



# **Marketing Intelligence, Part A**

This page intentionally left blank

# **Marketing Intelligence, Part A: Understanding Customers in the Era of Digitalization**

EDITED BY

**MUDITA SINHA**

*Christ University, India*

**ARABINDA BHANDARI**

*Sarala Birla University, India*

**SAMANT SHANT PRIYA**

*Lal Bahadur Shastri Institute of Management, India*

AND

**SAJAL KABIRAJ**

*LAB University of Applied Sciences, Finland*



United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited  
Emerald Publishing, Floor 5, Northspring, 21-23 Wellington Street, Leeds LS1 4DL

First edition 2025

Editorial matter and selection © 2025 Mudita Sinha, Arabinda Bhandari, Samant Shant Priya and Sajal Kabiraj.

Individual chapters © 2025 The authors.

Published under exclusive licence by Emerald Publishing Limited.

**Reprints and permissions service**

Contact: [www.copyright.com](http://www.copyright.com)

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

**British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

ISBN: 978-1-83549-419-6 (Print)

ISBN: 978-1-83549-418-9 (Online)

ISBN: 978-1-83549-420-2 (Epub)



INVESTOR IN PEOPLE

# Contents

About the Editors	vii
About the Contributors	xi
Preface	xxi
<b>Chapter 1 Unlocking the Power of Artificial Intelligence for Customer Engagement: A Bibliometric Analysis</b>	<b>1</b>
<i>Chand Prakash, Ritu Yadav, Amit Dangi and Manisha Yadav</i>	
<b>Chapter 2 Unlocking Financial Potential: The Dynamic Relationship Between Markets and Mobile Applications</b>	<b>19</b>
<i>Mohammed Majeed, Jonas Yomboi, Alhassan Fatawu, Clement Nangpiire and Manu Victoria</i>	
<b>Chapter 3 Leveraging Data Sharing for Enhanced Experiences in Service Industries: Role of Experience Orientation and Privacy Calculus</b>	<b>39</b>
<i>Elangovan N., Aishwarya Nagarathinam, Sundaravel Elangovan, Aarthy Chellasamy and Sangeetha Rangasamy</i>	
<b>Chapter 4 Centralized Knowledge Management and Machine Learning for Enhanced Healthcare in Ghana</b>	<b>57</b>
<i>Gideon Awini, Abubakari Abdul-Razak, Mohammed Majeed, Ahmed Sakara and Azumah Abdul-Tawab</i>	
<b>Chapter 5 Frictionless Shopping in the Digital Era: A Comprehensive Analysis of Instant Gratification, Ethical Considerations, and Future Prospects</b>	<b>73</b>
<i>Talasila Harshitha, Prathiba S., Narasimha Murthy H. and Joel Jebadurai Devapictahi</i>	

<b>Chapter 6 Internet of Things and Knowledge Management</b>	91
<i>Abubakari Abdul-Razak, Mohammed Majeed and Gideon Awini</i>	
<b>Chapter 7 Enhancing Customer Satisfaction Through Artificial Neural Networks (ANNS): Principles, Architectures, and Practical Applications</b>	103
<i>Diva Kaur Grewal, Vanishree Senthilkumaran and Hridhya P. K.</i>	
<b>Chapter 8 Managing the Ethical Concerns in Adoption of Artificial Intelligence in Marketing Strategies: A Case Study of Google AI</b>	121
<i>Aliza and Asha Ram Tripathi</i>	
<b>Chapter 9 Role of Artificial Intelligence in Customer Engagement and Experience</b>	137
<i>Shakti Swarupa Nayak, Himanshi R. Giri, Thirupathi Manickam and Sriram Ananthan</i>	
<b>Chapter 10 Digital Channels and User Engagement: A Conceptual Framework for Enhancing Brand Visibility and Revenue</b>	159
<i>Swetalina Mishra, Girija Nandini, Pramod Kumar Patjoshi and Shiv Sankar Das</i>	
<b>Chapter 11 Natural Processing Language: Business Strategy in Marketing Intelligence</b>	175
<i>Kankhita Mukherjee, Sriram Ananthan, Raghunandan G. and Thirupathi Manickam</i>	
<b>Chapter 12 Alexa, Can You Please Tell Me How I Can Engage and Provide the Best Experience and Value to My Customers?</b>	195
<i>Akhila R. Udupa and Arabinda Bhandari</i>	
<b>Index</b>	213

## About the Editors

**Dr Mudita Sinha** is an accomplished Associate Professor at Christ (Deemed to be University) in Bangalore, bringing over 12 years of experience in academia, research and the industry. Her expertise spans *market* research, customer satisfaction, industrial R&D and international sales. She has a distinguished record of achievements, including filing patents on cybersecurity and business analytics, organizing significant academic conferences and conducting specialized workshops. Dr Sinha has held various academic positions at prominent institutions such as Dayanand Sagar Business Academy and ITM Business School. She earned her PhD from CSJM University in Kanpur, India, focusing on post-harvest management and *marketing* of medicinal plant products. Additionally, she holds a PGDM and Master's in *Marketing* Management degree from Pune University. Dr Sinha is a prolific researcher, contributing extensively to journals and conferences on augmented reality in *marketing*, AI in e-learning and sustainable practices in the hospitality industry. She has edited several influential books, including *Future of Customer Engagement Through Marketing Intelligence*, *Improving Service Quality and Customer Engagement With Marketing Intelligence* and *HR Analytics in an Era of Rapid Automation*, both published by IGI Global. Her dedication to education and research is reflected in her numerous publications and active participation in various international academic forums.

**Dr Arabinda Bhandari** is currently working as an Associate Professor at the Faculty of Commerce and Management at Sarala Birla University, India. He received his PGCBM from XLRI, Jamshedpur, and PhD in Strategic Management from Ranchi University, Ranchi, in the year of 2006. He has more than 24 years of experience in academics and industry, prominently working with Presidency University, Bangalore, and various leadership positions in Dr Reddy's, Hyderabad, India. Dr Bhandari has written several case studies, many research papers and book chapters in ABDC and Scopus-indexed journals and books published by Sage, Interscience, Springer IGI global, etc. His areas of interest include advanced strategic management and its application in the international *market*. He is an Author of *Strategic Management: A Conceptual Framework* from McGraw Hill Education, Asia; he has edited several influential books, including *Future of Customer Engagement Through Marketing Intelligence* and *Improving Service Quality and Customer Engagement with Marketing Intelligence*, both published by IGI Global. He is a Six Sigma Green Belt certified professional and reviewer of *Business and Retail Management Research – A Scopus-indexed*

journal from London. *International Journal of Scientific Research and Publication*, *International Journal Publisher* (Editorial Board Member), Washington, DC, 20024, USA, Academy of Management and *Journal of Applied Research in Higher Education*, an Emerald publication, UK. The *International Journal of Management Education* (Elsevier) and *Energy Strategy Reviews* (Elsevier). His academic work has been cited by a leading journals like the *European Journal of Management* and many leading universities like Massachusetts Institute of Technology (MIT), Cambridge, USA. He is a member of the Strategic Management Society (USA) and a National Advisory Council Member in the International Chamber of Professional Education and Industry, New Delhi, India, and Hon. Advisory Board Member in the South Asian Institute for Advanced Research and Development Research Council. He is deeply interested in north Indian classical music and is an amateur Mohan Veena instrument player.

