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How do strong social ties shape youth migration trajectories (using data from the Russian on-line social network www.vk.com)

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**How do strong social ties shape youth migration trajectories
(using data from the Russian on-line social network www.vk.com)**

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It is well known that M. Granovetter (Granovetter, 1983) wrote about the declining role of strong social ties and the rising role of weak ties. Yet the situation in Russia is different. Social networks are even more important in shaping economic interactions in Russia than they are in Europe or the U.S. The vast spaces of the country in conjunction with relatively low infrastructural and institutional development make connections between the regions much more expensive than in Europe and the United States. Moreover, as is typical for countries with economies in transition, Russia is characterized by the large role for informal communications and contracts. The transitional nature of the economy compels economic actors to use their social capital to reduce their transaction costs. So, the involvement of urban residents in different social networks facilitates economic contacts for the city as a whole. Social networks shape inter-company contacts, innovation and knowledge flows, and also influence local identity and the adoption of modern living standards.

1. Theoretical approach

Youth migrations are both the cause and the effect of the social networks. The institutional order and high transaction costs compel young Russians to use strong social ties to cut transaction costs while they move from one city to another. The data on migrations between cities shows us that the force of strong institutional ties is sometimes greater than the force of distance or of the agglomeration effect: some very distant and small cities are tied closely by migration flows.

So we have to speak about social proximity between the cities in addition to the well-known organizational proximity and geographical proximity. (for ex.: Mollard A. and Torre A., 2004; Torre, 2008:) This type of proximity is marked by migration flows.

2. Data and methods

The data driving our research is the career information contained in the personal pages of the most popular Russian on-line social network www.vk.com (this network connects not less than 70% of Russian youth): particularly, data on birthplaces, schools, universities and current residences. The data was extracted by specially designed software (developed by A. Yashunsky). We employed this method because of the lack of city-level migration data in official Russian statistics.

We have collected 3000 to 14000 personal data files per city for people aging 20 to 29 years old (which is approximately 10—15% of the whole city population) for the following groups of cities:

1. Arctic cities Noyabrsk, Norilsk, Magadan, Muravlenko, Gubkinsky;
2. Cities with nuclear industry (Sarov, Desnogorsk, Sosnovy Bor, Snezhinsk, Dimitrovgrad, Lesnoy, Novouralsk) or physical science centers (Obninsk, Dubna);
3. Cities within an agglomeration (Gorodets, Konakovo, Nevjansk) and other peripheral small cities (Bezhetsk, Gagarin);
4. Industrial company-towns in the Urals and South of Siberia: Kachkanar, Bratsk and Ust-Ilimsk.

3. Results and discussion

The largest migration flows moved to the Russian capital and to the region centers. Yet, excluding such flows, we can see the concentration of remaining migrants in a portion of small cities. Here three types of migrations exist, which were clarified by qualitative analysis:

- migrations from the Arctic region to those places from which the parents of today's migrants came some decades ago (“over-generation coming back” migration);
- migration to the cities where a portion of former “city-mates” have just settled;
- migration between cities of a similar specialization.

Different groups of cities has different patterns of migrations.

3.1. Arctic cities

First of all, northern youth move to the largest Russian cities (“the group of capitals”): more often to St. Petersburg than to Moscow (Table 1) and also to the nearest macro-regional center, such

as Novosibirsk or Ekaterinburg (Table 2).

Table 1. Youth northern “diaspora” in Moscow and St. Petersburg

Moved from the cities of:	Youth migrants moved to:				Total migration (number of cards)	Staying		Total number of investigated cards	City population, 2012 (in thousands of people)
	Moscow		Saint-Petersburg			Total (number of cards)	% (of all cards investigated)		
	total	%*	total	%*					
Noyabrsk	359	9,7	373	10,1	3697	4608	4268	10756	109,2
Muravlenko	135	6,1	190	8,5	2231	1980	37,9	5220	33,5
Gubkinsky	175	13,1	98	7,4	1332	1284	39,4	3263	25,8
Norilsk**	735	13,7	1155	21,6	5359	6260	42,2	14833	177,3
Magadan	791	18,5	846	19,8	4275	6062	47,6	12738	95,5

*Of the total number of youth who moved away from the investigated home city

** Including Talnakh and Kayerkan

The leading role of St. Petersburg is not surprising. In the USSR, Leningrad (St. Petersburg) had strong institutional ties with the Russian North: many scientific, construction and consulting organizations in Leningrad worked on the development of the North. Leningrad State University was the traditional place to get an education for those interested in the North. So young people moving from the North to St. Petersburg follows their parents’ trajectories rather than today's economic opportunities. However, the lower cost of St. Petersburg real estate and education may play a role here as well.

