Voluntary Sustainability Standards and Efficiency of Coffee Production: The Case of Smallholder Producers in Honduras

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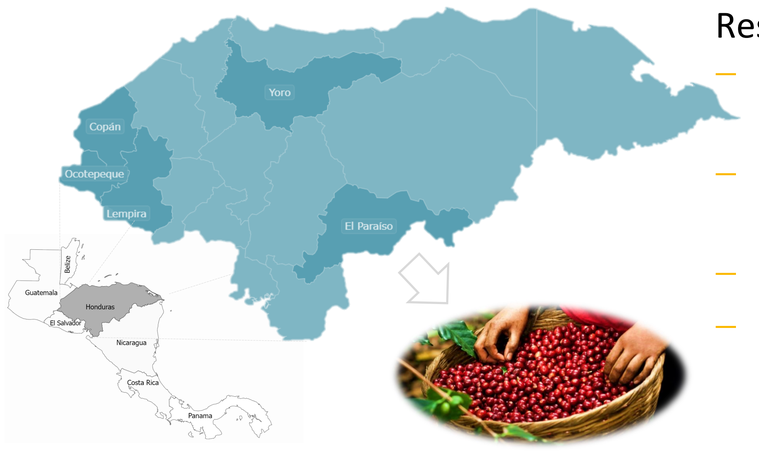
RESEARCH BACKGROUND & STUDY AREA

- **Sustainable coffee production** has been believed to have the potential to enhance the economic, social, and environmental performance of farmers
- **Coffee production** is under different socioeconomic, climatic, and political pressure, affecting the living conditions of smallholder coffee farmers,
- Different **Voluntary Sustainability Standards** (VSS) claim to improve the livelihood of smallholder coffee producers through certain pathways and practices that have to be adopted at the farm and household level



Research focus on **Honduras**

- One of the poorest countries in Central America
- **Sixth larger coffee-producing country**
- **4% of global coffee production**
- Small and medium size farms produce 89% of HN coffee

RESEARCH OBJECTIVE

- Determine the impact of VSS on the efficiency in the use of inputs and production of outputs, and the socioeconomic implications on Honduran smallholder coffee producers, against a comparable group of non-certified farmers, using Covariate Balancing Propensity Score (CBPS).

CONCEPTUAL FRAMEWORK (own development based on [1])

Practices → **Impact Pathways** → **Outcomes**

Financial Capital

Farmer training
Good Agricultural Practices
- → Fertilization
- → Soil analysis
- → Soil conservation
- → Insect control
- → Disease control
- → Weed management

Higher farm-gate prices
Record keeping

Farm productivity
Production costs
Technical efficiency

Gross profit
Household income
Poverty likelihood

\+ Demographic, institutional, and socio-economic determinants

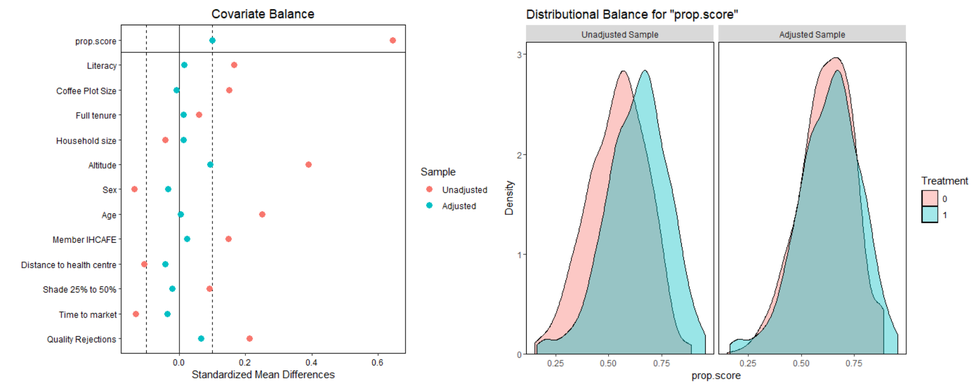
[1] Navichoc, D., Estrella, A., Dietz, T., & Kilian, B. (2022). Impact pathways of voluntary sustainability standards on smallholder coffee producers in Honduras: Price premiums, farm productivity, production costs, access to credit. *World Development Perspectives, 27*. doi.org/10.1016/j.wdp.2022.100435

METHODOLOGY & DATA

1. Agricultural household survey data in HN

- → **400 certified** smallholder farmers
- → **259 non-certified** smallholder farmers
- → Coffee-year 2015-2016.

2. Covariate Balancing Propensity Score



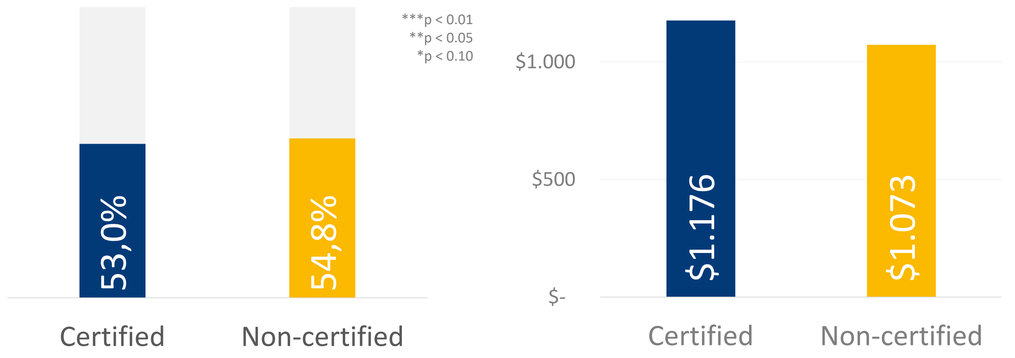
3. Stochastic Frontier Analysis

- → **Cobb-Douglas** to estimate the **Technical Efficiency**
- → **Two-limit Tobit model** to examine the impact of demographic, institutional, socio-economic, etc. on the farm efficiency

4. Socio-economic implications

- → **Gross profit**
- → **Coffee production efficiency**
- → **Household income**
- → **Poverty likelihood**

PRELIMINARY RESULTS



Tobit model determinants → Age of household head, coffee area, access to credit, time to plot, time to market

Implications
- → Opportunity to increase the efficiency for both groups.
- → Certified producers obtained higher gross profit.
- → However, the total gross profit represent only 1,5 and 1,3 min salary/person/year in HN for an avg. hh size of 4,3 people, for both certified and non-certified groups.

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