

Does buying local help?

Consequences of poorly-regulated short food supply chains: implications for environmental policy

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Background



- Purchase of local food to decrease carbon footprint



- Different conceptualization of locality



- Importance of the local geographical-climatic context



- Advanced logistics of conventional supply chains

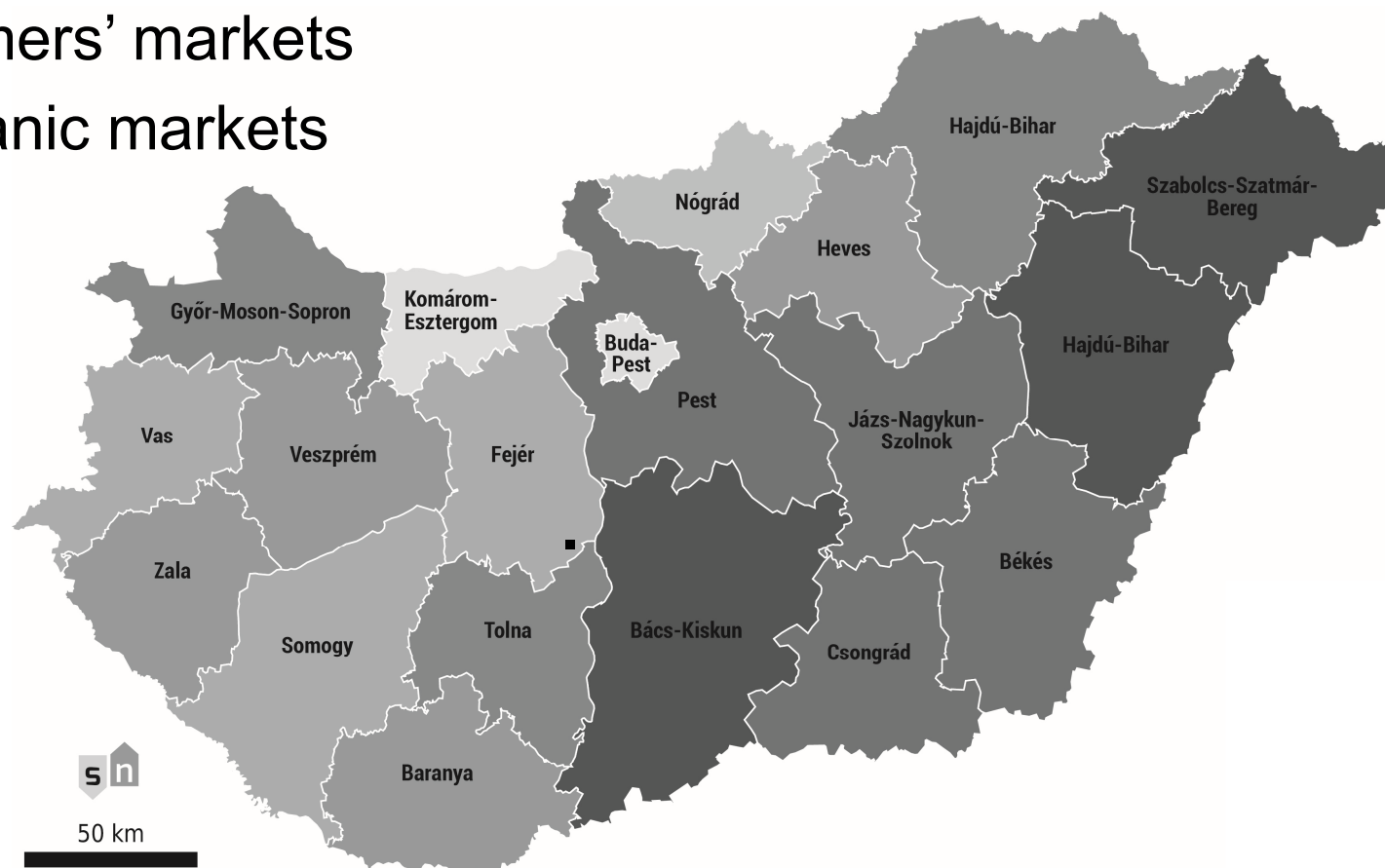
Is there any difference between various SFSCs?

