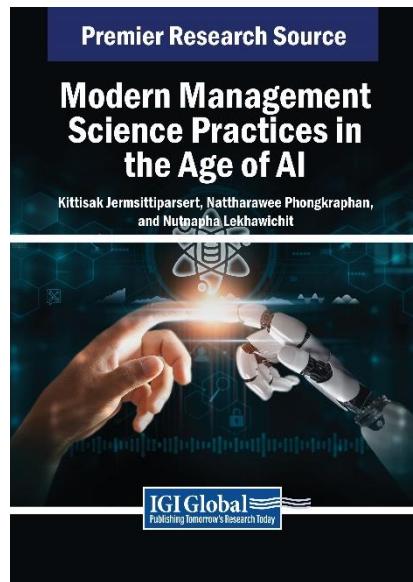


BOOK REVIEW



MODERN MANAGEMENT SCIENCE PRACTICES IN THE AGE OF AI

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Reviewed By

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About the Edited Book

"Modern Management Science Practices in the Age of AI" is a thorough reference book that offers a multidisciplinary perspective on the transformative influence of artificial intelligence (AI) across various sectors. Edited by Kittisak Jermittiparsert, Nattharawee Phongkraphan, and Nuchnapha Lekhavichit, this volume consists of thirteen chapters, each authored by leading experts in their respective fields. The book is thematically structured to explore AI's applications and implications within modern management science practices, addressing both the opportunities and challenges it presents in diverse industrial and organizational contexts.

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The book opens with a preface that provides an introduction and overview of its scope, underscoring its significance as a versatile textbook and an essential guide for researchers and practitioners navigating the AI landscape. The editors emphasize the book's interdisciplinary nature, which spans topics including accounting, behavioral economics, information systems, healthcare management, and sustainability.

Subsequently, the thirteen chapters are organized thematically to provide a comprehensive perspective. Each chapter delves into a specific area, offering real-world examples and in-depth analysis. The book culminates in a summary and future outlook section that presents insights and recommendations for future research.

Chapter 1, titled “AI and Smart Manufacturing: Building Industry 4.0,” authored by Kamaljeet Motia, Raj Kumar, and Shalom Akhai from Chandigarh University and Maharishi Markandeshwar Engineering College in India, rigorously examines the transformative effects of Industry 4.0 on manufacturing processes and supply chain optimization. The authors elucidate the pivotal role of artificial intelligence (AI) in enhancing production efficacy, elevating product quality, and driving innovation through the integration of advanced technologies such as the Internet of Things (IoT), blockchain, and machine learning. The discourse is supported by empirical case studies of enterprises that have successfully adopted innovative manufacturing technologies, thereby affirming their assertions.

Chapter 2, “AI in Managing Perishable Goods Inventory,” authored by Ahmet Bahadır Şimşek from Gumushane University, Turkey, delves into the intricate challenges associated with the management of perishable goods. The chapter articulates how AI has the potential to revolutionize this sector by employing machine learning, predictive analytics, and computer vision. Case studies involving prominent retailers such as Coles, Walmart, and Migros are presented to exemplify successful AI implementations within the inventory management domain.

Chapter 3, “The Role of Artificial Intelligence (AI) in Sustainable Marketing,” authored by Anshika Kumari, Ramji Nagoriya, Maureen Primrose Lal, and Sunny Joseph from Christ University, India, investigates the integration of AI technologies in promoting sustainable marketing practices. The research is anchored in a study involving 250 respondents from diverse industries, analyzing the interplay between AI and marketing strategies. The findings underscore AI's potential to enhance both marketing initiatives' environmental sustainability and social responsibility.

Chapter 4, “Harnessing AI for Financial Innovations: Pioneering the Future of Financial Services,” authored by K. Balaji from Christ University, India, scrutinizes the transformative

implications of AI for the financial services sector. The author discusses various applications of AI, including algorithmic trading, risk management, personalized financial advisory services, and fraud detection, while also thoughtfully addressing the ethical and regulatory challenges that accompany these advancements.

