YANYAN LIU

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EMPLOYMENT

Senior Research Fellow, Markets, Trade and Institutions Division, International Food Policy Research Institute, June 2015 - Present

Adjunct Associate Professor, Dyson School of Applied Economics and Management, Cornell University, July 2015 - Present

Research Fellow, Markets, Trade and Institutions Division, International Food Policy Research Institute, Feb 2010 - June 2015

Postdoctoral Fellow, Markets, Trade and Institutions Division, International Food Policy Research Institute, June 2009 - Jan 2010

Consultant Economist, Development Research Group, World Bank, Jan 2007 - May 2009

Research Economist, RTI International, Aug 2006 - Dec 2006

EDUCATION

Joint PhD in Agricultural Economics & Economics (2006), Michigan State University
    Dual Majors: Econometrics; Agricultural Economics

M.S. in Statistics (2003), Michigan State University, East Lansing, MI

M.S. in Agricultural Economics (2003), Michigan State University, East Lansing, MI

B.A. in Economics (1996), Nankai University, Tianjin, China

RESEARCH INTERESTS

Development economics, agricultural economics, applied microeconomics

JOURNAL ARTICLES

40. "A scalable crop yield estimation framework based on remote sensing of solar-induced chlorophyll fluorescence (SIF)", Oz Kira, Yangyang Fan, Jiaming Wen, Andrew McDonald, Christopher B. Barrett, Yanyan Liu, Liangzhi You, Zhengjun Qiu, Ariel Ortiz-Bobea, Cong Wang, and Ying Sun. *Environmental Research Letters*, 19: 044071, 2024.

39. "Uneven Recovery from the COVID-19 Pandemic: the Post-Lockdown Human Mobility Across Chinese Cities", Yanyan Liu, Shuang Ma and Ren Mu. *China Economic Review*, 84: 102125, 2024.

38. "Information, Mobile Communication and Referral Effects", Panle Jia Barwick, Yanyan Liu, Eleonora Patacchini, and Qi Wu. *American Economic Review*, 113 (5):1170-1207, 2023.

37. "Large-Scale Land Restoration Improved Drought Resilience in Ethiopia's Degraded Watersheds", Susana Constenla-Villoslada, Yanyan Liu, Jiaming Wen, Ying Sun, and Shun Chonabayashi. *Nature Sustainability*, 5 (2022): 488–497, 2022. [View-only full text].

36. "Adaptation Mitigates the Negative Effect of Temperature Shocks on Household Consumption", Wangyang Lai, Shanjun Li, Yanyan Liu, and Panle Jia Barwick. *Nature Human Behaviour*, 6 (2022): 837–846, 2022.

35. "Sustainable management of transboundary pests requires holistic and inclusive solutions", Boddupalli M. Prasanna, Monica Carvajal-Yepes, P. Lava Kumar, Nozomi Kawarazuka, Yanyan Liu, Annet Abenakyo Mulema, Steven McCutcheon, and Xenina Ibabao. *Food Security*, 2022.

34. "Group lending with peer selection and moral hazard," Li Gan, Manuel Hernandez, and Yanyan Liu. *Theoretical Economics Letters*, 12, 1351-1361, 2022.

33. "Predicting Poverty with Vegetation Index", Binh Tang, Yanyan Liu and David Matteson. *Applied Economic Perspectives and Policy*, 44 (2): 930-945, 2022.

32. "Predicting Poverty and Malnutrition for Targeting, Mapping, Monitoring, and Early Warning", L. McBride, C. B. Barrett, C. Browne, L. Hu, Y. Liu, D. S. Matteson, Y. Sun, and J. Wen. *Applied Economic Perspectives and Policy*, 44 (2): 879-892, 2022.

31. "Political Activism as a Determinant of Clientelistic Transfers: Evidence from an Indian Public Works Program," Nancy Chau, Yanyan Liu, and Vidhya Soundararajan. *European Economic Review*, 132 (2021): 103631, 2021.