**Samant Shant Priya** is an accomplished academic and industry professional with over two decades of experience. He holds a PhD from the Department of Management Studies at Maulana Azad National Institute of Technology, Bhopal, and an MBA with distinction from Bharati Vidyapeeth. Since September 2015, he has been an Associate Professor of *Marketing* at Lal Bahadur Shastri Institute of Management (LBSIM), New Delhi, where he chairs the PGDM (General) programme and heads the international relations, as well. Previously, he was the Associate Professor and HOD of MBA and *Marketing* at SIBACA, Lonavala, and an Assistant Professor at Bharati Vidyapeeth University, New Delhi. Dr Priya has published papers, including those in ABDC-listed, Scopus-indexed and WOS journals. His research has appeared in prestigious journals like *Environmental Science and Pollution Research and Benchmarking: An International Journal*, *International Journal of Emerging Markets*. Additionally, he has authored a book on e-retailing and co-edited two books, with two more currently in progress. Beyond academia, Dr Priya has significant corporate experience, having worked as an Area Sales Manager and Professional Service Representative in the logistics and pharmaceutical sectors. His teaching and research expertise includes services *marketing*, strategic brand management and digital *marketing*.

**Sajal Kabiraj** specializes in strategic management consulting and innovation-based *market* research studies. He has strong international practice area and research experience in multinational corporations. Dr Kabiraj currently teaches at the Faculty of Business and Hospitality Management at LAB University of Applied Sciences, Finland. Through his teaching career in China as a tenured Full Professor and elsewhere, he has been awarded the Best Teacher Awards in 2008, 2011, 2014 and 2018 for academic research and teaching excellence. His research interests lie in strategy, sustainability, innovation, entrepreneurship and international business. Sajal's research focuses on the question of how companies, in collaboration with other societal actors, can contribute to sustainable development as defined in the UN Sustainable Development Goals (SDGs). He works together closely with practitioners from various industries to find answers to questions of practical and academic relevance. His research is characterized by a quantitative-empirical approach. In addition to active publishing, he likes to be active in collaboration with companies

and other societal stakeholders and create societal impact. Sajal received the Outstanding Contribution Award for Research and Teaching from Dongbei University of Finance and Economics, Dalian, PR China in 2018. He has been awarded the highest honour to foreign experts 'Xinghai Friendship Award 2015' by the Mayor of Dalian City, Dalian Municipal Government, PR China. He has supervised theses at the postgraduate level, including MBA, MSc and Doctoral students.

This page intentionally left blank

## About the Contributors

**Abubakari Abdul-Razak** is an accomplished academic, distinguished Associate Professor and esteemed Dean of the Business Faculty at Tamale Technical University. With a profound commitment to academic excellence, Professor Abdul-Razak has made significant contributions to the field of business education. Professor Abdul-Razak has demonstrated expertise in his field, particularly in areas such as strategic leadership, corporate strategy, governance and business development. His academic journey has been marked by a dedication to advancing knowledge and fostering a dynamic learning environment. In his role as the Dean of the Business Faculty at Tamale Technical University, Professor Abdul-Razak plays a pivotal role in shaping the academic landscape. His leadership is characterized by a forward-looking vision, emphasizing innovation, inclusivity and the pursuit of excellence in business education. His research interests are expansive and reflect a keen interest in areas crucial to the business landscape. His work delves into strategic leadership, corporate strategy, governance and business development, contributing valuable insights to the academic and business communities.

**Azumah Abdul-Tawab** is a trained medical professional with public health as his area of specialization and currently works with the Ghana Health Service as the International Health Regulation NFP. His academic qualifications include a BSc in Medical Sciences, an MBCHB, a Master of Public Health and a Master of Public Administration, all from the University of Ghana, and a Membership in Public Health from the Ghana College of Physicians and Surgeons. The research interests of Azumah include the use of AI in healthcare delivery, public health emergency management, one-health implementation in Africa, the role of the community in global health security, the implementation of international health regulations in sub-Saharan Africa and the impact of multiple outbreaks on staff motivation.

**Aliza** has been working in the field of start-up funding and allied areas. She has been awarded Junior Research Fellowship (JRF) from Govt. of India for her doctoral research. She has authored and co-authored many research papers and articles in reputed journals. She has also contributed chapters in national and international books.

**Sriram Ananthan** is currently working as an Associate Professor at the Department of Business Management, Western Community College, Vancouver, B.C., Canada. He is known as a Canadian writer, professor and entrepreneur. Dr Sriram Ananthan

pursued his PhD in Marketing Management at Periyar University, Salem, Tamil Nadu, India. He started his career at a bank, where he served as an investment adviser at the Royal Bank of Scotland. With over 20 years of industrial experience and a successful business. Dr Sriram Ananthan drawing upon over two decades of comprehensive business development experience, Sriram passionately serves as a professor, mentoring young professionals as they embark on their entrepreneurial journeys. In addition to his academic and entrepreneurial pursuits, Dr Sriram Ananthan is the founder of [shifftocanada.com](http://shifftocanada.com), [settlent.com](http://settlent.com) and [hightablepublishing.com](http://hightablepublishing.com). He is also a devoted yoga practitioner, enriching his life through the practice. Furthermore, he is a prolific author, having written over 20 books across various fields, cementing his reputation as a versatile and accomplished writer.

**Gideon Awini** is a PhD candidate at the University of Ghana Business School and a Lecturer at Tamale Technical University, Department of Marketing. He holds a Master of Philosophy degree in Marketing. He is a reviewer for the *Journal of Sport Management* and Inderscience Publishers. His research interests include digital marketing, blockchain, financial services marketing, sports marketing and branding. His recent publications are 'Prospects and Challenges of Blockchain Technology in Managing Healthcare Data: Evidence from Africa' and 'Does Blockchain and the Internet of Things (BCoT) Help in Managing Customer Data?'

**Aarthy Chellasamy** is an Assistant Professor in the School of Business and Management Christ (Deemed to be) University, Bangalore, India. She has completed her Bachelor's in Engineering from Avinashi Lingam University, Coimbatore, Master's in International Business Management and PhD in Technology Marketing from Anna University. Her teaching interests are in the areas of information systems, consumer behaviour and business analytics. She has published more than 60 research papers to her credit in national and international journals including Emerald and Springer. She has also presented papers in many national and international conferences to her credit. Her field of research includes information technology implementation and its usage in industries, and consumer behaviour.

