

Walter Ac-Pangan

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EDUCATION

Ph.D. Candidate in Agricultural Economics

2021 – Present

Kansas State University (Manhattan, KS)

Dissertation: Essays in Forecasting and International Trade

M.Sc. Agricultural Economics

2021

Kansas State University (Manhattan, KS)

B.Sc. in Agribusiness Management

2017

Zamorano University, Pan-American Agricultural School (Honduras)

RESEARCH AND WORKING MANUSCRIPTS

- **Ac-Pangan, W.** Hendricks, N. (2024) Using Machine Learning to Forecast Crop Acreage in the US. (In progress).
- **Ac-Pangan, W.** Hendricks, N. (2024) . Effects of Non-Tariff Trade Barriers in Grain Markets: The Case of Rice Export Ban Imposed by India. (In progress).
- Jo, Francis. Reyes, P. Hendricks, NP., **Ac-Pangan, W.** (2024) A Unified Algorithm For Penalized Likelihoods In Model Selection Of Spatial-Temporal Models For Lattice Data. (In progress).
- **Ac-Pangan, W.** Sharma, P., Kim, J., (2024) Identifying The Untapped Potential Of The Small Local Food Manufacturing Business In The US. (In progress).

PEER-REVIEW PUBLICATIONS

- **Ac-Pangan, W.** Hendricks, N., Zereyesus, Y. A., Kee, J. (2024) Forecasting Grain Supply of Low and Middle-Income Countries. (Submitted to Agricultural Economics).
- Zereyesus, Y. A., Kee, J., Morgan, S., Jellife, J., Nava, N., Cardell, L., **Ac-Pangan, W.** (2024). Does trade openness affect global grain supply response?. (Resubmitted to Food Policy).
- **Ac-Pangan, W.** Coffey, B.K. (2024) An Analysis of Live Cattle Basis Prediction Errors (Resubmitted to Journal of Agricultural and Applied Economics).
- Rossi, L., Hallman, L. M., Adams, S. N. **Ac-Pangan, W.** (2020). Impact of a Soil Conditioner Integrated into Fertilization Scheme on Orange and Lemon Seedling Physiological Performances. Plants, 9(7), 812. Available at: <https://doi.org/10.3390/plants9070812>
- Adams, S. N., **Ac-Pangan, W.**, Rossi, L. (2019). Effects of Soil Salinity on Citrus Rootstock 'US-942' Physiology and Anatomy, HortScience horts, 54(5), 787-792. Available at: <https://doi.org/10.21273/HORTSCI13868-19>

OTHER PUBLICATIONS

• Zereyesus, Y. A., Kee, J., Hendricks, NP., **Ac-Pangan, W.**, Cardell, L., Nava, N.J., Jellife, J., Morgan, S. (2023). Special Article: Projecting Long-Term Staple Grain Production for the International Food Security Assessment: A Time Series Cross-Validation Approach. USDA ERS. International Food Security Assessment, 2023-2033. Page 38-47. Available at: <https://www.ers.usda.gov/webdocs/outlooks/107271/gfa-34.pdf?v=916.1>

• **Ac-Pangan, W.** Plan de negocios para el establecimiento de una exportadora de cacao fino de aroma en Cobán, Alta Verapaz, Guatemala. Zamorano University Wilson Popenoe Library. Available at: <https://bdigital.zamorano.edu/bitstream/11036/6136/1/AGN-2017-001.pdf>

SELECTED PAPER AND CONFERENCE PRESENTATIONS

• **Ac-Pangan, W.**, Hendricks, NP. (2024). Effects of Non-Tariff Trade Barriers in Grain Markets: The Case of Rice Export Ban Imposed by India. Selected paper will be presented at Australasian Agricultural and Resource Economics Society (AARES). Feb 12, 2025. Brisbane, Queensland, Australia.

• **Ac-Pangan, W.**, Sharma, P., Kim, J. (2024). Drivers of the Establishment of New Local Food Manufacturing Businesses in the Heartland Region. USDA-AMS Local Food Economics Data Visualization Challenge presented at American and Applied Economics Association Meeting (AAEA), July 28, 2024. New Orleans, Louisiana.

