Firdos Khan

Associate Professor

School of Natural Sciences

Email: firdos.khan@sns.nust.edu.pk
Contact: 5190855602
LinkedIn: https://www.linkedin.com/in/firdos-khan-yousafzai-1b560666/

About

Dr. Firdos Khan is working as Associate Professor in the School of Natural Sciences. Dr. Firdos Khan has a PhD in Statistics. Dr. Firdos Khan has published 40 research articles & conference papers having a citation count of 817, carried out 0 projects and filed 0 intellectual property.

Qualifications

PhD in Statistics 2013 - 2017
Universität Klagenfurt , Austria

MPhil in Statistics 2005 - 2007
Quaid-i-Azam University , Pakistan

MSc in Statistics 2001 - 2003
University of Peshawar , Pakistan

BSc in Mathematics 1999 - 2001
University of Peshawar , Pakistan

Experience

Associate Professor 2025- Present
School of Natural Sciences

Assistant Professor 2024 - 2024
School of Natural Sciences

Assistant Professor 2023 - 2024
School of Natural Sciences

Assistant Professor 2019 - 2019
School of Natural Sciences

Assistant Professor 2019 - 2023
School of Natural Sciences

Assistant Professor 2018 - 2019
International Islamic University, Islamabad , H-10 Sector, Islamabad

Scientific Officer (SPS-08) 2008 - 2013
Global Change Impact Studies Centre (GCISC) , Emigration Tower, G-8/1 Islamabad

Awards

YSSP 2012
It was a research program for three months and application were called form around the globe. I got selected and complete my project and awarded by a certificate.

Research Articles

Unveiling divergent crop signals in the face of climate variability and ensemble climate projections using CMIP6 data in the South-West of Pakistan 2025

Beenish Javed Firdos Khan Muhammad Abbas Shaukat Ali

Stochastic Environmental Research and Risk Assessment

Impact Factor: 3.600 | **Quartile:** 1

DOI: https://doi.org/10.1007/s00477-025-03056-3

Enhancing Drought Risk Assessment in the Punjab, Pakistan: A Copula-Based Modeling Approach for Future Projections 2024

Muhammad Akram Firdos Khan Hamd Ullah Shaukat Ali Azfar Hussain

Journal of Applied Meteorology and Climatology, Volume 63, Issue 10, Pages 1207–1225

Impact Factor: 2.600 | **Quartile:** 3 | **Citations:** 1

DOI: DOI: 10.1175/JAMC-D-24-0041.1

Association of precipitation extremes and crops production and projecting future extremes using machine learning approaches with CMIP6 data 2024

Firdos Khan Gunter Spöck Yuei-An Liou Shaukat Ali

Environmental Sciences and Pollution Research, Volume:31, Issue:42, Page:54979-54999.

Impact Factor: N/A

DOI: https://doi.org/10.1007/s11356-024-34652-5

Assessing the impacts of temperature extremes on agriculture yield and projecting future extremes using machine learning and deep learning approaches with CMIP6 data 2024

Firdos Khan Yuei-An Liou Gunter Spöck Xue Wang Shaukat Ali

International Journal of Applied Earth Observation and Geoinformation , Volume 132 , Article Number 104071

Impact Factor: 7.600 | **Quartile:** 1 | **Citations:** 6

DOI: https://doi.org/10.1016/j.jag.2024.104071

Modeling and Monitoring CO2 Emissions in G20 Countries: A Comparative Analysis of Multiple Statistical Models 2024

Anwar Hussian Firdos Khan Olayan Albalawi

Sustainability , Volume 16(14), Article Number 6114

Impact Factor: 3.300 | **Quartile:** 2 | **Citations:** 10

DOI: https://doi.org/10.3390/su16146114

Analysing spatiotemporal drought patterns in Punjab Province, Pakistan, utilizing SPI and SPEI 2024

Anwar Hussain Muhammad Suliman Firdos Khan

Theoretical and Applied Climatology, Pages 1-21

Impact Factor: 2.800 | **Quartile:** 3 | **Citations:** 2

DOI: https://doi.org/10.1007/s00704-024-05090-7

Assessment of the impacts of climate change on the construction of homogeneous climatic regions and ensemble climate projections using CMIP6 data over Pakistan 2024

