

When local interaction does not suffice: Sources of firm innovation in urban Norway

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Norwegian city-regions

► Norway

1. Small and relatively remote
2. Population of around 4,5 million

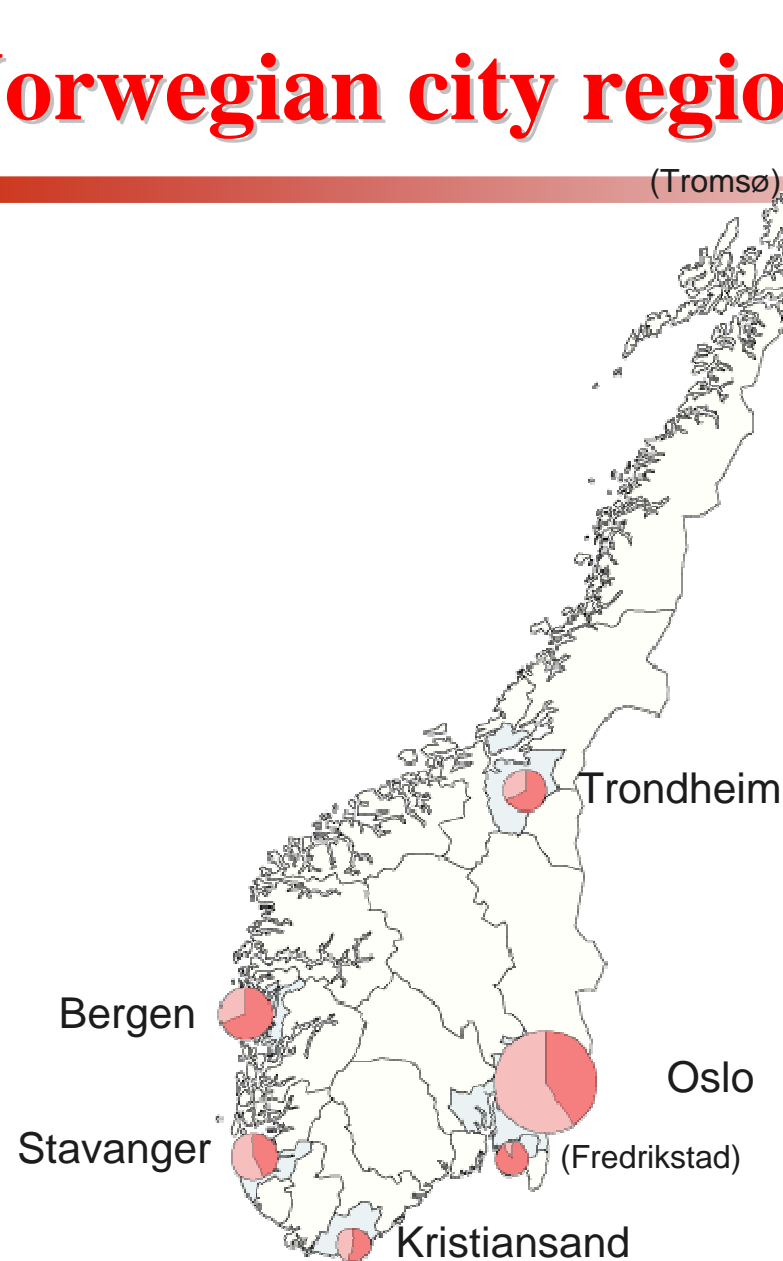
► Pros

1. Rich
2. Good endowments (human capital, infrastructure)
3. Innovative
4. Good institutions, high trust society

► Cons

1. Insufficient agglomeration
2. Relatively small and isolated urban agglomerations
3. Often with traditional sectors affected by strong international competition
4. Good institutions, high trust society

Norwegian city regions



	Population (2009)	Businesses > 10 empl	Sample
Oslo	1.400.000	4921	403
Bergen	375.000	1210	401
Stavanger	310.000	1282	400
Trondheim	240.000	901	300
Kristiansand	150.000	469	100
Total	2.475.000	8783	1604

Map from the Norwegian Government's white paper no. 31, 2002-03:

The Metropolitan Region Report: On the development of policies for metropolitan regions.

Innovation in Norwegian city-regions

But firms tend to
remain innovative

Why is this the case?

(% yes)	Product		Process		N
	<i>Total</i>	<i>Radical</i>	<i>Total</i>	<i>Radical</i>	
Oslo	59.6 %	34.0 %	50.4 %	20.4 %	403
Bergen	46.4 %	25.1 %	42.4 %	16.5 %	401
Stavanger	54.0 %	33.8 %	46.8 %	18.8 %	400
Trondheim	52.3 %	29.0 %	48.7 %	19.7 %	300
Kristiansand	58.0 %	30.0 %	47.0 %	20.0 %	100
Total	53.4 %	30.5 %	46.9 %	18.8 %	1604

Research questions

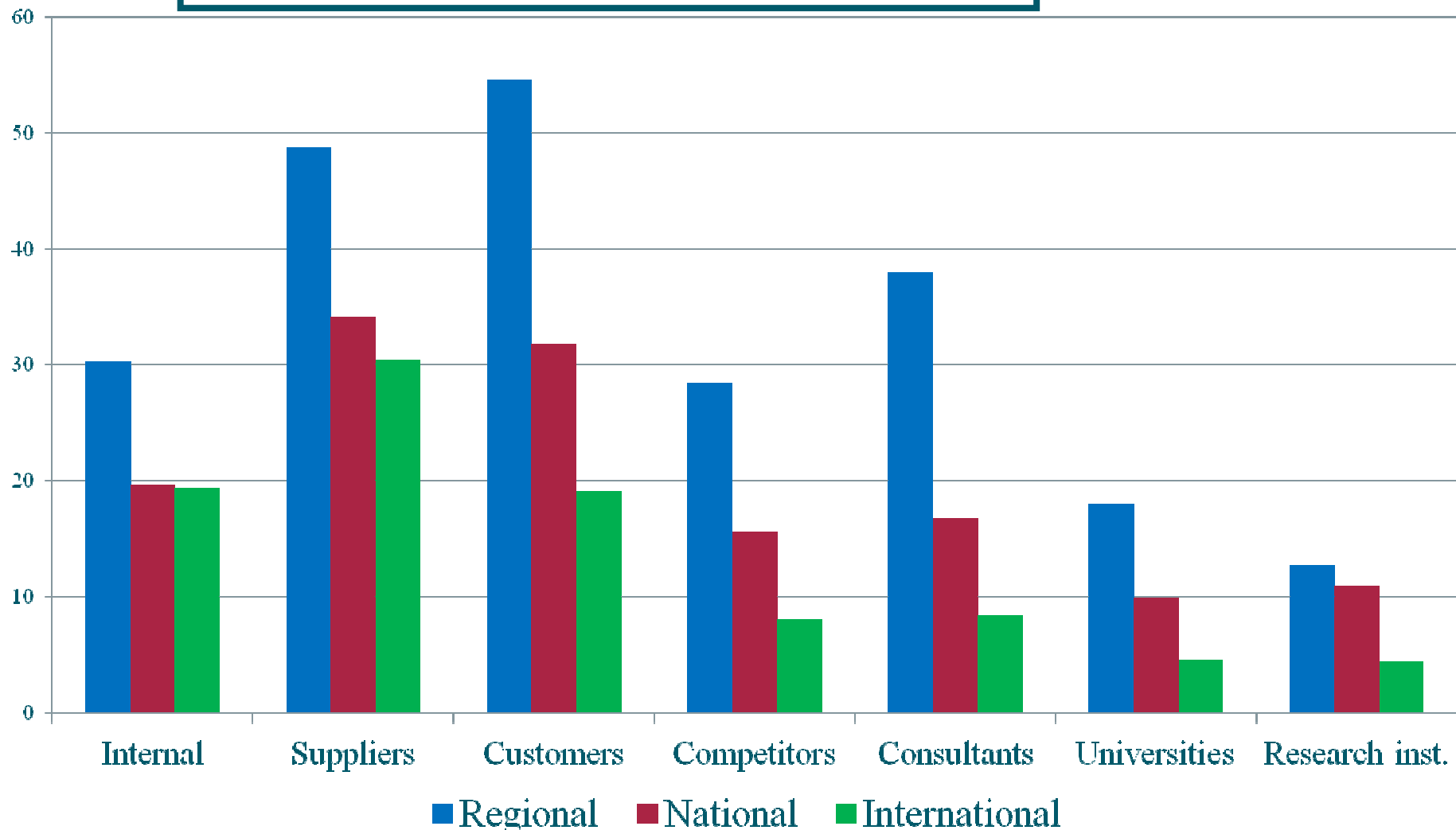
- ▶ **Despite relative isolation and lack of economies of agglomeration firms remain innovative**
- ▶ **Why is this the case?**
- ▶ **What are the sources of innovation in Norwegian urban firms?**
- ▶ **Are the sources of innovation internal or external to the region?**

