Dr. Samuel A. Gyamerah

Department of Statistics and Actuarial Science
Kwame Nkrumah University of Science and Technology

ORCID 0000-0003-2164-2339 · Email asante.gyamerah@torontomu.ca · Profile knust.peerford.com/staff/780544ca-b4cd-40bf-8ff3-74ff7f766b17

RESEARCH

Areas: Economics and Econometrics · Finance · Soil Science · Electrical and Electronic Engineering · Management Science and Operations Research · Accounting

RESEARCH SUMMARY

53	521	13	16	2.85	40%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 53 publications listed below, 2014–2026. Field-weighted impact is the mean over the 53 works scored for it; 1.00 is the world average for works of the same field, type and year. 21 of the 53 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Assistant Professor 2024–present
Computer Science (Faculty of Science), Toronto Metropolitan University, Toronto, Canada

Postdoctoral Research Fellow 2023–present
Statistics and Actuarial Science, University of Waterloo, Waterloo, Canada

Lecturer 2020–present
Statistics and Actuarial Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Data Scientist 2020–present
Laboratory for Interdisciplinary Statistical Analysis, kumasi, Ghana

Assistant Lecturer 2015–2016
Kessben University College, Kumasi, Ghana

Biostatistician 2010–2012
Holy Family Hospital, Nkawkaw, Ghana

DISTINCTIONS, MEMBERSHIPS AND SERVICE

Academic Member
Society of Quantitative Analyst, Albany, United States

Academic Member
Bernoulli Society for Mathematical Statistics and Probability, Leuven, Netherlands

Academic Member
International Association of Engineers, Hong Kong, China

PUBLICATIONS

Journal articles 52

1. Perpetual Andam Boiquaye, Edward Korveh, **Samuel Asante Gyamerah** (2026). A Markov Process Model of Joint Liability and Loan Repayment for Sustainable Microfinance. *Annals of Finance*. https://doi.org/10.1007/s10436-026-00478-z
2. Yethu Sithole, **Samuel Asante Gyamerah** (2026). Bayesian Integrated Nested Laplace Approximation (INLA) Longevity Bonds Market Model. *Risks*. https://doi.org/10.3390/risks14080172
3. Perpetual Andam Boiquaye, Bernadette Aidoo, **Samuel Asante Gyamerah** (2026). Loan Defaults and Credit Risk in Microfinance. *Risks*. https://doi.org/10.3390/risks14030066
4. **Samuel Asante Gyamerah**, Emmanuel Afrifa, Perpetual Andam Boiquaye, Nelson Dzupire (2026). Modelling financial contagion and optimal policy design for bank runs and systemic risk. *Mathematics and Computers in Simulation*. https://doi.org/10.1016/j.matcom.2025.12.023
5. Anuwoje I. L. Abonongo, John Abonongo, Haitham M. Yousof, **Samuel Asante Gyamerah** (2026). New modified light tail Weibull distribution with application to automobile collision data and PORT-VaR analysis. *Research in Mathematics*. https://doi.org/10.1080/27684830.2026.2718685
6. Anuwoje Ida. L. Abonongo, John Abonongo, **Samuel Asante Gyamerah** (2026). On the Sine Inverse Lomax Burr III Distribution with Application to Monthly Actual Tax Revenue Data. *Stats*. https://doi.org/10.3390/stats9030058
7. Stanley Jere, Danny Mukonda, Edwin Moyo, **Samuel Asante Gyamerah** (2026). Optimal Investment and Consumption Problem with Stochastic Environments and Delay. *Journal of risk and financial management*. https://doi.org/10.3390/jrfm19010062
8. **Samuel Asante Gyamerah**, Perpetual Andam Boiquaye (2026). Optimizing Strike Temperatures for Basis Risk Reduction in Crop Yield Weather Index Insurance. *North American Actuarial Journal*. https://doi.org/10.1080/10920277.2026.2626903
9. Enoch Sakyi-Yeboah, Umoro Pharuk Salifu, **Samuel Asante Gyamerah**, Perpetual Andam Boiquaye (2025). Evaluating Nonprice Terms to Ration Microfinance Loans Based on Expected Loan Loss Function. *Journal of Applied Mathematics*. https://doi.org/10.1155/jama/6673908
10. Queensley C. Chukwudum, **Samuel Asante Gyamerah**, Saralees Nadarajah, Eslam Hussam (2025). Extreme rainfall system transitions of west African countries. *Stochastic Environmental Research and Risk Assessment*. https://doi.org/10.1007/s00477-025-03086-x
11. Bernard Gyamfi, Perpetual Andam Boiquaye, **Samuel Asante Gyamerah** (2025). Stochastic modelling of temperature for pricing weather derivatives. *Environmental Research Communications*. https://doi.org/10.1088/2515-7620/add794
12. **Samuel Asante Gyamerah**, Iddrisu Kamal-Deen, Clement Asare, Mark Sabutey, Perpetual Andam Boiquaye (2025). The Impact of Financial Distress on Earnings Management: The Moderating Role of Audit Quality. *Journal of African Business*. https://doi.org/10.1080/15228916.2025.2561243
13. Irène Irakoze, Dennis Ikpe, Fulgence Nahayo, **Samuel Asante Gyamerah** (2025). Time Dynamics of Systemic Risk in Banking Networks: A UEDR-PDE Approach. *AppliedMath*. https://doi.org/10.3390/appliedmath5020054
14. **Samuel Asante Gyamerah**, Clement Asare (2024). A critical review of the impact of uncertainties on green bonds. *Green Finance*. https://doi.org/10.3934/gf.2024004
15. Yethu Sithole, Eeva Maria Rapoo, **Samuel Asante Gyamerah** (2024). Assessing the Impact of Geopolitical Risk on Longevity Bond Pricing: Insights from Bayesian Multivariate Regression. *Journal of Statistical Theory and Applications*. https://doi.org/10.1007/s44199-024-00088-6
16. **Samuel Asante Gyamerah**, Clement Asare, Henry Ofoe Agbi-Kaeser, Frank Baffour-Ata (2024). Assessing the impact of climate variability on maize yields in the different regions of Ghana—A machine learning perspective. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0305762