30. "Within-Season Producer Response to Warmer Temperatures: Defensive Investments by Kenyan Farmers", Maulik Jagnani, Christopher C. Barrett, Yanyan Liu, and Liangzhi You. *Economic Journal*, 131 (633): 392–419, 2021.
    - IFPRI Research Blog.

29. "Multivariate Random Forest Prediction of Poverty and Malnutrition Prevalence", C. Browne, D. Matteson, L. McBride, L. Hu, Y. Liu, Y. Sun, J. Wen, and C. Barrett. *PLOS ONE*, 16 (9): e0255519, 2021.

28. "On the Power of Microwave Communication Networks to Improve Agricultural Needs in Africa", N. David, Y. Liu, K.K. Kumah, J.C.B. Hoedjes, Z. Su, and H.O. Gao. *Water*, 13 (5): 730, 2021.

27. "Smallholder Mechanization Induced by Yield-Enhancing Biological Technologies: Evidence from Nepal and Ghana," Hiroyuki Takeshima and Yanyan Liu. *Agricultural Systems*, 184:(2020), 102914, 2020.

26. "Delayed Premium Payment, Insurance Adoption, and Household Investment in Rural China", Yanyan Liu, Kevin Chen and Ruth Hill. *American Journal of Agricultural Economics*, 102 (4): 1177–1197, 2020.

25. "The Intertemporal Evolution of Agriculture and Labor over a Rapid Structural Transformation: Lessons from Vietnam", Yanyan Liu, Christopher C. Barrett, Trinh Pham, and William Violette. *Food Policy*, 94: 101913, 2020.

24. "Agriculture-Nutrition Linkages in Tajikistan: Evidence from Household Survey Data", Hiroyuki Takeshima, Kamiljon T. Akramov, Allen Park, Jarilkasin Ilyasov, Yanyan Liu, and Tanzila Ergasheva. *Agricultural Economics*, 51: 553-565, 2020.

23. "Does Subway Expansion Improve Air Quality?", Shanjun Li, Yanyan Liu, Avralt-Od Purevjav, and Lin Yang. *Journal of Environmental Economics and Management*, 96 (2019): 213-235, 2019.

22. "Heterogeneous Welfare Impacts of India's National Rural Employment Guarantee Scheme: Evidence from Andhra Pradesh", Klaus Deininger and Yanyan Liu. *World Development*, 117: 98-111, 2019.

21. "Group Lending with Heterogeneous Types", Li Gan, Manuel Hernandez, and Yanyan Liu. *Economic Inquiry*, 56 (2): 895-913, 2018.
        - IFPRI Research Blog

20. "Preferential Resource Spending Under an Employment Guarantee: The Political Economy of MGNREGS in Andhra Pradesh", Megan Sheahan, Yanyan Liu, Christopher C. Barrett, and Sudha Narayanan. *World Bank Economic Review*, 32 (3): 551-569, 2018.

19. "Can Labor Market Imperfections Explain Changes in the Inverse Farm Size-Productivity Relationship? Longitudinal Evidence from Rural India", Klaus Deininger, Songqing Jin, Yanyan Liu, and Sudhir Singh. *Land Economics*, 94 (2): 239-258, 2018.

18. "Gender Asymmetries: Impacts of an Early-stage School Intervention in the Philippines", Futoshi Yamauchi and Yanyan Liu. *Review of Development Economics*, 22(1): 220-241, 2018.

17. "The 'Discouraged Worker Effect' in Public Works Programs: Evidence from the MGNREGA in India", Sudha Narayanan, Upasak Das, Yanyan Liu, and Christopher C. Barrett. *World Development*, 100: 31-44, 2017.

16. "Variable Returns to Fertilizer Use and Its Relationship to Poverty: Experimental and Simulation Evidence From Malawi", Aurelie Harou, Yanyan Liu, Christopher C. Barrett, and Liangzhi You. *Journal of African Economies*, 26 (3): 342-371, 2017.