The Hungarian context

- Conventional markets (and market halls)
- Farmers' markets
- Organic markets

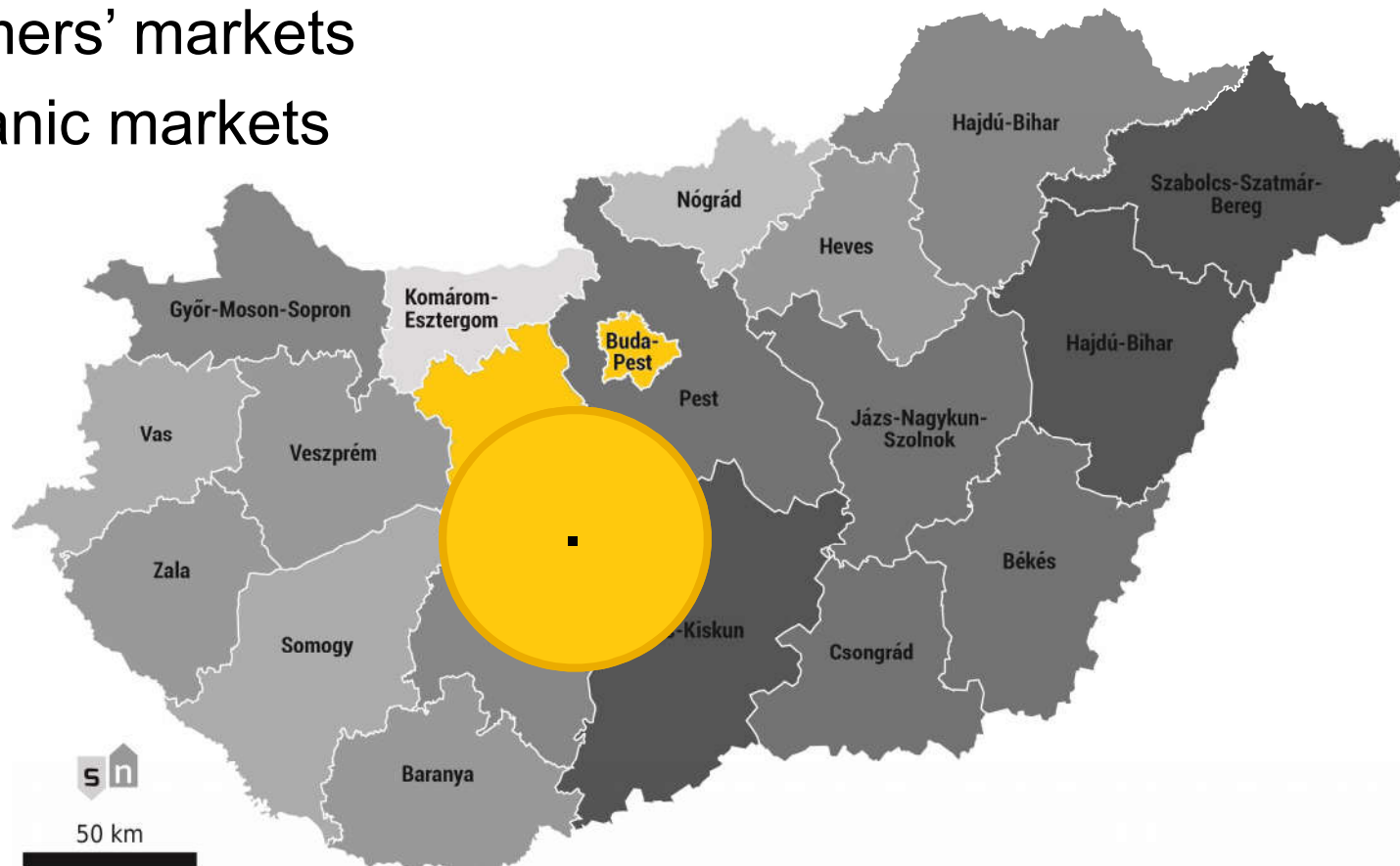
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Survey design and analysis

