Chapter 1
Introduction

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Abstract This brief introduction provides an overview of the book structure and content. The chapter discusses the concepts, research methods and results which the contributors present in their chapters. The diversity of addressed topics, the wide geographical and sector coverage lead to a wide range of book audiences. The book is useful to researchers, practitioners, educators and trainers in project management domain as well to postgraduate students, in general for all those interested to better understand how the sustainability can be integrated into project management.

Keywords Project management · Sustainability · Sustainable business · Social responsibility · Project excellence · Projectification

Climate change, threats to biodiversity and accelerated exhaustion of non-renewable resources have made researchers and practitioners more involved in revising economic growth models and practices, and in promoting sustainability into theory and practice. The research literature on sustainable development has expanded and more and more companies have started to include sustainability principles into their strategies and to report their regular actions/practices related to sustainable business.

Nowadays, one of the important trends of societies worldwide is projectification. Several studies reveal that around 40% of economic activities are performed as projects and programmes (www.ipma.world). For this reason, the implementation

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of sustainability into project, programme and portfolio management is considered as being critical for assuring sustainable development.

Sustainable project, programme and portfolio management aims to take into consideration the environmental, economic and social aspects of programmes and portfolios in order to achieve sustainable results. Many project, programme and portfolio management professionals took the responsibility for integrating sustainability by developing sustainable objectives and management plans and by translating them into practice. Professional associations, such as the International Project Management Association (IPMA) are actively involved in promoting sustainability in project, programme and portfolio management disciplines by financing research, developing standards and organizing events as platforms for professional knowledge sharing.

The book includes the extended version of selected papers presented at the 31st IPMA World Congress held in the Yucatan International Congress Centre, Merida, Mexico from September 30 to October 2, 2019. The main topic of the IPMA World Congress was "Integrating Sustainability into Project Management". These selected papers address relevant topics related to sustainability in projects by presenting advanced international academic research and practical studies on sustainable project, programme and portfolio management. The results can be adopted into project, programme and portfolio management practices.

The book is structured into three parts. While the first part covers concepts and approaches related to the integration of sustainability in project management, the second part presents research on integrating sustainability into project management in different industries and regions. The final part takes specific perspectives on integrating sustainability into project management related to learning and continuing competence development.

The first part includes the following five chapters.

Chapter 2, by *Lars Nielsen, Philipp Klausing and Peter Nyhuis* is entitled *Towards a Target System to Incorporate Sustainability in Multi-Project Management in Factories.* The authors raise the awareness about the challenge of portfolio balancing, which is requiring an overarching target system for providing guidance. Their research leads to a hierarchy framework according to which sustainability can be integrated and implemented. An exploratory case study, for the German automobile OEMs (Original Equipment Manufacturers) is conducted and the main findings are presented.

In Chap. 3, *Maedeh Molaei, Marcel Hertogh and Marian Bosch-Rekveldt* investigate the *Factors Affecting the Integration of Sustainability in the Early Project Phases in an Integrated Project Management Model.* They conducted a qualitative cross-case analysis on three highways projects in the Netherlands. It is concluded that each project management role is inclined towards specific sustainability dimension. The authors proposed a model for integrating key roles involved in integrating sustainability into project management of infrastructure projects.

Chapter 4 by *Thordur Vikingur Fridgeirsson, Bara Hlin Kristjansdottir and Helgi Thor Ingason* explores the challenges of complexity in the modern business environment and proposes a diagnostic tool, which was designed by the authors to assess the VUCA dimensions a project is facing with. For validation purpose, the tool was

tested on different projects from the manufacturing industry. Considering that one of the reasons to integrate sustainability into project management is to reduce project risks, the research is strongly connected with the design of sustainability indicators based on risk management.

In Chap. 5, *Gregory J. Skulmoski, Craig Langston, Alan Patchinga and Amir Ghanbaripour* conceptualize the sustainable approach in the career management. By running an extensive literature review, the authors show how the signals of career risks, such as the absence of substantial training or education, named error messages can be used in a sustainable project-oriented career within the Gig Economy.