15. . "The Dynamics of Microinsurance Demand in Developing Countries Under Liquidity Constraints and Insurer Default Risk", Yanyan Liu and Robert J. Myers. *Journal of Risk and Insurance*, 83: 121-138, 2016.

14. "Growing Advantage of Large Farms in Asia and Its Implications for Global Food Security", Keijiro Otsuka, Yanyan Liu, and Futoshi Yamauchi. *Global Food Security*, 11 (December 2016): 5-10, 2016.

13. "The Future of Small Farms in Asia", Keijiro Otsuka, Yanyan Liu, and Futoshi Yamauchi. *Development Policy Review*, 34 (3): 441-461, 2016.

12. "Population Pressures, Migration, and the Returns to Human Capital and Land: Insights from Indonesia", Yanyan Liu and Futoshi Yamauchi. *Food Policy*, 48: 182-193, 2014.

11. "Factor Endowments, Wage Growth, and Changing Food Self-Sufficiency: Evidence from Country-Level Panel Data", Keijiro Otsuka, Yanyan Liu, and Futoshi Yamauchi. *American Journal of Agricultural Economics*, 95 (5): 1252-1258, 2013.

10. "Economic and Social Impacts of an Innovative Self-Help Group Model in India," Klaus Deininger and Yanyan Liu *World Development* 43: 149-63, 2013.

9. "Evaluating Program Impacts on Mature Self-help Groups in India", Klaus Deininger and Yanyan Liu. *World Bank Economic Review*, 27 (2): 272-296, 2013.

8. "Heterogeneous Pro-Poor Targeting in India: Mahatma Gandhi National Rural Employment Guarantee Scheme", Yanyan Liu and Christopher B. Barrett. *Economic and Political Weekly*, 48 (10): 46-53, 2013.

7. "Impacts of an Early Education Intervention on Students' Learning Achievement: Evidence from the Philippines",Futoshi Yamauchi and Yanyan Liu *Journal of Development Studies*, 49 (2): 208-222, 2013.

6. "How Important are Peer Effects in Group Lending: Evidence from Self-Help Groups in India", Shanjun Li, Yanyan Liu, and Klaus Deininger. *Journal of Applied Econometrics*, 28 (5): 864-882, 2013.

5. "Lose Some, Save Some: Obesity, Automobile Demand, and Gasoline Consumption", Shanjun Li, Yanyan Liu, and Junjie Zhang. *Journal of Environmental Economics and Management*, 61 (1): 52-66, 2011.

4. "Model Selection in Stochastic Frontier Analysis with an Application to Maize Production in Kenya", Yanyan Liu and Robert Myers. *Journal of Productivity Analysis*, 31: 33-46, 2009.

3. "Evidence of the Role of Marketing Arrangements and Valuation Methods in Improving Beef Quality". Yanyan Liu, Mary Muth, S. Koontz, and J. Lawrence *Agribusiness* 25 (2):147-163, 2009.

2. "Differences in Prices and Price Risk Across Alternative Marketing Arrangements Used in the Fed Cattle Industry", Mary Muth, Yanyan Liu, S. Koontz, and J. Lawrence. *Journal of Agricultural and Resource Economics* 33 (1): 118-135, 2008.

1. "Is Site-specific Yield Response Consistent over Time? Does it Pay?", Yanyan Liu, Scott Swinton, and Neil Miller. *American Journal of Agricultural Economics* 88 (2): 471-483, 2006.

BOOK CHAPTERS

- "Microwave Communication Networks as a Sustainable Tool of Rainfall Monitoring for Agriculture Needs in Africa," David N., Gao H.O., Kumah K.K., Hoedjes J.C.B., Su Z. and Liu Y. in *Sustainable Environmental Solutions - Proceedings of the 16th International Conference on Environmental Science and Technology (CEST2019), Greece.* Mourad Amer (ed.). Springer ASTI Book Series 15883. 2021.