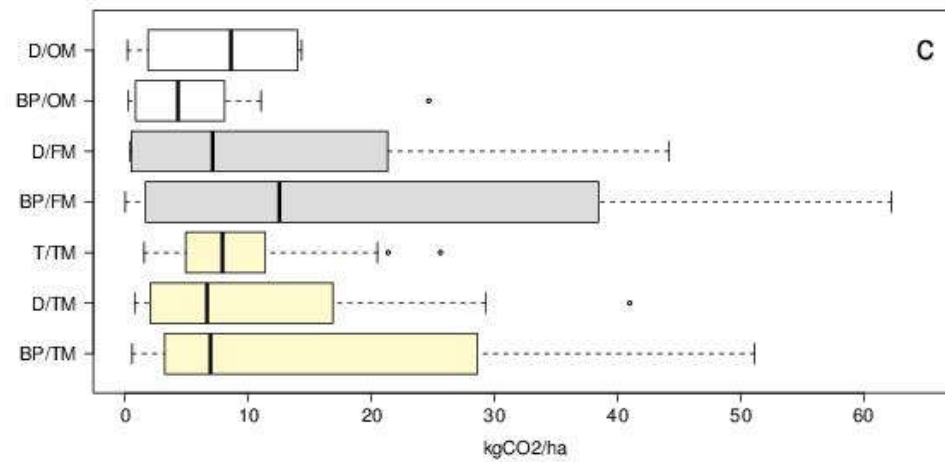
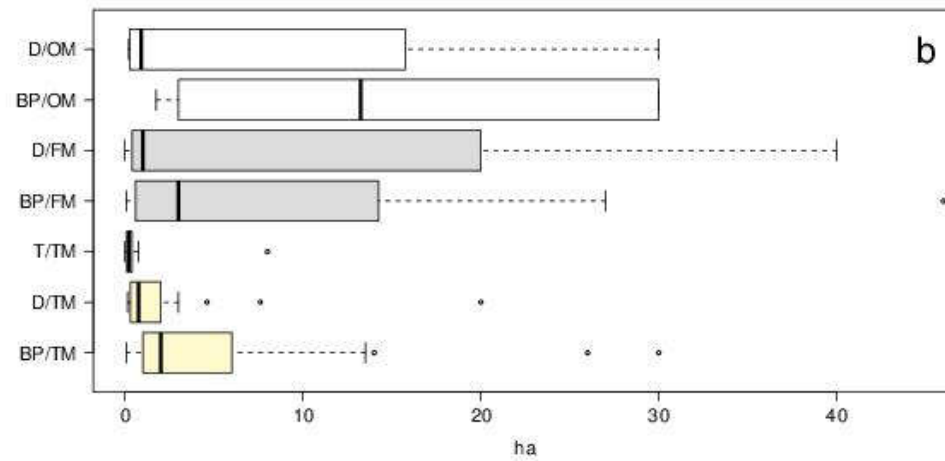
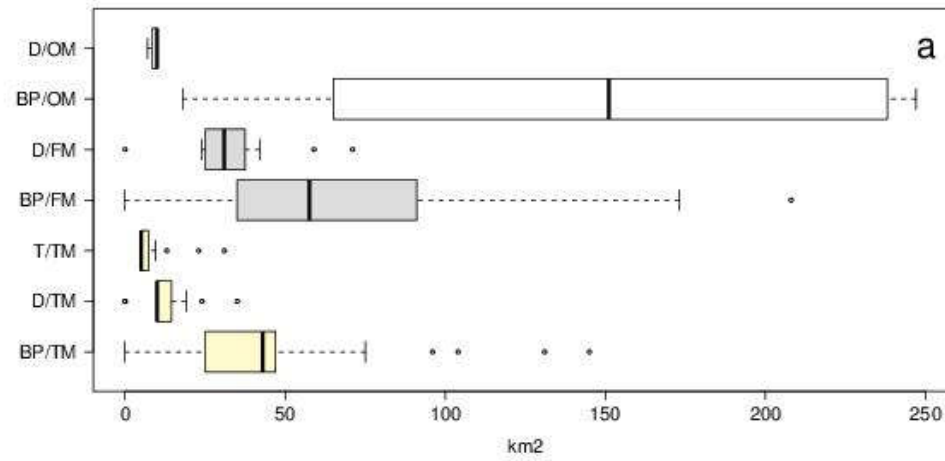
- 149 interviews
- 20 markets visited (Budapest, Debrecen, Tura)