**Amit Dangi** is currently working as an Associate Professor in the Amity School of Business, Amity University, Noida (Uttar Pradesh), India. Dr Dangi has completed his BTech from Guru Jambheshwar University, Hisar, MBA from Indraprastha University, Delhi, and Doctorate from Indira Gandhi University, Meerpur Rewari. His area of specialization is marketing and human resource management. In total, Dr Dangi has more than 16 years of experience in teaching, industry, and PSU banking. His research interests are in online retailing, perceived risk in online shopping and consumer behaviour. He has published more than 25 research articles in journals of high repute indexed in ABDC, Scopus and Web of Science along with two case studies in the UK Case Centre. He has also presented more than 30 research studies at various international and national conferences and seminars. He has successfully guided three doctorates and more than a dozen PG dissertations.

**Shiv Sankar Das** is currently working as an Assistant Professor at the School of Management, Centurion University of Technology and Management, Bhubaneswar, Odisha, India. Dr Das has 8 years of teaching experience at both UG and PG levels in Management. He has published many papers, book chapters and patents at both the international and national levels. He has received many awards for his scholarly works.

**Joel Jebadurai Devapictahi** is currently working as an Assistant Professor in Department of MBA, St. Joseph's College of Engineering, OMR, Chennai. He has 7 years of experience in teaching and 5 years in research. He has undertaken a major research project sponsored by the Indian Council of Social Sciences Research (ICSSR), New Delhi, India. He has published more than 20 research articles in various national and international journals.

**Sundaravel Elangovan** has a postgraduate MBA (Marketing) from Christ (Deemed to be University), Bangalore, India. He holds an undergraduate BTech degree in Electrical and Electronics Engineering from Amrita University, Bangalore, India. For a short duration, he worked as a Content Writer in Zoho Corp, Chennai, India. Currently, he works as a consultant for customer experience products at a reputed international firm. He has interned in Tata Insights and quants in the area of case writing. He has published in journals including the *International Journal of Business, Management and Social Research*, *MethodsX*, *Journal of International Technology* and the 2020 International Conference on Smart Electronics and Communication. His research interest is in the areas of market research, digital sales and marketing, data analytics and consumer behaviour.

**Alhassan Fatawu** is a Senior Lecturer in the Department of Hospitality and Tourism Management at Tamale Technical University. A dynamic and self-motivated individual, Fatawu is known for his strong interpersonal skills, fluid communication and reliability. He is dedicated to promoting and achieving the mission and vision of the organizations he is associated with. Fatawu is currently pursuing a PhD in Business and Management at the University of Science and Technology (KNUST), with a focus on further enriching his academic contributions. His educational journey includes an MSC in Hospitality and Tourism Management, an MA in Marketing Strategy from the University of Ghana, an MBA in Marketing from KNUST and a Bachelor of Science in Tourism from the University of Cape Coast, Ghana. Fatawu's academic achievements also extend to a Higher National Diploma in Hotel, Catering and Institutional Management from Sunyani Polytechnic. His academic prowess is complemented by his practical experience, as reflected in his role as a Senior Lecturer and his notable publications in reputable journals such as Taylor and Francis, Palgrave, and Bentham Science.

**Raghunandan G.** is an Associate Professor at Christ (Deemed to be University) in Bangalore, India. He has been with the University's School of Commerce, Finance and Accountancy since 2016. His research interests include business and data analytics, business intelligence, financial risk management, financial markets and institutions and socio-economic problems in India. He has been actively

involved in various research projects and conferences. Notable projects include studies on the entrepreneurial ecosystem in North East India and initiatives aimed at enabling persons with disabilities to pursue careers in finance, accounting and banking. In addition to his teaching and research duties, Raghunandan has presented papers at several international conferences. He has participated in numerous workshops and training programmes related to finance, entrepreneurship and higher education. Raghunandan is currently placed at the Bangalore Yeshwanthpur Campus of Christ (Deemed to be University) as an Associate Dean and the Head of the Department of Commerce and Professional Studies.

**Himanshi R. Giri** is currently pursuing a BCom in Finance and Accountancy from the Department of Professional Studies at Christ (Deemed to be University), Bangalore, India. Aspiring to become a Certified Public Accountant (CPA), Australia, Ms. Himanshi R. Giri is dedicated to her academic and professional growth. She has a keen interest in research, particularly in the fields of accounts and finance and technology management. With a passion for exploring new ideas and contributing to the academic community, Ms. Himanshi R. Giri is an emerging researcher committed to making significant strides in her areas of interest. Her enthusiasm and dedication make her a promising figure in the realm of finance and accountancy.

**Divya Kaur Grewal** is a dedicated student at Christ University, Bangalore, pursuing a Bachelor of Business Administration (BBA) in Finance and Accountancy. She is also working towards her professional qualifications with the Association of Chartered Certified Accountants (ACCA) and has successfully passed the Strategic Business Leader (SBL) exam. Divya is skilled in finance and data analysis, with notable achievements including her strong performance in the NPTEL course on the psychology of learning. As a Millennium Fellow of the United Nations, she is actively engaged in global initiatives. In her university, Divya contributes as the Head of the Festing Club and as a brand ambassador for the Christ University Insurance Club, Cufflinksia. Her balanced approach to academics and extracurricular activities reflects her personal and professional growth commitment.

**Narasimha Murthy H.** is an accomplished academic with over 15 years of teaching experience, currently serving as an Assistant Professor at Christ (Deemed to be University) in Bangalore. He holds a PhD in Finance, with a focus on mobile wallet adoption, from Presidency University Bangalore, and is a certified Positive Psychologist from the University of North Carolina, Chapel Hill. Dr Murthy has extensive experience in curriculum development, having worked as a Faculty Coordinator for syllabus framing committees and NAAC accreditation processes. He has published numerous research papers in Scopus and WoS-listed journals and presented his work at various national and international conferences. Additionally, he has co-authored several textbooks on accounting and finance topics. Dr Murthy's professional journey includes roles as Head of Department and Lecturer at various prestigious institutions, and he actively participates in organizing seminars and workshops to enhance academic and professional skills.

**Talasila Harshitha** is currently pursuing a Bachelor of Business Administration in Finance and Accountancy at Christ (Deemed to be University), Bangalore, India. As a Licentiate of the Insurance Institute of India (III), she is also aiming to become a member of the Association of Chartered Certified Accountants (ACCA). Harshitha has shared her insights at an international conference, reflecting her dedication to both academic and professional growth. Alongside her finance and accounting focus, she is passionate about sustainability and actively participates in local initiatives that promote sustainable practices. Additionally, Harshitha has a keen interest in marketing, which complements her financial acumen and broadens her perspective in the business world. Her diverse achievements and commitments position her as a dynamic talent ready to make a meaningful impact.

**Mohammed Majeed** is a Senior Lecturer (PhD) at Tamale Technical University, Tamale Ghana. He is the current Head of Department for Marketing. His current research interest includes branding, hospitality and tourism and social media in service organizations. Majeed holds Doctor of Business Administration (DBA), MPhil and MBA Marketing, Postgraduate Diploma, HND Marketing. He lectures part time in many Ghanaian public universities and a reviewer to many journals in management, hospitality and marketing. Majeed has also published in good journals like *Journal of Hospitality and Tourism Insights* (Emerald), Springer, Palgrave, *Cogent Business & Management* (Taylor & Francis).

