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**NATIONALITY:** Ugandan  
**DATE OF BIRTH:** 25<sup>th</sup> October 1970  
**MARITAL STATUS:** Married  
**EDUCATION:** PhD (Statistics) - 2010; M Stat. (Statistics) - 1999;  
PGD (Statistics) - 1999; BSc (Statistics) - 1995 - Makerere University

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## **BRIEF PROFILE**

Dr. Ronald WESONGA is a Statistician-cum Lecturer with specialization in Statistical Computing, based at the School of Statistics and Planning, Makerere University. He is a visiting Professor at the Institute of Social Research, Makerere University and at the Department of Mathematics and Statistics of College of Science, Sultan Qaboos University. He has accumulated over fifteen years of experience in teaching statistical methods with computational statistics to a wide range of students at different levels of learning ranging from undergraduate to postgraduate courses and to more specific professional fixes with applications. He has extensive experience in developing statistical models, computational algorithms and analysis, data mining techniques, information system development and management, survey design and management with applications. He is a team leader, diligent, result-oriented with a high level of integrity, accountability and timeliness coupled with professionalism.

Dr. Wesonga obtained his PhD in Statistics (2010) from Makerere University in Uganda under the supervision of Prof. Xavier Mugisha, Prof. Venancius Baryamureeba and Dr. Peter J. Jehopio; a Master of Statistics (1999) under the supervision of Prof. Kathuria and Dr. Peter J. Jehopio and a Bachelor of Science in Statistics (1995) Degree from Makerere University.

## **ACCOMPLISHMENTS**

- Led and developed courses in statistical computing taught at both undergraduate and postgraduate levels of study at the school of statistics and Planning formerly, the Institute of Statistics and Applied Economics, Makerere University.
- Led and developed courses in statistical methods taught PhD candidates at the Institute of Social Research, Makerere University.
- Led and developed courses in computer Science taught at undergraduate level of study at the Islamic University in Uganda, Mbale.
- Led and developed courses in computer education taught at undergraduate level of study at the Busitema University in Uganda.
- Developed and institutionalized the first Uganda National Governance Baseline Survey at the Uganda Bureau of Statistics (UBOS) with funding from the United Nations Development Programme (UNDP) and German International Cooperation (GIZ).
- Conducted the first statistical audit at the Central Statistical Organization in Uganda on the process and the reliability of price indices produced with funding from the Directorate of Value for Money, Office of Auditor General in Uganda.
- Various journal publications led into the establishment of a Low Level Wind shear Alert System (LLWAS) at Entebbe International Airport in Uganda valued at \$8M. Its purpose is to provide alerts and advisories to Pilots about the dynamic occurrences of the wind shear during aircraft departures and arrivals at the airport so as to abate incidences and accidents.
- Developed and established electronic database management systems for collection and management of statistical data and electronic resource Centre for the Ministry of Gender, Labour and Social Development.
- Led the development of the publications on Facts and Figures on Gender in Uganda and the Compendium on Gender, defines the terminologies, acronyms and meta-data. The Uganda Bureau of Statistics hosts both of these publications.
- Contributed to the publication of Status of Women in Uganda (2013 - 2015) with the Uganda Bureau of Statistics (UBOS) for the Ministry of Gender, Labour and Social Development (MGLSD). It gives the current statistics and trends over the period 1995 through 2013.
- Led a team of experts at the UNICEF to model and identify factors that together define a vulnerable child in Uganda by performing data mining of Uganda 2002 Census data.

## **RESEARCH INTERESTS**

Model and algorithm development enhanced by application of statistical and computationally intensive techniques to generate information and knowledge is presented with the global ever-increasing problem of small multivariable and big data phenomena occurring both in temporal and spatial fields. Apprehension of such a challenge is not a function of statistics or computing in isolation, but a collaborative dynamism, corroborated by both. We have attempted through a number of publications and work accomplished, shown that the world can be a better place through information and knowledge creation by theory and application, however more knowledge gaps keep revealing, hence demanding more research. For instance, the non-communicable diseases have become a silent killer and are almost going unnoticed especially in developing and middle-income countries due to lack of reliable data. Currently, our research activities are focused on statistical modeling of predictors and risk factors associated with the burden of non-communicable diseases.