Traditional explanation: local cooperation

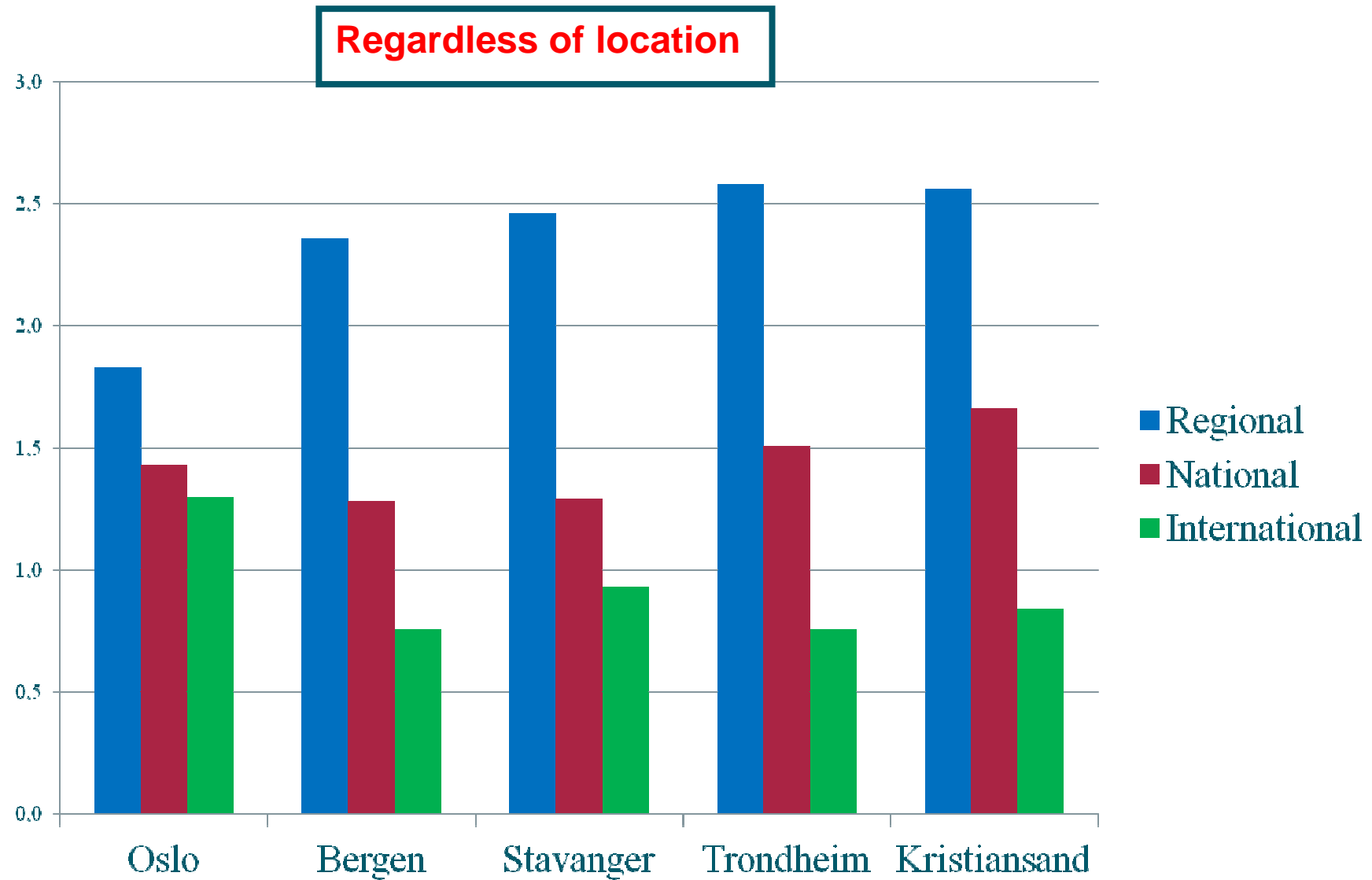
- ▶ **Sectoral and geographical proximity of firms promote interactions, networks and flows of tacit knowledge**
- ▶ **Agglomeration economies (clusters) compensate for SME's limited economies of scale** (Maskell 2001)
- ▶ **Build-up of trust in institutionally thick environments are crucial for the development of local buzz** (Amin and Thrift 1995, Storper and Venables 2004)
- ▶ **Tacit knowledge travels badly, therefore buzz relies on constant face-to-face interaction**
- ▶ **Firms in clusters benefit simply from “being there”** (Gertler 1995)

Firm partner types in Norway

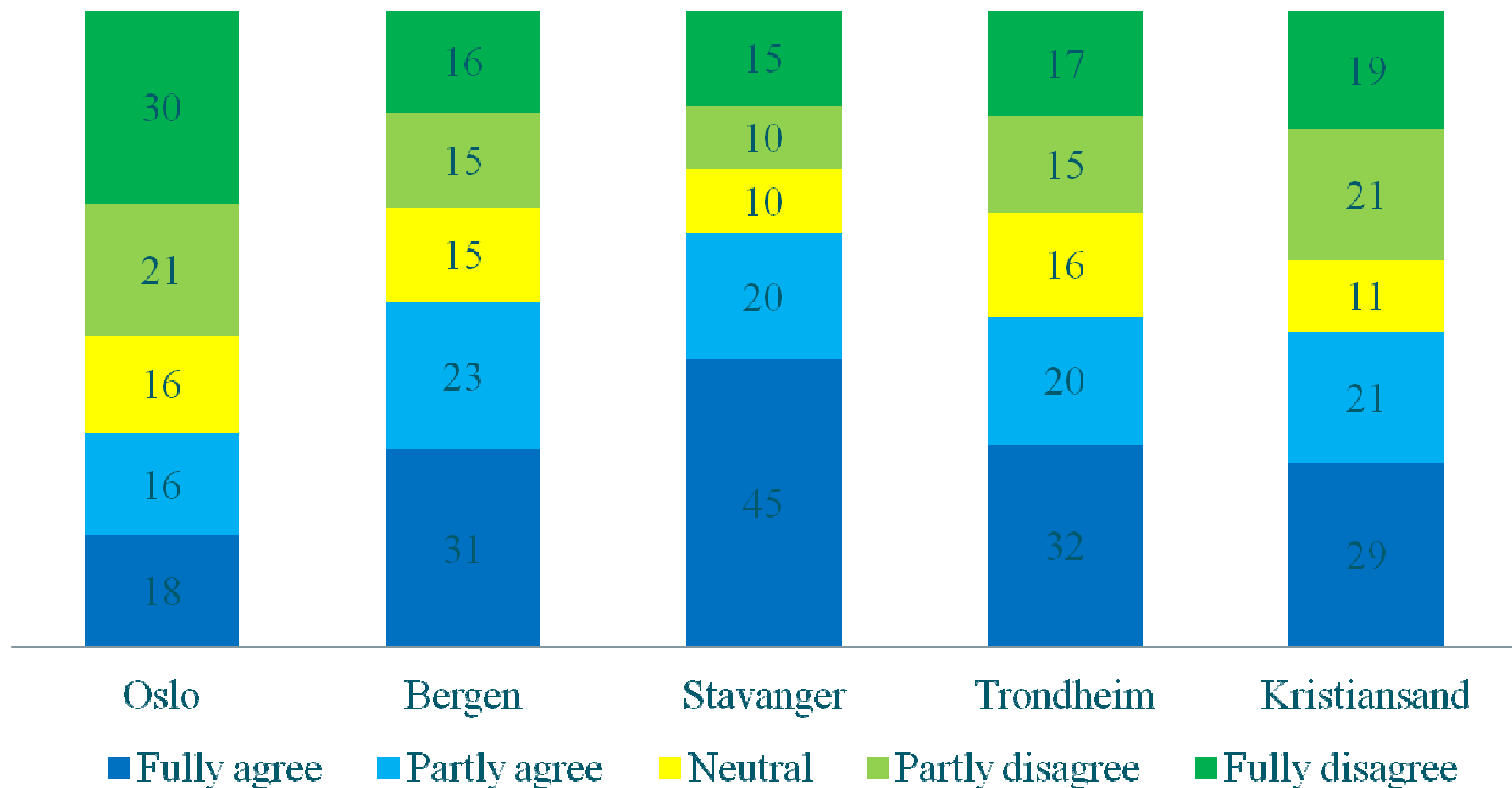
Firm partners tend to be fundamentally local



Partners by city-region

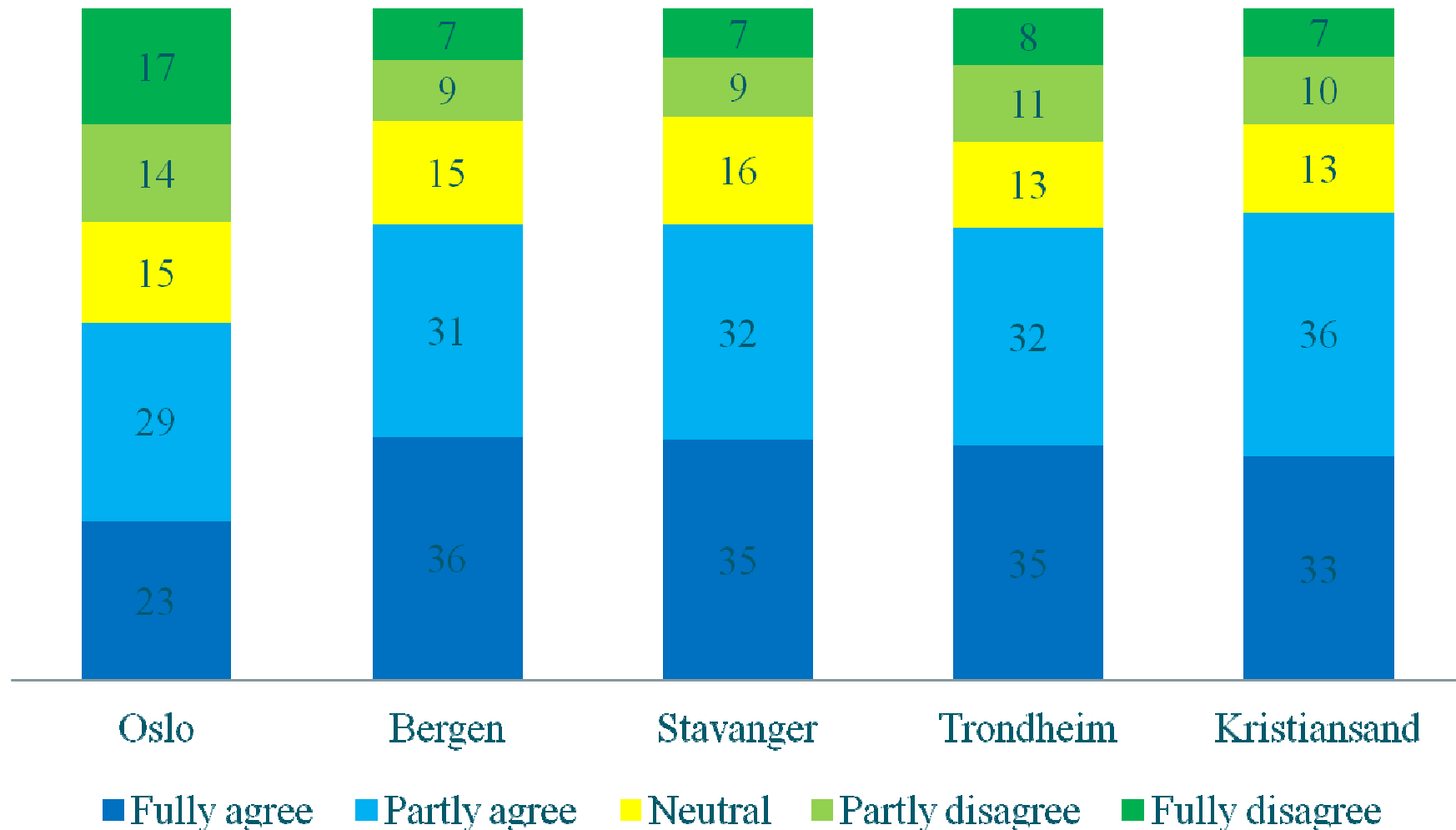


”I find it easier to cooperate with local and regional actors than with people from outside the region”



