

Dr. Muhammad Ahmed SHEHZAD

Associate Professor (Tenured) (HEC Approved Supervisor)

Department of Statistics

Bahauddin Zakariya University Multan

Personal Details

Date of Birth **February 17, 1984.**

Marital Status **Married.**

Nationality **Pakistani.**

Permanent address **D-105, street 04, Royal Orchard, Multan Public School Road, Multan.**

email **ahmad.shehzad@bzu.edu.pk.**

mobile **0092-332-6069535.**

Education

2009–2012 **PhD.**, *University of Burgundy*, Dijon, France.
PhD in Statistics

2008–2009 **MS.**, *University of Burgundy*, Dijon, France.
Masters in Applied Mathematics, Statistics and Computer Science

2002–2006 **BS.**, *Bahauddin Zakariya University*, Multan, Pakistan.
BS in Statistics

2000–2002 **HSSC**, Govt. College Civil Lines Multan, Pakistan.
Mathematics, Statistics, Economics

1998–2000 **SSE**, Govt. Pilot Secondary School Multan, Pakistan.

Experience

January 2021–
Continue **Associate Professor (Tenured)**, *Bahauddin Zakariyya University Multan*, Multan,
Pakistan.

January
2013–2020 **Assistant Professor (TTS)**, *Bahauddin Zakariyya University Multan*, Multan,
Pakistan.

Teaching Experience

10 years of Teaching experience of various courses to Under-Graduate, Graduate and Post-Graduate students. From 2013 to 2023 (continued.)

Few courses taught at Bahauddin Zakariya University Multan:

1. Advance Stochastic Processes (to PhD Statistics)
2. Advance Survey Sampling (to PhD Statistics)
3. Applied Multivariate Analysis (to MPhil Statistics)
4. Advance Survey Sampling (to MPhil Statistics)
5. Time Series (to MPhil Statistics)
6. Sampling and sampling techniques (completed to MSc Statistics)
7. Decision Theory (to MSc Statistics)
8. Time Series (to BS Statistics)
9. Sampling (to BS Statistics)
10. Statistical Methods and Estimation (to BS Advance Materials Science)
11. Statistical Inference (to Bachelor in Business Administration (BBA))
12. Regression analysis and econometrics (completed to MSc Statistics)
13. Application of Statistics in Social Research (completed to MSc Sociology)
14. Probability and Statistics (completed to BS Computer Science)

Some Research Supervision

Currently supervising research to Doctoral, Post-graduate, Graduate and Under-Graduate students at Department of Statistics, Bahauddin Zakariya University, Multan (Doctoral Students)

- Adnan Bashir , (2017-2021)
- Imran Mushtaq , (2018-)
- Nadeem Intezar , (2019-)
- Saira Anwar , (2019-)

(Master of Philosophy (Selected students))

- Humera Safdar , Calibration under different designs. (2013-2015)
- Bushra Rasool . Principal components calibration in survey sampling. (2013-2015)
- Nighat Iqbal , Small area estimation of demographic variables. (2013-2015)
- Tabassum Rasool , Performance comparison of shrinkage methods. (2014-2016)
- Muhammad Aleem , Application of modern imputations methods to treat nonresponse in survey sample. (2014-2016)
- Fatima Noor , Methods to treat ill-conditioned data in survey sampling. (2014-2016)
- Akasha Rehman , Statistical investigation of the factors influencing the occurrence of the chronic urticaria. (2014-2016)
- Ayesha Niaz , Principal components calibration in presence of heteroscedasticity. (2015-2017)
- Bushra Malik , Regression imputation versus other modern imputation methods in survey sampling. (2015-2017)
- Bushra Jahangir, Application of GREG estimator on data. (2015-2017)
- Affa Shakeel , Penalized calibration under different parameters. (2015-2017)
- Masooma Murid , Ridge calibration in presence of heteroscedasticity. (2015-2017)
- Farah Zahra , Moment calibration estimation in survey sampling. (2015-2017)
- Abida Hameed , Capture Recapture and Indirect sampling in survey sampling. (2016-2018)
- Mehreen Hassan , Quantile Regression and Growth Charts Development of School Aged Children in Southern Punjab. (2016-2018)
- Abida Hameed , Capture Recapture and Indirect sampling in survey sampling. (2016-2018)
- Sidra Bibi , Principal Components analysis and Independent component analysis. (2016-2018)
- Moosa Yaseen , Randomized Response technique to predict the number of drug users in Multan.

