Muhammad Umer Arshad

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I. PROFESSIONAL EXPERIENCE

Educational Background

- Ph.D., Agriculture Economics, Inner Mongolia University, China, 2021
- M.Com., Commerce and Accounting, The Islamia University of Bahawalpur, Pakistan, 2009
- B.Com., Commerce and Auditing, The Islamia University of Bahawalpur, Pakistan, 2007

Technical Skills

- DayCent (calibration and carbon modeling), Survey Design and Analysis
- Stochastic Frontier Analysis (SFA), Data Envelopment Analysis (DEA), Gravity Models
- ARDL, Johansen co-integration, Unit Root Tests, Panel Data Regression (fixed/random effects)
- Cost–Benefit Analysis, Profitability Modeling, Risk Management Simulation
- R, Stata, Python (statistical modeling and forecasting)
- GIS and remote sensing tools: ArcGIS, QGIS (certified in GIS for Climate Action)
- Data visualization: ggplot2 (R), matplotlib (Python)
- MS Excel, STATA, EViews

Extension and Outreach Experience

1. Participated in a farmer-focused Extension meeting in Decatur, IL (2024), collaborating with USDA and ANTARES to promote switchgrass adoption and explain federal subsidy programs.
2. Contributed to the development of a Best Management Practices (BMP) guide for switchgrass production, targeting Midwestern farmers.
3. Conducted field visits and policy education under China's Grassland Ecological Compensation Policy (GECP), informing herders of livestock subsidies and conservation compliance.

Certification

- GIS for Climate Action, Esri, 2024
- National Financial Literacy Program for Youth, State Bank of Pakistan, 2020

Academic Positions Since Final Degree

- Postdoctoral Researcher, Department of Crop Science, University of Illinois at Urbana-Champaign (UIUC), 2023 to date
- Assistant Professor, IMHC, 2022 to date
- Member, Pakistan Research Center, IMHC 2022 to date
- Adjunct Instructor, Cinematography Institute, Mongolia, 2022 – 2023

[1] Citation list is available at https://scholar.google.com/citations?user=iQbRc7kAAAAJ&hl=en

- Adjunct Instructor, Ikh Zasag International University, Mongolia 2022 – 2023
- Researcher, Department of Economics, Inner Mongolia Honder College of Arts and Science (IMHC), at Hohhot China, 2021 – 2022
- Researcher, Department of Economics, Inner Mongolia University, Hohhot, China, 2014 – 2017

Other Appointments
- Assistant Director, Ittefaq Concrete Lahore, Pakistan 2012- 2013
- Internal Auditor, Ittefaq Concrete, Lahore, Pakistan 2011- 2012
- Accountant, Ittefaq Concrete at Lahore, Pakistan, 2009-2010

Honors
- Member of the Outstanding Thesis Committee at IUMC
- Chinese Government Scholarship, Inner Mongolia Agriculture University, 2018-2
- Provincial Government Scholarship, Inner Mongolia University, 2014-17

Editorship and Review Panels
1. Managing Editor, *Journal of Social Sciences and Economics*, 2022 to date
2. Academic Editor, *Plos One*, 2024 – to date
3. Reviewer, *Plos One*, 2022- to date
4. Reviewer, *Heliyon (Elsevier)*, 2022 – 2024
5. Reviewer, *Journal of Agricultural Science and Technology*, 2022-2023
6. Reviewer, *Frontiers in Agronomy* (Frontier)
7. Reviewer, *Advances in Agriculture (Hindawi)*, 2021 – 2022
8. Production Editor, Pacific International Journal, 2018 – 2022

Member in Professional Societies
4. Member, American Society of Agronomy, 2023 – 2024
5. Member of the Outstanding Thesis Committee at IUMC, 2022 – To date

INVITED LECTURES AND PRESENTATIONS

1. Guest Speaker: Cultural Exchange Event Celebrating 70 Years of China-Pakistan Diplomatic Relations, Inner Mongolia Normal University, Inner Mongolia Hohhot, September 2021
2. Invited Speaker, Navigating Cultural Differences: Insights for International Students, Inner Mongolia Honder College of Arts and Sciences, China, April 2019
3. Invited Speaker: Overview of the Pakistani Economy: Challenges and Prospects" Inner Mongolia University Ordos College, China, December 2018