**Thirupathi Manickam**, MCom, MPhil, BEd, TN-SET, KSET, PhD, is working as an Assistant Professor in the Department of Professional Studies at Christ (Deemed to Be University), Bangalore. It is one of the leading institutions in Bangalore, Karnataka, and the institution is accredited by NIRF, NBA and NAAC accredited universities. He has more than 8 years of teaching and research experience. He has 85 citations and 4 h-Index. He has published 32 research papers in Scopus, Web of Science, UGC-CARE and UGC-approved and leading international journals, and 11 have presented papers at national and international conferences. He has also participated in over 50 seminars, conferences, FDP and workshops at the national and international levels. His areas of expertise are financial accounting, corporate accounting, financial management, management accounting, taxation, digital marketing and technology management.

**Swetalina Mishra** is currently working as an Assistant Professor in the School of Management, Centurion University of Technology and Management, Odisha, India. She is an engaging and creative consultant with extensive multi-industrial experience in diversified functions including HR, training, strategic planning, leadership development, mentoring, talent management, competency and capacity building. Over the past 15 years, she has worked in large multinational corporations. Besides working as a consultant trainer, she has been teaching in several premier B-Schools. She has been instrumental in designing an onboarding process that is structured and engaging in nature. She has actively participated in continued learning through conferences and professional research and passionately worked to connect students to their courses to transform lives. She has published many papers, book chapters and patents.

**Kankhita Mukherjee** is currently pursuing a Bachelor of Business Administration in Finance and Accountancy at the Department of Professional Studies, Christ (Deemed to be University), Bangalore, India. Aspiring to become a member of the Association of Chartered Certified Accountants (ACCA), she is dedicated to both her academic and professional growth. Kankhita has shown a profound passion for advancing knowledge in the fields of Accounts and Finance, delving into the complexities of financial systems. She also has a keen interest in sustainability, examining the integration and impact of technological innovations on business practices. Her dedication to these fields was recognized when she won the Best Paper Award at a national seminar for her work on the impact of carbon accounting in mitigating greenwashing. Committed to academic excellence and professional development, Kankhita aims to contribute valuable insights to both the academic community and the finance industry.

**Elangovan N.** is a Professor in the School of Business and Management at Christ (Deemed to be University), Bangalore, India. He also coordinates the PhD programme at the school. He was earlier the Director of National Institute of Fashion Technology (NIFT), Kannur Campus. He comes to academics after a long experience in running a textile business. He earned a PhD in Management Science from Anna University, Chennai, India. He holds an MBA in Marketing and an MSc in Psychology. He also holds a BE in Mechanical from Bharathiar University and a BA in Psychology from Madras University. He has published in journals including *International Journal of Enterprise Resource Planning*, *MethodsX*, *Journal of International Technology and Information Management* and *International Journal of Innovation and Technology Management*. His research interest is in the areas of strategic information systems, entrepreneurship, consumer behaviour studies, design and innovation. He has also published many book chapters in Springer, Emerald and IGI Global.

**Aishwarya Nagarathinam** has done her Doctorate in the field of Human Resource Management. She completed her MPhil in Human Resource Management, MBA in Information Systems and Human Resource Management and Undergraduate in BTech Information Technology. Currently, she is working as an Assistant Professor in the School of Business and Management at Christ (Deemed to be University), Bangalore. She has published papers in Scopus, Web of Science and UGC-indexed journals and has presented papers in national and international conferences. She also develops e-content for NPTEL and other universities. Her area of interest is in the areas of competency mapping, strategic management and business analytics.

**Girija Nandini** is currently working as an Associate Professor in the School of Management, Centurion University of Technology and Management, Odisha, India. She has 20 years of teaching experience in different B schools in Odisha. Dr Nandini has published 41 articles, 2 patents, 10 book chapters and 4 books. She has coordinated many government projects and organized many training programmes, conferences and seminars.

**Clement Nangpiire** is currently a Senior Lecturer at the Department of Procurement and Supply Chain Management at the SD-Dombo University of Business

and Integrated Development Studies (SDD-UBIDS) Wa. He holds a PhD degree in Marketing and Strategy from the University of Minho-Portugal and a Master of Business Administration (MBA) degree from the Maastricht School of Management in the Netherlands. Before then, he obtained a Bachelor's degree from the University of Ghana-Legon and holds a Diploma in Marketing from the University College of Management Studies, Ghana. His research interest is in services marketing and supply chain research, focusing on value co-creation, customer engagement, supply chain processes, procurement processes, market orientation, public sector marketing, hospitality and tourism marketing and digital/social media marketing. He teaches undergraduate/graduate courses in marketing research, services marketing, global logistics strategy, social marketing, innovation and entrepreneurship, total quality management and tourism/hospitality marketing.

**Shakti Swarupa Nayak** is currently pursuing Bachelor of Commerce in Finance and Accountancy in the Department of Professional Studies at Christ (Deemed to be University), Bangalore, India. Aspiring to become a Certified Public Accountant (CPA), Australia, she is dedicated to her academic and professional growth. Ms. Shakti Swarupa Nayak is an emerging researcher with a profound passion for advancing knowledge in the field of Accounts and Finance, where she delves into the complexities of financial systems, and Technology Management, where she examines the integration and impact of technological innovations on business practices. Dedicated to academic excellence and professional growth, Ms. Nayak is committed to contributing valuable insights to the academic community and the finance industry.

**Hridhya P. K.**, with MCom, MPhil and PhD qualifications, is a prominent faculty member in the School of Commerce, Finance and Accountancy. Her research focuses on financial literacy, carbon accounting and capital markets, with significant contributions to conferences and seminars. Notable presentations include the International Conference on Multidisciplinary Research, where she explored capital markets in India and the United Kingdom, and the 8th International Conference on Sustainable Management Practices, analyzing financial literacy's impact on retail investor risk tolerance. Dr Hridhya's research projects, such as examining demonetization's effects on India's agriculture and service sectors, highlight her analytical acumen. She has actively participated in workshops and faculty development programmes, including an orientation programme at Christ University and a national research methodology workshop. Her outstanding paper on carbon accounting and greenwashing earned her the Best Paper Award from Presidency College. Her work underscores a commitment to advancing financial and sustainability research.

**Pramod Kumar Patjoshi** is currently working as an Associate Professor in the School of Management, Centurion University of Technology and Management, Odisha, India. Dr Patjoshi has 17 years of teaching experience in different B schools in Odisha and has guided several research scholars. Apart from teaching and research, he also has 10 years of industry experience in the area of finance and administration. He has

attended many conferences, FDPs and orientation programmes in different parts of India. He has presented papers in different national and international seminars as well as conferences. He has three books, two patents and more than 30 journal articles to his credit.

