Guanghong Xu

University of California, Santa Cruz
Department of Economics
1156 High Street
Santa Cruz, CA 95064

Email: guanghongxu@ucsc.edu
Homepage: guanghongxu.github.io
Office: 498 Engineering 2
Mobile: +1 831-621-7860

Fields	Development Economics, Applied Econometrics, Bayesian Statistics

Academic Affiliations	**International Livestock Research Institute (ILRI)**	Nairobi, Kenya
	Visiting Scientist	Aug, 2021 – Sep, 2024
	Ph.D. Fellowship	Nov, 2022 – Sep, 2024

Education	**University of California, Santa Cruz**	
	Ph.D. in Economics, Department of Economics	2025 (expected)
	Jiangxi University of Finance and Economics	
	B.A. in Finance, International School, *Summa Cum Laude(Rank 2/557)*	2017

Job Market Paper

"Farm to Fridge: Digital Traceability and Quality Upgrading in Kenyan Dairy Value Chain"
Funding: **[NSF Economics Dissertation Grant]**, **[The Weiss Fund]**, **[MIT/J-PAL DAISI]**, **[CGIAR SPIA]**, **[SurveyCTO]**, **[UCSC Blum Center]**

Disorganized agricultural value chains often prevent the transmission of quality incentives to upstream farmers, especially when quality is costly to observe at the farm gate. This study develops digital traceability systems for Kenyan dairy cooperatives and introduces an innovative quality monitoring method, using Bayesian statistical models to infer individual milk quality from pooled samples and reduce testing costs. I reveal randomly selected farmers' milk quality either by the model or by random tests to both cooperatives and farmers. I find that model group farmers reduce added water by a significant 21.9% compared to the control group, while random test group farmers show an insignificant 12.6% reduction. Additionally, treated farmers who consistently deliver high-quality milk get higher credit limits from the cooperative and use more credit for animal feed. A back-of-the-envelope calculation suggests that the model offers cost-effective quality improvement, making it a promising tool for continuous quality monitoring and scalable implementation.

Publication & Working Paper

(2022) "God is in the Rain: The Impact of Rainfall-Induced Early Social Distancing on COVID-19 Outbreaks", with Ajay Shenoy, Bhavyaa Sharma, Rolly Kapoor, Haedong Rho, and Kinpritma Sangha.
***Journal of Health Economics* 81: 102575**

We measure the benefit to society created by preventing COVID-19 deaths through a marginal increase in early social distancing. We exploit county-level rainfall on the last weekend before statewide lockdown in the early phase of the pandemic. After controlling for historical rainfall, temperature, and state fixed-effects, current rainfall is a plausibly exogenous instrument for social distancing. A one percent decrease in the population leaving home on the weekend before lockdown creates an average of 132 dollars of benefit per county resident within 2 weeks. The impacts of earlier

distancing compound over time and mainly arise from lowering the risk of a major outbreak, yielding large but unevenly distributed social benefits.

"The Value of Value Chains: An Experiment Linking Farmers' Cooperatives with Maize Processors in Rwanda", with Shilpa Aggarwal, Susan Godlonton, Ammar Kawash, Jonathan Robinson, and Alan Spearot.
Funding: **[BASIS MRR Innovation Lab]**, **[ATAI]**, **[J-PAL]**, **[CEGA]**

Lack of access to output markets is a key barrier to productivity growth of agriculture in developing countries, because it reduces the profitability of investment in productivity. We conduct a field experiment with 180 maize-growing cooperatives in rural Rwanda where a treatment group received support from the WFP Farm to Market Alliance to form connections with processors, while a control group farmed as usual. We find that the program immediately increased the probability of selling into the formal output value chain, and dramatically increased revenue by 150%-300%, driven largely by large increases in land under cultivation and input usage.