Table 2. Migration to the regional centers of Siberia and the Urals

(Percentage of the total number of youth who moved away from the investigated home city)

Moved from the cities of:	Youth migrants moved to:		
	Regional center 1	Regional center 2	Regional center 3
Noyabrsk	Tumen (18,4)	Ekaterinburg (7,0)	Novosibirsk (4,8)
Muravlenko	Tumen (13,0)	Ekaterinburg (6,4)	Ufa (5,6)
Gubkinsky	Tumen (16,9)	Ekaterinburg (5,7)	Ufa (4,1)
Norilsk	Krasnoyarsk (10,3)	Novosibirsk (3,5)	Ekaterinburg (1,3)
Magadan	Novosibirsk (3,8)	Khabarovsk (3,6)	Vladivostok (2,0)

The choice of regional center is affected by (1) its administrative status (Tyumen’ is an administrative center for Noyabrsk, Muravlenko and Gubkinsky; Krasnoyarsk is the same for Norilsk), (2) prestige and economic opportunities, and also (3) similar specialization. The second cause could be illustrated with the fact that very few people move to Omsk, which is just as close and well populated (1 million inhabitants) as Novosibirsk, but Novosibirsk develops more rapidly and has a better university, so it attracts more migrants. The third cause is illustrated by the example of Ufa, which has an oil university (Tyumen’ also has similar institutions), so it attracts migrants from the oil-producing Muravlenko and Gubkinsky. There is also a two-way migration here: there are a lot of people in Muravlenko and Gubkinsky who were born in Bashkortostan (Ufa is the capital of the Republic of Bashkortostan). So there are strong diaspora ties playing a role here. Finally, distance also plays a role: people from Magadan move to Vladivostok and Khabarovsk,

Dubna	785	79,7	23	2,3	985	2676	53,4	5009	72,4
Obninsk	1330	66,8	91	4,6	1992	6576	58,9	11163	105,4
Desnogorsk	586	36,1	145	8,9	1623	2131	45,3	4708	29,4
Dimitrovgrad	738	34,6	171	8,0	2135	7581	62,5	12127	121,5
Sosnovy Bor	71	3,4	1825	87,9	2076	2302	38,2	6013	70,0
Lesnoy	93	6,1	90	5,9	1532	2753	51,8	5314	50,1
Sarov	744	34,3	243	11,2	2172	4562	53,2	8580	93,0
Snezhinsk	266	20,4	124	9,5	1303	2384	50,2	4750	48,9
Novouralsk	96	3,8	81	3,2	2556	4738	53,5	8849	84,4

*Of the total number of youth who moved away from the investigated home city. The sum of total staying and the total migration is not equivalent to the total examined due to some portion of empty or wrong personal cards.

Table 4. Migration from "smart-cities" to regional centers or other nearest cities
(Percentage of the total number of youth who moved away from the investigated home city)

Moved from the cities of:	Youth migrants moved to:		
	Regional center 1	Regional center 2	Regional center 3
Dubna	Tver (1,4)	Tula (0,5)	Yaroslavl (0,5)
Obninsk	Kaluga (4,6)	Tver (0,8)	Smolensk/Voronezh (0,6)
Desnogorsk	Smolensk (24,4)	Bryansk (6,5)	Kaluga (1,3)
Dimitrovgrad	Samara (17,8)	Ul'yanovsk (9,1)	Tol'yatty (5)
Sosnovy Bor	Petrozavodsk (0,2)	Krasnodar/Murmansk (0,2)	Helsinki (Finland) (0,1)
Lesnoy	Ekaterinburg (62,5)	Nizhnyaya Tura (2,7)	Perm (2,3)
Sarov	Nizhny Novgorod (39,5)	Arzamas (2,6)	Kazan/Saransk (0,7)
Snezhinsk	Chelyabinsk (32,1)	Ekaterinburg (24,7)	Novosibirsk (0,6)
Novouralsk	Ekaterinburg (77,8)	Nizhny Tagil (1,1)	Chelyabinsk (0,9)

*Of the total number of youth who moved away from the investigated home city

For so called "closed" cities with a special security regime the nearest "open" (normal) city is also very attractive even it is not big (Nizhnyaya Tura and Nizhniy Tagil for Lesnoy, Arzamas for Sarov, Nizhny Tagil for Novouralsk).

