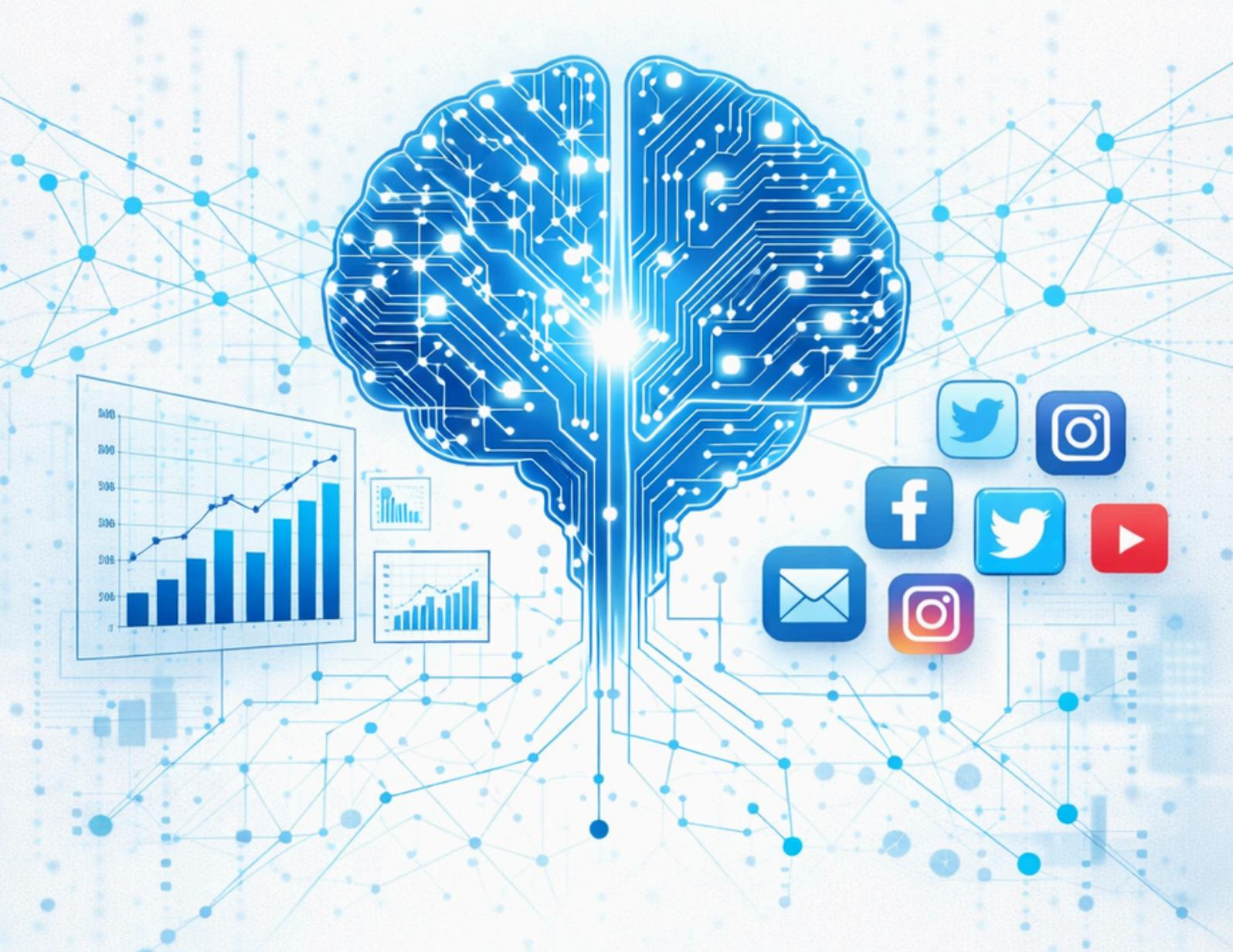


DIGITAL MARKETING

In the Era of Artificial Intelligence and Big Data



Dr. Kiran Bangarwa

Dr. Ankit Raj Singh

Digital Marketing in the Era of Artificial Intelligence and Big Data



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Digital Marketing in the Era of Artificial Intelligence and Big Data