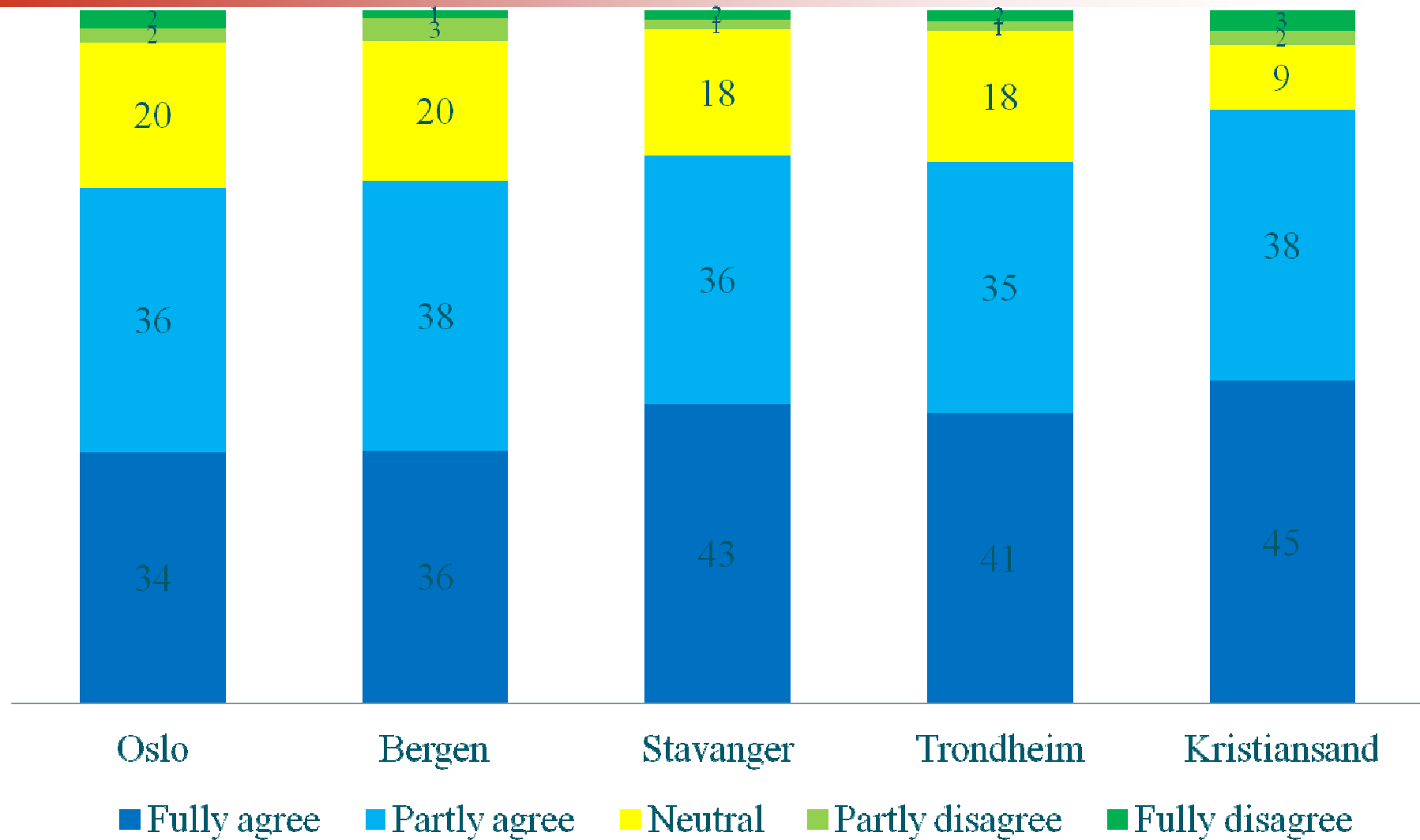
Tendency to trust local partners, with perhaps the exception of Oslo

”It is important to maintain employment in the region, even if it should hurt the business' profits”



Strong sense of regional identity...Oslo again the exception

"I trust other business managers in this region"



Strong sense of regional trust

Drawbacks of excessive local cooperation

- ▶ **Need for new or diverse information being fed into the cluster** (e.g. Malecki 2000)
- ▶ **Excessive cognitive proximity as a handicap**
- ▶ **Size matters: Smaller clusters are less likely to foster renovation of knowledge due to less varied exchanges**
- ▶ **Superiority of local over non-local interaction has not been empirically demonstrated** (Bathelt et al. 2004)

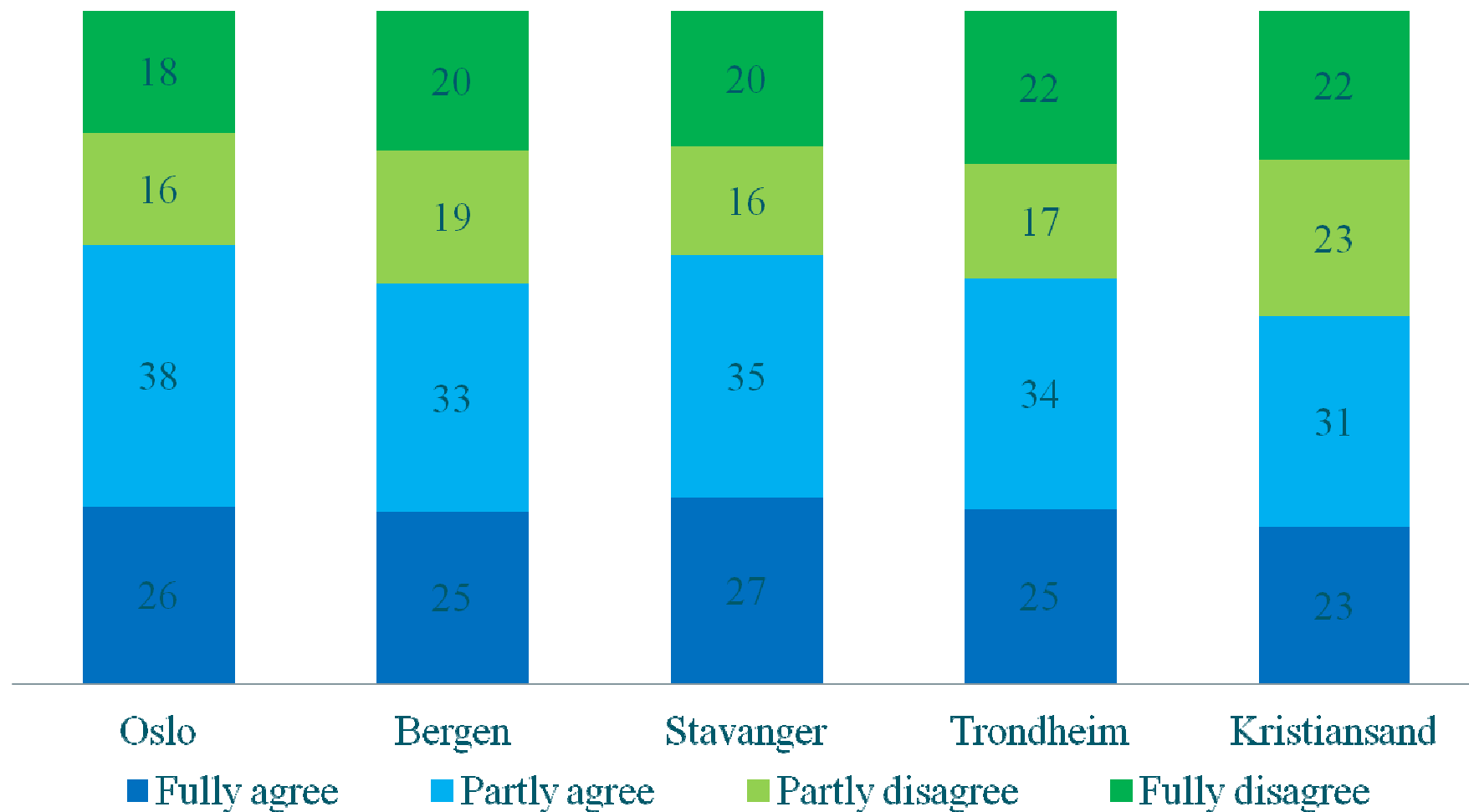
An alternative strategy: Global pipelines

- ▶ **Purpose-built connections with partners in the outside world**
- ▶ **Costlier than local interaction** (Bathelt et al. 2004)
- ▶ **Targeted towards specific, pre-defined goals**
- ▶ **Individual rewards may be greater – more radical innovations**
- ▶ **Compatible with local buzz?**
 1. Produce different types of innovation
 2. Radical innovations are spread in the cluster through local buzz

Who collaborates with international partners?