Selected Works in Progress

"Green Shoots: Seeding a Market for Certified Cassava Cuttings among Cooperatives in Rwanda", with Shilpa Aggarwal, Jonathan Robinson, Athanase Nduwumuremyi, Youngwoo Song, and Alan Spearot.
Funding: **[ATAI]**, **[CEGA]**

Many farmers in rural areas of developing countries do not use high-quality inputs, either because sellers of quality inputs are located far away or because the quality of inputs cannot be ascertained easily. This not only keeps farmers' income low in the short run but also has deleterious long-term consequences by preventing the development of value chains that require reliable access to high-quality farm output. In this study, we establish a market for high-quality cassava planting materials among cooperatives in Rwanda. Working with RAB, we randomly provide certification to cassava cooperatives and supplement this with a demand stimulation intervention in which we provide a subset of local farmers with information on crop diseases and how they can procure quality cassava planting material from certified cooperatives. We measure impacts on crop diseases, profits, and yields of cooperatives, as well as cassava planting and sourcing decisions of local farmers.

"Milky Way: Market Structure and Behaviour of Informal Traders in Kenyan Dairy Industry", with Martin Nandelenga and Sophie Nottmeyer.
Funding: **[PEDL]**

In the absence of formal contract enforcement, buyers and sellers in developing countries often rely on informal agreements to support repeated trade. This project investigates the existence and evolution of relational contracts between farmers and informal traders in the Kenyan dairy sector. We subsidize half of the traders' milk collection in randomly selected villages during the wet season, when milk supply is abundant, and competition is lower. This allows us to study whether traders build new relationships and how farmers respond to the temporary presence of the new traders. Through GPS tracking and weekly surveys, the project collects data on trader mobility, sourcing decisions, and farmer-trader interactions. We consider both farmers' and traders' perspectives and look at different mechanisms to explain under what conditions traders may or may not develop relationships.

Research Grants	**"Traceability and Quality Upgrading in Kenyan Dairy Value Chain"**	

· CGIAR Standing Panel on Impact Assessment (SPIA) ($23,027)   2024

· The Weiss Fund for Research in Development Economics ($23,368)   2023

· NSF Economics Dissertation Grant ($25,000)   2023

· MIT/J-PAL DAISI ($10,000)   2023

· UCSC Economics Dissertation Research Grant ($5,000) - *4x*   2021-2024

· UCSC Blum Scholars Grant ($4,000)   2023

· SurveyCTO Data Collection Research Grant ($3,376)   2022

"Seed Quality Certification with Cassava Cooperatives in Rwanda", with Shilpa Aggarwal, Jonathan Robinson, Youngwoo Song, and Alan Spearot.

· MIT/J-PAL Agricultural Technology Adoption Initiative ($118,900)   2022

"Market Structure of Kenyan Dairy Industry", with Martin Nandelenga and Sophie Nottmeyer.

· PEDL (CEPR/FCDO Initiative) ($8,166)   2022

"Financing Cattle Vaccinations with Dairy Cooperatives in Kenya", with Shilpa Aggarwal, Susan Godlonton, James Rao, Jonathan Robinson, Alan Spearot, and Nils Teufel.

· CGIAR Standing Panel on Impact Assessment (SPIA) ($329,594)   2020

"Output Value Chains for Cooperatives in Rwanda", with Shilpa Aggarwal, Susan Godlonton, Jonathan Robinson, and Alan Spearot.

