

Saugat Khanal

🏠 Stillwater, OK 74075, USA

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🎓 View publications



LinkedIn Profile

ORCID

Research Focus

Research interests include spatial econometrics, measurement error in climate data, and weather–yield modeling for agricultural policy analysis. My work focuses on addressing interpolation-induced bias and uncertainty in climate variables used in crop yield estimation, with applications relevant to agricultural risk management and climate adaptation policy.

Education

Ph.D., Agricultural Economics

FALL 2025-PRESENT

Oklahoma State University, Stillwater, OK, USA

Graduate Courses: Advanced Agricultural Marketing, Time Series Analysis, Mathematical Statistics I, Mathematical Statistics II, Statistics for Experimenters II, Advanced Applications of Mathematical Programming

M.S., Agricultural Economics

FALL 2023-SPRING 2025

Oklahoma State University, Stillwater, OK, USA

Graduate Courses: Mathematical Economics, Agricultural Marketing Policy, Applied Regression Analysis, Research Methodology, Econometric Methods, Production Economics, Primary Data Analysis, Macroeconomic Analysis, Advanced Agricultural Prices

B.Sc., Agriculture

2018-2022

Agriculture and Forestry University, Rampur, Chitwan, Nepal

Undergraduate Courses: Principle of Economics, Rural Sociology, Farm Management and Production Economics, Agricultural Statistics, Agricultural Marketing and Cooperatives, Agricultural Communication, Agricultural Project Planning, Agribusiness Management

High School

2015-2017

Times International College, Kathmandu, Nepal

Relevant Online Coursework

- Linear Regression and Modeling, Duke University
- Microeconomics Principles, University of Illinois Urbana-Champaign
- Introduction to Calculus, The University of Sydney

Research Interests

- Policy Analysis
- Climate Risk and Agricultural Productivity
- Spatial Econometric Modeling

- Measurement Error and Errors-in-Variables Models
- Climate–Yield Modeling
- Agricultural decision-making under climate uncertainty

Methods and Modeling Expertise

- Hierarchical spatial errors-in-variables models (HSEVM)
- Spatial interpolation and kriging of climate variables
- Measurement error and errors-in-variables regression
- Bayesian inference using Integrated Nested Laplace Approximation (INLA)
- Climate–yield econometric modeling under uncertainty
- Time-series econometrics
- Simulation-based bias and uncertainty assessment

Peer-Reviewed Publications

Economics

- Khanal, S., Tiwari, U., & Khanal, S. (2024). Willingness to Pay for Cattle Insurance in Nepal: A Double-Hurdle Model Perspective. *Global Journal of Agricultural and Allied Sciences*, 5(1), 7-14. DOI
- Khanal, S., Dhital, P., & Christian, S. (2021). Farming the future: Youth enthusiasm and transforming Nepal’s economy through agriculture. *Journal of Agriculture, Food Systems, and Community Development*, 10(2), 1-14. DOI
- Khanal, S., Lohani, S., & Khanal, S. (2022). Multicollinearity diagnostics upon cobb-douglas production function for estimating resource use efficiency of tomato in Chitwan, Nepal. *Russian Journal of Agricultural and Socio-Economic Sciences*.
- Khanal, S., Khanal, S., & Christian, S. (2021). Cannabis legalization and potential impacts on Nepali economy and public health. *Global Journal of Agricultural and Allied Sciences*, 3(1), 25-28. DOI
- Khanal, S., Khatri, S., & Khanal, S. (2020). Production, marketing, and future prospects of fish farming in Nepal: National and global scenario. *Cogent Food & Agriculture*, 6(1), 1860384. DOI
- Khanal, S. (2020). Consumers’ willingness, behaviors, and attitudes to pay a price premium for local organic foods in Nepal. *International Journal of Environment, Agriculture and Biotechnology*, 5(3), 594-609. DOI
- Khanal, S., Shrestha, J., & Lamichhane, J. (2020). Economics of production and marketing of cucumber in Nawalpur district of Nepal. *Azarian Journal of Agriculture*, 7(3), 93-101. DOI
- Khanal, S., Bhattarai, S. B. S., Adhikari, U., Sharma, D., & Pandey, M. (2021). Disparities between developed and emerging economies in digital divide and ICT gap to bring agricultural sustainability. *Fundamental and Applied Agriculture*, 6(3), 309-322. DOI
- Khanal, S., Lohani, S. (2022). Logistic Value Chain Analysis as an Approach to Modelling Tomato Supply Chain: Structural Market Evidence from Bharatpur Metropolitan City, Chitwan, Nepal. *Russian Journal of Agricultural and Socio-Economic Sciences*, 3(123). DOI
- Khanal, S., & Shrestha, M. (2019). Agro-tourism: Prospects, importance, destinations, and challenges in Nepal. *Archives of Agriculture and Environmental Science*, 4(4), 464-471. DOI