(2016-2018)

- **Neelam Bukhari**, Capture Recapture sampling in surveys. (2017-2019)
- **Memoona**, Modern imputation methods in survey sampling. (2017-2019)
- **Javaria Mehmood**, The Use of Randomized Response Technique to Measure the Induced Abortion Levels in Multan. (2017-2019)
- **Shahid Nawaz**, Detecting the number of examination cheaters Randomized Response Technique in surveys.(2017-2019)

(Bachelor of Science)

- **Mehreen Hassan** , Performance comparison of Horvitz Thompson estimator under equal and unequal sampling designs. (2012-2016)
- **Moosa Yaseen** , Effect of smartphones on students performance. (2012-2016)
- **Ratio estimation of total number of study hours of the students of B.Z.U. Multan** , Calibration under different designs. (2012-2016)
- **Muhammad Shakil** , Calibration estimation of total number of study hours of the students B.Z.U Multan. (2012-2016)
- **Nargis Lateef** , (2013-2017)
- **Aqsa** , (2014-2018)
- **Junaid ur Rehman** , (2014-2018)
- **Aiman** , (2015-2019)
- **Khalid** , (2015-2019)

Research Projects in Progress

- Currently conducting a research project titled 'Statistical analysis of contribution level of various risk factors involved in upper urinary tract stones formers and its chemical composition of Multan region'. Funded by the Higher Education Commission of Pakistan
- Statistical analysis of Chronic Urticheria'. A Bahauddin Zakriyya University funded project.

Certificates of Languages

An excellent ○ **English:**

command ○ TOEIC (2008)

over both ○ IELTS (2007)

English and ○ **French:**

French ○ Institut de Langue et de Culture Francaises, Institut Catholique de Paris, France
languages (July-September 2008)

○ Alliance Francaises Lahore, Pakistan (January-June 2008)

Doctoral Thesis

title *Penalization and Data Reduction of Auxiliary Variables in Survey Sampling*

advisor Hervé Cardot and Camelia Goga, University of Burgundy, Dijon

- description Developed three new principal component calibration estimators of population total
- Calibration on second moment of the principal components
 - Partial principal component calibration
 - Estimated principal component calibration

Research Interests

- Survey Sampling
- Data Reduction Techniques
- Calibration Estimation
- Ridge Regression Estimation
- Principal Components Regression
- Multivariate Analysis

Research Reports

- Regression estimation in survey Sampling: Theoretical Discussion, Research Report **MS(2009)**
- Model Selection Uncertainty in Prognostic Models for Coronary Heart Disease, Research Report **BS(2006)**

Articles

1. Published

title *A Note on the Partial Penalized Calibration.*
 authors Goga, C., and Shehzad, M. A. , **(2014) IF (0.334)**
 Journal Pakistan Journal of Statistics, Vol. 30(4), 429-438.

2. Published

title *Calibration and Partial Calibration on Principal Components when the Number of Auxiliary Variables is Large.*
 authors Cardot, H., Goga, C., and Shehzad, M. A. **(2017) IF (0.886)**
 Journal Statistica Sinica, vol 27, 243-260

3. Published

title *Development and Validation of a New HPLC Method For the Detection of 5- Fluorouracil In Mobile Phase and In Plasma.*
 Journal Current Pharmaceutical Analysis, Volume 12
 authors Muhammad Hanif, Muhammad Faheem Akhtar, Shabana Naeem, Muqet Wahid and Muhammad Ahmad Shehzad, **(2017)IF (0.859)**

4. Published

title *Heterosis for some physio-morphological plant traits in spring wheat crosses.*
 Journal Pure and Appl. Biol., 6(4):1103-1110,
 authors Shahzadi Mahpara, Muhammad Ishaq Asif Rehmani, Safdar Hussain, Javaid Iqbal, Muhammad Kamran Qureshi, Muhammad Ahmed Shehzad and Javed Shabbir Dar, **(2017)**

5. Published

title *Insect pollinator diversity in four forested ecosystems of southern Punjab, Pakistan.*
 Journal Saudi Journal of Biological Sciences doi.org/10.1016/j.sjbs.2018.02.007, Available online