PUBLICATIONS

Publications:25
Citation:148
h-index:8,
i10-index: 5

Articles in Journals

1. Arshad, M. U., Ruiz, A., Hwang, S., Jang, C., Archer, D., Chang, A., & Lee, D. (2025) Automated Detection and Quantification of Male Flowers in Hemp Plants via Deep Learning, Lab Review
2. Arshad, M. U., Hwang, S., Jang, C., Jeon, H., & Lee, D.* (2025) Winter Canola Integration Improves Carbon Balance, Biomass, and Profitability in Illinois Corn–Soybean Systems, Agricultural Systems, under review
3. Arshad, M. U., Archer, D., Wasonga, D., Namoi, N., & Lee, D. (2025) Optimizing Bioenergy Biofuel Harvest: A Comparative Analysis of Stepwise and Integrated Methods for Economic and Environmental Sustainability, Bioresource Technology, Impact factor 9, Q1
4. Arshad, M. U., Jianguo, Y., Yitian, G., Jinrui, G., Lijuan, Z., Lina, B., Anaer, & Baoyindureng* (2025) The Economic Impact of Agricultural Cooperative Membership on Household Income: Evidence from Livestock Farmers in Inner Mongolia, Australian Journal of Agricultural and Resource Economics, under review.
5. Zhao, J., Wang, Y., Shi, X., & Arshad, M. U. (2025). Fair Allocation of Industrial Carbon Footprint in China via Economic and Energy Flow Principles. Sustainability, under review.
6. Lin, H.; Bao, Q.; Arshad, Arshad, M. U.; Lin, H. (2025) Assessing Income Heterogeneity from Farmer Participation in Sustainable Management of Forest Health Initiatives. Sustainability, Impact factor 3.3, Q3
7. Namoi, N., Lin, C.-H., Jang, C., Wasonga, D., Zumpf, C., Arshad, M. U., Heaton, E., & Lee, D. (2025). Field-scale evaluation of ecosystem service benefits of bioenergy switchgrass. Journal of Environmental Quality. Impact factor 2, Q1
8. Wasonga, D., Jang, C., Lee, J., Arshad, M., Namoi, N., Zumpf, C., & Lee, D. K. (2025). Estimating switchgrass biomass yield and lignocellulose content from UAV-based indices. Crop Journal.
9. Arshad, M. U., Archer, D., Wasonga, D., Namoi, N., Boe, A., Mitchell, R., Heaton, E., Khanna, M., & Lee, D. (2025). Comparative economic analysis between bioenergy and forage types of switchgrass for sustainable biofuel feedstock production: A DEA and cost-benefit analysis approach. GCB Bioenergy. Impact Factor 5.9 Q1
10. Gong, Y.F., Arshad, M.U., Guo, X.Y., Zhang, X.G., Zhao, Y.F. A research paradigm of Weather Index Insurance for Grassland Animal Husbandry: A Pathway to Increased Income for Herders in China's Inner Mongolia, SAGE Open, 2023, Impact factor 2.2, Q4.
11. Lin, H.Y., Wu, H.Y., Lin, H.H., Zhu, T.Q., Arshad, M.U., Chen, H.N., Li, W.L. The impact of rural e-commerce participation on farmers' entrepreneurial behavior: Evidence based on CFPS data in China, PLOS ONE, 2024, Impact factor 3.7, Q3.
12. Liu, W., Arshad, M.U., Zhang, L.Z., Wei, J.N., Fu, Y.H. Uncovering the key factors influencing sustainable green production behavior among Chinese medicinal herb growers, Heliyon, 2023 (11), Impact factor 4.01, Q2.
13. Guo, X.Y., Arshad, M.U., Zhao, Y.F., Gong, Y.F., Li, H.Y. Effects of Climate Change and Grazing Intensity on Grassland Productivity—A Case Study of Inner Mongolia, China, Heliyon, 2023 (7), Impact factor 3.76, Q2.
14. Arshad, M.U., Qiao, S.H., Gong, Y.F., Guo, X.Y., Lin, H.Y., Baoyindureng. The Role of Heritage Sites and Other Influential Factors in Domestic Tourism Inflow to Australian States: A Gravity Model Approach, Current Issues in Tourism, 2023 (1), Impact factor 7.57, Q1.
15. Liu, Y.J., Arshad, M.U., Baoyindureng, Aruhan, Lanneau, R., Jianguo, Y. Promotion and sustainable development of beef cattle farming industry in agro-pasture ecotone areas, Inner Mongolia of China: A comparison between two fattening system, Heliyon, 2023 (9), Impact factor 3.76, Q2.