• **Ac-Pangan, W.**, Hendricks, N., Zereyesus, Y. A., Kee, J., Morgan, S., Jellife, J., Nava, N., Cardell, L. (2023). Global grain supply forecasting. Selected paper presented at American and Applied Economics Association Meeting (AAEA), July 24, 2023. Washington, DC. <https://ageconsearch.umn.edu/record/335783?ln=en>

• Zereyesus, Y. A., Kee, J., Morgan, S., Jellife, J., Nava, N., Cardell, L., Hendricks, N., **Ac-Pangan, W.** (2023). Does trade openness affect global grain supply response? Selected paper presented at American and Applied Economics Association Meeting (AAEA), July 24, 2023. Washington, DC. <https://ageconsearch.umn.edu/record/335666?ln=en>

• **Ac-Pangan, W.**, Hobbs, L., Sharma, P., Ofori-Bah, C., Sharma, M., (2024). Food Chain Partnership: When the Funding Stops: Sustaining private sector-non-profit collaborations. Case Study Solution presented at the International Food and Agribusiness Management Association (IFAMA), June 17, 2023. Christchurch, New Zealand.

• **Ac-Pangan, W.**, Hendricks, N. (2023). Improving existing methods of IFSA supply forecasting. Selected paper presented at the 2021 NCCC-134 Annual Conference, Applied Commodity Price Analysis, Forecasting and Market Risk Management. April 24, 2023. St. Louis, MO. Available at: https://legacy.farmdoc.illinois.edu/nccc134/conf_2023/pdf/Ac-Pangan_Hendricks_Zereyesus_Kee_NCCC-134_2023.pdf

• **Ac-Pangan, W.** Coffey, B. (2021) How do changes in market fundamentals affect the hedging in US live cattle markets? Selected paper presented at the 2021 NCCC-134 Annual Conference, Applied Commodity Price Analysis, Forecasting and Market Risk Management. April 19-20, 2021. (Online). <https://ageconsearch.umn.edu/record/316401>

POSTER PRESENTATIONS

• **Ac-Pangan, W.**, Sharma, P., Kim, J. (2024). Identifying the Untapped Potential of the Small Local Food Manufacturing Business in the US. Poster presented at AI and the Future Symposium: Trust AI?. Oct 15, 2024. Manhattan, Kansas.

- **Ac-Pangan, W.**, Hendricks, NP. (2024) Using Machine Learning to Forecast Long-Term Grain Supply of Low and Middle-Income Countries. Poster presented at AI and the Future Symposium: Trust AI?. Oct 15, 2024. Manhattan, Kansas.

- Jo, Francis. Reyes, P. Hendricks, NP., **Ac-Pangan, W.** (2023) A Unified Algorithm For Penalized Likelihoods In Model Selection Of Spatial-Temporal Models For Lattice Data. Research and the State, Graduate Student Poster Session. Kansas State University. April 20, 2023. Manhattan, KS. Available at: <https://www.k-state.edu/grad/student-success/research-forums/docs/research-state/2023-RS-Abstract-Booklet.pdf>

- Hallman, L., Rossi, L., **Ac-Pangan, W.**, Adams, S. N. (2019). Optimal Nutrient Concentrations and Use of Root Growth Enhancers to Improve Citrus Root Health. Poster presented at American Society for Horticultural Science (ASHS 2019 Annual Conference), July 24, 2019. Las Vegas, Nevada. Available at: <https://ashs.confex.com/ashs/2019/webprogramarchives/Paper30104.html>

- Adams, S. N., **Ac-Pangan, W.**, Rossi, L. (2019). Effects of Soil Salinity on Citrus Rootstock 'US-942' Physiology and Anatomy, HortScience horts, 54(5), 787-792. Poster presented at American Society for Horticultural Science (ASHS 2019 Annual Conference), July 24, 2019. Las Vegas, Nevada. Available at: <https://ashs.confex.com/ashs/2019/webprogramarchives/Paper30091.html>

RESEARCH EXPERIENCE

Department of Agricultural Economics, Kansas State University

Graduate Research Assistant

Aug 2021 – Present

Cooperative Agreement with USDA Economic Research Service

- Development of grain supply forecasting models using econometric (OLS, FEOLS, POISSON), ARIMA and Machine Learning (Random Forest, Extreme Gradient Boosting) techniques to predict yield, area and production at the country level.
- Evaluation of different approaches to improve the forecast using as linear and nonlinear trends with natural cubic splines, pooled panel, country-specific estimates. Model performance was validated through out-sample forecasting using accuracy measures (RMSE, MAE, MAPE and MSE). The models are estimated using production, price and climate data from 78 countries.
- Development of skills in forecasting methods, data wrangling, and manipulation of diverse geospatial datasets (raster, bricks, point, lineal, and polygon data), and spatial interpolation.

Graduate Research Assistant

Aug 2019 – Jul 2021

- Data analysis of Live Cattle Markets Fundamentals in the regions of KS, NE, CO, IO-MN, and TX-OK-NM using Bloomberg Terminals, LMIC, and USDA-AMS databases.
- Forecasting live cattle prices, basis, and hedging errors.
- Survey Design to perform a choice experiment on small corn producers in rural northern Guatemala.
- Construction of a survey using SurveyCTO.
- Translation and Interpretation of Survey Questions from English to Spanish.