- authors Muhammad Amjad Bashir, Shafqat Saeed, Asif Sajjad, Khalid Ali Khan, Hamed Ali Ghramah, Muhammad Ahmad Shehzad, Hussaini Mubarak, Nosheen Mirza, Shahzadi Mahpara, Muhammad Ishaq Asif Rehmani and Mohammad Javed Ansari **(2018)IF(3.138)**
6. Published
 title *Pollination biology of Albizia lebbeck (L.) Benth. (Fabaceae: Mimosoideae) with reference to insect floral visitors.*
 Journal Saudi Journal of Biological Sciences <https://doi.org/10.1016/j.sjbs.2018.12>, Online published 04-12-2018
 authors Abdul Latif, Saeed Ahmad Malik, Shafqat Saeed, Syed Muhammad Zaka, Zahid Mahmood Sarwar, Muqarrab Ali, Muhammad Farooq Azhar, Muhammad Javaid, Muhammad Ishtiaq, Unsar Naeem-Ullah, Mamoon Naoreen, Khalid Ali Khan, Hamed A. Ghramh, Muhammad Ahmed Shahzad **(2018)IF(3.138)**
7. Published
 title *Quercetin Protects Against Stress-Induced Anxiety- and Depression-Like Behavior and Improves Memory in Male Mice.*
 Journal Physiological Research. Vol (67), pp 795-808.
 authors N. SAMAD, A. SALEEM, F. YASMIN, M. A. SHEHZAD **(2018)IF(1.616)**
8. Published
 title *Sensitive Inexpensive HPLC-UV Method for Simultaneous Monitoring of Pantoprazole and Domperidone in Raft Forming Bilayer Tablets.*
 Journal Latin American Journal of Pharmacy. Vol 37(9), pp 1899-1904.
 authors Muhammad HANIF, Ghulam ABBAS, Akhtar RASUL, Sajid M. KHAN, Muhammad A. SHEHZAD, Hafeezullah KHAN and Safirah MAHEEN. **(2018)IF(0.401)**
9. Published
 title *Purple Nutsedge (Cyperus rotundus) Control through Interference by Summer Crops.*
 Journal International Journal Of Agriculture and Biology. DOI: 10.17957/IJAB/15.0997.
 authors Javaid Iqbal, Antonio Ditommaso, Muhammad Ishaq Asif Rehmani, Khawar Jabran, Safdar Hussain, Wajid Nasim, Shah Fahad, Muhammad Ahmad Shehzad and Anser Ali. **(2019)IF (0.902)**
10. Published
 title *Beta-Cyclodextrin and Maltodextrin Based Solid Dispersion of Meloxicam to Enhance the Solubility of Meloxicam; Formulation and In-vitro Evaluation.*
 Journal J.Chem.Soc.Pak., Vol. 41, No. 01, 2019. pp 133-142.
 authors Muhammad Zaman, Muhammad Hanif, Syed Saeed Ul Hassan, Javed Iqbal and Muhammad Ahmad Shehzad. **(2019)IF (0.28)**
11. Published
 title *Determination of Qnr allele frequencies in Fluoroquinolone resistant Pseudomonas aeruginosa isolated from burn wounds.*
 Journal J Pak Med Assoc. 69(2):250-252.
 authors Kashmala Rafiq, Khola Ahmad, Naheed Ahmad, Madiha Gohar, Muhammad Ahmad Shehzad, Muhammad Qamar Saeed. **(2019)IF (0.718)**
12. Published
 title *Genetic polymorphism in association with susceptibility to tuberculosis: a study in a Pakistani population.*
 Journal Brazilian Journal of Microbiology. (2019). <https://doi.org/10.1007/s42770-019-00048-8>.

