

The Uneven Spread of Private Food Quality Standards over Time and Space

Insa Flachsbarth, Nina Grassnick, Bernhard Brümmer

Contact: Insa.Flachsbarth@agr.uni-goettingen.de

Introduction

Discerning consumers demand safe high-quality, sustainably and 'ethically' produced food
+
Strict public standards in major markets
↓
In **global** agricultural supply chains, standards must be fulfilled independent of origin of produce.

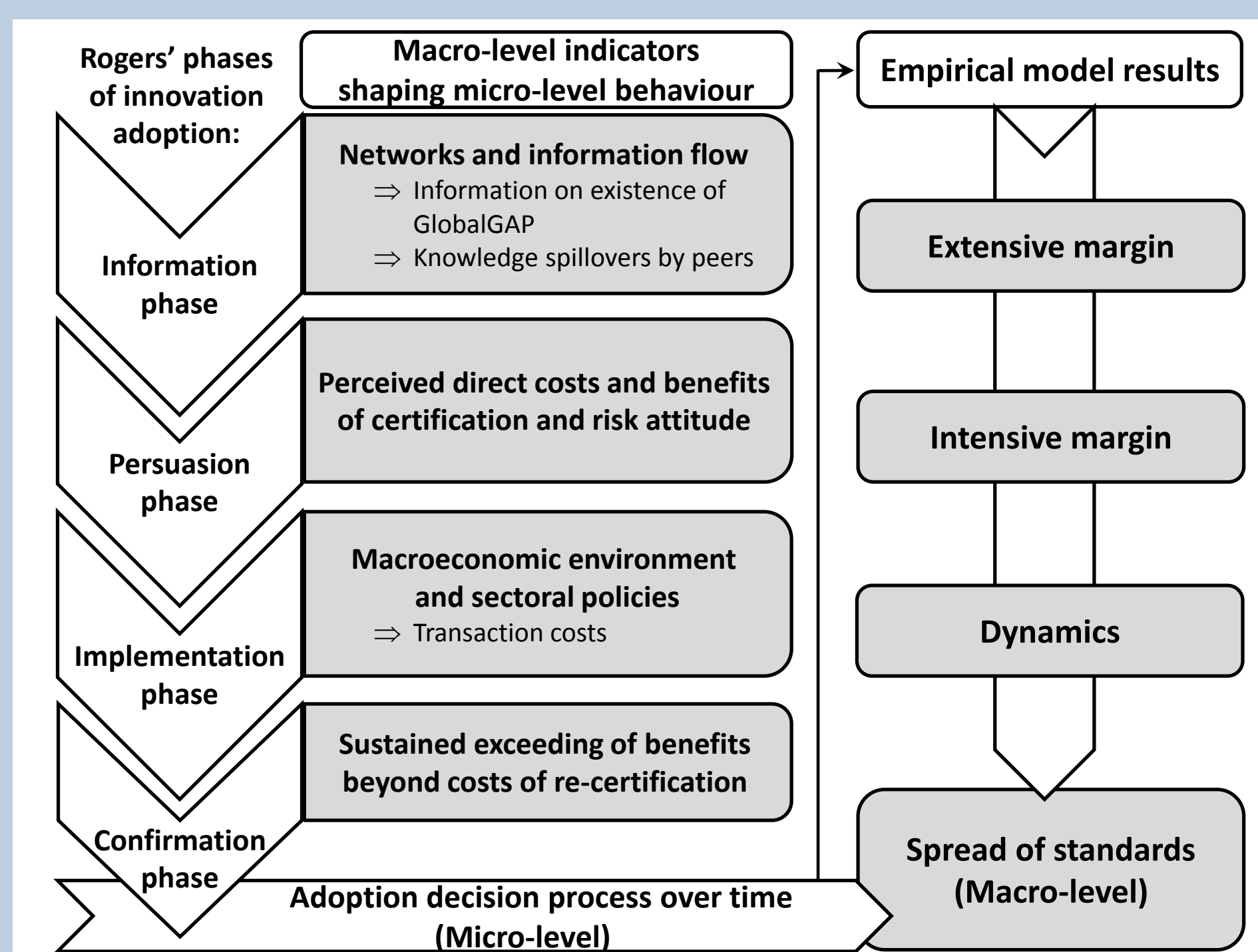
↓
Modernisation of procurement systems of agri-food companies and retail chains