**Chand Prakash** is a Faculty in Marketing, Retail Management and Consumer Behaviour. Dr Saini holds more than 14 years of experience in teaching, research and academia. He holds a Doctorate in Management on the topic: Issues and challenges involved in e-tailing and its influence on buying behaviour. He holds a Master's degree in Management and Commerce and has qualified for UGC NET in both disciplines and the Junior Research Fellowship in Management award. Dr Saini has authored and co-authored more than 30 research papers, including ABDC, UGC care, Scopus and Web of Science listed journals and has presented his research at more than 50 conferences of national and international reputation, including IITs and IIMs and has been awarded Best Research Paper Awards. He, with his name, has five cases published at Case Centre UK. Dr Saini has guided four research scholars to complete their research journey in their doctoral programme. He has attended and conducted various seminars, workshops and development programmes in his field. He has chaired technical sessions in the international conferences of his domain and is a reviewer to journals under Inderscience and IGI Global. Dr has been invited to various places for expert lectures in research and in his domain.

**Sangeetha Rangasamy** is currently working as an Associate Professor of Management in Christ (Deemed to be University), Bengaluru, India. Research interests and publications are in the fields of banking, stock market, econometrics and business analytics. Has done a major research project on 'Financial Literacy and Investment Behaviour of Middle-Class Families in Karnataka' which is funded by Christ (Deemed to be University). Since 2016, actively supported the Statistics Department of RBI to build their quantitative database for primary survey with households, firms and MSME. Successfully guided two MPhil scholars and currently guiding two PhD scholars. Has published 28 research papers in national and international peer-reviewed journals. Also acted as reviewers in *Ushus Journal of Management*, *International Journal of Finance and Banking Research* and *Finance Research Letters*.

**Prathiba S.** is currently pursuing Bachelor of Business Administration in Finance and Accountancy at Christ (Deemed to be University), Bangalore, India. As an Associate of the Insurance Institute of India (AIII), she is also aspiring to become a member of the Association of Chartered Certified Accountants (ACCA). She has also presented a research paper at an international conference, demonstrating her commitment to academic excellence. Prathiba's passion for finance and accounting is matched by her commitment to sustainability. As an emerging researcher, she is keenly interested in exploring sustainable financial practices. Ms. Prathiba's blend of academic achievements, professional certifications and research contributions positions her as a promising talent in the financial sector, eager to make a significant impact.

**Ahmed Sakara** is a Senior Lecturer at the Department of Marketing at Tamale Technical University, with his current highest qualification being MPhil

Marketing. His research interests are in the areas of corporate social responsibility, social marketing, branding, sales promotion, SMEs marketing and inclusive innovation.

**Vanishree Senthilkumaran** is a dedicated student at Christ (Deemed to be University), Bangalore, where she is pursuing a Bachelor of Business Administration (BBA) with a specialization in Finance and Accountancy. She is also working towards completing her professional-level papers with the Association of Chartered Certified Accountants (ACCA). Vanishree has strong skills in finance and accountancy, and she is proficient in advanced Excel, Power BI, MS Office, Python and various accounting tools. She is committed to continuous learning and has a keen interest in publishing research articles in her field. In addition to her academic pursuits, Vani is a state-level tennis player, demonstrating her ability to balance her studies with athletic activities. Her dedication to both her education and extracurricular interests reflects her well-rounded and humble approach to personal and professional development.

**Asha Ram Tripathi** holds more than 40 years of experience in academics and has successfully completed multiple project works undertaken from Government of India. The author is the recipient of Distinguished Academician Award given by the Institute of Chartered Accountants of India.

**Akhila R. Udupa** is currently working as a Professor, School of Management, Presidency University, Bangalore. With an interdisciplinary background of Economics, Marketing and Management, the career objective is to nurture the budding managers with knowledge and skill required by corporates. Dr Akhila comes with a passion to teach with innovative pedagogy to achieve right course outcomes. Further, strong passion towards research keeps her engaged in publication of articles and research papers in various journals. She has also undertaken small consultancy services to corporates in the area of marketing management, the recent one being a PDP on leveraging digital marketing for insurance professionals. Many sales training programmes have also been conducted in this regard. She has also worked closely with corporates with regard to Centres of Excellence, Placements and Consultancy projects. She has published research papers in the area of marketing in general and digital marketing in particular in various journals. She has received Best Paper Awards for her research papers related to Green Marketing Strategy and Understanding Factors that Influence Leadership in Disruptive Situation in IT Sector.

**Manu Victoria** is an Assistant Lecturer in the Accountancy Department at Sunyani Technical University. With a keen focus on finance, she holds an MSc in Finance and is currently pursuing a PhD in the same field, showcasing her commitment to advancing her expertise. Her academic journey is anchored in Sunyani Technical University, where she actively contributes to the growth of students in the Accountancy department. Manu Victoria's research interest centres on corporate social responsibility in finance, reflecting her dedication to exploring the intersection of financial practices and social impact. As an emerging scholar, she brings a fresh perspective and a wealth of knowledge to the academic

realm, aligning her contributions with the evolving landscape of finance and social responsibility.

**Manisha Yadav** is a seasoned professional with a diverse experience spanning over a decade. She has worked in the industry for 4 years in the Human Resource Department, honing her skills in talent management and development. Additionally, she has 6 years of experience as an Assistant Professor at Kishan Lal Public College, Rewari, where she has taught and mentored students in various disciplines. Her specialization lies in marketing and human resource, and she has further enhanced her expertise by pursuing a Doctorate degree in Marketing with the research title 'Impact of Gamification on brand engagement and brand equity'. Dr Manisha's unique blend of industry and academic experience has equipped her with a distinctive perspective, enabling her to contribute significantly to her field. Her passion for teaching and research continues to drive her towards excellence, making her a respected figure in her profession.

**Ritu Yadav** is an Assistant Professor in the Department of Management, at Gurugram University, Gurugram. Dr Yadav holds more than 5 years of experience in teaching, research and academia. She has obtained her Doctorate degree in Management on the topic 'Determinants of Employer Branding and its Impact on Employer Attractiveness in Banking Sector' from the Institute of Management Studies and Research (IMSAR), Maharshi Dayanand University, Rohtak, Haryana. She holds a Master's degree in the field of Management as well as Commerce and has qualified UGC NET with JRF in Management and Commerce. She has authored and co-authored more than 25 research papers in renowned journals indexed with ABDC, SCOPUS, WOS, etc. She has presented more than 20 research papers in national and international conferences.

**Jonas Yomboi** is currently a Teacher in Senior High School, Navrongo Ghana. He is a PhD student who holds Master of Commerce in Accounting from University for Development Studies, Bachelor of Education in Accounting with Mathematics and Diploma in Ghanaian Sign Language. Jonas teaches part time at Community Health Training College. His research interest includes social media, public sector accounting and financial reporting.