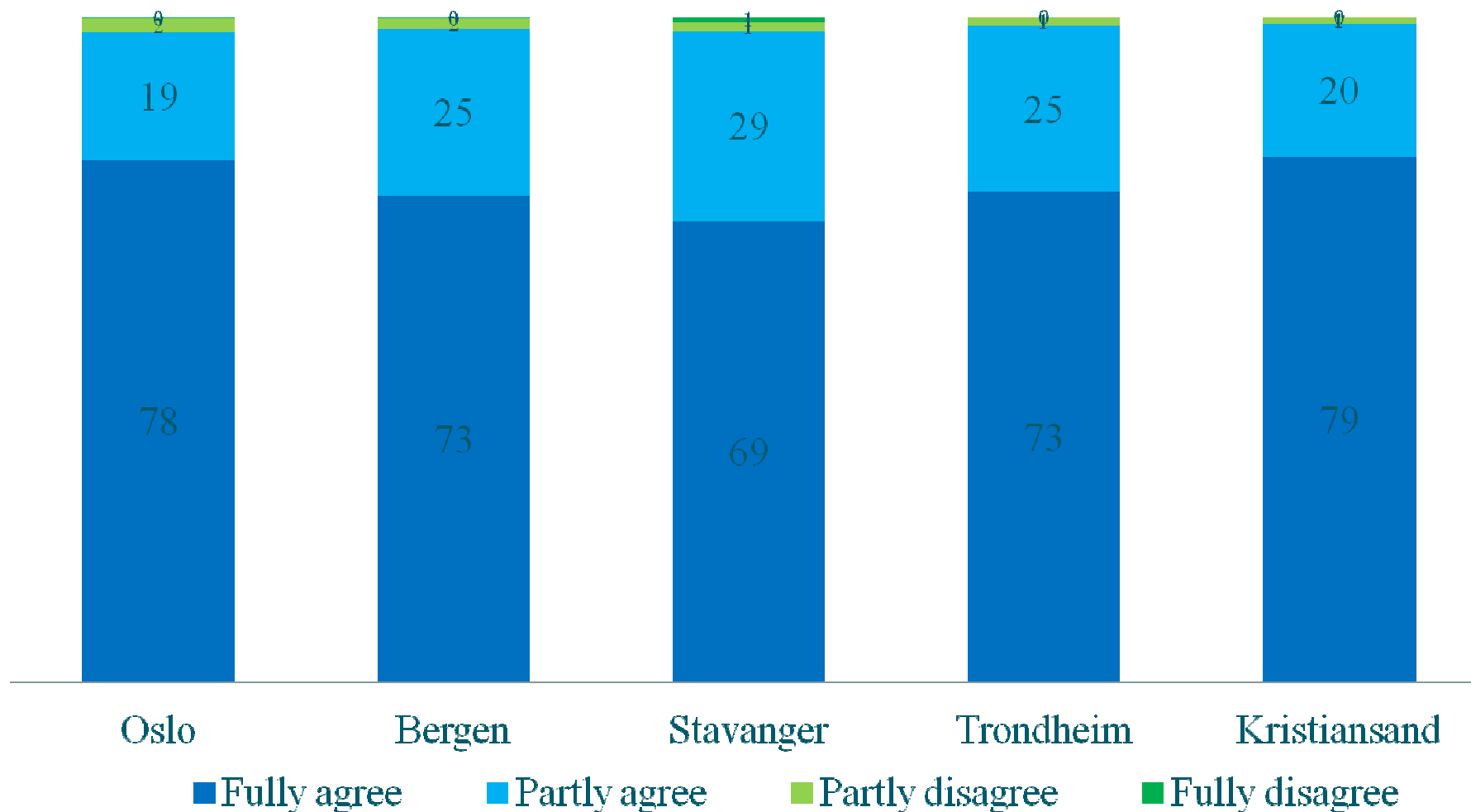
- ▶ **International collaboration hinges on overcoming geographical distance**
- ▶ **Depends on characteristics of the firm, but also of the individuals involved**
- ▶ **Firm characteristics: Capacity is important, but also organisational proximity and sector characteristics**
- ▶ **On the individual level, cognitive and social proximity are key factors for developing successful collaboration**
- ▶ **Reducing non-geographical distance**
 1. Through collaboration - human interaction promoting social proximity and mutual learning promoting cognitive proximity
 2. Soft institutions are important for reducing suspicion among economic actors, facilitating coordination and the generation of trust

"I need to improve my understanding of other countries' cultures"

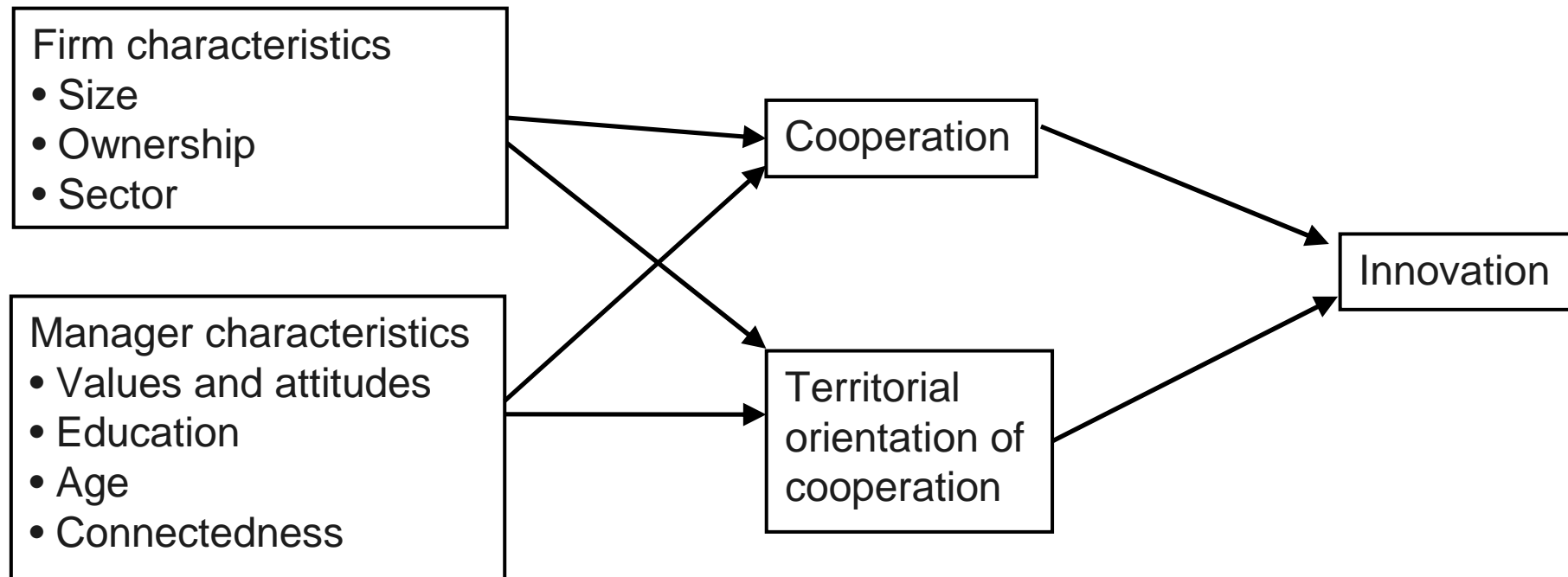


But strong level of openmindedness

"I am most comfortable around people who are open to change and new ideas"



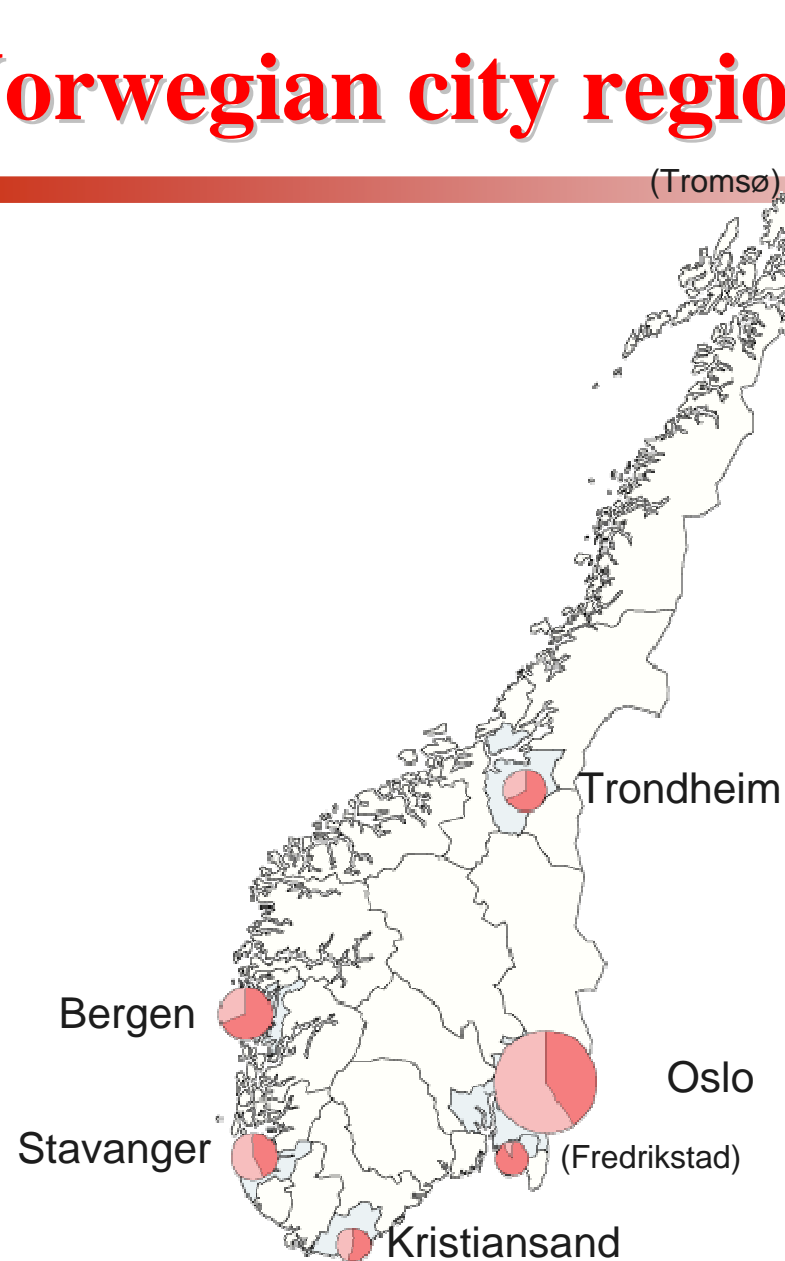
Analytical Model



Data source

- ▶ **Tailor-made survey of firms with more than 10 employees in Norway**
- ▶ **Targeting the managers of those firms**
- ▶ **Conducted by telephone**
- ▶ **In the five largest urban agglomerations in Norway**
- ▶ **Three types of questions:**
 1. Purpose-built connections with partners in the outside world
 2. Survey of attitudes by managers
 - Generalised trust
 - Open-mindedness
 3. General characteristics of firms and managers

Norwegian city regions



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Does cooperation lead to innovation?