The main important tendency *allocating a group of "smart cities"* is a migration within the group of "smart cities" (Table 5). Within the group the migrants move mostly to scientific and educational centers of the smart specialization (Obninsk, Dubna) or to some smart-industrial centers (Sosnovy Bor or Polyarnye Zory both with new nuclear power plants under construction). Also the intention to get an education in the field close to physics or nuclear industry is important: for example Dolgoprudny is a small city where one of the best Russian technical universities (Moscow Institute of Physics and Technology -- MIPT) is situated. So the decision to move to such a city was due to get an education close to the education of the parents or/and useful in the city of born.

The closed smart-industry cities with a special regime of security (Lesnoy, Novouralsk) and also Desnogorsk (small periphery city with a nuclear power plant) just do not attract new migrants.

Table 5. Migration within the group of "smart-cities"

Youth	Moved from the cities of:
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migrants moved to "smart cities":	Dubna		Obninsk		Desnogorsk		Dimitrovgrad		Sosnovy Bor		Lesnoy		Sarov		Snezhinsk		Novouralsk	
	%*	Total	%*	Total	%*	Total	%*	Total	%*	Total	%*	Total	%*	Total	%*	Total	%*	Total
Dubna	-	-	0	0	0,4	7	0,1	2	0	0	0,1	1	0,05	1	0	0	0,1	2
Obninsk	0	0	-	-	4,1	67	0,1	3	0,05	1	0,1	2	0	0	0,2	2	0	0
Desnogorsk	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0
Dimitrovgrad	0	0	0	0	0	0	-	-	0	0	0,1	1	0,05	1	0	0	0	0
Sosnovy Bor	0	0	0,1	1	0,4	6	0,05	1	-	-	0	0	0,05	1	0,1	1	0	0
Lesnoy	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0,1	2
Sarov	0	0	0,2	3	0	0	0	0	0	0	0	0	-	-	0	0	0	0
Snezhinsk	0	0	0	0	0	0	0	0	0	0	0,1	1	0	0	-	-	0,05	1
Novouralsk	0	0	0	0	0	0	0	0	0	0	0,3	4	0	0	0,2	2	-	-
Some other "smart cities" of Russia																		
Dolgoprudny	0,6	6	0	0	0,1	1	0	0	0	0	0	0	0	0	0,1	1	0	0
Polyarnye Zori	0	0	0	0	0,1	2	0	0	0,05	1	0	0	0	0	0	0	0	0
Ozersk	0,1	1	0	0	0,1	1	0	0	0	0	0,2	3	0	0	0,8	11	0	0

The organization proximity and even the "epistemological" proximity based on the common knowledge codes (Breschi S., Lissoni F., 2001a; Breschi S., Lissoni F., 2001b) must take place here.

3.3. Small peripheral cities

The majority of the youth from the peripheral cities usually move directly to their own nearest regional center (table 7) than to the Moscow and S.-Petersburg (table 6). Only for cities located close to the Russian capital (not far than 200 km) Moscow is of the high attraction (Konakovo, Gagarin).

Table 6. Migration from small peripheral cities to Moscow and St. Petersburg

Moved from the cities of:	Youth migrants moved to:				Total migration (number of cards)	Staying		Total number of investigated cards	City population, 2012 (in thousands of people)
	Moscow		Saint-Petersburg			Total (number of cards)	% (of all cards investigated)		
	total	%*	total	%*					
Bezhetsk	149	15,2	222	20,6	981	1580	49,6	3183	24,0
Gagarin	692	64,9	42	3,9	1067	1989	53,1	3748	31,3
Gorodets	49	5,5	23	2,6	895	2103	58,8	3575	30,5
Konakovo	661	56,2	42	3,6	1176	3418	60,3	5664	41,3
Nevyansk	13	2,0	14	2,1	659	1524	58,3	2614	24,3