Muhammad Abbas Firdos Khan Yuei-An Liou Hamd Ullah Beenish Javed Shaukat Ali

Atmospheric Research, Volume: 304, Article Number: 107359

Impact Factor: 5.5 | **Quartile:** 1 | **Citations:** 9

DOI: 10.1016/j.atmosres.2024.107359

Enhanced climate projections over Sindh, Pakistan: a bayesian model averaging ensemble methodology 2024

Aatka Irfan Firdos Khan Muhammad Abbas Shaukat Ali

Modeling Earth Systems and Environment, Volume: 10, Pages 4401–4413

Impact Factor: 2.700 | **Quartile:** 3 | **Citations:** 3

DOI: 10.1007/s40808-024-02028-w

A 5-km gridded product development of daily temperature and precipitation for Bangladesh, Nepal, and Pakistan from 1981 to 2016 2023

Shaukat Ali Zulfiqar A. Bhutta Michelle S. Reboita Muhammad Arif Goheer Shiva Ebrahimi Jose Roberto Rozante Rida S. Kiani Sher Muhammad Firdos Khan Md Mizanur Rahman Madan L. Shreshta Li Dan

Geoscience Data Journal, Pages 1-11

Impact Factor: 3.2 | **Quartile:** 2 | **Citations:** 5

DOI: https://doi.org/10.1002/gdj3.217

Development of high resolution daily gridded precipitation and temperature dataset for potohar plateau of indus basin 2023

Muhammad Wasif Khan Shakil Ahmad Zakir Hussain Dahri Zain Syed Khalil Ahmad Firdos Khan Muhammad Azmat

Theoretical and Applied Climatology, Volume 154, pages 1179–1201

Impact Factor: 3.4 | **Quartile:** 2 | **Citations:** 7

DOI: https://doi.org/10.1007/s00704-023-04626-7

Assessment of precipitation extremes and their association with NDVI, monsoon and oceanic indices over Pakistan 2023

Azfar Hussain Ishtiaq Hussain Shaukat Ali Waheed Ullah Firdos Khan Abolfazl Rezaei Safi Ullah Haider Abbas Asima Manzoom Jianhua Cao Jinxing Zhou
Atmospheric Research , Volume 292, Article Number: 106873
Impact Factor: 5.5 | **Quartile:** 1 | **Citations:** 29
DOI: 10.1016/j.atmosres.2023.106873

Assessment of climate change impacts on the construction of homogeneous climate zones and climate projections during the twenty first century over Pakistan 2023
Talha Farooq Firdos Khan Hamd Ullah Zahid-ur- Rehman Anum Luni
Stochastic Environmental Research and Risk Assessment, Pages 1-25
Impact Factor: 3.821 | **Quartile:** 1 | **Citations:** 5
DOI: https://doi.org/10.1007/s00477-023-02491-4

Spatiotemporal temperature trends over homogenous climatic regions of Pakistan during 1961–2017 2023
Azhar Hussain Ishtiaq Hussain Shaukat Ali Waheed Ullah Firdos Khan Safi Ullah Haider Abbas Asima Manzoom Jianhua Cao Jinxing Zhou
Theoretical and Applied Climatology , Pages 1-19
Impact Factor: 3.410 | **Quartile:** 3 | **Citations:** 23
DOI: https://doi.org/10.1007/s00704-023-04484-3

Twenty-first century climate extremes' projections and their spatio-temporal trend analysis over Pakistan 2023
Firdos Khan Shaukat Ali Hamd Ullah Sher Muhammad
Journal of Hydrology-Regional Studies, Volume 45, Article Number 101295
Impact Factor: 5.437 | **Quartile:** 1 | **Citations:** 19
DOI: https://doi.org/10.1016/j.ejrh.2022.101295