Logistic regression models, N = 1604.

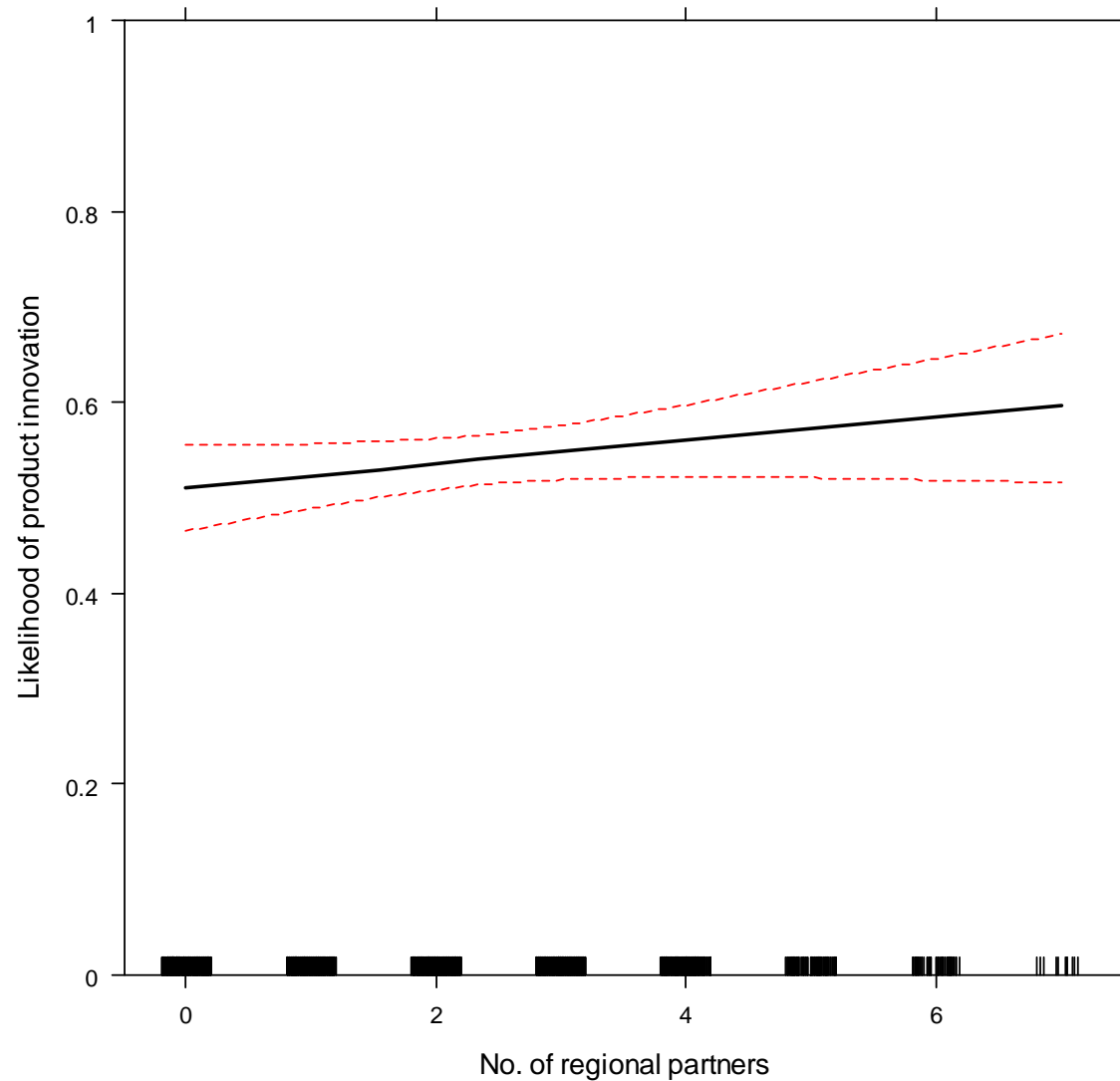
Controls: Sector, region, education, age, board memberships

	Product	New to market	Process	New to industry
Diversity of local partners	0.05 (0.03)	0.05 (0.04)	0.03 (0.03)	0.01 (0.04)
Diversity of national partners	0.05 (0.04)	0.03 (0.04)	0.07 (0.04)	0.07 (0.05)
Diversity of international partners	0.19*** (0.05)	0.23*** (0.05)	0.09 (0.05)	0.13** (0.05)
% foreign ownership	0.50* (0.21)	0.43* (0.19)	0.28 (0.19)	0.13 (0.22)
Log no. of employees	0.22*** (0.06)	0.15* (0.06)	0.25*** (0.06)	0.18** (0.07)
Nagelkerke R ²	0.15	0.15	0.11	0.11