- authors Asma Gul Naz, Muhammad Assad Aslam, Abrar Ul Haq Khan, Sumaira Rasul, Hamid Manzoor, Rehana Iqbal, Ahmed Shehzad and Muhammad Ali. **Vol 50(2). pp. 429-434.(2019), IF (1.81)**
13. Published
 title *Orodispersible Tablets of Epalrestat for Immediate Release Studies.*
 Journal Lat. Am. J. Pharm. 38 (4): 813-20.
 authors Zunaira ALVI, Imran NAZIR, Zobaria A. JAVED, Ghulam ABBAS, Muhammad HANIF and Muhammad A. SHEHZAD. **(2019)IF(0.401)**
14. Published
 title *Selection of appropriate time scale with Boruta algorithm for regional drought monitoring using multi-scaler drought index.*
 Journal Tellus A: Dynamic Meteorology and Oceanography (ZELA) (IF(1.738)). <https://doi.org/10.1080/16000870.2019.1604057>
 authors Zulfiqar Ali, Ijaz Hussain, Muhammad Faisal, Elsayed Elsherbini Elashkar, Showkat Gani, Muhammad Ahmed Shehzad. **(2019)**
15. Published
 title *Influence of single nucleotide polymorphism in the IFNG towards susceptibility to tuberculosis in Pakistani Population.*
 Journal Annals of Human Genetics. DOI: 10.1111/ahg.12325
 authors Asma Gul Naz, Muhammad Assad Aslam, Abrar Ul Haq Khan, Sumaira Rasul, Hamid Manzoor, Ahmed Shehzad and Muhammad Ali. **(2019)IF(1.529)**
16. Published
 title *Auxiliary Information Based Mixed EWMA–CUSUM Mean Control Chart with Measurement Error.*
 Journal Iranian Journal of Science and Technology, Transactions A: Science. <https://doi.org/10.1007/s40995-019-00774-6>.
 authors Afshan Riaz, Muhammad Noor-ul-Amin, Muhammad Ahmed Shehzad and Muhammad Ismail.. **(2019) IF(0.692)**
17. Published
 title *Redescending M-Estimator For Robust Regression.*
 Journal Journal of Reliability and Statistical Studies.
 authors Muhammad Noor-Ul-Amin, Salah Ud Din Asghar, Aamir Sanaullah and Muhammad Ahmad Shehzad. **(ISSN (Print): 0974-8024, (Online): 2229-5666 Vol. 11, Issue 2 (2018): 69-80)**
18. Published
 title *Capture Recapture Sampling Techniques: Artificial and Real Population Data Analysis.*
 Journal Journal of Public Value and Administration Insights (JPVAI).
 authors Neelam Bukhari, Sadia Bukhari, Muhammad Ahmed Shehzad. **2(3); 15-16 (2019)**
19. Published
 title *Generalized multiple dependent state sampling plans for coefficient of variation.*
 Journal Communications in Statistics - Theory and Methods. <https://doi.org/10.1080/03610926.2020.1869989>
 authors Gadde Srinivasa Rao, Muhammad Aslam , Rehan Ahmad Khan Sherwani, Muhammad Ahmed Shehzad , and Chi-Hyuck Jun. **(2021)IF(0.612)**
20. Published

- title *PARAMETER ESTIMATION OF THE PARETO DISTRIBUTION USING LEAST SQUARES APPROACHES BLENDED WITH DIFFERENT RANK METHODS AND ITS APPLICATIONS IN MODELLING NATURAL CATASTROPHES.*
- Journal Natural Hazards
- authors Shahzad Hussain, Sajjad Haider Bhatti, Tanvir Ahmad and Muhammad Ahmed Shehzad. **(2021)IF(2.427)**
21. Published
- title *Sensitive inexpensive HPLC-UV method for estimation of Cyproterone acetate in pharmaceuticals.*
- Journal Latin American Journal of Pharmacy.
- authors Muhammad Hanif, Khalid Hussain, Muhammad Ahmed Shehzad and Ghulam Abbas. **(2021)IF(0.240)**
22. Published
- title *Reservoir Inflow Prediction by Employing Response Surface-Based Models Conjunction with Wavelet and Bootstrap Techniques .*
- Journal Mathematical Problems in Engineering
- authors Muhammad Ahmed Shehzad, Adnan Bashir, Muhammad Noorul Amin, Saima Khan Khosa, Muhammad Aslam, and Zubair Ahmad. **(2021)**
- IF(1.305)
23. Published
- title *Improved anti-inflammatory effect of curcumin by designing self-emulsifying drug delivery system.*
- Journal Drug Development and Industrial Pharmacy
- authors Muhammad Hanif, Nabeela Ameer, Muhammad Ahmed Shehzad, Muhammad Azeem, Hafsa Latif, and Muhammad Usman. **(2022)IF(3.232)**
24. Published
- title *Nutritional status and growth centiles using anthropometric measures of school-aged children and adolescents from Multan district.*
- Journal Archives de Pédiatrie
- authors Muhammad Ahmed Shehzad, Haris Khurram, Zafer Iqbal, Maqsooda Parveen, Muhammad Nauman Shabbir. **(2022)IF(1.180)**
25. Published
- title *Response Surface Models Using the Wavelet Technique for Reservoir Inflow Prediction.*
- Journal Mathematical Problems in Engineering
- authors Adnan Bashir, Muhammad Ahmed Shehzad, Aamna Khan, Nabeel Asghar, Muhammad Aslam, Ramy Aldallal, Mutua Kilai and Mohamed Saad Mohamed. **(2022)IF(1.180)**
26. Accepted
- title *Machine Learning Methods for Predicating Major Types of Rheumatic Heart Diseases in Children of Southern Punjab, Pakistan.*
- Journal Frontiers in Cardiovascular Medicine
- authors Haris Khurram, Sana Shahid, Baki Billah, Atif Akbar, Muhammad Ahmed Shehzad, Muhammad Farhan Shabbir . **(2022)IF(5.846)**
27. Accepted
- title *Supervised ML Algorithms in the high dimensional Applications for Dimension reduction.*
- Journal Mathematical Problems in Engineering.