Performance evaluation of Standardized Copula-based Drought Index with Reconnaissance Drought Index and Standardized Precipitation Temperature Index using severity–duration frequency curves over Balochistan, Pakistan 2022
Hamd Ullah Muhammad Akbar Firdos Khan Muhammad Amjad
International Journal of Climatology , Pages 1-16
Impact Factor: 3.651 | **Quartile:** 2 | **Citations:** 4
DOI: 10.1002/joc.7985

Modelling the impact of climate change on dengue outbreaks and future spatiotemporal shift in Pakistan 2022
Alia Saeed Shaukat Ali Firdos Khan Sher Muhammad Michelle Simões Reboita Abdul Wali Khan Muhammad Arif Goheer Mumtaz Ali Khan Ramesh Kumar Aamer Ikram Aliya Jabeen Sathirakorn Pongpanich
Environmental Geochemistry and Health , Pages 1-17
Impact Factor: 4.898 | **Quartile:** 1 | **Citations:** 11
DOI: https://doi.org/10.1007/s10653-022-01429-z

The Karakoram Anomaly: Validation through Remote Sensing Data, Prospects and Implications 2022
Haleema Attaullah Asif Khan Mujahid Khan Firdos Khan Shaukat Ali Tabinda Masud Muhammad Shahid Iqbal
Water , Volume 14(19), Article Number 3157
Impact Factor: 3.530 | **Quartile:** 2 | **Citations:** 3
DOI: https://doi.org/10.3390/w14193157

Water availability and response of Tarbela Reservoir under the changing climate in the Upper Indus Basin, Pakistan 2022
Firdos Khan
Scientific Reports , Volume 12, Issue 1, Article Number 15865
Impact Factor: 4.996 | **Quartile:** 2 | **Citations:** 15
DOI: https://doi.org/10.1038/s41598-022-20159-x

A multi-scalar statistical approach to develop Standardized Copula-based Drought Index (SCDI) for drought risk analysis 2022
Hamd Ullah Muhammad Akbar Firdos Khan Muhammad Amjad
International Journal of Environmental Science and Technology, Vol:20, Pages7861-7876
Impact Factor: 3.519 | **Quartile:** 3 | **Citations:** 1
DOI: https://doi.org/10.1007/s13762-022-04411-5

Climate change and spatio-temporal trend analysis of climate extremes in the homogeneous climatic zones of Pakistan during 1962-2019 2022
Firdos Khan Shaukat Ali Hamd Ullah Sher Muhammad Christoph Mayer
PLoS ONE , Volume 17, Issue 7, Article Number e0271626

Impact Factor: 3.752 | **Quartile:** 2 | **Citations:** 36
DOI: https://doi.org/10.1371/journal.pone.0271626

Hydrological projections over the Upper Indus Basin at 1.5 °C and 2.0 °C temperature increase 2021
Rida Sehar Kiani Shaukat Ali Moetasim Ashfaq Firdos Khan Sher Muhammad Michelle S. Reboita Abida Farooqi
Science of the Total Environment, Volume 788, Article Number 147759
Impact Factor: 10.753 | **Quartile:** 1 | **Citations:** 29
DOI: https://doi.org/10.1016/j.scitotenv.2021.147759

Short-term forecasting of daily infections, fatalities and recoveries about COVID-19 in Algeria using statistical models 2021
Mohamed Lounis Firdos Khan
Beni-Suef University Journal of Basic and Applied Sciences, Volume 10(1), Article Number 46
Impact Factor: N/A | **Citations:** 3
DOI: 10.1186/s43088-021-00136-5

Forecasting daily new infections, deaths and recovery cases due to COVID-19 in Pakistan by using Bayesian Dynamic Linear Models 2021
Firdos Khan Shaukat Ali Alia Saeed Ramesh Kumar Abdul Wali Khan
PLoS ONE, Volume 16(6), Article Number e0253367
Impact Factor: 3.752 | **Quartile:** 2 | **Citations:** 11
DOI: https://doi.org/10.1371/journal. pone.0253367

Evaluation of CMIP5 models and ensemble climate projections using a Bayesian approach: a case study of the Upper Indus Basin, Pakistan 2021
Firdos Khan Jurgen Pilz Shaukat Ali
Environmental and Ecological Statistics, Pages 1-22
Impact Factor: 2.365 | **Quartile:** 1 | **Citations:** 21
DOI: https://doi.org/10.1007/s10651-021-00490-8

