



Call for Contributions:

**Artificial Intelligence, Finance, and Sustainability**

An edited collection to be published by Palgrave-Macmillan

**Co-edited by:**

Thomas Walker, PhD

Dieter Gramlich, PhD

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The John Molson School of Business, the Jacques M nard - BMO Center for Capital Markets at Concordia University, and Baden-W rttemberg Cooperative State University kindly invite contributions to the edited book collection, entitled *Artificial Intelligence, Finance, and Sustainability*, to be published by **Palgrave-Macmillan**.

**ABOUT THE BOOK:**

As the world increasingly recognizes the importance of sustainability, businesses and investors are looking for ways to integrate sustainable practices into their operations and investment decisions. At the same time, advancements in artificial intelligence (AI) and technology are transforming the finance industry and are enabling more data-driven decision-making. The intersection of these fields presents a significant opportunity to accelerate progress towards a more sustainable future, while also improving financial performance. In fact, AI has the potential to enhance the effectiveness of sustainable practices by facilitating the analysis of large and complex datasets, identifying previously unrecognized patterns, and providing more accurate and timely predictions.

This book will explore the crucial role of AI in sustainability and finance, examining how financial technologies and machine learning are shaping the approach of finance professionals towards environmental, social, and governance (ESG) issues. By focusing on the practical implications of these intersections, the book aims to provide valuable insights for practitioners, policymakers, academics, and students alike.

What makes “AI, Finance, and Sustainability” distinctive is its approach to the subject matter. Unlike prior publications, which typically focus on AI or sustainable finance in isolation, this book provides a comprehensive and integrated perspective on how these areas are becoming increasingly intertwined. The book examines the ethical and social implications of AI in finance and its potential to unlock new opportunities for sustainability. The educational features of the book, such as case studies and expert analysis, provide readers with a deep understanding of the topic and how it can be applied in practice. Financial institutions and other entities can benefit from the book’s practical guidance on how AI can be leveraged to promote sustainability in finance, making it a valuable resource for professionals looking to make a positive impact in their field. Additionally, the book’s comprehensive coverage of the latest developments in the field of AI and sustainability will enable readers to stay ahead of the curve and make informed decisions about how to integrate these concepts into their operations. Academics and researchers will also benefit from the book’s clear and concise organization, which facilitates easy comprehension and enables readers to stay up to date with the latest developments in the field.

**CALL FOR CONTRIBUTIONS:**

Given the global nature of our book’s subject matter, the co-editors welcome contributions from scholars and industry experts around the world who work at the intersection of AI, finance, and sustainability. The contributions will provide a comprehensive overview and critical analysis of how AI is impacting the finance industry’s sustainability efforts. Each chapter will highlight the

approaches, challenges, and obstacles that are hindering or derailing the adoption of AI in promoting sustainable finance practices.

Due to the interconnected and intricate nature of the topic, the editors encourage contributions that take a transdisciplinary approach. Furthermore, they seek chapters that incorporate case studies or comparative studies to illustrate key points in the context of AI, finance, and sustainability. To ensure that the potential multi-scalar effects of AI on sustainability are adequately considered, the co-editors encourage authors to critically analyze the relevance of their contributions at different levels – local, regional, national, and supranational. By doing so, authors will be able to reflect upon the implications of AI in promoting sustainable finance practices across different contexts and scales.

**Submitted chapters must be original and exclusively prepared for the book, with no part of the article having been published elsewhere.** Finally, although the book can be used as a reference book in academic courses, it is not explicitly organized as a textbook.

## **POTENTIAL TOPICS FOR CHAPTERS:**

### **1. INTRODUCTION**

- Introduction to the book (background, objectives, and contributions)
- Overview of artificial intelligence
  - Introduction to the history of AI and its development
  - Overview of current AI applications in different fields, including finance and sustainability
- Background on the intersection of AI, sustainability, and finance

### **2. THE ROLE OF AI IN SUSTAINABILITY PRACTICES**

- How can AI be used to enhance sustainable practices?
  - The potential of AI to improve sustainability practices
  - Analysis of case studies that demonstrate the successful application of AI in enhancing sustainability
  - Challenges and opportunities of integrating AI into sustainability practices
  - Potential solutions and recommendations for addressing these limitations and drawbacks
- The global impact of AI and sustainability
  - Implications of the intersection of AI and global perspectives (e.g., China, Russia)
  - Examination of regulations and laws on AI and sustainability in different regions (e.g., EU, China, USA)
  - The political and geopolitical implications of the intersection of AI and sustainability
- AI and ESG reporting
  - Overview of ESG reporting and disclosure requirements
  - The implication of AI in improving ESG reporting and analysis

### 3. AI AND CLIMATE CHANGE

- The impact of climate change on finance
- The role of AI in combatting climate change through financial tools
- Case studies of AI-based climate change mitigation and adaptation approaches
- Potential risks and challenges of AI in climate change finance
- Climate Tech VC: Exploring the role of venture capital in climate technology