- authors Hina Tabassum, Muhammad Mutahir Iqbal, Nabeel Asghar, Mohammed Yusuf, Mutua Kilai and Ramay Aldallal. **(2022)IF(1.401)**
28. Published
 title *Modeling of Body Mass Index, Body Fat Percentage and Body Adiposity Index for Measuring Obesity and Its Risk in School-Going Children of District Multan.*
 Journal Pakistan Pediatric Journal
 authors Maqsooda Parveen, Haris Khurram, Sana Shahid, Muhammad Ahmed Shehzad. **(46(2),2022)IF(Y)**
29. Published
 title *Corporate risk management: An empirical evidence on foreign currency derivatives' use by Malaysian nonfinancial firms.*
 Journal Journal of Public Value and Administrative Insight
 authors Abdullah Bin Omar, Haris Khurram, Maqsooda Perveen, Abdul Rauf Kashif, Muhammad Ahmed Shehzad and Neelam Bukhari. **(2022)**
30. Published
 title *Job Resources and Employee turnover: Examining the role of employee engagement and job demands.*
 Journal Journal of Public Value and Administrative Insight
 authors Rashid Munir, Abdulwahab, Maqsooda Perveen, Aamna Khan, Abdul Rauf Kashif, Muhammad Ahmed Shehzad and Neelam Bukhari. **5(2),(2022)**
31. Published
 title *Use of Wavelet and Bootstrap Methods in Streamflow Prediction.*
 Journal Journal of Mathematics
 authors Adnan Bashir, Muhammad Ahmed Shehzad,Aamna Khan,Ayesha Niaz,Muhammad Nabeel Asghar, Ramy Aldallal, Mutua Kilai. **(2023)**
32. Published
 title *Use of Wavelet and Bootstrap Methods in Streamflow Prediction.*
 Journal Pakistan Journal of Statistics
 authors Muhammad Ahmed Shehzad, Haris Khurram, Ayesha Niaz,and Sharqa Hashmi. **(2023)**
33. Published
 title *Estimation of Sensitive Attributes Using Randomized Response Techniques in Sample Surveys.*
 Journal Pakistan Journal of Humanities and Social Sciences
 authors Muhammad Ahmed Shehzad, Ansa Bibi, Aamna Khan. **(2023)**
34. Published
 title *Estimation of Sensitive Attributes Using Randomized Response Techniques in Sample Surveys.*
 Journal Pakistan Journal of Humanities and Social Sciences
 authors Muhammad Ahmed Shehzad, Ansa Bibi, Aamna Khan. **(2023)**
35. Under Review
 title *Selection of Mother Wavelet Functions using Maximal Overlap Discrete Wavelet Transform for Hydrological Data.*
 Journal Pakistan Journal of Humanities and Social Sciences
 authors Muhammad Ahmed Shehzad, Adnan Bashir, Aamna Khan. **(2023)**

36. Under Review
 title *Selection of Mother Wavelet Functions using Maximal Overlap Discrete Wavelet Transform for Hydrological Data.*
 Journal Pakistan Journal of Humanities and Social Sciences
 authors Muhammad Ahmed Shehzad, Adnan Bashir, Aamna Khan. **(2023)**
37. Under Review
 title *Instrumental-Variable Calibration Estimator For Endogeneity In Survey Sampling*
 Journal Journal of Mathematics
 authors Muhammad Ahmed Shehzad, Nadeem Intizar, Haris Khurram. **(2023)**
38. **Conference proceedings**
- *Principal component regression with survey data. Application on the French Media Audience.* 58th ISI World Statistics Congress, Dublin, **2011**.
 - *Regression en composantes principales en sondages.* Colloque Francophone sur les Sondages, Rennes, 5-7 November, **2012**.