17. **Samuel Asante Gyamerah**, Henry Ofoe Agbi-Kaiser, Clement Asare, Nelson Dzupire (2024). Asymmetric Impact of Heterogenous Uncertainties on the Green Bond Market. *Discrete Dynamics in Nature and Society*. https://doi.org/10.1155/2024/6644658

18. David Yaro, Saviour Worlanyo Akuamoah, **Samuel Asante Gyamerah**, Francois Mahama, Ebenezer Asabre (2024). Caputo Fractional Order Nonlinear Incidence HIV Infection Model with Optimal Control. *Contemporary Mathematics*. https://doi.org/10.37256/cm.5420245562

19. **Samuel Asante Gyamerah**, Henry Ofoe Agbi-Kaiser, Luis Alberiko Gil-Alana (2024). Do climate policy uncertainty and geopolitical risk transmit opportunity or threat to the green market? Evidence from non-linear ARDL. *The Journal of Economic Asymmetries*. https://doi.org/10.1016/j.jeca.2024.e00379

20. **Samuel Asante Gyamerah**, Gifty Laar, Clement Asare (2024). Evaluating the impact of internal control systems on corporate performance of Ghanaian banks: The moderating role of information technology. *Scientific African*. https://doi.org/10.1016/j.sciaf.2024.e02476

21. Kenneth Sena Blekor, Clement Asare, Sedinam Abra Benardine Bissi, Gabriel Elike Mawuhorm, Cornelius Benle Tanoel, **Samuel Asante Gyamerah** (2024). Global uncertainties and stock returns under heterogeneous market conditions: Evidence from wavelet coherence analysis. *Scientific African*. https://doi.org/10.1016/j.sciaf.2024.e02365

22. **Samuel Asante Gyamerah**, Victor Owusu, Stephen Oppong Kwakye (2024). Marginal Impact of climate variability on crop yields in Ghana. *Scientific African*. https://doi.org/10.1016/j.sciaf.2024.e02314