Table 7. Migration from small periphery cities to regional centers or other nearest cities
(Percentage of the total number of youth who moved away from the investigated home city)

Moved from the cities of:	Youth migrants moved to:		
	Regional center 1	Regional center 2	Regional center 3
Bezhetsk	Tver (42,8)	Yaroslavl (2,3)	Rybinsk (1,9)
Gagarin	Smolensk (9,7)	Vyazma (2,9)	Odintsovo (0,9)
Gorodets	Nizhni Novgorod (73,5)	Zavolzhye (5,0)	Balahna (0,6)
Konakovo	Tver (17)	Dubna (5,6)	Zelenograd (5,6)
Nevyansk	Ekaterinburg (68,4)	Nizhny Tagil (7,9)	Novouralsk (3,2)

The moving to the S.-Petersburg sometimes take place if it is situated not essentially wider than Moscow (the case of Bezetsk).

3.4. Industrial company-towns in the Urals and in the South of Siberia

The migration from the industrial company-towns in the Urals and in the South of Siberia looks very similar to those from the peripheral cities in the European part of Russian and in the Urals (tables 7 and 8)

Table 7. Migration from the company-towns of the Urals and the South of Siberia to Moscow and St. Petersburg

Moved from the cities of:	Youth migrants moved to:				Total migration (number of cards)	Staying		Total number of investigated cards	City population, 2012 (in thousands of people)
	Moscow		Saint-Petersburg			Total (number of cards)	% (of all cards investigated)		
	total	%*	total	%*					
Kachkanar	23	1,9	21	1,8	1195	2202	52,0	4238	41,0
Bratsk	797	13,1	728	11,9	6108	16812	59,9	28072	243,9
Ust-Ilimsk	262	7,1	185	5,0	3704	4714	45,7	10304	85,1

*Of the total number of youth who moved away from the investigated home city

Table 8. Migration from the company-towns of the Urals and South of Siberia to regional centers

(Percentage of the total number of youth who moved away from the investigated home city)

Moved from the cities of:	Youth migrants moved to:		
	Regional center 1	Regional center 2	Regional center 3
Kachkanar	Ekaterinburg (68,2)	Nizhny Tagil (7,6)	Perm (1,9)
Bratsk	Irkutsk (22,4)	Novosibirsk (11,5)	Krasnoyarsk (10,1)
Ust-Ilimsk	Irkutsk (22,2)	Novosibirsk (22,0)	Krasnoyarsk (13,1)

*Of the total number of youth who moved away from the investigated home city

All towns located close to the big regional center (both in the European part of Russia and in

the Siberian and the Urals) prefer to move to this center in large portions. However the "smart city" of the Urals (Snezhinsk) looks "closer" to Moscow due to the better level of education of its migrants and institutional tradition (family and professional) to get education in the concrete Moscow university.

The specific feature of the South Siberia company town migration is the tendency to move to the cities of similar specialization. Some youth from Kachkanar move to the relatively distant Magnitogorsk (0,4% of the total migration from Kachkanar), some migrants from Bratsk (0,1%) move to Sayanogorsk which also has got an aluminum plant as Bratsk has; some from Ust-Ilimsk move to Syktyvkar (both have pulp plants).

The great portion of migrants from Bratsk and Ust-Ilimsk move to the cities of the South of Russia. As it also typical for the North cities many people move here to Belgorod and Krasnodar, but their concentration in Sochi, Rostov-na-Dony, Voronezh is specific for Bratsk and Ust-Ilimsk.

Conclusion

Migrations reproduce inter-city social networks. We can see the largest strength of the network ties for the North and Siberian cities. The more great flows of migrants to S.-Petersburg than to Moscow are formed by the institutional tradition as well as economic conditions while the more little portions of movers to S.-Petersburg from other cities are primary attracts by economic conditions. The concrete choice of the Southern cities is also influenced by diaspora ties and institutional conditions (the conditions of real estate presage) as well as climate. At least the flows between the cities of similar specialization (both for smart-cities and productive cities) is also tied with the institutional forces.

Beyond the results listed here, we have preliminary data showing how the social ties between cities act on the labor market, firm contracting, innovation flows and city sustainability. This data provides a rich field for further research.

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