

**Food safety standards in developing countries:
Exploring the role of financial literacy**

Dissertation

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Summary

The global agri-food system is experiencing a far-reaching transformation process. The consequences for small, asset-poor farmers are a topic of special concern in development oriented agricultural research. One main characteristic of the trend is the increasing importance of food safety and quality standards for participating in global agricultural value chains. Small farmers' market participation may be challenged through this trend, as certification requires major investments and changes in production processes. The increasing importance of standards may be on the other hand a strong incentive to upgrade production. The literature discusses exclusion and upgrading scenarios controversially. Another topic of interest is the economic impacts of the increasing standardization in agricultural value chains. Considering the described trend, the objective of the thesis is to improve the understanding of the determinants of food safety standard adoption and contribute to the knowledge on the impacts of standard adoption. The thesis is divided into four papers that all contribute to the research objective.

The first paper of the thesis introduces the cluster concept and the global value chain approach. Both concepts are widely applied to analyze organizational patterns between economic actors. Whereas cluster analysis is used to analyze the economic organization at the local level, global value chain analysis is concerned with the economic organization of globally dispersed actors connected through their vertical trade relationships. For a deeper understanding of the agri-food transformation process, it is relevant to consider horizontal and vertical organizational patterns. The paper supports the position that both concepts could be complementary when it comes to analyzing determinants of small farmers' participation in high-value markets or the effects of organizational changes in global value chains on small farmers in developing countries.

The second paper of the thesis is discussing the determinants and effects of increased standard implementation in agricultural value chains. Categorizing standard systems according to the standard setters, their scope and their objectives helps to better understand adoption determinants and economic impacts. Food safety and quality as a credence good comes with high information asymmetries within agri-food chains. The shift towards private certification systems is partly due to a general policy shift which leaves

the responsibility for food safety and quality with private actors, as the retailers for example. Standards are used as a tool for risk management and product differentiation. They are used to meet the demand of informed consumers and stakeholders and to reduce risks related to food safety. Private standard schemes are important for non-traditional agricultural exports, which have received especial political support throughout Latin America. There is still no systematic evidence on whether standards create exclusive supply chains. But there is no doubt that standards for food safety and quality will continue to play an important role in agricultural value chains.

The core of the thesis consists of two papers that analyze primary data from a random sample of small pea farmers in Guatemala. Paper three studies the determinants of Globalgap adoption in the fresh pea sector in Guatemala. The sector is characterized by small-scale farming and has a long tradition of sanitary and phytosanitary problems. Regardless of the increasing importance of food safety and quality in high value chains, the compliance with Globalgap is relatively low. The contribution of the paper to the existing literature is the consideration of farmers' financial skills in the adoption process. The study shows that apart from capital endowment and access factors, financial literacy plays a significant role in standard adoption. Farmers with a higher level of financial literacy are more likely to adopt Globalgap compared to those farmers with a lower level of financial literacy. It seems that farmers with higher skills are better able to comply with the stringent criteria of the standard which improves their adoption probability. Furthermore, the results show that formal education is not important for Globalgap adoption in the study context. Skills and knowledge necessary for standard adoption do not come from formal education measured in years of schooling but seem to stem from informal sources.