23. Atinuke Olusola Adebanji, Clement Asare, **Samuel Asante Gyamerah** (2024). Predictive analysis on the factors associated with birth Outcomes: A machine learning perspective. *International Journal of Medical Informatics*. https://doi.org/10.1016/j.ijmedinf.2024.105529

24. Nelson Dzupire, Solomon Aboagye, **Samuel Gyamerah**, Prince Blackson Chirwa (2024). Risk management and insurance failures: the case of Ghana's National Health Insurance Scheme. *Discover Health Systems*. https://doi.org/10.1007/s44250-024-00147-w

25. **Samuel Asante Gyamerah**, Victor Owusu (2024). Short- and long-term weather prediction based on a hybrid of CEEMDAN, LMD, and ANN. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0304754

26. **Samuel Asante Gyamerah**, Clement Asare (2024). The impacts of global economic policy uncertainty on green bond returns: A systematic literature review. *Heliyon*. https://doi.org/10.1016/j.heliyon.2024.e25076

27. **Samuel Asante Gyamerah**, Luis Alberiko Gil-Alana (2023). A multivariate causality analysis of CO2 emission, electricity consumption, and economic growth: Evidence from Western and Central Africa. *Heliyon*. https://doi.org/10.1016/j.heliyon.2023.e12858

28. **Samuel Asante Gyamerah**, Clement Asare, Desmond Mintah, Bernice Appiah, Florence Abiodun Kayode (2023). Exploring the optimal climate conditions for a maximum maize production in Ghana: Implications for food security. *Smart Agricultural Technology*. https://doi.org/10.1016/j.atech.2023.100370

29. **Samuel Asante Gyamerah**, Aaron Akyea Mensah, Clement Asare, Nelson Dzupire (2023). Improving mortality forecasting using a hybrid of Lee–Carter and stacking ensemble model. *Bulletin of the National Research Centre/Bulletin of the National Research Center*. https://doi.org/10.1186/s42269-023-01138-2

30. Irène Irakoze, Fulgence Nahayo, Dennis Ikpe, **Samuel Asante Gyamerah**, Frederi Viens (2023). Mathematical Modeling and Stability Analysis of Systemic Risk in the Banking Ecosystem. *Journal of Applied Mathematics*. https://doi.org/10.1155/2023/5628621

31. **Samuel Asante Gyamerah**, Janet Arthur, Saviour Worlanyo Akuamoah, Yethu Sithole (2023). Measurement and Impact of Longevity Risk in Portfolios of Pension Annuity: The Case in Sub Saharan Africa. *FinTech*. https://doi.org/10.3390/fintech2010004

32. **Samuel Asante Gyamerah**, Henry Ofoe Agbi-Kaiser, Keziah Ewura Adjoa Amankwah, Patience Anipa, Bright Arafat Bello (2023). Modeling the hourly consumption of electricity during period of power crisis. *Clean Technologies and Recycling*. https://doi.org/10.3934/ctr.2023010

33. Michael Agyemang Obeng, Daniel Kobina Okwan, Ernest Adankwah, Pisco Kofi Owusu, **Samuel Asante Gyamerah**, Kluivert Boakye Duah, Ellis Kobina Paintsil (2023). Seroconversion and Prevalence of Hepatitis

B Surface Antigen among Vaccinated Health Care Workers in Ashanti Region, Ghana. *Advances in Medicine*. https://doi.org/10.1155/2023/2487837