Chapter 5, “Productivity Modern Management Science Practices in the Age of AI: AI-Driven Productivity,” authored by Noor Wazikhaz Madia Wazi, Fazida Karim, and Noor Aina Amirah Mohd Noor from Universiti Sultan Zainal Abidin, Malaysia, provides a comprehensive analysis of AI integration within management practices aimed at enhancing productivity. The authors scrutinize an array of AI methodologies and their applicability in optimizing efficiency and decision-making processes, presenting illustrative examples that demonstrate AI's capacity to automate tasks, personalize customer interactions, and facilitate data-driven strategic frameworks.

Chapter 6, “Bridging the Digital Divide: AI Solutions for Health Literacy in Underserved Populations,” authored by Roy Rillera Marzo from Curtin University, Malaysia, focuses on the critical role of AI in mitigating health literacy disparities in marginalized communities. The chapter evaluates the effectiveness of AI-driven applications, such as chatbots and predictive analytics, in fostering improved health outcomes while discussing the inherent challenges and potential obstacles associated with AI implementation in these settings.

Chapter 7, “Innovative Strategies and Future Trends: The Next Paradigm of Education Management,” authored by Noppakun Kunacheva, Busara Niyomves, and Sanya Kenaphoom from Ramkhamhaeng University and Rajabhat Maha Sarakham University, Thailand, explores the dynamic landscape of education management in light of advancing technologies. This chapter critically examines the implications of AI and other emerging technologies for educational practices and thoroughly considers the ethical ramifications of adopting these innovations within academic environments.

Chapter 8, “An Educational Administration Innovation in the Digital Age and Sustainable Development,” authored by Narat Wattanapanit, Krisda Tanchaisak, Busara Niyomves, and Sanya Kenaphoom from Ramkhamhaeng University and Rajabhat Maha Sarakham University in Thailand, critically examines the impact of digital innovations on educational administration, particularly in relation to sustainable development goals. The authors articulate the significance of utilizing digital tools to enhance both efficiency and equity within educational institutions while emphasizing the necessity of aligning these digital initiatives with overarching sustainable development objectives.

Chapter 9, “Agile Management: Mastering Change in Today's Dynamic Environment,” authored by Sanya Kenaphoom, Narat Wattanapanit, Krisda Tanchaisak, and Busara Niyomves, also affiliated with Rajabhat Maha Sarakham University and Ramkhamhaeng University, investigates the implementation of agile management methodologies as a means to improve organizational flexibility and responsiveness in contemporary settings. The chapter provides empirical illustrations demonstrating how agile principles can facilitate effective project management and enable organizations to adapt to fluctuating market conditions.

Chapter 10, “Eco-Smart Cities: Sustainable Tourism Practices Enabled by Smart Technologies,” authored by Andi Asrifan, Murni Murni, Sam Hermansyah, and Anita Candra Dewi from Universitas Negeri Makassar and Universitas Muhammadiyah in Indonesia, explores the integration of innovative technologies in fostering sustainable tourism practices within eco-smart cities. The authors underscore the pivotal roles of artificial intelligence (AI), big data, and the Internet of Things (IoT) in optimizing resource management, mitigating environmental impacts, and promoting economic and social equity.

Chapter 11, “The Role of Lifelong Learning in Navigating the Future of Work,” authored by Busara Niyomves, Noppakun Kunacheva, and Sanya Kenaphoom from Ramkhamhaeng University and Rajabhat Maha Sarakham University, emphasizes the critical importance of lifelong learning in the context of a rapidly evolving labor market. The authors evaluate various methodologies for engaging in lifelong learning, stressing the necessity for individuals to cultivate requisite skills and competencies to navigate technological advancements and shift job market dynamics effectively.

Chapter 12, “Guideline for Developing Ecotourism in Talo Makong Dam Community, Yala Province, Thailand,” authored by Panuwat Srimaca, Nattharawee Phongkraphan, Suradate Suwanchatree, Manus Suttikan, Wasanthanawin Harinpaponwich, and Jarinrat Voravongpitak from Yala Rajabhat University, presents a case study on community-based ecotourism development in a specific Thai locality. The study analyzes the potential for ecotourism within the community through quantitative research methodologies and identifies the critical factors influencing its development.

