Editorial Note

Winifred Mutuku

Editor-in-Chief

African Journal of Mathematics, Statistics and Actuarial Science (AJMSAS)

It is with immense pleasure and a sense of great anticipation that we announce the inaugural issue of the African Journal of Mathematics, Statistics and Actuarial Science (AJMSAS). This is a significant milestone for us, marking the culmination of dedicated effort and collaborative spirit. We are thrilled to officially launch the journal and share our vision with the academic community and assure you of our commitment for quality work and efficient process publication process.

This inaugural issue reflects the diverse and innovative research within our field. We extend our sincere gratitude to the authors who have contributed their valuable work, the reviewers who provided insightful feedback, and the editorial team who dedicated their time and expertise to bring this journal to life. Their commitment has been instrumental in establishing the foundation for African Journal of Mathematics, Statistics and Actuarial Science.

African Journal of Mathematics, Statistics and Actuarial Science is committed to the publication of high quality and original research articles in all areas of mathematics, statistics and actuarial science with applications geared towards addressing the Sustainable Development Goals and any other challenge facing the world today. The journal provides a platform for mathematical and statistical research dissemination spanning across Applied Mathematics, Pure Mathematics, Statistics, actuarial science and emerging fields such as mathematical

biology, informatics, machine learning and environmental statistics. All articles are refereed and judged by their contribution in advancing new trends in Mathematics and Statistics in line with emerging societal needs. Our mission is to disseminate high-quality research, facilitate scholarly discourse and provide a platform for emerging scholars. We aim to become a leading voice in the field of mathematics, statistics and actuarial science, and in encouraging impactful research and fostering a vibrant community of researchers.

The first article in this maiden issue is on a mathematical modelling journey of a global pandemic that shook the world in 2019. The paper by **Taremba Chirigo** and **Herbert Tafadzwa** gives us an insight on *understanding pandemics: a systematic review of epidemiological modelling of the COVID-19 pandemic in Southern African*. The paper gives a review of epidemiological models for policy uptake and action. The authors emphasize the importance of increasing infectious disease modelling literacy among users for the purposes of predicting and controlling future pandemics.

Next, **Aminu Asambe Dantani, M.O Adenomon, M.U. Adehi and N.O. Nweze** present a *multivariate GARCH Modelling of Oil Prices, Stock Exchange, Exchange and Inflation Rates' Volatility in Nigeria via the CCC Model*. The article models oil prices, stock exchange and inflation rates in Nigeria using a constant conditional correlation multivariate generalized autoregressive conditional heteroskedasticity (CCC MGARCH) model. The model reveals a positive and significant correlations between oil prices and stock exchange rates

Another article presented is by **Egbuhuzor Udechukwu Peter** and **Udoh Ndipmong Augustine.** They *mathematically modelled the deformation in a spherical compressible Blatz-Ko material under torsional effects*. The equations were solved using Mathematica to reveal the influence of material compressibility and external pressure significantly on the deformation displacement. Their research is impactful and involves compressible hyper-elastic materials subjected to torsional or radial forces, such as in biomechanics, soft robotics, or advanced material design.

This inaugural issue of the journal also presents a research paper by N. R. Zakariyau, M. A. Umar and I. Suleman entitled "*An Exponentiated New Exponential-Gamma Distribution with Applications*". In their work they explore ways of modelling real-life data from varied fields such as engineering, medicine, insurance, and finance. In their work, key statistical properties, including entropy measures and order statistics, are

established, and parameters are estimated using the Maximum Likelihood Method.

The last article (but by no means the least) is by **Leke Oni and Benedict Akpii** who presented an article entitled "*Existence and stability of the collinear equilibrium points of the photogravitational restricted three body problem with variable masses and charges*". Their investigation can be used to study motion of a test particle in the gravitational field of charged radiating celestial bodies with mass variations.

As Editor-in-Chief, I extend my deep appreciation to members of the editorial board, contributors to this first issue, the reviewers who generously offered their time and expertise, and the entire editorial team at Adonis & Abbey Publishers for their dedication to building this platform. I also wish to acknowledge the support of institutions, partners, and mentors who have championed this vision from the beginning.

We are excited about the future of African Journal of Mathematics, Statistics and Actuarial Science and the opportunities it presents for scholarly exchange and advancement. We invite you to explore this first issue, engage with the research papers presented, and join us in shaping the future of mathematics, statistics and actuarial science We welcome your feedback and suggestions as we strive to continuously improve and evolve. Thank you for joining us on this exciting journey.

As we embark on this journey we look forward to scaling greater heights with you.

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