# Preface

The digital age has brought both benefits and challenges for marketers and customers. Marketers face the unique challenge of identifying the channels of consumption, the customer's first point of visit and the choice of purchase destination. Customers, on the other hand, are empowered by the digital age to make informed decisions about the product, the best pricing option and the convenience of delivery and returns management. This book on Marketing Intelligence addresses some of the issues customers face in the digital age through a pragmatic selection of issues and challenges. The authors have highlighted the issues concerning the customers and suggested ways to overcome the challenges. Customer data management is crucial for increasing efficacy and for prescribing the right combination of products that can satisfy future customer needs. Omnichannel marketing is the new norm. Customers may visit the store and buy a product online or vice versa or engage only in online purchasing. AI is assisting customers to make informed decisions about their choices. However, trust remains a crucial factor in online purchasing. The book highlights the importance of trust and how businesses can build and maintain it in the digital age. The book addresses underlying theories of AI and how it can be used effectively for engaging with customers. The book is a unique effort to synthesize the learnings of new-age intelligence techniques and their utility for future marketing applications.

This page intentionally left blank

## Chapter 1

# Unlocking the Power of Artificial Intelligence for Customer Engagement: A Bibliometric Analysis

*Chand Prakash<sup>a</sup>, Ritu Yadav<sup>b</sup>, Amit Dangri<sup>a</sup> and Manisha Yadav<sup>c</sup>*

<sup>a</sup>The North Cap University, India

<sup>b</sup>Gurugram University, India

<sup>c</sup>Kishan Lal Public College, India

### Abstract

Marketers are increasingly focussed on artificial intelligence (AI) as a disruptive technology with transformative potential for current and future marketing strategies. The purpose of this study is to conduct a comprehensive bibliometric analysis of the present research landscape in artificial intelligence for customer engagement in the context of online purchasing. To attain the goal of the study, researchers referred to the Scopus database up to 30 November 2023, using ‘artificial intelligence’, ‘online shopping’, and ‘customer engagement’ search terms. A total of 621 records in the English language were considered appropriate for bibliometric analysis. Microsoft Excel, Scopus Analytics, R Studio, and Vos Viewer software were used to synthesize data on the basis of publication year, origin, authors, keywords, citations, etc. The findings of the research showed the diverse and impactful role of artificial intelligence in fostering customer engagement. Bibliometric analysis of previous voluminous research highlights the significance of artificial intelligence for customers in terms of personalized experiences, recommendation systems, advanced analytics, and adaptive learning models, all of which boost the overall competitiveness of businesses in today’s digital landscape. This bibliometric analysis can contribute to the existing knowledge base by identifying trends, gaps, and emerging themes within the realm of AI in customer engagement. It helps organizations assess the effectiveness of AI technologies for customer interaction and guides their strategic adoption for improved engagement.

*Keywords:* Artificial intelligence; customer engagement; online shopping; bibliometric analysis; e-commerce; predictive analysis

## 1. Introduction

Disruptions from technology and fierce competition are causing frequent transformations in the way firms' function (Gans, 2016). A customer-oriented approach is replacing a business-centric one as the primary emphasis of business. With the rapid growth in demand for online services and their potential of offering any organization leading edge, an increasing number of organizations are looking towards e-commerce (Gielens & Steenkamp, 2019; Hamad et al., 2018). Technological advancement successfully integrated online services with business (Yadav et al., 2022). Artificial intelligence is a technical development that may make it possible for machines to accurately comprehend and learn from input from the outside and deploy that knowledge to achieve the desired outcome (Kaplan & Haenlein, 2019).

Artificial intelligence, which refers to machine intelligence, is akin to human intelligence. An artificial intelligence system consists of intelligent agent machines that are able to understand their environment and achieve a goal. Artificial Intelligence (AI) is the term for gadgets or computers that simulate human emotional and mental abilities (Russell & Norvig, 2016). AI performs the task repetitively and continuously that a human finds boring and monotonous. All machines that need to think like humans can now solve problems and learn new things continuously. A method, strategy, tool, or algorithm for finding business opportunities and taking them by using huge amounts of data to offer personalized services is what artificial intelligence is (Bawack et al., 2022; Deng et al., 2019; Kumar et al., 2019).

A popular cutting-edge technology that aids businesses in monitoring data in real time to analyze and react quickly to customer specifications is artificial intelligence (Verma et al., 2021). The future of our civilization, according to experts and practitioners, lies in artificial intelligence. It is not restricted to marketing practices but is being spread extensively across all industries like education, hospitals, law, manufacturing, e-commerce, etc. (Verma et al., 2021). Businesses can develop marketing insight through big data analytics by investing in artificial intelligence. Users perceive artificial intelligence as being present in many aspects of their lives, such as automatic email filtering, assistance in driving a new vehicle, taking insights from past data, leveraging historical data to generate customer and market insights using programme-based algorithms, and automating business procedures (Davenport et al., 2020).

In the modern, technologically advanced world, customers choose the format, timing, and content. AI allows messages to be customized and personalized based on the preferences and profile of the user (Huang & Rust, 2020). Artificial intelligence, through AI-driven chatbots with natural language processing (NLP), improved the customer experience during online shopping (Nguyen & Sidorova, 2018). Through the use of AI, traditional retail stores are converted into smart

retail stores that elevate the customer experience and facilitate effortless shopping (Sujata et al., 2019). Efficient data processing using AI allows a customer to articulate the right decision (Maxwell et al., 2011). Identifying customers' likes, dislikes, habits, purchases, etc., becomes easy with the application of artificial intelligence (Chatterjee et al., 2019).

Huang and Rust (2018) have pointed out various abilities of AI in marketing, stressing out its contribution to customer satisfaction enhancement through personalized conversations as well as forecasting analytics. Grewal et al. (2020) have perceived AI as part of their marketing policies; they have mentioned particular directions and obstacles. Kumar et al. (2019) also highlighted the AI notable role for improved customer experience through touch points such as chatbots and personalized marketing campaigns. Still, there is a deficit of knowledge in an all and a comprehensive bibliometric analysis required to chart the larger research landscape, indicate new trends, and lead the way forward in the field of marketing intelligence. As per Cram et al. (2020), a proper synthesizing is required to identify existing literature gaps and propound new theories and framing strategies in this area. So, this study visually displays the existing literature that spans the years 2013–2023 using bibliometric analysis, as this method is considered efficient, reproductive, and scientifically reliable. Based on the study's research outcomes, theoretical and practical suggestions were proposed.

## **2. Materials and Methods**

This research attempts to visually synthesize the literature available on artificial intelligence and customer engagement in the case of online shopping. To attain the goal of the study, the researcher conducted bibliometric analysis through a comprehensive search of the Scopus database on 30 November 2023. The first record identified from the Scopus database was in 2013. So, the time frame for bibliometric analysis was from 2013 to November 2023. Scopus is one of the most useful and comprehensive resources for peer-reviewed research; because of its database quality, the research community prefers the Scopus repository to do bibliometric analysis (Baas et al., 2020). 621 records were identified for bibliometric analysis using the search terms 'Artificial Intelligence', AND 'Online Shopping', AND 'Customer Engagement'. Identified records covered articles, book chapters, and conference papers in English only.

Through bibliometric analysis, a wide-ranging understanding of artificial intelligence in the area of online shopping for engaging customers has been developed using multiple software programmes. Microsoft Excel was used to generate frequency tables to organize and analyze the data. Scopus Analytics was referred to for the purpose of creating graphs by year, country, and subject area. Vosviewer was employed to generate social network maps, enabling a deeper understanding of research communities and their interconnections. The biblioshiny package was installed under R Studio for creating three field plots, scientific country production, word cloud, and network creation.