16. Shi, Lizhen, A. Arshad, M.U., and Yanting Shi. "Utilizing AI models to optimize blended teaching effectiveness in college-level English education. Cogent Education, 10 (2), 2282804." 2023, Impact Factor
17. Gong, Y.F., Arshad, M.U., Guo, X.Y., Zhao, Y.F. An empirical study of the factors affecting herders' purchasing decision on Weather Index Insurance — A case study from Inner Mongolia Autonomous Region, China, Heliyon, 2022, Impact factor 3.76, Q2.
18. Arshad, M.U., Zhao, Y.F., Hanif, S., Fatima, F. Impact of climate change and technological advancement on cotton production: Evidence from Xinjiang Region, China. Journal of Agricultural Science and Technology (2022) 24(1) pp. 1519-1531, Impact factor 1.27, Q3.
19. Lin, H.Y., Gao, Y.H., Zhu, T.Q., Wu, H.Y., Hou, P.S., Li, W.L., Hou, S.X., Arshad, M.U., Measurement and identification of relative poverty level of pastoral areas: an analysis based on spatial layout. Environmental Science and Pollution Research (2022), Impact factor 5.19, Q2.
20. Guo, X.Y., Zhao, Y.F., Arshad, M.U., Gong, Y.F. Farmers' Willingness to Pay a High Premium for Different Types of Agricultural Insurance: Evidence from Inner Mongolia, China. Discrete Dynamics in Nature and Society (2022), Impact factor 1.47, Q4.
21. Arshad, M.U., Zhao, Y.F., Hanif, O., Fatima, F. Evolution of overall cotton productivity and its determinants: Implications for developing countries using Pakistan Sustainability (2022), 14, 840, Impact factor 3.88, Q3.
22. Arshad, M.U., Zhao, Y.F., Gong, Y.F., Guo, X.Y., Hanif, S., Ying, G., Jun, T. The effect of climate change on cotton productivity-an empirical investigation in Pakistan. Pakistan Journal of Agricultural Sciences 58, no. 5 (2021): 1455-1462, Impact factor 0.85, Q4.

International Peer-Reviewed Journals

23. Dr. Hanxiang, W., Arshad, M.U., Study on the Ecological Efficiency of Tourism Industry in the Inner Mongolia Autonomous Region of China, International Journal of Management & Business Studies (2018) 8(1).
24. Arshad, M.U., Dong, Z.H. Analysis of Pakistan and China's Trade Development under the Conception of "China - Pakistan Economic Corridor" Pacific International Journal. (2018): 1
25. Arshad, M.U., Usman, M. "Impact of Export on Economic Growth of Pakistan." Journal of Economics and Sustainable Development. (2017) 8(16)
26. Arshad, M.U., Haidong, Z. "China-Pakistan economic corridor (CPEC) issues/barrier and imperatives of Pakistan and China." Journal of Global Business Insights 2, no. 2 (2017): 104-114.
27. Arshad, M.U., Dong, Z.H. "China Pakistan Economic Corridor: A Spatial Analysis on the Security Risk of CPEC." International Journal for Innovative Research in Multidisciplinary Field, 2016 2 (9)
28. Arshad, M.U., Dong, Z.H. "China Pakistan Economic Corridor, CPEC, Internal and External Challenges, and solutions." Australian Journal of Basic and Applied Sciences. (2014): 14

Doctoral Thesis Title

29. "Impact of Climate Variation on Cotton Productivity ——A Case Study of Pakistan" Inner Mongolia Agriculture University, Hohhot, China, 2021