Chapter 6 addresses the topic of environmental projects. *Vladimir Obradović, Marija Todorović and Milica Jovanović* discuss the factors that are contributing to or limiting project management application in the field of environment protection at the national and local levels. Based on these factors and the findings of an empirical research conducted in Serbia, the key enablers for successfully integrating project management in environmental projects are identified.

The second part of the book is about integrating sustainability into project management in different industries and regions based on some research results obtained by the authors. This part includes the following ten chapters:

Chapter 7 describes the importance of integrative intelligence for sustainable rural development. By performing an extensive and in-depth analysis of the Mexican rural economy, *Jesus Martinez Almela, Jorge Flores and Jorge J. Peart Mijangos* identify the main types of Rural Mexico and militate for "extensionism", as the founder principle of sustainable rural development. According to the authors, "extension" should cover a wider range of communication and learning activities, organized for rural people and related to different disciplines and subjects, including agriculture, agricultural marketing, health and business studies and project management.

Chapter 8 by Teri Vivienne Okoro is about applying a hybrid framework for reviewing the integration of sustainability in a motorsports tourism project in Nigeria. The applied framework combines the traditional sustainability economic, social, environmental and other dimensions with the co-created benefits and value. This study adopts a qualitative research technique, exploring the challenges of sustainability through interviews relating to a singular case study. Two semi-structured in-depth interviews covered the project context with a more focused examination of project sustainability.

Chapter 9 by Reinhard Wagner is about the process of transforming automotive industry following the adoption of disruptive technologies and sustainable project management approaches. The chapter explains the role of projects in organizing innovation, product development, manufacturing and service delivery and explores the future projectification of this industry. The author made an historical research of the management approaches adopted in the automotive industry, in order to identify the relevant dynamics patterns and future trends.

In Chap. 10, Inga Minelgaite, Bjarnveig Birta Bjarnadottir and Kari Kristinsson present the research on new product development projects in the Icelandic seafood industry regarding three sustainability dimensions, namely environmental, economic and social. Icelandic experience is relevant, considering that Iceland is ranked among

the most sustainable countries in the world and the seafood industry in Iceland has been referred to as a role model in the use of fish waste to develop new products. Using survey methodology, the authors investigate how the sustainability dimensions are represented in each phase of new product development projects in the seafood sector.

Chapter 11 is concerned with the *Inter-organizational Co-creation: an Approach to Support Energy Transition Projects. Afshin Jalali Sohi, Maryam R. Nezami, Hans Bakker and Marcel Hertogh* argue that restructuring energy systems into more sustainable forms, called "Energy Transition", represents a solution to the actual inefficiency of the energy systems. By conducting a case-study research in The Netherlands, for one energy transition project, the interactions among different actors were mainly investigated in order to better understand to impact of co-creation on the project interactions and on the project success.

In Chap. 12, *Hans Knoepfel* presents a multi-case study on *Sustainability for Construction Projects.* Six large, medium-size and small construction projects were considered in the research. Narrative research was applied in data collection and analysis. In each case, the characteristics about capture, society, economy, environment and resilience were targeted, according to the conceptual model of sustainability of buildings and infrastructure which was proposed by the author, based on the literature review. The initial assumptions were confirmed through the research findings.

In Chap. 13, *Jaehyun Lee, Unho Lee, Eunsang Yoon and Changwoo Park* proposed the usage of Segway model for the assessment of megaproject excellence, especially in the case of Korea's Pilot Smart City Projects. The authors ran several rounds of interviews with project operating groups, mainly decision-makers, how revealed the difficulties in communication and decision-making. It is argued that the usage of the Segway model is a solution for these difficulties. The authors express their interest in continuing the research with the development of the assessment methodology based on the Segway model.

Chapter 14 brings forth the issue of *Public-Private-People Partnership (PPPP) for Infrastructure Development in Indonesia.* The authors *Lukas Beladi Sihombing, Achmad Jaka Santos and Andreas Wibowo* have conducted research for validating the new concept of public-private-people partnership (PPPP). A survey was conducted, mainly for identifying the relevance of people in PPPP. The result showed that the PPPP concept has the ability to benefit and support the livelihood of people living around the project area, thereby ensuring the integration of sustainability into project management.