### 3. Results and Discussion

621 records were found in the Scopus database for bibliometric analysis from 2013 to 2023. A brief description of the data in terms of main information, document types, document content, and author collaboration is displayed in [Table 1.1](#).

As per Scopus database analytics, there has been an increasing trend of publications related to artificial intelligence and customer engagement over some time ([Fig. 1.1](#)).

The first study was released in 2013. After 2018, a discernible rise was observed in the number of publications. There was a maximum of 264 records published in 2023. Significant publications were also recorded in the years 2022 and 2021, with

Table 1.1. Basic Data Description.

Description	Results
<i>Main Information About Data</i>	
Time	2013–2023
Sources (journals, books chapters, etc.)	298
Records	621
Average years from publication	1.28
Citations on average for each document	17.13
Annual average of citations for each document	5.648
References	1
<i>Document Types</i>	
Article	535
Book chapter	45
Conference paper	41
<i>Contents</i>	
Keywords plus (ID)	1,583
Author's keywords (DE)	1,990
Authors	1,719
The appearances of authors	2,048
Single-authored document authors	53
Authors of documents with multiple authors	1,666
<i>Authors Worked Together</i>	
Single-authored documents	54
Documents per author	0.361
Authors per document	2.77
Co-authors per documents	3.3
Collaboration index	2.95

Source: Biblioshiny output.

Documents by year

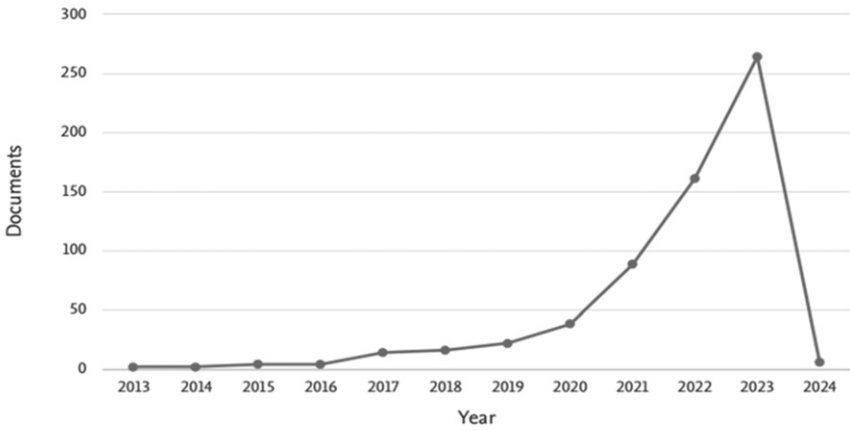


Fig. 1.1. Number of Publications per Year. *Source:* Scopus Analytics.

161 and 88 publications, respectively. The information sheds light on publication patterns from 2008 to 2023.

Fig. 1.2 demonstrates the list of researchers who have produced a maximum number of publications in the fields of ‘Artificial Intelligence’, And ‘Online Shopping’ AND ‘Customer Engagement’.

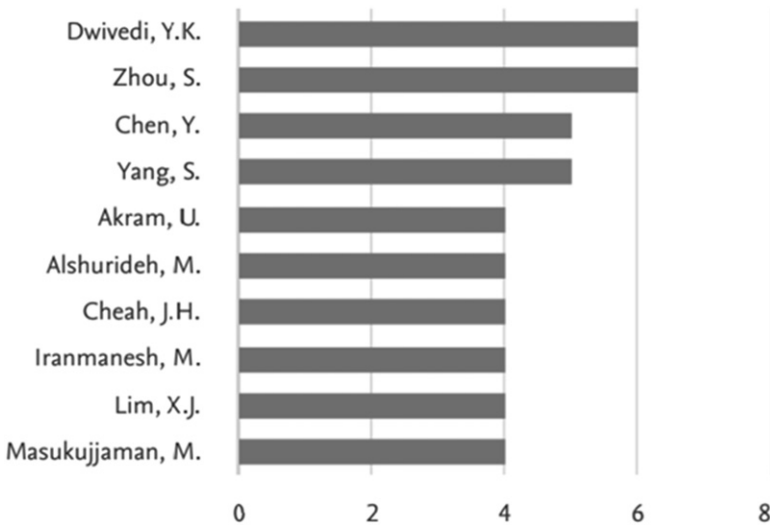


Fig. 1.2. Most Prominent Authors. *Source:* Scopus Data Analytics.

It is evident from the above chart that authors Dwivedi, Y.K., in 2013, 2022, 2023, and Zhou, S. in 2022, 2023, were both at the top of the list with a maximum number of publications – six publications. Chen, Y. and Yang, S., who were each credited with five articles in the same field, are next in line.

The pie chart shown in Fig. 1.3, retrieved from Scopus Analytics, provided a visual representation of the distribution of subject areas within international publications on ‘Artificial Intelligence’ AND ‘Online Shopping’, AND ‘Customer Engagement’.

Among these subject areas, business, management, and commerce emerged as the most prominent, with 30.2% of publications in this category. Computer science emerged second on the list with 20.3% of publications. Social Science was next in this category, accounting for 12.4% of the documents, and economics and Econometrics held 7.2%. Additional subject areas include psychology (6.8%), engineering (5.7%), decision science (5.2%), arts and humanities (2.4%), mathematics (2.1%), and environmental science (2.1%). Other subject areas collectively constitute 5.6% of the publications in this field. This distribution provided valuable insights into the diverse disciplines that intersect with artificial intelligence, customer engagement, and online shopping.

Fig. 1.4 shows the three fields plot map or Sankey diagram of author names, author’s country name, and keywords by using the Biblioshiny package in R Studio.

All of the 20 most frequently used keywords by the most productive 20 authors are based on their countries. Rectangular shape diagrams are used to depict relevant elements. The association between many elements, including countries,

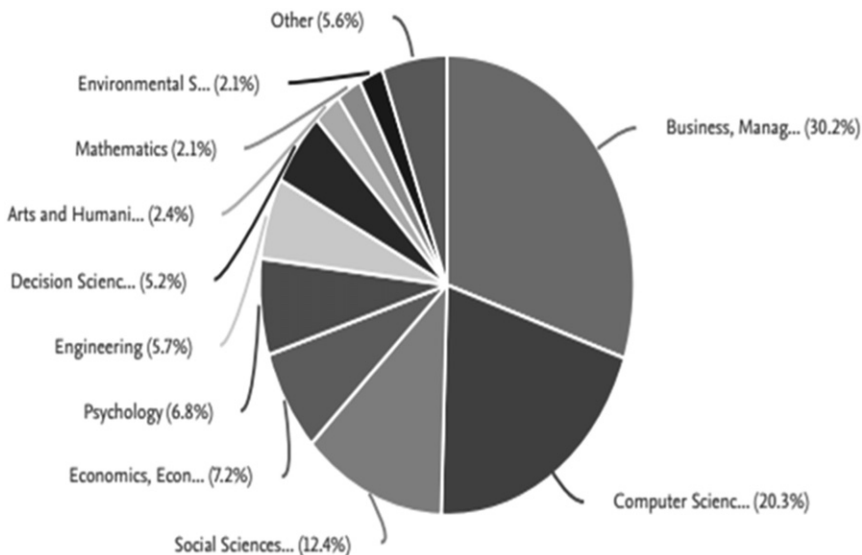


Fig. 1.3. Documents by Subject Area. Source: Scopus Analytics.