Edited By

Dr. Kiran Bangarwa

Assistant Professor

Department of Business Studies

Panipat Institute of Engineering and Technology

Samalkha (Panipat), India

Dr. Ankit Raj Singh

Assistant Professor

Department of Business Studies

Panipat Institute of Engineering & Technology (PIET)

Samalkha, Panipat, Haryana

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Preface

The digital revolution has profoundly reshaped the way businesses communicate, engage, and create value for their customers. In recent years, the convergence of **Digital Marketing, Artificial Intelligence (AI), and Big Data analytics** has accelerated this transformation, redefining traditional marketing paradigms and enabling organizations to move toward more intelligent, personalized, and data-driven strategies. In an environment characterized by information abundance, real-time interactions, and rapidly evolving consumer expectations, the ability to collect, analyze, and act upon data has become a critical source of competitive advantage.

Artificial Intelligence and Big Data have moved beyond being emerging technologies to becoming integral components of modern marketing ecosystems. Machine learning algorithms, natural language processing, predictive analytics, and automated decision systems now support a wide range of marketing activities, including customer segmentation, content personalization, recommendation engines, dynamic pricing, sentiment analysis, and programmatic advertising. At the same time, the exponential growth of structured and unstructured data from social media, mobile devices, IoT platforms, and digital transactions has created unprecedented opportunities—and challenges—for marketers and organizations worldwide.

The primary objective of the book *Digital Marketing in the Era of Artificial Intelligence and Big Data* is to provide a comprehensive, interdisciplinary, and contemporary perspective on the application of intelligent technologies in digital marketing. This volume seeks to bridge the gap between **marketing theory, technological innovation, and managerial practice** by offering conceptual frameworks, empirical findings, case-based insights, and future research directions. The book emphasizes how AI and Big Data are not only enhancing marketing efficiency but also reshaping decision-making processes, organizational capabilities, and customer relationships.

The chapters included in this book explore a wide range of themes, including AI-driven consumer behavior analysis, data-enabled personalization and customer engagement, marketing automation, social media and influencer analytics, omnichannel marketing, predictive and prescriptive analytics, and performance measurement in digital environments. Special attention is given to emerging areas such as conversational AI, chatbots, virtual assistants, and intelligent content generation, which are transforming the nature of brand–consumer interactions. In addition, the book critically addresses key challenges related to **data governance, privacy, cybersecurity, ethical use**

of AI, algorithmic transparency, and consumer trust, which have become central concerns in the digital age.

This book is designed to serve a diverse audience, including **academicians, researchers, postgraduate and doctoral students, marketing professionals, digital strategists, entrepreneurs, and policy makers**. For scholars and students, it offers a structured understanding of theoretical foundations, research methodologies, and emerging trends in AI-enabled marketing. For practitioners, it provides actionable insights and strategic perspectives that can support informed decision-making and effective implementation of digital marketing initiatives in data-intensive environments.

By integrating multidisciplinary perspectives from marketing, data science, information systems, and management, this volume highlights the evolving role of marketers as strategic analysts and decision-makers in an increasingly intelligent and automated marketplace. The book also aims to encourage responsible and ethical innovation by emphasizing the importance of transparency, inclusivity, and consumer-centric approaches in the deployment of AI and Big Data technologies.

As organizations continue to navigate the complexities of digital transformation, the insights presented in this book are intended to stimulate critical thinking, inspire future research, and contribute to the development of sustainable and ethical digital marketing practices. It is hoped that ***Digital Marketing in the Era of Artificial Intelligence and Big Data*** will serve as a valuable reference for advancing knowledge, fostering innovation, and shaping the future of marketing in an AI-driven world.

