



# **Cooperative forms of food production – The effect of organizational decision-making capacity and social capital on perceived benefits**

**Christian Ritzel & Stefan Mann**

187th Seminar of the European Association of Agricultural Economists



# Cooperative forms of food production

- Traditional food production → humans are consumers & not producers
- Cooperative food production → humans are producers & consumers
  - Community-supported agriculture
  - Community gardening
  - Allotment gardening
- Motivation for engagement:
  - Collective & democratic decision-making
  - Benefits for health & environment
  - Community experience



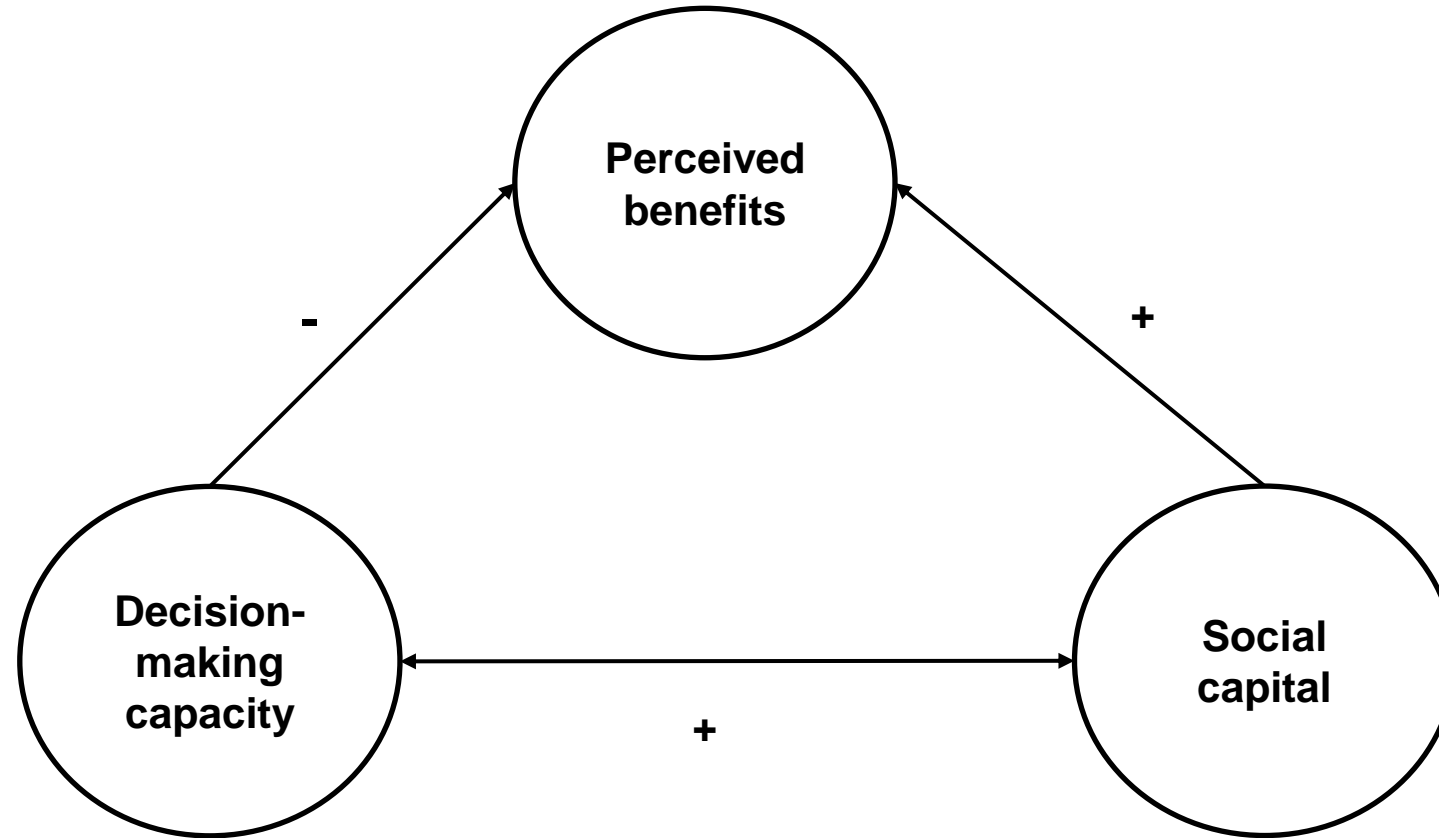


# Research aims

1. Identify the effect of organizational decision-making capacity and social capital on perceived benefits
2. Identify group differences of the proposed effects (community-supported agriculture vs. allotment gardens)