MEDIA COVERAGE

1. University of Illinois College of ACES. (2024, March 7). Illinois research shows benefits of prairie grass for sustainable aviation fuel. https://aces.illinois.edu/news/illinois-research-shows-benefits-prairie-grass-sustainable-aviation-fuel
2. Bioengineer.org. (2024, March 7). Illinois study highlights prairie grass as a sustainable source for aviation fuel. https://bioengineer.org/illinois-study-highlights-prairie-grass-as-a-sustainable-source-for-aviation-fuel/
3. WCIA News. (2025, April 24). Prairie grass shows potential for sustainable aviation fuel: U of I scientists. https://www.wcia.com/news/champaign-county/prairie-grass-shows-potential-for-sustainable-aviation-fuel-u-of-i-scientists/
4. Springfield Herald. (2025, April 24). Illinois research shows benefits of prairie grass for sustainable aviation fuel. https://springfieldherald.news/illinois-research-shows-benefits-of-prairie-grass-for-sustainable-aviation-p27625-103.htm
5. Life Technology. (2024, April). Switchgrass potential as sustainable aviation fuel. https://www.lifetechnology.com/blogs/life-technology-science-news/switchgrass-potential-as-sustainable-aviation-fuel
6. Illinois Ag Connection. (2024, March 7). Switchgrass research supports future aviation fuel production. https://illinoisagconnection.com/news/switchgrass-research-supports-future-aviation-fuel-production
7. Farms.com. (2025, April 25). Switchgrass powers new hopes for aviation fuel. https://m.farms.com/news/switchgrass-powers-new-hopes-for-aviation-fuel-226398.aspx
8. Kajal, K. (2025, April). Switchgrass a viable contender for clean aviation fuel: Study. Interesting Engineering. https://interestingengineering.com/energy/switchgrass-clean-aviation-fuel-study
9. Kentucky Ag Connection. (2025, April 25). Switchgrass set to fuel sustainable aviation dreams. https://kentuckyagconnection.com/news/switchgrass-set-to-fuel-sustainable-aviation-dreams
10. Yahoo News. (2025, April 24). Prairie grass shows potential for sustainable aviation fuel: U of I scientists. https://www.yahoo.com/news/prairie-grass-shows-potential-sustainable-214314332.html

PRESENTATIONS and POSTER

1. Arshad, M.U., Archer, D.W., Wasonga, D., Namoi, N., Boe, A., Mitchell, R.B., Heaton, E., Khanna, M., Lee, D. "Nitrogen Fertility Management Strategies of Bioenergy-Type Switchgrass for Profitable Biomass Production. (2024)" ASA, CSSA, SSSA International Annual Meeting. ASA-CSSA-SSSA.
2. Namoi, N., Lin, C.-H., Jang, C., Wasonga, D., Zumpf, C., Arshad, M. U., Heaton, E., & Lee, D. (2024). Field-scale evaluation of ecosystem service benefits of bioenergy-type switchgrass. ASA, CSSA, SSSA International Annual Meeting. ASA-CSSA-SSSA.

RESEARCH PROJECTS

1. Researcher, Next-Generation Feedstocks for the Emerging Bio-Economy (DE-EE0008521), University of Illinois Urbana-Champaign, Funded by U.S. Department of Energy, 2023–Present
2. Researcher, Research on the Benefit Mechanism and Performance of the Beef Cattle Breeding System in Inner Mongolia, Science Foundation of Inner Mongolia Autonomous Region (2023LHMS07006), 2023–Present

3. Researcher, Institutional Innovation of Collective Cooperative Production in Inner Mongolia Grassland Animal Husbandry under High-Quality Development, Inner Mongolia Higher Education Scientific Research Project (NJSY21481), 2021–Present
4. Researcher, Sino-Mongolian Agriculture and Animal Husbandry Supply Chain Collaborative Research, National Key R&D Program – Intergovernmental International Cooperation in Science and Technology (2021YFE0190200), 2021–2023
5. Researcher, Green Development of Traditional Industries in Inner Mongolia, Major Project Explaining Party Congress Spirit (2018ZGH006), Inner Mongolia, 2018–2019
6. Researcher, Implementation of the Rural Revitalization Strategy in Inner Mongolia, Major Philosophy and Social Science Project (2018ZDA004), Inner Mongolia, 2018–2019
7. Researcher, *Livestock Weather Index Insurance: Household Demand, Income Effects, and Behavioral Impact*, NSFC Regional Project (71863028), 2019–2022
8. Researcher, *Drought Risk Assessment and Refined Premium Rate Design in Agriculture*, Inner Mongolia Science and Technology Plan (201802108), 2018–2021
9. Researcher, *Effects of 'Insurance + Credit' on Credit Access, Production Decisions, and Income of Livestock Farmers – Empirical Study on Cattle Policy*, NSFC Project (72173069), 2022–2025

INSTRUCTIONAL EXPERIENCE

1. Courses Taught

Principles Of Accounting
Principles of Management
Principles of Economics

REFERENCES

1. Prof. D.K. Lee, Department of Crop Sciences, University of Illinois Urbana-Champaign, Email: leedk@illinois.edu, (Post-Doctoral Supervisor)
2. David Archer, United States Department of Agriculture, Email: david.archer@usda.gov, (Post-Doctoral Supervisor)
3. Dr. Arshan Khan, Florida International University (Peer), Email: arskhan@fiu.edu
4. Prof Zhao Yun Feng, Department of Economics, Inner Mongolia Agriculture University, Zhaoyf@263.net, (PhD. Supervisor)