Labor Mobility and Organizational Proximity:
Routines as supporting mechanisms for variety, skill-integration and productivity

Lisa Östbring
Department of Geography and Economic history,
Umeå University
lisa.ostbring@geography.umu.se

EU-SPRI Early Career Researcher Conference, Lund, 2013

Why study labor mobility and knowledge transfer? (1)

- Today most input factors are ubiquitous……
- …..Knowledge is not.
- Thus, in order to understand the success of firms and regions one should try to understand how firms acquire and use new knowledge.
- Knowledge (being sticky and always partly tacit) is localized in space and embodied in people.
- Mobile individuals are an important channel for knowledge transfer and potential knowledge generation between firms and plants in space.

Why study labor mobility and knowledge transfer? (2)

- Recent advances in the field has pointed to the importance of complementary knowledge for knowledge absorption, reapplication and innovation to take place.

- Inflowing skill/knowledge should be cognitively related (not too similar, not too different) to the existing knowledge at the firm or plant.

- But there seem to be other factors at play, which also affect the potential learning from inflowing labor…….
  - Geography
  - Technology
  - Firm specificities

Why labor mobility and organizational proximity?

- In an evolutionary framework firms are constantly affected by past events and decisions originating from:
  - The firm
  - The industry (and related industries)
  - The region

- Path-dependence within the firm is due to firm routines, which:
  - Act as firm memory
  - Steer the knowledge-view
  - Cause both intangible and tangible structures
  - Promote efficiency/lock-in

- Regardless of how routines are interpreted, there is coherence in some aspects:
  - Context dependence
  - Regularity

How do organizational proximity and cognitive proximity complement one another?

- Familiarity with firm routines (intra-organizational proximity) causes similarity in (potentially) both an organizational and social dimension.
- A short distance in on or two proximity dimensions may ease the need for cognitive proximity (relatedness) in order for knowledge transfer and learning to occur…..
- Thus, we expect cognitively unrelated inflow to positivelty impact productivity if originating from within the firm and region.
- External inflow needs to be cognitively related to the existing knowledge in order to be absorbed and useful.
- Cognitively related knowledge is probably less sensitive to geographic distance than unrelated knowledge.

How do we test the effect of organizational proximity? (1)

- By comparing internal job moves to external job moves and estimating the effect on productivity.

- We use longitudinal micro data to investigate knowledge flows in and to four large Swedish firms between 2003 and 2008.
  - 33 plants
  - 11,131 internal job moves
  - 11,460 external job moves

- Measure impact on productivity (value added per plant and employee)

- The cognitive dimension is created using three-digit occupation code (SSYK).

- The geographic dimension is intra- or inter-regional with regard to 87 functional labor market regions.

How do we test the effect of organizational proximity? (2)

- Inflow variables are created using entropy measures to determine degree of cognitive similarity, relatedness and unrelatedness.

- Analysis is carried out stepwise, adding dimensions:
  - Total inflow (SIM, REL, UNREL)
  - Internal vs. External (SIM, REL, UNREL)
  - Internal: intra-regional vs. inter-regional (SIM, REL, UNREL)
  - External: intra-regional vs. inter-regional (SIM, REL, UNREL)

- Dynamic panel esimation (Arellano-Bond GMM estimators) handles potential problems with:
  - Fixed-effects
  - A dynamic dependent variable
  - Endogenous or pre-determined independent variables

So, what did we find?

- Organizational proximity seem to compensate for long cognitive distance and speed up the absorbtion process.
- When there is no organizational proximity, the inflowing skill must be related to existing knowledge.
- Organizatoinal and geographic proximity cause rapid initial absorbtion of unrelated knowledge.
- External flows have larger and more immediate positive impact on plant performance if originating from outside the region than if originating within the region.

	Model A			Model B			Model C		
Dependent variable:	(Total Inflow)			(Internal Inflow)			(External Inflow)		
Productivity	Coeff	SE	t	Coeff	SE	t	Coeff	SE	t
SIM inflow (log)	-2777.25	5459.15	-.51	-106.26	102.47	-1.04	35.84	204.31	.18
t-1	-5233.31	4256.29	-1.23	-117.16	67.41	-1.74*	-170.37	176.38	-.97
t-2	-5493.44	4405.71	-1.25	-108.38	68.15	-1.59	29.61	171.20	.17
REL inflow (log)	-8430.06	11592.62	-.73	508.07	580.11	.88	-227.34	432.97	-.53
t-1	46478.3	36879.06	1.26	445.58	426.33	1.05	829.63	414.28	2.00*
t-2	9247.53	10417	.89	207.36	260.23	.80	183.77	357.83	.51
UNREL inflow (log)	2983.63	4671.33	.64	279.96	139.42	2.01*	-324.32	194.02	-1.67
t-1	11663.09	4185.27	2.79***	233.78	104.00	2.25**	11.06	129.64	.09
t-2	11989.15	3035.15	3.95***	203.67	87.37	2.33**	73.48	146.90	.50

	Model D1				Model D2		
Dependent variable:	Intra-Regional				Inter-Regional		
Productivity	Coeff	SE	t		Coeff	SE	t
Internal inflow variables							
SIM inflow	-63.05	43.41	-1.45		74.81	48.45	1.54
t-1	-42.96	55.33	-.78		19.03	23.46	.81
t-2	-85.43	41.59	-2.05**		31.85	41.09	.78
REL inflow	1631.81	1095.72	1.49		-16.51	522.63	-.03
t-1	-73.76	730.62	-.10		215.96	555.90	.39
t-2	-92.44	592.70	-.16		287.34	493.70	.58
UNREL inflow	180.51	94.84	1.90*		-77.67	116.07	-.67
t-1	98.52	85.81	1.15		100.10	80.86	1.24
t-2	223.32	107.09	2.09**		137.23	84.20	1.63

	Model E1				Model E2		
Dependent variable:	Intra-regional				Inter-Regional		
Productivity	Coeff	SE	t		Coeff	SE	t
External inflow variables							
SIM inflow	58.26	67.27	.87		-21.75	43.73	-.50
t-1	-42.16	49.38	-.85		-50.54	45.99	-1.10
t-2	-35.26	47.84	-.74		-17.30	50.41	-.34
REL inflow	-303.43	355.15	-.85		484.37	188.70	2.57**
t-1	862.81	482.51	1.79*		920.73	507.85	1.81*
t-2	92.78	505.78	.18		1028.28	914.40	1.12
UNREL inflow	-150.84	82.31	-1.83*		-83.87	52.33	-1.60
t-1	-38.35	93.65	-.41		-32.95	76.24	-.43
t-2	15.48	94.45	.16		20.03	68.38	.29