Warm Regards

Dr. Kiran Bangarwa

Dr. Ankit Raj Singh

Acknowledgement

The successful completion of the book *Digital Marketing in the Era of Artificial Intelligence and Big Data* has been made possible through the collective support, cooperation, and intellectual contributions of many individuals and institutions. We take this opportunity to express our sincere gratitude to all those who have played a significant role in bringing this academic endeavor to fruition.

First and foremost, we extend our heartfelt thanks to all the chapter contributors for their valuable scholarly contributions, dedication, and timely efforts. Their expertise, rigorous research, and thoughtful insights have enriched this volume and ensured its academic relevance and practical significance. The diversity of perspectives presented in the chapters reflects the interdisciplinary nature of digital marketing in the age of Artificial Intelligence and Big Data.

We are deeply grateful to the academic reviewers for their critical evaluation, constructive feedback, and scholarly guidance. Their meticulous reviews and insightful suggestions have significantly enhanced the quality, clarity, and academic rigor of the chapters included in this book.

Our sincere appreciation is also extended to our institutional partners for their continuous encouragement and support throughout the development of this volume. Their commitment to research excellence and knowledge dissemination has provided a conducive environment for academic collaboration and innovation.

We acknowledge with gratitude the contributions of our research collaborators and academic colleagues, whose discussions, ideas, and intellectual engagement have helped, shape the conceptual foundation of this book. Their support has been instrumental in addressing emerging trends, methodological challenges, and ethical considerations in AI- and Big Data-driven digital marketing.

We would also like to thank the experts and professionals from diverse fields, including marketing, data science, artificial intelligence, information systems, and management, whose insights and experiences have added depth and practical relevance to this work. Their interdisciplinary perspectives have strengthened the book's objective of bridging theory and practice.

Finally, we express our sincere thanks to all those who have directly or indirectly contributed to this project through encouragement, guidance, and

support. It is our hope that this book will serve as a valuable resource for academicians, researchers, students, and practitioners, and will contribute meaningfully to the advancement of knowledge in the evolving domain of digital marketing.

With heartfelt appreciation,

Dr. Kiran Bangarwa

Dr. Ankit Raj Singh

About the Editors



Dr. Kiran Bangarwa is an accomplished academician and researcher, currently serving as an Assistant Professor at Panipat Institute of Engineering & Technology (PIET), Panipat. In addition to her teaching role, she holds the significant administrative responsibility of IQAC Coordinator, where she actively contributes to quality assurance, accreditation processes, academic audits, and continuous institutional improvement initiatives.

She has more than 15 years of extensive teaching experience, during which she has consistently demonstrated academic excellence, pedagogical innovation, and strong mentorship capabilities. Her teaching and administrative roles reflect her ability to balance academic rigor with institutional governance and strategic planning.

Dr. Kiran earned her Doctor of Philosophy (Ph.D.) degree from Bhagat Phool Singh Mahila Vishwavidyalaya (BPSMV), Khanpur. She is a recipient of both the Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF), which underscores her strong research aptitude, academic discipline, and commitment to scholarly excellence.

Her research contributions include the publication of numerous research papers in reputed national and international journals, addressing contemporary issues and advancing knowledge in her domain. She has also contributed book chapters to edited volumes published by recognized academic publishers. Dr. Kiran has actively presented her research findings at various national and international conferences, engaging with global academic communities and fostering interdisciplinary dialogue.

In addition to her research and teaching credentials, Dr. Kiran is recognized for her effectiveness in academic administration, curriculum development, documentation, and quality enhancement initiatives. Her role as IQAC Coordinator reflects her expertise in regulatory frameworks, outcome-based education, and institutional best practices.

With a strong blend of academic insight, research orientation, and administrative competence, Dr. Kiran continues to contribute meaningfully to higher education, scholarly publishing, and institutional development. Her experience and dedication make her a valuable editor, academic leader, and contributor to knowledge creation and dissemination.