- Distance by road
- CO₂-emission of travelling
- Linear mixed effects models

Variable	Description	N	Mean	SD	Min	Max
Age	Continuous	149	54.71	13.98	26	85
Education	Categorical	149	2.35	1.26	1	5
Area	Continuous, hectare	144	12.77	46.90	0	367
Transport (Private vehicle)	Binary (1=car, truck, 0=public transport)	149	0.89	0.31	0	1
Organic	Binary (1=organic production methods, 0=conventional)	148	0.18	0.39	0	1
Greenhouse	Continuous, hectare	147	0.06	0.22	0	2.5
Long-term contract	Binary (1=yes, 0=no contract)	149	0.70	0.46	0	1
Specialized storage facility	Binary (1= air conditioned, 0=other or none)	149	0.53	0.50	0	1
Income from agricultural activity	Percentage	130	65.93	37.63	0	100
Income from processed product	Percentage	145	21.58	36.00	0	100
Number of products	Categorical	146	22.19	34.45	1	350
Market days per week	Categorical	148	3.11	1.93	1	14
Motivation – Closeness	Binary (1=yes, 0=no)	149	0.07	0.25	0	1
Motivation – Monetary	Binary (1=yes, 0=no)	148	0.43	0.50	0	1
Motivation – Emotional	Binary (1=yes, 0=no)	149	0.61	0.49	0	1

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Variance explained		59% (24%)			
Fixed effects	Estimate	Std. Error	LR	p-value	
(Intercept)	59.81	27.41			
Years of experience	-0.475	0.286	2.708	0.010	
Education	5.098	3.581	2.007	0.157	
Area	0.144	0.097	33.88	< 0.001	
Private vehicle	-19.62	13.74	2.018	0.156	
Organic	-15.09	13.72	10.25	0.001	
Greenhouse	29.73	15.95	12.58	< 0.001	
Long-term contract	-0.895	11.12	0.006	0.938	
Specialized storage facility	13.76	7.792	3.062	0.080	
Income from agricultural activity	-0.071	0.123	196.8	< 0.001	
Income from processed product	0.110	0.124	30.52	< 0.001	
Number of products	-0.243	0.145	11.76	< 0.001	
Market days	-1.756	2.138	20.38	< 0.001	
Motivation – Closeness	8.661	16.02	0.292	0.589	
Motivation – Monetary	11.66	11.01	22.48	< 0.001	
Motivation – Emotional	7.150	10.69	0.446	0.504	
Random effects	Variance	Std. Dev.			
Region: Type of Market	2732	52.27			
Residual	1373	37.05			

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Conclusions and implications

- Food mileage and CO₂ emissions are higher in FMs than in CMs
- Bigger and more diversified farms → higher willingness to travel
- Conflicting socio-economic and environmental policy goals
- Promotion of cooperation (e.g. joint marketing)

Thank you for your attention.

Descriptive statistics – distance (km)

Region	Budapest			Debrecen			Tura
	Type of market	CM	FM	OM	CM	FM	OM
N	47	34	10	23	11	4	20
Average	49.9	72.8	148.2	14.3	37.9	9.3	8.1
SD	43.4	49.8	86.8	6.8	15.5	1.5	7
Variance	2013	2635	7529	49.4	353.1	2.3	48.3
Minimum	15.7	10	18	10	24	7	5
Maximum	280	208	247	35	71	10	31
Median	43	61	151	11	31	10	5

Weekly CO₂ emission (g×ha⁻¹)

	Budapest			Debrecen			Tura
Type of m.	CM	FM	OM	CM	FM	OM	CM
N	46	31	10	22	10	4	20
Average	42 005	76 517	11 690	39 685	52 805	8 907	19 456
SD	50 363	103 202	13 141	49 056	95 540	6 468	13 783
Min	1 148	64	236	3 005	492	532	5 641
Max	22 1260	356 475	40 374	204 871	311 696	14 341	51 218