mail: vmperra@certh.gr

I. Bras

FiveSenses Consulting & Development, South Aegean, Greece

e-mail: ibras@FiveSensesConsulting.com

In this chapter, we seek to contribute to an understanding of crisis, adaptation and sustainability through the following objectives: first, we explore the reasons behind the downturn of the Cypriot Cruise Industry. Then, a second objective is to explore the ongoing digitisation, and its role in enhancing the cruise supply chain sustainably. To address these objectives, we draw on findings collected through workshops and face-to-face interviews with the Shipping Deputy Ministry, Cyprus Port authority, cruise companies, suppliers and other key stakeholders. The current study makes a significant contribution to the literature of system interoperability and utilisation of shipping information. The study's findings concern EU-wide policy and could be generalised, or be useful, to ports in the Mediterranean region and other Member States.

The chapter is organised as follows. First, we review the crisis factors that led to decline, along with the ongoing digitisation through NMSW and EMSW. Then, the research design is discussed, prior to presenting the study's findings. The final section reflects on our findings to discuss how digitisation may support the cruise supply chain sustainably.

5.2 Literature Review: Co-existence of Crisis and Digitisation

Crisis in Context

Since 2010, the Cypriot cruise industry has been declining unceasingly. Its downturn is characterised by a paradox. On the one hand, for almost a decade, Cyprus has seen record-breaking tourism figures and has attracted millions in hotel investment and tourism-related infrastructure, whereas tourism's contribution to the Gross Domestic Product soared by 20% (Loizou, 2020). On the other hand, during the same period, Cyprus has lost about 90% of its recorded cruise passengers. This is evident in the statistics provided by MedCruise on passenger traffic (Table 5.1). From 378,909 passengers in 2010, the number dropped to 43,197 in 2019. Earlier numbers reveal an even sharper decline. For instance, the number of passengers in 2006 was 448,821 (Cyprus Port Authority, CPA). The reduction in numbers of passengers and cruise ships calling to Cyprus is

Table 5.1 Arrivals-departures of passengers and passengers in transit

Year	Total Pax	Total calls
2019	43,197	38
2018	91,089	106
2017	123,397	113
2016	141,358	135
2015	173,309	167
2014	183,507	223
2013	271,673	255
2012	248,356	247
2011	303,086	454
2010	378,909	378

Source: MedCruise

attributed to the wider political turbulence in the Eastern Mediterranean region (Charalambous, 2019).

Lately, an attempt is being made to change the negative picture and promote Cyprus as an attractive port of call for cruise ships. A number of recently signed agreements with neighbouring countries, a new national investment policy and developments in infrastructure aim at reviving stakeholders' interest. As of February 2017, DP World Limassol was awarded a 25-year concession to exclusively operate the multi-purpose and Cruise terminal in Limassol (the biggest port in Cyprus), and a brand new 7000 sqm cruise passenger terminal was inaugurated.

However, while the numbers of passengers and cruise ships calling to Cyprus remain low, it is questionable whether the factors behind the decline can be attributed to external factors only. It becomes even more questionable if we consider that the collapse took place in a period where cruises in the EU were recording a steady upward trend; and, Cyprus was recording unprecedented tourism arrivals. Therefore, one of the purposes driving this study is to identify the actual reasons behind the downturn, prior to making suggestions for sustainable development. Also, as explained in the next section, the revival effort takes place within a wider context of digitisation.

The Digital Context

Technology diffusion and digitisation in tourism are manifested in several ways. Scholars have previously examined disruptive technologies in tourism (Buhalis, 2020), smart-tourism interoperability (Buhalis & Amaranggana, 2014; Buhalis & Leung, 2018), hotel analytics (Efthymiou, 2018; Efthymiou et al., 2020), cashless payments (e.g. Batiz-Lazo & Efthymiou, 2016a, 2016b, 2016c; Efthymiou & Michael, 2013, 2016), blockchain and robots in hotels (Efthymiou et al., 2019), digitisation in education (Efthymiou & Zarifis, 2021) and digitalisation in custom-authorities to enhance trade around the world (World Customers Organisation, 2018), among others.

In this chapter, moreover, we examine an institutionalised EU-wide digitisation through system interoperability in the cruise industry. This is carried out through the implementation of a National Maritime Single Window in each EU member state. Then, an equally important step concerns the establishment of a European Maritime Single Window Environment, which is going to be common in all EU ports. These systems aim at enhancing the competitiveness and efficiency of EU ports. At the same time, they aim at minimising instances of crisis by facilitating the use of digital information, and thus, reducing the administrative burden on ships. The following sections offer a review of the conception and implementation of digital technology in the cruise and wider maritime industry.

Conception and Historical Evolution of the National Maritime Single Window (NMSW)

Upon their call into a port, each ship has to submit a set of pre-arrival information via its maritime transport operator. The information needs to be submitted to a range of local agencies, varying from different local authorities, operators and agencies. Multiple reporting results to crisis through disorganisation and excessive administrative burden among stakeholders with negative impacts on the logistics chain. In addition, the information provided by ships is not efficiently shared among concerned

stakeholders (Pape, 2019). To rectify the inefficiency associated with this situation, the ‘*European Parliament and of the Council*’ issued on 20 October 2010, the ‘Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC’ (Official Journal of the European Union, 2010). The directive concerned the standardisation of electronic transmission of information and reporting formalities, through a Single Window, which enables all stakeholders involved in the business process to input the information used by other stakeholders. The information provided should be submitted electronically and only once, by using a single point of data entry and storage. The European Parliament set a deadline for implementation by 1 June 2015, offering to Member States five years to establish a National Maritime Single Window (NMSW).

The concept of Single Window (SW) has been in development for decades. Historically, it was conceived by customs for trade facilitation. ‘Single Windows’ were first introduced by United Nations (UN) Centre for Trade Facilitation and Electronic Business (UN/CEFACT), to improve the exchange of information between trade and government (Koliousis & Katsoulakos, 2015). Gradually, the use of SWs became common in transport facilitation until its institutionalisation by ‘Directive 2010/65/EU’, as National Maritime Single Window (NMSW).

More recently, NMSWs is examined in a wide range of contexts and for different purposes. For instance, NMSW has been discussed in relation Blockchain and smart contracts to improve the accuracy and transparency of trade data (Ganne, 2018). In addition, the National Maritime Single Environment (NMSE) has been associated with Economic and Environmental sustainability. According to Tijan et al. (2019), the benefits of implementing an NMSW include economic sustainability (due to paperless clearance, efficient and predictable supply chain management, among others), environmental sustainability (due to disaster management) and social sustainability (due to improved compliance, mutual recognition agreements, robust legal framework). Also, it can integrate the digital platforms of different countries (as with the case of Singapore and Hong Kong), which enhances the supply chain transparency, integrity and security (2019). What is more, NMSW is linked to trade facilitation as simplification and standardisation of information flows enhance trade

and transport chains (Koliousis & Katsoulakos, 2015). At the same time, contradictory studies recommend that the setup and operation costs of NMSWs may be forbidding. Kapidani et al. (2020) have conducted a cost-benefit analysis, which suggests that the cost associated with NMSW, for its implementing and ongoing operation, may exceed its benefit. This is the case especially in developing, small or coastal countries, with limited human resources and infrastructure available.

Moreover, following the implementation of NMSW, an EU-wide harmonisation is attempted. As explained in the next section, for the past several years, the EU has been working on the development of the European Maritime Single Window—EMSW.

EU-Wide Harmonisation Through the European Maritime Single Window Environment (EMSWe)

However fruitful the attempt to establish individual NMSWs in each country is (and it really is), this process does not enable harmonisation across EU ports. Lack of harmonisation often results in crisis (in the short or long term). Therefore, the European Commission has proposed to bring all the reporting linked to a port call together into one digital space, namely, the ‘European Maritime Single Window’. The regulation was published on 25 July 2019 and entered into force on 14 August 2019 as *Regulation (EU) 2019/1239 of the European Parliament and of the Council of 20 June 2019 establishing a European Maritime Single Window environment and repealing Directive 2010/65/EU* (eumonitor.eu, 2019). The main aim of the ‘European Maritime Single Window’ is to harmonise reporting procedures for shipping operators and ensure that data can be shared and reused efficiently. As Norbert Hofer (President of the EU Council) mentioned:

[a] single reporting window for ships will significantly reduce the administrative burden on maritime transport. We are creating conditions for increased application of the once-only principle, so that ships would only need to report once per port call and the same information would be reused for subsequent port calls within the EU.

A good question then is, what happens with the National Maritime Single Window systems. Apparently, the existing National Maritime Single Window in each Member State should be maintained as the basis for a technologically neutral and interoperable European Maritime Single Window environment (EMSWe). However, as mentioned earlier, the directive 2010/65/EU for the National Single Window, in essence, is repealed by regulation (EU) 2019/1239 and becomes redundant.

The European Maritime Single Window offers an environment where all existing National Maritime Single Windows are linked together in a coordinated and harmonised manner. The reform improves interoperability between various systems, making it much easier to share and reuse data (Maritime Cyprus, 2019). The Single Window regulation provides a standardised interface system to provide information to ship operators in the same format across the EU. To that end, the European Maritime Single Window (EMSW) will rely on an established and very specific data set, which covers all reporting obligations set out in the Union as presented in Table 5.2.

Moreover, according to Katsoulakos (2013), EMSW will include the following indirect benefits:

- promote cooperation between customs and business communities.
- traders will trade with a single administrative authority.
- strengthen networking arrangements between customs administrations and consequently support the smooth movement of goods through secure international supply chains.

Within this framework, the chapter's second objective is to examine the progress of the implementation of an EMSW environment. More specifically, we are interested in whether the interoperability of systems (e.g. between EMSW and NMSW) may contribute to a sustainable supply chain, and support the adaptive effort.

Table 5.2 Data set for reporting formalities through EMSW

Directives	Information
Directive 2002/59/EC	Notification for ships arriving in and departing from ports of the Member States
Regulation (EC) No 562/2006	Border checks on persons
Directive 2002/59/EC	Notification of dangerous or polluting goods carried on board
Directive 2000/59/EC	Notification of waste and residues
Regulation (EC) No 725/2004 (EEC) 2913/92 and Regulation (EC) 450/2008	Notification of security information Entry Summary Declaration (Regulation)
FAL forms 1 to 7: Maritime Declaration of Health	General Declaration; Cargo Declaration; Ship's Stores Declaration; Crew's Effects Declaration; Crew List; Passenger List; Dangerous Goods
Directive 2009/16/EC	<ul style="list-style-type: none"> • Pre-arrival notification for ships eligible to expanded inspection • Notifications of actual arrival and departure
Information in accordance with national legislation may also include:	<ul style="list-style-type: none"> • Cargo-related formalities: Declaration of Temporary Storage, Cargo Manifest (tentative) • Waste delivery receipt, • Bunkers remaining on board • Civil Liability Certificate for Oil Pollution Damage • Civil Liability Certificate for Bunker Oil Pollution Damage • Ship defects

Source: Council of the EU, <http://data.consilium.europa.eu/doc/document/ST-14587-2018-REV-1/en/pdf>

5.3 Research Design and Methods

The analysis draws on the findings collected through interviews and two 2-day workshops. The first workshop was held in Nicosia, Cyprus, EU (20–21 July 2019) and was titled 'Nays Information Workshop: Utilisation of Maritime Information in the Interoperability of Supply Chains and Cruise Service'. The second workshop, titled 'Digitisation in the Shipping Sector: Creating a Supply Chain Platform for the Cruise Industry', was held in Limassol, Cyprus (27–28 February 2020). Several important stakeholders participated in the workshop, including:

- the Shipping Deputy Ministry of Cyprus;
- the Cyprus Chamber of Commerce and Industry, CCCCI;

- DP World Limassol (operator of the largest port in Cyprus);
- The Manager of the Limassol Port (the Island's main port);
- International Cruise and Infrastructure Consultants (e.g. Five Senses Consulting & Development);
- International Cruise-ship Management companies (e.g. Celestyal Cruises and Salamis Cruise Lines);
- Information Technology and Communication companies (e.g. DotSoft SA) and
- Small, local producers and suppliers (e.g. Fikardou Winery).

Cover letters and invitations were sent to all stakeholders by the 'Cyprus Chamber of Commerce and Industry (CCCI)', which is one of the project's partners. Both events began with presentations by different stakeholders. Then, participants were divided into teams to discuss, brainstorm and produce suggestions on a particular subject matter. Finally, each team had to present its suggestions and respond to possible questions.

During the same period (July 2019 to March 2020), seven (7) face-to-face and five (5) telephonic interviews were conducted with different stakeholders. Face-to-face interviews were conducted on each participant's premises. Cover letters were sent in advance and interview sessions have been booked telephonically. The benefit of conducting interviews was twofold. First, they provided authors with first-hand information on the cruise supply chain and the implementation of NMSW/EMSW. For example, during a face-to-face interview, the Cyprus Port Authority (CPA) representative kindly offered a virtual tour of NMSW by sharing his computer screen with us. We also had an opportunity to collect valuable documentation. Second, interviews enabled a triangulation—and better understanding—of the findings collected during the workshop(s). The interview sample included government representatives (e.g. the CPA), cruise companies (e.g. Salamis Cruise Lines) and International Ship Management companies (e.g. CSM Columbia). Moreover, to align with established ethical standards on anonymity, all participants' names are kept confidential. As we present below, the combination of

workshops and interviews enabled the collection of important opinions and perceptions of a wide range of stakeholders.

5.4 Findings

The Reasons Contributing to Crisis and Decline

For more than a decade, the Cypriot cruise industry has been recording a decline in passenger arrivals and home-porting. In this section, we draw on our findings to present ten main factors, which led to the downturn, along with lessons that can be learned for other countries in the region. As indicated in the points below, although external forces had a role to play, the decline is also attributed to local factors.

1. The political crisis in the Eastern Mediterranean region. Many of the destinations that are included in the Cypriot cruise packages are located in politically unstable countries. Once popular cruise itineraries, which include Egypt and Syria, ceased to exist. Also, Cyprus is wrongly perceived by the market to be included in the actual politically unstable countries. Geo-political crisis gains a bad name for the entire region and triggers a domino effect in the market. As explained in the following point, clear and systematic communication with target markets may be necessary to alter public perception.
2. Participants highlighted the lack of strategy, promotion and advertising of Cypriot ports as a cruise destination. Representatives of cruise companies highlighted that cruises are no longer part of the Cyprus tourism product. They do not appear in marketing campaigns. As with the previous point, we suggest (in line with participants' observations) that strategic communication has a role to play in the long-term success of the cruise industry.
3. The increasing operational costs (e.g. fuel costs, customer fees and port charges) for cruises that start and end their routes in Cyprus and/or use Cyprus as a destination for approaching the following routes make Cypriot ports less popular. A participant in one of the cruise companies explained that since the new operator took over, all

costs have increased considerably. *'We now need about €10,000 every time our ship enters and leaves the port. Limassol is the most expensive port in the area whereas some costs have increased by 100%'* (Cruise company, Chief Executive Officer). As a result, the decisions of cruise companies on whether to include ports in their destinations are influenced by varied charges; and whether better rates exist for a given type and level of service in a different port in the region.

4. It's hard for small producer and suppliers to cope with increasing costs. A participant explained that *'[t]o enter the port for a delivery, a supplier needs to pay 50 Euro or 1200 Euro per year. This is not financially feasible for small suppliers as their revenue is less than 1200 euro per year [e.g. small producers who deliver flower arrangements to cruise-ships]. Price increase has influenced the entire supply chain'*. Our suggestion here is that a fairer rate of charges could be set on the basis of weight, volume or number and nature of goods.
5. Multiple external charges occurring by other stakeholders. As an interviewee said: *'[t]he number of cruising ships visiting Cyprus is extremely low. Cruising ships prefer alternative ports, such as the one in Malta. About 15 years ago, we had a success story, due to the low costs of 'Tours & Stay & Fly' (e.g. visit Cyprus by plane and visit another two countries by cruise). Today the story is different. Hoteliers and airports add extra costs for the extra nights; airlines offer 50-minute trips to Israel, Airports, Airlines and hoteliers are subsidized—but not the cruises'*. Our suggestion here is that strategic planning requires collective effort and involvement of all stakeholders in decision-making.
6. The significant reduction in the cost of air tickets, especially by budget airlines, is considerably lower than cruise tickets.
7. Failure to find appropriate solutions to deal with possible delays in the process of boarding and disembarking passengers upon arrival at the port due to the procedures to be followed by the immigration department when tourists enter the Republic of Cyprus. As we explain in the next sections, technology here has a role to play, along with a political will.
8. A decade-long neglect and a poor supply chain make it easier for cruise companies to adopt different practices. For instance, TUI imports products from abroad, which are stored in containers within

the Limassol Port, to supply its cruise ships while in Cyprus. 'Fragmented information result to extra costs and make supply chain services time-consuming' (Ship Management Company, Control Room Manager).

9. The supply chain in Cyprus relies solely on agents. As a result, selection of suppliers relies heavily on each agent's preferences, with little direct access of incoming ships to the local supply market (Ship Management Company, Control Room Manager). The proposed NAYS platform is likely to overcome this kind of barriers.
10. Level of services and places of interest around Cypriot ports. It's positive that the new Passenger Terminal has been completed, as well as the infrastructure around the port. However, passengers of short-stay ships will disembark only if they have something interesting to see in the surrounding area. If not, they will stay in the ship and, therefore, there will be limited benefit for the local businesses (restaurants, shops, etc.). This is a lesson to be learned, as well as an opportunity for smaller ports in the region. For instance, smaller ports, with poorer infrastructure, may be selected if the surrounding areas have something interesting to offer in terms of tourist attractions.

The downturn in the cruise industry is attributed to several aspects, including government, industry and wider geo-political factors. There are lessons that can be learned out of these findings: for a cruise industry to thrive, we need strategic vision, long-term planning, continuous competitive analysis, political will to confront regional challenges, the participation of several stakeholders in policy formulation, as well as incentives for stakeholders. These factors become increasingly important in the new, digitised environment. The next section examines the implementation of a National Single Window, and its possible benefits to the cruise supply chain.

Implementation of NMSW and Links to the Cruise Supply Chain

The data reported to Port Authorities regarding the arrival and departure of a ship should be submitted electronically through the National Maritime Single Window. This is a national portal administered by local authorities (CPA representative). Our findings suggest that the National Maritime Single Window was established fully in most EU countries, including Cyprus, in line with Directive 2010/65/EU. However, some exemptions exist, such as the case of Greece, where the system is only partly implemented. These findings resonate with previous studies, which underline the difficulties of implementing the NMSW. For example, through a cost-benefit analysis, Kapidani et al. (2020) reveal that the cost of implementing and operating an NMSW may exceed its benefit. This is the case in developing, small or coastal countries, with limited availability of human resources and infrastructure.

Prior to the full implementation of NMSW in 2015, several collaborations took place between EU member states, which served as forerunners for system interoperability. For instance, The Cyprus Port Authority was part of a collaboration with respective organisations in Italy, Spain, Germany and Portugal, namely, the MIELE project (Mediterranean Interoperability E-services for Logistics and Environment sustainability). The project aimed at developing a supply chain model (multimodal logistic chain), linking all modes of transport related to shipping. The supply chain model was called 'Motorways of the Sea' (MOS). At the same time, MIELE aimed at implementing a unified and interoperable IT system, allowing interconnection of different supply chain systems among the specific EU member states. According to CPA representatives, MIELE can be considered the forerunner of NMSW and EMSW, as it contributed to an understanding of how a common information platform (single-window concept) exists and operates.

Moreover, prior to entering a port, all ships must provide information using the Ship Security Pre-Arrival Form, through the electronic single-window system—Port Community System (PCS) of the Cyprus Ports Authority (CPA). The information is submitted through the NMSW by

private shipping agents, representing the ships and their companies. Our findings suggest that the private agents are trained on how to use and interact with the NMSW system directly by the CPA. The CPA officials seemed to be quite satisfied with institutionalised response to the Directive 2010/65/EU. As they explained, their organisation has done a great work implementing the NMSW while other EU countries are yet to implement it.

However, although it facilitates the submission of information before and during the departure of ships, NMSW does not seem to be helpful in linking cruise ships with the local supply chains—in contrast to our literature review—mainly due to contextual factors. Our findings suggest that local cruise shipping companies in Cyprus choose to supply their ships in other countries. Also, on some occasions, multinational cruise companies import the goods intended for their cruise ships (e.g. those approaching Cypriot ports) from abroad (CEO, Major local cruise company). Although NMSW accepts modifications, which can be used to enhance information transfer relating to supply chain, the current condition of the Cypriot Cruise industry discourages trade of goods, whereas, there is a difficulty of local suppliers to penetrate the cruise supply chains competitively.

What such findings tell us is that digitisation on its own is not enough. There is a wider range of factors that need to be implemented to attract cruise companies, cruise ships and passengers—as discussed in the previous section. Moreover, as we explain below, this study also explores possible links between NMSW, the EMSW and how they may contribute to a sustainable Cruise Supply chain.

Implementation of EMSW and Links to the Cruise Supply Chain

While these lines are written, the authorities of each EU member state (e.g. Ministries of Shipping) work in a coordinated way to implement the European Maritime Single Window (EMSW), which needs to be applied by 15 August 2025, a CPA representative explained. The existing National Single Window systems in each Member State will remain as the basis for

a technologically neutral and interoperable European Maritime Single Window. Officials in the Cyprus Port Authority and the Shipping Deputy Ministry of Cyprus expressed great optimism regarding the implementation of the European Maritime Single Window: *'most of the hard work has already been done while implementing the National Single Window'*. The processes that have been established, as well as the expertise accumulated during that process, are now a great contributor to the upcoming implementation of the EMSW: *'although its full implementation is going to take some years, it will definitely happen'*.

However, an interesting claim, which relates to the cruise supply chain, was expressed by the head of the IT Department in CPA. More specifically, he mentioned:

We work relentlessly on the establishment of EMSW. This week, we had a meeting with the other 26 member states to decide what exactly we want the EMSW to include. As soon as we decide, the final system will be standardized for all ports across the EU. No additional components or forms will be added or changed by member states (e.g. the crew list will include the same entries—such as the passport number—across the entire system, in all EU ports). All European ports will be using the same structured system.

Such findings tell us that the EMSW will differ from NMSW in the way it is treated and used. The NMSW could be modified. Additional forms and functions could be added. Several stakeholders, such as the immigration office, police, agents and more, could add entries on the existing system. The customs, for example, could add a requirement for a certificate by private suppliers, listing extra information for containers (e.g. oversized, extra length, temperature and other business-related information). However, *'EMSW will have no place for this kind of additions, alterations and extra information. All EMSW standards will be generic and unaltered. If we would add what each country wants, a unified EMSW environment will never become materialized'* (CPS, Head of IT Department). When we asked about the possible contribution of EMSW to the supply chain, the immediate response was: *'No. EMSW will neither be related to nor enhance the cruise supply chain. The system will be so standardized that leaves no space for modifications relating to the supply chain.'*

Due to its standardised structure, the EMSW will have no direct impact on the cruise supply chain. Our findings, moreover, contradict previous scholars, who believed that harmonisation through European Single Windows would facilitate trade, either by directly supporting trade interfaces or by serving as ‘global single window trade portals’ (e.g. Nowak, 2007).

There are, nevertheless, some indirect benefits that could have a meaningful impact—provided that a collective effort is made by key stakeholders. This prospect is best expressed by one of our responders:

The establishment of EMSW, which aims to harmonize and improve the interoperability of the various systems through the interconnection of National Shipping Units (NMSWs), is expected to minimize the complexity of inter-stakeholder relationships. A platform working in parallel to EMSW, could enhance the cruise ship supply. (Ship Management Company, Control Room Manager)

These findings corroborate Katsoulakos’s work (2013), which has been presented in the literature review. Also, the findings highlight the importance of interoperability of systems. EMSW can work in parallel with existing systems, such as the NMSW and SafeSeaNet, to enhance utilisation of information in the cruise supply chain. In other words, although NMSW will play a complementary role, it may help in stitching up trade ecosystem, empowered by both EMSW and other interoperable technologies. Besides, although the NMSW directive (2010/65/EU) is repealed by the EMSW regulation (EU 2019/1239), NMSW will not cease to exist. It will be able to host additional information, forms and entries—for example, for agents, traders and suppliers.

By the same token, the proposed ‘NAYS’ platform will be interoperable and dependable with the rest of the system. ‘Today, a single trade can involve over 25 parties, generating 30–40 documents, and about 60–70% of the information is manually re-entered at least once’ (World Customs Organization, 2018). It is up to stakeholders, such as port authorities, suppliers, cruise companies, agents and others (including other trade communities and platforms), to network with the platform and take

advantage of information transfer and enhanced communication along with the entire trade ecosystem.

Here is where technology, and more specifically the implementation of EMSW, becomes vital: orders need to be processed in a timely manner, so that products are delivered on time and without any deviations in terms of number or volume. Interoperability of the platform with other systems, such as the NMSW, enables orders of passengers to be delivered in very short time after the arrival of the cruise vessel at the port. System interoperability here is like the two sides of the coin. On the one hand, it offers reduced administrative burden, more efficient interaction with authorities and a fast turnaround for the ship. On the other hand, local suppliers will have to make sure that the delivery process is efficiently planned and executed within the short period of time (Cruise Consultant, Workshop Participant).

Sustainable Supply Chain Through an e-Marketplace Platform

The idea of an e-marketplace platform, which takes advantage of system interoperability, was welcomed by research participants positively. Traders expressed willingness to use the platform provided that it offers some of the following benefits: process simplification, supply time-reduction, automation, ease of use, secured transactions and a wide range of products/services/prices.

Furthermore, representatives of cruise companies, suppliers, port operators and cruise consultants considered the platform as an extra benefit for their customers. For instance, while a cruise ship approaches a port, its passengers/tourists may have the ability to order good/gifts from a list of local products while on the ship (prior to their arrival) and collect them at each cruise destination. Among others, they suggested that:

1. a traditional dish or meal can be included on the cruise-ship menu, which is unique to each or selected destinations. The ingredients could be sourced entirely by small, local, organic producers;

2. cruise-ship passengers may have the ability to order 'platform-only' goods that are available in special packages; quality goods of certified origin.
3. the platform may be able to provide customers with additional information about the products on offer (e.g. enabling them to trace the origins of ingredients, the tradition and history of the place of production).

Another suggestion/possibility includes the development of Apps, which are connected to the wider trade ecosystem through the NAYS platform. Apps may be used by each stakeholder for different purposes. For instance, cruise companies may have access to consumption metrics; customers may have access to gifts and consumables, business partners can have access to government services, ship personnel can gain access to energy savings, ship positioning and weather information—through the interoperability of systems. This suggestion is consonant with a wide body of literature, which discusses the interconnectivity of the maritime sector, through digitisation (Sanchez-Gonzalez et al., 2019), real-time information (Bauk et al., 2017), electronic reporting, 'maritime Big Data', remote monitoring and maritime clouds (Ullah et al., 2019), among others.

Taken altogether, such findings point to the sustainable nature of the platform. The economic, societal and environmental benefits stemming from the 'NAYS' platform align with, and expand, the widely accepted triple-bottom-line of sustainability (coined by Elkington in 1998). In addition, the platform can serve as a reflexive mechanism that is easier to adapt to the changing environment and market needs (Vrontis et al., 2012; Thrassou et al., 2014). Moreover, several participants highlighted the importance of competitive edge. To increase their transactions, local producers and sellers must be as competitive as those in other countries. Cruise companies are especially concerned about shorter delivery times and cost-effectiveness. Today, it is cheaper for a Cypriot cruise-ship company to supply its ship in a port outside Cyprus instead of using Cypriot logistics companies (Interviewee: Cruise Ship Owner and CEO).

Finally, a new important aspect that has affected the whole community worldwide is the COVID-19 crisis, where almost all cruise traffic has been at a standstill for the past nine months. This unprecedented crisis has resulted in a -90% of cruise traffic worldwide for 2020 and an unclear 2021. The new era of cruise travel will happen with much stricter rules and health protocols that we have never witnessed before. As cruise will gradually restart, the industry will be much different. The cruise product will exist in a pre- and post-vaccine reality. Strict excursions may result in a new cruise product, where passengers have to taste the local flavours within the ship—rather than disembarking. This will give the opportunity to local vendors to provide products unique to the destination to each ship. Additionally, as purchasing in the destination might be limited, it is an excellent opportunity for local producers to promote their products in an organised way for e-purchases and then delivered to their cabins. As presented in Fig. 5.1, the platform can be adapted to play such a role, adding further to its sustainable nature.

The interoperability of systems and the proposed NAYS platform is presented in Fig. 5.1. Our graphic representation illustrates how the digitisation of systems and processes, along with the interoperability that comes through harmonisation, can facilitate an inclusive platform-based supply chain. The role of stakeholders, nevertheless, remains important,

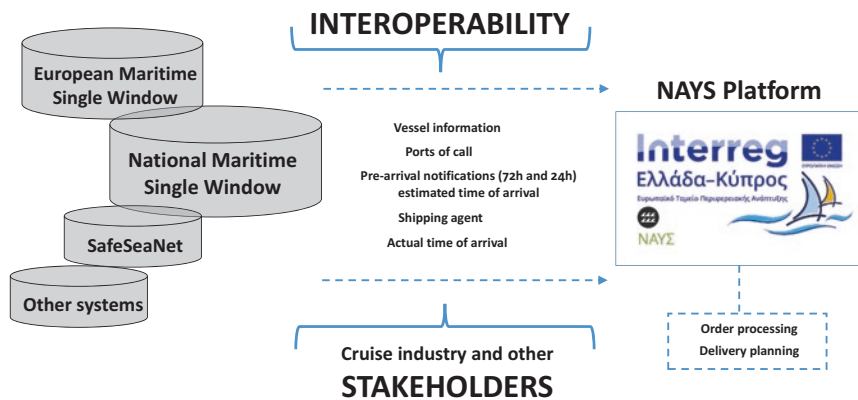


Fig. 5.1 Interoperability facilitating the NAYS platform

especially in terms of vision, strategy and promotion of the cruise industry. Besides, the NAYS platform is an innovation that has been conceived and designed for the particular context. This deliberate effort is consonant with previous studies, suggesting that each innovation has a context, which is shaped by consumer behaviour and all the macro- and micro-environmental factors affecting it (Chebbi et al., 2013; Thrassou, 2007; Vrontis & Thrassou, 2007; Thrassou & Vrontis, 2009).

5.5 Discussion and Conclusion

This chapter makes a threefold contribution to the literature of system interoperability and utilisation of shipping information in the cruise supply chain. First, we have demonstrated the actual reasons that led to the industry's decline. Poor planning, absence of vision, high costs in relation to competing countries/ports, lack of infrastructure and geo-political instability are all ingredients for prolonged decline. By identifying the nature of the crisis, we inform the industry's revival effort, and offer lessons to other countries in the region.

Second, our chapter adds to the literature on digitisation through NMSWs and EMSWs. For many years, there was no clear understanding in regard to the purpose, use and capabilities of NMSWs and EMSWs. Scholars often treated Single Windows and National Single Windows as synonymous, whereas, others believed that EMSWs would directly facilitate trade interfaces or serve as 'global single window trade portals' (e.g. Nowak, 2007). In this chapter, we clearly explain what each system is, what is capable of and how it could facilitate or hinder the cruise supply chain. Also, by drawing on workshops and interviews with key stakeholders, we explain what the interoperability of systems can offer to the trading ecosystem, as presented in Fig. 5.1.

Moreover, following the successful implementation of NMSW in most EU member states, countries work persistently to establish the EMSW (Regulation EU2019/1239). As our findings reveal, EMSW is going to be standardised across all EU ports. In fact, EMSW will be so standardised and bound up by its generic and narrow function that no space is left for a direct support to cruise supply chains. As one of our responders claimed,

on the one hand, the EU had to choose between standardising the EMSW platform and putting its materialisation at risk—standardisation was the only way towards materialisation. On the other hand, the national window (NMSW) will continue to work in parallel to EMSW. At the same time, it can sustain its previous modifications (or accept further changes), to support the cruise industry and its supply chain. Towards this end, we invite key stakeholders, such as the CPA, to re-engineer the NMSW towards becoming a fully interoperable system, which prioritises trade facilitation, transport security, safety and environmental protection.

This suggestion is a third contribution, which concerns the literature of system interoperability in the cruise supply chain. The interoperability of NMSW and EMSW can have a meaningful contribution on the local supply chain, entrepreneurship and further economic development. It will contribute to the wider digitisation, which supports the NAYS Interreg project, as well as the development of an e-marketplace platform for the Cypriot Cruise Industry. The proposed platform will provide a digital common point for all those involved in the supply chain, including entrepreneurs, local producers, traders, distributors and cruise-ship companies. Purchasing turnover will be faster. Good's auctions will facilitate trading inclusion, as local producers and traders will gain direct access to the supply chain, whereas, stakeholders will have access to market data and trends' analysis. Also, cruise-ship passengers will have direct access to local 'platform-only' products. The overall economy is likely to be strengthened along with the development of a sustainable supply chain. However, for this to happen, a collective effort and stakeholder collaboration are required, as illustrated in Fig. 5.1.

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References

- Batiz-Lazo, B., & Efthymiou, L. (2016a). *The Book of Payments: Historical and Contemporary Views on the Cashless Economy*. Palgrave Macmillan.
- Batiz-Lazo, B., & Efthymiou, L. (2016b). Introduction: The 360 Degrees of Cashlessness. In B. Batiz-Lazo & L. Efthymiou (Eds.), *The Book of Payments: Historical and Contemporary Views on the Cashless Economy* (pp. 1–10). Palgrave Macmillan.
- Batiz-Lazo, B., & Efthymiou, L. (2016c). Preface: News from the Cashless Front. In B. Batiz-Lazo & L. Efthymiou (Eds.), *The Book of Payments: Historical and Contemporary Views on the Cashless Economy* (pp. ix–xi). Palgrave Macmillan.
- Bauk, S., Draskovic, M., & Schmeink, A. (2017). Challenges of Tagging Goods in Supply Chains and a Cloud Perspective with Focus on Some Transitional Economies. *Promet – Traffic & Transportation*, 29(1), 109–120.
- Buhalis, D. (2020). Technology in Tourism-From Information Communication Technologies to eTourism and Smart Tourism Towards Ambient Intelligence Tourism: A Perspective Article. *Tourism Review*, 75(1).
- Buhalis, D., & Amaranggana, A. (2014). Smart Tourism Destinations. In Z. Xiang & I. Tussyadiah (Eds.), *Information and Communication Technologies in Tourism 2014* (pp. 553–564). Springer.
- Buhalis, D., & Leung, R. (2018). Smart Hospitality – Interconnectivity and Interoperability Towards an Ecosystem. *International Journal of Hospitality Management*, 71, 41–50.
- Charalambous, A. (2019, December 24). Cyprus Back on the Cruise Industry's Map. *In-Cyprus*. Retrieved October 13, 2020, from <https://in-cyprus.phile-news.com/cyprus-back-on-the-cruise-industrys-map/>
- Chebbi, H., Yahiaoui, D., Thrassou, A., & Vrontis, D. (2013). The Exploration Activity's Added Value into the Innovation Process. *Global Business and Economics Review*, 15(2/3), 265–278. (ISSN: 1097-4954, Inderscience).
- CLIA. (2019). *2019 Trends & Industry Outlook*. Cruise Lines International Association Inc. Retrieved November 5, 2020, from [https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-\(1\).pdf](https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-(1).pdf)
- Efthymiou, L. (2018). Worker Body-Art in Upper-Market Hotels: Neither Accepted, nor Prohibited. *International Journal of Hospitality Management*, 74, 99–108.
- Efthymiou, L., & Michael, S. (2013). When Cards and ATM's Are the Only Choice: A Fortnight in Cyprus with no Banking System, nor Trust. *MPRA*

- Paper*. Retrieved June 20, 2019, from <https://mpra.ub.uni-muenchen.de/50646/>
- Efthymiou, L., & Michael, S. (2016). The Cyprus Cash Crash: A Case of Collective Punishment. In B. Batiz-Lazo & L. Efthymiou (Eds.), *The Book of Payments: Historical and Contemporary Views on the Cashless Economy* (pp. 131–140). Palgrave Macmillan.
- Efthymiou, L., Orphanidou, Y., & Panayiotou, G. (2019). The Latest from the Tourism Front: Technology, Innovation and Disruption. *The European Financial Review*, 4(5), 39–43.
- Efthymiou, L., Orphanidou, Y., & Panayiotou, G. (2020). Delineating the Changing Frontstage and Backstage Segregation in High-End and Luxury Hotels. *Hospitality & Society*, 10(3), 287–312. https://doi.org/10.1386/hosp_00025_1
- Efthymiou, L., & Zarifis, A. (2021). Modeling Students' Voice for Enhanced Quality in Online Management Education. *The International Journal of Management Education*, 19(2), 1–16. <https://doi.org/10.1016/j.ijme.2021.100464>
- Elkington, J. (1998). Partnerships from Cannibals with Forks: The Triple Bottom Line of 21st-Century Business. *Environmental Quality Management*, 8(1), 37–51.
- EU Monitor. (2019). COM(2018)278 – *European Maritime Single Window environment*. Retrieved September 11, 2019, from <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vl0h7d6zqbz6>
- Ganne, E. (2018). *Can Blockchain Revolutionize International Trade?* World Trade Organisation. Retrieved November 17, 2020, from <https://tradenews.com.ar/wp-content/uploads/2018/12/Blockchain-OMC.pdf>
- Hadjioannou, B. (2019). Sustainable Cruise Tourism Key Driver to Economic Growth. *In-Cyprus*. Retrieved October 10, 2020, from <https://in-cyprus.philenews.com/sustainable-cruise-tourism-key-driver-to-economic-growth/>
- Kapidani, N., Tijan, E., Jović, M., & Kočan, E. (2020). *National Maritime Single Window – Cost-Benefit Analysis of Montenegro Case Study*. PROMET. Retrieved November 11, 2020, from <https://traffic.fpz.hr/index.php/PROMTT/article/view/3422>
- Katsoulakos, T. (2013). *EU Maritime Single Window Development Guide and Check-List*. eMAR White Paper MSW 1 11th December 2013 – Version 1. https://www.ebos.com.cy/ebos2013/uploadfiles/EU_Maritime_Single_Window_Development_Guide_Version_1.pdf
- Koliouisis, I., & Katsoulakos, T. (2015). Maritime Single Windows: Lessons Learned from the eMAR Project. In Ehlers et al. (Eds.), *Maritime-Port*

- Technology and Development*. Taylor & Francis Group. ISBN 978-1-138-02726-8.
- Loizou, A. (2020). New Wage of Tourism. *Cyprus Profile*. Retrieved October 10, 2020, from <https://www.cyprusprofile.com/sectors/tourism>
- Maritime Cyprus. (2019). *EU – Modernizing Ship Reporting Systems (European Maritime Single Window Environment)*. 07-01-2019. Retrieved August 22, 2019, from <https://maritimecyprus.com/2019/01/07/eu-modernizing-ship-reporting-systems-european-maritime-single-window-environment/>
- Nowak, J. (2007). *The Evolution of Electronic Trade Facilitation: Towards a Global Single Window Trade Portal*. Retrieved November 11, 2020, from https://www.researchgate.net/publication/228581401_The_Evolution_of_Electronic_Trade_Facilitation_Towards_a_Global_Single_Window_Trade_Portal
- Official Journal of the European Union. (2010, October 29). *Directives: 'Directive 2010/65/EU on Reporting Formalities for Ships Arriving in and/or Departing from Ports of the Member States and Repealing Directive 2002/6/EC'*. Retrieved August 12, 2019, from <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:283:0001:0010:EN:PDF>
- Pape, M. (2019). European Maritime Single Window: Harmonised Digital Reporting for Ships. *European Parliamentary Research Service*. Retrieved October 15, 2020, from [https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI\(2019\)633179](https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2019)633179)
- Sanchez-Gonzalez, P. L., Díaz-Gutiérrez, D., Leo, T. J., & Núñez-Rivas, L. R. (2019). Toward Digitalization of Maritime Transport? *MDPI Sensors*, 19(4) Retrieved November 11, 2020, from <https://www.mdpi.com/1424-8220/19/4/926>
- Sdoukopoulos, E., Perra, V. M., Boile, M., Efthymiou, L., Dekoulou, E., & Orphanidou, Y. (2020). Connecting Cruise Lines with Local Supply Chains for Enhancing Customer Experience: A Platform Application in Greece. In E. G. Nathanail, G. Adamos, & I. Karakikes (Eds.), *Advances in Mobility-as-a-Service Systems, CSUM2020* (Part of the Advances in Intelligent Systems and Computing Book Series) (Vol. 1278, pp. 1086–1096). Springer. https://doi.org/10.1007/978-3-030-61075-3_104
- Thrassou, A. (2007). Doing Business in the Industrialised Countries (Chapter 13). In M. Katsioloudes & S. Hadjidakis (Eds.), *International Business – A Global Perspective*. Butterworth-Heinemann.
- Thrassou, A., & Vrontis, D. (2009). A New Consumer Relationship Model: The Marketing Communications Application. *Journal of Promotion Management*, 15(4), 499–521.

