

NATALIE R. LODUCA

Email: loducana@msu.edu

Website: natalieloduca.com

LinkedIn: [linkedin.com/in/natalieloduca](https://www.linkedin.com/in/natalieloduca)

FIELDS OF INTEREST

Environmental and Resource Economics, Sustainable Agriculture, Conservation Policy

EDUCATION

PhD	Agricultural, Food, and Resource Economics, Michigan State University Major Field: Environmental and Resource Economics Advisor: Dr. Scott Swinton	2024
MS	Agricultural Economics, Purdue University Major Field: Natural Resource Economics Advisor: Dr. Carson Reeling	2020
BS	Managerial Economics, University of California, Davis Minor in Statistics	2016

JOB MARKET PAPER

“Farmer Risk Aversion to Changing Weather” with Scott M. Swinton. [In progress](#). Target journal: *American Journal of Agricultural Economics*.

As farmers adapt to changing climate, they modify practices and technologies to manage evolving production risk. Understanding farmers’ risk attitudes is critical to predicting their decisions about climate change adaptation. This research empirically estimates utility functions to measure the risk preferences of Michigan corn-soybean farmers. We elicit from farmers their choices between paired lotteries in both a general and an agricultural domain. Aggregate results show that farmers are risk averse and tend to be more risk averse toward agricultural investment decisions than general risky gambles. Estimating individual farmer constant relative risk aversion (CRRA) utility functions reveals greater heterogeneity of risk preferences in the agricultural domain than in the general one. Determinants of CRRA preferences point to decreasing relative risk aversion based on crop acreage as a measure of wealth.

SELECTED ONGOING PROJECTS

“The Influence of Farmers’ Risk Preferences and Crop Yield Beliefs on Climate Change Adaptation Decisions” with Scott M. Swinton. [In progress](#). Target journal: *Journal of Agricultural Economics*.

Agricultural producers’ risk preferences and perceptions of climate change risks significantly shape their adaptation decisions. This research delves into the relationship between farmer risk preferences, perceived crop yield distributions, and climate change adaptation decisions among Michigan corn and soybean growers. Based on interviews with 44 farmers, we discover that participants anticipate future crop yield distributions to shift upwards with increased variances. Participants with higher levels of risk aversion perceive higher crop yield variances and are more likely to adopt irrigation technology in the future. Participants prefer to adopt adaptive technologies that they perceive as increasing expected crop yield or decreasing the variance of crop yield. These findings highlight the complex interplay between risk preferences, subjective probabilities, and the perceived effectiveness of adaptive inputs, providing policymakers and stakeholders with insights into the drivers of climate change adaptation decisions.

“Exploring the Influence of NRCS Cost-share Programs on Cover Crop Adoption in the Midwest”
with James Sears. In progress. Target journal: *Applied Economic Perspectives & Policy*.

Cover crops offer multiple public ecological benefits and private benefits to farmers. The cost-share payments from the Natural Resource Conservation Service (NRCS) allow farmers to bridge the gap between the public and private benefits of conservation practices. This study analyzes the impact of NRCS cover crop cost-share percentage levels on adoption rates at the county-level in the Midwest, employing fixed effects and contract-type controls to understand drivers of cover crop adoption in agriculture. By decomposing the per-acre payments into their cost-share proportions and per-acre costs, we isolate the marginal effect of increasing the cost-share proportion on enrolled cover crop acreage. We find that the basic single species contract is the most popular contract type, and higher adoption corresponds to lower precipitation levels in the previous growing season. Additionally, we find complementarity in adopting cover crops and conservation tillage practices using remote sensing data. These findings contribute to understanding the factors influencing the adoption of cover crops and offer insight into the role of government incentives in increasing sustainable agricultural practices.

PAPERS UNDER REVIEW

“The Changing Values of the U.S. Farm Workers’ Legal Status and Labor Quality Adjustment: A Hedonic Price Analysis,” with Sun Ling Wang. Forthcoming at *Applied Economic Perspectives and Policy*.

RESEARCH EXPERIENCE

Research Assistant , Michigan State University, East Lansing, MI Advisor: Dr. Scott M. Swinton	2020-2024
Intern , U.S. Department of Agriculture Economic Research Service, Remote Advisor: Dr. Sun Ling Wang	2023
Research Assistant , Purdue University, West Lafayette, IN Advisor: Dr. Carson J. Reeling	2018-2020

HONORS AND AWARDS

A. Allan Schmid Fellowship in Institutional Economics Dept. of Agricultural, Food, and Resource Economics, Michigan State University	2023
KBS-LTER Graduate Research Fellowship Kellogg Biological Station, Michigan State University	2022
Agricultural Economics’ Outstanding Thesis Dept. of Agricultural Economics, Purdue University	2021
Agricultural Research Graduate Diversity Research Fellowship Dept. of Agricultural Economics, Purdue University	2018-2019

INVITED PRESENTATIONS

<i>Agricultural & Applied Economics Association Annual Meeting</i> , New Orleans, LA	2024
<i>Allied Social Science Associations Annual Meeting</i> , San Antonio, TX	2024
<i>Agricultural & Applied Economics Association Annual Meeting</i> , Washington, D.C.	2023
<i>NSF Long-Term Ecological Research All-Scientist Meeting</i> , Monterey, CA	2022
<i>Agricultural & Applied Economics Association Annual Meeting</i> , Virtual	2020
<i>US-China Young Professional Forum</i> , West Lafayette, IN	2019

OUTREACH MATERIAL

Swinton, S. and N. Loduca 2024. "[Michigan farmers expect higher yields, more variability as weather changes](#)." *Michigan Farm News* 101(3): 11 (online Jan. 26, 2024; in print February 15, 2024).

PROFESSIONAL SERVICE

Graduate Student Representative , Committee on Women in Agricultural Economics Agricultural & Applied Economics Association	2021-2023
Social Media Team , Committee on Women in Agricultural Economics Agricultural & Applied Economics Association	2020-2023
Award Committee , Department of Agricultural Economics Purdue University	2019-2020

PROGRAMS

Stata, RStudio, Excel

REFERENCES

Dr. Scott Swinton
Distinguished Professor
Dept. of Agricultural, Food, and
Resource Economics
Michigan State University
446 W. Circle Dr.
East Lansing, MI 48824
(517) 353-7218
swintons@msu.edu

Dr. James Sears
Assistant Professor
Dept. of Agricultural, Food, and
Resource Economics
Michigan State University
446 W. Circle Dr.
East Lansing, MI 48824
(517) 353-4518
searsja1@msu.edu

Dr. Sun Ling Wang
Senior Economist
Economic Research Service
United States Department of
Agriculture
1400 Independence Ave, SW
Washington DC 20250
(202) 694-5460
sunling.wang@usda.gov