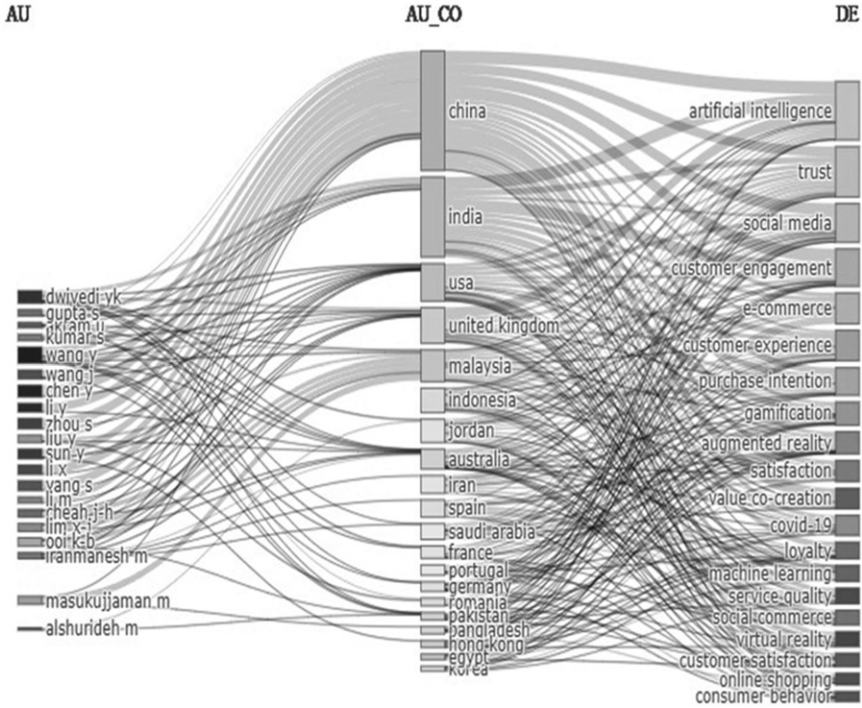


Fig. 1.4. Three Field Plot Based on Author Name, Author’s Country, and Author’s Keywords. *Source:* Biblioshiny Output.

well-known authors, keywords, etc., was shown by the height of the rectangle. More relationships between different components are depicted by the larger size of the rectangle. This three-field diagram shown in Fig. 1.4 establishes the relationship between the author (left), the author’s country (middle), and the author’s keywords (right). The relation of the prominent authors, authors’ countries, and keywords indicated that there are authors Dwivedi, Zhou, Chen, Wang, and Sun and countries China, India, USA, United Kingdom, and Malaysia widely used the key terms ‘Artificial Intelligence’, ‘Trust’, ‘Social Media’, ‘Customer Engagement’, ‘E-commerce’.

Fig. 1.5, generated from R Studio (Biblioshiny), exhibited the most prolific journals published by various publishers in the field of customer engagement.

With 40 publications during the specified period, ‘Journal of Retailing and Consumer Services’ stood out as the most significant journal, and ‘Frontier in Psychology’ came in second with 18 complete publications. Following the ‘Journal of Business Research’ with 14 articles, ‘Sustainability (Switzerland)’ contributed next in this category with records. ‘International Journal of Information Management’ and ‘Computers in Human Behaviour’ closely followed it

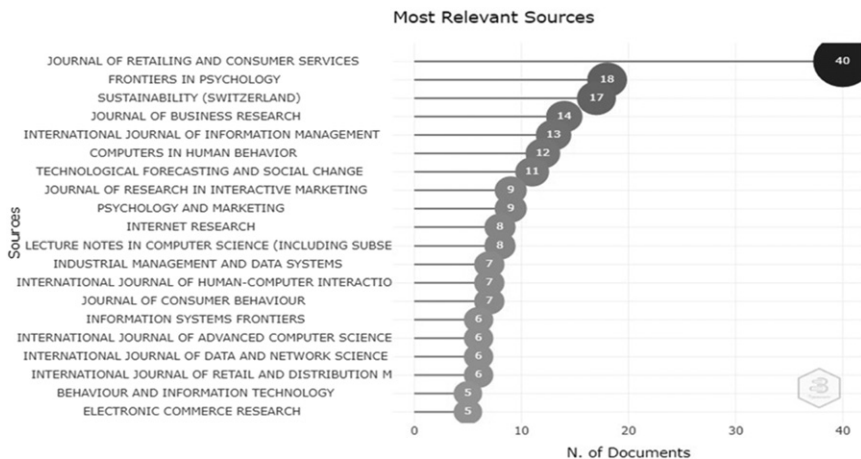


Fig. 1.5. Most Relevant Journals. Source: Biblioshiny Output.

with 14 and 13 publications, respectively. The least number of records were published in the journals ‘Electronic Commerce Research’ and ‘Behaviour and Information Technology’ with five articles.

Fig. 1.6 shows the country’s scientific contribution in the cases of ‘Artificial Intelligence’, ‘Online Shopping’, AND ‘Customer Engagement’. More publications from that particular nation are reflected in the darker tint, and vice versa. With the most articles – 456 – among all the countries, China topped the list in

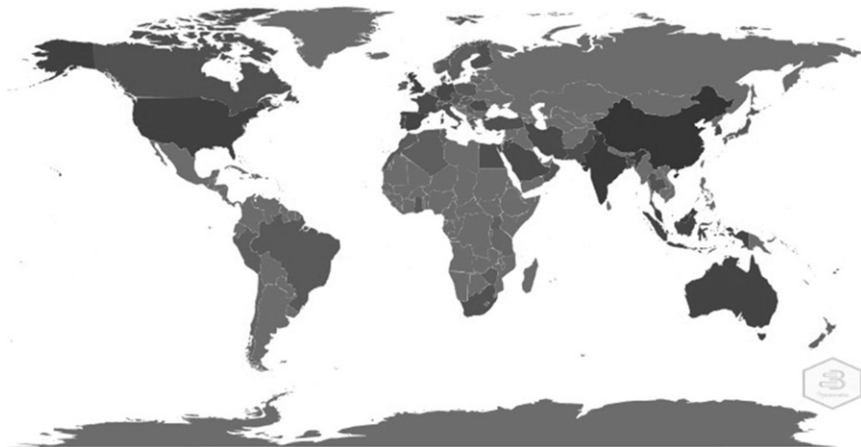


Fig. 1.6. Countries Scientific Production. Source: Biblioshiny Output.