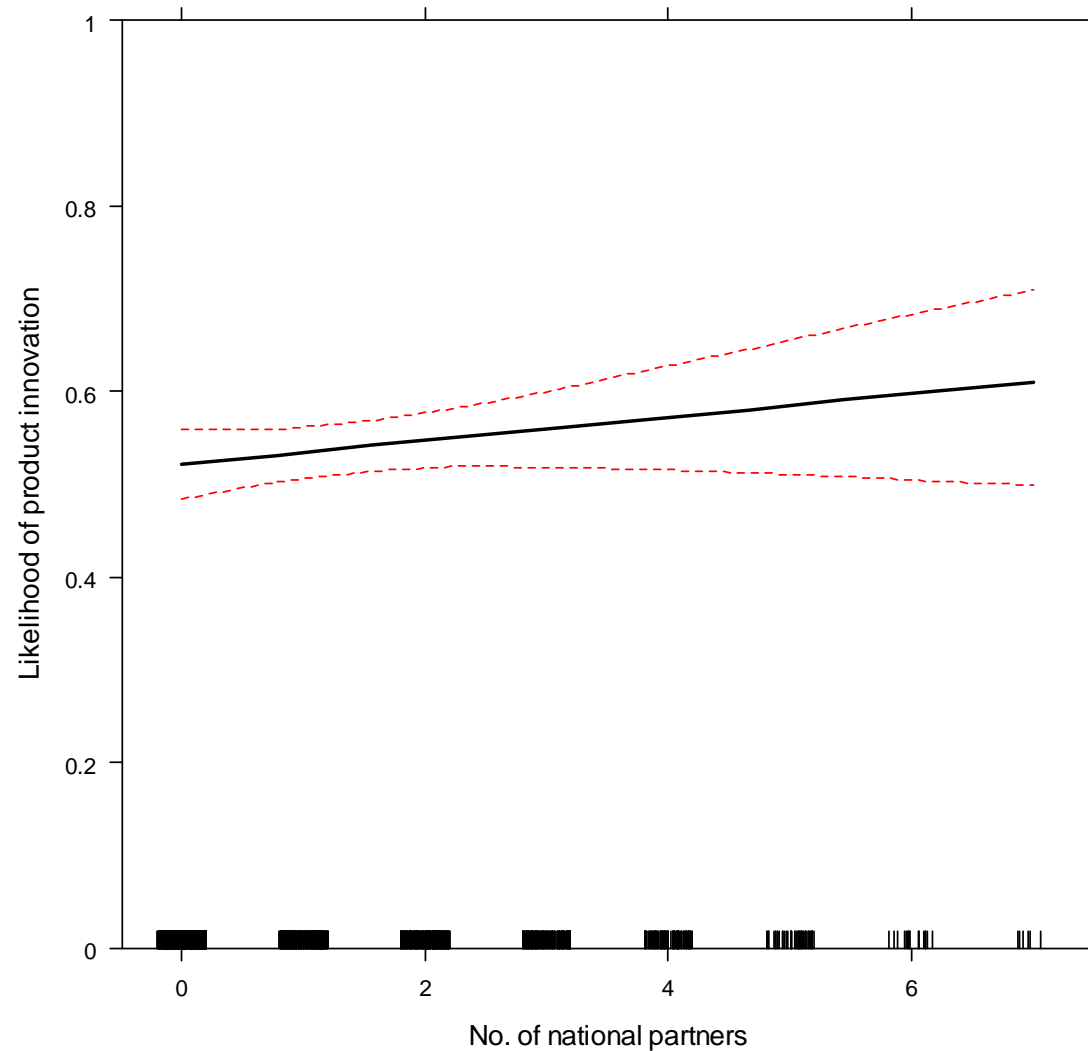
* p < 0.05, ** p < 0.01, *** p < 0.001

Diversity of international partners makes all the difference

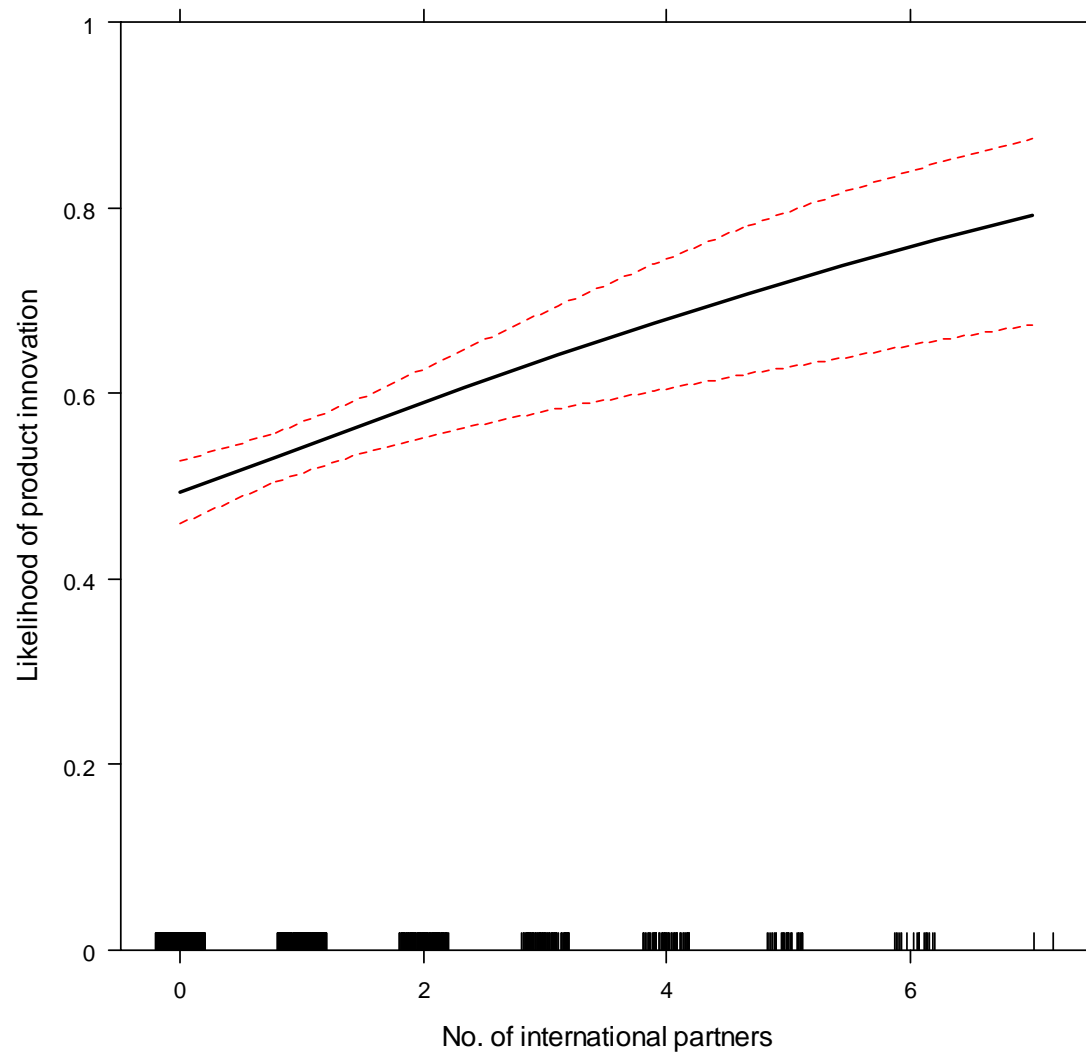
Regional cooperation and product innovation



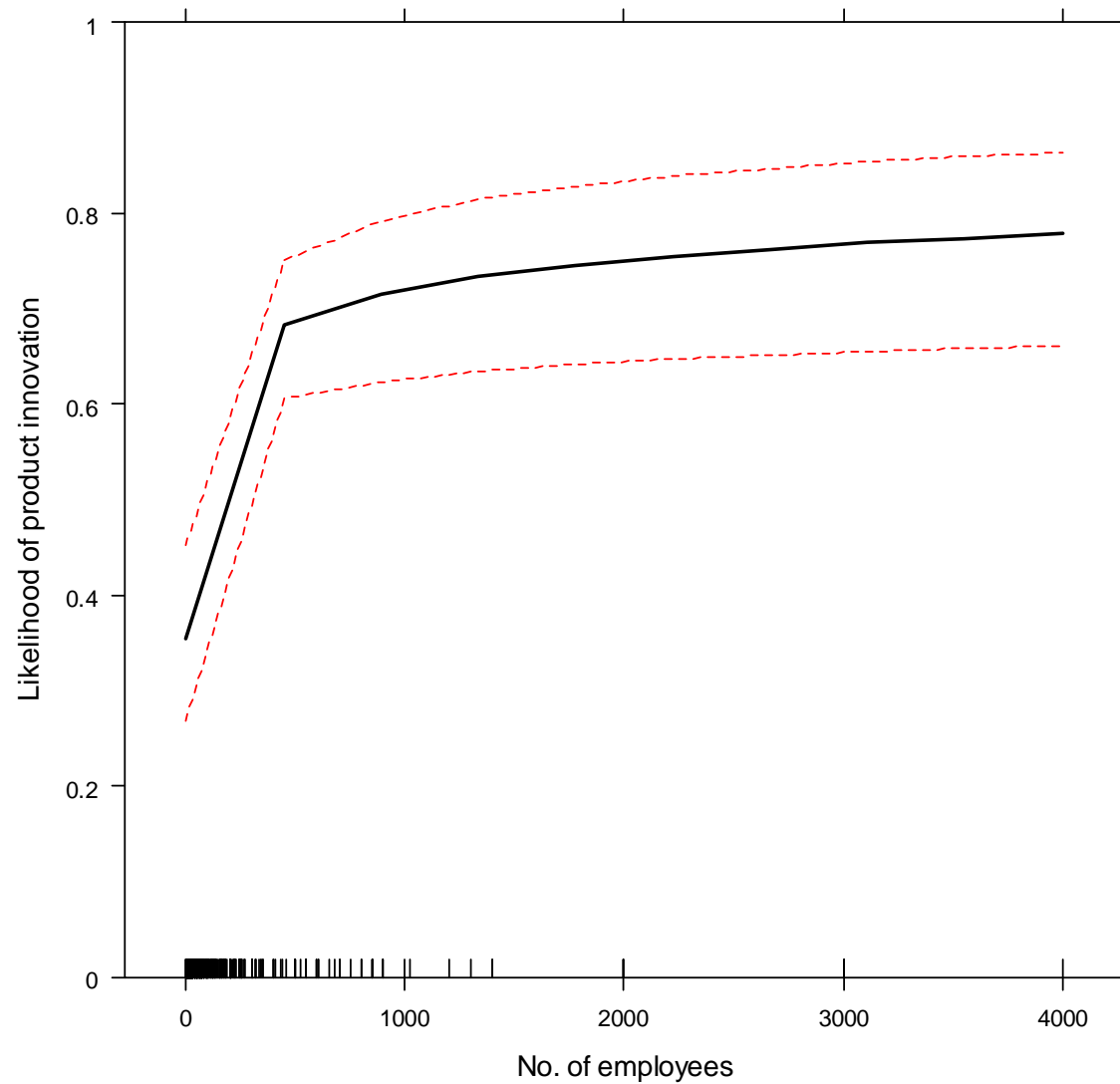
National cooperation and product innovation



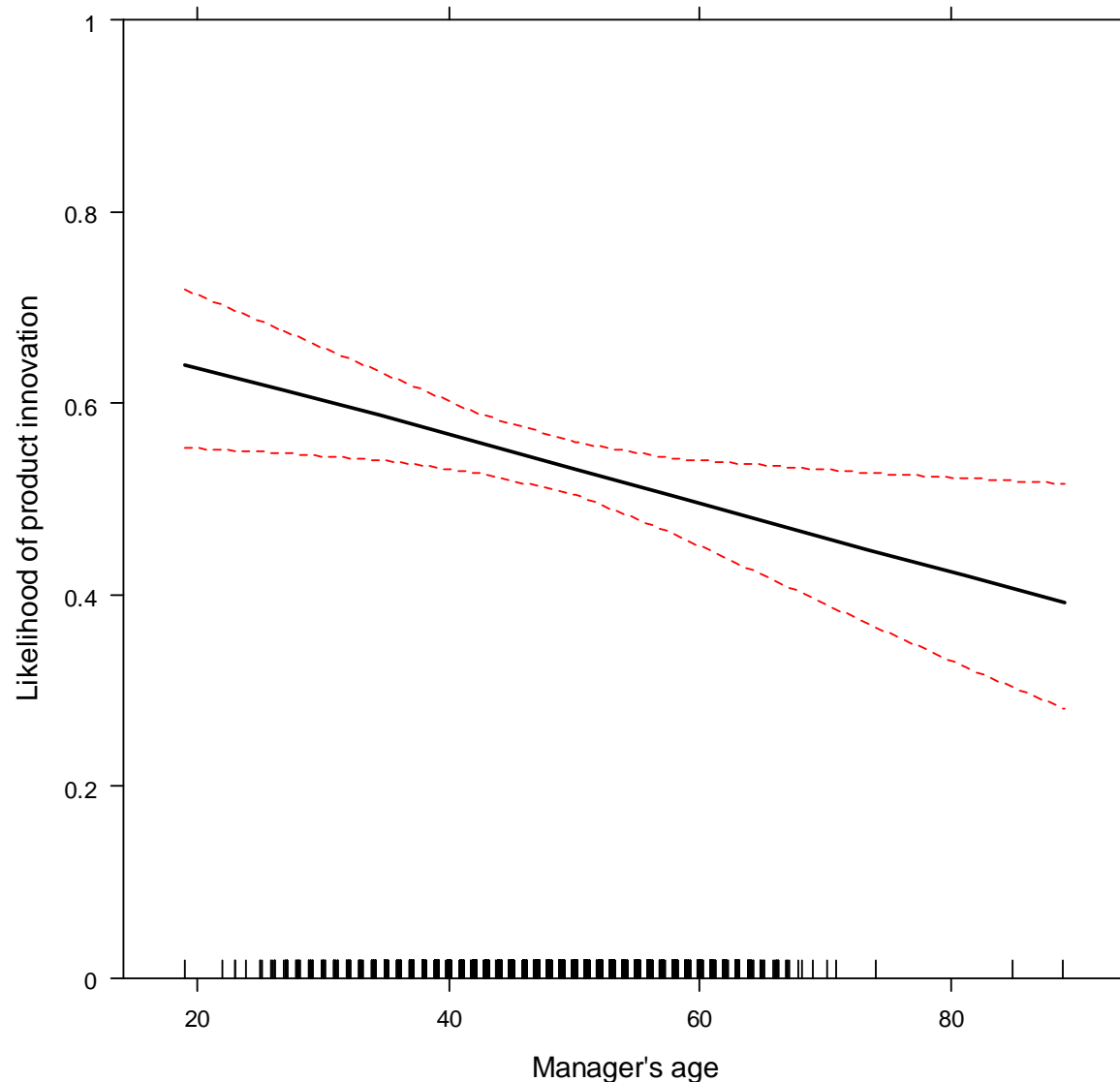
Intl' cooperation and product innovation