- Thrassou, A., Vrontis, D., & Bresciani, S. (2014). Strategic Reflexivity in the Hotel Industry—A Value-Based Analysis. *World Review of Entrepreneurship, Management and Sustainable Development*, 10(1–2), 352–371.
- Tijan, E., Agatić, A., Jović, M., & Aksentijević, S. (2019). Maritime National Single Window – A Prerequisite for Sustainable Seaport Business. *MDPI Sustainability*, 11(17), 1–21.
- Ullah, I., Ahmad, S., Mehmood, F., & Kim, D. (2019). Cloud Based IoT Network Virtualization for Supporting Dynamic Connectivity among Connected Devices. *MDPI Electronics*, 8(7) Retrieved November 11, 2020, from <https://www.mdpi.com/2079-9292/8/7/742/htm>
- Vrontis, D., & Thrassou, A. (2007). A New Conceptual Framework for a Business-Consumer Relationship. *Marketing Intelligence and Planning*, 25(7), 789–806.
- Vrontis, D., Thrassou, A., Chebbi, H., & Yahiaoui, D. (2012). Transcending Innovativeness Towards Strategic Reflexivity. *Qualitative Market Research*, 15(4), 420–437. <https://doi.org/10.1108/13522751211257097>
- World Customs Organization. (2018). *Going Beyond the National Single Window*. Retrieved November 17, 2020, from <https://mag.wcoomd.org/magazine/wco-news-87/going-beyond-the-single-window/>



6

Adoption of Artificial Intelligence Integrated Customer Relationship Management in Organizations for Sustainability

Sheshadri Chatterjee and Ranjan Chaudhuri

6.1 Introduction

Customer Relationship Management (CRM) is considered a strategic initiative for a business organization. It helps an organization in inducing and retaining the right customers. CRM is perceived to help an organization ensure long-term profitability (Heide et al., 2007; Tamilmani et al., 2020). The CRM system involves in analyzing huge volume of data of customers that includes knowing the habits of the customers. It also requires knowing the daily needs of the customers (Raghunathan, 1999;

S. Chatterjee

Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India

R. Chaudhuri (✉)

Department of Marketing, National Institute of Industrial Engineering (NITIE), Mumbai, Maharashtra, India

e-mail: ranjan@nitie.ac.in

Sreenivasulu & Chatterjee, 2019). CRM plays a part to make the organization customer centric. Obviously, to achieve these, huge volume of data of customers is needed to be stored and to be accurately analyzed. However, the work of collection of such huge volume of customers' data and their accurate analysis is very difficult for humans, and in such perspective, it is necessary to take help of technology (Rana et al., 2021; San-Martina et al., 2016). This situation is addressed by the grace of Artificial Intelligence (AI). From a study, it has been learnt that by the assistance of AI in CRM known as AI integrated Customer Relationship Management (CRM), it will be possible to develop global business revenue by \$1.1 trillion from 2017 to 2021 (Gantz et al., 2017; Rana et al., 2020; Nguyen & Chatterjee, 2021). The AI integrated CRM system will be able to store customers' data in a cloud platform. This will help for quick and accurate analysis of these data in a cost-effective way without any constraint (Misra et al., 2020; Nguyen et al., 2019; Wen & Chen, 2010). This hybrid process (AI and CRM) would provide the organizations for achieving sustainability in terms of accurate, consistent, and automated decision-making (Maxwell et al., 2011; Kizgin et al., 2019; Kar & Chatterjee, 2020).

In this context, it will be worth explaining the meaning of CRM. Scholars have defined CRM in various ways in the context of their studies. CRM has been defined as "an integration of technologies and business processes used to satisfy the needs of a customer during any given interaction" (Bose, 2002, p. 89). CRM has also been defined as "a term for methodologies, technologies, e-commerce capabilities used by firms to manage customer relationships. CRM software packages facilitates the interaction between the customer and the company, enabling the company to consolidate all of the communication efforts so that the customer is presented with unified message and image" (Jobber & Lancaster, 2006, p. 357). AI is expected to improve CRM in many ways (Bradlow et al., 2017). AI can collect data effectively, process the collected data meaningfully, realize Natural Language associated with several business processes, realize the behavioral pattern of customers, and assess risk factors harmful for the organizations in the context of business growth (Kar & Chatterjee, 2019). This hybrid system will help the organizations to provide protection of customers' and partners' data from various security- and privacy-related issues (Chatterjee et al., 2019). The

AI-CRM should be developed based on appropriate AI algorithm which protects the customers' and partners' data.

6.2 AI-CRM Solution and Sustainability

As already stated, for achieving success, organizations need to handle various data of customers and partners. This data is huge in volume. Manually, it is difficult to manage such huge volume of data especially because of security and privacy vulnerabilities. When such data are used manually, there is possibility of misuse of personal data of customers and partners endangering their security and privacy. But if the huge volume of data is analyzed by AI integrated CRM system using appropriate AI algorithms, it will help the organizations to overcome such crisis of misuse of data of customers and partners. If the organizations use AI-CRM solution, customers and partners would feel secure and would not hesitate to share their data with the organizations.

Moreover, the application of appropriate AI algorithm in CRM system helps the organizations for accurate and consistent decision-making redefining their practices and processes. The accurate and consistent decision-making by AI integrated CRM system helps the organizations toward sustainability in terms of appropriate use of customers' and partners' data. It also helps for proper recommendations toward accurate, quick, and consistent decision-making. This automated, consistent, and accurate decision-making helps organizations to overcome errors in manual decision-making. The following model (Fig. 6.1) will show the process of sustainability by AI-CRM solution.

6.3 Different Characteristics of CRM for Sustainable Solution

To ensure customer satisfaction, it is necessary for successful functioning of CRM (Zeng et al., 2003). Organizations are needed to ensure quick and instantaneous response regarding the needs of the customers and

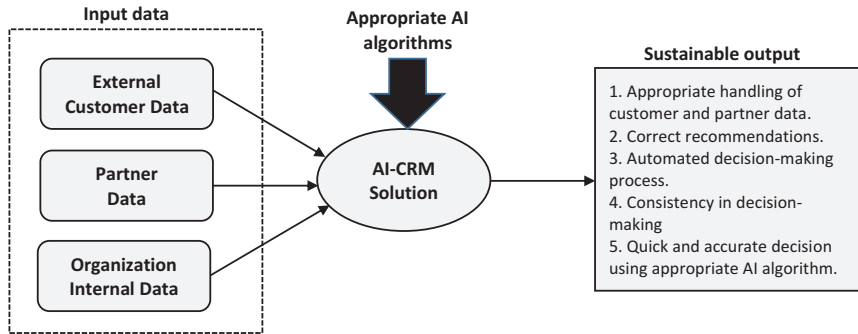


Fig. 6.1 Model for AI-CRM solution toward sustainability

CRM is effective for this purpose. CRM system is supposed to have appropriate abilities for providing accurate information to the prospective customers that would help the organization to ensure sales in future (Gupta et al., 2018a). CRM system helps to ensure accurate analysis of the history of purchase by the customers. It will help the organizations to synthesize future purchasing behavior of the customers. Customers are needed to be provided with customized service by the organizations (Gupta et al., 2017; Kar & Chatterjee, 2018a). Moreover, by the help of CRM, organizations are scheduled to be able to address the needs of the customers in a calibrated way (Chaudhuri & Chatterjee, 2010; Chaudhuri, Chatterjee, & Ghosh, 2020a). To ensure this, flexibility of the organization is essential so that the organizations in no time can meet the customer needs as soon as the needs are available (Kar & Chatterjee, 2018b; Samiee et al., 2015). By the CRM system, each contact with the potential customer is to be logged. By the help of CRM, the collected data is to be meaningfully arranged (Gupta et al., 2018b). The system efficiency is required to be improved concerning the marketing process with the help of automated sale process. Practically, by the help of advanced technology, the principal aim of CRM is to target the potential customers for establishing a soothing relationship with the customers through CRM technique (Öberg, 2014). In this way, the organizations are benefitted by using CRM for sustainable solution. Table 6.1 shows different CRM solution and their key functionalities.

Table 6.1 CRM solution and their key features

CRM solution	Company	Key functionalities/features
HubSpot CRM	HubSpot	Lead analytics, Gmail/Outlook integration
Salesforce CRM	Salesforce	Vertical industry offering, IoT support
Insightly	Insightly	Automated lead capture, relationship mapping
Dynamics 365	Microsoft	Talent management, project service automation
Pipedrive	Pipedrive	Visual interface, activity reminders
NetSuite CRM	Oracle	Real-time analytics, automatic incentive management
Oracle CRM	Oracle	Single instance sign-in, smooth legacy integration
Sell	Zendesk	Lead prioritization, intuitive user interface
Sugar CRM	SugarCRM	Customization, curated view, multilingual, multicurrency
Zoho CRM	Zoho Corp.	Customizable, predictive analytics
Bpm'online CRM	Bpmonline	Integrated analytics, collaboration tool

6.4 Migration to Electronic CRM for Better Sustainability

Electronic CRM, that is, e-CRM is associated with all the CRM activities which include internet and extranet. This technique takes the help of ICT for effectively managing the relationship with the customers' essential for organizations' business growth and for better sustainability. By e-CRM it is possible to integrate the several types of internal resources of the organizations with the external business strategies of the organizations (Chatterjee, Chaudhuri, & Vrontis, 2020a). It helps to understand the needs of the customers. Interorganizational collaborative activities are improved by the help of e-CRM techniques. The cooperative activities augmented by e-CRM help the organizations to communicate with the customers in an effective way. E-CRM process is deemed to be more appropriate as well as effective for getting closer with the customers in comparison to traditional CRM process (Homburg et al., 2009). For ensuring effective contact with customers, e-CRM uses internet, email, and PDA technologies. E-CRM emphasizes on front office activities for system interface. In the e-CRM system, the process of relationship with

the potential customers appears to be cheaper in comparison with the legacy system (Hunt et al., 2006). E-CRM possesses several success factors. Customer-oriented developments are strategized by the help of e-CRM in a meaningful way. Management system can be redesigned with the help of e-CRM that would help to understand the customers in a more exhaustive and efficient way (Chaudhuri, Chatterjee, Vrontis, et al., 2020b; Dohan & Chatterjee, 2021; Wieseke et al., 2014). There are different attributes of e-CRM. Some of the attributes of e-CRM are explained in brief. Loyalty of customers is increased by e-CRM (Plakoyiannaki & Tzokas, 2002; Chatterjee, 2018). By the help of e-CRM, customers can use different channels like voice portals, emails, WAP, IVR, and so on (Chatterjee, Chaudhuri, Vrontis, Thrassou, et al., 2020b; Fletcher, 2003). E-CRM possesses such an attribute that helps to understand the customer behavior in a better way and can support the customer with personalized services (Reinartz et al., 2004). E-CRM can help the organizations to be more responsive toward the queries of the customers regarding product- or service-related issues helping the organizations for better sustainability. It also saves time (Hunt et al., 2006).

6.5 AI Algorithms in CRM to Overcome Crisis Situations in Organizations

In business organizations, in the context of applications of AI in CRM activities, the part played by data as well as AI algorithm is considered vital. In this context, it is necessary to effectively create actionable and true AI in terms of data and AI algorithm. For this, it is necessary to have smarter models of data, uninterrupted accessibility of huge volume of virtual data and cheap but powerful availability of cloud computing system (Alshare & Lane, 2011). In this perspective, it has been noted that majority of CRM applications in business organization have already started using AI algorithms and embedded AI-related features in the CRM applications. “Dynamics 365 for customer insights” is an ideal example in this context. This can meaningfully undertake predictive analytics of the several kinds of data of the customers in an accurate and

quicker way. Basing on the collected data, it has been able to establish a robust and effective relationship in a successful way and has been able for providing actionable matrices (Bhattacharya & Chatterjee, 2020). If the meaningful and appropriate data of customers befitting for a particular purpose are provided to the AI integrated CRM system, it would surely be able to fetch best results (Awasthi & Sangle, 2012; Ghosh et al., 2019).

Thus, it must be made sure that updated, latest, purely clean, as well as actionable data have been administered into the AI integrated CRM system (Bhattacharjee et al., 2020). Then, it can be expected that AI algorithm will help to quickly and accurately analyze those data to predict everything necessary to improve businesses of the organization (Alshibly, 2015; Chatterjee et al., 2021; Ghosh et al., 2020). Analysis of customers' and partners' data by the organizations might invite some challenges regarding security and privacy vulnerabilities. This crisis issue can be addressed by appropriate application of AI integrated CRM system. Then the customers and partners would not hesitate to share their data. In this conjecture, it is to note that in a study (Chatterjee, 2019), a framework has been proposed to ascertain if the organization is ready to use AI integrated CRM system for fetching effective and meaningful output which would help the managers of the organizations to take appropriate decision on a real-time basis.

6.6 Sustainable Solution of AI Integrated CRM System

CRM has achieved increasing adoption and use toward automated system concerning intimate interactions between the potential customers and the organizations (Bitner et al., 2000). Automatic responses may be considered as examples of adoption of automated CRM (Chatterjee, 2019; Dysart, 1999). Again, owing to introduction of AI applications, the interaction process between the organizations and customers has become more complicated as well as sophisticated (Van Doorn et al., 2017). By the integration of AI in CRM, the relationship between customers and the organizations is expected to be considerably improved

through automated process since AI can sometimes function in a better way than humans (Boden, 1977; Kumar et al., 2016). AI is seemed to have improved several CRM functionalities. Some of the functionalities are mentioned here.

- For protection of personal and confidential data of customers and partners, use of appropriate AI algorithm with existing CRM system would provide sustainable solution (Chatterjee, 2019).
- For business growth and for lead generation, integration of AI with CRM will be helpful (Verma & Verma, 2013).
- Sales cycle of an organization will be accelerated by the assistance of AI integrated CRM system (San-Martína et al., 2016).
- AI integrated CRM system will derive effective campaigning and brand recognition (Galvão et al., 2018).
- The customers will be effectively supported toward issues of problem-solving in a faster way by the applications of AI integrated CRM system (Jesús Juan et al., 2017).
- Accurate price optimization can be ensured with the help of AI integrated CRM system (Davenport, 2018).
- Automated fraud-detection mechanism will be improved to help the organizations from sustaining loss by the help of AI integrated CRM system (Huang & Rust, 2018).
- By the help of AI integrated CRM system, the organizations will be benefited toward better optimization of distribution logistics and supply chain (Gantz et al., 2017).
- Cost of support for sales will be reduced because of applications of AI integrated CRM system in the organization (Chatterjee et al., 2019).
- Applications of AI integrated CRM system have been able to efficiently manage Human Resource Management that would reduce the cost and time toward process of recruitment of employees (Hopkinson et al., 2018).
- AI integrated CRM system will help to accurately predict the behavioral patterns of the customers which, in turn, eventually would benefit the organizations (Huang & Rust, 2018).

6.7 Adoption of AI-CRM for Sustainability and Related Theories

Adoption of AI integrated CRM system may be considered as adoption of a new technology in organizations. The adoption of AI integrated CRM system will help the organizations for achieving better sustainability for their growth. Besides, this application (AI-CRM) will help organizations to overcome various crisis situations as already stated. There are several adoption theories and models having multifarious specialties (Venkatesh et al., 2003). Different adoption models and theories deal with issues of adoption through different angles. In one type, use and intention are construed as dependent variables (Compeau & Higgins, 1995). There is another type of models or theories that nurture satisfaction as well as benefits experienced by the users in adopting a technology (De Lone & Mc Lean, 1992, 2003). It has already been discussed that AI integrated CRM system brings several benefits to the organizations compared to those derived by legacy CRM system. This leads the organizations for attempting to adopt AI integrated CRM system in the organizations. In this context, discussions on different theories and models relating to adoption of new technology are perceived to be relevant.

Theory of Reasoned Action (TRA)

This theory principally nurtures about the human behavior. This theory principally discusses prediction of behavioral intention of the users. The core constructs of this theory are attitude and subjective norm. This theory has been enunciated by Ajzen and Fishbein (1980).

Technology Acceptance Model (TAM)

This model is widely used as an adoption model for any new technology. This model has successfully interpreted the adoption behavior of the users to adopt and use computers. This model has two core constructs

which are perceived usefulness and perceived ease of use. This model has been developed by Davis (1989).

Theory of Planned Behavior (TPB)

This theory is considered as an extension of TRA. The additional construct is perceived behavioral control. Hence, the core constructs of TPB are attitude, subjective norm, and perceived behavioral control. This theory has found its applications for understanding individual usage and various technology acceptance. This theory has been introduced by Ajzen (1991).

Decomposed Theory of Planned Behavior (DTPB)

This theory is considered as an alternative form of TPB. As per this theory, it has decomposed the belief traits of TPB. The decomposition is expected to help for understanding the model more clearly. The core constructs of DTPB are attitude, perceived behavioral control, subjective norm, perceived usefulness, perceived ease of use, resource facilitating condition, technology facilitating condition, compatibility, and self-efficacy. This theory has been introduced by Taylor and Todd (1995).

Social Cognitive Theory (SCT)

It has been introduced by Compeau and Higgins (1995). This theory is deemed to be most popular and strong theory for explaining human behavior. Its core constructs are anxiety, affection, self-efficacy, output expectancy (professional), and output expectancy (personal).

Innovation Diffusion Theory (IDT)

It is considered as a most popular theory for explaining the adoption issue of users for a new technology. This theory has been developed by

Moore and Benbasat (1991). It has the core constructs like voluntariness of use, visibility, image, result demonstrability, ease of use, observability, compatibility, trialability, complexity, and relative advantage.

Extended Theory of Acceptance Model (TAM2)

This model is an extension of TAM. It has been introduced by Moore and Benbasat (1991), Rogers (1995), and Venkatesh and Davis (2000). Its core constructs are subjective norm, result demonstrability, job relevance, perceived ease of use, and perceived usefulness.

Unified Theory of Acceptance and Use of Technology (UTAUT)

This theory is extensively used in technology acceptance. It has been introduced by Venkatesh et al. (2003). Its core constructs are facilitating conditions, social influence, effort expectancy, and performance expectancy. This theory has also considered four moderators which are gender, age, experience, and voluntariness.

Unified Model of Electronic Government Adoption (UMEGA)

The UTAUT model has been validated by some scholars in the context of electronic government. In this scenario, UMEGA model has been introduced by Dwivedi et al. (2017) with the core constructs as attitude, perceived risk, behavioral intention, effort expectancy, performance expectancy, facilitating conditions, and social influence.

Table 6.2 shows a summary of different adoption-related theories with authors which could be used by practitioners and researchers to study AI-CRM adoption by the organizations.

Table 6.2 Different (CRM adoption) adoption-related theories and model

Sources (authors)	Theory/model	Core constructs
Ajzen and Fishbein (1980)	Theory of Reasoned Action (TRA)	The core constructs of this theory are attitude and subjective norm
Davis (1989)	Technology Acceptance Model (TAM)	This model has two core constructs which are perceived usefulness and perceived ease of use
Ajzen (1991)	Theory of Planned Behavior (TPB)	The core constructs of TPB are attitude, subjective norm, and perceived behavioral control
Taylor and Todd (1995)	Decomposed Theory of Planned Behavior (DTPB)	The core constructs of DTPB are attitude, perceived behavioral control, subjective norm, perceived usefulness, perceived ease of use, resource facilitating condition, technology facilitating condition, compatibility, and self-efficacy
Social Cognitive Theory (SCT)	Compeau and Higgins (1995)	Its core constructs are anxiety, affection, self-efficacy, output expectancy (professional), and output expectancy (personal)
Innovation Diffusion Theory (IDT)	Moore and Benbasat (1991)	It has the core constructs like voluntariness of use, visibility, image, result demonstrability, ease of use, observability, compatibility, trialability, complexity, and relative advantage
Extended theory of acceptance model (TAM2)	Moore and Benbasat (1991), Rogers (1995), and Venkatesh and Davis (2000)	Its core constructs are subjective norm, result demonstrability, job relevance, perceived ease of use, and perceived usefulness
Unified Theory of Acceptance and Use of Technology (UTAUT)	Venkatesh et al. (2003)	This theory has also considered four moderators which are gender, age, experience, and voluntariness
Unified Model of Electronic Government Adoption (UMEGA)	Dwivedi et al. (2017)	This theory uses core constructs such as attitude, perceived risk, behavioral intention, effort expectancy, performance expectancy, facilitating conditions, and social influence

6.8 Conclusion

Due discussions have been made in this chapter describing the features, functionalities, and adoption of AI integrated CRM system in the organizations. In the study, it is seen that the employees in the organizations can act on a real-time basis based on the intelligent inputs and recommendations from the AI integrated CRM system. This would also help the organizations to achieve higher growth, profitability, as well as better sustainability. Detail discussions have been done on how AI integrated CRM system will help the organizations for accurate, consistent, and automated decision-making to ensure better sustainability to the organizations. It also supports the organizations to overcome many crisis situations which include providing due measures for protection of data of customers and partners inducing them to unhesitatingly share their data to the organizations. The appropriateness of the input data to the AI system is essential. Without appropriate input data, the system will provide inappropriate output. So even the most advanced AI algorithms integrated with the CRM system cannot provide accurate output with the inappropriate input data. Here it is expected that the business organization is supposed to possess appropriate expertise to mine, capture, and synthesize data to predict exact consumer behavior with the help of AI integrated CRM system. An effective CRM platform integrated with AI technology will help the organization to understand the consumer behavior, attitude toward a certain product or service, and so on. The organizations could formulate appropriate strategies depending on the intelligence inputs from the AI integrated CRM system. The AI-CRM system could help the organization to take proper decision regarding any new product launch, modification of existing products, new customer services, and in other areas. Mere collection of multifarious data of customers will not ensure any effective contribution to the business activities of the organization because there is a need of proper segmentation of data. Thus, before using the AI-CRM tool, the designer and developer need to ensure that appropriate set of data is fed to the AI integrated CRM system so that the system provides appropriate output which could be used for segmentation of customers based on which the marketing managers can

take appropriate actions on the real-time basis. Thus, it is important to note that technology development department in the organization should possess high level of expertise for curation of data as well as making the data fit for using as input data of AI integrated CRM system. To improve the expertise of the technology development department of the organization, there is a need of extensive training to be imparted to the employees working in the technology development department in the organization.

It is a fact that business organizations are supposed to depend on AI integrated CRM system for meeting their business needs. And for that, they would capture various kinds of customers' data including their personal data. However, in this context, while using personal data of customers for different kinds of analysis, issues of security and privacy of the customers' data may cause issues (Sahu & Gupta, 2007). In analyzing customer data by AI integrated CRM system, the customers are needed to be satisfied that their data will not be misused. If the organization can ensure that their customer data will not be misused, then the customers will not hesitate to disclose and share their personal and other kinds of data to the organization (Hone & Eloff, 2002; Solms & Solms, 2004). Thus, from the above discussions, it is seen that if the customer data is used in a secured manner without compromising the privacy of the customers, the customers will unhesitatingly share their data to the organization. And in this way, the organization can use those data as input data to the AI integrated CRM system which would ultimately help the organizations to develop the business strategy and would derive better business growth.

References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior Englewood Cliffs*. Prentice-Hall.
- Alshare, K. A., & Lane, P. L. (2011). Predicting Student-Perceived Learning Outcomes and Satisfaction in ERP Courses: An Empirical Investigation. *Communications of the Association for Information Systems*, 28(1), 571–584.

- Alshibly, H. H. (2015). Customer Perceived Value in Social Commerce: An Exploration of Its Antecedents and Consequences. *Journal of Management Research*, 7(1), 17–37.
- Awasthi, P., & Sangle, P. S. (2012). Adoption of CRM Technology in Multichannel Environment: A Review (2006–2010). *Business Process Management Journal*, 18(3), 445–471.
- Bhattacharjee, K., Chatterjee, S., Nguyen, B., Ghosh, S. K., & Chaudhuri, S. (2020). Adoption of Artificial Intelligence Integrated CRM System: An Empirical Study of Indian Organizations. *The Bottom Line*, 33(4), 359–375. <https://doi.org/10.1108/BL-08-2020-0057>. ISSN: 0888-045X
- Bhattacharya, K., & Chatterjee, S. (2020). Adoption of Artificial Intelligence in Higher Education: A Quantitative Analysis Using Structural Equation Modelling. *Education and Information Technologies*, 25, 3443–3463. <https://doi.org/10.1007/s10639-020-10159-7>
- Bitner, M. J., Brown, S. W., & Meuter, M. L. (2000). Technology Infusion in Service Encounters. *Journal of the Academy of Marketing Science*, 28(1), 138–149.
- Boden, M. A. (1977). *Artificial Intelligence and Natural Man*. Basic Books.
- Bose, R. (2002). Customer Relationships Management: Key Components for IT Success. *Industrial Management & Data Systems*, 102(2), 89–97.
- Bradlow, E. T., Gangwar, M., Kopalle, P., & Voleti, S. (2017). The Role of Big Data and Predictive Analytics in Retailing. *Journal of Retailing*, 93(1), 79–95.
- Chatterjee, S. (2018). Internet of Things and Social Platforms: An Empirical Analysis from Indian Consumer Behavioral Perspective. *Journal of Behavior & Information Technology*, 39(2), 133–149.
- Chatterjee, S. (2019). Is Data Privacy a Fundamental Right in India? An Analysis and Recommendations from Policy and Legal Perspective. *International Journal of Law and Management*, 61(1), 170–190.
- Chatterjee, S., Ghosh, S., Chaudhuri, R., & Nguyen, B. (2019). Are CRM Systems Ready for AI Integration? A Conceptual Framework of Organizational Readiness for Effective AI-CRM Integration. *The Bottom Line*, 32(2), 144–157.
- Chatterjee, S., Chaudhuri, R., & Vrontis, A. (2020a). Does Data-Driven Culture Impact Innovation and Performance of a Firm? An Empirical Examination. *Annals of Operational Research*, Early cite. <https://doi.org/10.1007/s10479-020-03887-z>
- Chatterjee, S., Chaudhuri, R., Vrontis, D., Thrassou, A., Ghosh, S. K., & Chaudhuri, S. (2020b). Social Customer Relationship Management Factors and Business Benefits. *International Journal of Organizational Analysis*, ISSN: 1934-8835. 29(1), 35–58. <https://doi.org/10.1108/IJOA-11-2019-1933>

- Chatterjee, S., Chaudhuri, R., Vrontis, D., & Piccolo, R. (2021). Enterprise Social Network for Knowledge Sharing in MNCs: Examining the Role of Knowledge Contributors and Knowledge Seekers for Cross-Country Collaboration. *Journal of International Management*, 27(1), Article No. 100827.
- Chaudhuri, R., & Chatterjee, S. (2010). A System Theoretic Analysis of IT/IS Outsourcing: A Case Based Approach. *Journal of Modeling and Simulation of Systems*, 1(2), 131–143.
- Chaudhuri, R., Chatterjee, S., & Ghosh, S. K. (2020a). Knowledge Management in Improving Business Process: An Interpretative Framework for Successful Implementation of AI–CRM–KM System in Organizations. *Business Process Management Journal*, 26(6), 1261–1281.
- Chaudhuri, R., Chatterjee, S., Vrontis, D., Thrassou, A., & Ghosh, S. (2020b). ICT-Enabled CRM System Adoption: A Dual Indian Qualitative Case Study and Conceptual Framework Development. *Journal of Asia Business Studies*, 15(2), 257–277. <https://doi.org/10.1108/JABS-05-2020-0198>
- Compeau, D. R., & Higgins, C. A. (1995). Application of Social Cognitive Theory to Training for Computer Skills. *Information Systems Research*, 6(2), 118–143.
- Davenport, T. H. (2018). From Analytics to Artificial Intelligence. *Journal of Business Analytics*, 1(2), 73–80.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–339.
- De Lone, W. H., & Mc Lean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, 3(1), 60–95.
- De Lone, W. H., & Mc Lean, E. R. (2003). The De Lone and Mc Lean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*, 19(4), 9–30.
- Dohan, M., & Chatterjee, S. (2021). Artificial Intelligence for Healthcare in India: Policy Initiatives, Challenges & Recommendations. *International Journal of Healthcare Information Systems and Informatics*, 17(3), Article No. 3.
- Dwivedi, Y. K., Rana, N. P., Jansen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An Empirical Validation of a Unified Model of Electronic Government Adoption (UMEGA). *Government Information Quarterly*, 34(2), 211–230.
- Dysart, J. (1999). Email Marketing Grows Up: A Primer for the New Millennium. *Net Worker*, 3(4), 40–41.

- Fletcher, K. (2003). Consumer Power and Privacy: The Changing Nature of CRM. *International Journal of Advertising*, 22(2), 249–272.
- Galvão, M., de Carvalho, R., Oliveira, L., & Medeiros, D. (2018). Customer Loyalty Approach Based on CRM for SMEs. *Journal of Business & Industrial Marketing*, 33(5), 706–716.
- Gantz, J. E., Gerry, M., David, S., Dan, V., & Mary, W. (2017). *A Trillion-Dollar Boost: The Economic Impact of AI on Customer Relationship Management* (pp. 1–20). Sales Force Publication. Retrieved December 12, 2020, from https://www.salesforce.com/content/dam/web/en_us/www/documents/white-papers/the-economic-impact-of-ai.pdf
- Ghosh, S. K., Chatterjee, S., & Chaudhuri, R. (2019). Adoption of Ubiquitous Customer Relationship Management (uCRM) in Enterprise: Leadership Support and Technological Competence as Moderators. *Journal of Relationship Marketing*, 19(2), 75–92.
- Ghosh, S. K., Chatterjee, S., Ghosh, S. K., & Chaudhuri, S. (2020). Adoption of AI-Integrated CRM System by Indian Industry: From Security and Privacy Perspective. *Information and Computer Security*, In Press. <https://doi.org/10.1108/ICS-02-2019-0029>
- Gupta, M. P., Chatterjee, S., & Kar. (2017). Critical Success Factors to Establish 5G Network in Smart Cities: Inputs for Security and Privacy. *Journal of Global Information Management*, 25(2), 5–37.
- Gupta, M. P., Chatterjee, S., & Kar, A. K. (2018a). Success of IoT in Smart Cities of India: An Empirical Analysis. *Government Information Quarterly*, 35(3), 349–361.
- Gupta, M. P., Chatterjee, S., & Kar, A. K. (2018b). Alignment of IT Authority and Citizens of Proposed Smart Cities in India: System Security and Privacy Perspective. *Global Journal of Flexible Systems Management*, 19(1), 95–107.
- Heide, J. B., Wathne, K. H., & Rokkan, A. I. (2007). Interfirm Monitoring, Social Contracts, and Relationship Outcomes. *Journal of Marketing Research*, 44(3), 425–433.
- Homburg, C., Wieseke, J., & Hoyer, W. D. (2009). Social Identity and Service-Profit Chain. *Journal of Marketing*, 73(2), 38–54.
- Hone, K., & Eloff, J. H. P. (2002). Information Security Policy—What Do International Security Standards Say. *Computers & Security*, 21(5), 402–409.
- Hopkinson, P. J., Perez-Vega, R., & Singhal, A. (2018). Exploring the Use of AI to Manage Customers' Relationships. In *Conference: Academy of Marketing Workshop: Artificial Intelligence in Marketing – The Field, Research Directions, and Methodological Issues* (pp. 1–8).

- Huang, M.-H., & Rust, R. T. (2018). Artificial Intelligence in Service. *Journal of Service Research*, 21(2), 155–172.
- Hunt, S. D., Arnett, D. B., & Madhavaram, S. (2006). The Explanatory Foundations of Relationship Marketing Theory. *The Journal of Business & Industrial Marketing*, 21(2), 72.
- Jesús Juan, C.-F., Edgar Centeno, A. O., & Rosario, V.-C. (2017). Success Factors in a CRM Strategy: Technology Is Not All. *Journal of Strategic Marketing*, 25(4), 316–333.
- Jobber, D., & Lancaster, G. (2006). Business & Economics. *Financial Times & Prentice Hall*, 1–526.
- Kar, A. K., & Chatterjee, S. (2018a). Effects of Successful Adoption of Information Technology Enabled Services in Proposed Smart Cities of India: From User Experience Perspective. *Journal of Science and Technology Policy Management*, 9(2), 189–209.
- Kar, A. K., & Chatterjee, S. (2018b). Regulation and Governance of the Internet of Things in India. *Journal of Digital Policy, Regulation and Governance*, 20(5), 399–412.
- Kar, A. K., & Chatterjee, S. (2019). Securing IoT Devices in Smart Cities of India: From Ethical and Enterprise Information System Management Perspective. *Journal of Enterprise Information System*. <https://doi.org/10.1080/017517575.2019.1654617>
- Kar, A. K., & Chatterjee, S. A. K. (2020). Why Do Small and Medium Enterprises Use Social Media Marketing and What Is the Impact: Empirical Insights from India. *International Journal of Information Management*, 55. <https://doi.org/10.1016/j.ijinfomgt.2020.102103>
- Kizgin, H., Chatterjee, S., Kar, A. K., & Dwivedi, Y. K. (2019). Prevention of Cybercrimes in Smart Cities of India: From a Citizen's Perspective. *Information Technology & People*, 32(5), 1153–1183.
- Kumar, V., Dixit, A., Javalgi, R., & Dass, M. (2016). Research Framework, Strategies, and Applications of Intelligent Agent Technologies (IATs) in Marketing. *Journal of the Academy of Marketing Science*, 44(1), 24–45.
- Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business Angel Early-Stage Decision Making. *Journal of Business Venturing*, 26(2), 212–225.
- Misra, S., Chatterjee, S., & Majumdar, D. (2020). Adoption of Mobile Applications for Teaching-Learning Process in Rural Girls' Schools in India: An Empirical Study. *Education and Information Technologies*, 25, 4057–4076. <https://doi.org/10.1007/s10639-020-10168-6>. ISSN: 1360-2357
- Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192–222.

- Nguyen, B., & Chatterjee, S. (2021). Value Co-Creation and Social Media at Bottom of Pyramid (BOP). *The Bottom Line*, In Press. 34(2), 101–123. <https://doi.org/10.1108/BL-11-2020-0070>
- Nguyen, B., Chatterjee, S., Ghosh, S., & Chaudhuri, R. (2019). Are CRM Systems Ready for AI Integration? *The Bottom Line*, 32(2), 144–157.
- Öberg, C. (2014). Customer Relationship Challenges Following International Acquisitions. *International Marketing Review*, 31(3), 259–282.
- Plakoyiannaki, E., & Tzokas, N. (2002). Customer Relationship Management: A Capabilities Portfolio Perspective. *Journal of Database Marketing*, 9(3), 228–237.
- Raghunathan, S. (1999). Impact of Information Quality and Decision-Maker Quality on Decision Quality: A Theoretical Model and Simulation Analysis. *Decision Support Systems*, 26(4), 275–286.
- Rana, N. P., Chatterjee, S., & Dwivedi, Y. K. (2020). Social Media as a Tool of Knowledge Sharing in Academia: An Empirical Study Using Valence, Instrumentality, and Expectancy (VIE) Approach. *Journal of Knowledge Management*, 24(10), 2531–2552.
- Rana, N. P., Chatterjee, S., & Dwivedi, Y. K. (2021). Assessing Consumers' Co-Production and Future Participation on Value Co-Creation and Business Benefit: An F-P-C-B Model Perspective. *Information Systems Frontiers*, ISSN: 1572-9419. Early cite. <https://doi.org/10.1007/s10796-021-10104-0>
- Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). The Customer Relationship Management Process: Its Measurement and Impact on Performance. *Journal of Marketing Research*, 41(3), 293–305.
- Rogers, E. M. (1995). *Diffusion of Innovations* (4th ed.). The New York Free Press.
- Sahu, G., & Gupta, M. P. (2007). Users' Acceptance of e-Government: A Study of Indian Central Excise. *International Journal of Electronic Government Research*, 3(3), 1–21.
- Samiee, S., Chabowski, B. R., & Hult, G. T. M. (2015). International Relationship Marketing: Intellectual Foundations and Avenues for Further Research. *Journal of International Marketing*, 23(4), 1–21.
- San-Martina, S., Jiménez, N. H., & López-Catalán, B. (2016). The Firms Benefit of Mobile CRM from the Relationship Marketing Approach and the TOE Model. *Spanish Journal of Marketing – ESIC*, 20(1), 18–29.
- Solms, B. V., & Solms, V. R. (2004). The Ten Deadly Sins of Information Security Management. *Computers & Security*, 23(5), 371–376.
- Sreenivasulu, N. S., & Chatterjee, S. (2019). Personal Data Sharing and Legal Issues of Human Rights in the Era of Artificial Intelligence: Moderating Effect of Government Regulation. *International Journal of Electronic Government Research*, 15(3), 21–36.

- Tamilmani, K., Chatterjee, S., Rana, N. P., & Dwivedi, Y. K. (2020). Employees' Acceptance of AI Integrated CRM System: Development of a Conceptual Model. In S. K. Sharma, Y. K. Dwivedi, B. Metri, & N. P. Rana (Eds.), *Re-Imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation. TDIT 2020* (IFIP Advances in Information and Communication Technology) (Vol. 618). Springer. https://doi.org/10.1007/978-3-030-64861-9_59
- Taylor, S., & Todd, P. A. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6(2), 144–176.
- Van Doorn, J., Martin Mende, S., Noble, J. H., Ostrom, A., Grewal, D., & Petersen, A. (2017). Domo Arigato Mr. Roboto: Emergence of Automated Social Presence in Organizational Frontlines and Customers' Service Experiences. *Journal of Service Research*, 20(1), 43–58.
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 45(2), 186–204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478.
- Verma, D., & Verma, D. S. (2013). Managing Customer Relationships Through Mobile CRM in Organized Retail Outlets. *International Journal of Engineering Trends and Technology*, 4(5), 1696–1701.
- Wen, K.-W., & Chen, Y. (2010). E-Business Value Creation in Small and Medium Enterprises: A US Study Using the TOE Framework. *International Journal of Electronic Business*, 8(1), 80–100.
- Wieseke, J., Alavi, S., & Habel, J. (2014). Willing to Pay More, Eager to Pay Less: The Role of Customer Loyalty in Price Negotiations. *Journal of Marketing*, 78(6), 17–37.
- Zeng, Y., Wen, J., & Yen, D. (2003). Customer Relationship Management (CRM) in Business-to-Business (B2B) e Commerce. *Information Management & Computer Security*, 11(1), 39–44.



7

COVID Crisis and the Impact on Smart Tourism, Sustainable Development and Local Communities

Paula Rodrigues, Mónica Gómez-Suárez,
Ana Brochado, Mónica Veloso, Ana Pinto Borges,
and Álvaro Matias

7.1 Introduction

Smart tourism is an increasingly important concept that builds on smart city principles (Coca-Stefaniak, 2019). While the latter are oriented towards serving city residents' needs, the former concept mainly focuses on fulfilling visitors' requirements. However, smart cities and smart tourism share common goods and facilities and seek to increase residents and tourists' wellbeing. This symbiotic relationship between the two concepts is intrinsically connected to the benefits of sharing public goods and

P. Rodrigues (✉)

Faculty of Economics and Management, Universidade Lusíada—Norte, COMEGI (Research Centre in Organizations, Markets and Industrial Management), Lisboa, Portugal

BRU—IUL (Business Research Unit—Instituto Universitário de Lisboa), Porto, Portugal

services, as well as the need to avoid negative externalities that can arise from tourism activities.

Tourism's adverse effects are the result of various factors, especially massification and diversification trends (Matias, 2019). The first trend is related to the pressures excessive demand puts on destinations, which generate complaints from locals regarding, for example, noise, litter, property destruction and general congestion. The second tendency relates to the movement away from traditional sun, sea and sand (i.e. triple-S) products to other offers, for instance, short-term stays in cities. Tourist crowds affect densely populated areas, so some discomfort among locals is to be expected as they compete for the same vital spaces, services and amenities in urban environments. While this competition may occur in

M. Gómez-Suárez • M. Veloso

Department of Finance and Marketing Research, Economics and Business Faculty, Universidad Autónoma de Madrid, Madrid, Spain

e-mail: monica.gomez@uam.es; monica.veloso@uam.es

A. Brochado

Department of Marketing, Operations and Management, Economics and Management Faculty, ISCTE—Instituto Universitário Lisboa, Lisboa, Portugal

DINÂMIA'CET—IUL and BRU—IUL (Business Research Unit—Instituto Universitário de Lisboa), Lisboa, Portugal

e-mail: Ana.Brochado@iscte-iul.pt

A. P. Borges

ISAG—European Business School, Research Center in Business Sciences and Tourism (CICET), Porto, Portugal

COMEGI (Research Centre in Organizations, Markets and Industrial Management), Porto, Portugal

e-mail: anaborges@isag.pt

Á. Matias

Faculty of Economics and Management, Universidade Lusíada—Norte, COMEGI (Research Centre in Organizations, Markets and Industrial Management), Lisboa, Portugal

e-mail: amatias@bportugal.pt

less densely populated areas, the effects are mitigated by more plentiful space, and the benefits of tourists' spending in local businesses are more quickly visible.

Tourism can thus contribute to the general degradation of natural and local assets, which in turn lowers both residents and tourists' quality of life, but tourism and nature (i.e. the environment) can also coexist or develop a symbiosis (Budowski, 1976) depending on a variety of factors. In tourism contexts, market forces alone do not always produce the desired outcomes, so adequate and suitable policies and initiatives must be implemented to avoid the latent conflict between tourism and nature. This proactive approach includes promoting sustainable tourism, smart cities and smart tourism.

The problem with either positive or negative externalities is that they are often difficult to assess and manage given the numerous side effects associated with tourism—particularly non-economic impacts—as no strategies for making them marketable exist. To improve residents and tourists' welfare, cities must develop appropriate policies and initiatives to cope with negative externalities and benefit from positive impacts. This chapter's remaining sections will examine how policy-based initiatives need to be coordinated and integrated in order to build on smart city and smart tourism principles.

One of tourism authorities and policymakers' main roles is precisely to avoid or offset negative externalities' effects through regulations, licences, tax policies or cooperative solutions among private and public agents. More specifically, the uncertainty generated in the tourism industry by the coronavirus disease-19 (COVID-19) pandemic has created different obstacles and opportunities to varied players. This crisis changed tourism's direction when countries closed their borders and locked down their economies in the fight against COVID-19, triggering an unprecedented crisis in the travel and tourism industries.

The present study assessed the pandemic's impact on smart tourism, sustainable tourism development and local communities through an in-depth literature review. To this end, a tripartite but interconnected analysis was conducted to answer the following research questions:

- What impact has COVID-19 had on smart tourism?
- Will sustainable tourism be strengthened or threatened by the pandemic?
- What effects can COVID-19 be expected to have on local communities?