# Conceptual model and expected effects



Expected effects are stronger for community-supported agriculture



# Database

- Online survey conducted among members (12/2022 & 01/2023)
- Web search of cooperative food production organizations → contact through e-mail
- After agreement, contact person distributed survey to members
- N = 500 respondents participated
  - n = 247 community-supported agriculture
  - n = 197 allotment gardens
  - n = 28 community gardens → drop
  - n = 19 other organizations → drop
  - n = 14 missing values → drop



# Database

- **Decision-making capacity:** four Likert-scale items ranging from 1 = “completely disagree” to 5 = “completely agree”
  - Easy participation
  - Active participation
  - Transparent decisions
  - Organization takes decisions
  
- **Social capital:** four Likert-scale items ranging from 1 = “completely disagree” to 5 = “completely agree”)
  - Integration
  - Talk to other members
  - Meet members outside organization
  - New friends



# Database

- **Perceived benefits:** five items ranging from 0 = “non-beneficial” to 100 = “fully beneficial”
  - Physical health
  - Mental health
  - Environmental friendly activity
  - Food grown is healthy
  - Connectedness with nature



# Methods

- **Multivariate analysis of variance and covariance (MANOVA)**
  - Identify differences regarding the mean values of the items between groups
- **Generalized structural equation modeling (GSEM)**
  - Investigate the relationships between the (latent) constructs with and without considering group differences
  - Wald-test: Examine whether the coefficients across the groups were equal