- Khanal, S., Poudel, P. B., Lamichhane, J., & Ajanthan, A. (2020). Food Supply Chain Disruptions and Resilience Under the Stress of COVID-19: Evidence from Nepal. *Acta Scientific Agriculture*, 4(7), 158-166. DOI
- Khanal, S., & Khanal, S. (2020). Trade deficits impede Nepalese economic growth: an analysis from review perspective. *International Journal of Multidisciplinary Research and Analysis*, 3, 7-8. DOI

Other than Economics

- Khatri, S., Khanal, S., & Kafle, S. (2021). Perceived attributes and adoption of Indigenous Technological Knowledge on agriculture- A case study from Bhirkot municipality of Syangja District, Nepal. *Cogent Food & Agriculture*, 7(1), 1914384. DOI
- Khanal, S. K., & Dawadi, K. K. (2020). Experimental Investigation on Phytochemical Analysis and Antibacterial Activity of Aegle Marmelos (Bael) Plants. *Turkish Journal of Agriculture-Food Science and Technology*, 8(7), 1587-1592. DOI
- Khan, A. U., Khan, A. U., Khanal, S., & Gyawali, S. (2020). Insect pests and diseases of cinnamon (*Cinnamomum verum* Presl.) and their management in agroforestry system: A review. *Acta Entomology and Zoology*, 1(2), 51-59. DOI
- Bista, S., Thapa, M. K., & Khanal, S. (2020). Fall armyworm: Menace to Nepalese farming and the integrated management approaches. *International Journal of Environment, Agriculture and Biotechnology*, 5(4), 1011-1018. DOI
- Khan, A. U., Choudhury, M. A. R., Khan, A. U., Khanal, S., & Maukeeb, A. R. M. (2020). Chrysanthemum production in Bangladesh: significance the insect pests and diseases management: A review. *Journal of Multidisciplinary Applied Natural Science*.
- S Khatri, P Pakuwal, S Khanal. (2020). Integrated pest management of fall armyworm infestations in maize fields in Nepal: A review. *Archives of Agriculture and Environmental Science*, 5(4), 583-591. DOI
- Rijal, B., Baduwal, P., Chaudhary, M., Chapagain, S., Khanal, S., Khanal, S., & Poudel, P. B. (2021). Drought stress impacts on wheat and its resistance mechanisms. *Malaysian Journal of Sustainable Agriculture (MJSA)*, 5(2), 67-76. DOI
- Sharma, D., Ghimire, P., Bhattarai, S., Adhikari, U., Khanal, S., & Poudel, P. B. (2020). Bio-fortification of wheat: Genetic and agronomic approaches and strategies to combat Iron and Zinc deficiency. *International Journal of Environment, Agriculture and Biotechnology*, 5(4). DOI
- Gosai, S., Adhikari, S., Khanal, S., & Poudel, P. B. (2020). Effects of plant growth regulators on growth, flowering, fruiting and fruit yield of cucumber (*Cucumis sativus* L.): A review. *Archives of Agriculture and Environmental Science*, 5(3), 268-274. DOI
- Shrestha, M., & Khanal, S. (2020). Future prospects of precision agriculture in Nepal. *Archives of Agriculture and Environmental Science*, 5(3), 397-405. DOI
- Dangi, B., Khanal, S., & Shah, S. (2020). A review on rice false smut, its distribution, identification, and management practices. *Acta Scientific Agriculture*, 4, 48-54.
- Bhandaria, S., Khanal, S., & Dhakal, S. (2020). Adoption of Direct Seeded Rice (DSR) over puddled-Transplanted Rice (TPR) for resource conservation and increasing wheat yield. *Reviews in Food And Agriculture (RFNA)*, 1(2), 44-51.
- Pandey, M., Kayastha, P., Khanal, S., Shrestha, S., Thakur, G., Adhikari, K., ... & Khanal, D. (2022). An overview on possible management strategies for coffee white stem borer *Xylotrechus quadripes* Chevrolat (Coleoptera: Cerambycidae) in Nepal. *Heliyon*. DOI
- Gyawali, P., Khanal, S., & Bhandari, S. (2022). Need to take precedence for off seasonal vegetable farming? Issues in context of Nepal. *Turkish Journal of Agriculture-Food Science and Technology*, 10(12), 2495-2503. DOI