## **OTHER ACCOMPLISHMENTS**

**Statistician (National NCD Consultant Data Management and Analysis) 2014 - 2015:** with the Ministry of Health in collaboration with World Health Organization and Uganda Bureau of Statistics; a national survey study on Non-communicable diseases in Uganda. Tasks included; coordination and field survey, data downloads and verification, cleaning, updating and maintenance in different statistical packages. Further specialized data analysis of factors associated with NCDs in Uganda. **PROJECT FUNDED BY UNDP.**

**Data Manager (Expert Survey Data Management and Communication) 2012 - 2014:** with Nutrition CRSP, United States Agency for International Development (**USAID**) Programme (USA); a national survey research on Food Security, Nutrition, Agriculture and Health. Tasks included; coordination and field survey, data downloads and verification, cleaning, updating and maintenance in different statistical packages. **PROJECT FUNDED BY USAID.**

**Statistician (Consultant Multivariate Statistical Analysis) 2012:** with the UNICEF modelled and identified factors that together define a vulnerable child in Uganda using Census data. Here, census data were mined; principal component analysis methods were applied to extract significant factors that together sufficiently explain a vulnerable child.

**Statistician (Expert Data Management/Researcher) 2009 – 2011:** with the International Centre for Rights of Women, Washington DC in Collaboration with Centre for Basic Research, Kampala, Uganda. **PROJECT FUNDED BY USAID;** Designed baseline survey tools; conducted data collection tools and pretesting of the questionnaires; Developed the sample, sampling size and sample selection; supervised the data collection exercise, supervised data management process (design of the data entry screen, data entry exercise, data cleaning); data analysis and report writing

**Statistician (Consultant Data Management and Analysis) 2007 – 2010:** with the National Development Authority, Kampala Uganda; Supervised the Baseline Survey and data management process (design of the data entry screen, data entry exercise, data cleaning); Data analysis and Report writing; Developed analysis tables to inform the five-year National Development Programme.

**Statistician (Consultant, Monitoring and Evaluation) 2007 – 2008** with the Youth Map Uganda USAID – Kampala – Uganda; developed tools for a Baseline Survey of on the youth and their work perception in Uganda; supervised the data collection process; conducted data management, analysis and report writing.

## SOME PUBLICATIONS

1. Guwatudde, D., Mutungi, G., **Wesonga, R.**, Kajjura, R., Kasule, H., Muwonge, J., Ssenono, V., and Bahendeka, S. K. (2015). The Epidemiology of Hypertension in Uganda: Findings from the National Non-Communicable Diseases Risk Factor Survey. *PloS one*, 10(9), e0138991. <http://dx.doi:10.1371/journal.pone.0138991>
2. **Wesonga R**, Nabugoomu F., and Masimbi B., (2014) Airline Delay Time Series Differentials: Autoregressive Integrated Moving Average Model. *International Journal of Aviation Systems, Operations and Training (IJASOT)*, 1(2), 64-76. <http://dx.doi:10.4018/IJASOT.2014070105>
3. **Wesonga R**, Owino A., Ssekiboobo A. , Atuhaire L., Jehopio Peter (2015) Health and Human Rights: a statistical measurement framework using household survey data in Uganda, *BMC International Health and Human Rights* 05/2015; 15(1):11. <http://dx.doi:10.1186/s12914-015-0049-8>.
4. **Wesonga R** (2015) Airport utility stochastic optimization models for air traffic flow management, *European Journal of Operational Research*, ELSEVIER, <http://dx.doi.org/10.1016/j.ejor.2014.10.042>.
5. **Wesonga, R.** (2015). On multivariate imputation and forecasting of decadal wind speed missing data. *SpringerPlus*, 4(1), 12, Springer Berlin Heidelberg. <http://dx.doi:10.1186/s40064-014-0774-9> (SCOPUS)
6. Owino A. Y., **Wesonga R.** and Nabugoomu F (2014) Determining Food Insecurity: an application of the Rasch Model to household survey data in Uganda, *International Journal of Food Science*, Hindawi Publishers, <http://dx.doi.org/10.1155/2014/121269>.
7. **Wesonga R**, Nabugoomu F., Owino A., Atuhaire L., Ssekiboobo A., Mugisha X., Ntozi J., Makumbi T., Jehopio P. and Ocaya B. (2014) On statistical definition of free and fair election: bivariate normal distribution model, *International Journal of Mathematical Research*, 2014, 3(5): 49-62.