· MIT/J-PAL Agricultural Technology Adoption Initiative ($343,000)   2020

· BASIS MRR Innovation Lab ($410,000)   2020

· MIT/J-PAL Agricultural Technology Adoption Initiative (pilot) ($50,000) 2019

Fellowships & Awards	UCSC Chancellor's Dissertation-Year Fellowship ($54,320)	2023
	UCSC Teaching Assistant Award for Excellence in Teaching	2020
	CFA Program Student Scholarship by *CFA Institute* ($1,200)	2017
	Industrial Securities Student Scholarship (¥6,000)	2016
	The 3rd Prize of China's Social-economic Development Analysis Tournament by the *Department of Economics at Harvard University*	2015
	China National Scholarship by *Ministry of Education* (¥8,000)	2015
	The 3rd Prize of Student Case Competition by *Institute of Management Accountants (IMA)*	2015
	CJIC Student Scholarship (¥3,000)	2015
	The 3rd Prize of Chinese College Student Competition on Energy Economics by *Chinese Society of Optimization, Overall Planning and Economical Mathematics*	2015
	JUFE Outstanding Academic Performance Scholarship - *3x* (¥4,500)	2014-2016
	China National Encouragement Scholarship by *Ministry of Education* (¥5,000)	2014
	The Star of Self Improvement of Chinese College Students (¥2,000)	2014
	Xiangdong Yue Student Scholarship (¥2,000)	2014

Conferences &	CGIAR Standing Panel on Impact Assessment (SPIA) Webinar (*scheduled*)	2024
Presentations	UCSC Brown Bag Seminar	2024
	SurveyCTO Webinar	2024
	UCSC Behavioral, Experimental, and Theoretical Economics Workshop	2024
	PEDL (CEPR/FCDO Initiative) Workshop at NYU Abu Dhabi	2022
	CGIAR Standing Panel on Impact Assessment (SPIA) Webinar	2021
	CGIAR ILRI PIL Program Workshop in Nairobi, Kenya	2021-2024
	UCSC Microeconomics Workshop	2020-2024

Teaching	**UC Santa Cruz**	
Experience	ECON 294A: Applied Economics and Finance Laboratory	
	· Instructor	Fall 2024
	ECON 136: Business Strategy	
	· Robert Brian Baden	Fall 2020
	ECON 2: Introductory Macroeconomics	
	· Julie H. Gonzalez	Spring 2020
	· Ajay M. Shenoy	Fall, Winter 2019
	ECON 100A: Intermediate Microeconomics	
	· Kristian Lopez Vargas	Winter 2020
	Jiangxi University of Finance and Economics	
	Equity Securities Valuation and Investment Analysis	
	· Instructor	Spring 2017
	Financial Engineering	
	· Lawrence A. Leger (Loughborough University, UK)	Spring 2017
	Financial Econometrics	
	· Gregor Kastner (University of Klagenfurt, Austria)	Spring 2016
	Probability Theory and Mathematical Statistics	
	· Jie Li	Spring 2016
	Linear Algebra	
	· Changqi Tao	Fall 2015
	Financial Econometrics	
	· Randall R. Rojas (University of California, Los Angeles, USA)	Fall 2015

Fieldwork	Kenya (36 months), Rwanda (10 months), Tanzania (1 month)	

Professional	**Berkeley Initiative for Transparency in the Social Sciences (BITSS)**	
Activities	BITSS Catalyst	Feb, 2024–present
	Social Science Prediction Platform (SSPP) – *Superforecaster*	Sep, 2023–present
	UC Berkeley - Center for Effective Global Action (CEGA)	
	Non-Resident Fellowship – *Ph.D. mentor*	Spring 2022
	Alibaba Research Center for Rural Dynamics	
	Guest Researcher	Apr, 2022–present

Industry	**Morningstar, Inc.**	
Experience	*Equity Analyst* for listed companies in the US and Canada	2017–2018
	Hillhouse Investment	
	Hillhouse Elite – affiliated to Hillhouse Academy	2015–2017

Skills	**Computer:** STATA, R, Stan, Python, SurveyCTO, ODK, GIS, Git, EViews, LaTeX
	Language: Chinese Mandarin (native), English (fluent), Swahili (basic), Kinyarwanda (basic)
	Certificates: Financial Risk Manager (FRM®), Chartered Financial Analyst (CFA®) Level I

References

Professor Jonathan Robinson
University of California, Santa Cruz
Economics Department
Email: jmrtwo@ucsc.edu

Professor Ajay Shenoy
University of California, Santa Cruz
Economics Department
Email: azshenoy@ucsc.edu

Professor Alan Spearot
University of California, Santa Cruz
Economics Department
Email: aspearot@ucsc.edu