- "Chapter 6: Evolutions of Agricultural Mechanization in Vietnam: Insights from the Literature Review and Multi-rounds of Farm Household Survey Data", Hiro Takeshima, Yanyan Liu, CV Nguyen, and Ian Masias. In *An Evolving Paradigm of Agricultural Mechanization Development: How Much Can Africa Learn from Asia?* X Diao, H Takeshima, and X Zhang (eds.). IFPRI. 2020. Washington DC.

- "Chapter 18: Improving Market Access for Smallholders," Yanyan Liu, Nicholas Minot and Mengying Wang. In *The Sustainable Intensification of Smallholder Farming Systems.* Mike Robinson and Dominik Klauser (eds.). Burleigh Dodds Science Publishing Limited. 2020. Cambridge, UK.

- "Chapter 14: Heterogeneous Pro-Poor Targeting in India: Mahatma Gandhi National Rural Employment Guarantee Scheme", Yanyan Liu and Christopher C. Barrett. In *Social Policy.* Jean Dréze (ed.). Orient Blackswan Private Limited. 2016. New Delhi, India.

OTHER PUBLICATIONS (SELECTED)

- "Bui, T.; Pham, T.H. ; Kawarazuka, N.; Schreinemacher, P.; Liu, Y. 2022. Introducing an agricultural app to vegetable farmers: a pilot study in Lam Dong, Vietnam," Research Report: International Potato Center. 2022.

- "Targeting and the impacts of India's MGNREGS," Yanyan Liu, Christopher B. Barrett, Nancy H. Chau, Upasak Das, Klaus Deininger, Sara Gustafson, Sudha Narayanan, Megan Sheahan, Vidhya Soundararajan. IFPRI Project Note. 2021.

- "How mobile phone towers could help monitor rainfall in developing countries," Noam David, Oliver Gao, and Yanyan Liu (2020). *The Conversation* on April 20, 2020.

- "Disentangling determinants of insecticide use to manage production, food security, and health risks in Cambodia and Vietnam: evidence from household surveys and risk-assessment experiments", Wei Zhang, Yanyan Liu, and Andrew Bell. *The Lancet Planetary Health* 2 (Supplement 1): S11 (Abstract), 2019.

WORKING PAPERS AND WORK IN PROGRESS

- "High-frequency monitoring enables machine learning-based forecasting of acute child malnutrition for early warning", with Susana Constenla-Villoslada, Linden McBrided, Clinton Oumae, Nelson Mutandae, and Christopher B. Barrett.

- "Monitoring and Anticipating Food Security Risks using Machine Learning", with Weilun Shi, Rob Vos, Soonho Kim, and Miguel Almanzar.

- "Impact of Risk Contingent Credit and Traditional Credit on Smallholders' Agricultural Investment and Productivity: Experimental Evidence from Kenya", with Michael K. Ndegwa, Apurba Shee, Patrick S. Ward, Calum G. Turvey, and Liangzhi You.

- "Disaggregated labor supply implications of guaranteed employment in India", with Christopher B. Barrett, Megan Sheahan, and Sudha Narayanan.

- "Land Plot Size, Machine Use and Agricultural Intensification in China", with Yuan Zhou.

- "Temperature and Tractor Use in Kenya" with Hiroyuki Takeshima.

- "Impacts of India's NREGS on Female Empowerment", with Sudha Narayanan.

AWARDS AND GRANTS ($\approx$ $7.4 Million)

- JPAL- Digital Agricultural Innovations and Services Initiative (DAISI), "Improve farmers' access to digital extension for pest and disease management in Kenya", $75,000, Lead PI, 2022-2023

- Government of Japan, Using Commercial Microwave Links to Improve Forecasting and Emergency Response in Rainstorm Prone Areas, $1,425,209, co-Lead, 2021-2022

- The World Bank, Impact Evaluation of the Landscape Programs in Ethiopia, $135,000, Lead PI, 2019-2020

- CGIAR Big Data Platform Inspire Challenge Scale up Fund, Use CML to estimate rainfall for agriculture, $125,000, Lead PI, 2019-2020

