Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Determinants of Technical Efficiency in Vineyard Systems of Central Chile When Adapting to Climate Change: the Role of Risk Preferences and Social Capital

Enrique Alvarado[1], Bernhard Brümmer[2], Marcela Ibanez Díaz[3]

[1] *Georg-August-Universität Göttingen, Dept. of Agricultural Economics and Rural Development, Germany*
[2] *Georg-August-Universität Göttingen, Dept. of Agricultural Economics and Rural Development, Germany*
[3] *Georg-August-Universität Göttingen, Research Centre, Equity, Poverty and Growth, Germany*

Abstract

The effects of climate change on global agriculture have been widely studied. However, it is necessary to keep studying the responses that production systems could have when farmers attempt to adapt to climate change. The objective of this research was to understand how risk preferences and social capital forms affect the technical efficiency of vineyard systems when adapting to climate change. This study took place in the O'Higgins and Maule regions of central Chile, data were collected through a field experiment and an exit survey from September to December 2016. Specifically, we conducted an artefactual field experiment to elicit risk preferences of 182 small vineyard farmers; we used the structural and midpoint methods to estimate the Cumulative Prospect Theory (CPT) parameters. The parameters indicate vineyard farmers are strongly risk averse and sensitive to losses, and their determinants are grape area and subjective norms for risk aversion, and experience and education for loss aversion. Then we apply stochastic frontier analysis on plot-level data of vineyards. Results suggest that age and household size positively influence the technical efficiency of vineyard systems; meanwhile, general trust, membership in farmers organisations, risk and loss aversion negatively influence the technical efficiency. In this regard, it is necessary to design policies focus on facilitates farmers' accessibility to a wide range of inputs, insurance, and credit, and also improved their perception about risk preferences and social capital forms, in this case, general trust and membership.

Keywords: Cumulative prospect theory, risk preferences, social capital, stochastic frontier analysis, technical efficiency, vineyard farmers

Contact Address: Enrique Alvarado, Georg-August-Universität Göttingen, Dept. of Agricultural Economics and Rural Development, Albrecht Thaer Weg, 22A, 13, 37075 Göttingen, Germany, e-mail: ealvarado79@gmail.com