- Gyawali, P., & Khanal, S. (2021). Overview of agriculture in Nepal: Issues and future strategies. *Fundamental and Applied Agriculture*, 6(3), 323-335. DOI
- KC, B., Pandeya, B., Chanda, H., Bhusala, P., Pandita, S., & Khanal, S. (2021). Promotion of organic and sustainable agriculture through the use of bio-fertilizers. *Journal of Wastes and Biomass Management (JWBM)*, 3(1), 01-08.
- Khanal, S., & Khanal, S. (2022). Trends of Major Cereal Productivity in South Asia. *Malaysian Journal of Halal Research*, 5(1), 6-16.
- Gosai, S., Adhikari, S., Khanal, S., & Poudel, P. B. (2020). Effects of plant growth regulators on growth, flowering, fruiting and fruit yield of cucumber (*Cucumis sativus* L.): A review. *Archives of Agriculture and Environmental Science*, 5(3), 268-274. DOI

Conference Presentations and Submissions

- Khanal, S. & Lambert, D. (2026). *Using Interpolated Weather Station Data as Crop Yield Predictors Introduces Measurement Error*. Submitted and presented at the Southern Agricultural Economics Association (SAEA) Annual Meeting, Louisville, Kentucky.

Manuscripts Under Review / Submitted

- Khanal, S., Bir, C., & Essary, A. *Economic Feasibility of Wine Grape Cultivation in Oklahoma*. Manuscript submitted for peer-reviewed journal consideration.
- Khanal, S. *Long-Run Cointegration and Short-Run Adjustment of U.S. Foreign Direct Investment: An ARDL Error-Correction Model*. Manuscript submitted for peer-reviewed journal consideration.

Work Experience

- **Graduate Research Assistant** at Department of Agricultural Economics, Oklahoma State University (*Ph.D. level*): August 2025 - Present
 - Research climate–yield modeling using interpolated weather predictors (temperature, precipitation, soil moisture).
 - Develop a hierarchical spatial errors-in-variables model (HSEVM) that jointly estimates interpolation surfaces with county-level yield regressions.
 - Diagnose Modifiable Areal Unit Problem (MAUP) and spatial support misalignment (stations $j \in S$ vs. counties $i \in L$); quantify bias via simulation study.
 - Implement kriging and INLA-based approximate Bayesian inference; build reproducible R workflows (data, modeling, diagnostics, visualization).
 - Prepare manuscripts and conference submissions; manage Oklahoma weather and yield datasets with version control and replication files.
- **Graduate Research Assistant** at Department of Agricultural Economics, Oklahoma State University (Master’s level): August 2023- May 2025
 - Study literature review regarding wine industry in Oklahoma, USA.
 - Conduct research work related to financial feasibility of vine production in Oklahoma.
 - **Thesis:** Economic feasibility of wine grape cultivation in Oklahoma

Skills

PROGRAMMING:	STATA, SAS, R, Python, LaTeX, SPSS (econometric and statistical modeling)
GIS MAPPING SOFTWARE:	ArcGIS (spatial data processing and analysis)
OTHER:	Data coding and analysis, Statistical modeling, Research design

Honors and Awards

- Williams Endowed Distinguished Graduate Fellowship (DGF), Ferguson College of Agriculture, Oklahoma State University – 2026
- Stoecker Family International Agricultural Economics Scholarship, Ferguson College of Agriculture, Oklahoma State University – 2026
- Stoecker International Agricultural Economics Fellowship, OSU Ferguson College of Agriculture – 2025
- Shepherd Family Memorial Endowed Scholarship, OSU Ferguson College of Agriculture – 2025
- Williams Distinguished Graduate Fellowship (DGF), Ferguson College of Agriculture – 2025
- Spielman Scholarship, Oklahoma State University – 2024
- Leo and Betty Blakley Graduate Fellowship, Oklahoma State University – 2024
- Graduate Research Assistantship, Department of Agricultural Economics, Oklahoma State University (Master’s level) – 2023
- Merit-based Scholarship for B.Sc. in Agriculture, Agriculture and Forestry University, Nepal – 2018
- Full Scholarship, Times International College (Higher Secondary Education) – 2017
- Semifinalist, Asian-level Nobel Quiz Mania – 2018
- Mahatma Gandhi Scholarship Scheme – 2016/17
- International Scientist Award (Emerging Scientist Award) – 2021

Peer Review Activity

- Reviewer, *Discover Agriculture* (Springer Nature portfolio), 2026.
- Recognized for contribution to peer review of one manuscript (Reviewer Certificate, Springer Nature).

References

- Dayton Lambert, Ph.D., Professor, Department of Agricultural Economics, Oklahoma State University, dayton.lambert@okstate.edu
- Courtney Bir, Ph.D., Associate Professor, Department of Agricultural Economics, Oklahoma State University, courtney.bir@okstate.edu