- CGIAR Big Data Platform Inspire Challenge Pilot Fund, Use CML to estimate rainfall for agriculture, $100,000, Lead PI, 2018-2019 (one of five awardees out of 130 applications)

- USAID, Harnessing big data and machine learning to feed the future, $1,000,000, Co-PI, 2018-2021

- The International Initiative for Impact Evaluation (3ie), Uptake and Evaluation of Innovative Insurance Embedded Credit for Promoting Resilience and Livelihoods for Smallholder maize and wheat farmers in Kenya Phase 2, $430,000, Co-PI, 2018-2021

- Syngenta Foundation, Mechanization processes in Asia and Sub-Saharan Africa, $300,000, Lead PI, 2017-2019

- Cornell University, Effects of Temperature on Agricultural Input Decisions in Kenya, $46,000, Lead PI, 2017

- CGIAR-PIM, Implementation and Impacts of India's National Rural Employment Guarantee Scheme, $230,000, Lead PI, 2017-2019

- Atkinson Center for a Sustainable Future Academic Venture Fund, Cornell University, Advancing Famine Early Warnings and Index-Based Agricultural Insurance in Developing Countries using Solar-Induced Chlorophyll Fluorescence Satellite Measurements and Machine Learning, $110,000, Co-PI, 2017-2019

- The International Initiative for Impact Evaluation (3ie), Using Big Data to Evaluate the Impacts of Transportation Infrastructure Investment: The Case of Subway Systems in Beijing, $340,000, Co-PI, 2017-2019

- The International Initiative for Impact Evaluation (3ie), Uptake and Evaluation of Innovative Insurance Embedded Credit for Promoting Resilience and Livelihoods for Smallholder maize and wheat farmers in Kenya Phase 1, $75,000, Co-PI, 2016-2017

- IFPRI Strategic Innovation Fund, Insurance, Knowledge, and Antibiotics use in Hog Production in China, $200,000, Lead PI, 2015-2016

- The International Initiative for Impact Evaluation (3ie), Impact Evaluation of National Rural Employment Guarantee Scheme in India, $300,000, Lead PI, 2013-2015

- Bill & Melinda Gates Foundation, Economic Transformation of Asian Agriculture and its Impacts on Global Economy Asia Really Becomes a Gigantic Net Importer of Foods?, $700,000, Lead PI, 2012-2014

- CGIAR-PIM, Assessing the Performance of An Innovative Microfinance Model: Repayment and Sustainability of Women Self-Help Groups in India and Bangladesh, $750,000, Lead PI, 2012-2014

- CGIAR-WLE, Impact of irrigation on smallholder resilience and ecosystem services in Nepal, $430,000, co-PI, 2013-2015

- Mario Einaudi Center for International Studies, Targeting and Impacts of India's National Rural Employment Guarantee Scheme, $7,000, co-PI, 2012-2013

- Cornell University Institute for the Social Sciences, Targeting and Impacts of India's National Rural Employment Guarantee Scheme, $9,000, co-PI, 2012-2013

- International Labor Organization, Can We Relax Liquidity Constraints in Micro-Insurance Demand? Piloting an Innovative Design for Agricultural Insurance, $120,000, co-PI, 2010-2012

- The International Initiative for Impact Evaluation (3ie), Smallholder access to weather securities: demand and impact on consumption and production decisions, $600,000, co-PI, 2010-2012

- The World Bank and IFPRI, Impact evaluation of subsidized staff training in Rural and Community Banks of Ghana, $60,000, Lead PI, 2010-2011

- The World Bank, Poverty Impact of India's National Rural Employment Guarantee Scheme, $50,000, Lead PI, 2009-2011

- Glenn and Sandy Johnson Fellowship, MSU, 2006

- Chinese Government Award for Outstanding Self-Financed Students Abroad, 2006

- Outstanding M.S. Thesis for 2003, Department of Agricultural Economics, MSU