This chapter is thus structured as follows. The next section presents the literature review, providing an overview of past research on smart cities, sustainable tourism and local communities, as well as the most relevant empirical rankings and/or benchmarks. The third section is a brief note on the methodology applied. The fourth section presents and analyses the findings, discussing COVID-19's expected impacts on the three main concepts discussed in the literature review. The chapter ends with conclusions and recommendations.

7.2 Literature Review

Smart Tourism

Smart cities and smart tourism are closely related phenomena mainly because of shared foundational elements. Smart tourism grew out of the smart city concept (Coca-Stefaniak, 2019). As mentioned previously, one major difference between the two ideas is that smart cities serve their residents while smart tourism is mainly oriented towards visitors and/or tourists. Smart cities and smart tourism share infrastructure and facilities that provide solutions to both population segments. The literature has, however, explored these concepts separately, and the resulting knowledge has evolved into two separate subdivisions of 'smart' phenomena (Khan et al., 2017).

Researchers have considered the smart city concept from diverse points of view. The existing studies recently began to conceptualise smart cities as ecosystems that contain a network of complex, interdependent communities of interacting organisms and their environments (Gretzel, Werthner, et al., 2015c). Smart cities comprise interdependent resources that interact dynamically to provide solutions to local communities,

thereby improving the opportuneness and efficiency of the services that meet their needs.

Technological innovation's effects on tourism-related behaviours have created a new social phenomenon—smart tourism—through mobile information technologies (Hunter et al., 2015). Smart tourism can be defined as mobile information systems that use physical information infrastructure in tourism contexts to create new kinds of experiences for tourists. This tourism trend needs to be understood holistically as it combines technologies, systems and management practices (Gretzel, Werthner, et al., 2015c; Koo et al., 2016).

By engaging all stakeholders in dialogues about their interests and responsibilities, smart tourism provides discourse and platform that facilitate value co-creation (Boes et al., 2016; Mistilis et al., 2014). Smart tourism increases residents and destinations' shared vision and sustains smart destinations' competitive advantages (Femenia-Serra et al., 2019). This type of tourism can thus be implemented as a novel approach that creates new boundaries for tourism production and value co-creation. By expanding the convergence of governments, businesses, residents and visitors' interests, smart tourism can strengthen destinations' competitiveness (Boes et al., 2016).

Smart tourism can sometimes be mistakenly seen as an extension of e-tourism. However, this approach to tourism connects the digital and physical worlds before, during and after tourists travel to create additional value, whereas e-tourism affects these links only before and after tourists' trips (Gretzel, Werthner, et al., 2015c). Smart tourism generates value by combining destinations' ecosystem with technologies, infrastructure and businesses, so smart tourism and e-tourism are quite different (Gretzel, Sigala, et al., 2015b; Hunter et al., 2015).

This form of tourism has also attracted researchers' attention as an effective sustainable development tool within the tourism industry. Smart tourism ecosystems inherently place high priority on economic and environmental sustainability (Buhalis & Amaranggana, 2014; Gretzel, Sigala, et al., 2015b). Smart tourism destinations' top priorities can be analysed from a demand- or supply side perspective. These destinations seek to enhance tourists' travel experiences by providing intelligent platforms with which visitors can gather and distribute information from local

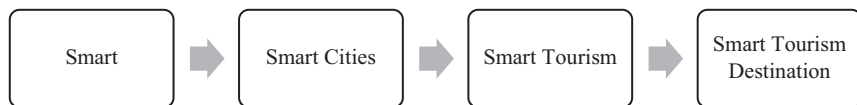


Fig. 7.1 Concept evolution

stakeholders and by facilitating an efficient and effective allocation of tourism resources. The smart tourism approach integrates tourism suppliers to ensure that tourism's benefits are equally distributed to visitors and local communities (Buhalis & Amaranggana, 2014; Nam & Pardo, 2011).

Creating smart destinations exploits the convergence between physical infrastructure and information and communications technology. This strategy also entails developing new business ecosystems based on new information infrastructure to increase efficiency, enhance experiences and, ultimately, strengthen sustainability in tourism (Gretzel, Koo, et al., 2015a). Smart tourism destinations are thus seen as a solution that meets tourists and locals' changing expectations and needs and implements holistic innovations that benefit all stakeholders in tourism ecosystems (Kulualp & Sari, 2020) (see Fig. 7.1).

Sustainable Tourism Development

The public health crisis provoked by COVID-19 has created a need for a 'fresh look' to be taken through sustainability analyses of tourism activities. Researchers must understand the pandemic's positive and negative impacts, taking into account its consequences for sustainability strategies. This crisis makes identifying tourism's positive economic, sociocultural and environmental effects during the COVID-19 pandemic critical as a way to minimise tourism's negative effects on destination cities. The remainder of this section first defines sustainable tourism development and the factors determining residents' attitudes towards tourism. The discussion then focuses on how this industry has been affected by the COVID-19 crisis.

The World Tourism Organization (2020) defines sustainable tourism development as 'tourism that takes full account of its current and future

economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities'. This United Nations (UN) agency recommends a suitable balance be found between the three types of impacts to guarantee tourism's long-term sustainability.

Promoting sustainable tourism involves paying attention to constructs such as support—or even empowerment—of sustainable tourism development, so destination managers first need to understand which factors are antecedents of residents' attitudes. Figure 7.2 summarises the sustainable tourism conceptual framework based on the three aforementioned dimensions and residents' attitudes. The literature offers diverse theoretical or empirical approaches to this topic, but these dimensions appear to be a stable element of all models.

Applying more generalised models of locals' attitudes to the specific context of sustainable tourism development helps to highlight the factors influencing local communities' support for expanding tourism. Multiple models and scales have been extensively studied by tourism researchers in the last decade (Hsu et al., 2020; Lee, 2013). More recent studies have been based on the sustainable tourism attitude scale (SUS-TAS), which is a multiple-item instrument developed by Choi and Sirakaya (2005,

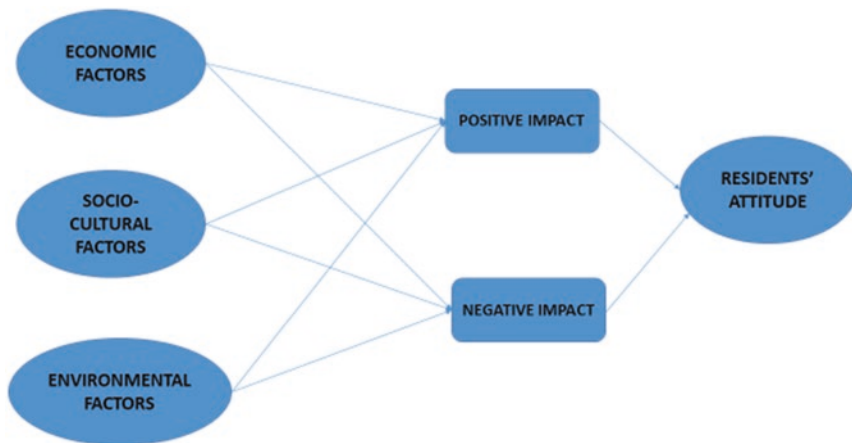


Fig. 7.2 Conceptual model of residents' attitudes towards sustainable tourism

2006) to measure residents' attitudes towards sustainable tourism development.

This scale considers not only community feelings towards sustainable tourism development but also existing paradigms such as social exchange and sustainability theories (Vong et al., 2020). One of the latest adaptations and refinements of the SUS-TAS scale can be seen in Hsu et al.'s (2020) work. The cited authors' scale includes economic (i.e. perceived economic benefits, long-term planning and community-centred economies), sociocultural (i.e. perceived social costs, community participation maximisation and visitor-friendly environments) and environmental (i.e. environmental sustainability) factors.

Sustainable tourism development is frequently mentioned as an important way to reduce poverty by increasing tourism's positive economic impacts on locals, as well as reducing environmental degradation and sociocultural disturbances (Budhiasa et al., 2016). Sustainability has been widely accepted in tourism as a way to mitigate the detrimental effects of mass tourism (Hsu et al., 2020) and 'overtourism', a term used to describe tourism's excessive negative impacts on host communities and/or natural environments (Gowreesunkar & Seraphin, 2019; Koens et al., 2019). Although these terms (i.e. mass tourism and overtourism) are different, both focus on some of the most important causal factors of non-sustainable tourism.

Local Communities

Tourism development in destinations generates both positive and negative impacts on the host community. Various authors have used social exchange theory to explain host communities' perceptions of and support for tourism development (Chen et al., 2020; Rasoolimanesh et al., 2015; Ribeiro et al., 2017). According to this theory, if residents are more aware of tourism's benefits rather than its costs, locals will be more predisposed to support tourism development (Pulina et al., 2013). While positive perceptions of impacts encourage residents to support tourism projects, locals' negative perceptions dissuade them from supporting them (Sharpley, 2014).

The existing literature classifies tourism's effects on residents as economic, environmental and sociocultural. Positive impacts include, among

others, job and infrastructure improvements, monument restorations, protection of natural and cultural heritage sites, residents' better quality of life and promotion and preservation of local culture. Negative effects encompass higher prices, dependency on the tourism industry, saturation of public and leisure infrastructure, traffic congestion, weakened cultural authenticity and/meaning and cultural conflicts between locals and tourists. Other negative impacts are an increased incidence of crime and the availability of drugs, among others (Almeida García et al., 2015; Rasoolimanesh & Jaafar, 2016; Rasoolimanesh et al., 2017).

Various studies (Cardoso, 2018; Chen et al., 2020; Rivera et al., 2016) have confirmed that residents directly perceive economic, cultural, social and environmental impacts on their lives, which influence their predisposition to support tourism development and sustainable tourism. However, attitudes towards and perceptions of this development are mediated by varied factors. These variables include sociodemographics, type of tourism (Pulina et al., 2013; Rasoolimanesh et al., 2015), distance to tourism attractions, frequent contact and/or dealings with tourists (Sharpley, 2014), communities' stage of tourism development (Kim et al., 2013), perceptions of tourists' behaviours regarding respect, tourist density and tourism's personal benefits (Vargas-Sanchez et al., 2011).

In addition, residents' attitudes towards tourism can be categorised as due to extrinsic or intrinsic factors. Extrinsic variables refer to destinations' characteristics such as the degree or stage of tourism development, the host area's level of economic activity, tourism and/or types of tourists' seasonality, density of tourists and/or tourism development and nationwide stage of development. Intrinsic factors comprise host community members' characteristics including the perceived balance between positive and negative impacts. If locals feel that development's benefits are greater than its costs (i.e. economic, environmental and sociocultural effects), residents are more disposed to support it. Other intrinsic variables are geographical proximity to concentrations of tourism activities or distance from tourism zones; rural, urban or coastal residential areas; economic and/or employment dependency on tourism; community attachment and length of residency. Personal values, social identity and/or status, level of contact with tourists and residents' sociodemographic characteristics can also be considered intrinsic factors (Ozturk et al., 2015; Pulina et al., 2013; Sharpley, 2014).

Some authors (Blasco-López et al., 2018, 2020; Lee, 2013) use community involvement to describe the degree of locals' participation in destinations' tourism development. Increased involvement allows residents to gain greater control over and knowledge about the initiatives developed, as well as a more direct perception of tourism's personal benefits, which can increase locals' support for tourism (Almeida García et al., 2015). A better understanding of benefits not only increases backing for tourism but also has a positive impact on residents' subjective wellbeing. Kim et al. (2013) also confirmed that locals perceive economic, environmental, cultural and social effects and acknowledge that each of them has an impact on residents' wellbeing. Mathew and Sreejesh (2017) further concluded that locals' overall quality of life derives from destinations' sustainability and responsible tourism initiatives.

The literature on tourism perceptions reveals that most opinions of tourism and related crises centre around two different perspectives: risk perception at an individual level (i.e. the demand side) and crisis management at a collective level (i.e. the supply side). Researchers have also observed a lack of studies focused on local perceptions of tourism that consider the risks associated with tourism (Qiu et al., 2020).

Smart and Sustainable Tourism and Smart City Rankings and Benchmarks

Different rankings, benchmarking and indexes have been developed over time to evaluate cities according to how smart and sustainable their tourism is (for an in-depth review, see Sáez et al., 2020). These rankings offer city leaders, local authorities and policymakers valuable tools that support urban development policy design at a strategic and tactical level. During the initial phases of the COVID-19 pandemic, public and private institutions released the results of some rankings.

The Instituto de Estudos Sociais e Económicos (IESE) Cities in Motion Index (IESE, 2020), for example, ranks 174 cities worldwide based on 101 indicators classified into nine main dimensions. These are governance, economy, social cohesion, human capital, international projection, technology, urban planning, environment and mobility and

transport. The top five smart cities in 2020 are located on three different continents: London, New York, Paris, Tokyo and Reykjavík.

The Institute for Management Development-Singapore University for Technology and Design's (IMD-SUTD) Smart City Index (IMD-SUTD, 2020), in turn, rates 109 cities worldwide based on residents' perceptions. Two pillars are considered—structures (i.e. cities' existing infrastructure) and technology (i.e. the available technological provisions and services)—over five key areas (i.e. health and safety, mobility, activities, opportunities and governance). According to their residents, the top five 2020 smart cities are Singapore, Helsinki, Zurich, Auckland and Oslo.

The World's Best Cities for 2021 (Resonance, 2020) also assessed cities' performance by combining quantitative indicators with qualitative evaluations by residents and visitors in six core dimensions: places, people, programmes, products, prosperity and promotion. The 2020 edition included new indicators related to the pandemic. The 2021 best cities are London, New York, Paris, Moscow and Tokyo.

At a regional level, the European Capital of Smart Tourism (2020) ranking recognises the importance of four areas—accessibility, sustainability, digitalisation and cultural heritage and creativity—and describes the winners based on a case study approach. The two 2020 European Capitals of Smart Tourism are Gothenburg and Malaga. In addition, the latest data gathered for the UN's Sustainable Development Goals (SDG) Index (Lafortune et al., 2019) revealed that no European city has yet fully achieved the UN's SDGs. The city with the best overall performance across the 17 SDGs (i.e. Oslo) has achieved 74.8% in terms of implementing appropriate ways to achieve the UN's targets. More specifically, the best city with reference to SDG 11—sustainable cities and communities—(i.e. Berlin) was found to be, on average, 76.7% of the way to achieving the relevant targets.

7.3 Methodology

The present research was based on an in-depth literature review focused on three main aspects of the COVID-19 pandemic's impacts on smart tourism, sustainable tourism and local communities. This kind of study

can be described as a more or less systematic way to collect and synthesise previous research (Snyder, 2019; Tranfield et al., 2003). The current study collected secondary data using desk research to identify recent findings related to the COVID-19 pandemic that specifically include all three concepts under analysis: smart tourism, sustainable tourism and local communities.

7.4 Analysis of Findings

COVID-19 Crisis in Smart Tourism

The recent pandemic crisis has had numerous, lasting adverse effects on the tourism industry worldwide. Concurrently, COVID-19 has increased the competitive advantages generated by smart tourism infrastructure that can provide relevant health and smart services. When the pandemic began, individuals, organisations and countries turned to technology to enable societies to keep functioning (Gretzel et al., 2020). The tourism industry has been, however, one of the most strongly affected activities due to the current level of globalisation and this industry's widely acknowledged fragility regarding tourist movements (Gossling et al., 2020).

During the pandemic's initial phases, an enormous amount of mobile data were collected on a vast number of users' calls and behaviours on social media platforms, with special attention paid to the need for privacy and data protection. Technology had been used previously to connect isolated individuals and employees and to replace physical interactions (Tešić et al., 2020). In tourism, various innovative examples exist of smartphone mobile applications that track people and their contacts. In addition, tourism marketers have resorted to new virtual solutions to satisfy individuals' desire to travel, such as virtual museum tours and virtual reality concerts (Chandler, 2020; Zeng et al., 2020).

Tourism information services and travel planning assistants appear to be strongly influenced by hopes regarding post-pandemic environments. As more people avoid closed places, outdoor activities will increase. This

trend could accelerate the digital transformation of services or facilitate the development of new digital solution applications (Stankov & Filimonau, 2019). In this context, a new term, 'non-contact tourism', has emerged in destinations more consistently aligned with the smart city approach (El-Assasy, 2020).

Advanced smart city and smart tourism depend strongly on spatial components as most services offered are location-oriented from both a user and services provider perspective. Since smart tourism destinations are associated with situations that optimise interactions between technologies and physical environments (Liberato et al., 2018), these destinations need to improve real-time information and information access and encourage greater context awareness and real-time monitoring (Buhalis & Amaranggana, 2014). These enhancements could increase smart tourism destinations' competitiveness (Lin, 2017).

COVID-19 Crisis in Sustainable Tourism Development

Sustainability in the tourism industry was already a high priority for both scholars and tourism stakeholders before COVID-19 appeared (Jones & Comfort, 2020). However, the pandemic crisis has generated new concerns and opportunities related to applying sustainable tourism development measures and practices (Santos-Roldán et al., 2020). While tourism researchers recognise the devastation caused by the pandemic, many look to the COVID-19 crisis as a potential catalyst for essential transformations (Higgins-Desbiolles, 2020).

Different issues should be examined to ensure accurate predictions about the COVID-19 crisis's short- and long-term effects on sustainable tourism development in cities. First, from an economic point of view, governments (i.e. national, regional or local), companies, local businesses or other national companies that depend on tourism are focusing on preserving the economic systems present prior to the pandemic. Thus, companies need to plan how to invest their financial resources in sustainability practices to keep their operations alive through financial support (i.e. loans and grants) and public and private investment. In addition, legislation should be favourable to the interests of businesses that depend

on tourism and that do not harm entire ecosystems' long-term sustainability. Sustainability behaviours in the tourism industry are also strongly driven by internal stakeholders' consent and best tourism practices. If companies head off in opposite directions, this lack of coherence could start a vicious cycle of weakened efforts to increase sustainability (Zenker & Kock, 2020).

Second, the external shock generated by the COVID-19 crisis has more strongly hit southern EU economies that rely too heavily on the tourism industry, such as Italy, Spain and Portugal. Many national companies and local businesses are closing or are planning to give up in the near future if they do not receive government help. A promising line of research centres around the concept of resilience—a characteristic increasingly recognised as important for tourism destinations' long-term sustainable development. Resilience can help managers focus on more positive aspects of the situations created by pandemic crisis. The gaps and empty spaces left in the market by exiting companies could further represent market entry opportunities that will allow new innovative business models to develop (Ioannides & Gyimóthy, 2020).

Third, the overall reduction of greenhouse gases emissions (Muley et al., 2020) is helping to promote more sustainable tourism in the short term and changes in final consumers' (i.e. tourists) vision. However, these individuals also expect a recession after the pervasive health crisis passes and thus unfavourable economic conditions, so tourists will likely look for the lowest prices rather than the most sustainable options. Post-crisis consumers will also probably choose to travel to destinations closer to their place of residence. Given people's growing insecurity and uncertainty, nearby destinations could be considered less risky by many potential tourists who have been noticeably affected by the economic crisis triggered by the health crisis and who have seen their purchasing power reduced (Romagosa, 2020). In the long term, tourists might, nonetheless, see the pandemic as a reason to engage in more sustainable behaviours as well.

Before the COVID-19 crisis, scholars questioned themselves regarding how to reframe the overtourism phenomenon within the wider conceptual framework of urban development analysis and the rethinking of tourism models (Pasquinelli & Trunfio, 2020). Before the pandemic,

inhabitants from varied cities complained about mass tourism, but Western countries' cities that relied heavily on tourism before 2020 are now empty. Policymakers, local businesses that did not directly depend on tourism activities and city-centre residents are thus experiencing a deep economic and social crisis. The pandemic's effects have helped locals to understand that large numbers of tourists are not necessarily a negative phenomenon unless visitors 'over-exploit' cities' resources.

Last, the COVID-19 pandemic may subconsciously reshape both tourists and residents' behaviours in important ways that future tourism research needs to examine (Zenker & Kock, 2020). Locals may become less welcoming of incoming tourists and less supportive of tourism development (Muley et al., 2020). The pandemic may, therefore, give rise to in-group and/or out-group biases among residents and tourists—a phenomenon that is still under-researched (Chien & Ritchie, 2018; Zenker & Kock, 2020).

COVID-19 Crisis in Local Communities

Societies currently dealing with COVID-19 consider it to be a natural disaster associated with restrictions that have generated sociopolitical and/or human-made situations heading towards general economic and more specific tourism-demand crises (Ritchie & Jiang, 2019). The COVID-19 incidence has been different in each country. Some countries such as Italy, Spain, the United States or parts of China—especially at the pandemic's beginning—have experienced extremely high rates of infection. These trends have had a negative impact on their image as tourism destinations, including perceptions of local health infrastructure, safety or other COVID-19-impaired facilities. These more exposed countries are in an adverse situation as they will have to find ways to attract tourists again. The citizens of those nations with more vulnerable conditions or those more concerned about the pandemic's further development will be less motivated to travel to the harder hit destinations. However, the latter may be able to take advantage of tourists who seek to provide financial support to less favourable destinations (Zenker & Kock, 2020).

Because of the pandemic, guest-host relationships have been abruptly interrupted. This situation will have a prolonged negative effect on these relationships because of greater mistrust of tourists within host communities. In addition, negative emotions have been generated in visitors' minds towards specific destinations, and travellers may lack a willingness to interact with host communities. These effects could cause guest-host relationships to deteriorate so that residents could become less welcoming of incoming tourists and less supportive of tourism development, thereby weakening destinations' image. If tourists have bad experiences, these could generate negative emotions, a sense of dissatisfaction and disappointment, which probably will result in negative word of mouth and have an adverse impact on intentions to revisit these locations (Kour et al., 2020; Zenker & Kock, 2020).

Qiu et al. (2020) report that residents are willing to endure the consequences of reducing tourism's negative impacts on their communities during the COVID-19 pandemic. More specifically, the cited study's results suggest that, in general, locals are willing to suffer financial losses to reduce tourism's social costs. Young residents were especially willing to pay more for risk reduction than older people probably because younger locals are more digitally connected, which gives them access up-to-date information about the pandemic crisis.

The changes brought about by the COVID-19 disaster have redirected tourism towards meeting host communities' needs. At first, this shift was a survival strategy, but it could become, in the long term, a resilience strategy (Lapointe, 2020).

7.5 Conclusions and Recommendations

This chapter presented an in-depth systematic literature review focused on answering three research questions. Regarding the first research question (i.e. What impact has COVID-19 had on smart tourism?), the results reveal that, although the pandemic crisis has strongly affected the tourism industry, the crisis has also generated other responses to overcome the multiple adversities produced by the pandemic. Researchers expect that COVID-19 will boost the digital transformation of tourism

(e.g. planners' use of big data), which will contribute to promoting the smart tourism approach based on personalised and 'non-contact' travel solutions (e.g. outdoor activities and virtual tours). Even as the COVID-19 crisis exposed the fragilities of tourism-dependent economies, it also underlined the importance of developing integrated policies that seek to promote smart cities and destinations.

Concerning the second research question (i.e. Will sustainable tourism be strengthened or threatened by the pandemic?), the findings include short- and long-term positive and negative economic, environmental and sociocultural effects. In the short term, the external shock on economies generated by the pandemic has had a negative impact on the likelihood that many tourism companies will survive. However, in the long term, the shock also may represent opportunities in varied markets for developing new, more environmentally friendly business models. In terms of sociocultural impacts, the literature review showed that the pandemic will reshape residents' attitudes towards tourists and tourism.

Regarding the third research question (i.e. What effects can COVID-19 be expected to have on local communities?), the pandemic crisis has also provided opportunities to policy planners and locals to update their attitudes towards tourism. The crisis has demonstrated that, while negative externalities are always likely to arise from tourism activities, sustainable tourism's positive effects often largely overshadow these problems. In addition, the authorities have at their disposal various tax instruments to compensate for tourism's potential negative impacts.

Although more time needs to pass before lessons can be learned from the COVID-19 pandemic's effects on cities worldwide, smart tourism destinations should be able to withstand the most harmful effects and take advantage of future opportunities to improve. The present findings contribute to the existing literature by offering in-depth insights into COVID-19's expected impacts on smart cities, smart tourism and local communities. These complex issues must be addressed by travel and tourism organisations, event planners, destination marketers and smart tourism leaders. Future research could focus on measuring the three types of impacts, especially how city rankings, benchmarking and indexes change in post-COVID tourism industry.

References

- Almeida García, F., Balbuena Vázquez, A., & Cortés Macías, R. (2015). Resident's Attitudes Towards the Impacts of Tourism. *Tourism Management Perspectives*, 13, 33–40. <https://doi.org/10.1016/j.tmp.2014.11.002>
- Blasco-López, F., Virto, N. R., Aldas Manzano, J., & García-Madariaga Miranda, J. (2018). Residents' Attitude as Determinant of Tourism Sustainability: The Case of Trujillo. *Journal of Hospitality and Tourism Management*, 35, 36–45. <https://doi.org/10.1016/j.jhtm.2018.02.002>
- Blasco-López, F., Virto, N. R., & Figueiredo, J. (2020). Determinants of Residents' Word-of-Mouth Behaviour and Support for Tourism. *Administrative Sciences*, 10(51), 1–14.
- Boes, K., Buhalis, D., & Inversini, A. (2016). Smart Tourism Destinations: Ecosystems for Tourism Destination Competitiveness. *International Journal of Tourism Cities*, 2(2), 108–124.
- Budhiasa, S., Kencana, E. N., & Darmayanti, T. (2016). Local Communities as an Agent for Sustainable Tourism at Northern Bali Province Indonesia. *International Journal of Economic, Commerce and Management*, 4(10), 115–127.
- Budowski, G. (1976). Tourism and Environmental Conservation: Conflict, Coexistence, or Symbiosis? *Environmental Conservation*, 3(1), 27–31.
- Buhalis, D., & Amaranggana, A. (2014). Smart Tourism Destinations. In J. Neidhardt & W. Wörndl (Eds.), *Information and Communication Technologies in Tourism* (pp. 553–564). Springer.
- Cardoso, C. S. M. (2018). Residents' Perceptions and Attitudes towards Future Tourism Development. *Worldwide Hospitality and Tourism Themes*, 10(6), 688–697. <https://doi.org/10.1108/WHAT-07-2018-0048>
- Chandler, S. (2020, May 5). Virtual Reality Concert in Helsinki Attracts over 1 Million Spectators. *Forbes*. <https://www.forbes.com/sites/simonchandler/2020/05/05/virtual-reality-concert-in-helsinki-attracts-over-1-million-spectators/#621fcdf61281>
- Chen, Y., Cottam, E., & Lin, Z. (2020). The Effect of Resident-Tourist Value Co-creation on Residents' Well-Being. *Journal of Hospitality and Tourism Management*, 44(May), 30–37. <https://doi.org/10.1016/j.jhtm.2020.05.009>
- Chien, M. P., & Ritchie, B. W. (2018). Understanding Intergroup Conflicts in Tourism. *Annals of Tourism Research*, 72, 177–179. <https://doi.org/10.1016/j.annals.2018.03.004>
- Choi, H. S. C., & Sirakaya, E. (2005). Measuring Residents' Attitude toward Sustainable Tourism: Development of Sustainable Tourism Attitude Scale. *Journal of Travel Research*, 43(4), 380–394.

- Choi, H. S. C., & Sirakaya, E. (2006). Sustainability Indicators for Managing Community Tourism. *Tourism Management*, 27(6), 1274–1289.
- Coca-Stefaniak, J. A. (2019). Marketing Smart Tourism Cities—A Strategic Dilemma. *International Journal of Tourism Cities*, 5(4), 513–518.
- El-Assasy, A. (2020). How Does Korea Response to COVID-19? *Sada El Balad*. <https://see.news/how-does-korea-response-to-covid-19-sada-elbadalad-englis/>
- European Capital of Smart Tourism. (2020). *Compendium of Best Practices '2019 & 2020 European Capital of Smart Tourism Competitions'* [PDF File]. https://smartrtourismcapital.eu/wp-content/uploads/2020/03/Compendium_2020_FINAL.pdf
- Femenia-Serra, F., Perles-Ribes, J. F., & Ivars-Baidal, J. A. (2019). Smart Destinations and Tech-Savvy Millennial Tourists: Hype versus Reality. *Tourism Review*, 74(1), 63–81.
- Gossling, S., Scott, D., & Hall, C. M. (2020). Pandemics, Tourism and Global Change: A Rapid Assessment of COVID-19. *Journal of Sustainable Tourism*, 27 April, 1–20.
- Gowreesunkar, V., & Seraphin, H. (2019). Conclusion: Local Communities' Quality of Life: What Strategy to Address Overtourism? *Worldwide Hospitality and Tourism Themes*, 11(5), 627–633.
- Gretzel, U., Koo, C., Sigala, M., & Xiang, Z. (2015a). Special Issue on Smart Tourism: Convergence of Information Technologies, Experiences, and Theories. *Electronic Markets*, 25, 175–177.
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015b). Smart Tourism: Foundations and Developments. *Electronic Markets*, 25, 179–188.
- Gretzel, U., Werthner, H., Koo, C., & Lamsfus, C. (2015c). Conceptual Foundations for Understanding Smart Tourism Ecosystems. *Computers in Human Behavior*, 50, 558–563.
- Gretzel, U., Fuchs, M., Baggio, R., Hoepken, W., Law, R., Neidhardt, J., Pesonen, J., Zanker, M., & Xiang, Z. (2020). E-tourism beyond COVID-19: A Call for Transformative Research. *Information Technology and Tourism*, 22(2), 187–203.
- Higgins-Desbiolles, F. (2020). The 'War over Tourism': Challenges to Sustainable Tourism in the Tourism Academy after COVID-19. *Journal of Sustainable Tourism*, 0(0), 1–19.
- Hsu, C. Y., Chen, M. Y., Nyaupane, G. P., & Lin, S. H. (2020). Measuring Sustainable Tourism Attitude Scale (SUS-TAS) in an Eastern Island Context. *Tourism Management Perspectives*, 33(December), 100617.

- Hunter, W. C., Chung, N., Gretzel, U., & Koo, C. (2015). Constructivist Research in Smart Tourism. *Asia Pacific Journal of Information System*, 25, 105–120.
- Institute for Management Development-Singapore University for Technology and Design (IMD-SUTD). (2020). *IMD-SUTD Smart City Index Report* [PDF File]. https://www.imd.org/globalassets/wcc/docs/smart_city/smartcityindex_2020.pdf
- Instituto de Estudos Sociais e Económicos (IESE). (2020). IESE Cities in Motion Index 2020. <https://doi.org/10.15581/018.ST-542>
- Ioannides, D., & Gyimóthy, S. (2020). The COVID-19 Crisis as an Opportunity for Escaping the Unsustainable Global Tourism Path. *Tourism Geographies*, 22(3), 624–632.
- Jones, B. P., & Comfort, D. (2020). The COVID-19 Crisis. *Tourism and Sustainable Development*, 7(2), 75–86.
- Khan, M., Woo, M., Nam, K., & Chatoth, P. (2017). Smart City and Smart Tourism: A Case of Dubai. *Sustainability*, 9(12), 2279.
- Kim, K., Uysal, M., & Sirgy, M. J. (2013). How Does Tourism in a Community Impact The Quality of Life of Community Residents? *Tourism Management*, 36(36), 527–540.
- Koens, K., Melissen, F., Mayer, I., & Aall, C. (2019). The Smart City Hospitality Framework: Creating a Foundation for Collaborative Reflections on Overtourism that Support Destination Design. *Journal of Destination Marketing and Management*, August, 100376. <https://doi.org/10.1016/j.jdmm.2019.100376>
- Koo, C., Yoo, K.-H., Lee, J.-N., & Zanker, M. (2016). Special Section on Generative Smart Tourism Systems and Management: Man-Machine Interaction. *International Journal of Information Management*, 6, 1301–1305.
- Kour, P., Jasrotia, A., & Gupta, S. (2020). COVID-19: A Pandemic to Tourism Guest-host Relationship in India. *International Journal of Tourism Cities*, October. <https://doi.org/10.1108/IJTC-06-2020-0131>
- Kulualp, H., & Sari, Ö. (2020). Smart Tourism, Smart Cities, and Smart Destinations as Knowledge Management Tools. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology* (pp. 371–390). IGI-Global Editor.
- Lafortune, G., Zoeteman, K., Fuller, G., Mulder, R., Dagevos, J., & Schmidt-Traub, G. (2019). *The 2019 SDG Index and Dashboards Report for European Cities (Prototype Version)*. Sustainable Development Solutions Network (SDSN) and the Brabant Center for Sustainable Development (Telos). https://s3.amazonaws.com/sustainabledevelopment.report/2019/2019_sdg_index_euro_cities.pdf (18)

- Lapointe, D. (2020). Reconnecting Tourism after COVID-19: The Paradox of Alterity in Tourism Areas. *Tourism Geographies*, 22(3), 633–638.
- Lee, T. H. (2013). Influence Analysis of Community Resident Support for Sustainable Tourism Development. *Tourism Management*, 34, 37–46.
- Liberato, P. M., Alen-Gonzalez, E., & Liberato, D. F. (2018). Digital Technology in a Smart Tourist Destination: The Case of Porto. *Journal of Urban Technology*, 25(1), 75–97.
- Lin, S. W. (2017). Identifying the Critical Success Factors and an Optimal Solution for Mobile Technology Adoption in Travel Agencies. *International Journal of Tourism Research*, 19(2), 127–144.
- Mathew, P. V., & Sreejesh, S. (2017). Impact of Responsible Tourism on Destination Sustainability and Quality of Life of Community in Tourism Destinations. *Journal of Hospitality and Tourism Management*, 31, 83–89.
- Matias, A. (2019). On the Economic Value of Tourism: A Pragmatic Reflection. *Revista Economia & Empresa*, 26, 13–29.
- Mistilis, N., Buhalis, D., & Gretzel, U. (2014). E-destination Marketing of the Future: The Perspective of an Australian Tourism Stakeholder Network. *Journal Travel Research*, 53, 1–13.
- Muley, D., Shahin, M., Dias, C., & Abdullah, M. (2020). Role of Transport during Outbreak of Infectious Diseases: Evidence from the Past. *Sustainability*, 12(18), 1–22.
- Nam, T., & Pardo, T. A. (2011). Conceptualizing Smart Cities with Dimensions of Technology, People, and Institutions. In J. Bertot (Ed.), *Proceedings of the 12th Annual International Conference on Digital Government Research* (pp. 282–291). Association for Computing Machinery.
- Ozturk, A. B., Ozer, O., & Çaliskan, U. (2015). The Relationship between Local Residents' Perceptions of Tourism and their Happiness: A Case of Kusadasi, Turkey. *Tourism Review*, 70(3), 232–242. <https://doi.org/10.1108/TR-09-2014-0053>
- Pasquinnelli, C., & Trunfio, M. (2020). Reframing Urban Overtourism through the Smart-City Lens. *Cities*, 102(August 2019). <https://doi.org/10.1016/j.cities.2020.102729>
- Pulina, M., Meleddu, M., & Del Chiappa, G. (2013). Residents' Choice Probability and Tourism Development. *Tourism Management Perspectives*, 5, 57–67.
- Qiu, R. T. R., Park, J., Li, S. N., & Song, H. (2020). Social Costs of Tourism during the COVID-19 Pandemic. *Annals of Tourism Research*, 84(April), 102994.

- Rasoolimanesh, S. M., & Jaafar, M. (2016). Residents' Perception toward Tourism Development: A Pre-development Perspective. *Journal of Place Management and Development*, 9(1), 91–104.
- Rasoolimanesh, S. M., Jaafar, M., Kock, N., & Ramayah, T. (2015). A Revised Framework of Social Exchange Theory to Investigate the Factors Influencing Residents' Perceptions. *Tourism Management Perspectives*, 16, 335–345.
- Rasoolimanesh, S. M., Jaafar, M., & Barghi, R. (2017). Effects of Motivation, Knowledge and Perceived Power on Residents' Perceptions: Application of Weber's Theory in World Heritage Site Destinations. *International Journal of Tourism Research*, 19(1), 68–79.
- Resonance. (2020). World's Best Cities 2021. A Ranking of Global Place Equity. Best Cities. <https://www.bestcities.org/reports/2021-worlds-best-cities/>
- Ribeiro, M., Silva, A., Alector, M., Pinto, P., & Woosnam, K. M. (2017). Residents' Attitudes and the Adoption of Pro-tourism Behaviours: The Case of Developing Island Countries. *Tourism Management Journal*, 61, 523–537.
- Ritchie, B. W., & Jiang, Y. (2019). A Review of Research on Tourism Risk, Crisis and Disaster Management: Launching the Annals of Tourism Research Curated Collection on Tourism Risk, Crisis and Disaster Management. *Annals of Tourism Research*, 79(November), 102812.
- Rivera, M., Croes, R., & Lee, S. H. (2016). Tourism Development and Happiness: A Residents' Perspective. *Journal of Destination Marketing and Management*, 5(1), 5–15.
- Romagosa, F. (2020). The COVID-19 Crisis: Opportunities for Sustainable and Proximity Tourism. *Tourism Geographies*, 22(3), 690–694.
- Sáez, L., Heras-Saizarbitoria, I., & Rodríguez-Núñez, E. (2020). Sustainable City Rankings, Benchmarking and Indexes: Looking into the Black Box. *Sustainable Cities and Society*, 53, 101938.
- Santos-Roldán, L., Canalejo, A. M. C., Berbel-Pineda, J. M., & Palacios-Florencio, B. (2020). Sustainable Tourism as a Source of Healthy Tourism. *International Journal of Environmental Research and Public Health*, 17(15), 1–15.
- Sharpley, R. (2014). Host Perceptions of Tourism: A Review of the Research. *Tourism Management*, 42, 37–49. <https://doi.org/10.1016/j.tourman.2013.10.007>
- Snyder, H. (2019). Literature Review as a Research Methodology: An Overview and Guidelines. *Journal of Business Research*, 104, 333–339.
- Stankov, U., & Filimonau, V. (2019). Reviving Calm Technology in the e-Tourism Context. *Service Industries Journal*, 39(5–6), 343–360.

- Tešić, D., Blagojević, D., & Lukić, A. (2020). Bringing 'Smart' into Cities to Fight Pandemics: With Reference to the COVID-19. *Zbornik Radova Departmana Za Geografiju, Turizam i Hotelijerstvo*, 49(1), 99–112.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14, 207–222.
- Vargas-Sanchez, A., Porras-Bueno, N., & Plaza-Mejía, M. de los Á. (2011). Explaining Residents' Attitudes to Tourism: Is a Universal Model Possible? *Annals of Tourism Research*, 38(2), 460–480.
- Vong, M., Pinto, P., & Silva, J. A. (2020). Different Type of Residents, Different Types of Attitudes? The Case of Tourism Development in East Timor. In P. Pinto & M. Guerreiro (Eds.), *Handbook of Research on Resident and Tourist Perspectives on Travel Destinations* (pp. 166–190). IGI Global.
- World Tourism Organization. (2020). *Sustainable Development*. UNWTO. <https://www.unwto.org/sustainable-development>
- Zeng, Z., Chen, P.-J., & Lew, A. A. (2020). From High-Touch to High-Tech: COVID-19 Drives Robotics Adoption. *Tourism Geographies*, 22, 724–734.
- Zenker, S., & Kock, F. (2020). The Coronavirus Pandemic—A Critical Discussion of a Tourism Research Agenda. *Tourism Management*, 81(April), 104164. <https://doi.org/10.1016/j.tourman.2020.104164>



8

Russian Economy in Risk Zone: The Most Affected Industries (Regional Analysis Case Study)

Anna S. Zotova, Aleksandra A. Chudaeva,
and Irina A. Svetkina

8.1 Introduction

Over the past 50 years, the key to economic growth has been globalisation resulting in certain global- and country-level economic relations created as part of this process. However, the uncertainty of global development is growing, as the process of fragmentation has been prevailing in the world for a number of years. Geopolitical uncertainty, populism, nationalism and protectionism have already negatively affected the economy. As a rule, macro- and micro-economic uncertainty is a negative factor that should be considered when developing forecasts of socio-economic development.

In January 2020, the Ministry of economic development of the Russian Federation predicted economic growth of 1.9%, in 2021–3.1% (Economy without virus, 2020).

A. S. Zotova (✉) • A. A. Chudaeva • I. A. Svetkina
Samara, Russian Federation

At the end of March 2020, the authorities of the International Monetary Fund (IMF) officially announced a reduction in the global economy and the beginning of a recession (Hedrick-Wong, 2020). The main cause was identified as the COVID-19 coronavirus pandemic, which has spread to all five continents where humanity lives. For the first time in recent history, an unprecedented situation has emerged when a deadly disease has influenced greatly on global economic and financial systems. Almost all countries and markets are now feeling the negative effects of the coronavirus pandemic.

In the expert community, there is a very widespread, and to a certain extent—justified—belief that the coronavirus pandemic and the accompanying economic crisis are largely a test of specific states and their leadership's ability to mobilise, and quickly mobilise in conditions of increased risk and uncertainty (Hammer & Hallegatte, 2020; Oliver, 2020).

The first signs of the beginning of the coronavirus epidemic appeared in Russia at the end of January 2020, and a month later, Russians were dragged into self-isolation mode. The majority of the population had to learn completely unusual practices of everyday life.

At present, the Russian Federation is in a multi-faceted crisis. It includes medical, economic, social, political, cultural and moral crises. It was especially difficult for small- and medium-sized businesses. The sectors with the largest presence (transportation, physical culture and sports, tourism and hospitality, consumer services, public catering, healthcare, etc.) were hit harder by the restrictions imposed due to COVID-19 (Economy without virus, 2020).

