

Caston Sigauke

Postgraduate Supervision

MSc - Completed

MSc by research dissertation

1. Modelling the extremal dependence structure of equity returns: A survey of four African equity markets. Samuel Taiwo Abayomi Richard (University of Venda, South Africa), 2019. <http://univendspace.univen.ac.za/handle/11602/1356?show=full>
2. Forecasting foreign direct investment in South Africa using nonparametric quantile regression models, by Nyawedzeni Netshivhazwaulu (University of Venda, South Africa), 2019. <http://univendspace.univen.ac.za/handle/11602/1297?show=full>
3. Probabilistic solar power forecasting: An application to South African data. Phathutshedzo Mpfumali (University of Venda, South Africa), 2019. Was on NRF project on Probabilistic Load Forecasting (2015-2017). <http://univendspace.univen.ac.za/handle/11602/1349?show=full>
4. Discrete survival models with flexible link functions for age at first marriage among women in Swaziland. Thambeleni Portia Nevhungoni, 2019. <http://univendspace.univen.ac.za/handle/11602/1346?show=full>
5. Short term load forecasting using quantile regression with an application to the unit commitment problem, by Moshoko Emily Lebotsa (University of Venda, South Africa), 2018. Was on NRF project on Probabilistic Load Forecasting (2015-2017). <http://univendspace.univen.ac.za/handle/11602/1208?show=full>
6. Medium term load forecasting using generalized additive models with tensor product interactions. Thakhani Ravele (University of Venda, South Africa), 2018. <http://univendspace.univen.ac.za/handle/11602/1165?show=full>
7. Stochastic modelling of daily peak electricity demand using extreme value theory Jerry Boano Danquah (University of Venda, South Africa), 2018. Was on NRF project on Probabilistic Load Forecasting (2015-2017). <http://univendspace.univen.ac.za/handle/11602/1209?show=full>
8. Modelling temperature in South Africa using extreme value theory by Murendeni Maurel Nemukula (University of the Witwatersrand, Johannesburg, South Africa), 2017. Was on the NRF project on Probabilistic Load Forecasting (2015-2017). <http://wiredspace.wits.ac.za/handle/10539/24840>
9. Modelling annual flood heights of the Limpopo river at Beitbridge border post using extreme value theory, by Robert Kajambeu (University of Venda, South Africa), 2017. <http://univendspace.univen.ac.za/handle/11602/676?show=full>
10. Modelling short term probabilistic electricity demand in South Africa by Molete Mokhele (University of the Witwatersrand, Johannesburg, South Africa). Was on the NRF project on Proba-

bilistic Load Forecasting, 2016. <http://wiredspace.wits.ac.za/handle/10539/21021>

MSc by coursework and research report

1. Short-term hourly load forecasting in South Africa using neural networks by Elvis Tshiani Ilunga (University of the Witwatersrand, Johannesburg, South Africa), 2018. <http://wiredspace.wits.ac.za/xmlui/handle/10539/25629>

Examination of Masters' dissertations and PhD theses

PhD theses examined

- 2019: On the use of the bootstrap methods in uncovering the sampling distribution of threshold value estimates. School of Statistics and Actuarial Science, University of the Witwatersrand, Johannesburg, South Africa.
- 2017: Title of thesis: Inspection and replacement models for reliability and maintenance: Filling in gaps. School of Statistics and Actuarial Science, University of the Witwatersrand, Johannesburg, South Africa.
- 2016: Title of thesis: The relationship between electricity supply and economic growth in South Africa. Department of Economics, Nelson Mandela Metropolitan University, South Africa.

Refereed research papers

1. Sigauke, C. and Nemukula, M.M. (2018). Modelling extreme peak electricity demand during a heatwave period: a case study, *Energy Systems*, pp. 1-23. <https://doi.org/10.1007/s12667-018-0311-y>
2. Sigauke, C., Nemukula, M.M. and Maposa, D. (2018). Probabilistic hourly load forecasting using additive quantile regression models, *Energies*, vol. 11, no. 9, pp. 1-21.
3. Nemukula, M.M. and Sigauke, C. (2018). Modelling average maximum daily temperature using r -largest order statistics: An application to South African data, *Journal: Jàmá: Journal of Disaster Risk Studies*. ISSN: (Online) 2072-845X, (Print) 1996-1421. 10(1), a467. <https://doi.org/10.4102/jamba.v10i1.467>
4. Lebotsa, M.E., Sigauke, C, Bere, A., Fildes, R. and Boylan, J.E. (2018). Short term electricity demand forecasting using partially linear additive quantile regression with an application to the unit commitment problem, *Applied Energy*, vol. 222, pp. 104-118. ISSN: 0306-2619.
5. Sigauke, C. and Bere, A. (2017) Modelling non-stationary time series using a peaks over threshold distribution with time varying covariates and threshold: An application to peak electricity demand, *Energy Journal*, vol. 119, pp. 152-166. ISSN: 0360-5442.
6. Sigauke, C. (2017). Forecasting medium term electricity demand in a South African power supply system, *Journal of Energy in Southern Africa*, vol. 28, no. 4, pp. 54-67. ISSN 1021-447X.

7. Sigauke, C. and Chikobvu, D. (2017). Estimation of extreme inter-day changes to peak electricity demand using Markov chain analysis: A comparative analysis with extreme value theory, *Journal of Energy in Southern Africa*, vol. 28, no. 4, pp. 68-76. ISSN 1021-447X.
8. Sigauke, C. (2016) Volatility modeling of the JSE all share index and risk estimation using the Bayesian and frequentist approaches, *Economics, Management, and Financial Markets*, vol. 11, no. 4, pp. 33-48, ISSN 1842-3191.
9. Sigauke, C. and Chikobvu, D. (2016) Peak electricity demand forecasting using time series regression models: An application to South African data, *Journal of Statistics and Management Systems*, vol. 19, no. 4, pp. 567-587, ISSN: 2169-0014.

Book chapters

1. Sigauke C., Kumar S., Maswanganyi N. and Ranganai E. (2018). Reliable Predictions of Peak Electricity Demand and Reliability of Power System Management. In: *System Reliability Management: Solutions and Technologies*. Edited by Anand A. and Ram M. CRC Press, Taylor and Francis, 1st Edition, Chapter 10. ISBN 9780815360728, eBook ISBN 9781351117654

Refereed research papers in conference proceedings

1. Mokilane, P., Debba, P., Yadavalli, V.S.S. and Sigauke, C. (2018). Long-term electricity demand forecasting using a generalised additive mixed quantile averaging (GAMMQV) model. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, Pretoria, South Africa, October 30 – November 1, 2018. ISBN: 978-1-5323-5947-7.
2. Nemukula, M.M., Sigauke, C. and Maposa, D. (2018). Bivariate threshold excess models with application to extreme high temperatures in Limpopo province of South Africa. *South African Statistical Journal: Peer-reviewed Proceedings of the 60th Annual Conference of the South African Statistical Association for 2018*, pp. 33-40.
3. Maswanganyi, N., Sigauke, C. and Ranganai, E. (2017). Peak electricity demand forecasting using partially linear additive quantile regression models. *South African Statistical Journal: Peer-reviewed Proceedings of the 59th Annual Conference of the South African Statistical Association for 2017*, pp. 25-32. ISBN 978-1-86822-692-4.