Company size and product innovation



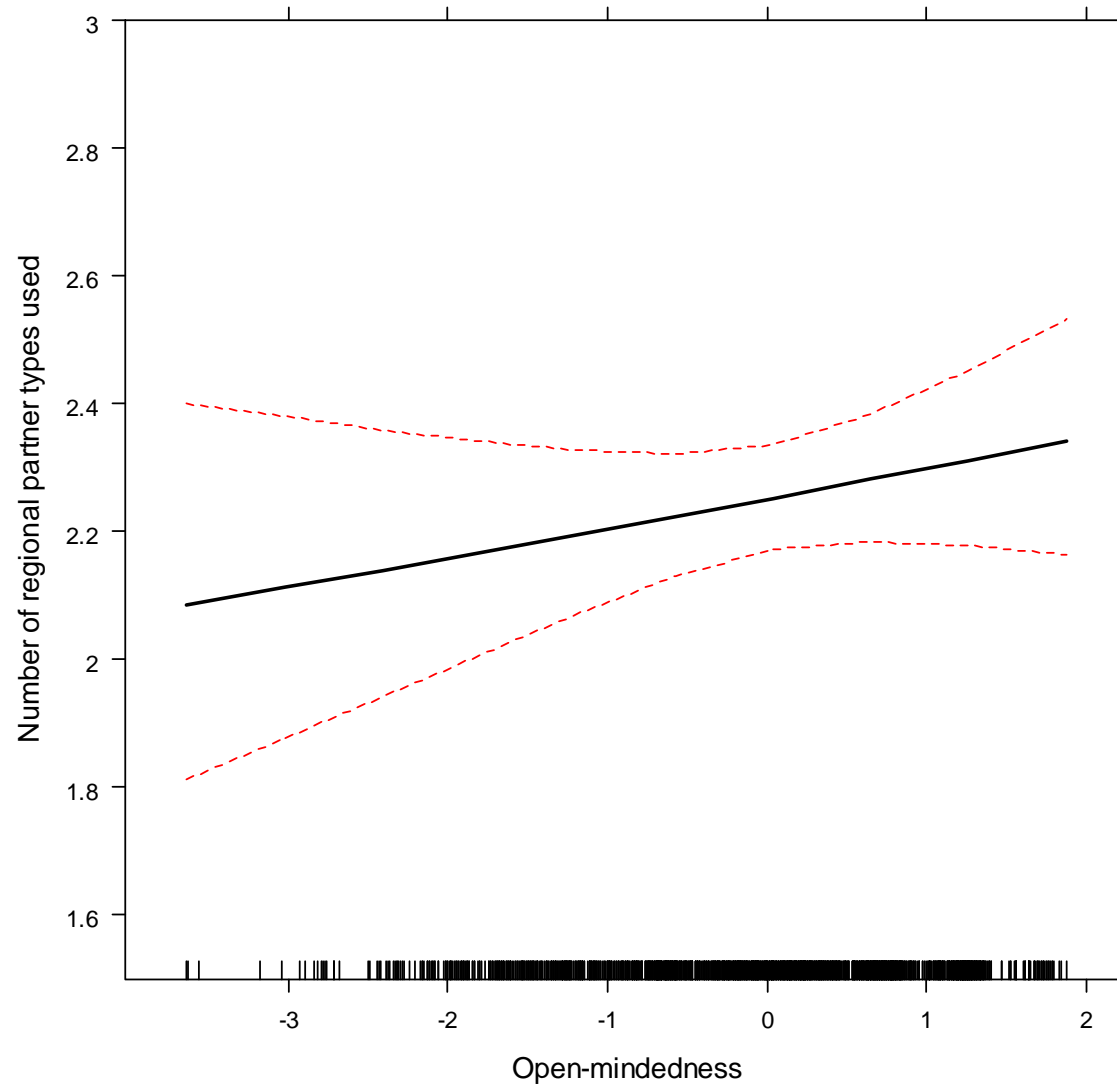
Manager's age and product innovation



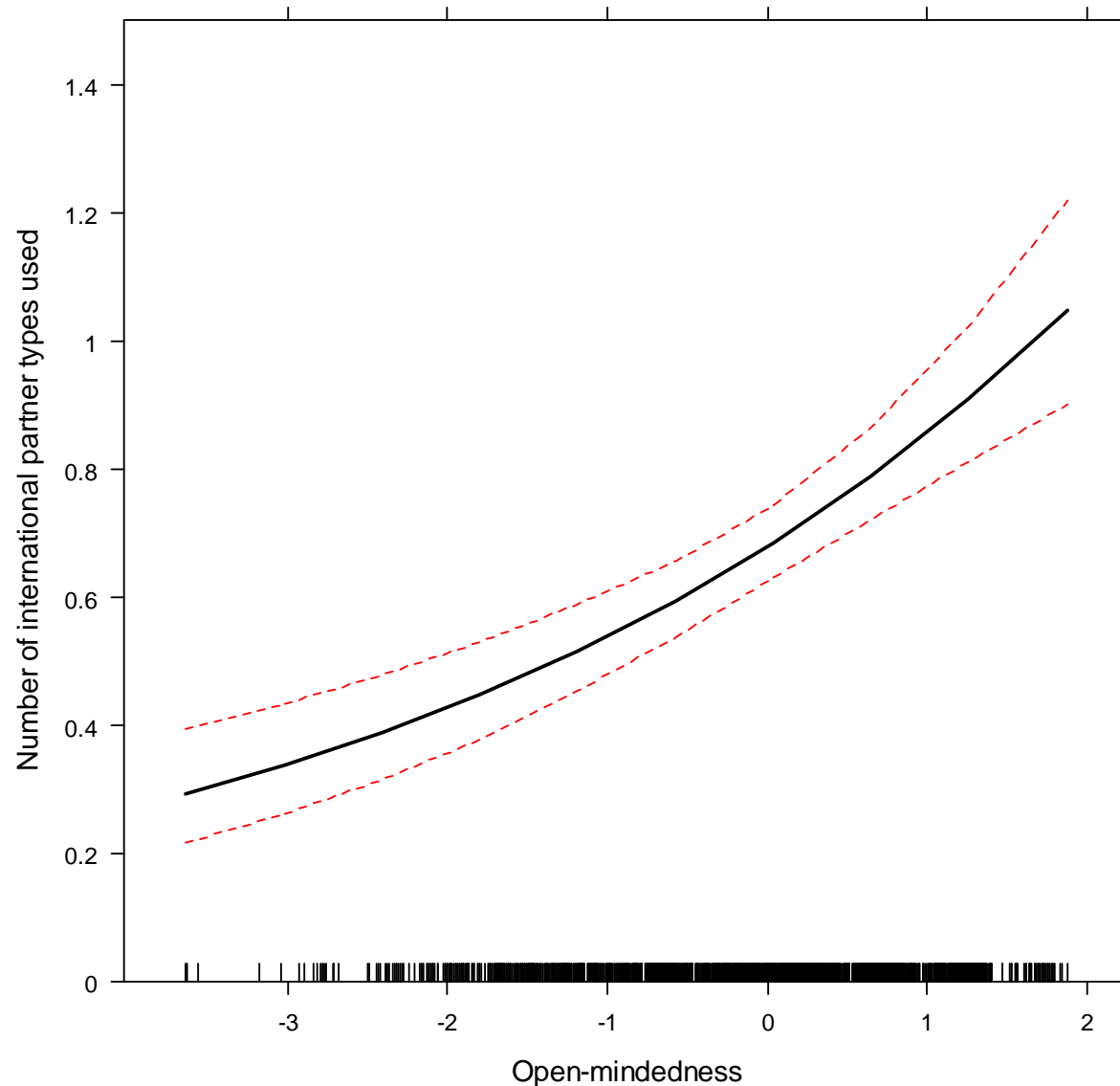
Patterns of cooperation

Neg. bin. regressions, N = 1604		Regional	National	Internat'l
Manager characteristics	<i>General trust (comp. 1)</i>	0.07***	0.06*	0.00
	<i>Work-related trust (comp. 4)</i>	0.02	-0.01	-0.03
	<i>Open-mindedness (comp. 2)</i>	0.02	0.01	0.23***
	<i>Regional orientation (comp. 3)</i>	0.00	-0.16***	-0.20***
	<i>Education</i>	-0.00	0.03*	0.07***
	<i>Age</i>	-0.01***	-0.00	-0.01
	<i>Log no. of directorships</i>	0.01	0.06	-0.01
Firm char.	<i>Log no. of employees</i>	0.06**	0.16***	0.15***
	<i>Foreign-owned share</i>	-0.14*	-0.08	0.80***
	<i>Sector</i>	Controlled	Controlled	Controlled
	<i>Region</i>	Oslo ÷***	O/B/S < K/T*	Not sign.
	<i>Pseudo R²</i>	0.02	0.04	0.12