“The negative changes in the current socio-economic situation caused by the COVID-19 pandemic will not be overcome quickly, the consequences will be visible over a long period of time, and all institutions will be put to the test. In this situation, it is especially important to rely not only on instant (quick) solutions aimed at ensuring current socio-economic stability, but also to go beyond meeting urgent needs and set up long-term policies for a vigorous and sustainable economic recovery in the regions of the Russian Federation” (High School of Economics, 2020).

Thus, the research is based on crisis diagnostics and crisis management theory (Argenti, 2020; Coombs & Holladay, 2001) and some regional analysis practices (Hoover, 1971; Isard, 1954; Richardson, 1973). The

purpose of the research is to make analysis of SMEs operating in the most affected industries and to focus on the problems, which has been superimposed by the pandemic crisis. Some of these problems the industries have already been grappling with for years and the research tries to give an auxiliary tool for the development of strategic decisions on the use of hidden reserves and new opportunities. The structure of the chapter includes literature review, the description of methodological approaches used in the research, then the main findings of the research are presented and some conclusion is done in the end of the chapter.

8.2 Literature Review

Some basic crisis management systems such as situational crisis communication management (Coombs & Holladay, 2001) or image restoration theory (Benoit, 1997) were applied to the research. Coombs and Holladay suggest that the company should react to the crisis according to the society attitude to it and such an approach might be essential in the case of COVID-19 crisis. Also, recently some current researches concerning the results of pandemic situation in various regions of the world appeared (Argenti, 2020; Hammer & Hallegatte, 2020; Hedrick-Wong, 2020). Although the general aspects of regional analysis were developed several decades ago (Hoover, 1971; Isard, 1954; Richardson, 1973) such issues as regional growth and the factors that influence it are still under concern of regional policymakers and regional authorities. Currently the policy of regional authorities is considered to be the key factor of regional economic development.

8.3 Methodology

The authors used such research methods as analysis, synthesis, description and comparison. Their application is determined by the theoretical nature of the study, which included the following stages: formulation of the problem, analysis of information on this topic, comparison and description of different scientific views on the studied issues, synthesis of different approaches to the problem.

8.4 Analysis of Findings

Regional Analysis of Socio-economic Situation (Based on Samara Region Data Analysis) for COVID-Economy Period

The coronavirus pandemic has had an uneven impact on the Russian Federation's economy. During the crisis, all regions of the Russian Federation were under attack. The situation in the regions is different. Note that the regions have quite different spending policies in Russia as well as in many other states of the world and neighbourhood countries (Zhidebekkyz et al., 2020).

Throughout the Russian Federation, regional budgets were formed in conditions of favourable economic development. However, after the situation changed for known reasons, it became necessary to adjust expenses, protecting the most important items.

The donor regions have a field for changes, because of the existing surpluses; they will be able to give up some projects painlessly. However, most of the Russian Federation's constituent entities exist thanks to subsidies. The fall in profits and the suspension of small business activities hit regional budgets hard.

The structure of their economies, the severity of quarantine restrictions and the level of self-isolation of the population determine the situation in the regions of Russia. The main anti-crisis measures were taken by the government, which has significant budgetary resources (OPORA ROSSII, 2020; SMARTEKA, 2020). Priority budget expenditures and protected items include, for example, salaries, social support measures, employment and mandatory health insurance for non-working residents of the region, fulfilment of obligations in the road and transport sectors. In addition, funding for national projects, as well as for those activities that receive funds from the Federal budget, has been maintained. At the same time, most public procurements that were not related to the implementation of anti-crisis measures were cancelled or postponed to a later date.

Regions have their own capabilities and resources. Some of them have adopted and are still implementing their own programmes to support

small- and medium-sized businesses, healthcare and the population. Among the business support measures introduced by regional Executive authorities, the following categories are distinguished:

- tax benefits;
- benefits for renting regional and municipal property;
 - credit support;
- direct financial support for businesses;
 - support for employment;
- reducing the control and supervision burden.

In 2020, the socio-economic situation in the Samara region is developing under the influence of a worsening situation in Russia as a whole because of the epidemiological situation associated with the spread of a new coronavirus infection. Restrictive measures introduced to combat the epidemic such as self-isolation, social distancing, the maximum transition to remote work and training, the termination or restriction of the work of enterprises and organisations, a long period of non-working days from late March to mid-May 2020 caused a deterrent effect on the development of the region's economy. Regional economic activity decreased both in the basic industries and in the service sector. The most affected sectors were those focused on the provision of services in the field of air transportation, tourism, hotel business, catering, culture, leisure and entertainment, physical education and sports, consumer services, retail trade in non-food products, and the media (High School of Economics, 2020; Samara Government, 2020).

An additional negative factor was a significant reduction in oil prices due to the decision to terminate the agreements on limiting production within OPEC + in March. The renewal of the agreements between the OPEC + countries from May made it possible to stabilise the situation on the oil market (Hedrick-Wong, 2020). By the end of May, the price for Urals crude oil exceeded the level of US \$30 per barrel. The decline in oil prices led to a significant weakening of the national currency plus to an unstable situation in the international financial markets.

Under these conditions, in January–May 2020, industrial production in the processing complex, in the field of water supply and sanitation, organisation of waste collection and disposal in the Samara region decreased. At the same time, there was an increase in production in the extractive sector and energy. The indicators of the development of the transport sector moved into the negative zone, the decrease in foreign trade turnover continued. In conditions of a high level of uncertainty, the general economic uncertainty of investors increased, which, in turn, led to a decrease in the volume of investments in fixed assets (High School of Economics, 2020; Samara Government, 2020).

At the same time, against the background of a low base last year, there was a significant growth in the construction sector, and the volume of housing construction is growing. The positive dynamics in agriculture continued.

The decline in business activity led to a decrease in real incomes of the population, which limited effective demand. At the same time, an increase in real wages was noted. The retail trade turnover decreased, primarily due to the fall in the segment of non-food products, including sales of new cars. A particularly significant decrease was noted in the sphere of consumer services, associated with restrictions on activities in the field of leisure, culture and sports, as well as personal services (High School of Economics, 2020; Samara Government, 2020).

The number of unemployed is growing, but the level of general unemployment is still below the national and regional average values.

The most significant reduction in production volumes was noted in the automotive industry, the aerospace sector, the production of petroleum products, water supply, wastewater disposal, waste collection and disposal, activities to eliminate pollution and the production of electrical equipment. At the same time, the production of chemical products, food products and beverages, metallurgy, mining, production of medicines and materials used for medical purposes, machinery and equipment is growing at a steady pace since the beginning of the year.

The decline in the type of economic activity “Production of motor vehicles, trailers and semi-trailers” had the greatest impact on the decline in the industrial production index of 62.5%. The negative dynamics in the industry is due to a decrease in the volume of production of cars in

JSC AVTOVAZ due to a sales drop in the Russian car market (Samara Government, 2020).

For five months of 2020, 104,576 LADA vehicles were sold on the Russian market, which is 22% less than the same period in 2019 (in May 2020, a 46% decrease compared to May 2019). After a high level of sales in March 2020, in April due to the situation around COVID-19, dealerships in the country were forced to suspend or significantly limit their activities. The Russian auto industry faced the largest monthly drop in retail sales.

The closure of borders has had the greatest impact on the field of tourism and transport services (Hedrick-Wong, 2020; Oliver, 2020). The terms of import deliveries have increased, accompanied by a slowdown in complex technological chains processes with long production cycles. At the same time, the opening of new directions of export deliveries of vehicles and automotive components, including non-CIS countries, is observed, and the volumes of cooperation with the Republic of Kazakhstan (JSC AVTOVAZ and JSC Asia Auto) are increasing.

In order to mitigate the negative effects resulting from the spread of coronavirus, a number of urgent anti-crisis measures were adopted, including the Plan of Priority Measures (Actions) to ensure the sustainable development of the Samara Region economy.

As the socio-economic situation in the Samara region changes, measures to support the economy are constantly increasing and expanding.

As it was already mentioned, SMEs were at greater risk at that period. Comparison of the first half of 2020 (up to June 1) with the same period last year in Samara region showed that the number of small- and medium-sized businesses (hereinafter referred to as SMEs) decreased by 2.7% and amounted to 135,711 SMEs, of which 33,248 SMEs (24.5% of the total)—newly created, that is operating for less than one year. In terms of the number of SMEs, the Samara region ranks second place in the Volga Federal District. The average number of people employed by SMEs was 375.2 thousand people, which is 1.1% less than the same period last year (4.3 thousand people). Tax revenues from doing business in the consolidated budget of the region decreased by 10% and amounted to 4288.4 million roubles (Economy without virus, 2020).

In order to support SMEs in an unfavourable economic situation associated with the spread of a new coronavirus infection, a package of anti-crisis measures has been adopted in the Samara region in the following areas (Samara Government, 2020):

1. Credit support: additional capitalisation of JSC Microcredit Company “Guarantee Fund of the Samara Region” for 500 million roubles, additional capitalisation of the Regional Industrial Development Fund for 188 million roubles and introduction of a new product on microloans at 1% for an amount of up to 5 million roubles.
2. Financial support: subsidising public transport operators for lost income (185 million roubles), subsidising the costs of organisations providing services in the field of physical culture and sports and not included in the list of affected industries.
3. Preservation of employment: subsidies for the organisation of temporary employment for employees of small enterprises (up to 100 people) who are at risk of dismissal.
4. Tax incentives: the provision of benefits under the simplified taxation system (STS), land and transport taxes, an increase in the deduction from the area of immovable property taxed at the cadastral value.
5. Tax measures: a three-month extension of the deadlines for the payment of the simplified taxation system for 2019, advance payments for the first quarter of 2020 for the simplified taxation system, land tax, transport tax for legal entities, the unified tax on imputed income and tax on property of organisations for all SMEs. For owners of shopping (office) centres on property tax of organisations for the first and second quarters of 2020 and for 2019, the deadline for paying the tax has been extended until 30.10.

Since April of this year, the consequences of the spread of coronavirus infection have negatively affected the economy of the local administrative structures of the Samara Region. In most of them, by the end of January—May 2020, a decline in industrial production was noted (in 8 cities and 18 regions).

The most significant decrease in the industrial production index for large- and medium-sized enterprises was observed in large industrial

centres—Togliatti (84.1%) and Samara (85.9%), in mono-cities—Novokuibyshevsk (74.1%) and Oktyabrsk (73.3%). In four urban districts, the decrease in the indicator was less than 10%: in Syzran (90.9%), Chapaevsk (91.5%), Kinel (93.6%) and Otradny (97.6%). A significant increase in industrial production was noted in Zhigulevsk (130.8%) and Pokhvistnevo (122.1%).

Thus, the analysis of the socio-economic situation in the Samar region over the past period of 2020 shows that the epidemiological situation and the introduction of restrictive measures related to the spread of the new coronavirus infection, as well as the unfavourable external economic situation, had a negative impact on the economy. In 2020, an adaptation and recovery process of economic development has been forecasted to meet current risks and challenges, which, combined with unsecured investment and consumer demand, does not allow expecting economic growth in the region at the end of the year. In order to minimise the negative impact of the spread of the new coronavirus and prevent a worsening of the economic situation in the region, a package of federal and regional anti-crisis measures has been adopted and is being implemented. The task is to create conditions for the fastest recovery of the regional economy and the most complete implementation of the measures taken to stabilise the economic situation (OPORA ROSSII, 2020; Samara Region, 2020; SMARTEKA, 2020).

How Effective Are the Supporting Measures?: Survey Results of the Most Vulnerable Industries of Samara Region (Mainly Represented in SMEs)

The impact of the crisis caused by the coronavirus pandemic on the socio-economic development of the Samara region is of interest. In order to determine the effects of the crisis phenomena in social and economic life in the world and in Russia's most affected sectors of Samara region economy (Samara Government, 2020), Samara State Economic University conducted a sociological poll. The profile of organisations whose representatives participated in this survey is shown in the Table 8.1 “see Table 8.1”:

Table 8.1 Survey participating enterprises' profile

		Relative share of the organisations						The existence of credit liabilities for the date of 01.03.2020, %	
		Organisation form, %		Average staff number, %				Yes	No
Areas of activity	Individual entrepreneurship/freelancers	Private business	State organisations	1–15 pers.	16–100 pers.	101–250 pers.	251–1000 pers.		
The whole economy (vulnerable industries in general)	19.6	65.3	15.1	69.1	23.1	4.9	3.0	31.0	69.0
Transport	7.7	84.6	7.7	46.2	19.2	7.7	26.9	73.1	26.9
Culture, leisure time organisation, entertainment	4.9	9.7	85.4	24.4	46.4	29.2	–	17.1	82.9
Sport	17.2	73.5	9.3	75	2.5	17.5	5.0	18.8	81.2
Tourism and hotel business	32.6	67.4	–	76.7	20.9	2.3	–	27.9	72.1
Vocational education	25	33.3	41.7	61.7	36.2	2.1	–	22.9	77.1
Domestic services	5.7	94.3	–	91.8	7.6	0.6	–	31.5	68.5
Food service	48.7	51.3	–	79.5	17.4	5.1	–	39.3	60.7
Dental services	6.2	79.0	14.8	53.1	34.6	4.9	7.4	11.1	88.9
Retail of non-food goods	78.2	21.8	–	83.9	10.3	2.3	3.4	62.1	37.9

Source: Developed by the authors

Key issues influencing them greatly were identified by respondents:

- falling demand for a service/product—59.6%,
- costs associated with the growth of the exchange rate, which is 13.5%,
- imposed restrictions on social activity due to the self-isolation regime—67.9%,
- payment obligations in the context of a reduction in the organisation's income—40.8%.

Measures taken by respondent companies in connection with the spread of COVID-19*:

- Price reduction, promotions—17.3%,
- Cost reduction—54.1%,
- Lending—13.3%,
- Search for new work formats—47.8%,
- Other—10.0%.

As part of the survey, respondents evaluated the effectiveness of the proposed measures of state support. Their opinions were distributed as follows:

- only postponed the severity of problems—29.2%,
- helped, but only some organisations—37.2%,
- did not bring the desired effect,—23.5%,
- provided significant support—10.1%.

In the survey, 79% of respondents noted the need to remove restrictions on economic activity and extend support measures to additional OKVED (Samara Region Government, 2020). The proposals of the surveyed organisations on state support measures are shown in Table 8.2:

The next step of the research has been to forecast the future economic situation in the region and think over the measures that might be adopted to help the businesses that are in the risk zone.

Table 8.2 Key supporting measures that might be in demand according to the interviewees' opinion

The enterprises offer state supporting measures that should be introduced	Percentage of respondents who indicated the need to implement state support measures ^a
The lessening of restrictions on economic activities	79%
Extension of state support measures to organisations with additional OKVED	67%
Provision of subsidies for the payment of salaries in full until the end of 2020	64%
Tax cancellation by the end of 2020	56%
Subsidising utility and rental payments in the amount of at least 50%	49%
VAT cancellation for the next 6 months	29%
Payment of the minimum wage for individual entrepreneurs without employees	18%
Deferral of credit obligations	20%
Interest-free targeted loans for businesses	12%

^aThe question provided multiple choice of answers; the total share is not reduced to 100%

Source: Developed by the authors

The Forecast of Samara Region Economic Development for the Period of 2021–2023

The scenario conditions were developed considering the assessment of the negative impact of the events associated with the spread of the new coronavirus infection COVID-19. Also, a significant deterioration of macroeconomic conditions due to high volatility in stock markets, a weakening of the national currency, a fall in energy prices worsened the situation. (Deloitte Report, 2020).

The scenario conditions consider the implementation of regional components of national projects, a package of federal and regional anti-crisis

measures, national and regional action plans that ensure the restoration of employment and incomes of the population, economic growth and long-term structural changes.

The main indicators of the forecast of the socio-economic development of the Samara Region in 2021–2023 have been developed in two versions—basic and conservative.

The differences in options are explained by:

- varying degrees of influence of the consequences of the spread of coronavirus infection on the regional economy;
- different rates of recovery of the regional economy from the crisis and transition to its post-crisis recovery;
- differences in the initial conditions for the development of foreign economic conditions (oil price, national currency rate);
- varying degrees considering all-Russian parameters (dynamics of economic growth, inflation, deflator indices in certain types of economic activity, etc.) when forecasting the socio-economic situation in the region;
- the scale and effectiveness of the state anti-crisis measures taken to ensure sustainable economic development and social stability in the region (High School of Economics, 2020; Samara Government, 2020).

Both scenarios assume that socio-economic development in the Samara region in the medium term will be determined not only by economic, but also by epidemiological factors and, therefore, will be characterised by an increased degree of uncertainty. The basic option is based on the premise of a more favourable sanitary and epidemiological situation in comparison with the conservative option.

Both development options are based on common goals and priorities of the state socio-economic policy ensuring the implementation of national goals, but the degree of their achievement will be different. The basic development option is based on the prerequisites for the full implementation of measures aimed at economic recovery and ensuring sustainable economic growth and social stability in the region. The conservative option assumes the presence of risks of not achieving the assigned tasks (Deloitte Report, 2020).

The Scenario Conditions Are Based on the Following External Economic Factors

Russian Economy Development Dynamics

According to estimates, the decline in the global gross domestic product in 2020 may be at least 3%. The subsequent recovery of the global economy will be largely determined by the epidemiological situation. The uneven exit of countries from quarantine and the long-term preservation of restrictions will curb global growth. At the same time, the “second wave” of the epidemic of a new coronavirus infection remains a significant risk for the recovery of the global economy (Deloitte Report, 2020).

In 2021, economic growth in the Russian Federation is expected to resume according to the base case to 103.2% versus the previous year, according to the conservative option—to 102.3%. In 2022, the rate of development of the Russian economy will be 102.5–102.9%, in 2023—102.6–103.1%, depending on the development option.

World Oil Price for Urals Oil

According to the base case, an insignificant increase in the average annual price for Urals oil is forecasted: from US \$43.3 per barrel in 2021 to US \$46.5 per barrel in 2023. A restraining effect on oil prices will be exerted by the high level of oil reserves, which formed during the period of tough quarantine restrictions, as well as the continuing uncertainty about the epidemiological situation in the world, and, accordingly, the rate of recovery in demand.

According to the conservative option, the average annual oil price in 2021 will decrease to US \$37.7 per barrel, followed by stabilisation at US \$40.7 and US \$41.9 per barrel in 2022–2023, respectively.

Dollar Exchange Rate to National Currency (Rouble)

In the medium term, a further moderate depreciation of the national currency is predicted: the average annual exchange rate of the dollar against

the rouble in 2023 will be 72.4 roubles per US dollar against 70.8 roubles per US dollar in 2021. According to the conservative variant the weakening of the national currency rate is predicted to 76.2 roubles per US dollar in 2023.

Coming to the forecast for the chosen region, according to both development options, a resumption of economic growth is expected in the Samara region starting from 2021. At the same time, the speed and timing of recovery of the regional economy to the pre-crisis level are characterised by a high degree of uncertainty associated with epidemiological factors and will vary depending on development options.

The baseline scenario provides for a gradual recovery of the regional economy due to an intensification of economic activity in the industries, transport, services affected by the spread of coronavirus infection, recovery and development of the small- and medium-sized business sector, investment demand and resumption of growth in real incomes of the population, employment and effective demand of households. The growth of exports, as well as a slowdown in the decline in inventories with a transition to their subsequent growth, will be a positive factor in economic recovery.

Key opportunities to stabilise the region's economy and accelerate economic growth will be associated with the implementation of national projects, national and regional action plans that ensure the restoration of employment and incomes of the population, economic growth and long-term structural changes (Samara Government, 2020).

Additional factors for the intensification of economic growth will be an increase in labour productivity, the development of digitalisation, import substitution, support for non-resource exports, the development of human capital and the creation of modern infrastructure.

As a result, by 2022, economic growth is expected to accelerate to 103.9% in comparable prices, in 2023—to 103.6%. In general, for the period 2021–2023, the volume of GRP will increase by 11.1% in comparable prices. The economic decline observed in 2020 can be compensated for in 2022. Economic growth will be facilitated by the positive dynamics of the development of manufacturing industries (the average annual growth rate of gross value added for 2021–2023 will be 104.4%), mining (103.8%), construction (104%), hotels and catering

establishments (110.4%), activities on transactions with real estate (104.4%), administrative activities and related additional services (104%). At the same time, the growth rates of gross added value are predicted to be lower in the energy sector, agriculture, transport and communications, and trade than in the economy as a whole.

According to the conservative option, the growth rate of the gross added value of the main types of economic activity will be lower than under the base case. The scenario provides for the development of the regional economy in the context of low consumer demand, accompanied by a moderate growth in real incomes of the population. In addition, it forecasts a slow recovery of investment activity, which does not fully compensate for the negative effect of reducing investment demand resulting from the negative impact of the spread a new coronavirus infection in 2020. This will affect the rate of economic growth. According to this option, the index of the physical volume of GRP in the Samara region in 2021 can be 101.4%, in 2022—102.4%, in 2023—102.1%. Considering the predicted dynamics of the indicator, the decline in the regional economy in 2020 can be compensated only in 2023.

The main restrictions on economic growth in the Samara region in 2021–2023 may be restrictions aimed at combating the spread of a new coronavirus infection, external risks (recession in the world economy, instability in world markets, increased competition in global and domestic markets, gaps in global value chains) (Samara Government, 2020). Additionally, the restrictions might include:

- insufficient growth rates of labour productivity;
- the scale of the shadow economy;
- risks of reducing the competitiveness of products of regional producers;
- lack of financial resources allocated for investment, including budgetary ones;
- high degree of depreciation of fixed assets in the region;
- insufficient innovation activity;
- insufficient state and level of development of road and transport infrastructure;

- dependence of the regional budget on the state of large industrial companies;
- structural imbalances in the professional and qualification composition of workers and other factors.

In 2021, the profit growth for profitable organisations according to the basic development scenario will amount to 108.3% by the estimate of 2020; according to the conservative version, profit will remain at the level of 2020. Over the entire forecasting period (2023 by 2019), the indicator will increase by 1.9% according to the basic development scenario. According to the conservative version, the indicator value will be 91.8% of the 2019 level. The formation of profit in the medium term will be affected by changes in the growth rates of production volumes and producer prices, tariffs for services and energy resources, and the wage bill.

In the medium term, the development of industrial production is predicted in the context of the complex impact of the consequences of the epidemiological crisis. The gradual easing of restrictive measures, the restoration of effective demand from the population, will facilitate the acceleration of growth rates in 2021–2023 and furthermore, the effective implementation of measures aimed at the restoration and development of affected industries might influence.

According to the basic development scenario, in 2021, the industrial production index is projected at 103.3%, in 2022—105%, in 2023—103.6%. The decline of 2020 is expected to stop in 2022. In general, for the period 2020–2023, the volume of industrial production in the Samar region may increase by 4.4%.

The implementation of measures of the state programme “Comprehensive development of rural areas in the Samara region for 2020–2025” will contribute to the further development of social and engineering infrastructure in the countryside (Samara Government, 2020).

The index of agricultural production in all categories of farms in 2021 may be 103.3% compared to the previous year, in 2022—102.7%, in 2023—102.6%. In general, over the forecast period (2023 to 2019), the growth rate of agricultural production may reach 110.8%.

The conservative option provides for the predominantly negative impact of factors that determine the production of agricultural products:

- the dependence of the yield and harvesting of agricultural crops on natural and climatic conditions (average annual temperature, precipitation regime) characteristic of the Samara region;
- instability of the agri-food market and purchase prices for agricultural products;
- decrease in the level of state support for the industry.

In addition, the economic risks associated with the introduction of quarantine restrictions aimed at combating the spread of the new coronavirus infection, with a decrease in investment activity in the agricultural sector of the economy; social risks affecting the structure of consumption of agricultural products, the availability of products for population has been considered (Economy without virus, 2020)

According to the conservative version, the index of the physical volume of gross agricultural output in all categories of farms in 2021 may be 100.9%, in 2022—101.4%, in 2023—101.7%. In general, for the period 2020–2023, the volume of agricultural production may increase by 5.9% in comparable prices.

In 2021–2023, the foreign economic activity of the Samara region will be focused on promoting Samara products in the international arena and strengthening the positions of regional enterprises in foreign markets. It is planned to hold exhibition international and national events aimed at maintaining the existing image of the Samara Region as an export-oriented territory, as well as organising visits and economic missions in order to ensure the entry of regional organisations into new markets and search for new partners (Samara Government, 2020).

From 2021, a recovery in the growth of foreign trade turnover of the Samara Region is expected.

The basic development scenario considers the stabilisation and growth of world prices for oil and metals, which will allow specialised enterprises participating in the foreign economic activity of the Samara region to increase the volume of export supplies (Samara Government, 2020). In the export of food products, in the absence of restrictions on supplies, it is predicted to enter new markets (products with a long shelf life). At the same time, there are restrictions on increasing export supplies of engineering products to non-CIS countries, risks of reducing export supplies

of chemical industry enterprises with long production cycles (SMARTEKA, 2020).

The forecast also provides for the successful implementation of the planned measures to support export-oriented companies, including non-resource non-energy exports.

According to the conservative option, the possibilities of increasing foreign non-trade turnover in 2021–2023 may be limited by the following factors and risks:

- a protracted recovery of the global economy and a structural slowdown in its growth rates due to the consequences of the spread of a new coronavirus infection;
- volatility in oil prices;
- decrease in prices for chemical products and metals;
- lack of sufficient effect from measures of state support for exports;
- introduction of mutual trade restrictions by key countries;
- deterioration of the situation in external commodity markets.

In 2021, a slight increase in exports of the Samara region is forecasted to US \$4209.3 million—an increase of 0.6% against the level of 2020. In 2022–2023, the growth rates of the indicator are expected to accelerate by 1.2% and 6.5%, respectively. Despite this, in 2023 the volume of exports will not reach the level of 2019 (96.9%).

The forecast for the development of the construction industry in the Samara region according to the base case is based on the predicted intensification of investment activity in the Samara region and the growth of investments in fixed assets. The increase in construction volumes will be facilitated by the implementation of national and federal projects, large infrastructure projects with state participation, further modernisation and technical re-equipment of the industrial complex. A positive contribution to the demand for housing will be made by a decrease in the key rate, and as a result, a decrease in the cost of mortgage lending. The total volume of work performed by the type of activity “Construction” in the Samara region in 2021 will increase by 3.9% compared to the previous year in comparable prices and will amount to 190.4 billion roubles, in 2022—by 4.2% (208.1 billion roubles), in 2023—by 4% (227.3 billion

roubles). The volume of construction work in the region in 2023 will be 115.3% of the 2019 level in comparable prices.

The forecast for the development of construction activities in the Samara region, according to the conservative version, is based on the low investment activity of private business and limited incomes of the population with the ongoing implementation of large infrastructure investment projects at the expense of the federal budget. The index of the physical volume of work performed by the type of activity “Construction” in 2021 may reach 102.6%, in 2022—102.7%, in 2023—102.5%.

8.5 Conclusion

In conclusion, we will once again note the most significant points.

Firstly, each region occupies a certain place in the economic complex of the country, while at the same time forming a single economic space with other regions (Hoover, 1971; Richardson, 1973; Zhidebekkyzy et al., 2020). At the stage of modern development of the national economy of the Russian Federation, each region is given the right to solve economic problems independently, considering the resource potential and the management structure (High School of Economics, 2020). We observe full realisation of this right in 2020 during the pandemic.

We note that the situation in the regions is different. The fall in profits, the shutdown of small businesses is hitting regional budgets hard. This issue requires serious financial support during the recovery period, including that from the federal centre (Economy without virus, 2020; Hammer & Hallegatte, 2020; Oliver, 2020).

Secondly, the decline in real incomes of the regions continues, but there have been no fundamental negative changes in the economic space of most regions. Although by the end of 2020, on average, real incomes in Russia are projected to decline by 3%. According to analysts, this deviation will not significantly change the way to sustainable development, as quarantine restrictions are gradually eased. Small- and medium-sized businesses are adapting to the new economic conditions (Deloitte Report, 2020).

Thirdly, in the long term, restrictive measures will also affect the functioning of the health system, the transport sector and the organisation of our

lives—in each region, declining real disposable incomes, rising unemployment, reduced consumption levels of goods (works, services) and investment (Samara Government, 2020). Therefore, the range of forecasts of the economic state of each region today remains wide. The dynamics of the economic recovery and the intensity of the recovery depend on many factors, including how much government support measures will work (Argenti, 2020; Hammer & Hallegatte, 2020; High School of Economics, 2020).

Thus, in the current economic situation, the Russian regions need to ensure:

- protection of the interests of the country and its territories in relation to the resource potential;
- prerequisites for the preservation and survival of regional structures in a crisis;
- regional competitiveness in domestic and international markets;
- stability of the country's financial situation;
- development of regional infrastructure;
- promoting the development of enterprises, associations, regional financial and industrial groups and complexes;
- creating internal and external protection from possible negative impacts.

In the complex of measures that form the system of economic security of the region, the crucial importance should belong to the prevention of potential and real threats. It is important to assess and forecast the impact of all expected threats, as well as economic and non-economic impacts on them.

References

- Argenti, P. (2020, March). Communicating through the Coronavirus crisis. *Harvard Business Review*. <https://hbr.org/2020/03/communicating-through-the-coronavirus-crisis?autocomplete=true>
- Benoit, W. L. (1997). Image repair discourse and crisis communication. *Public Relations Review*, 23, 177–190.

- Coombs, W. T., & Holladay, S. J. (2001). An extended examination of the crisis situation: A fusion of the relational management and symbolic approaches. *Journal of Public Relations Research*, 13, 321–340.
- Deloitte Report. (2020, May). *Economic scenarios for the COVID-19 recovery*. <https://www2.deloitte.com/au/en/pages/economics/articles/economic-scenarios-covid-19-recovery.html#>
- Economy Without Virus. (2020). *A VIRUS-FREE ECONOMY: Measures to support small and medium-sized businesses, as well as NGOs, to overcome the consequences of the new coronavirus infection*. <https://covid.economy.gov.ru>
- Hammer, S., & Hallegatte, S. (2020, April). *Planning for the economic recovery from COVID-19: A sustainability checklist for policymakers*. [Blog post]. <https://blogs.worldbank.org/climatechange/planning-economic-recovery-covid-19-coronavirus-sustainability-checklist-policymakers>
- Hedrick-Wong, Y. (2020, March). *Economic recovery from COVID-19 and geopolitical ramifications*. <https://www.forbes.com/sites/panel-of-economic-commentators/2020/03/23/economic-recovery-from-covid-19-and-geopolitical-ramifications/?sh=734a1cd0596e>
- High School of Economics. (2020). *Regional initiatives to ensure socio-economic stability in the context of the COVID-19 pandemic: Measures to support businesses and ensure employment*. <https://region.hse.ru/anti-crisis>
- Hoover, E. (1971). *An introduction to regional economics* (pp. 26–49). Knopf.
- Isard, W. (1954). *Location and space economy* (pp. 22–88). Princeton University Press.
- Oliver, L. (2020, March). *It could take three years for the US economy to recover from COVID-19*. <https://www.weforum.org/agenda/2020/03/economic-impact-covid-19/>
- OPORA ROSSII. (2020). *Global business support practices in the context of the COVID-19 pandemic through the eyes of “eyewitnesses”. Official website of the all-Russian public organisation of small and medium-sized businesses*. <https://opora.ru/news/mirovye-praktiki-podderzhki-biznesa-v-usloviyakh-pandemii-covid-19-vzglyadom-ochevidthsev.html>
- Richardson, H. (1973). *Regional growth theory*. Macmillan.
- Samara Government. (2020, May). *Small and medium-sized businesses in the Samara region, along with Federal ones, can also benefit from regional support measures*. <https://minprom.samregion.ru/2020/05/07/predpriyatiya-malogo-i-srednego-biznesa-samarskoj-oblasti-naryadu-s-federalnymi-mogut-vospolzovatsya-i-regionalnymi-merami-podderzhki/>

- Samara Region Government. (2020). *The order of the Government of Samara region from 14.04.2020 No. 157-p "On amending order of the Government of the Samara region from 07.07.2015 No. 540-R "On approval of the List of strategic enterprises of the Samara region"*. <https://pravo.samregion.ru/wp-content/uploads/sites/2/2020/04/dokument.pdf>
- SMARTEKA. (2020). *Catalogue of anti-crisis practices and solutions*. <https://smarteka.com/solution?solutionCountries%5B%5D=176>
- Zhidebekkyzy, A., Sagiyeva, R., & Temerbulatova, Z. (2020). Assessing the competitiveness of Kazakhstan regions: Creating an index. *E3S Web of Conferences*, 159. <https://doi.org/10.1051/e3sconf/202015905002>



9

COVID-19 and the Strategic Responses to Crises in the Italian Entrepreneurial Firms: An Explorative Research

Lara Penco, Enrico Ivaldi, and Andrea Ciacci

9.1 Introduction

On March 11, 2020, the World Health Organisation (WHO) declared COVID-19 crisis a pandemic. Since then, the rapid worldwide outbreak of the novel coronavirus has triggered an alarming global health crisis (Kraus et al., 2020; Zheng et al., 2020). In mid-December 2020, we had over 72 million people infected and more than 1.6 million deaths across the globe (<https://www.worldometers.info/coronavirus>). In absence of short-term medical responses to the virus, most governments at a global level have imposed social distancing to slow down the transmission and

L. Penco (✉) • A. Ciacci

Department of Economics and Business Studies, University of Genoa,
Genoa, Italy

e-mail: lara.penco@economia.unige.it; andrea.ciacci@edu.unige.it

E. Ivaldi

Department of Political Science, University of Genoa, Genoa, Italy

e-mail: enrico.ivaldi@economia.unige.it

spread of the coronavirus (Ferguson et al., 2020; Tuzovic & Kabadayi, 2020). However, the restrictions have impacted the economic activities, producing simultaneous demand and supply shock (Anderson et al., 2020). Lockdowns usually required closing of non-essential businesses and limiting operations of essential businesses (<https://www.natlawreview.com/article/how-do-i-know-if-what-i-do-essential-service>). The organisation of essential businesses, like grocery, required to change the way they serve their customers (Tuzovic & Kabadayi, 2020). Restaurants and cafes have been forced to close and most of them changed the business model (Nicola et al., 2020). This situation has contributed to deterioration of the level of general confidence in the future (external confidence), that is one of the most important divers of entrepreneurial activities since it affects the expected consumption and the attitude to invest (Tonkiss, 2009).

For this reason, this work is aimed to analyse the entrepreneurial response to crisis, proposing a model that we want to test for further research. We consider that market and entrepreneurial orientations influence the strategic responses during a period of crisis, such as the current pandemic. On the basis of the literature review on market, entrepreneurial, and then strategic orientation, we try to identify the most important behaviours and to propose a model for changes during a crisis for short-term adaption and long-term firm positioning. We insert also an illustration of the external atmosphere in terms of deterioration in the level of confidence in different economic sectors, as a result of the epidemic explosion. The chapter contributes to entrepreneurial firm research and shows how these companies cope with a lockdown situation. Finally, it contributes to business model innovation research by providing insights into how external shocks may trigger firms' innovation.

The chapter is structured as follows: a literature review on strategic action for crisis, entrepreneurial orientation (EO), market orientation (MO), and three confidence constructs is presented in Sect. 9.2; a description of data, methodological issues, and damages generated by the COVID-19 on macro-level confidence in European countries is provided in Sect. 9.3; Sect. 9.4 and 9.5 are focused on relationships model analysis, involving all the previous elements. After the relationships are discussed, conclusions and implications are provided in Sect. 9.6.

9.2 Literature Review and Research Issues

Strategic Responses (SR) to Crises

A crisis can be examined from an internal and an external perspective. Crisis can be defined as a period of unexpected and unfavourable external environment changes that create intense difficulties, emerging troubles, or new threats for organisations (Vaaler & McNamara, 2004). Crises can have a relevant impact on organisation's viability and imply the need to make timely decisions to identify changes in the competitive landscape (Kunc & Bhandari, 2011; Pearson & Clair, 1998).

Most of the authors agree on the fact that the term “crisis” is usually associated to critical events that are “in some way attributable to the organisation itself” (Faulkner, 2001, p. 136); if the cause is external and/or out of the controllability by the organisations (Bonn & Rundle-Thiele, 2007), the crisis is usually called “disaster” or “shock event” (Faulkner, 2001). A crisis may be interpreted as “threats” or “opportunities” (Chattopadhyay et al., 2001), which influence the adoption of different strategic responses (SR) to crises; in particular, the dimensions—positive/negative, gain/loss, and controllable/uncontrollable—are the most relevant categorisation for threat/opportunity (Bao, Bao, & Sheng, 2011a). With the term SRs to crises we mean all the basic corporate choices aimed at facing crises situations, understood as the serious and general alteration of the company balance (Pretorius, 2008). Some SRs to crises provide interventions within the same strategic business area aimed at recovering efficiency or making the company more competitive in terms of effectiveness (e.g. downsizing; retrenchment); sometimes SRs to crises modify the structure of the strategic portfolio (e.g. reconversion strategy; focusing strategy). Focused strategies, on the other hand, take the form of abandoning the business in crisis to refocus all resources and skills in the core business; in other words, the structure of the portfolio of activities is revised, enhancing the activities on which the company is more competitive and sacrificing the others. Finally, among the strategic options available to the company for dealing with crises situations, it is possible to include the turnaround strategy. The “turnaround” takes on a particular

importance in the context of crisis resolution strategies, since it follows the objective of rehabilitating the company and then aiming for future growth.

Focusing on SRs to crises directly to face shocks that are perceived by organisational members as disruptive (Pearson & Clair, 1998), Wenzel et al. (2020) propose four strategic responses to a crisis during the COVID-19. The first orientation can be traced back to the retrenchment strategy (1), consisting in firm decisions to reduce costs (Pearce & Robbins, 1993) and complexity (Benner & Zenger, 2016). Previous studies demonstrate that this SR may favour firm survival in the short run during a crisis. On the contrary, there is no certainty that retrenchment strategy can produce positive effects in the long term, as it could result in the loss of synergies (Ndofor et al., 2013). Persevering strategy (2) is instead related to the preservation of the firm status quo in specific business activities in a crisis. It is based on the leveraging of debt financing and the consumption of available slack resources. Stieglitz et al. (2016) identify the benefit of persevering in the fact that frequent strategic changes reduce the value of a strategic renewal. However, a different conception of persevering emerges between the medium and long term. In the first case, this strategy is considered sustainable, while if the crisis lasts for a longer period, the sources of internal and external slack may dry up at some point (Wenzel et al., 2020). Innovating (3) is a type of strategy that refers to conducting renewal in response to crisis. Prior studies show that crises generate opportunities for strategic renewal, even for firms that usually stick to a consolidated business strategy. Innovation is possible when crises trigger a reflection process that leads managers and employees to cross the boundaries of what they believe is conceivable and feasible. Innovating is an important SR to cope with lasting crises, which tend to permanently affect the firms. Exit (4) is the last possible reaction when all possible strategies are considered as impractical or unsuccessful. A successful exit strategy can be the prelude to the foundation of a new firm (Ren et al., 2019), made possible by the release of new resources (Carnahan, 2017) and the creation of new opportunities.

Strategic Orientation During the Crisis: The Role of the Self, Macro-Level, and Business Confidence

This study adopts the strategic orientation framework, including the market orientation (Miles & Snow, 1978) and the entrepreneurial orientation (Lumpkin & Dess, 1996).

The strategic orientation is concerned with the direction of the firm and is based on perceptions, motivations, and desires that precede and guide the strategy formulation and deployment processes (Massa & Testa, 2009). The strategic orientation framework reflects the characteristics of the market orientation towards customers, competitors, and other external forces (Ferraresi et al., 2012) and the EO (Lumpkin & Dess, 1996).

Market Orientation (MO)

Concerning MO, Miles and Snow's (1978) typology is particularly appropriate for small and entrepreneurial businesses (Rugman & Verbeke, 1988). It proposes four categories of firms: prospectors, analysers, defenders, and reactors that are studied especially for business performance (Anwar & Hasnu, 2017).

Defenders pose the basis of the competitiveness on price, service, or quality. To do this, they maintain a stable product focus and seek to develop greater efficiency in existing operations. Conversely, prospectors combine differently the product-market mix and explore environmental changes in search of new perspectives for innovation. Analysers are at the same time similar and diverse to defenders and prospectors. They aim to stabilise their actions over time to form a pattern of consistent and stable response to environmental variations. Reactors exhibit a pattern of adjustment to its environment that is both inconsistent and unstable. Reactors are the category most susceptible to environmental changes, in a way that they are led to attempt unlikely responding strategies. In other words, reactors are reluctant to anticipate the evolutionary trajectories of the business, performing poorly as a result (Miles & Snow, 1978). Few literature discusses the time path at which the reactor lacks consistency; the reason is associated to difficulties in giving a precise characterisation to

reactors' behaviour at a single point in time by applying objective approaches (Blackmore & Nesbitt, 2013). In fact, reactors can adopt different actions at different times, showing alternatively the characteristics of a defender, analyser, or prospector. This behavioural fluidity makes reactors a phenomenon hard to classify.

Specifically, there are two opposite MOs (Saebi et al., 2017), that is market development versus domain defence, or prospectors versus defenders. While the market development orientation of prospectors leads firms to explore and exploit new market opportunities, by creating or renovating their entrepreneurial ideas, defenders focus their attention on more limited products set in order to protect the acquired strategic domain (Miles & Snow, 1978).

A general consequence of this COVID-19 crisis is a change in the consumer demand. Moreover, this crisis is characterised by unemployment, and as a result, consumers become more price-sensitive. Despite low-demand, and high uncertainty, that affect the level of the external confidence in the future, prospectors are attended to be more proactive and able to capitalise on an economic crisis, pursuing an innovative strategy.