Finally, Chapter 13, “The Business Management Development of the Military Housewives’ Group: Producing Cosmetic Products in Southern Thailand,” authored by Chompunuch Sripong, Piyada Maneenin, and Sasadee Kamphangdee from Yala Rajabhat University, examines the evolution of a community enterprise constituted by military housewives. The authors use participatory action research to assess the business environment, identify inherent strengths and weaknesses, and propose strategic interventions to enhance

business management practices and achieve sustainable growth within this unique entrepreneurial context.

Review

"Modern Management Science Practices in the Age of AI" presents a timely and ambitious exploration of AI's transformative impact across various management disciplines. The book's strength lies in its broad scope and multidisciplinary approach, successfully integrating AI's implications within diverse sectors, from smart manufacturing to sustainable tourism and education management. This holistic perspective is a significant contribution, highlighting AI's pervasive influence on contemporary management practices. However, while the book excels in its breadth, a more nuanced and critical analysis reveals certain limitations that warrant attention.

The book's structure, progressing thematically through thirteen chapters, is generally well-organized and easy to follow. The consistent use of real-world examples and case studies throughout the various chapters enhances the work's accessibility and relevance for both academic and practitioner audiences. For instance, Chapter 2's exploration of AI in managing perishable goods inventory effectively illustrates the practical applications of machine learning and predictive analytics with case studies from major retailers. Similarly, Chapter 4's examination of AI in financial innovations provides compelling examples of AI's use in algorithmic trading, risk management, and fraud detection, further showcasing AI's transformative potential. This effective use of practical applications is arguably one of the book's greatest strengths.

Furthermore, the editors' decision to incorporate chapters focused on specific sectors, like education and tourism, strengthens the book's interdisciplinary nature. This allows the reader to observe AI's diverse and multifaceted applications in different contexts. Chapter 7's examination of AI's implications in education, including personalized learning and adaptive technologies, is a particularly relevant and timely contribution. The analysis of the sociocultural and ethical considerations associated with the adoption of AI in education is particularly insightful, pointing to the often-overlooked implications of these technologies. Similarly, Chapter 10's focus on eco-smart cities and sustainable tourism provides a unique and valuable perspective on how innovative technologies can be leveraged to promote sustainability within the tourism sector.

However, the book's ambition also exposes some significant limitations. While the editors strive to provide a balanced perspective on AI's potential benefits and challenges, a more critical analysis would have been valuable. For instance, a deeper exploration of the ethical implications of AI in various sectors would strengthen the book. While data privacy and algorithmic bias are mentioned, a more in-depth investigation into the complexities of these issues across different sectors would have strengthened the book considerably. Similarly, while several chapters address the challenges of AI implementation, a more comprehensive discussion of the practical strategies for overcoming these challenges across diverse organizational contexts could enhance the book's overall pragmatic value.

Another area for improvement relates to the book's theoretical framework. While many chapters draw on relevant academic literature, there is a lack of a clearly articulated overarching theoretical framework guiding the analyses across chapters. Developing a more robust theoretical framework would provide a stronger foundation for analyzing the complex relationships between AI and modern management practices. It would allow for a more rigorous and nuanced comparison across sectors.

Some specific chapters could benefit from a more critical assessment of the existing literature. While many chapters cite relevant works, a more comprehensive and critical evaluation of the literature in each chapter's specific field would have further enhanced the book's scholarly contributions. The lack of in-depth discussion of alternative theoretical perspectives or approaches also limits the book's capacity to stimulate debate and critical engagement with current academic discourse.

In conclusion, "*Modern Management Science Practices in the Age of AI*" is a valuable and timely contribution, offering a broad overview of AI's transformative influence across various management disciplines. Its breadth, use of real-world examples, and multidisciplinary approach are significant strengths. However, the book's limitations, particularly in its in-depth exploration of ethical implications, the lack of a stronger overarching theoretical framework, and the less critical analysis of the existing literature, suggest that the work could have benefited from a more focused and nuanced approach. Despite these limitations, the book makes significant contributions, providing valuable insights and serving as a useful starting point for future research and debate on the increasingly important role of AI in management science.

Reference

Jermsittiparsert, K., Phongkraphan, N., & Lekhavichit, N. (eds.). (2024). *Modern Management Science Practices in the Age of AI*. IGI Global.