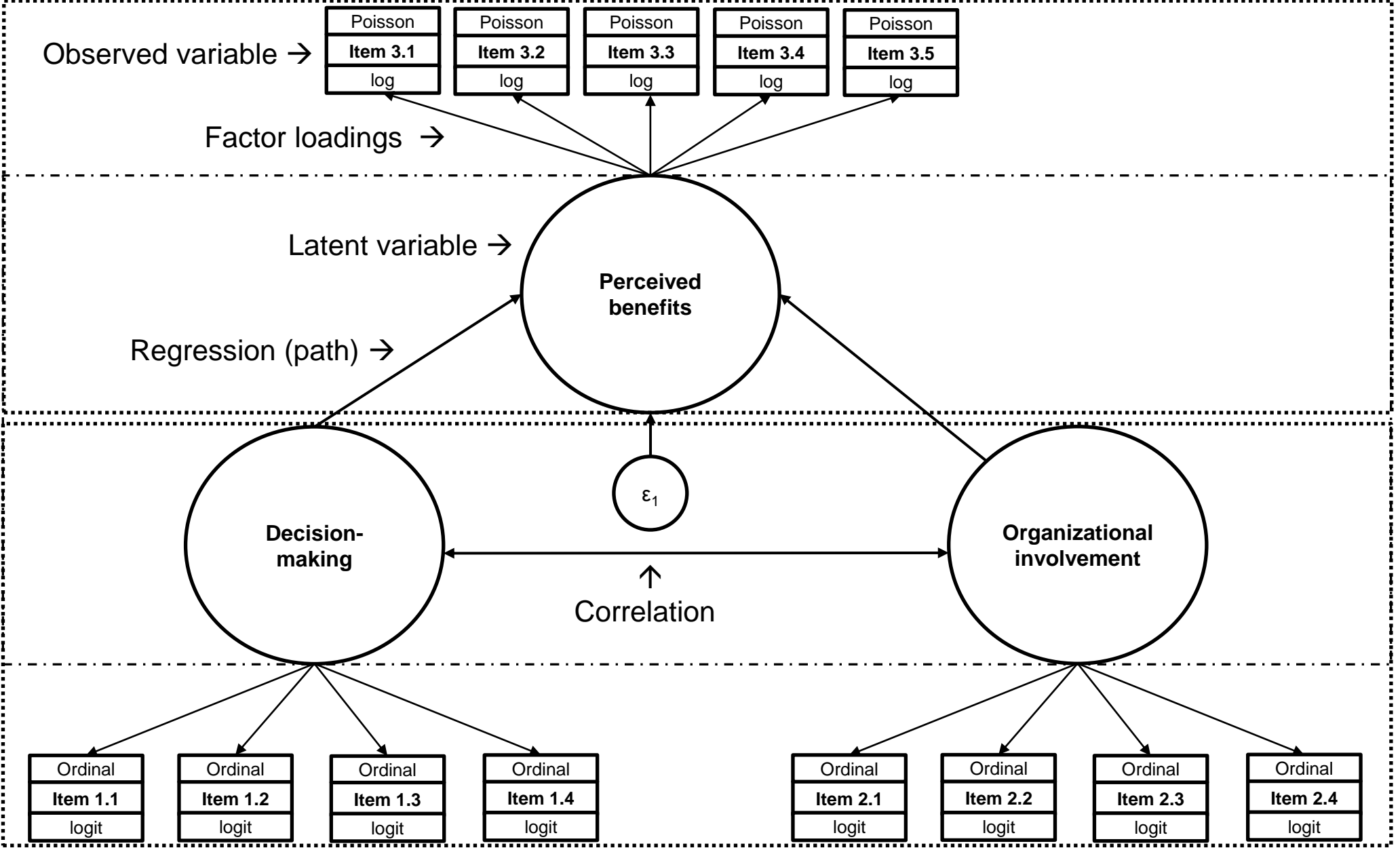




Structural model

Measurement model

Measurement model





# Results MANOVA

Item	Mean value	Mean value	Mean difference	p-value
	AGs	CSA		
<b>Decision-making capacity</b>				
Easily participate	3.7	4.3	-0.6	0.000
Transparent decisions	3.8	4.5	-0.7	0.000
Organization makes decisions	2.6	1.7	+0.9	0.000
Actively participate	3.3	3.3	0.0	0.857
<b>Social capital</b>				
Well integrated	4.4	4.7	-0.3	0.000
New friends	3.3	3.0	+0.3	0.015
Regularly talk to members	4.0	3.8	+0.2	0.146
Meet members outside organization	2.6	2.7	-0.1	0.725
<b>Perceived benefits</b>				
Environmentally friendly	85.5	92.1	-6.6	0.000
Healthiness of food	89.6	95.2	-5.6	0.000
Physical health	85.9	73.9	+12.0	0.000
Mental health	89.8	79.2	+10.6	0.000
Connection with nature	90.1	83.2	+6.9	0.000



# Results GSEM

Path	Pooled	Grouped		
		AGs	CSA	Test H <sub>0</sub> rejected
Decision-making capacity → perceived benefits	-0.012* (0.007)	-0.002 (0.010)	-0.004 (0.012)	No
Social capital → perceived benefits	0.119*** (0.033)	0.040* (0.022)	0.134** (0.065)	No
Decision-making capacity ↔ social capital	0.508*** (0.064)	0.718*** (0.068)	0.460*** (0.102)	Yes
<b>Observations</b>	421	189	232	

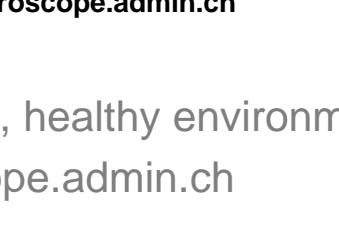
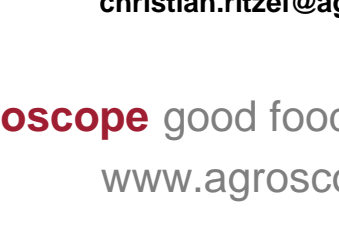
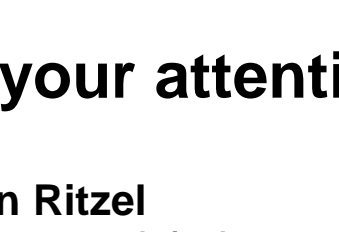
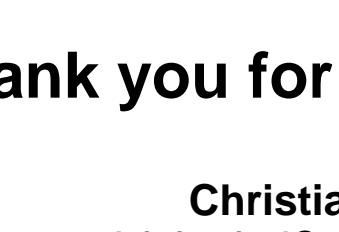
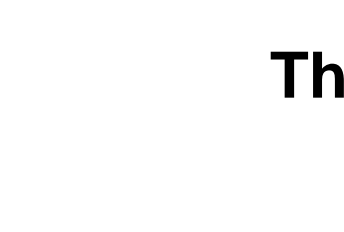
\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . Robust standard errors are in parentheses.



# Conclusions and practical implications

- Community-supported agriculture & allotment gardens have rightfully been labeled cooperative forms of food production
- Positive relationship between social capital & perceived benefits  
→ Strengthen social capital (e.g., community events)
- Decision-making is associated with costs  
→ Democratic costs should be reduced (e.g., establishment of elected groups responsible for autonomous or consensus-based decision-making)

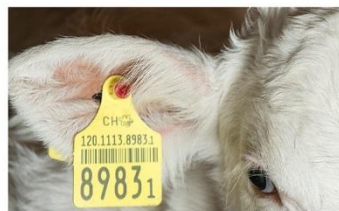




**Thank you for your attention**

**Christian Ritzel**  
christian.ritzel@agroscope.admin.ch

**Agroscope** good food, healthy environment  
www.agroscope.admin.ch





# Cronbach's alpha coefficients for the three latent variables and their underlying items

Latent variable and underlying items	Cronbach's alpha coefficient
1. Decision-making capacity: Items 1.1-1.4	0.684
2. Social capital: Items 2.1-2.4	0.746
3. Perceived benefits: Items 3.1-3.5	0.724