Entrepreneurial Orientation (EO)

Another dimension is related to the entrepreneurial orientation (EO). In recent decades, entrepreneurship has been extensively examined in economics and management studies as it is considered one of the most dynamic sources of job creation, healthy competition, economic growth, promotion of an “inclusive” society, and innovation. EO is the entrepreneur's attitude to search market opportunities through continuous innovation, adopting a proactive posture, and taking risks in the pursuit of new opportunities (Lumpkin & Dess, 1996; Covin & Slevin, 1989). Several studies address the socio-economic and personality characteristics of entrepreneurs such as academic education and technical background (Koellinger, 2008; Shane, 2000). In this vein, academic contributions tend to identify the antecedents of EO, for example processes, practices, and decision-making activities used by entrepreneurs that lead to the

creation of an entrepreneurial firm (Lumpkin & Dess, 1996). The typical conceptualisations of EO include three dimensions: proactiveness, risk-taking, and innovativeness (Wiklund & Shepherd, 2005; Covin & Slevin, 1991; Zahra, 1991; Wales et al., 2019).

More in detail, Lumpkin and Dess (1996) formulates a definition of innovativeness, bringing it back to the trend of a firm “to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes” (p. 142). The same authors explain the concept of proactiveness, that is entrepreneur attempt to shape the environment to his own advantage. The risk-taking dimension of EO refers to “the degree to which managers are willing to make large and risky resource commitments—i.e., those which have a reasonable chance of costly failures” (Miller & Friesen, 1978, p. 923).

We argue that during periods of economic crisis, EO may capitalise on market opportunities by quickly adapting to unpredictable environmental changes and may even be able to construct new markets based on the innovative and proactive behaviour (Covin & Slevin, 1989). EO makes firms more positive during the periods of crisis and able to take risks in more uncertain external environments (Marino et al., 2008), as well as devoted to shape their resources to exploit emerging opportunities, also innovating their business model. We consider that SMEs with higher level of EO are better able to face economic crisis while the more conservative SMEs have greater focus on minimising loss.

The integration of strategic orientations and EO allows clarifying their role in determining the SRs to crises. Departing from research examining the impact of economic crisis on firm survival, this study examines how firms may capitalise upon, or make the most of, an economic crisis (Beliaeva et al., 2020).

Self-Confidence, Macro-Level Confidence, and Business Confidence in the Future

In this chapter we refer to three main confidence constructs employed in this analysis.

The self-confidence has an important role when a situation of a general concern about the future, such as a crisis, occurs (Chaston & Sadler-Smith, 2012), for example external un-confident atmosphere. A high self-confidence helps to interpret potential hostile environments in more positive ways. In other words, this construct expresses the confidence that characterises the agent at an individual level.

The external environments' business confidence can be defined, in a more significant way, as a macro-level confidence. SRs are influenced by the interpretation of external events as threats and opportunities. The threats and opportunities framework has been useful in examining different organisational actions responding to environmental changes (Chattopadhyay et al., 2001; Sharma, 2000).

The interpretation of the external environment in terms of threats or opportunities in situations that are characterised by risk and uncertainty is affected by the profile of the different decision-makers (Benevolo et al., 2020). During this phase of reading and interpreting the framework at a macro-level, business confidence in the future comes to the fore. While the self-confidence impacts the dimensions of EO (Baron et al., 2016), the business confidence in the future determines the interpretation of the external environment in order to take innovative strategic choices (Koellinger, 2008). When it is necessary to operate in business environments perceived negatively, in low predictable situations, the business confidence in the future becomes salient.

The Starting Point: The Macro-Level Confidence in EU During the COVID-19

In this section we analyse what consequences the COVID-19 pandemic has generated on the macro-level confidence of consumers and economic operators in the different EU27 countries. Specifically, we study the relationship existing between COVID-19 impact and decline in confidence, and the extent to which the virus has affected the decrease in macro-level confidence levels. This paragraph is preparatory to the subsequent analysis on strategic responses in time of crisis.

We consider the macro-level of confidence in the future of an important trigger fact that influences the interpretation of the COVID-19 as a treat or an opportunity, on the basis of the aforementioned three dimensions—positive/negative, gain/loss, and controllable/uncontrollable (Bao, Bao, & Sheng, 2011a).

In order to measure this perspective, we focus on the temporal analysis between the first and second quarter. We apply a quantitative non-aggregative method, known as Poset, by which we obtain synthetic indexes (Alaimo et al., 2020; Ivaldi et al., 2020).

The data used to perform the analysis are related to two main dimensions: the first one is related to the macro-level confidence affecting the various compartments of national economic systems at EU27 level, and the second to the clinical sphere of COVID-19. The macro-level confidence indicators come from periodic surveys administered by the Directorate-General for Economic and Financial Affairs of the European Commission to various economic operators in the applicant countries. In order to monitor the change in macro-level confidence from first to second quarter, we have worked separately on macro-level confidence for the two reference periods, respectively, January–March 2020 and April–June 2020.

The indicators used to measure the macro-level confidence are described below (online data code EI_BSSI_M_R2):

- consumer confidence indicator detects the attitude of the consumers to buy a car, purchase or build a home, home improvements;
- industrial confidence indicator refers to production capacity, order-books, new orders, export expectations, capacity utilisation, competitive position, and factors limiting the production;
- construction confidence indicator expresses the operating time ensured by current backlog;
- retail confidence indicator measures business situation, stocks of goods, orders placed with suppliers and firm's employment;
- service confidence indicator refers to all factors limiting businesses.

For clinical COVID-19 dimension, we have jointly considered COVID-19 national incidence and mortality indicators.

Macro-level confidence and COVID-19 dimensions have different polarities. To higher values of macro-level confidence correspond better results, while higher values of COVID-19 index indicates a major viral impact.

The Relationship Between COVID-19 and Macro-Level Confidence in the Economic System

The analysis shows the existence of an inverse relationship between the pandemic impact and the macro-level confidence. The relation is attested at level -0.6 on the Pearson correlation scale. This trend appears to be widespread at a systematic level, although in some countries it is more pronounced than in others.

The results show a high sensitivity of the confidence level perceived from economic operators and consumers to the occurrence of exogenous shocks. The decline in macro-level confidence has affected all economic sectors considered, as well as all EU27 countries, from first to second quarter but to different extents (Table 9.1).

Belgium, Italy, Portugal, and Spain have particularly suffered both COVID-19 crisis under a clinical point of view and concomitant collapses of confidence. The more developed economies, despite starting from pre-crisis confidence levels below the EU27 average, limit the loss of confidence during the crisis, notwithstanding they were strongly affected by the pandemic. Finland, Italy, Germany, Denmark, and Austria fall in this case history. On the other hand, developing countries, that is countries with lower per capita incomes and higher growth rates than the European average, show a greater volatility in the macro-level confidence (e.g. Croatia, Estonia, Poland, Romania, Malta). On this basis, it is possible to say that economic operators in a developed country tend to judge worse the economic phases not characterised by exogenous shocks, while they provide more balanced opinions in periods when the economic situation is strongly negative. The opposite dynamic grips developing countries; when a crisis outbreak, the “ghosts” of a strongly unfavourable economic situation would seem to be more convincing in the opinion of the interviewees. This sentiment could be affected by a “return to the

Table 9.1 Results matrix of macro-level confidence and COVID-19I, with differentials

Country	Macro-level confidence (+)	COVID-19I (-)	Macro-level confidenceQ2-Q1	COVID-19IQ2-Q1
Aus_Q1	37.83	30.37	-20.20	+6.82
Aus_Q2	17.63	37.19		
Bel_Q1	30.49	41.55	-22.99	+11.69
Bel_Q2	7.49	53.24		
Bul_Q1	38.99	2.79	-25.68	+25.74
Bul_Q2	13.31	28.53		
Cro_Q1	51.35	6.68	-37.88	+16.10
Cro_Q2	13.47	22.78		
Cyp_Q1	40.19	15.44	-30.32	+13.02
Cyp_Q2	9.87	28.46		
Cze_Q1	44.09	10.86	-21.63	+18.73
Cze_Q2	22.46	29.60		
Den_Q1	41.91	19.16	-19.36	+22.74
Den_Q2	22.56	41.90		
Est_Q1	44.09	15.69	-37.45	+19.86
Est_Q2	6.64	35.56		
Fin_Q1	36.73	10.42	-16.40	+27.41
Fin_Q2	20.33	37.83		
Fra_Q1	40.26	31.13	-22.85	+16.81
Fra_Q2	17.41	47.95		
Ger_Q1	38.31	21.67	-18.71	+19.88
Ger_Q2	19.61	41.55		
Gre_Q1	36.30	9.45	-23.66	+5.32
Gre_Q2	12.63	14.78		
Hun_Q1	37.52	3.14	-21.40	+23.93
Hun_Q2	16.12	27.06		
Ire_Q1	50.66	20.47	-33.18	+30.92
Ire_Q2	17.48	51.40		
Ita_Q1	31.37	44.45	-17.96	+4.91
Ita_Q2	13.40	49.35		
Lat_Q1	37.82	5.17	-24.35	+13.99
Lat_Q2	13.47	19.16		
Lit_Q1	41.82	9.45	-23.14	+15.93
Lit_Q2	18.68	25.39		
Lux_Q1	40.79	40.19	-25.78	+8.44
Lux_Q2	15.01	48.64		
Mal_Q1	42.12	9.81	-33.86	+22.96
Mal_Q2	8.26	32.77		
Net_Q1	44.44	34.17	-24.61	+13.22
Net_Q2	19.83	47.39		

(continued)

Table 9.1 (continued)

Country	Macro-level confidence (+)	COVID-19I (-)	Macro-level confidenceQ2-Q1	COVID-19IQ2-Q1
Pol_Q1	41.84	2.79	-36.24	+29.91
Pol_Q2	5.60	32.70		
Por_Q1	35.36	23.96	-29.60	+22.10
Por_Q2	5.75	46.05		
Rom_Q1	47.36	6.35	-34.08	+33.08
Rom_Q2	13.28	39.42		
Spa_Q1	35.69	45.13	-29.63	+6.18
Spa_Q2	6.06	51.31		
Svk_Q1	41.84	2.15	-28.96	+10.94
Svk_Q2	12.88	13.09		
Svn_Q1	43.36	15.63	-30.06	+11.02
Svn_Q2	13.31	26.66		
Swe_Q1	47.56	23.57	-25.19	+30.01
Swe_Q2	22.37	53.59		

Source: Our elaboration on Eurostat (2020)

past” presentiment (Hagerty & Veenhoven, 2003). Particular cases are the Netherlands and Sweden. Despite the Netherlands have suffered the strong impact of COVID-19 since first quarter, it seems not to have affected the macro-level confidence during the crisis, which remains high. Sweden is one of the very few countries in Europe that has not adopted restrictive measures such as lockdown and severe social distancing. The non-lockdown decision may have helped to instil awareness in consumers and economic operators.

Overall, the widespread decline in macro-level confidence is a mirror of the changing perceptions of economic operators and consumers. It is well known that when shocks are perceived as sudden, unexpected, and massively disruptive (Pearson & Clair, 1998), organisational members are committed to adopting strategic solutions to deal with the crisis (Wenzel et al., 2020). The changes in the external environment and relative confidence fluctuations on a large scale have altered the firms’ *modus operandi*, as well as the definition of their strategies (Fabeil et al., 2020). COVID-19 has brought direct consequences, linked to the non-pharmaceutical governmental measures implemented by several countries (Kraus et al., 2020). While these measures have limited the ability to do business, they have also exacerbated the negative perceptions of consumers and economic

operators, as empirically demonstrated. In this light, we can expect a decrease in the firms' risk appetite to favour an approach directed to the company's survival, such as cost reduction, rationalisation of resources, dynamic process management and planning, and reduction of formality in the decision-making phases (Giones et al., 2020).

COVID-19 has inflicted deep wounds, which have nicked the heart of the community, resulting in multiple loss of life. To the human tragedy are added the economic consequences of taking non-pharmaceutical interventions that have caused simultaneous demand and supply shocks. On the demand side, they have weighed the reduction in purchases of non-essential goods and services, such as entertainment and travel, by consumers (Cahyanto et al., 2016). Added to the contraction in demand was the inevitable contraction in supply by all companies that were not ready to face the crisis timely, adapting, transforming, or adjusting their strategies (Simchi-Levi et al., 2014). Many service and manufacturing sectors as a result had to shut down their operations (del Rio-Chanona et al., 2020).

Europe and the U.S. have adopted financial first aid and stimulus packages for businesses in an attempt to make up for the downturn. However, the destructive events coming from the COVID-19 crisis have directly affected an already unstable social fabric, causing a disintegration that could prolong the persistence of this state of crisis.

9.3 EO, MO, and SRs During the (Un) Confident Macro-Level Environment of the Pandemic

Methodology, Sample, and Procedure

Four narrative case studies are presented in order to verify our proposal. This method is used in the entrepreneurial research (Bodolica & Spraggon, 2015; Marlow & McAdam, 2012). The empirical research focuses on Italy, which is an ideal empirical field for investigations. Italy was the first country in the European Union to register more than 30,000 COVID-19-related deaths and the first to impose a lockdown in February 2020 (Tuite et al., 2020).

Within Europe, Italian SMEs employ 82% of workers in Italy (well above the EU average) and represent 92% of active companies, excluding dormant companies with zero turnover in the last year. These numbers make SMEs a salient feature of the Italian economy and reflect traditions and entrepreneurship widespread in the territories.

The case studies are represented by four Italian cases studies, named SPORTFASHION, TUNA, OIL/COSM, and MILK. Moreover, we introduced the following criteria: (1) made in Italy; (2) national or international scope; (3) the status of not listed firms; (4) strong entrepreneurial features. Data collection comes from a variety of sources such as financial reports, newspapers, and the company's website. We also carried out explorative interviews. We introduced general and open questions to encourage the interviewee to share information and then we continued with more specific questions. We use the literature in order to evaluate Risk-Taking (I like to venture into the unknown and make risky decisions; I tend to act boldly in risky situations), Innovativeness (I often like to try new and unusual activities; in general, I prefer a strong emphasis on innovative approaches rather than previously tested and used approaches; I am in favour of trying out new approaches to problem-solving rather than using methods that others often use), and Proactivity (I tend to plan projects in advance; I would rather get up and put projects in motion than sit around waiting for someone else to do it). In order to classify the attitude towards the COVID-19 atmosphere, we present to the interviewed entrepreneurs the results of the data analysis of the impact of COVID-19 on macro-level confidence in the different economic sectors (Sect. 9.3). In particular, we illustrated the drop in macro-level confidence between the first quarter and the second quarter was quite small compared to other countries. After, we recorded their "sentiment" in order to interpret this situation as positive/negative, gain/loss, and controllable/uncontrollable (Bao, Bao, & Sheng, 2011a). These perspectives help us to identify the role of the self-confidence of the entrepreneur in interpreting the macro un-confident environment and in facing the future (business confidence in the future) with adequate SRs. When necessary, we carried out a follow-up correspondence with the firm's respondents via e-mail and telephone.

The Identification of the Selected Cases

The cases were selected not because they are a representative sample in statistical terms, rather they were considered able to provide significant insights concerning the relationship between digitalisation and customer value creation, with a focus on capabilities. All the analysed cases are family businesses, with entrepreneurs in the leading role. Table 9.2 provides the description of the selected cases.

OIL/COSM is mainly focused on Olive Oil and Mediterranean specialties (such as preserves in oil and sauces). It was founded in 1911. Its strategy is characterised by segmenting the market concerning the distribution channel and is exclusively based on home delivery. The company seeks a differentiation advantage in product quality and customer service. Over the years, OIL has diversified its portfolio by adding a line of cosmetics to the traditional oil and food specialties.

SPORTFASHION, established in 1976 by the founder entrepreneur, focuses on dance and fitness apparel. SPORTFASHION's strength is its uniqueness or its philosophy: "The Art of Movement". Its strategy is characterised by creativity and product innovation, and in 2013 SPORTFASHION launched an innovative pants designed to sculpt the female body by redefining the thighs and backside. In recent years, other products have been designed using technology and have been patented by SPORTFASHION. The new 100% Made in Italy capsule collection, entirely conceived, designed, and manufactured in Italy, was launched in 2017.

TUNA was founded in 1913 by first-generation entrepreneur. The company operates mainly in the food production market: tuna in glass jars is the flagship product of the company. Since 2008 TUNA has undertaken product diversification strategies and made substantial investments to increase production capacity. TUNA has also opened a Country Resort, strengthening the already-existing link with the belonging territory. As part of the company's internal digitalisation processes, TUNA has included e-commerce among its sales channels, obtaining a significant increase in company sales and turnover.

MILK was found in 1948. It focused on a limited range of dairy products (milk, yoghurt, cheese) and in particular on cream for food

Table 9.2 Description of the selected cases

Company	Profiles/strategic business units	Foundation year	Size: revenues and employees	Strategic paths	Respondent's position
Oil/Cosm	Food: Olive oil/Mediterranean food specialities Cosmetics	1911	155 million euros 150 employees	Focus on a market niche: Home delivery/e-commerce High differentiation: Brand image Diversification (cosmetics: Mediterranean)	Entrepreneur Responsible for cosmetics division
Tuna	Food: Tuna	1913	57 million euros 380 employees	Internationalisation (FDI and export) Focus on a market niche: Tuna and Mediterranean speciality Diversification in ice-cream production and hospitality in the south of Italy	Entrepreneur
Sportfashion	Fashion: Dance and fitness	1976	45 million euros 130 employees	Focus on a market niche: Apparel for dance and fitness Product innovation: Patents (shaping pants) High differentiation: Brand image and new made in Italy line Contractual vertical integration with suppliers	Entrepreneur + member of the Board of Directors CFO
Milk	Milk, cheese, dairy products	1948	17 million euros 50 employees	Internationalisation (FDI and export) Focus on a market/geographical niche: Milk and cheese/Liguria and Piedmont Acquisition of two labels in the same product/geographical niche	Entrepreneur

Source: Our elaboration

industries (e.g. ice cream); it has also a geographic focus (working in only two regions, Liguria and Piedmont).

9.4 Results

OIL/COSM is a prospector firm (Penco et al., 2019) and its EO is high. Considering that the company is oriented to e-commerce (Lucio Carli says: “*I wanted the first e-commerce and I promoted the use of new digital marketing media*”), they continue to invest in its own channel. Moreover, OIL/COSM is a partner of some digital marketplaces (e.g. Amazon), especially for the cosmetics brand.

In recent years, they have invested in physical shops (flagship shops named Emporio) to bring the product closer to the consumer, enhancing value creation. All marketing channels (mailing/phone, e-commerce, digital platforms, and physical shops) are integrated following an omnichannel strategy (Matarazzo et al., 2021). In their Emporios, during pandemic customers can have a safe shopping choosing also the home delivery. Thanks to the prospector orientation and the high EO, OIL/COSM are investing more in digitalisation and product innovation during the pandemic. Regarding digitalisation, social media marketing and Customer Relationship Management (CRM) are the most important area for increasing the market, especially in the current situation where the social distancing is stimulating the online channels. Regarding the cosmetics line, OIL/COSM decided to invest in new products such as sanitisation gels, soaps, and masks. Moreover, social media are used to promote not-alcoholic cosmetics for the body care. In this vein, OIL/COSM adapt the cosmetics line to the new demand issues.

TUNA can be described as “analysers”. The EO is high and thanks to this attitude, the level of business confidence in the future is positive. It is necessary to underline that the core business has been advantaged by this crisis. During the COVID-19 and especially during the lockdown, generally speaking preserves have increased the sales in volumes. Considering that the portfolio of TUNA was constituted by 60% for retailing (big retailers and nearby shops) and 40% for catering and HORECA, the growth of sales in the retailing channels balanced the loss of volumes in

catering. Unfortunately, the resort was opened only a few months, then closed causing high losses of ice-cream sales. However, these business areas represent less than 5% of the turnover. Regarding the core business, nevertheless the reduction of the HORECA channel, tuna is +9% of turnover. In terms of the impact of COVID-19, the President says “*we don't have reinvented anything, we were not forced, we only continue to do the same things catching the new opportunities*”. These words demonstrate the adoption of a persevering strategy (Wenzel et al., 2020). TUNA has changed the mix of products (no big boxes for HORECA); moreover, they enhanced the relationship with smaller retailers since the demand during the pandemic tended to buy in nearby shops. The stress for safety stimulated the adoption of smart working for the staff activities. But COVID-19 has driven digitalisation. They enhance the e-commerce channel, passing from 5–6 orders per day to 25, and the social media marketing.

SPORTFASHION can be defined as a prospector, since it tends to explore environmental changes in search of new perspectives for innovation. Despite a 30% loss in core business, thanks to the high level of self-confidence that influences in turn EO, the business confidence in the future is high. “*Unfortunately, COVID-19 impacts differently on economy: high tech and digital services have gone well; other sectors such as tourism, fashion, footwear has taken a deadly hit. Due to the lockdown, many shops had to close, with a 20/30% loss. We hoped that the New Year will start with optimism. We hope that consumer confidence will increase. Perhaps in January and February.*” Thanks to the prospector orientation and the high EO, SPORTFASHION “uses” this crisis for innovating, investing in digitalisation, and product innovation. Nevertheless, SPORTFASHION is already digitalised (Matarazzo et al., 2021); COVID-19 was a shock that forced the company to push on digitalisation and online sales. It made important investment in order to improve website and sales (e.g. Google services in order to increase the visibility). It invested in other digital tools, changing the website platform for e-commerce, adopting a new CRM programme, and switching the logistic digital system. Moreover, they are introducing Google Glass in their physical shops in order to show the products to the customers at home. The entrepreneur is self-confident and optimistic, so that in recent months SPORTFASHION

has launched a new patented pant. This product derives from the principles of pranotherapy: with the support of the pranotherapists during the R&D process, SPORTFASHION inserted little spheres in the tissue, aimed at stimulating the “energy” meridians. This product is stimulating social media marketing messages.

MILK, despite it has developed the number of its products, has reinforced its positioning in the same market niche, revealing its “defenser” orientation. The levels of self-confidence and the EO are moderate. The business confidence attitude towards the future is only quite positive. Despite the food sectors have been advantaged by this crisis, the sales deriving from HORECA have felt down and only partially recovered by sales deriving from retailers. Consistently with our approach, these companies are pursuing a retrenchment strategy to obtain a positive effect on maintaining liquidity and prove a solid foundation for long-term recovery (Pearce & Robbins, 1993), and a persevering strategy.

Table 9.3 represents a path of the strategic orientations dimensions, self and business confidence, and SRs adopted by the different analysed companies.

9.5 Discussions

This study is explorative and wants to demonstrate that companies with a prospector strategic orientation and a high EO are likely to adopt an innovation strategy during this pandemic, characterised by negative effects on the macro-confidence in the future. In this vein, part of this analysis is aimed at defining the link between the impact of the COVID-19 virus and the macro-level confidence of consumers and operators in various economic sectors. For each country, by applying the Poset method, we have obtained two aggregated macro-level confidence indexes separately for the first and second quarter of 2020 and two indexes measuring the COVID-19 impact in the same periods.

The correlation analysis shows an inverse relationship between pandemic impact and macro-level confidence. This trend can be defined at a general level, although for some countries (Belgium, Italy, Portugal, Spain) it is more pronounced. We have also noticed that developed

Table 9.3 MO and EOs, self-confidence and business confidence in the future, SRs, and actions

Company	Strategic orientation	EO	Self-confidence and business confidence in the future	SRs	Actions
Oil/Cosm	Prospector	Innovativeness + Proactiveness + Risk-taking +	<i>SELF-CONFIDENT</i> Positive/negative + Gain/loss + Controllable/uncontrollable + = CRISIS AS A SOURCE OF OPPORTUNITIES (BUSINESS CONFIDENCE IN THE FUTURE)	Persevering/ innovating	Digitalisation Ominichannel integration New products
Tuna	Analyser	Innovativeness - Proactiveness + Risk-taking +	<i>SELF-CONFIDENT</i> Positive/negative + Gain/loss + Controllable/uncontrollable + = CRISIS AS A SOURCE OF OPPORTUNITIES (BUSINESS CONFIDENCE IN THE FUTURE)	Persevering	Digitalisation
Sportfashion	Prospector	Innovativeness + Proactiveness + Risk-taking +	<i>SELF-CONFIDENT, nevertheless the negative situation of the business</i> Positive/negative + Gain/loss - Controllable/uncontrollable + = CRISIS AS A SOURCE OF OPPORTUNITIES (BUSINESS CONFIDENCE IN THE FUTURE)	Innovating/ persevering	Digitalization New products
Milk	Defenser	Innovativeness - Proactiveness - Risk-taking -	NOT VERY SELF-CONFIDENT <i>Nevertheless the positive situation of the business</i> Positive/negative + Gain/loss + Controllable/uncontrollable + = CRISIS AS A SOURCE OF OPPORTUNITIES (BUSINESS CONFIDENCE IN THE FUTURE)	Retrenchment	Cost efficiency
			NOT VERY SELF-CONFIDENT <i>Nevertheless the positive situation of the business</i> Positive/negative + Gain/loss + Controllable/uncontrollable = CRISIS AS A NEUTRAL EVENT (BUSINESS CONFIDENCE IN THE FUTURE)		

Source: Our elaboration

countries, although strongly affected by the pandemic, limit the loss of confidence, while developing countries show more sudden fluctuations in confidence from the first to the second quarter, producing significant drops in confidence.

All this has effects on the strategic choices of companies (Fabeil et al., 2020). At a difficult and uncertain time, companies should adopt more cautious behaviour, refraining from exploiting windows of opportunity to preserve minimum levels of liquidity. Such sudden drops in the macro-level confidence could affect the companies' risk attitude, if they are not characterised by a robust level of self-confidence, compromising their EO. On the contrary, companies could benefit from the implementation of SRs based on a high EO, taking advantage of the potential opportunities for innovation offered by this anomalous situation. Timeliness would seem to be the factor capable of shifting the balance in one's favour. Evaluate, plan, implement, all combining an overall vision, a positive attitude to risk, and a nose for innovation: these are the ingredients to fly above the flames lit by the current crisis. As a consequence, on a micro-level, SMEs with a higher EO are likely to show a major business confidence in the future (OIL/COSM; TUNA; SPORTFASHION). In terms of SRs, our narrative case studies demonstrate that prospectors with a high EO are likely to adopt innovating strategies, defined by Wenzel et al. (2020). Our study highlights also that companies utilise a combination of different coping mechanisms (Kraus et al., 2020).

The findings of our study point to the importance of digitalisation (Zhanna & Yana, 2020). In recent years, digital transformation has revolutionised the way companies conduct business, create relationships with consumers, suppliers, and other stakeholders (Scuotto et al., 2020; Bresciani et al., 2018), and foster business model innovation and customer value creation (Matarazzo et al., 2021). Considering that the situation and restrictions make personal interaction more difficult, digital technologies are used to communicate with consumers and to sell. Digitalisation is more intensively applied also for the re-organisation of work and internal operations. The COVID-19 has forced also SMEs to implement digital technologies, also those operating in traditional industries such as Made in Italy.

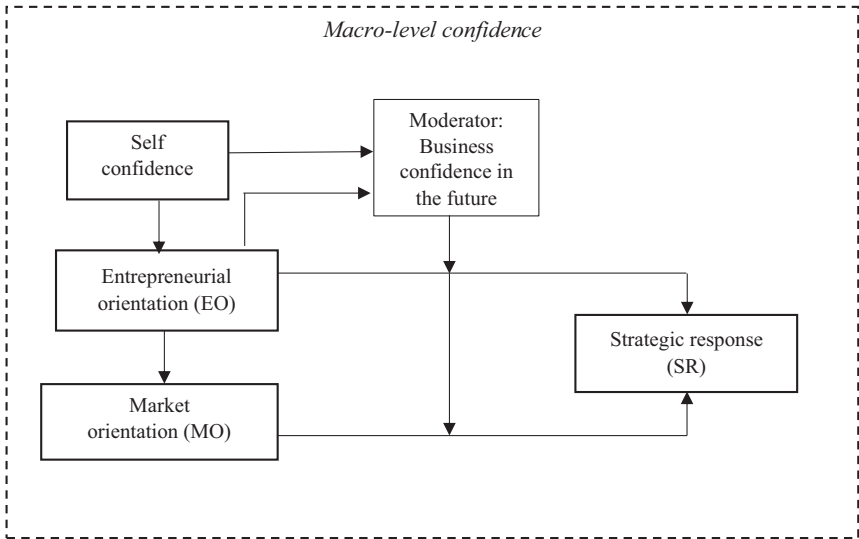


Fig. 9.1 Relationship model between the key concepts. (Source: Our elaboration)

From these results, it emerges that the business confidence in the future, depending on the self-confidence, is influenced by EO that depends in turn by the entrepreneur's self-confidence level (Fig. 9.1). When EO is particularly pronounced, rooted in the very identity of the firm and reinforced over time, it can directly influence the business confidence in the future. In this case, a causal relationship between EO and business confidence in the future is engaged, where EO produces increasing business confidence in the future even within a macro-environment potentially discouraging. The high level of EO helps to enhance the controllability of the event, confirming Bao, Olson, and Yuan (2011b).

In our framework, EO directly influences MO. In fact, based on the entrepreneurial behaviour implemented at different times by the agents, the firm's capacity to adjust its operations to target markets varies. Starting from the typology proposed by Miles and Snow's (1978), it is possible to define the MOs according to precise product-market combinations. In this regard, we refer again to the clear opposition that originates from two antithetical entrepreneurial behaviours: the development of the market undertaken by the type prospector and the defence of the market already

acquired by the action perpetrated by the defender. At last, both EO and MO address the SRs and determine their different declinations.

On the basis of the previous results and after having carefully examined the current literature, we provide some research propositions. These are linked to the various constructs analysed in this study, that is MO, EO, and SRs to a crisis. Our research propositions are declined as follows:

- P1*: firms with a high EO are likely to adopt a prospector MO;
- P2*: firms with a high EO are likely to adopt an innovating/persevering response to a crisis;
- P3*: firms with a low EO are likely to adopt a defensive MO;
- P4*: firms with a low EO are likely to adopt a retrenching response to a crisis;
- P5*: the entrepreneur's business confidence in the future is able to moderate the relationship between the EO and the adoption of specific strategic choices;
- P6*: the entrepreneur's business confidence in the future is able to moderate the relationship between the MO and the adoption of specific strategic choices;
- P7*: firms with a high EO are likely to take a major business confidence in the future;
- P7 bis*: it can also be expected that firms with lower EO take a less business confidence in the future;
- P8*: self-confidence influences EO that in turn is able to enhance business confidence in the future.

9.6 Conclusions, Implications, and Limitations

The study analyses the widespread decline in macro-level confidence during the COVID-19 shock. The changes in the macro-environment and relative confidence fluctuations on a large scale have altered the firms' *modus operandi*, as well as the definition of their strategies (Fabeil et al., 2020).

Given this scenario, this study scrutinises the relationship between Italian SMEs strategic orientation (Miles & Snow, 1978) due to EO and MO, and consequent SRs. Prospectors and high entrepreneurial firms are more self-confident and confident in the business future and inclined to better respond to a crisis, using it for innovating the business model. Digitalisation, re-organisation, and innovation are the most used paths.

Theoretical and practical implications characterise this study. Regarding the theoretical implications, the relationship between strategic orientations and SRs to a crisis offers an original contribution to the literature, by analysing all these constructs simultaneously. This study also contributes to enriching the literature about entrepreneurial businesses during a crisis.

Moreover, this research has significant managerial implications. Our research demonstrates that when the company has to face a crisis, a more aggressive MO and EO represent a stimulus for business model innovation. In particular, digitalisation, re-organisation, and innovation are the most successful tools for facing a crisis.

Despite the importance of these empirical results and practical implications, this study has some inherent limitations, which might be challenged in future research. First, the study is based on a multiple case study design that does not provide static generalisations. It is only provided by a pilot study aimed at building a new theory about the connection between EO, MO, and their impact on SRs to a crisis. Further studies are needed to extend the number of case studies, belonging to other country. Second, the number of variables could be expanded by adding other factors related to corporate governance (e.g. the balance between entrepreneurship and professional managers). Then, it would be appropriate to evaluate the effects of the different strategies also in the long term, in line with the evolution of the economic situation.

References

- Alaimo, L. S., Ciacci, A., & Ivaldi, E. (2020). Measuring Sustainable Development by Non-aggregative Approach. *Social Indicators Research*. <https://doi.org/10.1007/s11205-020-02357-0>

- Anderson, R. M., Heesterbeek, H., Klinkenberg, D., & Hollingsworth, T. D. (2020). How Will Country-Based Mitigation Influence the Course of the COVID-19 Epidemic? *The Lancet*, 395(10228), 931–934.
- Anwar, J., & Hasnu, S. (2017). Strategic Patterns and Firm Performance: Comparing Consistent, Flexible and Reactor Strategies. *Journal of Organizational Change Management*, 30(7), 1015–1029. <https://doi.org/10.1108/JOCM-03-2016-0053>
- Bao, Y., Bao, Y., & Sheng, S. (2011a). Motivating Purchase of Private Brands: Effects of Store Image, Product Signatureness, and Quality Variation. *Journal of Business Research*, 64, 220–226, ISSN 0148-2963, <https://doi.org/10.1016/j.jbusres.2010.02.007>
- Bao, Y., Olson, B., & Yuan, W. (2011b). Defensive and Expansion Responses to Environmental Shocks in China: Interpreting the 2008 Economic Crisis. *Thunderbird International Business Review*, 53(2), 225–245.
- Baron, R. A., Mueller, B. A., & Wolfe, M. T. (2016). Self-Efficacy and Entrepreneurs' Adoption of Unattainable Goals: The Restraining Effects of Self-Control. *Journal of Business Venturing*, 31(1), 55–71.
- Beliaeva, T., Shirokova, G., Wales, W., & Gafforova, E. (2020). Benefiting from Economic Crisis? Strategic Orientation Effects, Trade-Offs, and Configurations with Resource Availability on Sme Performance. *International Entrepreneurship and Management Journal*, 16(1), 165–194.
- Benevolo, C., Penco, L., & Torre, T. (2020). *Entrepreneurial Decision-Making for Global Strategies: A 'Heart-Head' Approach*. *Management Decision*, Vol. Ahead-of-Print No. Ahead-of-Print. <https://doi.org/10.1108/MD-10-2019-1495>
- Benner, M. J., & Zenger, T. (2016). The Lemons Problem in Markets for Strategy. *Strategy Science*, 1(2), 71–89.
- Blackmore, K., & Nesbitt, K. (2013). Verifying the Miles and Snow Strategy Types in Australian Small- and Medium-Size Enterprises. *Australian Journal of Management*, 38(1), 171–190.
- Bodolica, V., & Spraggon, M. (2015). An Examination into the Disclosure, Structure, and Contents of Ethical Codes in Publicly Listed Acquiring Firms. *Journal of Business Ethics*, 126, 459–472. <https://doi.org/10.1007/s10551-013-1966-x>
- Bonn, I., & Rundle-Thiele, S. (2007). Do or Die—Strategic Decision-Making Following a Shock Event. *Tourism Management*, 28(2), 615–620, ISSN 0261-5177, <https://doi.org/10.1016/j.tourman.2006.04.021>
- Bresciani, S., Ferraris, A., & Del Giudice, M. (2018). The Management of Organizational Ambidexterity Through Alliances in a New Context of Analysis: Internet of Things (IoT) Smart City Projects. *Technological*

- Forecasting and Social Change*, 136, 331–338., ISSN 0040-1625. <https://doi.org/10.1016/j.techfore.2017.03.002>
- Cahyanto, I., Wiblishauser, M., Pennington-Gray, L., & Schroeder, A. (2016). The Dynamics of Travel Avoidance: The Case of Ebola in the US. *Tourism Management Perspectives*, 20, 195–203.
- Carnahan, S. (2017). Blocked But Not Tackled: Who Found New Firms When Rivals Dissolve? *Strategic Management Journal*, 38(11), 2189–2212.
- Chaston, I., & Sadler-Smith, E. (2012). Entrepreneurial Cognition, Entrepreneurial Orientation and Firm Capability in the Creative Industries. *British Journal of Management*, 23(3), 415–432.
- Chattopadhyay, P., Glick, W., & Huber, G. (2001). Organizational Actions in Response to Threats and Opportunities. *The Academy of Management Journal*, 44(5), 937–955. Retrieved December 12, 2020, from <http://www.jstor.org/stable/3069439>
- Covin, J. G., & Slevin, D. P. (1989). Strategic Management of Small Firms in Hostile and Benign Environments. *Strategic Management Journal*, 10(1), 75–87. <https://doi.org/10.1002/smj.4250100107>
- Covin, J. G., & Slevin, D. P. (1991). A Conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship Theory and Practice*, 16(1), 7–26. <https://doi.org/10.1177/104225879101600102>
- del Rio-Chanona, R. M., Mealy, P., Pichler, A., Lafond, F., & Farmer, D. (2020). Supply and Demand Shocks in the COVID-19 Pandemic: An Industry and Occupation Perspective, *arXiv Preprint arXiv:2004.06759*
- Eurostat Database. (2020). *Eurostat*. <https://ec.europa.eu/eurostat/data/database>
- Fabeil, N. F., Pazim, K. H., & Langgat, J. (2020). The Impact of COVID-19 Pandemic Crisis on Micro-Enterprises: Entrepreneurs' Perspective on Business Continuity and Recovery Strategy (May 28). *Journal of Economics and Business*, 3(2). Available at SSRN: <https://ssrn.com/abstract=3612830>
- Faulkner, B. (2001). Towards a Framework for Tourism Disaster Management. *Tourism Management*, 22(2), 135–147.
- Ferguson, N. M., Laydon, D., Nedjati-Gilani, G., Imai, N., Ainslie, K., Baguelin, M., Bhatia, S., Boonyasiri, A., Cucunuba, Z., & Cuomo-Dannenburg, G. (2020). *Impact of Non-pharmaceutical Interventions (NPIs) to Reduce COVID-19 Mortality and Healthcare Demand*. Imperial College, London. Available at <https://doi.org/10.25561/77482>
- Ferraresi, A., Quandt, C., dos Santos, S. A., & Frega, J. R. (2012). Knowledge Management and Strategic Orientation: Leveraging Innovativeness and Performance. *Journal of Knowledge Management*, 16(5), 688–701.

- Giones, F., Brem, A., Pollack, J. M., Michaelis, T. L., Klyver, K., & Brinckmann, J. (2020). Revising Entrepreneurial Action in Response to Exogenous Shocks: Considering the COVID-19 Pandemic. *Journal of Business Venturing Insights*, 14. <https://doi.org/10.1016/j.jbvi.2020.e00186>
- Hagerty, M. R., & Veenhoven, R. (2003). Wealth and Happiness Revisited—Growing National Income Does Go with Greater Happiness. *Social Indicators Research*, 64, 1–27. <https://doi.org/10.1023/A:1024790530822>
- Ivaldi, E., Ciacci, A., & Soliani, R. (2020). Urban Deprivation in Argentina: A POSET Analysis. *Papers in Regional Science*, 99(6), 1723–1747. <https://doi.org/10.1111/pirs.12555>
- Koellinger, P. (2008). Why Are Some Entrepreneurs More Innovative Than Others? *Small Business Economics*, 31(1), 21–37. <https://doi.org/10.1007/s11187-008-9107>
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A., & Tiberius, V. (2020). The Economics of COVID-19: Initial Empirical Evidence on How Family Firms in Five European Countries Cope with the Corona Crisis. *International Journal of Entrepreneurial Behavior & Research*, 26(5), 1067–1092. <https://doi.org/10.1108/IJEBR-04-2020-0214>
- Kunc, M., & Bhandari, R. (2011). Strategic Development Processes during Economic and Financial Crisis. *Management Decision*, 49(8), 1343–1353.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying and EO Construct and Linking It to Performance. *Academy of Management Review*, 21(1), 135–172.
- Marino, L. D., Lohrke, F. T., Hill, J. S., Weaver, K. M., & Tambunan, T. (2008). Environmental Shocks and SME Alliance Formation Intentions in an Emerging Economy: Evidence from the Asian Financial Crisis in Indonesia. *Entrepreneurship Theory and Practice*, 32(1), 157–183.
- Marlow, S., & McAdam, M. (2012). Analysing the Influence of Gender upon High Technology Venturing within the Context of Business Incubation. *Entrepreneurship Theory and Practice*, 36(4), 655–676.
- Massa, S., & Testa, S. (2009). How Do Miles and Snow's Strategic Types Differ in Their Knowledge Assets? Evidence from Italian SMEs. *Knowledge Management Research and Practice*, 7(4), 377–386.
- Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital Transformation and Customer Value Creation in Made in Italy SMEs: A Dynamic Capabilities Perspective. *Journal of Business Research*, 123, 642–656.
- Miles, R. E., & Snow, C. C. (1978). *Organizational Strategy, Structure and Process*. McGraw-Hill.
- Miller, D., & Friesen, P. H. (1978). Archetypes of Strategy Formulation. *Management Science*, 24(9), 921–933.