↓
Food quality standards ubiquitous in western markets (GlobalGAP membership of 30 European retail chains)
+
Supermarket revolution in developing countries (GlobalGAP membership of 15 non-European retail chains)
↓
Demand for certified produce intensifies across the world in oligopsony market structures

⇒ Compliance by farmers becomes *de facto* mandatory for market participation, yet certification rates unequal around the world

Conceptual framework



Source: Own elaboration based on Rogers (1995)

Results: Extensive margin

Table 1: Why does certification start to emerge in some countries and in others not?

Variable	Effect	Rational
Information Communication Technologies	+	<ul style="list-style-type: none"> Fast information flow Lower costs of documentation and traceability
Modern grocery distribution	+	<ul style="list-style-type: none"> More access to standard-specific information Increase in buyer power Home market effect - less export dependency
Agricultural capital stock	+	<ul style="list-style-type: none"> Highly mechanised and productive systems
Doing business	+	Reduced transaction costs, specifically: <ul style="list-style-type: none"> Access to credit Effective land-markets (secure property rights) Functioning contract enforcement Efficient trading across borders
Development flows to agriculture	+	<ul style="list-style-type: none"> Financial support: certification costs Financial/technical support: initial investments

Note: A positive sign means that the variable increases the probability of entering the certification market. Horizontal lines separate Roger's phases: (1) Information phase, (2) Persuasion phase, (3) Implementation phase. Results refer to first stage results of the ZINB model.

Methodology and data

Empirical modelling:

1. Poisson
2. Double hurdle
3. Zero inflated negative binomial

Explanatory variables:

Information phase Neighbour's certification rate, Trade network with EU, Fruits and Vegetable production area, Roads, ICT

Persuasion phase Agricultural capital stock, Crop export share, Population size, Modern grocery distribution

Implementation phase Inflation rate, Exchange rate, Doing business index, Development flows to agriculture, GDP, Maximum residue limit strictness index

Confirmation phase TFP growth

Data: Dependent variable: Counts of certified farmers. Sample: N=183, T=7 (2008 -2014)

Results: Intensive margin

Table 2: Why do some countries show high certification rates and why does it spread fast?

Variable	Effect	Rational
Lagged certification rate	+	<ul style="list-style-type: none"> Information flow from peer farmers
Existing trade networks with EU	+	<ul style="list-style-type: none"> Network effects with core market Vertical integration: multinationals – farmers Export dependency/oligopsony market structures
Transportation infrastructure	+	<ul style="list-style-type: none"> Fast information flow Lower trade costs to high-value markets
F&V production area	+	<ul style="list-style-type: none"> Horticulture highly relevant for GlobalGAP
Domestic auditor	+	<ul style="list-style-type: none"> Reduced certification costs
Agricultural capital stock	+	<ul style="list-style-type: none"> Highly mechanised and productive systems
Crop export share	+	<ul style="list-style-type: none"> High export dependency Lower initial investment costs
Strict public standards (Maximum residue limit)	+	<ul style="list-style-type: none"> Overlap of public and private standard Farmers' investments imperative to serve domestic market → Part of initial investments needed to comply to GlobalGAP already made

Note: A positive sign means an increasing effect on the spread of GlobalGAP. The horizontal lines separate Roger's phases: (1) Information phase, (2) Persuasion phase, (3) Implementation phase. Results refer to second stage results of the ZINB model.

Conclusions and policy recommendations

- Agricultural specific bilateral development flows can help to overcome initial market access constraints.
- Central governments should create a stimulating business environment:
 - Trade agreements with core GlobalGAP markets
 - Guarantee functioning executive authorities to enforce (GlobalGAP) contracts and to secure land tenure rights.
 - Road and communication infrastructure investments to reduce costs.
- Domestic public food safety standards set up by agricultural ministries oblige farmers to invest ⇒ Reduction in initial investment costs to comply with GlobalGAP.