Department of Horticultural Science, University of Florida

Research Scholar

May – Dec 2018

Field and Lab work in the Plant Root Biology Lab

- Perform research on Plant breeding and Root Physiology in Citrus Crops

TEACHING EXPERIENCE

Department of Agricultural Economics, Kansas State University

Instructor

Aug – Dec 2024

AGEC 115 – Decision Tools For Agricultural Economics and Agribusiness
(20 Undergraduate students). Freshman Level Course

Instructor

R Programming Language Camp for first-year M.S. and Ph.D. students.
(10 Graduate students)
(14 Graduate students)

Aug 2023

Aug 2024

Instructor

Aug – Dec 2021

AGEC 632 – Agribusiness Logistics
(22 Undergraduate students). Senior Level Course

Graduate Teaching Assistant

Aug – Dec 2019

AGEC 615 – Global Agricultural Development
(56 Undergraduate students). Senior level Course

AGEC 120 – Agricultural Economics and Agribusiness
(17 Undergraduate students). Freshman level Course

Department of Economics, Kansas State University

Guest Lecture for ECON 890 Computational Methods for Economics

Mapping in Python

March 2024

Random Forest Models for Global Grain Supply Forecasting

May 2024

(8 Graduate students)

Department of Grain Science, Kansas State University

English - Spanish Translator and Interpreter

Jun – Aug 2021

Educational Program USSSEC – International Grain Program at Kansas State University Practical and Strategic Education for the Next Generation of Agribusiness Leaders Online Course Taught in Mexico and Colombia

EXTENSION AND OUTREACH EXPERIENCE

Department of Agricultural Economics, Kansas State University

Extension Assistant Coordinator

Oct - Dec 2024

76th Annual Kansas Income Tax Institute (Online and In-Person Sessions)

INDUSTRY EXPERIENCE

Oro del Pacifico S.A. (Guatemala)

Jan - Apr 2018

Production Assistant Manager of Shrimp Farms

QualiTech Company, (Chaska, Minnesota)

Jan - May 2017

Lab Research Assistant in the AG Nutrition Department

LEADEARSHIP AND AWARDS

- Social Chair at AAEA-Latin American Section
(New Orleans, Louisiana. 2024 - 2025)
- AAEA / USDA AMS Local Food Economics Data Visualization Challenge Award (First Place)
(New Orleans, Louisiana. 2024)
- AAEA-Graduate Student Section / USDA-AMS Travel Award
(New Orleans, Louisiana. 2024)
- KSU - Graduate Student Council Travel Award
(Manhattan, Kansas. 2024)
- IFAMA Case Study Competition Award (First place Graduate Level Category)
(Christchurch, New Zealand. 2023)
- KSU - Graduate Student Council Travel Award
(Manhattan, Kansas. 2023)
- Treasurer of the Graduate Student Agricultural Economics Association
(Kansas State University, Manhattan, KS. 2023)
- First place in academic performance at Department of Agribusiness (*Summa Cum Laude*)
(Zamorano University, Honduras. 2017)
- President of the Students Association at Department of Agribusiness
(Zamorano University, Honduras. 2016 - 2017)
- Learning by Doing Award
(Zamorano University, Honduras. 2016)
- Outstanding Academic Performance Award
(Zamorano University, Honduras. 2015 - 2017)
- Outstanding Academic Performance Award
(Escuela Nacional Central de Agriculture (ENCA), Guatemala. 2012-2013)

PROFESSIONAL MEMBERSHIPS

Agricultural & Applied Economics Association (AAEA)	2021 - Present
Applied Commodity Price Analysis, Forecasting and Market Risk Management (NCCC-134)	2021 - Present
Australasian Agricultural and Resource Economics Society (AARES)	2024 - Present
Graduate Student Agricultural Economics Association at KSU (GSAE)	2019 - Present
International Food and Agribusiness Management Association (IFAMA)	2022 - Present
North American Colleges and Teachers of Agriculture (NACTA)	2024 - Present

ADDITIONAL TRAINING AND SKILLS

Languages:

- English (Professional proficiency)
- Spanish (Native Speaker)

Software and Computational Languages Experience:

- R Studio/R Markdown/R Shiny
- Python (NumPy, SciPy, Pandas, SciKit-Learn, Matplotlib, TensorFlow)
- Visual Studio Code, Google Colab, Jupyter, Github
- Quarto
- SurveyCTO
- Latex/Overleaf