- Ndofor, H. A., Vanevenhoven, J., & Barker, V. L., III. (2013). Software Firm Turnarounds in the 1990s: An Analysis of Reversing Decline in a Growing, Dynamic Industry. *Strategic Management Journal*, 34(9), 1123–1133.
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The Socio-economic Implications of the Coronavirus Pandemic (COVID-19): A Review. *International Journal of Surgery*, 78, 185–193. <https://doi.org/10.1016/j.ijvsu.2020.04.018>
- Pearce, J. A., & Robbins, K. (1993). Toward Improved Theory and Research on Business Turnaround. *Journal of Management*, 19(3), 613–636.
- Pearson, C. M., & Clair, J. A. (1998). Reframing Crisis Management. *Academy of Management Review*, 23(1), 59–76.
- Penco, L., Torre, T., & Scarsi, R. (2019). Does Strategic Orientation Influence Strategy Formulation and Organisational Design in Italian Food Medium Sized Enterprises? The Role of the Family. *British Food Journal*, 122(5), 1397–1419. <https://doi.org/10.1108/BFJ-03-2019-0210>
- Pretorius, M. (2008). When Porter's Generic Strategies Are Not Enough: Complementary Strategies for Turnaround Situations. *Journal of Business Strategy*, 29(6), 19–28. <https://doi.org/10.1108/02756660810917200>
- Ren, C. R., Hu, Y., & Cui, T. H. (2019). Responses to Rival Exit: Product Variety, Market Expansion, and Preexisting Market Structure. *Strategic Management Journal*, 40(2), 253–276.
- Rugman, A. M., & Verbeke, A. (1988). Does Competitive Strategy Work for Small Business? *Journal of Small Business and Entrepreneurship*, 5(3), 45–50. <https://doi.org/10.1080/08276331.1988.10600300>
- Saebi, T., Lien, L., & Foss, N. J. (2017). What Drives Business Model Adaptation? The Impact of Opportunities, Threats and Strategic Orientation. *Long Range Planning*, 50(5), 567–581.
- Scuotto, V., Del Giudice, M., Garcia-Perez, A., Orlando, B., & Ciampi, F. (2020). A Spill Over Effect of Entrepreneurial Orientation on Technological Innovativeness: An Outlook of Universities and Research Based Spin Offs. *The Journal of Technology Transfer*, 45, 1634–1654. <https://doi.org/10.1007/s10961-019-09760-x>
- Shane, S. (2000). Prior Knowledge and the Discovery of Entrepreneurial Opportunities. *Organization Science*, 11, 448–469.
- Sharma, S. (2000). Managerial Interpretations and Organizational Context as Predictors of Corporate Choice of Environmental Strategy. *Academy of Management Journal*, 43(4), 681–697.
- Simchi-Levi, D., Schmidt, W., & Wei, Y. (2014). From Superstorms to Factory Fires: Managing Unpredictable Supply Chain Disruptions. *Harvard Business Review*, 92(1–2), 96–101.

- Stieglitz, N., Knudsen, T., & Becker, M. C. (2016). Adaptation and Inertia in Dynamic Environments. *Strategic Management Journal*, 37(9), 1854–1864.
- Tonkiss, F. (2009). Trust, Confidence and Economic Crisis. *Intereconomics*, 44(4), 196–202.
- Tuite, A. R., Bogoch, I., Sherbo, R., Watts, A., Fisman, D. N., & Khan, K. (2020). Estimation of COVID-2019 Burden and Potential for International Dissemination of Infection from Iran. *medRxiv* 2020.02.24.20027375; (Published Online Feb 25.) (Preprint). <https://doi.org/10.1101/2020.02.24.20027375>
- Tuzovic, S., & Kabadayi, S. (2020). The Influence of Social Distancing on Employee Well-Being: A Conceptual Framework and Research Agenda. *Journal of Service Management*. <https://doi.org/10.1108/JOSM-05-2020-0140>
- Vaaler, P. M., & McNamara, G. (2004). Crisis and Competition in Expert Organizational Decision Making: Credit Rating Agencies and Their Response to Turbulence in Emerging Economies. *Organization Science*, 15(6), 687–703. <https://doi.org/10.1287/orsc.1040.0089>
- Wales, W., Gupta, V. K., Marino, L., & Shirokova, G. (2019). EO: International, Global and Cross-cultural Research. *International Small Business Journal*, 37(2), 95–104.
- Wenzel, M., Stanske, S., & Lieberman, M. B. (2020). SRs to Crisis. *Strategic Management Journal*. <https://doi.org/10.1002/smj.3161>
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial Orientation and Small Business Performance: A Configurational Approach. *Journal of Business Venturing*, 20, 71–91. <https://doi.org/10.1016/j.jbusvent.2004.01.001>
- Zahra, S. A. (1991). Predictors and Financial Outcomes of Corporate Entrepreneurship: An Exploratory Study. *Journal of Business Venturing*, 6(4), 259–285, ISSN 0883-9026. [https://doi.org/10.1016/0883-9026\(91\)90019-A](https://doi.org/10.1016/0883-9026(91)90019-A)
- Zhanna, B., & Yana, L. (2020). The Impact of Digitalization and Sustainable Development Goals in SMEs' Strategy: A Multi-Country European Study. In A. Thrassou, D. Vrontis, Y. Weber, S. M. R. Shams, & E. Tsoukatos (Eds.), *The Changing Role of SMEs in Global Business*. Palgrave Studies in Cross-disciplinary Business Research. In Association with EuroMed Academy of Business. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-45835-5_2
- Zheng, Y. Y., Ma, Y. T., Zhang, J. Y., & Xie, X. (2020). COVID-19 and the Cardiovascular System. *Nature Reviews Cardiology*, 17, 259–260. <https://doi.org/10.1038/s41569-020-0360-5>



10

The Impact of Sustainability and Total Quality Management on SMEs Financial Performance Under Crisis Conditions

Georgios Sainis, Athanasios Kriemadis,
and Dimitra Kapnisi

10.1 Introduction

The study examines the contribution of sustainability and Total Quality Management to the improvement of SMEs' financial performance, especially when small- and medium-sized enterprises (SMEs) operate under crisis conditions. It also describes the role corporate social responsibility plays to a company's reputation and stakeholders' perceptions. Finally, it illustrates the importance of the cooperation of SMEs with their stakeholders and the implementation of sustainability strategies along with

G. Sainis

The American College of Greece (Deree), Athens, Greece

e-mail: gsainis@acg.edu

A. Kriemadis (✉) • D. Kapnisi

Department of Management Science and Technology, University of Peloponnese, Tripolis, Greece

e-mail: thanosk@uop.gr

total quality management strategies, leading to an improved operational and financial performance under crisis conditions.

The methodology approach used supports the aim of the survey that is to overview what has been written in literature regarding the contribution of TQM and sustainability of an SME leading to its improved financial performance under crisis conditions. A Systematic literature review was conducted at the intersection of sustainability and total quality management fields, for businesses under crisis conditions. Three databases, including Emerald, Taylor & Francis, Elsevier Science and Google Scholar, were searched up to 2020. After collecting a number of articles, books, book chapters, proceedings, conference papers and published papers, the authors reviewed the most important and relevant of the reference lists in order to enrich the present study with updated research-oriented studies. Sixty-two (62) sources were selected representing the knowledge base of the present study. The literature was categorized into sections as presented in Fig. 10.1, which also displays the logical structure of the analysis followed.

10.2 The Concept of Corporate Sustainability

To cope with issues and problems that the modern business world entails, SMEs should evolve and think strategically, considering the benefits of their stakeholders and the society as a whole (Fernando, 2012). Sustainability is a brand-new concept in the business world, both to its content and to the means of its implementation. SMEs have decided lately to educate and train their senior executives on sustainable development issues; though, this concept is not yet widely acknowledged (Hesselbarth & Schaltegger, 2014). Given that competition is strong among business units, sustainability is becoming a trend being included in even more business units' vision, strategies and activities (Windolph et al., 2014). Sustainability is the ability of a company to satisfy its current needs and be capable to cope better with future needs (Idris & Zairi, 2006).

A sustainable way of thinking, planning and acting is becoming even more integrated into corporate strategies. This is because it shows positive

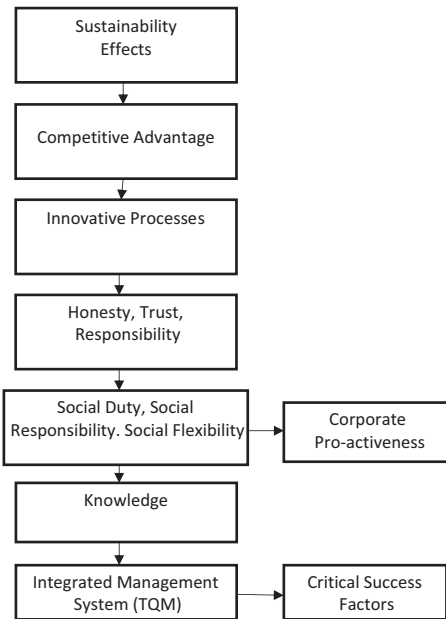
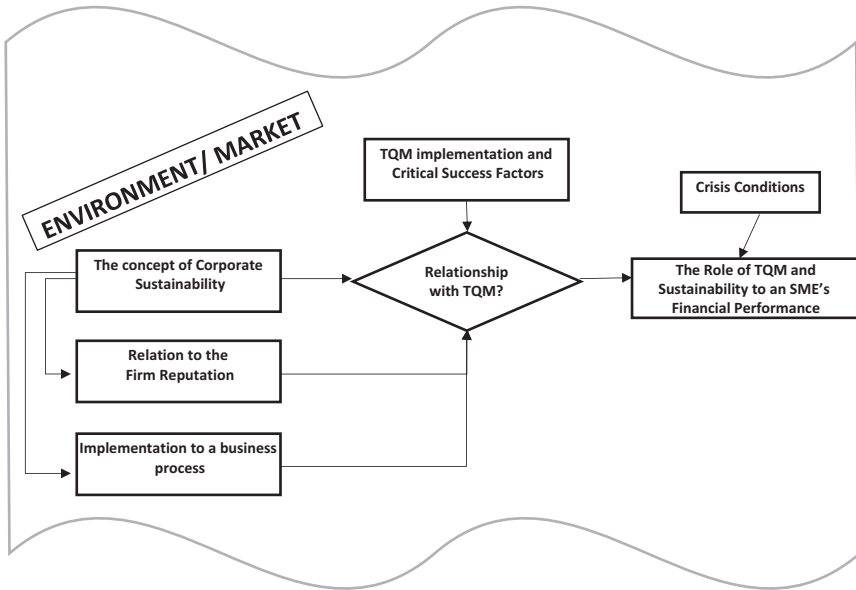


Fig. 10.1 Literature Review Structure

results in terms of economic welfare, competition and corporate reputation. It is important for growth SMEs to consider what is known as “triple bottom line” (TBL). The triple bottom line or the three “P”s as it is used to be called, refer to the SME’s social aspect (the people), environmental aspect (the planet) and economic aspect (the profit). Thus, SMEs should implement strategies and make investments that will benefit the planet, the society and their economic growth (Fernando, 2012).

More and more SMEs consider sustainability as a focal point in the development of their mission, goals, strategies and actions. Thus, the concept of sustainability is spreading in businesses across the globe creating a new eco-friendly and people-oriented business reality. SMEs that commit to sustainability make reliable decisions that create stakeholder value, benefit the SMEs’ environment and yield more profits to them (Fernando, 2012).

People tend to make ethical and sustainable choices committed to sustainability, like recycling and composting. Therefore, SMEs looking for a competitive advantage, an economic welfare and a continuous improvement will eventually be aligned with the concept of sustainability, offering their customers a sustainable option. The interaction between an SME and its stakeholders could act as a mediator for the adoption of sustainable practices and strategies (Fernando, 2012). Corporate sustainability is also considered as an SMEs wealth accumulated from the long-term benefits created for the company’s stakeholders (Zink, 2007).

According to business literature, the SMEs’ need for economic development, adaptation to the changes due to the environmental governing policies and regulations, as well as response to the stakeholders’ urge for social responsibility and integrity have shaped the notion of corporate sustainability which also arises from the corporate innovation activities related to social and environmental issues (Christofi et al., 2012).

The stakeholder theory that raises awareness on the perceptions, attitudes and needs of all internal and external parties of an SME, like the shareholders, employees, customers, suppliers and community, is the basis for corporate sustainability (Freeman, 1984). Therefore, SMEs that aim at sustainability should focus on their stakeholders’ demands that are influenced by the business environment.

The business environment is very dynamic due to constantly changing market trends, number of customers, competitors, regulations and so on. Firms that face intense economic, social and cultural uncertainties may respond to those challenges by becoming even more flexible. Vargo and Seville (2011) define flexibility as the ability of a company to thrive when it faces difficult and continuous changing conditions. All the selected “thrive” actions should be incorporated into a company’s strategic plan and not just being part of the crisis management actions. They should be capable of being adapted to new conditions and remain competitive (Asif et al., 2011).

The process of meeting stakeholders’ needs and requirements is composed from the detection of those requirements, the planning of the process, the allocation and management of resources and, finally, the determination of those processes. All these components are linked using the sustainable development and the continuous improvement (Asif et al., 2011).

The collaboration and the constant interaction between the SME and its stakeholders through innovative processes are crucial for the incorporation of sustainability into the business processes. Following that way, the SME will be in the position to adapt to new tendencies and conditions, to competition but also identify stakeholders’ needs and demands before they state them. Honesty, trust and the sense of responsibility are the basis for having a good and long-term relationship between sustainable SMEs and society based on SMEs values. That relationship is also the prerequisite for the sustainable development of SMEs (Stuebs & Sun, 2015). In conclusion, the SME should consider its economic strengths and weaknesses, the market opportunities, as well as the community and the environment within it functions in order to respond to stakeholders’ requirements (Asif et al., 2011).

10.3 Sustainability and Firm Reputation

In 1975, Sethi presented the first model of corporate social responsibility, setting up a three-step corporate social performance behaviour model. This model includes the elements of social duty, social responsibility and

social flexibility. At first, social duty refers to the legal restrictions and the market limitations. Social responsibility refers to the societal standards, while social flexibility refers to the corporate pro-activeness and readiness to respond to emerging needs, demands and trends (Christofi et al., 2012). In 1999, Carroll extended the Sethi's model and described the corporate social performance as a four-step corporate behaviour. It consists of the following aspects: the economic, the ethical, the voluntary and humanistic and the legitimacy aspects. It also incorporates the corporate profitability in the context of corporate social responsibility as part of the corporate sustainability (Christofi et al., 2012).

The corporate social responsibility is measured and described using the following indicators: (a) justice and integrity, (b) the consideration for human rights, (c) the safety, (d) the security and equality among employees, (e) the human resource development, (f) the labour practices, (g) the long-term industrial relations with employees and (h) the social responsibility reporting (Christofi et al., 2012). It is important and challenging to note that it would be better to integrate the sustainability management into the company's corporate operations, activities and processes instead of developing a discrete sustainable structure in a company (Schaltegger et al., 2002).

SMEs that act towards sustainability are capable of improving their reputation and image, increasing in this way their revenues. The recognized relationship of corporate sustainability with corporate reputation is based on the stakeholder's perceptions and attitudes towards the company's set of strategies and policies referring to its profitability, society and environment. In particular, when values such as integrity, honesty and consciousness characterize a company's operations, its stakeholders acknowledge the contribution and consideration of the triple bottom line and express their support, enhancing the corporate reputation (Gomez-Trujillo et al., 2020).

Corporate sustainability enriches stakeholders' positive views regarding the SME, improving in this way its corporate image. The company's image is a crucial factor of SME performance evaluation. Sustainability should be incorporated into SME vision, core management processes and activities. SME management should also inform all stakeholders for the sustainable orientation it has adopted and communicate to them all the

activities and investments made on sustainability. Thus, “sustainability reporting” is essential for SMEs that invest in sustainable development (Kwarteng et al., 2016).

10.4 Implementation of Sustainability in the Business Processes

The need to constantly perceive their internal and external environment, sustainable SMEs determine their current or upcoming issues, create new strategies and act proactively to respond to evolving challenges. To achieve that objective, the need to apply a management system seems very useful for the managers of these SMEs. Having implemented a management system, SMEs will manage to integrate gradually and systematically sustainability elements in their main processes (Asif et al., 2011).

To implement sustainability into a corporate strategy is not an easy task though more and more business units are pressed by their external environment to adopt the concept of sustainability and implement it into their corporate strategies (Bansal, 2005). The management tools used for implementation should also be characterized by sustainability elements. Those tools occasionally obstruct rather than facilitate the implementation of the sustainable strategies, mainly because they are developed by scholars and not practitioners. That makes them even more difficult to be understood and practically being applied in SMEs. Therefore, SMEs occasionally find difficulties in choosing the appropriate tool for applying each of the sustainability strategy elements (people, planet, profit) (Boiral, 2002). The organizational structure should change radically in order to implement sustainability strategies and practices, effectively (Schaltegger et al., 2012).

Windolph et al. (2014) research dealt with the implementation of corporate sustainability and highlighted the implementation of sustainability management tools. The variables that significantly affect the application of such tools were the “awareness” and the “standards”. The variable “awareness” describes the SME’s awareness of the available sustainability management tools. SMEs that are aware of the existence and the value of those management tools will most probably implement them in their operations. In order to support businesses (educational institutions,

governing bodies, scholars, business consultants and management specialists), scholars, business consultants and management specialists should develop and disseminate new sustainability management tools which will contribute to the creation of a viable SME, complying with the triple bottom line (people, planet, profit).

The second variable “standards” influences significantly the application of sustainability management tools. Windolph et al. (2014) argued that it is to the company’s benefit to comply with regulations and standards as this will facilitate them to implement sustainability management tools, uniformly. The use of an integrated management system (IMS) could contribute to the incorporation of stakeholders’ demands and expectations into the company’s business processes. An integrated management system refers to the processes that are connected to each other trying to accomplish specific complex goals, utilizing company’s resources efficiently (Karapetrovic, 2003). An IMS integrates sustainability and continuous improvement strategies and practices into the SME. The IMS is considered as the framework (Rocha et al., 2007), the roadmap for a corporate sustainable development (Oskarsson & Malmborg, 2005).

Corporate sustainability can be easily incorporated into the business processes through a pertinent management system that will conduct, methodologically and systematically, the process(es) of sustainability integration. An integrated management system for corporate sustainability includes a number of elements like the definition of governance, the creation of governance mechanisms, the development of SME structures and infrastructures, the evaluation of plans and actions, the reconsideration and continuous improvement of ideas, plans and initiatives concerning sustainability, and the establishment of routines for the systematic integration of corporate sustainability into the business processes (Asif et al., 2011).

10.5 The Relationship of Sustainability with Total Quality Management

The process of integrating sustainability into the SME could be based on Deming’s (1994) PDCA (Plan, Do, Check and Act) cycle. Deming’s cycle can ensure the continuous improvement of a process and when an

implemented IMS follows the PDCA cycle, creates the needed framework for an SME in order to cope with social, economic and environmental issues (Asif et al., 2011).

There is a link between sustainability and Total Quality Management (TQM), since both are concepts related to the SMEs' need for continuous improvement, showing simultaneously respect for all stakeholders. Sustainability is a vital requirement for continuous improvement and thus, should be incorporated into the business management processes (Asif et al., 2011).

Quality is the comparative degree of excellence based on which, products and services can be compared or judged (Hansson & Eriksson, 2002). Total Quality Management (TQM) is considered a business management approach that aims to increase the value of a company by continuously improving its operating systems and processes. In the last few decades, TQM was used as an approach to sustain a company's competitive advantage and maintain or further improve its productivity and profitability level (Chen et al., 2020).

TQM is considered a philosophy supported by a quality management programme. Management experts stated the importance of TQM, marking the beginning of a new philosophy in the field of management (Sainis et al., 2016; Teixeira et al., 2015; Kriemadis, 2018). Quality is equally applied to services and products (Kriemadis, 2001; Sainis et al., 2017, 2019; Sioutou et al., 2019). Quality was first introduced in the manufacturing industry, and later on in services. Its role in both industries was to be used as a means of achieving a competitive advantage considering both quality and cost issues (Sainis et al., 2016; Kriemadis, 2019; Kriemadis et al., 2017). In the last decade, TQM applies in SMEs and in public sector (Gherhes et al., 2016). Implementing a TQM system to different-sized enterprises (SMEs), according to Sainis et al. (2019), will enable them to:

- (a) develop and improve their planning process in the short and long run,
- (b) empower their workforce,
- (c) instil quality goals within the SMEs,
- (d) encourage the implementation of quality circles, team building and problem-solving processes and
- (e) improve the quality of products and services, achieving customers' satisfaction.

TQM philosophy supporters claim that, if businesses adopt that strategy, the benefits derived would be the following: (a) high-quality products, (b) reduced costs, (c) improved communication, (d) strong team spirit, (e) satisfied employees and customers and (f) enhanced financial performance (Chandler & McEvoy, 2000; Easton & Jarrell, 1998). Hendricks and Singhal (2001) showed that corporations that effectively implemented TQM, outperformed non-TQM companies in the areas of profitability, revenues, costs, capital expenditure, total assets and employee turnover. Literature review on TQM practices revealed that an extensive research has been conducted on practices of TQM in large manufacturing companies; however, research on implementation of TQM to SMEs was limited (Dinesh & Deepak, 2005; Petroni, 2002; Rahman, 2001). It should be noted that SMEs are often resource suppliers to larger companies and any lack of product quality from the former can have a negative impact on the quality and productivity of the latter. There is a need for SMEs to develop and adopt a TQM plan supporting and reinforcing their operational and financial competitive advantage (Sainis, 2018).

The value added of TQM implementation is derived from the development of a management system that will improve the decision-making process and the company's financial and operational performances. To guarantee sustainability in this process, the TQM principles and the thoughtfully selected Critical Success Factors (CSF) need to be followed (Aquilani et al., 2016).

The development and implementation of a TQM plan follow two different paths that can drive a company to the necessary changes to improve its level of efficiency. The first path supports the continuous improvement processes, increasing its reliability and efficiency, and the second path supports the company's continuous learning processes, keeping its flexibility and responsiveness of the management system (Sutcliffe et al., 2000).

New methods, like the Six Sigma and the Lean management approach, are used as a means of introducing quality to a company. These methods are treated as TQM components that increase a company's operational and financial performance (Hendricks & Singhal, 2001). All these quality elements implemented need the support and adoption of information

technology, improving in this way its operational and financial performances (Widyaningrum et al., 2017).

International and national quality awards have been developed and applied in different parts of the world like the Deming Prize in Japan, the Malcolm Baldrige National Quality Award in the USA and the European Quality Award in European Union (Fonseca, 2015).

Research findings indicate that there is a positive relationship between TQM elements and SMEs sustainability. TQM elements include the SMEs values (organizational quality culture), quality processes, continuous quality improvements and customer's satisfaction (Alharbi et al., 2016).

One of these elements is the Leadership's readiness, a prerequisite in developing the appropriate quality culture needed for introducing and implementing TQM. Top management is responsible for identifying and recognizing the need for change in a company's cultural environment. Then, it will be easier for all employees to recognize and understand that change. Thus, in all different-sized companies, management's visibility becomes an opportunity for supporting probable cultural changes applied to all different levels of workers. This would have as a result the minimization of the employee's resistance to change, given that managers would motivate all employees in satisfying the company's vision for quality, placing realistic quality performance goals, objectives, strategies and processes (Ghobadian & Gallear, 1997; O'Regan & Ghobadian, 2002).

10.6 Critical Factors in TQM Implementation and Firm's Performance Evaluation

Yusof and Aspinwall (2016) support that in the TQM implementation process, not all quality criteria should be considered as Critical Success Factors (CSF). Different circumstances and practices adopted from each company should determine the CSF, making the TQM implementation sensitive to these variables. Sensitive critical factors could be the management of leadership; the employees' commitment and support; the suppliers' quality management; the employee's relations; and training and education; in addition the attitudes, the behaviour of employees, the

teamwork and involvement of all stakeholders are also important and critical factors for the successful implementation of TQM (Yusof & Aspinwall, 1999).

Research findings reveal that all companies operating in different sectors, from the construction and merchandising to services and public sector, have recognized various benefits from implementing TQM, like higher product/service quality of their products, better customer service, improvements in customer and employee satisfaction as well as an increase in the efficiency and improvement in overall business performance.

Research has also revealed that the effective implementation of TQM has a strong impact on a company's operating-based measures, a modest impact on the revenue-based measures and a weak impact on the cost-based measures. So, the operational character of TQM has been identified and verified. Moreover the cultural issues of TQM have a significant effect on TQM implementation (Wayhan & Balderson, 2007). So, TQM implementation needs to be supported by a management system that includes tools and methods capable of minimizing and sustaining the available resources of a company, resulting in improved processes, an increase of customer's satisfaction level and SMEs commitment (Alharbi et al., 2016).

Quality implementation provides a higher long-term profitability and an increase in a company's market share (Shahin, 2011). The quality implemented through a TQM plan can influence a company's financial performance which was verified from the survey conducted by Easton & Jarrell (1998). The methodology of this survey was based on an interview-research approach and the authors have used 14 different financial performance measures. They also supported the long-term character of TQM implementation for achieving an improved financial performance. Findings also revealed that the more mature the level of TQM implementation, the better the financial results in the long- and short-term horizon Easton & Jarrell (1998).

On the other hand, a study conducted by Herzallah et al. (2014) has proved the indirect relationship of TQM practices with a company's financial performance. The effect of this relationship was on the company's competitive strategies developed. Those strategies and the cost-leadership strategy in particular have shown a direct and statistically

significant positive relationship with the hard elements of TQM, and specifically, with financial performance (Douglas & Judge, 2001; Hendricks & Singhal, 2001; Herzallah et al., 2014).

In a survey conducted by Onuwa (2008) the relationship between quality management elements and financial and non-financial performance measures was examined. Results disclosed that customer focus, human resource capabilities and internal culture were the quality elements that influenced mainly a company's financial performance. Leadership and employee commitment were, on the other hand, the quality elements that mainly affected the non-financial criteria, such as employees' and customers' satisfaction, SMEs learning and process efficiency.

The reasons for TQM implementation are not only the satisfaction of a company's internal needs, that is cost minimization and quality improvement, but also company's response to external pressure realized due to the strong level of competition and the need for sustainability in the market.

10.7 The Role of Corporate Sustainability and TQM in the Survival and Development of Businesses Under Crisis Conditions

Prajogo and Sohal (2006) presented the way that the TQM elements fit into and mediate the relationship between SME strategy and performance. Both the level of diversification and the level of TQM implementation were positively and significantly related to the three SMEs performance measures, namely the product quality, the product innovation and the process innovation. TQM, as a contemporary business philosophy, could be adopted as a means of implementing a differentiation strategy achieving and improving a company's performance. To differentiate from its competitors a company can set as a target both innovation and quality. They also found that the costs incurred from the differentiation strategy implemented showed no significant correlation with any of the performance measures used (O'Neill et al., 2016). Thus, it would be

preferable for companies to focus on product innovation and product quality on an equal basis so as the cost-benefit analysis conducted to recognize the added value of the strategy implemented.

Focusing on the crisis conditions, Pal et al. (2014) have stated three important components that characterize a crisis: the threat, the surprise and the limited time in decision-making management has in order to respond to an event. A strategic plan should focus on a company's long-term future, and its short-term threats, opportunities, weaknesses and strengths derived from the economic, financial and social crisis components. What connects a strategic plan with a crisis management plan is that the former deals with opportunities, while the latter deals with threats though it is known that threats may potentially become opportunities (Vargo & Seville, 2011).

A company can survive better in crisis conditions by controlling its costs more efficiently. This is because under economic and financial deficiencies, costs that were hidden or intangible could expose the company to more severe and unrecoverable crisis conditions. So, when a company faces crisis conditions, it has to change or adjust part of its quality elements that may influence its cost-leadership strategy aims, that is the reduction of their wastes and flaws (Herzallah et al., 2014). Such a reduction may contribute to further decrease a company's operational and production costs (overhead costs, distribution costs, etc.) and providing the opportunity to better measure and control them, improving in this way audits sustainability. Implementing a holistic TQM strategy could lead to a better customer's satisfaction level and an improvement of a company's internal processes, keeping it agile and creative. Another element that supports a company's sustainability policy is to implement a successful quality management programme (Idris & Zairi, 2006).

Leadership is also an important aspect as stated by Regan (2000) and Vargo and Seville (2011) when a company is facing a crisis condition. Leaders need to envisage, to engage and to enact in order to cope with a crisis condition. Soltani (2005) on the other hand has identified that, what is needed is the willingness of employees to make a company's problem their own problem. Such an attitude can be easily accomplished considering the cultural environment established, by bringing up the

development of close relationships and camaraderie between owner(s)-managers and staff (Hong et al., 2012).

That result is also supported by Vargo and Seville (2011) who stated that the accuracy of a company's strategic plan is based on the actions it takes under crisis conditions and how these actions alter the possibility of its sustainability and survival. Berman's study (Germanos, 2012) also supported the positive relation between a company's planning process and its income growth and sustainability level.

10.8 Results and Conclusions

From the analysis conducted it was revealed that economic growth, environmental protection and maintenance are related to the betterment of the society. There is a very fragile equilibrium between the management of resources and the environmental protection and maintenance (Hopwood et al., 2005). The world's best sustainable organizations respond to challenges with respect to the environment, community and their stakeholders as illustrated in Fig. 10.1. They take into consideration the advantages of all possible emerging opportunities and invest only in those projects that give as a return on the improvement of their operational and financial performances (Hopwood et al., 2005). It is suggested by Pal et al. (2014) that in order to cope with unexpected environmental changes, companies need to be prepared in advance. Being prepared means to be in coordination and share available information with the team members, being responsible for managing the company's resources and the difference in nature crisis conditions.

According to Vargo and Seville (2011), a company that operates under crisis conditions can face seven different types of opportunities. These could be: (a) the development of heroes, (b) the changes being accelerated, (c) the concealed problems that may appear, (d) the people's behaviour that may change, (e) the new strategies that may be developed, (f) the warning systems that need to be developed and (g) the competitive threats that may appear.

Having incorporated all the possible opportunities mentioned above into the company's strategic plan, and developing the appropriate

strategies to support them, the company can obtain a sustainable advantage and potentially turn a threat or a crisis condition into an opportunity. Companies mainly focus on the development of a short-term strategic plan, as the crisis conditions make their long-term projections riskier, though the development of a long-term strategic plan is necessary.

On the other hand, leaders who need to cope with the perpetual changing conditions should inspire employees and all stakeholders. They need to develop a supportive SMEs culture capable of reinforcing innovative behaviour and actions. The corporate strategic plan should incorporate a structured decision-making process and an adequate set of feedback loops. In addition, the use of teamwork and the existence of individuals capable of utilizing information and identifying patterns are needed. All the above will make companies capable of projecting possible changes and incorporating them into their strategic and quality plans. Nonetheless, customer's satisfaction and continuous improvement still remain the basic "quality elements" that support the TQM philosophy (Soltani, 2005).

Consequently, SMEs should consider sustainability as a crucial feature for a long-term survival directly related to an increased level of their profitability. Conscientious people will appreciate the sustainable orientation of SMEs and hence, they will show their preference for their products and services, becoming loyal customers (Christofi et al., 2012).

References

- Alharbi, K., Al-Matari, E. M., & Yusoff, R. Z. (2016). The Impact of Total Quality Management (TQM) on Organisational Sustainability: The Case of the Hotel Industry in Saudi Arabia: Empirical Study. *Social Sciences (Pakistan)*, 11(14), 3468–3473.
- Aquilani, B., Silvestri, C., & Ruggieri, A. (2016). Sustainability, TQM and Value Co-creation Processes: The Role of Critical Success Factors. *Sustainability*, 8(10), 2–23.
- Asif, M., Searcy, C., Zutshi, A., & Ahmad, N. (2011). An Integrated Management Systems Approach to Corporate Sustainability. *European Business Review*, 23(4), 353–367.
- Bansal, P. (2005). Evolving Sustainably. A Longitudinal Study of Corporate Sustainable Development. *Strategic Management Journal*, 26(3), 197–218.

- Boiral, O. (2002). Tacit Knowledge and Environmental Management. *Long Range Planning*, 35(3), 291–317.
- Chandler, G. N., & McEvoy, G. M. (2000). Human Resource Management, TQM, and Firm Performance in Small and Medium-Size Enterprises. *Entrepreneurship: Theory and Practice*, 25(1), 43–43.
- Chen, R., Lee, Y. D., & Wang, C. H. (2020). Total Quality Management and Sustainable Competitive Advantage: Serial Mediation of Transformational Leadership and Executive Ability. *Total Quality Management and Business Excellence*, Taylor & Francis, 31(5–6), 451–468.
- Christofi, A., Christofi, P., & Sisaye, S. (2012). Corporate Sustainability: Historical Development and Reporting Practices. *Management Research Review*, 35(2), 157–172.
- Deming, W. E. (1994). *The New Economics for Industry, Government, Education*. MIT Press.
- Dinesh, S., & Deepak, T. (2005). Relationship between TQM and TPM Implementation Factors and Business Performance of Manufacturing Industry in Indian Context. *International Journal of Quality & Reliability Management*, 22(3), 256–277.
- Douglas, T. J., & Judge, W. (2001). TQM Implementation and Competitive Advantage—Structural Control and Exploration. *Academy of Management Journal*, 44(1), 158–189.
- Easton, G. S., & Jarrell, S. L. (1998). The Effects of Total Quality Management on Corporate Performance: An Empirical Investigation. *The Journal of Business*, 71(2), 253–307.
- Fernando, R. (2012). Sustainable Globalization and Implications for Strategic Corporate and National Sustainability. *Corporate Governance: The International Journal of Business in Society*, 12(4), 579–589.
- Fonseca, L. M. (2015). From Quality Gurus and TQM to ISO 9001:2015: A Review of Several Quality Paths. *International Journal for Quality Research*, 9(1), 167–180.
- Freeman, E. R. (1984). *Strategic Management: A Stakeholder Approach (Pitman Series in Business and Public Policy)* (1st ed.). Harpercollins College Div.
- Germanos, G. (2012). The process of the strategy formulation in small and medium enterprises in Greece and the role of accounting information (Doctoral dissertation, University of Birmingham).
- Gherhes, C., Williams, N., Vorley, T., & Vasconcelos, A. C. (2016). Distinguishing Micro-businesses from SMEs: A Systematic Review of Growth Constraints. *Journal of Small Business and Enterprise Development*, 23(4), 939–963.

- Ghobadian, A., & Gallea, D. (1997). TQM and Organization Size. *International Journal of Operations & Production Management*, 17(2), 121–163.
- Gomez-Trujillo, A. M., Velez-Ocampo, J., & Gonzalez-Perez, M. A. (2020). A Literature Review on the Causality between Sustainability and Corporate Reputation: What Goes First? *Management of Environmental Quality*, 31(2), 406–430.
- Hansson, J., & Eriksson, H. (2002). The impact of TQM on financial performance. *Measuring Business Excellence*, 6(4), 44–54. <https://doi.org/10.1108/13683040210451714>
- Hendricks, K. B., & Singhal, V. R. (2001). Firm Characteristics, Total Quality Management, and Financial Performance. *Journal of Operations Management*, 19(3), 269–285.
- Herzallah, A. M., Gutiérrez-Gutiérrez, L., & Muñoz Rosas, J. F. (2014). Total Quality Management Practices, Competitive Strategies and Financial Performance: The Case of the Palestinian Industrial SMEs. *Total Quality Management and Business Excellence*, 25(5–6), 635–649.
- Hesselbarth, C., & Schaltegger, S. (2014). Educating Change Agents for Sustainability—Learnings From The First Sustainability Management Master of Business Administration. *Journal of Cleaner Production*, 62, 24–36.
- Hong, P., Huang, C., & Li, B. (2012). Crisis Management for SMEs: Insights from a Multiple-Case Study. *International Journal of Business Excellence*, 5(5), 535.
- Hopwood, B., Mellor, M., & O'Brien, G. (2005). Sustainable Development: Mapping Different Approaches. *Sustainable Development*, 13(1), 38–52.
- Idris, M. A., & Zairi, M. (2006). Sustaining TQM: A Synthesis of Literature and Proposed Research Framework. *Total Quality Management*, 17(9), 1245–1260.
- Karapetrovic, S. (2003). Musings on Integrated Management Systems. *Measuring Business Excellence*, 7(1), 4–13.
- Kriemadis, A. (2001). Total Quality Management in Sport SMEs. *International Sports Law Review*, 4(2), 167–177.
- Kriemadis, T. (2018) *Theory building: Expanding Ansoff's strategic management theory and relating it with total quality management theory*. 14th Hellenic Society for Systemic Studies National and International Conference, 14-15/9/2018, Kalamata, Greece.
- Kriemadis, T. (2019). *Benchmarking: A Powerful Tool of Business Intelligence for Continuous SMEs Improvement*. Paper presented at the 15th National and International Conference on Systemics and Business Intelligence of Hellenic

- Society for Systemic Studies (HSSS) and University of Piraeus, Department of Informatics. 29–30 November 2019. Piraeus, Greece.
- Kriemadis, A., Thomopoulou, I., & Sioutou, A. (2017). *Ideological Function of Deming Theory in Higher Education*. IGI Global.
- Kwarteng, A., Dadzie, S. A., & Famiyeh, S. (2016). Sustainability and Competitive Advantage from a Developing Economy. *Journal of Global Responsibility*, 7(1), 110–125.
- O'Neill, P., Sohal, A., & Teng, C. W. (2016). Quality Management Approaches and Their Impact on Firms' Financial Performance—An Australian Study. *International Journal of Production Economics, Elsevier*, 171, 381–393.
- O'Regan, N., & Ghobadian, A. (2002). Effective Strategic Planning in Small and Medium Sized Firms. *Management Decision*, 40(7), 663–671.
- Onuwa, W. (2008). *Quality Management Practices Organisational Performance*. Thesis.
- Oskarsson, K., & Malmborg, F. V. (2005). Integrated Management Systems as a Corporate Response to Sustainable Development. *Corporate Social Responsibility and Environmental Management*, 12(3), 121–128.
- Pal, R., Torstensson, H., & Mattila, H. (2014). Antecedents of Organizational Resilience in Economic Crises—An Empirical Study of Swedish Textile and Clothing SMEs. *International Journal of Production Economics, Elsevier*, 147 (PART B), 410–428.
- Petroni, A. (2002). Critical Factors of MRP Implementation in Small and Medium-Sized Firms. *International Journal of Operations & Production Management*, 22(3), 329–348.
- Prajogo, D. I., & Sohal, A. S. (2006). The Relationship between Organization Strategy, Total Quality Management (TQM), and Organization Performance—The Mediating Role of TQM. *European Journal of Operational Research*, 168(1), 35–50.
- Rahman, S. (2001). A Comparative Study of TQM Practice and Organisational Performance of SMEs with and Without ISO 9000 Certification. *International Journal of Quality & Reliability Management*, 18(1), 35–49.
- Regan, N. O. (2000). *The Relationship between Culture, Leadership, Strategic Planning and Performance in SMEs*. Middlesex University Business School.
- Rocha, M., Searcy, C., & Karapetrovic, S. (2007). Integrating sustainable development into existing management systems. *Total Quality Management & Business Excellence*, 18(1–2), 83–92.
- Sainis, G. (2018). *Characterising the Quality Journey of TQM in Relation to the Financial Performance of SMEs under Crisis Conditions. The Case for Greece*. University of Hertfordshire.

- Sainis, G., Haritos, G., Kriemadis, T., & Fowler, M. (2016). The Quality Journey of Greek SMEs. In Y. M. Goh & K. Case (Eds.), *International Conference on Manufacturing Research: Advances in Transdisciplinary Engineering* (Vol. 3, pp. 508–513). IOS Press.
- Sainis, G., Haritos, G., Kriemadis, A., & Fowler, M. (2017). The Quality Journey for Greek SMEs and Their Financial Performance. *Production and Manufacturing Research*, 5(1), 306–327.
- Sainis, G., Haritos, G., Kriemadis, T., & Papasolomou, I. (2019). TQM for Greek SMEs: An Alternative in Facing Crisis Conditions. *Competitiveness Review: An International Business Journal*, 30(1), 41–58.
- Schaltegger, S., Herzig, C., Kleiber, O., & Mueller, J. (2002). *Sustainability Management in Business Enterprises. Concepts and Instruments for Sustainable SME Development*. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and Federation of German Industries/ Centre for Sustainability Management.
- Schaltegger, S., Lódeke-Freund, F., & Hansen, E. G. (2012). Business Cases for Sustainability: The Role of Business Model Innovation for Corporate Sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119.
- Shahin, A. (2011). An Investigation on the Influence of Total Quality Management on Financial Performance the Case of Boutan Industrial Corporation. *International Journal of Business and Social Science*, 2(15), 105–112.
- Sioutou, A., Kriemadis, T., & Papaioannou, A. (2019). *Public Administration and the Deming Management Method*. Paper Presented at the Yearly Administrative Chamber Conference. Administrative Reform in the Post-Memorandum Period. 8 February 2019. Athens, Greece.
- Soltani, E. (2005). Conflict between Theory and Practice: TQM and Performance Appraisal. *International Journal of Quality & Reliability Management*, 22(8), 796–818.
- Stuebs, M., & Sun, L. (2015). Corporate Governance and Social Responsibility. *International Journal of Law and Management*, 57(1), 38–52.
- Sutcliffe, K., Sitkin, S., & Browning, L. (2000). Tailoring Process Management to Situational Requirements: Beyond the Control and Fauzia Siddiqui, Abid Haleem and S.W. Exploration Dichotomy, The Quality Movement and Organization Theory.
- Teixeira, H. N., Lopes, I., Sousa, S., Wilson, F., Klute-Wenig, S., Refflinghaus, R., & Rallabandi, S. (2015). The Contributions of TQM and Six Sigma in

- the Organizations to Achieve the Success in Terms of Quality. *The TQM Journal*, 27(3), 258–267.
- Vargo, J., & Seville, E. (2011). Crisis Strategic Planning for SMEs: Finding the Silver Lining. *International Journal of Production Research*, 49(18), 5619–5635.
- Wayhan, V. B., & Balderson, E. L. (2007). TQM and Financial Performance: A Research Standard. *Total Quality Management & Business Excellence*, Routledge (Taylor & Francis group), 18(4), 393–401.
- Widyaningrum, H. A., Raharjo, K., & Nuzula, F. N. (2017). Analysis of Factors Affecting the Decision to Adopt Information Technology and Its Impact on Business Performance: Study on Micro, Small and Medium Enterprises (SMEs). *RJOAS*, 2(February), 164–173.
- Windolph, E. S., Schaltegger, S., & Herzig, C. (2014). Implementing Corporate Sustainability. *Sustainability Accounting, Management and Policy Journal*, 5(4), 378–404.
- Yusof, S. M., & Aspinwall, E. (1999). Critical Success Factors for Total Quality Management Implementation in Small and Medium Enterprises, 10 (1988), 803–810.
- Yusof, S., & Aspinwall, E. (2016). Case Studies of TQM Implementation. Case Studies on the Implementation of TQM in the UK Automotive SMEs (January 2000).
- Zink, K. J. (2007). From Total Quality Management to Corporate Sustainability Based on a Stakeholder Management. *Journal of Management History*, 13(4), 394–401.