### 4. AI AND CORPORATE SUSTAINABILITY REPORTING

- How AI can improve sustainability reporting
  - Generative AI: Exploring its potential applications in sustainability reporting
  - The contribution of fintech organizations to AI and sustainability reporting
  - Utilizing Chat GPT for automated sustainability reporting and analysis
- Case studies of successful AI-powered sustainability reporting
- Ethical considerations in AI-powered sustainability reporting

### 5. AI AND SUSTAINABLE FINANCE INSTRUMENTS

- Overview of the sustainable bond and loan market (green bonds/loans, social bonds/loans, sustainability-linked bonds/loans)
- How AI can be used to enhance the issuance and monitoring of sustainable finance instruments
- Critique of potential limitations and drawbacks of using AI in sustainable finance instruments

### 6. AI AND ENERGY EFFICIENCY

- Overview of energy efficiency
- The importance of energy efficiency in finance
- How AI is being used to improve energy efficiency and finance
- Case studies of successful AI-powered energy efficiency projects
- Potential risks and challenges of AI in energy efficiency

### 7. CONCLUSIONS

- Conclusions and lessons learned
- Implications for the future of AI, sustainability, and finance
- The future of employment in the context of AI and sustainability
- Areas for future research and development

#### Timeframe:

We currently anticipate the following timeline for the project:

- Abstract and CV submission deadline – **September 30, 2023**
- Selection of abstracts and notification to successful contributors – **October 31, 2023**
- After October 2023, the publisher's release forms will be forwarded to successful contributors

- Full chapter submission – **January 31, 2024**
- Revised chapter submission – **March 31, 2024**
- Manuscript delivery – **June 30, 2024**
- Publication (tentative date) – **Fall 2024** (tentative)

**GUIDELINES FOR CONTRIBUTORS:**

Submissions should be written in English using a non-technical writing style. The contributions may include diagrams/illustrations in order to present data, or photographs/figures (all in black & white) to better illustrate the topic of discussion. Submitted chapters should be original and exclusively prepared for the present book. No part of the article should be published elsewhere. Chapters must not exceed 7,000 words (including all references, appendices, biographies, etc.), must use 1.5-line spacing and 12 pt. Times New Roman font, and must use the APA 7th edition reference style.

Researchers and practitioners are invited to submit abstracts of no more than 500 words, a bibliography for their proposed chapter, and a CV. Abstract submissions are expected by **September 30, 2023**. Submissions should be sent via email to:

[ai.finance.sustainability@concordia.ca](mailto:ai.finance.sustainability@concordia.ca)

Authors will be notified about the status of their proposals and will be sent complete chapter guidelines. Full chapters are expected to be submitted by **January 31, 2024**.

Please note that there are no submission or acceptance fees for the manuscripts.

**ABOUT THE EDITORS:****Thomas Walker<sup>1</sup>**

Thomas Walker holds an MBA and PhD degree in Finance from Washington State University. Prior to his academic career, he worked for several years in the German consulting and industrial sector at such firms as Mercedes Benz, Utility Consultants International, Lahmeyer International, Telenet, and KPMG Peat Marwick. His research interests are in emerging risk management, corporate finance, venture capital, sustainability & climate change, Fintech, corporate governance, securities litigation, and institutional ownership, and he has published over eighty articles, book chapters, and edited books in these areas. He is the lead editor of ten books on sustainable financial systems, sustainable real estate, sustainable aviation, environmental policy, emerging risk management, innovations in social finance, and water risk management. Dr. Walker currently serves as the principal investigator on research grants by the Social Sciences and Humanities Research Council (SSHRC), the Autorité des marchés financiers, and the Global Risk Institute. In 2018, he founded the Emerging Risks Information Center (ERIC, <https://emerging-risks.com>) which conducts targeted research on environmental, technological, and societal risks that affect our world today. In 2021, he became the inaugural director of the Jacques Ménard/BMO Center for Capital Markets at Concordia University and the Concordia University Research Chair in Emerging Risk Management (Tier 1).

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**Dieter Gramlich<sup>2</sup>**

Dieter Gramlich is a full professor and the head of the Department of Banking at the Duale Hochschule Baden-Württemberg (DHBW) in Heidenheim, Germany. Previously, he was the Deputy Chair of Finance and Banking, Martin-Luther-University Halle-Wittenberg, and was a visiting professor at Cleveland State University, as well as a visiting scholar at the Federal Reserve Bank of Cleveland. He is well published and has had multiple research semester stays in Japan, USA, and Canada (JMSB, Concordia). His areas of expertise include opportunity and risk analysis, opportunity and risk management, early warning systems, and sustainable finance.

**Akram Sadati<sup>3</sup>**

Akram Sadat Sadati is an MSc candidate at the John Molson School of Business, Concordia University where she studies Finance. She currently serves as a teaching assistant and research assistant in the Department of Finance at Concordia University. Akram completed her undergraduate and graduate degrees in Financial Management at the School of Economic Sciences in Iran. Her research interests include risk management, corporate finance, Fintech, and machine learning.

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