Dr. Ankit Raj Singh is an esteemed academician, researcher, and innovator with over a decade of experience across academia, industry, and research. He currently serves as Assistant Professor of Management at the Panipat Institute of Engineering and Technology (PIET), Samalkha (Panipat), where he teaches courses in Marketing, Brand Management, Corporate Social Responsibility, and International Trade.

He earned his Doctorate in Management from Sharda University, with a research focus on wellness tourism and consumer behaviour. Dr. Singh has published extensively in Scopus-indexed, ABDC-listed, and UGC Care journals, and has presented his work at numerous national and international academic conferences. He has also served as editor of several academic volumes in business and management studies.

With over six years of industry experience in the travel sector, Dr. Singh has contributed to corporate training programs for organizations like Hindustan Coca-Cola Pvt. Ltd. and Tata Power Solar India Ltd. An avid traveler, he has explored all 24 Indian states and 7 Union Territories, which informs his deep understanding of customer behaviour and service dynamics.

A staunch advocate for innovation and Intellectual Property Rights (IPR), Dr. Singh holds multiple design patents and copyrights granted by the Government of India. His research and teaching focus on wellness tourism, consumer behaviour, digital marketing, organizational change, and AI in management. He is actively guiding PhD scholars and postgraduate students in research and innovation projects.

Dr. Singh also holds several key leadership roles at PIET, serving as Chairman of the Placement & Summer Training Committee, and as a member of

both the Research & Development Committee and the Internal Quality Assurance Cell (IQAC). He is also deeply engaged in community development through Rotary International's CSR initiatives, including education, health, and environmental programs. His exceptional contributions have earned him recognition in social service activities, along with commendable service in Delhi Civil Defence.

Through his academic leadership, research innovation, and social commitment, Dr. Singh continues to shape the future of business management education across India and beyond.

Table of Contents

Title of Chapters	Page No.
AI-DRIVEN MARKETING ANALYTICS: DOMINANT TECHNIQUES AND STRATEGIC IMPACTS IN BIG DATA IN MODERN ERA	1 – 10
<i>Dr. Pushpendra Singh, Ruby Sharma and Vishal Shukla</i>	
ANALYTICS-DRIVEN FINTECH INNOVATION: EVIDENCE FROM EMERGING DIGITAL FINANCIAL MARKETS	11 – 25
<i>Prof. (Dr.) Deepika Arora, Akansha Singh and Apoorva Shukla</i>	
ARTIFICIAL INTELLIGENCE AND CONSUMER BEHAVIOUR: A QUANTITATIVE AND EMPIRICAL PERSPECTIVE IN THE INDIAN CONTEXT	26 – 36
<i>Prof. (Dr.) Gopal Singh Latwal, Dr. Puja Garg and Tanu Garg</i>	
BEYOND AUTOMATION: HUMANS AND AI AS COLLABORATIVE PARTNERS	37 – 47
<i>Abhishek Gulia and Amarpreet Kaur</i>	
BIG DATA AND PERSONALIZATION IN CONSUMER BEHAVIOR: A RESEARCH FRAMEWORK	48 – 59
<i>Dr. Ridhi Gupta, Dr. Ila Sehrawat and Geetanjali</i>	
FACTORS INFLUENCING AI ADOPTION IN MARKETING ACTIVITIES: A SYSTEMATIC LITERATURE REVIEW	60 – 74
<i>Dr. Mandeep Singh, Harsh Sain and Kamal Krishna</i>	