Future climatic changes, extreme events, related uncertainties, and policy recommendations in the Hindu Kush sub-regions of Pakistan 2021
Shaukat Ali Alia Saeed Rida Sehar Kiani Sher Muhammad Firdos Khan Romaisa Babar Asif Khan Muhammad Shahid Iqbal Muhammad Arif Goheer Wajid Naseem Shah Fahad
Theoretical and Applied Climatology, Volume 143, Pages 193-209
Impact Factor: 3.410 | **Quartile:** 3 | **Citations:** 11
DOI: https://doi.org/10.1007/s00704-020-03399-7

Modelling and forecasting of new cases, deaths and recover cases of COVID-19 by using Vector Autoregressive model in Pakistan 2020
Firdos Khan Alia Saeed Shaukat Ali
Chaos Solitons & Fractals, Volume 140, Article Number 110189
Impact Factor: 5.944 | **Quartile:** 1 | **Citations:** 54
DOI: https://doi.org/10.1016/j.chaos.2020.110189

Assessment of drought and wet projections in the humid climatic regions for Pakistan 2020
Hamd Ullah Muhammad Akbar Firdos Khan
Stochastic Environmental Research and Risk Assessment, Pages 1-14
Impact Factor: 3.379 | **Quartile:** 2 | **Citations:** 11
DOI: https://doi.org/10.1007/s00477-020-01879-w

Identifying hotspots cities vulnerable to climate change in Pakistan under CMIP5 climate projections 2020
Shaukat Ali Rida S. Kiani Michelle S. Reboita Li Dan Hyung-Il Eum Jaepil Cho Firdos Khan Madan L. Shreshta K. Dairaku
International Journal of Climatology, Pages 1-23
Impact Factor: 4.069 | **Quartile:** 2 | **Citations:** 33
DOI: https://doi.org/10.1002/joc.6638

Droughts' projections in homogeneous climatic regions using Standardized Precipitation Index in Pakistan 2020
Hamd Ullah Muhammad Akbar Firdos Khan
Theoretical and Applied Climatology, Volume 140, Pages 787–803
Impact Factor: 3.179 | **Quartile:** 2 | **Citations:** 22
DOI: https://doi.org/10.1007/s00704-020-03109-3

Variability and Predictability of Summer Monsoon Rainfall over Pakistan 2020
Muhammad Adnan Firdos Khan Nadia Rehman Shaukat Ali Sher Shah Hasan Muhammad Mubashar Dogar Shahbaz Mehmood Shabehul Hasoon

Asia-Pacific Journal of Atmospheric Sciences, Pages 1-9

Impact Factor: 2.100 | **Quartile:** 3 | **Citations:** 16
DOI: https://doi.org/10.1007/s13143-020-00178-2

A novel approach for modelling pattern and spatial dependence structures between climate variables by combining mixture models with copula models 2019

Firdos Khan Jürgen Pilz Gunter Spöck

International Journal of Climatology, Volume 40, Issue 2, Pages 1049-1066

Impact Factor: 3.928 | **Quartile:** 1 | **Citations:** 13
DOI: 10.1002/joc.6255

Assessment of climate extremes in future projections downscaled by multiple statistical downscaling methods over Pakistan 2019

Shaukat Ali Hyung-Il Eum Jaepil Cho Li Dan Firdos Khan K. Dairaku Madan Lall Shrestha Syewoon Hwang Wajid Nasim Imtia Ali Khan Shah Fahad

Atmospheric Research, Volume 222, Pages 114-133

Impact Factor: 4.676 | **Quartile:** 1 | **Citations:** 134
DOI: 10.1016/j.atmosres.2019.02.009

Construction of homogeneous climatic regions by combining cluster analysis and L-moment approach on the basis of Reconnaissance Drought Index for Pakistan 2019

Hamd Ullah Muhammad Akbar Firdos Khan

International Journal of Climatology, -

Impact Factor: 3.928 | **Quartile:** 1 | **Citations:** 37
DOI: 10.1002/joc.6214

Evaluation of statistical downscaling models using pattern and dependence structure in the monsoon-dominated region of Pakistan 2018