11

Innovation Tendencies in Internationalised Family Firms During Periods of Crisis: A Conceptual Framework

Katerina Kampouri, Yannis Hajidimitriou,
and Eva Mouratidou

11.1 Introduction

Previous authors acknowledge Family Firms (FFs) presence in the international arena and highlight the role of Internationalised Family Firms (IFFs) in the global economy (Pukall & Calabrò, 2014). FFs constitute firms “in which family members have substantial ownership and take an active role in management” (Hennart et al., 2019, p. 8). Internationalised Family Firms are FFs that have “developed and maintained international business relationships in foreign markets” (Johanson & Mattsson, 1988, p. 288). In this chapter, we use both the terms FFs and IFFs since

K. Kampouri (✉) • Y. Hajidimitriou • E. Mouratidou
Department of Business Administration, University of Macedonia,
Thessaloniki, Greece
e-mail: kampourikat@uom.edu.gr; hajidim@uom.edu.gr;
emouratidou@uom.edu.gr

literature on IFFs is part of the wider FF literature. To foster discussion, we integrate studies from both FF and IB fields.

FFs' internationalisation is a phenomenon that has attracted increasing attention (Debellis et al., 2020). In terms of innovation, FFs internationalisation scholars have highlighted that the impact of internationalisation on firm performance and innovation is stronger for IFFs than for non-IFFs (e.g. Tsao & Lien, 2013; Yeoh, 2014) and that innovation in firms' internationalisation activities can influence IFFs' sustainability (e.g. Alonso & Austin, 2016; Ratten & Tajeddini, 2017).

Nevertheless, with regard to the tendencies of IFFs to innovate, especially during periods of crisis, both the FF and the international business (IB) literature are fragmented and incoherent (Boubakri et al., 2010; Kraus et al., 2020; Muñoz-Bullón & Sanchez-Bueno, 2011). To illustrate, even though FFs are shown to resist crises (Gueye & Simon, 2010) and even innovate (Kraus et al., 2020), there is also the claim that FFs are seldom pioneers, leading to less innovation and growth at the micro level (e.g. Craig et al., 2014; Muñoz-Bullón & Sanchez-Bueno, 2011). Bearing this in mind and considering also that many FFs also operate in the international arena, where there is high uncertainty and complexity, the reader can be blurred with regard to why few IFFs innovate while others do not, especially during periods of crisis when uncertainty is higher (Boubakri et al., 2010; Kraus et al., 2020; Muñoz-Bullón & Sanchez-Bueno, 2011). A crisis period constitutes a particular context since times of crisis can create market opportunities that can best be addressed with innovative and proactive attitudes (Eggers, 2020).

Taking the aforementioned discussion into account, this chapter aims to advance FF internationalisation research by providing new explanations in the innovative behaviour of IFFs, especially during periods of crisis. In particular, the specific purpose of this study is to *better understand why few IFFs innovate while others do not during periods of crisis*. To address its purpose, this chapter followed the suggestions provided by Jaakkola (2020) in developing conceptual studies and summarised, integrated and discussed key papers published in IB and FF journals that provide insights into the behaviour of FFs when they take international and domestic decisions during periods of crisis, in terms of innovation (*theory synthesis*, Jaakkola, 2020, p. 21). Summarising helped us to encapsulate and digest what is known in both IB and FF fields, whereas integration of findings from both fields

enabled us to see what enable or restrict innovation in IFFs—especially during periods of crisis—in a new way (MacInnis, 2011). It should be also noted that although the process of identifying and analysing the relevant articles included in this chapter is inspired by literature review by scholars such as Christofi et al. (2017), we emphasise that this work is not an exhaustive literature review on the topic of IFFs’ innovation behaviour during crises, since our aim was not to fully describe extant knowledge on the topic but to unearth what may be beyond it by linking previously unconnected pieces in a novel way (Jaakkola, 2020). Drawing on the governance heterogeneity logic—in terms of family structures and the generation ruling the firm—we broaden the scope of our thinking with regard to what can explain innovation tendencies in IFFs during periods of crisis and a conceptual framework with propositions is developed.

Finally, it should be noted that the relevant articles included in this chapter take into account the family dimension in their definition of FFs; the owners and managers of the FFs reflect in their decisions their influence on their family goal’s prioritisation process. Hence, we distinguish between FFs and “lone founder firms”, which are more entrepreneurial and financially motivated (Miller et al., 2011). In “lone founder firms” there are no other family members in the firm but the founder. The proposed conceptual framework focuses on FFs which involve family members in the firm. The remainder of this chapter is structured as follows: first, we discuss (1) the importance of innovation in FFs as a topic for research and (2) the FFs’ behaviour during crisis periods. Then, we illustrate our conceptual framework and develop nine propositions that if tested could provide clarity on the innovation behaviour of FFs. The final section provides the discussion of our findings, the implications and limitations of the proposed framework and some ideas for future research.

11.2 Background Literature and Synthesis

Innovation in FFs

Innovation refers to the “set of activities through which a firm conceives, designs, manufactures, and introduces a new product, service, process, or business model” (Alrubaishi et al., 2020, p. 2). Innovation is crucial for

the prosperity and longevity of all FFs, including IFFs, because it allows them to remain competitive and to create new streams of revenue (Calabrò et al., 2019; Karagouni, 2018).

In the context of internationalisation, innovation seems to be of particular importance since it can have an impact on FFs' performance that is higher compared to non-FFs (Tsao & Lien, 2013). In particular, innovation can form a business strategy for FFs, through which FFs can achieve competitive advantage by implementing new production processes, new products and/or by preparing for new markets. Such a competitive advantage can foster FFs' internationalisation (Braga et al., 2017; Yeoh, 2014).

Until recently, IB researchers that have focused on the exploration of the innovation in the context of IFFs have mainly focused on *the role of innovation in FFs' internationalisation* activities (e.g. Alonso & Austin, 2016; Ratten & Tajeddini, 2017) and the role of *family management in innovation decisions in the context of internationalisation* (e.g. Tsao & Lien, 2013; Yeoh, 2014). Innovation and internationalisation seem to be fundamental drivers for IFFs' sustainability (e.g. Braga et al., 2017) and studies that explore the role of innovation in internationalisation have revealed that IFFs that display higher interest in certain innovation objectives are more likely to enter international markets (e.g. Braga et al., 2017; Ratten & Tajeddini, 2017). Studies that explore the role of family management in the innovation decisions in the context of internationalisation have revealed that characteristics of the CEO (i.e. international experience) can influence the performance of the IFF (Table 11.1).

Although internationalisation is approached in innovation models (Johnston & Czinkota, 1982; Reid, 1981), research on the innovative behaviour in the context of internationalisation of FFs seems to be limited (Alonso & Austin, 2016; Braga et al., 2017). This may be due to the fact that only recently IB researchers have acknowledged FFs' different behaviour in complex decisions such as internationalisation (Arregle et al., 2019; Boellis et al., 2016).

In the FF literature, there is extant research on the innovative behaviour, yet the findings regarding the tendencies and the degree of innovativeness among FFs remain mixed. On one hand, despite their capacity to innovate, FFs often tend to be conservative and reluctant to change

Table 11.1 Key papers in innovation research in the context of FFs internationalisation

Authors (year)	Research objectives/ questions as stated by authors	Key findings
Braga, V., Correia, A., Braga, A., and Lemos, S. (2017)	To assess the propensity of FFs to design and use strategies for innovation and internationalisation	<ul style="list-style-type: none"> • Innovation and internationalisation are important strategies to ensure the longevity of FFs, and as such, to their success. • The motivations of FFs to engage in innovation and internationalisation processes are to anticipate the need for growth or to react to their competitors. • Firms are more likely to enter international markets if they see innovation as means to new distribution channels, enter into new geographical markets and reduce the costs of production and/or commercialisation. • Firms that display higher interest in certain innovation objectives are more likely to enter international markets.
Ratten, V., and Tajeddini, K. (2017)	The purpose is twofold: (1) to explore the role of innovativeness in FFs as part of their internationalisation process and (2) to examine whether FFs utilise customer responsiveness, proactiveness and risk-taking as part of their considerations for internationalisation.	<ul style="list-style-type: none"> • Innovativeness of FFs depends on responsiveness to customer needs in the international market while involving a degree of risk-taking. • FFs are not proactive in their pursuit of international market opportunities. • FFs utilise both exploration and exploitation to assess innovative opportunities in international markets. • FFs that are more responsive to customers will be better able to assess international opportunities. • FFs are more likely to be proactive about innovation when it leads to increased internationalisation.

(continued)

Table 11.1 (continued)

Authors (year)	Research objectives/questions as stated by authors	Key findings
Yeoh, P. L. (2014)	To understand the role of outside chief executive officers (CEOs) on the firm's innovative and internationalisation efforts.	<ul style="list-style-type: none"> • Functional and process upgrading strategies depend not only on the firms' internal and external sourcing strategies but are also moderated by the international experience of the outside CEO. • The internationalisation-performance relationship is strengthened when an outside CEO possesses greater international experience.
Tsao, S. M., and Lien, W. H. (2013)	To examine the impact of family management and ownership on firm performance and innovation implications of internationalisation.	<ul style="list-style-type: none"> • Family management positively moderates the relation between internationalisation and performance/innovation. • The impact of internationalisation on firm performance and innovation is stronger for FFs than for non-FFs. • Family ownership enhances the long-term value of firms from the viewpoint of internationalisation.

Source: The authors

through innovation, while at the same time they are emotionally attached to their original business models and strategies (Goel & Jones III, 2016). On the other hand, there are many examples of FFs around the world that take risks, adapt to changes and innovate (Eddleston et al., 2019; Erdogan et al., 2020; Gudmundson et al., 2003).

In addition to these inconsistencies in the literature, the ambivalence of some aspects makes it difficult to clearly define why some FFs innovate while others do not. For example, although the FFs long-term orientation is seen to foster innovation, it is at the same time considered prejudicial since FFs may avoid risky innovation projects because innovation is consistent with concern for long-term continuity (Sirmon et al., 2008).

In this chapter, we are in line with the suggestions by Calabrò et al. (2019), emphasising that future studies in FFs behaviour should thoroughly consider FFs heterogeneity family variables when examining

innovation. We argue that by considering the governance heterogeneity in FFs, the aforementioned inconsistencies in the literature can be resolved. Moreover, we emphasise that consideration of governance heterogeneity in FFs is of particular importance, especially when investigating IFFs during periods of crisis, since the findings can help IFFs to respond to crises through innovation (Kraus et al., 2020) and remain sustainable in international markets.

FFs and Crisis

In the FF literature, crisis is defined as “a low-probability situation with significant consequences for the organisation, a high degree of uncertainty, and a sense of decision-making urgency” (Cater III & Beal, 2014). A crisis can occur due to internal factors, for example due to changes in ownership (e.g. Kashmiri & Brower, 2016; Lingo & Elmes, 2019; Maret et al., 2018) or due to external factors, for instance epidemic outbreaks (e.g. Eggers, 2020) and abrupt changes in the political (e.g. Mzid et al., 2018) and/or the economic environment (Sun et al., 2018).

Crises that occur due to external factors are of particular importance since they are characterised by two opposite poles. On one hand, external crises can create market opportunities and enable firms to increase their long-term performance (Eggers, 2020; Sun et al., 2018; Peris-Ortiz et al., 2014) and, on the other, external crises are characterised by disruption propagations (i.e. the ripple effect), high risk and uncertainty (Ivanov, 2020). For example, the recent coronavirus (COVID-19/SARS-CoV-2) which started spreading globally led many governments to enforce social distancing to slow its spread around the world. Social distancing and the unprecedented lockdown of large parts of the economy and the society led to the closure of many businesses and impaired sales and trade (Kraus et al., 2020). These measures have also forced many businesses to contend with a number of challenges, including the implementation of required health protection measures, reduced production and demand, cope with global and local supply chain disruption risks and other challenges (Araz et al., 2020; del Rio-Chanona et al., 2020; Xu et al., 2020).

With regard to external crises, FFs, including IFFs, can show a distinct behaviour in their effort to protect both the family and the business' wealth. To illustrate, IFFs (especially those of smaller size) are typically vulnerable to their priority on family's wealth and their constrained resources (financial, knowledge, etc.) (Cesinger et al., 2016; Kontinen & Ojala, 2011). This means that an external crisis can influence the family owners as private citizens and also as business owners and as result both the family and the businesses' wealth can be at stake (Kraus et al., 2020). Moreover, the emotional attachment of the family can affect the performance of the FF during a crisis (Arrondo-García et al., 2016). As a result a few FFs may adopt a risk-averse behaviour in their international decision-making in terms of innovation whereas others may innovate in order to resist crises (Erdogan et al., 2020; Kraus et al., 2020; Wenzel et al., 2020).

Eradicating external crises (e.g. COVID-19), and confronting IB difficulties that afflict all firms in the world, is one of the most compelling grand challenges of our time. Indeed, in responding to the pandemic crisis many companies have realised that they have to adapt to the global challenges involved. One of the most promising avenues for addressing the grand societal challenges is through innovation (Khavul & Bruton, 2013; Stilgoe et al., 2013).

Having acknowledged this, research of FFs phenomena during crisis periods has lately started to attract increasing attention (Kraus et al., 2020; Zahra, 2020). Eduardsen and Marinova (2020) state that whether a firm will perceive a crisis as an opportunity or as a threat depends on its organisational context, since the organisational context plays an important role in shaping managerial interpretations of risk in business operations (Claver et al., 2008; Eduardsen & Marinova, 2020).

In this chapter, we consider FF heterogeneity family variables since they enable us to identify explanations for the innovative behaviour of IFFs during periods of crisis. Our focus of investigation may help not only to avoid inconsistencies in the FF literature but also to develop the field.

11.3 The Conceptual Framework: Governance Heterogeneity and Innovation Tendencies in Internationalised Family Firms

Until recently, IB scholars have acknowledged the significant differences between IFFs and non-IFFs international decision-making, mostly in terms of the family presence in the IFF (Fernández & Nieto, 2006; Hennart et al., 2019; Swinth & Vinton, 1993). Recent IB research highlights that IFFs are very different, that is they are heterogeneous, and a major source of heterogeneity stands in the extent to which family members occupy upper echelon positions (Boellis et al., 2016; Hambrick & Mason, 1984). The management of the firm could be characterised by high or low family involvement, hence different types of IFFs, that is family managed or family owned but not family managed FFs, emerge (Boellis et al., 2016).

In the FF literature, it is generally accepted that family involvement in ownership, management and governance affects FF innovative behaviour (Chrisman et al., 2015; Di Toma, 2020; Dieleman, 2019). It seems that family involvement enables or hampers innovation. To illustrate, FF conservative posture, risk aversion, organisational rigidity, willingness to maintain the control of the firm and limited propensity to use financial capital to fund innovation projects can constrain innovation (Calabrò et al., 2019). Nevertheless, the involvement of multiple generations in the firm and FFs' typical long-term orientation can foster innovation (Calabrò et al., 2019).

Nevertheless, it should be noted that family ownership and presence in the management is not a dichotomous condition since family may be involved to different extents in firm ownership and management (Boellis et al., 2016; Daspit et al., 2018). Also families differ in their structures and different family members from different generations may rule the FF (Arregle et al., 2019; Jaskiewicz & Dyer, 2017; Mariotti et al., 2021). We propose that this governance heterogeneity—in terms of family structures and the generation ruling the firm—is related to the innovative behaviour in IFFs within periods of crisis.

Heterogeneity in Terms of Family Structures

According to Jaskiewicz and Dyer (2017), a family structure refers to “a group of individuals who share family ties, consider themselves as part of family and interact with each other” (p. 2). Family structures characterising IFFs have been studied with different typologies of families: the nuclear family (i.e. a married couple with children), the extended family (i.e. a nuclear family plus grandparents), single parent (i.e. one parent may not be in life) and blended families (when the parents have been re-married but they have children from their first marriage) (Jaskiewicz & Dyer, 2017). These different typologies may have different corresponding values, beliefs and ideologies of family managers (e.g. openness to change or self-enhancement) (Verbeke et al., 2019) and hence affect decisions related to international behaviour. Taking this into account, a recent study by Arregle et al. (2019) proposes different family structures with different characteristics that can be seen throughout the world (Table 11.2). These characteristics refer to the relationship between parents and children (e.g. liberty or authority) and relationships between siblings (e.g. equal treatment).

These different family structures likely influence the management and strategies in IFFs and should be a key component of the analysis of IFFs’

Table 11.2 Characteristics of family structures

Family structures	Characteristics of family structures
Authoritarian family	Strong authority, inequality of children by rules of inheritance
Asymmetrical community family	Weaker authority, inequality of social relations
Endogamous community family	Weaker authority, equality of social relations
Exogamous community family	Strong authority, equality of children through rules of inheritance
Egalitarian nuclear family	Weaker authority, equality of children through rules of inheritance
Absolute nuclear family	Weaker authority, parental property is divided without any precise conventions of inheritance
Anomic family	Weaker authority, indifference to the principles of equality

Source: Adapted from Arregle et al. (2019)

behaviour in the context of internationalisation (Arregle et al., 2019). This is of particular importance in the crisis context since crises are characterised by high risk. We argue that the behaviour of IFFs in terms of innovation during periods of crisis depends on whether an IFF will perceive a crisis as an opportunity that it could exploit by innovating or as a threat that it could be encountered through innovation. Whether an IFF will perceive a crisis as an opportunity or as a threat in order to innovate depends on its family structure, since family structures play an important role in shaping managerial interpretations of risk in IB operations (Arregle et al., 2019). Taking into account the aforementioned discussion, the following proposition is developed:

P1: IFFs with different family structures will adopt different behaviour in terms of innovation during periods of crisis.

Moreover, it should be noted that when faced with decisions, family managers are known to suffer from cognitive biases (e.g. loss aversion) that do not similarly apply to non-family managers (e.g. Hoffmann et al., 2017). This is mostly due to the overlap between family life and work that provides a unique context for specific cognitive biases to emerge; although decision-making may differ between various managers, in FFs settings decisions are influenced by FFs' social-emotional commitment to their family's values and beliefs (Ng et al., 2020) and family idiosyncrasies can affect the emergence of specific psychological biases and heuristics (e.g. overconfidence). Moreover, the *familiness*, namely "the interaction between the family, its individual members and the business" (Habbershon & Williams, 1999, p. 11), is higher in IFFs with particular types of family structures (Arregle et al., 2019). This means that family members identify with and are economically and emotionally attached to the IFF and this can affect their internationalisation behaviour (Gómez-Mejía et al., 2007, 2011). Taking this into account, we argue that IFFs with particular types of family structure may exhibit stronger biases and this may influence their behaviour. Bearing these in mind, the following proposition is developed:

P2: Different biases in family managers of IFFs with different family structures may differently affect their tendency to innovate during periods of crisis.

Heterogeneity in Terms of the Generation Ruling the Firm

For IFFs that aspire to be transgenerational, innovation enhances their ability to be entrepreneurial over the long run (Diaz-Moriana et al., 2020). Nevertheless, in the FF literature, studies have revealed that over the generations, innovation decreases, being significantly lower in the third-and-beyond generation than in the founder generation (Rau et al., 2019). In the IB literature, it is highlighted that IFFs international behaviour may be different between different generations, mostly for two reasons. First, succeeding generations are shown to have different orientation to socio-emotional wealth (SEW) preservation tendencies (e.g. the willingness to maintain the control of the firm, the identification with the firm, the need to transit the firm to the next generation and others) and second, succeeding generations are shown to have different organisational capabilities (Arregle et al., 2017; cf. Garcia et al., 2019; Mariotti et al., 2021).

In terms of organisational capabilities, these originate from the continuous interaction between family members and other stakeholders in IFFs and are developed during an IFF's existence. This is because as the IFF is handed down to the successive generations, IFFs learn—through international experience—and develop new capabilities. Indeed, the role of the international experience in innovation behaviour and performance in the context of internationalisation has been revealed in our overview (Yeoh, 2014) (see previous section). In line with this, we argue that different generations may have developed different organisational capabilities through their lives, given that they have gained different experiences in both personal and professional level. Hence, different generations are likely to show different behaviours when they take risky and uncertain international decisions in terms of innovation. According to this line of thinking we develop the following proposition:

P3: IFFs ruled by different generations will adopt different behaviours in terms of innovation.

In terms of SEW orientation, Mariotti et al. (2021) bring into light that first and third-and-beyond generations are shown to adopt similar

SEW orientation and hence similar behaviours compared to second generations (Arregle et al., 2017; cf. Garcia et al., 2019; Mariotti et al., 2021). Nevertheless, the SEW could be quite different if for example the family is an authoritarian family or an absolute nuclear family (Arregle et al., 2019). For example, an authoritarian family shows strong authority and places emphasis on the preservation of the wealth within the family, but the absolute nuclear family shows a weaker authority and there is also weak attachment to the IFF (Arregle et al., 2019). This means that the behaviour of IFFs in terms of innovation may be different due to the different family structures even if the generations are the same. Taking the aforementioned discussion into account, the following propositions are developed:

P4: Innovation tendencies of family managers are influenced by both the number of the generation and the family structure of the IFF regardless of the existence of a crisis.

P4a: When comparing IFFs, those ruled by different generations and have the same family structures will adopt different behaviours in terms of innovation.

P4b: When comparing IFFs, those ruled by the same generations and have different family structures will adopt different behaviours in terms of innovation.

P4c: When comparing IFFs, IFFs those ruled by different generations and have different family structures will adopt different behaviours in terms of innovation.

P4d: When comparing IFFs, those ruled by the same generations and have the same family structures will adopt similar behaviours in terms of innovation.

Whether an IFF will perceive a crisis as an opportunity or as a threat that leads them to innovate depends also on the family's owner reference points and biases (e.g. bifurcation bias or loss aversion bias) (e.g. Verbeke et al., 2019). Although the important role of SEW wealth dimensions is highlighted in the IB literature (e.g. Boellis et al., 2016; Cesinger et al., 2016), regardless of the generation ruling the IFF and its family structure, family managers may adopt different reference points when making decisions in periods of crisis. For example, the intention to hand the

business to the next generation (a SEW preservation tendency) may conflict with the family's need to involve outsiders in the ownership to keep the IFF alive (De Massis & Rondi, 2020). Disruptions caused by an external crisis (e.g. the COVID-19) may lead IFFs to adopt different reference points when taking innovation decisions. According to this line of thinking, the following proposition is developed:

P5: SEW orientation heterogeneity between IFFs ruled by different generations may not affect the tendencies of IFFs to innovate during periods of crisis.

Figure 11.1 shows that innovation tendencies in IFFs in periods of crisis can be affected differently by IFFs with different family structures and by IFFs with different generations (1st, 2nd, 3rd etc.) ruling the firm. Taking into account that (1) family structures play an important role in shaping managerial interpretations of risk in IB operations, (2) IFFs with particular types of family structure may exhibit stronger or weaker biases and this may influence their innovation behaviour and (3) succeeding generations have different organisational capabilities, experience and different orientation to socio-emotional wealth (SEW) preservation tendencies that affect IFFs innovation behaviour, nine propositions are developed that are ready to be empirically tested.

11.4 Discussion and Conclusions

Research on IFFs' innovation behaviour is highly fragmented whereas in the context of crises has lately started to attract increasing attention (Kraus et al., 2020; Zahra, 2020). Herein, we argue that the inconsistencies in the literature may be due to the fact that the relevant IB and FF literature has not considered other sources of family heterogeneity. Given that there are IFFs with different types of governance structures, which may impact how crises and innovation are perceived and utilised by the FF managers, we draw on the governance heterogeneity logic—in terms of family structures and the generation ruling the firm—to better understand what can explain innovation tendencies in IFFs during

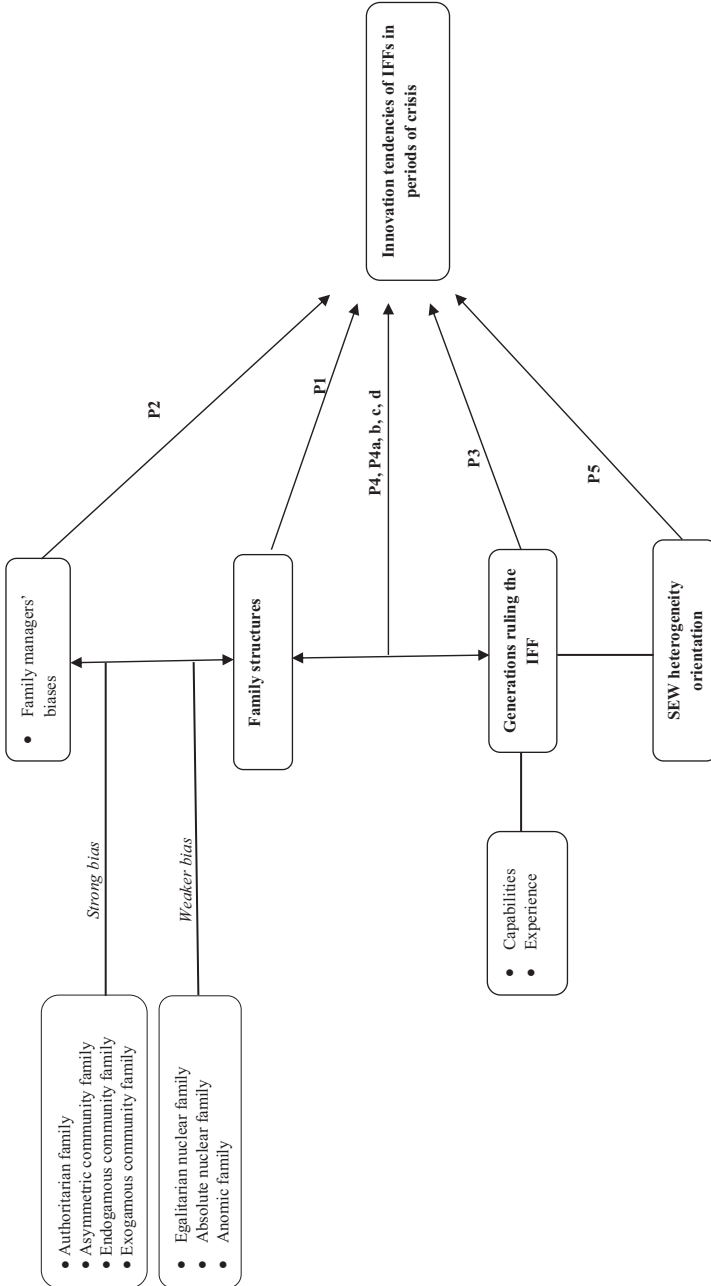


Fig. 11.1 Explaining innovation tendencies of IFFs through family governance heterogeneity logic. (Source: The authors)

periods of crisis. Our study highlights that whether family managers will perceive a crisis as an opportunity or as a threat that leads them to innovate depends on (1) the firm's family structure and (2) the particular attributes of family managers (e.g. the generation they belong, their organisational capabilities and the family decision-maker bias).

The contribution of this study is twofold. *First*, our overview identified a conceptual framework and nine ready to test propositions considering the relationship between family structures, the ruling generation and innovation behaviour in IFFs. To develop the proposed framework, we offered alternative explanations of IFFs' innovation behaviour during crises drawn from the IB and the FF literature. Nevertheless, we emphasise that this work is not an exhaustive literature review on the topic of IFFs' innovation behaviour during crises, but it follows the suggestions provided by Jaakkola (2020) in developing conceptual studies. The proposed framework lays the foundations for empirical research on what can influence IFFs' innovation tendencies. By identifying factors that could influence innovation tendencies, this framework helps family members to better understand the consequences of their behaviour. *Second*, our research identified that not all IFFs are affected by SEW preservation tendencies during crises periods. This finding is important since it highlights that IFFs may have reference points other than SEW tendencies in periods of crisis. Hence further research is needed to advance understanding of IFFs' behaviour and decision-making when there is high uncertainty (De Massis & Rondi, 2020).

This study has limitations that suggest directions for future research. First, there are other sources of IFFs' heterogeneity such as size, family goals and so on. Hence, a limitation is that we didn't account for other sources of heterogeneity. For example, the fact that an IFF is governed by an egalitarian or authoritarian family does not inform us whether the IFF is owned and managed by a nuclear or blended family, which could also affect the IFFs' innovation behaviour during crises. Rondi et al. (2019) reveal FFs' heterogeneous orientation towards innovation and argue that the FF's innovation behaviour must fit with its family system dimensions (e.g. family goal diversity) since the lack of fit will hurt the FF's ability to innovate. Family culture and familiness are also acknowledged as possible sources of competitive advantage for innovation since they are

hard-to-duplicate resources (Zahra et al., 2004). Moreover, the literature has revealed that small- and medium-size FFs are characterised by quick decision-making and willingness to take risks, while innovation is more dependent on external knowledge obtained through partnerships (Calabrò et al., 2019). Hence, the proposed framework could be extended by considering how other sources of heterogeneity (e.g. family goals, firm size) may influence IFFs' innovation behaviour. Second, the conceptual framework developed does not distinguish between different types of innovation (Alrubaishi et al., 2020) which may be used by IFFs with different family structures and ruling generations. Therefore, our framework could be extended by considering how various family managers choose different types of innovation. Finally, empirical testing of our propositions could provide additional valuable insights on the importance of heterogeneity in IFFs and may help family managers rethink their innovation behaviour.

References

- Alonso, A. D., & Austin, I. P. (2016). I see the future. *Review of International Business and Strategy*, 26(3), 314–333.
- Alrubaishi, D., Alarifi, G., & McAdam, M. (2020, forthcoming). Innovation heterogeneity in family firms: Evidence from the date industry in Saudi Arabia. *International Journal of Entrepreneurship and Innovation*. <https://doi.org/10.1177/1465750320930869>
- Araz, O. M., Choi, T. M., Olson, D., & Salman, F. S. (2020, forthcoming). Data analytics for operational risk management. *Decision Sciences*, 51, 1316–1319.
- Arregle, J. L., Duran, P., Hitt, M. A., & Van Essen, M. (2017). Why is family firms' internationalization unique? A meta-analysis. *Entrepreneurship Theory and Practice*, 41(5), 801–831.
- Arregle, J. L., Hitt, M. A., & Mari, I. (2019). A missing link in family firms' internationalization research: Family structures. *Journal of International Business Studies*, 50(5), 809–825.
- Arrondo-García, R., Fernández-Méndez, C., & Menéndez-Requejo, S. (2016). The growth and performance of family businesses during the global financial

- crisis: The role of the generation in control. *Journal of Family Business Strategy*, 7(4), 227–237.
- Boellis, A., Mariotti, S., Minichilli, A., & Piscitello, L. (2016). Family involvement and firms' establishment mode choice in foreign markets. *Journal of International Business Studies*, 47(8), 929–950.
- Boubakri, N., Guedhami, O., & Mishra, D. (2010). Family control and the implied cost of equity: Evidence before and after the Asian financial crisis. *Journal of International Business Studies*, 41(3), 451–474.
- Braga, V., Correia, A., Braga, A., & Lemos, S. (2017). The innovation and internationalisation processes of family businesses. *Review of International Business and Strategy*, 27, 231–247.
- Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., De Massis, A., & Kraus, S. (2019). Innovation in family firms: A systematic literature review and guidance for future research. *International Journal of Management Reviews*, 21(3), 317–355.
- Cater, J. J., III, & Beal, B. (2014). Ripple effects on family firms from an externally induced crisis. *Journal of Family Business Management*, 4(1), 62–78.
- Cesinger, B., Hughes, M., Mensching, H., Bouncken, R., Fredrich, V., & Kraus, S. (2016). A socioemotional wealth perspective on how collaboration intensity, trust, and international market knowledge affect family firms' multinationality. *Journal of World Business*, 51(4), 586–599.
- Chrisman, J., Chua, J., De Massis, A., Frattini, F., & Wright, M. (2015). The ability and willingness paradox in family firm innovation. *Journal of Product Innovation Management*, 32(3), 310–318.
- Christofi, M., Leonidou, E., & Vrontis, D. (2017). Marketing research on mergers and acquisitions: A systematic review and future directions. *International Marketing Review*, 34(5), 629–651.
- Claver, E., Rienda, L., & Quer, D. (2008). Family firms' risk perception: Empirical evidence on the internationalization process. *Journal of Small Business and Enterprise Development*, 15(3), 457–471.
- Craig, J. B., Pohjola, M., Kraus, S., & Jensen, S. H. (2014). Exploring relationships among proactiveness, risk-taking and innovation output in family and non-family firms. *Creativity and Innovation Management*, 23(2), 199–210.
- Daspit, J. J., Chrisman, J. J., Sharma, P., Pearson, A. W., & Mahto, R. V. (2018). Governance as a source of family firm heterogeneity. *Journal of Business Research*, 84, 293–300.
- De Massis, A., & Rondi, E. (2020). COVID-19 and the future of family business research. *Journal of Management Studies*, 57(8), 1727–1731.

- Debellis, F., Rondi, E., Plakoyiannaki, E., & De Massis, A. (2020). Riding the waves of family firm internationalization: A systematic literature review, integrative framework, and research agenda. *Journal of World Business*, 56(1), 101–144.
- del Rio-Chanona, R. M., Mealy, P., Pichler, A., Lafond, F., & Farmer, D. (2020). Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective. *arXiv preprint arXiv: 2004.06759*.
- Di Toma, P. (2020). Integrating business model innovation and corporate governance in family-owned SMEs: A dynamic capability perspective. In A. Thrassou, D. Vrontis, Y. Weber, S. M. R. Shams, & E. Tsoukatos (Eds.), *The changing role of SMEs in global business* (pp. 179–198). Palgrave Studies in Cross-disciplinary Business Research, in Association with EuroMed Academy of Business. Palgrave Macmillan.
- Diaz-Moriana, V., Clinton, E., Kammerlander, N., Lumpkin, G. T., & Craig, J. B. (2020). Innovation motives in family firms: A transgenerational view. *Entrepreneurship Theory and Practice*, 44(2), 256–287.
- Dieleman, M. (2019). Reaping what you sow: The family firm innovation trajectory. *Journal of Family Business Strategy*, 10(4), 100–248.
- Eddleston, K. A., Kellermanns, F. W., & Collier, G. (2019). Research on family firm innovation: What do family firms actually think and do? *Journal of Family Business Strategy*, 10(4), 100–308.
- Eduardsen, J., & Marinova, S. (2020). Internationalisation and risk: Literature review, integrative framework and research agenda. *International Business Review*, 29(3), 101–688.
- Eggers, F. (2020). Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *Journal of Business Research*, 116, 199–208.
- Erdogan, I., Rondi, E., & De Massis, A. (2020). Managing the tradition and innovation paradox in family firms: A family imprinting perspective. *Entrepreneurship Theory and Practice*, 44(1), 20–54.
- Fernández, Z., & Nieto, M. (2006). Impact of ownership on the international involvement of SMEs. *Journal of International Business Studies*, 37(3), 340–351.
- García, P. R. J. M., Sharma, P., De Massis, A., Wright, M., & Scholes, L. (2019). Perceived parental behaviors and next-generation engagement in family firms: A social cognitive perspective. *Entrepreneurship Theory and Practice*, 43(2), 224–243.
- Goel, S., & Jones, R. J., III. (2016). Entrepreneurial exploration and exploitation in family business: A systematic review and future directions. *Family Business Review*, 29(1), 94–120.

- Gómez-Mejía, L., Cruz, C., Berrone, P., & De Castro, J. (2011). The bind that ties: Socioemotional wealth preservation in family firms. *Academy of Management Annals*, 5(1), 653–707.
- Gómez-Mejía, L., Haynes, K., Núñez-Nickel, M., Jacobson, K., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106–137.
- Gudmundson, D., Tower, C. B., & Hartman, E. A. (2003). Innovation in small business: Culture and ownership structure do matter. *Journal of Developmental Entrepreneurship*, 8(1), 1–17.
- Gueye, S., & Simon, E. (2010). Is the family business a safer type of governance in time of crisis? *Problems and Perspectives in Management*, 8(4), 23–29.
- Habbershon, T., & Williams, M. (1999). A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review*, 12(1), 1–25.
- Hambrick, D., & Mason, P. (1984). Upper Echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- Hennart, J. F., Majocchi, A., & Forlani, E. (2019). The myth of the stay-at-home family firm: How family-managed SMEs can overcome their internationalization limitations. *Journal of International Business Studies*, 50(5), 758–782.
- Hoffmann, C., Jaskiewicz, P., Wulf, T., & Combs, J. (2017). The effect of transgenerational control intention on family-firm performance: It depends who pursues it. *Entrepreneurship Theory and Practice*, 43(3), 629–646.
- Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transportation Research Part E: Logistics and Transportation Review*, 136, 101922.
- Jaakkola, E. (2020). Designing conceptual articles: four approaches. *AMS Review*, 10(1–2), 18–26.
- Jaskiewicz, P., & Dyer, W. G. (2017). Addressing the elephant in the room: Disentangling family heterogeneity to advance family business research. *Family Business Review*, 30(2), 111–118.
- Johanson, J., & Mattsson, L.-G. (1988). Internationalization in industrial systems – A network Approach. In N. Hood & J.-E. Vahlne (Eds.), *Strategies in Global Competition* (pp. 287–314). Croom Helm.
- Johnston, W., & Czinkota, M. (1982). Managerial motivations as determinants of industrial export behaviour. In R. Zinkota & G. Tesar (Eds.), *Export management: An international context* (pp. 3–17). Praeger Publishers.

- Karagouni, G. (2018). The role of dynamic entrepreneurial capabilities and innovation in intergenerational succession of family firms. In D. Vrontis, Y. Weber, A. Thrassou, S. Shams, & E. Tsoukatos (Eds.), *Innovation and capacity building* (pp. 31–54). Palgrave Studies in Cross-disciplinary Business Research, In Association with EuroMed Academy of Business. Palgrave Macmillan.
- Kashmiri, S., & Brower, J. (2016). Oops! I did it again: Effect of corporate governance and top management team characteristics on the likelihood of product-harm crises. *Journal of Business Research*, 69(2), 621–630.
- Khavul, S., & Bruton, G. D. (2013). Harnessing innovation for change: Sustainability and poverty in developing countries. *Journal of Management Studies*, 50, 285–306.
- Kontinen, T., & Ojala, A. (2011). Network ties in the international opportunity recognition of family SMEs. *International Business Review*, 20(4), 440–453.
- Kraus, S., Clauss, T., Breier, M., Gast, J., Zardini, A., & Tiberius, V. (2020). The economics of COVID-19: Initial empirical evidence on how family firms in five European countries cope with the corona crisis. *International Journal of Entrepreneurial Behavior & Research*, 26(5), 1067–1092.
- Lingo, E. L., & Elmes, M. B. (2019). Institutional preservation work at a family business in crisis: Micro-processes, emotions, and nonfamily members. *Organization Studies*, 40(6), 887–916.
- MacInnis, D. J. (2011). A framework for conceptual contributions in marketing. *Journal of Marketing*, 75(4), 136–154.
- Marett, E., Marler, L., & Marett, K. (2018). Socioemotional wealth importance within family firm internal communication. *Journal of Family Business Management*, 8(1), 22–37.
- Mariotti, S., Marzano, R., & Piscitello, L. (2021). The role of family firms' generational heterogeneity in the entry mode choice in foreign markets. *Journal of Business Research*, 132, 800–812.
- Miller, D., Le Breton-Miller, I., & Lester, R. H. (2011). Family and lone founder ownership and strategic behaviour: Social context, identity, and institutional logics. *Journal of Management Studies*, 48(1), 1–25.
- Muñoz-Bullón, F., & Sanchez-Bueno, M. J. (2011). The impact of family involvement on the R&D intensity of publicly traded firms. *Family Business Review*, 24(1), 62–70.
- Mzid, I., Khachlouf, N., & Soparnot, R. (2018). How does family capital influence the resilience of family firms? *Journal of International Entrepreneurship*, 17, 249–277.

- Ng, D., James, H. S., Jr., & Klein, P. G. (2020). Keeping it in the family: A socio-cognitive approach to the prioritization of family goals. *Journal of Small Business and Enterprise Development*, 27(3), 471–487.
- Peris-Ortiz, M., Fuster-Estruch, V., & Devece-Carañana, C. (2014). Entrepreneurship and innovation in a context of crisis. In *Entrepreneurship, innovation and economic crisis*. Springer.
- Pukall, T. J., & Calabrò, A. (2014). The internationalization of family firms a critical review and integrative model. *Family Business Review*, 27(2), 103–125.
- Ratten, V., & Tajeddini, K. (2017). Innovativeness in family firms: An internationalization approach. *Review of International Business and Strategy*, 27(2), 217–230.
- Rau, S. B., Werner, A., & Schell, S. (2019). Psychological ownership as a driving factor of innovation in older family firms. *Journal of Family Business Strategy*, 10(4), 100246.
- Reid, S. (1981). The decision maker and export entry and expansion. *Journal of International Business Studies*, 12(2), 101–112.
- Rondi, E., De Massis, A., & Kotlar, J. (2019). Unlocking innovation potential: A typology of family business innovation postures and the critical role of the family system. *Journal of Family Business Strategy*, 10(4), 100236.
- Sirmon, D. G., Arregle, J. L., Hitt, M. A., & Webb, J. W. (2008). The role of family influence in firms' strategic responses to threat of imitation. *Entrepreneurship Theory and Practice*, 32(6), 979–998.
- Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42, 1568–1580.
- Sun, X., Lee, S. H., & Phan, P. H. (2018). Family firm R&D investments in the 2007–2009 Great Recession. *Journal of Family Business Strategy*, 10(4), 100244.
- Swinth, R., & Vinton, K. (1993). Do family-owned businesses have a strategic advantage in international joint ventures? *Family Business Review*, 6(1), 19–30.
- Tsao, S. M., & Lien, W. H. (2013). Family management and internationalization: The impact on firm performance and innovation. *Management International Review*, 53, 189–213.
- Verbeke, A., Yuan, W., & Kano, L. (2019). A values-based analysis of bifurcation bias and its impact on family firm internationalization. *Asia Pacific Journal of Management*, 37(2), 449–477.
- Wenzel, M., Stanske, S., & Lieberman, M. B. (2020). Strategic responses to crisis. *Strategic Management Journal*, 42(2), O16–O27.