34. Romeo Mawonike, Dennis Ikpe, **Samuel Asante Gyamerah** (2023). State-space of the Vasicek model for long-term bonds with Kalman filter. *International Journal of Financial Engineering*. https://doi.org/10.1142/s2424786322500384
35. **Samuel Asante Gyamerah**, Collins Abaitey (2022). Modelling and forecasting the volatility of bitcoin futures: the role of distributional assumption in GARCH models. *Data Science in Finance and Economics*. https://doi.org/10.3934/dsfe.2022016
36. **Samuel Asante Gyamerah**, Bright Emmanuel Owusu, Ellis Kofi Akwaa-Sekyi (2022). Modelling the mean and volatility spillover between green bond market and renewable energy stock market. *Green Finance*. https://doi.org/10.3934/gf.2022015
37. Dennis Ikpe, Yethu Sithole, **Samuel Asante Gyamerah** (2022). On a consistent state-space bond markets model for pricing long-maturity bonds. *International Journal of Financial Engineering*. https://doi.org/10.1142/s2424786322500244
38. **Samuel Asante Gyamerah** (2021). COVID-19 PANDEMIC AND HERDING BEHAVIOUR IN CRYPTOCURRENCY MARKET. *Applied Finance Letters*. https://doi.org/10.24135/afl.v10i.443
39. Romeo Mawonike, Dennis Ikpe, **Samuel Asante Gyamerah** (2021). Modelling the dynamics of long-term bonds with Kalman filter. *International Journal of Bonds and Derivatives*. https://doi.org/10.1504/ijbd.2021.116971
40. **Samuel Asante Gyamerah** (2021). Two-Stage Hybrid Machine Learning Model for High-Frequency Intraday Bitcoin Price Prediction Based on Technical Indicators, Variational Mode Decomposition, and Support Vector Regression. *Complexity*. https://doi.org/10.1155/2021/1767708
41. **Samuel Asante Gyamerah**, Edwin Moyo (2020). Long-Term Exchange Rate Probability Density Forecasting Using Gaussian Kernel and Quantile Random Forest. *Complexity*. https://doi.org/10.1155/2020/1972962
42. **Samuel Asante Gyamerah** (2020). On forecasting the intraday Bitcoin price using ensemble of variational mode decomposition and generalized additive model. *Journal of King Saud University - Computer and Information Sciences*. https://doi.org/10.1016/j.jksuci.2020.01.006
43. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2020). Weather derivatives for managing weather and climate risk in agriculture. *International Journal of Financial Engineering*. https://doi.org/10.1142/s2424786320500498
44. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2019). Hedging Crop Yields Against Weather Uncertainties—A Weather Derivative Perspective. *Mathematical and Computational Applications*. https://doi.org/10.3390/mca24030071
45. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2019). Mitigating geographical basis risk of weather derivatives using spatial-temporal regime-switching temperature model. *AIMS Mathematics*. https://doi.org/10.3934/math.2019.4.1274
46. **Samuel Asante Gyamerah** (2019). Modelling the volatility of Bitcoin returns using GARCH models. *Quantitative Finance and Economics*. https://doi.org/10.3934/qfe.2019.4.739
47. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2019). Probabilistic forecasting of crop yields via quantile random forest and Epanechnikov Kernel function. *Agricultural and Forest Meteorology*. https://doi.org/10.1016/j.agrformet.2019.107808
48. **Samuel Asante Gyamerah**, Philip Ngare (2018). Regime-Switching Model on Hourly Electricity Spot Price Dynamics. *Journal of Mathematical Finance*. https://doi.org/10.4236/jmf.2018.81008
49. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2018). Regime-Switching Temperature Dynamics Model for Weather Derivatives. *International Journal of Stochastic Analysis*. https://doi.org/10.1155/2018/8534131
50. Charles Sebil, Veronica Owusu, **Samuel Gyamerah** (2016). Demand Responsive Transportation Service Problem with Time Windows. *British Journal of Mathematics & Computer Science*. https://doi.org/10.9734/bjmcs/2016/24872

51. **Samuel Gyamerah**, Peter Boateng, Prince Harvim (2015). Max-plus Algebra and Application to Matrix Operations. *British Journal of Mathematics & Computer Science*. https://doi.org/10.9734/bjmcs/2016/21639

52. Albert Agyei, **Samuel Asante Gyamerah** (2014). The Awareness of Employees on Tax Relief Scheme in Ghana. *International Business Management*.

Conference papers 1

1. **Samuel Asante Gyamerah**, Philip Ngare, Dennis Ikpe (2019). On Stock Market Movement Prediction Via Stacking Ensemble Learning Method. https://doi.org/10.1109/cifer.2019.8759062