Firdos Khan Shaukat Ali Jürgen Pilz

Weather, Volume 73, Issue 6, Pages 193-203

Impact Factor: 1.143 | **Quartile:** 4 | **Citations:** 9
DOI: 10.1002/wea.3164

Metallogenic efficiency from deposit to region–A case study in western Zhejiang Province, southeastern China 2017

Bo Zhao Ling Han Jürgen Pilz Jianjian Wu Firdos Khan Dehui Zhang

Ore Geology Reviews, Volume 86, Pages 957-970

Impact Factor: 3.993 | **Quartile:** 1 | **Citations:** 10
DOI: 10.1016/j.oregeorev.2016.10.003

Improved Hydrological Projections and Reservoir Management in the Upper Indus Basin under the Changing Climate 2017

Firdos Khan Jurgen Pilz Shaukat Ali Jurgen Pilz Shaukat Ali

Water and Environment Journal, Volume: 31 Issue: 2 Pages: 235-244

Impact Factor: 1.224 | **Quartile:** 3 | **Citations:** 21
DOI: 10.1111/wej.12237

Climate variability and its impacts on water resources in the Upper Indus Basin under IPCC climate change scenarios 2015

Firdos Khan Jürgen Pilz Shaukat Ali David A. Weiberg

International Journal of Global Warming, Volume: 8 Issue: 1 Pages: 46-69

Impact Factor: 1.286 | **Quartile:** 3 | **Citations:** 37
DOI: 10.1504/IJGW.2015.071583

Evaluation of weather research and forecasting model for the assessment of wind resource over Gharo, Pakistan 2015

Muhammad Amjad Qudsia Zafar Firdos Khan Muhammad Munir Sheikh

International Journal of Climatology, Volume 35, Issue 8, Pages 1821-1832

Impact Factor: 3.609 | **Quartile:** 1 | **Citations:** 25
DOI: 10.1002/joc.4089

Twenty first century climatic and hydrological changes over Upper Indus Basin of Himalayan region of Pakistan 2015

Shaukat Ali Li Dan Congbin Fu Firdos Khan

Environmental Research Letters, Volume 10, Issue, 1 Article Number 014007

Impact Factor: 4.134 | **Quartile:** 1 | **Citations:** 130

DOI: 10.1088/1748-9326/10/1/014007

Editorial Activities

International Journal of Climatology 2025
Reviewed Papers for Journals
Impact Factor: 2.8

Journal of Cleaner Production 2025
Reviewed Papers for Journals
Impact Factor: 9.7

Science of the Total Environment 2024
Reviewed Papers for Journals
Impact Factor: 8.2

Journal of Hydrology 2024
Reviewed Papers for Journals
Impact Factor: 6.4

Science of the Total Environment 2024
Reviewed Papers for Journals
Impact Factor: 9.8

PLoS One 2023
Reviewed Papers for Journals
Impact Factor: 3.75

Discrete Dynamics in Nature and Society 2023
Reviewed Papers for Journals
Impact Factor: 1.457

PeerJ 2023
Reviewed Papers for Journals
Impact Factor: 3.06

PLoS One 2022
Reviewed Papers for Journals
Impact Factor: 3.752

2022
Reviewed Papers for Journals
Impact Factor: 3.24

2022
Reviewed Papers for Journals
Impact Factor: 1.2

2022
Reviewed Papers for Journals
Impact Factor: 2.222

2022
Reviewed Papers for Journals
Impact Factor: 0.96

2021
Reviewed Papers for Journals
Impact Factor: 3.998

2021
Reviewed Papers for Journals
Impact Factor: 4.728

2021
Reviewed Papers for Journals
Impact Factor: 3.998

2020
Reviewed Papers for Journals

Impact Factor: 1.656

2020

Reviewed Papers for Journals
Impact Factor: 1.847

2019

Reviewed Papers for Journals
Impact Factor: 2.544

2018

Reviewed Papers for Journals
Impact Factor: 6.192