Some Conferences

- *Adaptive principle components calibration in survey sampling.* 11th International Statistics Days Conference. Muğla Sıtkı Koçman University Department of Statistics, 3 - 7 October **2018**.
- *Calibration and Partial Calibration on Principal Components when the Number of Auxiliary Variables is Large.* The 14th International Conference on Statistical Sciences, Karachi, 14-16 March, **2016**.
- *Principal Component Regression with Survey Data. Application on the French Media audiences.* 11th Islamic Countries Conference on Statistical Sciences [ICCS-11], Lahore, 19-22 December, **2011**.
- *Principal Component Regression with Survey Data. Application on the French Media audiences.* 58th Congress, ISI Dublin 21-26 August, **2011**.
- *Principal Components Regression versus Ridge Regression in Survey Sampling.* XIIeme Journées des Ecoles Doctorales Carnot et Pasteur, Dijon, 6 May, **2011**.
- *Some Properties of the Ridge Regression Estimator with Survey data at Methodes Avancées pour l'Analyse de Sondages Complexes.* University of Burgundy, IMB, Dijon, 9 November, **2010**.
- *Applications des estimateurs de type ridge et en composantes principales en sondages.* Deuxieme Journée de Rencontre Dijon-Besancon en Probabilités et Statistique. Université de Bourgogne, IMB, Dijon 28 January **2011** (presented by Camelia Goga).
- *Régression en composantes principales versus ridge régression en sondages. Application aux données Médiamétrie.* 43ème Journées de Statistique (Société Française de Statistique) at Gammarth, Tunisie 23-27 May 2011 (presented by Camelia Goga).

Course Attended

- ECAS course on small area estimation, Trier, Germany, 8-10 August, **2011**.

Course Delivered as a Speaker

- Data Clinic: An Introduction to R, Multan, Pakistan, 23 November, **2015**.

Computer Skills

- R Language for statistical analysis
- LATEX
- SPSS

Member Examination Committees

- External examiner of 04 MPhil (Statistics) research thesis at Government College University Faisalabad.
- External examiner of 13 MPhil (Mathematics) research thesis at National College of Business Administration and Economics, Multan Campus.
- External examiner of MSc (Statistics) as paper setter at Punjab University, Lahore.

Awards and Achievements

- 2002-2006 **Merit Scholarship during BS**, Bahaudin Zakariya University, Multan
- 2002-2006 **Second Position in BS**, Bahaudin Zakariya University, Multan
- 2008-2012 **HEC overseas scholarship for MPhil leading to PhD**, France.

Membership of University Purchase Committee

- Member of Bahauddin Zakariya University (BZU) Purchase Committee, since November, **2015** to May **2019**. This committee evaluates the purchases of all sorts in the BZU.
- Secretary and Member of Departmental Purchase Committee, since, **2016**. This committee evaluates the purchases of all sorts in the Department of Statistics.
- Secretary and Member of Departmental Library Committee, since, **2016**.

Member of Editorial Advisory Board

- January 2014–continue **Editor**, *Journal of Agricultural and Environmental Sciences*, Pakistan.
- April 2013–continue **Journal of Statistics**, *I have reviewed many papers for the Journal of Statistics and have been a member of their Editorial Advisory Board*, Pakistan.

References

- Hervée Cardot** **Professor of Statistics**, *Institute of Mathematics*, University of Burgundy, Dijon, France.
herve.cardot@u-bourgogne.fr
- Camelia Goga** **Professor of Statistics**, *Institute of Mathematics*, University of Burgundy, Dijon, France.
camelia.goga@u-bourgogne.fr
- Jean-Claude Deville** **Professor of Statistics**, CREST-ENSAI, France.
deville@ensai.fr
- Anne Ruiz-Gazen** **Professor of Statistics**, Toulouse School of Economics, Toulouse, France.
anne.ruiz-gazen@tse-fr.eu

Khalifa Es-Sebaiy Associate Professor of Statistics, National School of Applied Sciences, Cadi Ayyad University, Marrakesh, Morocco.
k.essebaiy@uca.ma

Online access of my thesis

My PhD thesis can be accessed online at: http://ressources-numeriques.u-bourgogne.fr/theses/28005786/these_SHEHZAD_MUHAMMAD_00_00.pdf.