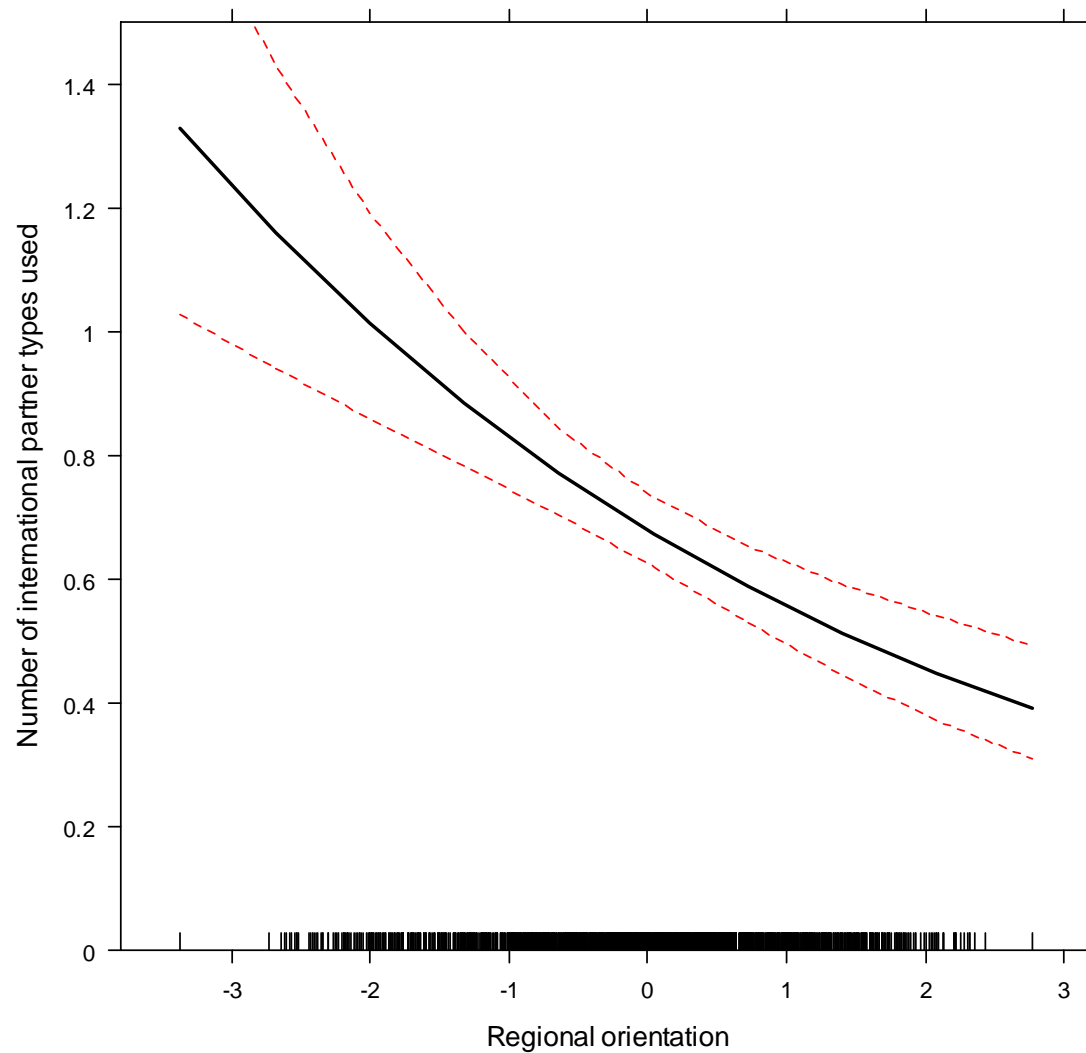
Open-mindedness and regional cooperation



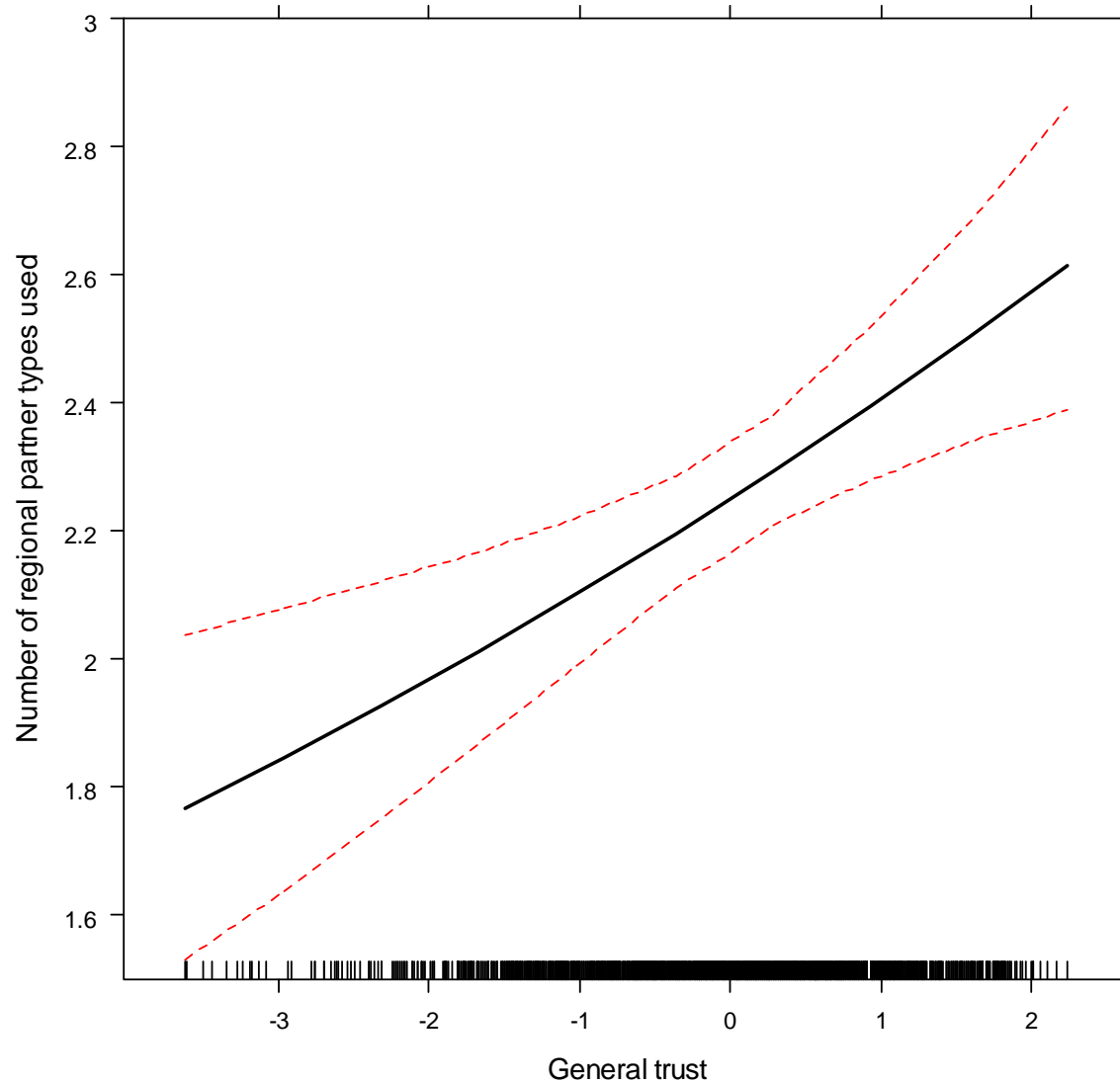
Open-mindedness and intl' cooperation



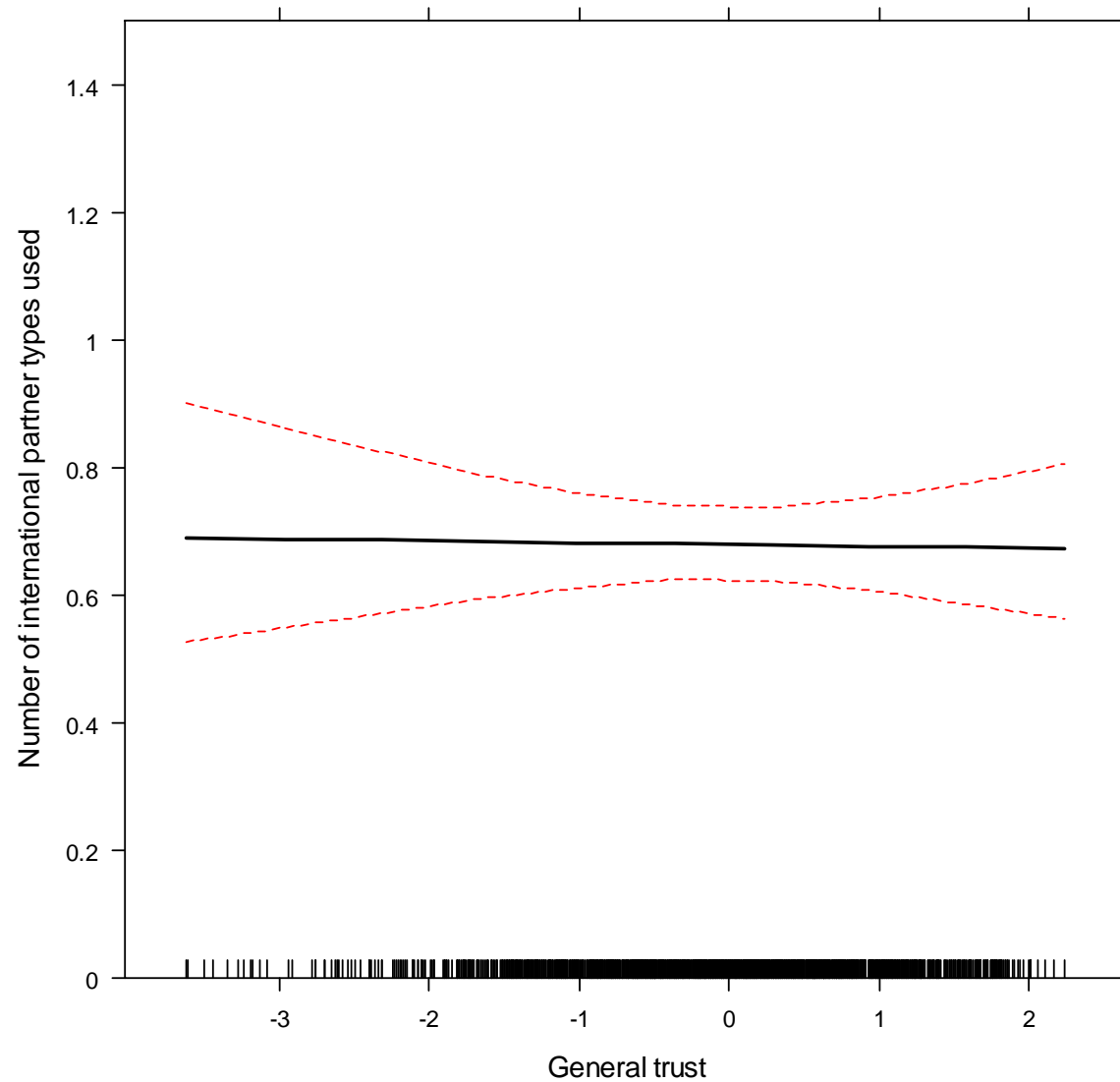
Regional orientation and intl' cooperation



General trust and regional cooperation



General trust and international cooperation



Conclusions

- ▶ **International cooperation is conducive to most kinds of innovation:**
 1. Incremental and radical product innovation
 2. Radical process innovation
- ▶ **Regional and national cooperation has almost no significant effect on innovation**
- ▶ **Patterns of cooperation are associated with managers' values and attitudes:**
 1. Open-mindedness and lack of regional orientation produces national and international cooperation
 2. General trust produces regional and national cooperation