- Xu, S., Zhang, X., Feng, L., & Yang, W. (2020). Disruption risks in supply chain management: A literature review based on bibliometric analysis. *International Journal of Production Research*, 58(11), 3508–3526.
- Yeoh, P. L. (2014). Internationalization and performance outcomes of entrepreneurial family SMEs: The role of outside CEOs, technology sourcing, and innovation. *Thunderbird International Business Review*, 56(1), 77–96.
- Zahra, S., Hayton, J., & Salvato, C. (2004). Entrepreneurship in family vs. non-family firms: A resource-based analysis of the effect of organizational culture. *Entrepreneurship Theory and Practice*, 28(4), 363–381.
- Zahra, S. A. (2020). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), 101143.



12

Responsible Consumption: Society Habits in Time of Crisis

Ligita Šimanskienė, Jurgita Paužuolienė,
Mariantonietta Fiore, and Erika Župerkienė

12.1 Introduction

Society is constantly facing the ecological and social problems and consequences of consumption. Implementation of responsible consumption and production contributes to development, reducing future economic, environmental, and social costs, strengthening economic competitiveness, and reducing poverty. Responsible consumption is a broad concept that has not only an environmental dimension but also economic, social, and health dimensions. A responsible consumer can be defined as a person basing his acquisition, usage, and disposition of products on a desire

L. Šimanskienė (✉) • J. Paužuolienė • E. Župerkienė
Klaipėda University, Klaipėda, Lithuania
e-mail: Ligita.simanskiene@ku.lt; erika.zuperkiene@ku.lt

M. Fiore
University of Foggia, Foggia, Italy
e-mail: mariantonietta.fiore@unifg.it

to minimize or eliminate any harmful effects and maximize the long-run beneficial impact on society. Some responsible consumers will focus on the ecological side of their consumption, trying to choose seasonal, organic, and ecological products. Others will focus on the impact that their choices will have on the economy by choosing locally produced products. There are also the ones who will choose their products according to what is best for their health. The responsible consumer tends to make conscious and deliberate choices in the products they consume and support socially responsible businesses.

A number of academic articles deal with sustainability issues through responsible consumption. Johnson and Chattaraman (2019) argue that behind socially responsible consumption stands individual concerns—it has both social- and self-signalling abilities. Blas et al. (2019) compared Spanish and Mediterranean diets with nutritional content and healthiness and they recommend shifting to Mediterranean one since it will reduce water consumption by 750 l/capita daily. Webb et al. (2008) identify three dimensions of responsible consumption: corporate social responsibility (CSR), recycling, and reduced use of materials having negative environmental impact. Gunawan et al. (2020), based on the study of Indonesian companies' attitudes towards responsible consumption, propose to governments to strengthen the understanding of importance of sustainable development in the society. Uniyal et al. (2021) offer Information and Communication Technology (ICT)-based solution as a tool for knowledge management for industries in order to encourage them for Sustainable Consumption and Production. Fatimah et al. (2020) and Patil et al. (2021) combat against waste and promote circular economy.

Similarly, Mina et al. (2021) and Jiménez-Zaragoza et al. (2021) seek for circular economy. Jouzdani and Govindan (2021), using a multi-objective mathematical programming model, propose supply chain optimisation by reducing the cost, energy consumption, and the traffic congestion. Researchers and international organizations emphasize the importance of implementing responsible consumption in achieving the goals of sustainable development. The great challenge faced by economies today is to integrate environmental sustainability with economic growth and welfare by decoupling environmental degradation from economic

growth and doing more with less. This is one of the key objectives of the European Union, but the consequences of climate change and the growing demand for energy and resources are challenging this objective. Sustainable consumption and production (SCP) maximize business' potential to transform environmental challenges into economic opportunities and provide a better deal for consumers. The challenge is to improve the overall environmental performance of products throughout their life cycle, to boost the demand for better products and production technologies, and to help consumers in making informed choices (European Commission, 2020). Sustainable production and consumption patterns use resources efficiently, respect resource constraints, and reduce pressures on natural capital to increase overall well-being, keep the environment clean and healthy, and safeguard the needs of future generations. Since we live on a planet with finite and interconnected resources, the rate at which they are used has relevant implications for today's prosperity and lasting effects on future generations. It is thus important for the EU to decouple economic growth and the improvement of living standards from resource use and the eventual negative environmental impacts (Eurostat, 2020a). The European Commission's planned guidelines for sustainable development, and at the same time for responsible consumption, have dealt with the global, completely unplanned global pandemic of COVID 19. We can say that this caused the global crisis. Crisis can be defined as a sudden onset of internal or external perturbation that creates conflict between organizations and society (Hwang & Lichtenthal, 2000). Thus, the emerging global pandemic has caused many people, organizations not only personal or organizational crises, but also survival issues, both in terms of saving lives and the fate of organizations. COVID-19 pandemic has shown where many of the weaknesses in systems lie. It has proved that responsibilities to act extend from governments to the private sector to civil society and individuals if we are to successfully meet environmental goals.

Closed borders, availability of commodities, and confinement have forced behaviour changes worldwide. Some of the changes have accelerated new and emerging sectors that support responsible consumption, such as online working or locally sourced production. As people return to work and schools reopen, some of these positive changes can be

maintained. Employers—public and private—and individuals have now tested alternative ways of working, studying, and consuming at a scale that can durably leap-frog some transitions to more responsible consumption and production (UN Environment Programme, 2020). The COVID-19 pandemic impacted the financial and/or physical well-being of large segments of the population, exposing them to life-altering events, including sickness, job/income losses, and food shortages. Consequently, many consumers experienced precarious situations that impacted their behaviour. During a crisis, certain retail stores provide a unique context for the expression of consumer fear and anxiety because of their ability to constrain or facilitate the acquisition of goods, as is the case with grocery stores (Anderson & Anderson, 2020). Furthermore, the contemporary COVID-19 pandemic is determining a reconsidering of purchase choice elements and of consumers' behaviour (Alaimo et al., 2020). According to Severo et al. (2020) the COVID-19 pandemic has become a major public health concern worldwide, which can impact environmental sustainability and social responsibility, as well as people's quality of life.

The Scientific Group (Zettler et al., 2020) has a common role in responding to the adoption of a pandemic and commentary on the elegance of the community. Further measures are to be taken by all Member States, including non-compliance with pandemic targets (Harper et al., 2020). In this context, environmental awareness, sustainable consumption, and social actions of people have been effectively changed, as a period of quarantine, social isolation, and health crisis caused by pandemic has been experienced. In the EU strategy on sustainable consumption (2020), it is noted that the COVID-19 pandemic has exposed the fragility of supply chains. It is a necessity, to shift priorities towards more sustainable modes of production, distribution, and consumption and to make all actors in the supply chains more resilient to crises. To develop responsible consumption, it is important to analyse the experience of consumption in different groups of society and the measures that may influence consumption practices.

We raise *problematic question*: How have consumers' responsible consumption habits changed in Lithuania and some European countries during the pandemic? *The aim*: To analyse the society habits on responsible consumption on time of crisis. *The methods*: Analysis of research

literature sources, systematization, synthesis, generalization, and comparison were applied in the theoretical level. Quantitative research and data processing methods were applied in the empirical research.

12.2 Sustainable Consumption Theoretical Framework

Sustainable consumption and production (SCP) have been recognized as an integral part of the Sustainable Development Agenda until 2030 (Rybarova, 2020) and is one of the 17 goals of sustainable development that has a significant impact on other goals. It is identified separately as objective number 12, and at the same time as a link for some other agreed objectives. Goal 12 “Responsible consumption and production” is divided into 11 indicators with a quantitative target (Rybarova, 2020) and focuses on ethic, equity, ecological and economic principles of consumption (Fiore, 2020; UN, 2021b). Responsible consumption and production can be defined as using materials in the manner that minimizes negative impacts on the environment, society and economy “doing more and better with less” (UN, 2021a). The implementation of SDG 12 on sustainable consumption and production is still challenging in Europe (Eurostat, 2020b), while being instrumental to the realization of the Agenda 2030 as a whole. The ways in which most people consume today—large volumes at a high rate, along a linear trajectory and with significant wastage (take-make-dispose)—are not sustainable. Moreover, citizens have primarily been cast as individual consumers, which have put the burden of responsibility on people for their choices, without providing them with accessible or affordable alternatives (Towards an EU strategy on sustainable consumption, 2020). SCP is a well-established interdisciplinary research field with a wide variety of practical life-cycle approaches, including life-cycle analysis (LCA), cleaner production, eco-efficiency, changes in consumption patterns, using less resource-intensive products, the 3Rs (reduce, reuse, and recycle), moving from material products to immaterial services, energy conservation, sharing the use of

products and using higher-quality products with longer lifespans (Katila et al., 2020).

To ensure sustainable consumption and production practices necessarily entails to respect the biophysical boundaries of the planet and to reduce current global consumption rates to fit with the biophysical capacity to produce ecosystem services and benefits (UN Environment Programme, 2020). Jastrzebska (2017) reveals that sustainable consumption continues to be most frequently defined in terms of eco-consumption (eco-centric perspective), in other words, respect for the natural environment, disregarding the social context of this issue. Consumers are becoming more socially conscious and are including ethical considerations in their purchase decisions (Predergast & Tsang, 2019), as well as consumers are increasingly interested in various forms of responsible consumption (Schrader, 2007). Consumers have more product choices and, therefore, have more opportunities to reveal their social preferences when making purchase decisions (Auger et al., 2010). The responsible consumer understands that his choices bring about not only individual short-term consequences (satisfaction derived from consumption), but also long-term individual and social results. He therefore buys consciously, taking into account the consequences of his consumer choices, both on the environmental and on the social level (their effect on the surroundings and also on the market itself) (Jastrzebska, 2017). Mohr et al. (2001) defined a socially responsible consumer as the person who bases his acquisition, usage, and disposition of products on the desire to eliminate or at least minimize any harmful effect while maximizing the long-run impact on society (Pachchigar & Patel, 2020). Socially responsible consumers aspire to minimize or eliminate hazards to society and maximize any long-term benefits to society. Hence, socially responsible consumers will avoid buying products from companies that harm society (Mohr et al., 2001) and prefer products or services from companies that benefit society (Anderson & Anderson, 2020). In particular, the Joint Action and Trade Action Plans will be accompanied by a decision on the implementation of the Joint Action Plan (e.g. the Correction Assortment Assessment, which will be added during this period).

The matter of sustainability, and consequently all the activities having impact on it, gets increasing attention over time. The main activity

affecting and influencing sustainability issues is certainly responsible consumption and production. Dermody et al. (2021) propose to shift from post-capitalism to living in a sustainable manner, meaning obtain a habit of responsible consumption in order to improve human well-being and environment. The work of Fonseca and Carvalho (2019) shows that it is first priority of the companies for sustainable development making annual reports by 23.8% of Portuguese organizations. In this context, “consumption” and “production” mostly are mentioned together, since companies have power to impact on consumers’ decisions. Consumers usually are willing to act in a sustainable manner but often it does not reflect in reality. The factors affecting their decision are availability, affordability, product characteristics, comfort, distrust, and habit. Companies can offer consumers desired products through innovation in production process. Additionally, they can gain consumer loyalty and trust using different marketing activities. Lastly, they can simply eliminate the products or services with negative sustainable impacts (WBCSD, 2008).

Responsible consumption has less negative impact or more positive impact on the environment, society, the self, and the other-beings. It is an umbrella concept that highlights various types of consumption terms that represent specific practices such as sustainable consumption—consumers consider the impact of their consumption on society, the environment, and the economy, and use resources considering future generations (Ulusoy, 2016). Responsible consumption includes environmental activism, private or in-built behaviour such as efficient-related behaviour, buying behaviour for organic produce and recycling behaviour, behaviour related to financial sacrifices for environment, sympathy for environmental concern, altruistic behaviour (Kumar, 2016), and emotional affinity towards nature (Kumar & Dholahia, 2020). Fundamentally, the goal of reducing environmental pressure by consumption can be reached via three routes: greening production and products, shifting demand to low-impact consumption categories, and lowering material demands (Tukker et al., 2008). The consumption of a sustainable or “green” product simultaneously serves two purposes. As a private good, the consumption generates direct utility to the consumer. For instance, hybrid vehicles provide transport at a lower operational cost. As a public good, sustainable consumption in the form of using hybrid vehicles provides

important societal benefits, such as reduced energy consumption and reduced greenhouse gas emission. Unfortunately, the public good nature of such products often poses a challenge for their adoption because the societal benefits are diffuse, hard to quantify, and only obtained at an unknown future date. Further, consumers could freeride on others' purchase for these societal benefits, even people who label themselves as environmentalists may not always "practice what they preach." Also, even with tax incentives, sustainable products are often more expensive than conventional ones (Chen et al., 2019), therefore, the ability of some consumers to move to more responsible consumption is limited. In the Towards an EU strategy on sustainable consumption (2020) is revealed that price is one of the most important determinants and drivers of demand and as long as the price of products and services does not reflect more accurately their true costs, an overall shift to sustainable consumption patterns will not be possible. The economic costs of environmental and social externalities of production and consumption are currently usually borne by tax payers and by future generations, not by the companies who market the products and services in question. Products and services offering alternative solutions with lower impacts are still often more expensive and cumbersome to access, despite proven impacts of less negative externalities by more sustainable consumption options, such as organic and Fair Trade products. Unsustainable consumption is driven by a complex interplay between a range of different factors. The dominant business model is linear, with most companies' growth still based on more people buying more stuff. The effective lifetime of many consumer products is shrinking, while repairing them is becoming increasingly (often intentionally) difficult. Alternatives to the linear take-make-dispose economic model, such as those based on material circularity, servicing, or sharing, could contribute to a reduction in overall material consumption but remain peripheral and are often not able to compete with linear solutions under current conditions. In fact, secondary (reused/remanufactured/recycled) products are often sold in addition to primary (new) products, resulting in environmental impacts from both the primary and secondary production. Promoting circularity without promoting wider systemic changes in production (in particular product design),

consumption, and waste prevention would therefore only be addressing part of the problem (Towards an EU strategy on sustainable consumption, 2020).

12.3 Research Methodology

The Research Method

The quantitative research method was used in the research. The questionnaire was prepared on the pollimill.com website, and the link was sent to respondents.

Research Limitations

Only those respondents who use the internet connection could participate in the study.

The Research Population: Residents of Lithuania

The survey was conducted among Lithuanian consumers. Residents of other European countries were selected as a control group (England, France, Germany, Latvia, Poland, Italy, and others).

The Survey Sample

In this survey 372 respondents from Lithuania and 214 from other European countries participated. A simple random sample was used in the research. A simple random sample is a subset of a statistical population in which each member of the subset has an equal probability of being chosen. The sample size in this sampling method should ideally be more than a few hundred so that simple random sampling can be applied appropriately.

Such a method was chosen in order to obtain as much information as possible on the analysed topic, to find out the habits of responsible consumption of the Lithuanian population; to review differences and similarities with other EU countries.

Principles of Compiling the Questionnaire

The questionnaire consisted of seven questions. Respondents' opinion was researched about habits of responsible consumption.

The first two questions in the questionnaire are designed to find out the respondents' consumption habits in everyday life and during the pandemic. The questions are based on the criteria of responsible consumption set by scientists and the goals of responsible consumption set in the Sustainable Development Strategy. The questions contained ten statements each. Respondents rated the questions on a five-point Likert scale from 1 to 5, with 1- strongly agree and 5- strongly disagree. The third question explains the reasons why consumers choose to use responsibly. The fourth question is to find out if the pandemic forced society to change consumption habits and become more responsible consumers. Last three questions are designed to find out the demographics of the respondents, gender, age, and country of residence. The questionnaire is based on the analysis of scientific literature and EU strategy on sustainable consumption, also the reality and consequences of the worldwide COVID-19 pandemic.

The study was conducted in five stages:

- Stage 1. The research topic is formed.
- Stage 2. A survey questionnaire has been prepared.
- Stage 3. Data collected.
- Stage 4. The analysis of the obtained data was performed.
- Stage 5. Conclusions and suggestions are presented.

Demographic Characteristics

From Lithuania's participants 13.6% were men and 86.4% were women. From other European countries (EU) 39.9% were men and 60.1% were women. From Lithuania, the largest number of participants was in the 36–45 age group (24.3%); Respondents aged 46–55 (21.4%) and 26–35 (20.3%). 14% of the study participants aged 55–60; In the 18–25 age group, 9.7%, and 9.4% were over 60 years of age. In European countries, the age distribution of respondents was as follows: The majority of respondents were aged 36–45 (32.9%) and aged 26–35 (24.5%). About 18.8% of participants are aged 18–25; 10.8% aged 46–55; 7.5% over 61 years of age; and 4.7% over 55–66 years of age.

Respondents from 16 different European countries took part in the research: 14.5% from Latvia; 19.2% from Poland; 13.6% from Italy; 15.0% from the United Kingdom; 5.1% from Germany; 7.00% from Bulgaria; 2.8% from France; 4.2% from Spain; 3.7% from Moldova; 1.4% from Czech Republic; 0.5% from Albania; 0.9% from Azerbaijan; 2.3% from Slovakia; 1.9% from Romania; and 3.7% from other EU countries. As the number of respondents from different countries is different, the data will be analysed together for all European countries. The survey time is December 2020.

Research Ethics

The research was guided by ethical principles:

- The principle of goodwill is ensured by the statements of the questionnaire, which are presented in a respectful style, without creating pre-conditions for respondents to lose privacy.
- Applying the principle of respect to the individual, the purpose of the study was explained to the respondents.
- Volunteering is the free will of study participants to participate or not to participate in a study.
- Research participants are guaranteed anonymity and data confidentiality.

Data Processing Methods

The collected empirical data were processed using the SPSS 20.00 (Statistical Package for the Social Sciences). The data processing descriptive statistics were used, such as percentiles, mean, mode, and standard deviation. The data was also processed by the one-way analysis of variance (ANOVA) and independent samples *t-test* where significant differences are when $p \leq 0.05$. To assess the reliability, or internal consistency, of a set of scale, Cronbach's alpha coefficient was used.

12.4 Research Data

The research intended to evaluate the responsible consumption habits in the daily life of Lithuania and other European countries respondents. Research respondents had to assess ten statements about responsible consumption habits with a range scale, where 1 means that respondents always do, 5—never do. For the assessment of the question scale internal consistency, Cronbach's alpha coefficient was used. Cronbach's alpha coefficient value for a properly and qualitatively composed question scale should be greater than 0.7. In our case, the analysis of the questionnaire scale items obtained that Cronbach's alpha coefficient is 0.773, and Cronbach's Alpha Based on Standardized Items is 0.777. This shows that the scale is properly prepared. Analysing responsible consumption statements are submitted *mean* and *p-value* which show the significant differences between countries and respondents age (significance level is $p \leq 0.05$) (Table 12.1). The standard deviation for the analysed statements ranges from 0.690 to 1.090.

The mean between Lithuania and other European countries is very similar. Research data analysis reveals that respondents are trying to be socially responsible consumers. Respondents' responsible consumption in their daily lives is less manifested in volunteering (mean Lithuania 3.90; Europe 3.38) and participating in local community activities (mean Lithuania 3.11; Europe 3.40). All other activities are implemented always or usually. Research findings showed that demographic variables like

Table 12.1 Responsible consumption habits in daily life

Statements	Mean Lithuania	Mean European countries	Significant differences between countries <i>p-value</i>	Significant differences between age <i>p-values</i>
I sort garbage (waste)	2.03	2.05	$p = 0.081 > 0.05$	$p = 0.000 < 0.05$
When choosing goods in a store, the priority is the quality of the product/ goods, not the price	2.04	2.18	$p = 0.007 < 0.05$	$p = 0.006 < 0.05$
I choose products/ goods from local manufacturers	2.25	2.47	$p = 0.000 < 0.05$	$p = 0.000 < 0.05$
I volunteer	3.90	3.38	$p = 0.313 > 0.05$	$p = 0.262 > 0.05$
I save electricity, water	2.15	2.04	$p = 0.138 > 0.05$	$p = 0.003 < 0.05$
I try to use responsibly (I don't buy what I don't need, I pay attention to whether the products are packed in recyclable containers, etc.)	2.33	2.26	$p = 0.869 > 0.05$	$p = 0.023 < 0.05$
I buy organic products	2.84	2.67	$p = 0.362 > 0.05$	$p = 0.125 > 0.05$
I buy those goods/ services if I know that the company is really behaving ethically and responsibly	2.88	2.76	$p = 0.150 > 0.05$	$p = 0.012 < 0.05$
I participate in local community activities	3.11	3.40	$p = 0.024 < 0.05$	$p = 0.000 < 0.05$
I sell or donate unnecessary clothes, items (do not throw away)	2.10	2.39	$p = 0.000 < 0.05$	$p = 0.272 > 0.05$

country and age have an impact on responsible consumption habits. *p-value* provided in Table 12.1 shows that there are significant differences between Lithuania and other European countries. The obtained results reveal that the residents of European countries, compared to the residents of Lithuania, more often pay attention to quality rather than price when buying products/goods ($p = 0.007 < 0.05$). Lithuanian residents more often choose goods of local producers ($p = 0.000 < 0.05$); more often participates in local community activities ($p = 0.024 < 0.05$); and unnecessary items are more often sold or donated ($p = 0.000 < 0.05$) than the population of European countries. Such results suggest that, in general, respondents to the study have relatively strong habits of responsible consumption.

Statistically significant differences were observed and when comparing the data with the age of the respondents $p \leq 0.05$, significant data were highlighted (Table 12.1). ANOVA Post-Hoc Tukey test disclose the mean difference between age groups. The obtained data show that older respondents sort waste more often compared to younger respondents ($p = 0.000 < 0.05$); when choosing goods in the store pays more attention to quality than price ($p = 0.006 < 0.05$); more often choose goods/products of local producers ($p = 0.000 < 0.05$). The group of respondents aged 55–60 saves more electricity and water ($p = 0.003 < 0.05$). Also, the respondents of this group try to consume responsibly and not to buy what is not necessary ($p = 0.023 < 0.05$); more often involved in local community activities ($p = 0.000 < 0.05$) than younger respondents. For other statements respondent age does not have an impact because *p-value* is higher than 0.05; it indicates that there is no statistical variation.

Respondents also had the opportunity to provide examples of their responsible consumption. Lithuanians mentioned the following examples: shopping goes with a list so as not to buy what is not necessary; uses reusable bags; buys better quality clothes; buys from the second hand; saves electricity, water; compost food waste; try not to throw food; drive economically; avoid buying products packaged in plastic containers; consume in moderation; responsibly sorts garbage and so on.

Respondents from European countries provided the following examples of responsible consumption: *Shop once a week; shop at the market from farmers; Taking own shopping bag; Buy vegan cosmetics, no tested on*

animals; try to avoid the waste of water closing the tap when it isn't necessary; Give out excess food and recycle cans and plastics; Buy vegan cosmetics, no tested on animals; Try to avoid the waste of water closing the tap when it isn't necessary; try to use a car with a traditional engine as little as it is possible; buy fair trade products; do not buy gift bags, but use the ones that have been given already; fix electronic devices and clothes instead of buying new ones; grow own vegetables and fruits; try to buy a well-planned amount of food to avoid food waste; Turn off lights when not needed; Using public transport or bike instead of own car; Walk when is possible and so on.

We observe that the consumption habits of the society are quite different, but the answers of the respondents allow us to assume that consumers are aware of the consequences of consumption and therefore try to use responsibly. Many of the respondents have their consumption habits, which shows that society is not indifferent and in one way or another tries to reduce the negative impact on the environment and addresses the issues of responsible consumption. The answers of the respondents to the survey show that consumption habits are strong in many areas, regardless of the country in which they live. However, age is observed to influence consumption patterns. Older respondents sort waste more often, buy goods from a local producer, pay more attention to product quality than price compared to younger respondents.

The research also aimed to find out consumption habits during the pandemic of respondents of Lithuania and other European countries. Research respondents assess ten statements about responsible consumption habits during the pandemic with a range scale, where 5 means strongly disagree, 1 strongly agree. Cronbach's alpha coefficient is 0.723, and Cronbach's Alpha Based on Standardized Items is 0.732. This shows that the scale is properly prepared. Research data is provided in Table 12.2.

Analysing the obtained results, it is seen that a significant part of the respondents was forced to use more non-ecological, environmentally unsustainable products (protective masks, disposable tableware, disinfectants, etc.) (mean Lithuania 2.19; Europe 2.32); refused to use airlines during the pandemic, although even respondents had the opportunity to do so (mean Lithuania 2.41; Europe 2.90); to buy locally produced products in support of local businesses (mean Lithuania 2.98; Europe 2.63); respondents became more sensitive to issues of social vulnerability (mean

Table 12.2 Responsible consumption habits during pandemic

Statements	Mean Lithuania	Mean European countries	Significant differences between countries <i>p-value</i>	Significant differences between age <i>p-values</i>
I use more than usual during the pandemic	3.65	3.00	$p = 0.211 > 0.05$	$p = 0.000 < 0.05$
The pandemic has made me more sensitive to issues of social vulnerability (e.g. providing financial support to deprived people; donating food/ clothing)	3.06	2.45	$p = 0.214 > 0.05$	$p = 0.252 > 0.05$
During the pandemic, I order more goods online without being convinced of their necessity (e.g. non-essential items)	3.57	3.09	$p = 0.010 < 0.05$	$p = 0.000 < 0.05$
The pandemic forced me to order goods online (e.g. food in self-isolation; fear of infection)	3.11	2.80	$p = 0.535 > 0.05$	$p = 0.000 < 0.05$
The pandemic led me to buy locally produced products in support of local businesses	2.98	2.63	$p = 0.013 < 0.05$	$p = 0.505 > 0.05$
The pandemic has further raised awareness of the planets impact on the environment	2.54	2.53	$p = 0.005 > 0.06$	$p = 0.030 < 0.05$
I refused to use airlines during the pandemic, although I had the opportunity to do so	2.41	2.90	$p = 0.602 > 0.05$	$p = 0.028 < 0.05$

Table 12.2 (continued)

Statements	Mean Lithuania	Mean European countries	Significant differences between countries <i>p-value</i>	Significant differences between age <i>p-values</i>
The pandemic forced the use of more non-ecological, environmentally unsustainable products (protective masks, disposable tableware, disinfectants, etc.)	2.19	2.32	$p = 0.530 > 0.05$	$p = 0.233 > 0.05$
The pandemic prompted me to volunteer	3.84	3.27	$p = 0.005 < 0.05$	$p = 0.486 > 0.05$
The pandemic made me think about renewable energy sources (wind, solar) in the household	3.38	2.97	$p = 0.783 > 0.05$	$p = 0.284 > 0.05$

Lithuania 3.06; Europe 2.45). In part, the pandemic made respondents think about renewable energy sources (wind, solar) in the household (mean Lithuania 3.38; Europe 2.97).

Statistically significant differences between countries were observed in only a few statements. The majority of European respondents partially agreed that during the pandemic, they ordered more goods online without being convinced of their necessity (e.g. non-essential items) ($p = 0.010 < 0.05$), while respondents from Lithuania tended to disagree with this statement. And that the pandemic caused volunteering was more strongly accepted by respondents living in other European countries than by respondents from Lithuania ($p = 0.005 < 0.05$). For other statements the country does not have an impact because the p -value is higher than 0.05; it indicates that there is no more statistical difference between countries.

Significant differences were also observed when comparing the data with the age of the respondents. ANOVA Post-Hoc Tukey test data

revealed that respondents in the 26–35 and 36–45 age groups started using more than usual during the pandemic ($p = 0.000 < 0.05$); to order goods online without being convinced of their necessity ($p = 0.000 < 0.05$). Meanwhile, respondents aged 55–60 and older than 61 were forced to order goods online due to fear of infection or the need to stay at home ($p = 0.000 < 0.05$). Respondents in the 18–25 age group and 36–45 age group caused the pandemic to become even more aware of the planet's impact on the environment ($p = 0.030 < 0.05$), as well as the pandemic in this age group, responded to flights ($p = 0.028 < 0.05$). Respondents were asked whether the pandemic forced them to change consumption habits and become a more responsible consumer. 55.2% of Lithuanian and 51.4% of European countries respondents argued that yes, pandemic forced to change consumption habits and become a more responsible consumer.

The data obtained revealed that the pandemic affected respondents' consumption habits. Some consumers began to consume more, more things they did not need online at all during the pandemic. Meanwhile, other pandemics have led to volunteering, buying local produce, abandoning flights. Part of the society has become more sensitive to issues of social vulnerability, thinking about the use of renewable sources in the household. We cannot say that the pandemic has radically changed consumer consumption habits, but they have certainly adjusted them.

Respondents were asked what are the main reasons that motivate or encourage them to use responsibly. Respondents were allowed to choose an unlimited number of relevant answers. Research data reveals that the main reasons which encourage respondents to use responsibly are self-care, family (Lithuania 78.1%; Europe 61.4%); a sense of responsibility for what is happening in the world (Lithuania 61.5%; Europe 59.8%), and caring for future generations (Lithuania 59.8%; Europe 50.5%). Also, respondents note that they feel guilt for the damage caused to the environment (Lithuania 42.2; Europe 51.4). Less important for Lithuania respondents is the perception of civic and social responsibilities (Lithuania 36.8%; Europe 53.3%) and for European respondents less important is financial benefits (Lithuania 33.8%, Europe 27.1%).

Summarizing the results, it can be concluded that the consumption habits of the population of Lithuania and other European countries are

quite similar. Consumers are familiar with the concept of responsible consumption and in many areas strive to use responsibly. Volunteering and involvement in local communities is still a rare practice in Lithuania and in European countries. However, activities such as sorting garbage, donating food and clothes to the poorer, saving water and electricity are already becoming daily habits. The pandemic situation has partly adjusted the habits of some consumers, leading to higher-than-normal consumption, use of more non-ecological, environmentally unsustainable products (protective masks, disposable tableware, disinfectants, etc.), refuse to use airlines even if is an opportunity to do so. Such trends suggest that the pandemic has prompted some consumers to change their consumption habits.

12.5 Conclusions

Responsible consumption is behaviour that includes the responsible use of natural resources, the efficient use of organic products, waste sorting, recycling, and so on. Practicing responsible consumption also means knowing better the products being bought and their environmental, social, or economic impacts. The essential point of responsible consumption is to be aware of the impacts of consumption on various criteria and to act to make this consumption more positive. One of the greatest global challenges is to integrate environmental sustainability with economic growth and welfare by decoupling environmental degradation from economic growth and doing more with less. Resource decoupling and impact decoupling are needed to promote sustainable consumption and production patterns and to make the transition towards a greener and more socially inclusive global economy.

The negative consequences of consumption for the environment and society encourage people to consume more responsibly, to choose the goods they buy more carefully, to pay more attention to the quality of the product. The amount of waste generated can be reduced by changing consumption patterns, such as responsible purchasing planning, sorting waste, using it for a longer period of time, or handing it over to others, recycling it, and not turning it into landfill waste. Unfortunately, research

shows that only a few people consume socially responsibly. Although our study revealed that respondents' consumption habits are quite responsible, global practice shows that most people still lack the knowledge and skills to contribute to responsible consumption and the well-being of society.

The results of the study revealed that the habits of some consumers changed during the pandemic. There are also differences between consumers in different countries. Of course, it needs to be emphasized that habits are most determined by tradition, lifestyle, and income. Based on the results of the study, it can be noticed that during the pandemic, some consumers in European countries started consuming more than usual compared to the Lithuanian population. Most consumers were forced to cancel flights; Lithuanian consumers started ordering goods/products online more often than respondents from other European countries. However, it has also had a positive development, with many consumers even more concerned about the planet's impact on the environment or the use of renewable energy sources in the household.

According to the results obtained, we see that it is still necessary to inform and educate people on the topic of sustainable consumption.

We recommend educational institutions (starting from preschool education to universities) to prepare lessons or lectures on responsible consumption topics according to age groups, to prepare methodological tools—exercise books—to create computer games that show how the regional or global environmental changes are from each person's consumption and behaviour, how local businesses in the region are changing and the associated lower pollution, and so on.

It is also recommended that the adult population be informed as much as possible about the harms of over-consumption and the impact it has on the environment and the region in which they live and to promote community and volunteering.

Recommendations for municipalities and national governments to work more intensively on the use of renewable energy sources, to have strategies on how to deal with various types of waste, and so on should be provided.

It is recommended that regional and national governments encourage businesses to be responsible and at the same time look for ways to

support local businesses to withstand global competition and enable people to buy goods from local producers (especially food producers). In this way, the pollution caused by the transport of goods would be reduced, and local businesses in the regions would be activated.

References

- Alaimo, L. S., Fiore, M., & Galati, A. (2020). How the Covid-19 Pandemic Is Changing Online Food Shopping Human Behaviour in Italy. *Sustainability*, 12, 1–18.
- Anderson, S., & Anderson, J. (2020). Leave Some for Me! The Role of Marketing in Influencing Responsible Consumption during Times of Crisis. *Journal of Strategic Marketing*, 28, 1–19.
- Auger, P., Devinney, T. M., Louviere, J. L., & Burke, P. F. (2010). The Importance of Social Product Attributes in Consumer Purchasing Decisions: A Multi-Country Comparative Study. *International Business Review*, 19(2), 140–159.
- Blas, A., Garrido, A., Unver, O., & Willaarts, B. (2019). A Comparison of the Mediterranean Diet and Current Food Consumption Patterns in Spain from a Nutritional and Water Perspective. *Science of the Total Environment*, 664, 1020–1029.
- Chen, Y., Ghosh, M., Liu, Y., & Zhao, L. (2019). Media Coverage of Climate Change and Sustainable Product Consumption: Evidence from the Hybrid Vehicle Market. *Journal of Marketing Research*, 56(6), 995–1011.
- Dermody, J., Koenig-Lewis, N., Zhao, A. L., & Hanmer-Lloyd, S. (2021). Critiquing a Utopian Idea of Sustainable Consumption: A Post-Capitalism Perspective. *Journal of Macromarketing*, 269, 1–20.
- European Commission. (2020). Retrieved from https://ec.europa.eu/environment/eussd/escp_en.htm
- Eurostat. (2020a). Retrieved from Sustainable Development in the European Union—Monitoring Report on Progress Towards the SDGs in an EU Context—2020 Edition—Products Statistical Books—Eurostat (europa.eu).
- Eurostat. (2020b). Ensure Sustainable Consumption and Production Patterns. <https://ec.europa.eu/eurostat/statistics-explained/index.php/>
- Fatimah, Y. A., Govindan, K., Murniningsih, R., & Setiawan, A. (2020). Industry 4.0 Based Sustainable Circular Economy Approach for Smart Waste Management System to Achieve Sustainable Development Goals: A Case Study of Indonesia. *Journal of Cleaner Production*, 269, 122–263.

- Fiore, M. (2020). Food Loss and Waste: The New Buzzwords. Exploring an Evocative Holistic 4Es Model for Firms and Consumers. *EuroMed Journal of Business*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EMJB-07-2020-0080>
- Fonseca, L., & Carvalho, F. (2019). The Reporting of SDGs by Quality, Environmental, and Occupational Health and Safety-Certified Organizations. *Sustainability (Switzerland)*, 11(20), 1–20.
- Gunawan, J., Permatasari, P., & Tilt, C. (2020). Sustainable Development Goal Disclosures: Do They Support Responsible Consumption and Production? *Journal of Cleaner Production*, 246, 1–8.
- Harper, C. A., Satchell, L. P., Fido, D., & Litzman, D. (2020). Functional Fear Predicts Public Health Compliance in the COVID-19 Pandemic. *International Journal of Mental Health and Addiction*, 27, 1–14.
- Hwang, P., & Lichtenthal, J. D. (2000). Anatomy of Organizational Crises. *Journal of Contingencies and Crisis Management*, 8(3), 129–140.
- Jastrzebska, E. (2017). The Responsible Consumer as an Answer to New Sustainable Development Challenges. *Economia*, 1(60), 198–206.
- Jiménez-Zaragoza, A., Arredondo-Soto, K. C., Miranda-Ackerman, M. A., & Cortés-Robles, G. (2021). Consumer Perception Applied to Remanufactured Products in a Product-Service System Model. In T. Ahram (Ed.), *Advances in Artificial Intelligence, Software and Systems Engineering*. AHFE 2020. Advances in Intelligent Systems and Computing, 1213, 459–464.
- Johnson, O., & Chattaraman, V. (2019). Conceptualization and Measurement of Millennial's Social Signaling and Self-Signaling for Socially Responsible Consumption. *Journal of Consumer Behaviour*, 18(1), 32–42.
- Jouzani, J., & Govindan, K. (2021). On the Sustainable Perishable Food Supply Chain Network Design: A Dairy Products Case to Achieve Sustainable Development Goals. *Journal of Cleaner Production*, 278, 2411–2502.
- Katila, P., Colfer, C. P., Jong, W., Gallaway, G., Pacheco, P., & Winkel, G. (2020). *Sustainable Development Goals: Their Impact on Forest and People*. <https://www.cambridge.org/core/product/5FA75743F80CCE33751BD2095E5754DC>
- Kumar, B. (2016). Factors Affecting Adoption of Green Products among Youths: A Conceptual Framework Based on Evidence from India. *International Journal of Indian Culture and Business Management*, 13(1), 111–126.
- Kumar, B., & Dholahia, N. (2020). Firms Enabling Responsible Consumption: An Ethnographic Approach. *Marketing Intelligence & Planning*, 1, 1–21.

- Mina, H., Kannan, D., Gholami-Zanjani, S. M., & Biuki, M. (2021). Transition Towards Circular Supplier Selection In Petrochemical Industry: A Hybrid Approach to Achieve Sustainable Development Goals. *Journal of Cleaner Production*, 286, 125–273.
- Mohr, L. A., Webb, D. J., & Harris, K. E. (2001). Do Consumers Expect Companies to be Socially Responsible? The Impact of Corporate Social Responsibility on Buying Behavior. *The Journal of Consumer Affairs*, 35(1), 45–72.
- Pachchigar, N., & Patel, B. I. (2020). Socially Responsible Consumption Behavior of Youth in Surat City. *Mukt Shabd Journal*, 9(5), 1–11.
- Patil, A. B., Tarik, M., Struis, R. P. W. J., & Ludwig, C. (2021). Exploiting End-of-Life Lamps Fluorescent Powder e-Waste as a Secondary Resource for Critical Rare Earth Metals. *Resources, Conservation and Recycling*, 164, 1–8.
- Predergast, G. P., & Tsang, A. S. L. (2019). Explaining Socially Responsible Consumption. *Journal of Consumer Marketing*, 36(1), 146–154.
- Rybarova, D. (2020). Assessing Progress Towards Responsible Consumption and Production. *SHS Web of Conferences/HS Web of Conferences*, 83, 1–8.
- Schrader, U. (2007). The Moral Responsibility of Consumers as Citizens. *International Journal of Innovation and Sustainable Development*, 2(1), 79–96.
- Severo, E. A., Guimaraes, J. C. F., & Dellarmelin, M. L. (2020). Impact of the COVID-19 Pandemic on Environmental Awareness, Sustainable Consumption and Social Responsibility: Evidence from Generations in Brazil and Portugal. *Journal of Cleaner Production*. <https://www.sciencedirect.com/science/article/pii/S095965262034991X>
- Towards an EU strategy on sustainable consumption, European Economic and Social Committee. (2020). Towards an EU Strategy on Sustainable Consumption (Own-Initiative Opinion) | European Economic and Social Committee (europa.eu).
- Tukker, A., et al. (2008). Fostering Change to Sustainable Consumption and Production: An Evidence Based View. *Journal of Cleaner Production*, 16, 1218–1225.
- Ulusoy, E. (2016). Experiential Responsible Consumption. *Journal of Business Research*, 69, 284–297.
- UN Environment Programme. (2020). <https://www.unenvironment.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-12>
- United Nations. (2021a). *Responsible Consumption and Production*. <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

- United Nations. (2021b). *The 17 Goals*. <https://sdgs.un.org/goals>
- Uniyal, S., Mangla, S. K., Sarma, P. R. S., Tseng, M., & Patil, P. (2021). ICT as ‘Knowledge Management’ for Assessing Sustainable Consumption and Production in Supply Chains. *Journal of Global Information Management*, 29(1), 164–198.
- Webb, D. J., Mohr, L. A., & Harris, K. E. (2008). A Re-examination of Socially Responsible Consumption and Its Measurement. *Journal of Business Research*, 61(2), 91–98.
- World Business Council for Sustainable Development (WBCSD) (2008). *Sustainable Consumption Fact and Trends from a Business Perspective*. <https://www.wbcsd.org/Programs/People/Sustainable-Lifestyles/Resources/Sustainable-consumption-facts-trends>
- Zettler, I., Schild, C., Lillehot, L., & Böhm, R. (2020). *Individual Differences in Accepting Personal Restrictions to Fight the COVID-19 Pandemic: Results from a Danish Adult Sample*. PsyArXiv Preprints.

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