8. Owino A. Y., Atuhaire L. K., **Wesonga R.**, Nabugoomu F., and Muwanga-Zaake E. S. K. (2014) Logit Models for Household Food Insecurity Classification, *American Journal of Theoretical and Applied Statistics*, vol. 3, No.2, pp. 49-54. <http://dx.doi.org/10.11648/j.ajtas.20140302.14>.
9. Owino A. Y., Atuhaire L. K., **Wesonga R.**, Nabugoomu F., and Muwanga-Zaake E. S. K. (2014) Determining Factors that Influence Household Food Insecurity in Uganda: A case study of Tororo and Busia districts, *International Journal of Sciences: Basic and Applied Research*, vol. 14, No.1, pp. 394-404.
10. Mbazira M., **Wesonga R.**, and Nabugoomu F. (2014) Survival Factors of Burkitts Lymphoma Patients at Discharge: The Case of St. Mary's Hospital Lacor in Northern Uganda, *American Journal of Health Research*, vol. 2, pp. 9-14. <http://dx.doi.org/10.11648/j.ajhr.20140202.13>.
11. **Wesonga R.** and Nabugoomu F. (2014) Bayesian Model Averaging: An Application to the Determinants of Airport Departure Delay in Uganda, *American Journal of Theoretical and Applied Statistics*, vol. 3, pp. 1-5. <http://dx.doi.org/10.11648/j.ajtas.20140301.11>.
12. **Wesonga R.**, Nabugoomu F., Jehopio P. and Mugisha, X (2013) Modelling Airport Efficiency With Distributions Of The Inefficient Error Term: An Application Of Time Series Data For Aircraft Departure Delay, *International Journal of Sciences: Basic and Applied Research*, vol. 12, No.1. pp. 103-114.
13. **Wesonga R.**, Nabugoomu F., and Masimbi B., (2013) Assessing Aircraft Timeliness Variations By Major Airlines: Passenger Travel Practice In Uganda," *International Journal of Sciences: Basic and Applied Research*, vol. 11, No.1, pp. 75-83.
14. **Wesonga R.**, Nabugoomu F., and Jehopio J.P. (2012) Parameterized framework for the analysis of probabilities of aircraft delay at an airport, *Journal of Air Transport Management* 23 (2012) 1-4, ELSEVIER Ltd, <http://dx.doi.org/10.1016/j.jairtraman.2012.02.001>.
15. **Wesonga R.** Jehopio J. P. and Baryamureeba V. (2008) Stochastic Optimization Model for Agricultural Production in Africa using Remote sensing Technology, *Makerere University Research Journal*, Kampala Uganda.

## **SUPERVISION - MASTER OF STATISTICS STUDENTS**

Below are some of the students I have supervised:

- 1) Deriving multi-factor models for predicting airline delays case study: Entebbe International Airport by Masimbi Brian (2010/HD15/1001U)
- 2) An efficient analysis of survey data using double sampling design: a computerized approach by Nabuduwa Ketty (2012/HD06/584U)
- 3) A web-based clinical malaria diagnosis system using data mining techniques, the rule-based classification algorithm by Bbosa Francis Fuller (2012/HD06/581U)
- 4) A system for Implementation and evaluation of continuous assessments in secondary schools: case of Seeta High School by Olal Daniel (2012/HD06/597U)
- 5) Academic decision support system based on determinants of university students' performance: case of Kyambogo University
- 6) Factors that influence tourism demand in Uganda by Epiaka William
- 7) Survival of Burkitts Lymphoma patients in Northern Uganda: Admissions at St. Mary's Hospital Lacor by Mbazira Mike (2011/HD06/4025U)
- 8) Modeling the effect of ART use on survival of HIV and AIDS patients in Rural Uganda: A case study of Kasese District by Bwambale Kyamakya Moses (2009/HD15/16063U)
- 9) Economic growth in the three traditional East African Countries: A panel data analysis approach by Ssebagala Godfrey (2010/HD/646U)
- 10) Impact of foreign aid on government consumption in Uganda by Basala Martin (2010/HD15/1103U)
- 11) Reduced proportions of Malaria Hospitalizations: a comparison of longitudinal and cross-sectional groups of children of five years and below in Tororo district by Okiring Jaffer (2011/HD06/4020U)

**SOME CONFERENCES ATTENDED**

- 1) **58<sup>th</sup> World Statistics Congress of the International Statistical Institute (ISI), Dublin, Ireland (2011):** I represented School of Statistics and Planning, Makerere University, Kampala and participated in a number of conference workshops and meetings.
- 2) **57<sup>th</sup> World Statistics Congress of the International Statistics Institute (ISI), Durban, South Africa (2009):** Statistics: Our Past, Present and Future: I Presented a Paper: Stochastic optimization model for monitoring millennium development goals: case of HIV/AIDS.
- 3) **International Statistical Conference by South African Statistical Association (SASA), Pretoria, South Africa (2008):** I Presented a paper: Stochastic optimization model for monitoring millennium development goals: case of HIV/AIDS.
- 4) **3<sup>rd</sup> International Conference on Agricultural Statistics, Beijing China (2007):** I Presented a Paper: Stochastic Optimization Models for Agricultural Management Using Remote Sensing Technologies.
- 5) **International Civil Aviation Organization (ICAO) – MET Workshop (Co-jointly with the 15<sup>th</sup> Session of the WMO Commission for Aeronautical MET (CAeM) Including Technical Conference; ICAO Headquarters, Montreal, Canada (2014):** I was the Uganda Country Representative.
- 6) **11<sup>th</sup> EUMETSAT User Forum in Africa, Johannesburg, South Africa (2014):** I was the Uganda Country Representative. Decisions and discussions were focused on exploitation of the European Satellite Data for the benefit of African countries.
- 7) **10<sup>th</sup> EUMETSAT User Forum in Africa, Addis Ababa, Ethiopia (2012):** I was the Uganda Country Representative. Decisions and discussions were focused on exploitation of the European Satellite Data for the benefit of African countries.



## **SOME COMPUTATIONAL SKILLS**

Data Mining, Statistical Data Analysis and Modeling (R, Stata, SPSS, SAS, Epidata, S, MatLab, Mplus, WINSTEP), Systems Analysis and Design, Algorithm Analysis and Design, Neural Networks, Data Structures, Database Management Systems (Ms-Access, SQL, Oracle), Structural Computer Programming (C, Pascal, FORTRAN), Object-Oriented Computer Programming (C++, C#, Java), Web Design (HTML, PHP, Dreamweaver), Management of Information Systems and Project Management.

## **MEMBERSHIP TO SOME STATISTICAL ASSOCIATIONS**

- 1) Elected Member of the International Statistical Institute (ISI)
- 2) Elected Member of the International Association for Statistical Computing (IASC)
- 3) Member of Uganda Statistical Society (USS)

## **REFERENCES**

<b>Name of Referee</b>	<b>Physical Address</b>
Prof. Nabugoomu Fabian	Office of the Deputy Vice Chancellor, Kyambogo University, P. O. Box 1, Kampala, Uganda
Dr. Jehopio Peter Jegrace	School of Statistics and Planning, Makerere University, P. O. Box 7062, Kampala Uganda.
Prof. Xavier Mugisha	Makerere University, Economic Policy Research Centre, P. O. Box 7062, Kampala Uganda.

## **APPROVAL**

I confirm that the above descriptions are a true representation of me the undersigned.

**Ronald WESONGA, PhD**

**Date: September 2015**