Preface

Welcome to the proceedings for the Seventeenth International Conference on Management Science and Engineering Management (ICMSEM 2023), which was held from the 3rd to the 4th of August 2023 at the University of Cape Town, Cape Town, South Africa. Organized by the International Society of Management Science and Engineering Management (ISMSEM), this annual Conference provides a platform for academics, researchers, and practitioners from Management Science (MS), Engineering Management (EM), and related fields to gain advanced knowledge about MSEM research and technologies and gives participants the chance to work together and share the newest MSEM developments. Because new findings are emerging every year, participants have the opportunity to explore advanced methodologies and technologies that can address new global challenges. Every year, an increasing number of prestigious experts and scientists from all over the world attend the Conference to share their innovative work. Therefore, we hope that everyone can gain something by freely communicating with peers and colleagues during the conference.

The ICMSEM, which has been held sixteen times since 2007 in locations across Asia, Europe, the Americas, and Oceania has significantly influenced Management Science and Engineering Management research. In the past sixteen years, the ICMSEM has been successfully held in Chengdu, Chongqing, Bangkok, Chungli, Macau, Islamabad, Philadelphia, Lisbon, Karlsruhe, Baku, Kanazawa, Melbourne, Ontario, Chisinau, Toledo, and Ankara. All accepted proceedings papers presented at the ICMSEM have been published by high-level publishing houses. The Proceedings from the 1st, 2nd, 3rd, and 4th ICMSEMs were archived by ISTP retrieval, and the Proceedings from the 1st, 3rd, 6th, 7th, 8th, 9th, 10th, 13th, 14th, 15th, and 16th ICMSEMs were archived by EI retrieval. The Proceedings for the 11th and 12th ICMSEMs were also delivered to EI retrieval. The accepted papers for the conference are to be published in the “Proceedings of the Seventeenth International Conference on Management Science and Engineering Management” by EDP Sciences.

To enlarge its international vision and improve MSEM knowledge, the ICMSEM is committed to building an international cooperative platform that can attract high-quality scholars from around the world, enhance MSEM knowledge internationally, facilitate international exchanges, and provide a platform for the development of high-level talent. Of the 326 manuscripts received, 100 outstanding papers from 25 countries were finally accepted. All full papers were subjected to a double-blind peer-review process that involved an assessment of the abstracts by the scientific committee, feedback to authors on the submitted abstracts, the submission of full papers for the accepted abstracts, a review of the full papers by the scientific committee and a panel of reviewers, and feedback to accepted authors on their revised papers to ensure content quality. The accepted papers came from Australia, Azerbaijan, Bangladesh, Canada, China, France, Germany, Indonesia, Israel, Italy, Laos, Mexico, Moldova, New Zealand, Pakistan, Philippines, Portugal, Singapore, Spain, South Africa, Thailand, Turkey, the UK, the USA, and Vietnam. Therefore, because of the ICMSEM platform, international academic research collaboration between authors has been enhanced, with 78 of the accepted manuscripts being co-authored by scholars from different countries.

Because it promotes cross-discipline international exchanges, the ICMSEM has made cutting-edge MSEM achievements. The proceedings papers have been divided into six sections based on the research areas: Sustainable Development, Decision Support Systems, Data Science, Project Management, Economic and Social Effects, and Risk Assessment. The main topics for the 17th ICMSEM cover many issues, for which experts from the Sapienza University of Rome, the National University of Singapore, the University of Cape Town, the University of Leeds, the Beijing University of Chemical Technology, the China University of Political Science and Law, and The University of Adelaide have been invited to deliver
keynote lectures and join the panel discussions for the six parallel sessions based on the Conference proceedings sections. Members from these outstanding organizations are going to be the parallel session moderators for the consequent discussions after the research presentations. Because the parallel sessions are equal exchange platforms, they allow scholars in the same fields to have in-depth academic discussions about their research, give suggestions, share cutting-edge trends, and broaden their ideas for future research.

After more than ten years, the ICMSEM Conference has come a long way from its initial difficulties to encourage global cooperation and exchange through an international platform. However, today, 80% of the received manuscripts were the result of international collaboration. Further, because of developments in online conferencing, a greater number of authors are choosing to join the Conference online.

For a long time, the ICMSEM Conference has been themed “MSEM” to provide a platform for management science (MS) and engineering management (EM) experts, scholars, and technical professionals in related fields to exchange the latest research results and promote scientific research progress. The round table “Development of Engineering Management Science - Perspectives on Scientific Journal Reports” has been held annually as a regular session to allow renowned experts to conduct in-depth discussions on improving the evaluation of MSEM journals. ISMSEM also established an Advanced Award to encourage cutting-edge MSEM research, which is given to outstanding papers that have made significant contributions to innovative MSEM practice and applications, which can be found in the IJMSEM (https://www.tandfonline.com/toc/tmse20/current) journal. Because of the range of high-level contributions, the ICMSEM extends MSEM knowledge, provokes extensive discussions, and is a key platform for publishing the significant progress that has been made in management science research and innovation.

We would like to express our sincere thanks and gratitude to all participants and scholars who have shown support for the ICMSEM and the prestigious schools and institutions that have continued to support us; the National Academy of Sciences and Ministry of Science and Education, Azerbaijan; the Academy of Sciences of the Republic of Uzbekistan, Uzbekistan; the Institute of Fuzzy Logic Systems, Tokyo University of Science, Japan; Brock University, Canada; the Academy of Sciences of Moldova, Moldova; the University of Castilla-La Mancha (UCLM), Spain; the University of Belgrade, Serbia; Gazi University, Turkey; the University of Cape Town, South Africa, and Sichuan University, China. We would also like to thank the International Society for Management Science and Engineering Management (ISMSEM), the University of Cape Town, and Sichuan University for their assistance in organizing this Conference. We are also grateful to EDP Sciences on E3S Web of Conferences for publishing the Conference proceedings. Thanks also go to Professor Abimbola Windapo for offering to be the general chair, Dr. Nnedinma Umeokafor and Amanda Mtya for chairing the organizing committee, all members of the organizing Committee, the local arrangement committee and the program committee, and all participants for their great support. Finally, we would like to thank all authors for their excellent Conference papers, which are of great educational and research value, and for the diverse synergistic collaborative efforts that have spurred innovation and global participation.

Because of the continuous MSEM research, many new MSEM development trends have emerged. For greater and more innovative development activities, our work must continue to focus on the MSEM. Next year, we plan to continue the novel and successful ICMSEM and intend to intensify our efforts to improve the quality of the proceedings and to recommend more excellent papers for the ISMSEM Advancement Prize. In the end, we sincerely hope you can submit your new MSEM findings and share your great idea in 2024.

Cape Town, South Africa, August 2023