IMPACT OF BIG DATA ON MARKETING STRATEGIES: REDEFINING THE ROLE OF CONSUMERS 75 – 83

Prof. Dr. Krishan Kumar Boora, Dr. Sunitha Ravi and Dr. Ajay Gangele

KNOWLEDGE INTEGRATION IN SMES: HOW BIG DATA AND MARKETING ANALYTICS BOOST INNOVATION AND COMPETITIVENESS 84 – 97

Dr. Latika Malhotra, Kamal Krishna and Vinita Bajaj

ONLINE SERVICE QUALITY IN THE DIGITAL AGE: THE ROLE OF TRUST, USER-CENTRIC DESIGN, AND ETHICAL PERSONALIZATION 98 – 109

Dr. Sonam Arora, Dr. Anju and Ritika Arya

RECONCEPTUALISING SERVICE QUALITY IN DIGITAL AND AI-ENABLED SERVICES: A MULTI-DIMENSIONAL FRAMEWORK 110 – 127

Ekta Bansal, Dr. Anju and Purnima Raina

BIG DATA ANALYTICS AS A STRATEGIC CATALYST FOR TRANSFORMING CONTEMPORARY MARKETING PRACTICES 128 – 132

Dr. Meenakshi Sharma and Dr. Namarta Kaushik

RETAIL RENAISSANCE: NAVIGATING THE COST OF TRANSFORMATION 133 – 142

Dr. Shweta Gupta, Dr. Hannah Hameed and Manvi Nehra

SMART CITIES AS CLIMATE SOLUTIONS: INTEGRATING GREEN TECHNOLOGIES FOR SUSTAINABLE URBAN DEVELOPMENT 143 – 158

Dr. Amita Pathania, Dr. Esheta Tyagi and Nikita Bhati

SUSTAINABLE MARKETING STRATEGIES AND THEIR IMPACT ON CONSUMER BUYING BEHAVIOR: EMPIRICAL EVIDENCE FROM INDIA 159 – 168

Dr. Pooja Gupta

THE EVOLUTION OF BUSINESS MODELS IN THE AGE OF ARTIFICIAL INTELLIGENCE 169 – 181

Mamta, Shilpa Maggo and Abeeta Hilal

CUSTOMER EXPERIENCE INNOVATION IN THE ERA OF THE METAVERSE 182 – 191

Dr. Shachie and Ms. Preeti Dahiya

THE ROLE AND EXPANDING SCOPE OF AI AND BIG DATA ANALYTICS IN CONSUMER BEHAVIOR AND DIGITAL MARKETING EFFECTIVENESS 192 – 205

Prof. Atul Gautam and Prof. Pooja Sharma

ABOUT THE EDITORS



Dr. Kiran Bangarwa

Assistant Professor
Department of Business Studies,
Panipat Institute of Engineering and Technology,
Samalkha (Panipat), India



Dr. Ankit Raj Singh

Assistant Professor
Department of Business Studies
Panipat Institute of Engineering & Technology (PIET)
Samalkha (Panipat), India

ABOUT THE BOOK

Digital Marketing in the Era of Artificial Intelligence and Big Data explores how emerging technologies are transforming the marketing landscape in the 21st century. The book provides a comprehensive understanding of how Artificial Intelligence (AI), machine learning, data analytics, and automation are reshaping customer engagement, strategic decision-making, and competitive advantage in digital markets.

The authors examine the evolution of digital marketing from traditional online promotion to intelligent, data-driven ecosystems. Key themes include predictive analytics, personalization strategies, customer behavior modeling, programmatic advertising, chatbots, sentiment analysis, and the role of big data in crafting highly targeted campaigns. The book also highlights how organizations can leverage AI-powered tools to enhance customer experience, optimize conversion rates, and improve return on investment (ROI).

Blending theoretical foundations with practical insights, the text presents real-world examples, case studies, and frameworks that help readers understand both opportunities and challenges associated with AI integration. Ethical considerations, data privacy concerns, and regulatory implications are also discussed, ensuring a balanced and responsible approach to technology adoption.

Designed for students, researchers, academicians, and marketing professionals, this book serves as both a foundational guide and a strategic roadmap. It equips readers with the analytical mindset and technological awareness required to thrive in an increasingly automated and data-centric business environment.

Overall, the book demonstrates that the future of marketing lies at the intersection of creativity, technology, and intelligent data utilization.