In Chap. 15, *Sandra Matuhina, Mladen Radujković, Maja-Marija Nahod* present a survey on the role of practice competences in decision-taking process in projects. The survey targeted the challenges of the decision-making, the shift towards the creative leadership and the sustainability of the decision-making. The survey was conducted in three European countries: Croatia, Slovenia and Slovakia.

In Chap. 16, Asa Bjork Jonsdottir, Haukur Ingi Jonasson, Helgi Thor Ingason and Agnes Holm Gunnarsdottir examine four international business excellence models emphasizing on *social responsibility* and sustainability in order to identify how

a company's excellence can be better measured. The applied comparison framework has six dimensions; Leadership, Vision and strategy, Continuous improvement, Processes, People and Universal success and Systematic approach. The authors ran a survey amongst CEOs of 25 Icelandic companies. An important research finding was the actual necessity for the companies to be more oriented than before to the world at large, mainly considering the recent threats, such as global warming and the increase of pollution.

The last section of the book addresses the perspectives of incorporating sustainability in project management through the competence development and includes the following chapters:

Chapter 17 discusses the significance of chatbots in the corporate project management training. *Constanta-Nicoleta Bodea, Maria-Iuliana Dascalu and Alexandru Hang* claim that chatbots are very useful in corporate training, as they support professional development and knowledge sharing to day-to-day business practices, they reinforce learning and help users to find quickly the relevant information, thus contributing to a sustainable education. The authors propose a pattern-based chatbot, useful for corporate training for competence enhancement. The solution was successfully deployed in a professional association and integrated into its digital platform.

In Chap. 18, *Steven Nijhuis* considers that in order to get sustainable teaching of project management, focus on teaching subjects and processes is needed. Comparing the subjects of the offerings of project management, the author concludes that commercial and higher education courses on project management are not only targeting the same group but also give attention to similar subjects. The only significant difference is that higher education tests more the students' knowledge even though there is not a clear proof that learning goals are really achieved. Further research is still required for assuring sustainable project management teaching.

Chapter 19 describes an ex post analysis of the competencies of a team of educators asked to design and implement an online educational programme in a very short track. To achieve this objective, the team applied different methods for crashing the schedule. As a member of the project team, *Adán López Miranda* applied the observation method to collect data for his research. To face these time constraints, the project team members have to develop their project management competences.

Chapter 20 by *Ángela Paneque de la Torre, Vanesa G. Lo Iacono Ferreira, María José Bastante-Ceca and Salvador F. Capuz-Rizo* discusses how certification process organized in Spain during 2014–2019 and based on IPMA ICB standard addressed the competences required to incorporate sustainability in project management of the candidates. Inclusion of sustainability concepts in the project management standard was analysed, together with the assessment tools applied during different stage of the certification programme by Spanish certification body.

Chapter 21 by *Amin Saidoun* addresses the importance of project management competences for the sustainability of non-profit organizations. The empirical investigation was undertaken in two case studies. The first case concerns a medium-sized international fundamental research NPO based in Grenoble (France) and the

second case concerns a small national company which advocates the interests of large companies from the logistics sector based in Bonn, Germany.

As editors, we compiled this book with the intention to offer the readers a great variety of approaches and perspectives on sustainability in project management. The book includes relevant regional and sector-specific approaches in integrating sustainability in project management, We are advocating for knowledge co-creation, based on the cooperation between practitioners and academics. For this reason, we consider that this book ensures not only the theoretical grounding but also the practical relevance of the addressed theme.

The book is a valuable resource for researchers and practitioners in project, programme and portfolio management, for educators and trainers as well for post-graduate students, in general, for all those interested to better understand how the sustainability can be integrated into project management. The first part of the book is recommended for scholars interested in general conceptual models and approaches in incorporating sustainability into project management in complex business contexts. Researchers and practitioners will find a great diversity of studies, conducted in different regions and sectors by using a wide range of research methods. The final part of the book is intended to be read mainly by educators and trainers delivering courses and training including as learning topic sustainability in project management.

Thank you for reading!