Institutions, Preferences, and Human Capital: Evidence with North Korean Refugees

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KDI

Introduction

- Institutions, preferences, and human capital are central elements in understanding human behaviour and economic development.

- We seek to answer

  ➢ Do institutions have long-lasting effects on preferences and human capital accumulation?

- Potential endogeneity: an exogenous change of institutions is needed.

Division of Korea into North and South

- The Cold war division of Korea offers arguably a grand-scale, natural experiment in institutional change.

  1. Homogeneous population prior to the division;

  2. Exogenous and orthogonal to preferences of ordinary Korean people;

  3. Institutional changes in NK and SK are divergent and persistent over time;

  4. Little contamination between the two populations.

North Korean Refugees

- Accessing the general population in NK is practically impossible.
- We have used NK refugees who live in South Korea as our baseline population every year since 2011.
- We contrast their behaviour and abilities with those of South Korean and Korean Chinese.
- Our studies are subject to selection issue.

Our Tools of Measurements

1. **Economic experiments**

   - Preferences;
   - Beliefs;
   - Competitiveness;
   - Market performance (summer 2016)

2. **Surveys**

   - Socioeconomic variables;
   - Subjective attitudes (toward, e.g., institutions);
   - Cognitive abilities / skills;
   - Economic literacy (summer 2016)

Samples

- During the period between 2011 and 2015, we recruited 1752 people:
  - 757 NK refugees;
  - 923 SK;
  - 72 Korean Chinese
- We collaborated Nielsen Company Korea in 2014 and 2015 to recruit a representative sample of NK refugees.

Sampling in 2015

북한이탈주민

입국 시기	남성			여성			합계
	20-30대	40-50대	계	20-30대	40-50대	계	
전체	**43**	**22**	**65**	**82**	**44**	**126**	**191**
2005년 이전 입국	17	9	26	16	13	29	55
2006-2008년 입국	10	3	13	24	12	36	49
2009-2011년 입국	9	7	16	26	10	36	52
2012년 이후 입국	7	3	10	16	9	25	35

남한주민

입국 시기	남성			여성			합계
	20-30대	40-50대	계	20-30대	40-50대	계	
전체	**41**	**15**	**56**	**95**	**42**	**137**	**193**
250만원 이하 (저소득층)	12	4	16	29	14	43	59
251만원 이상	29	11	40	66	28	94	134

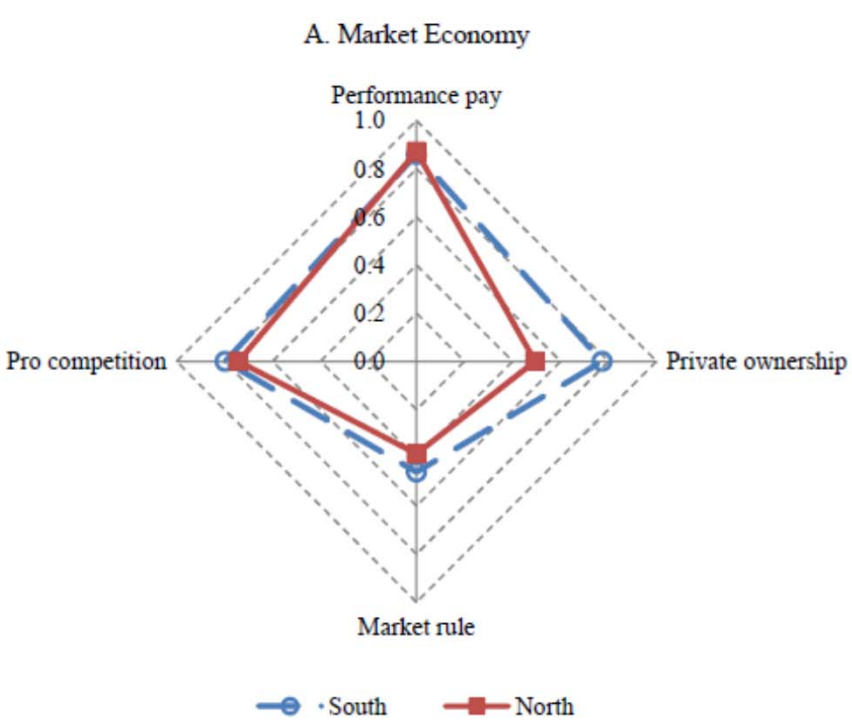
한국 체류 중국동포

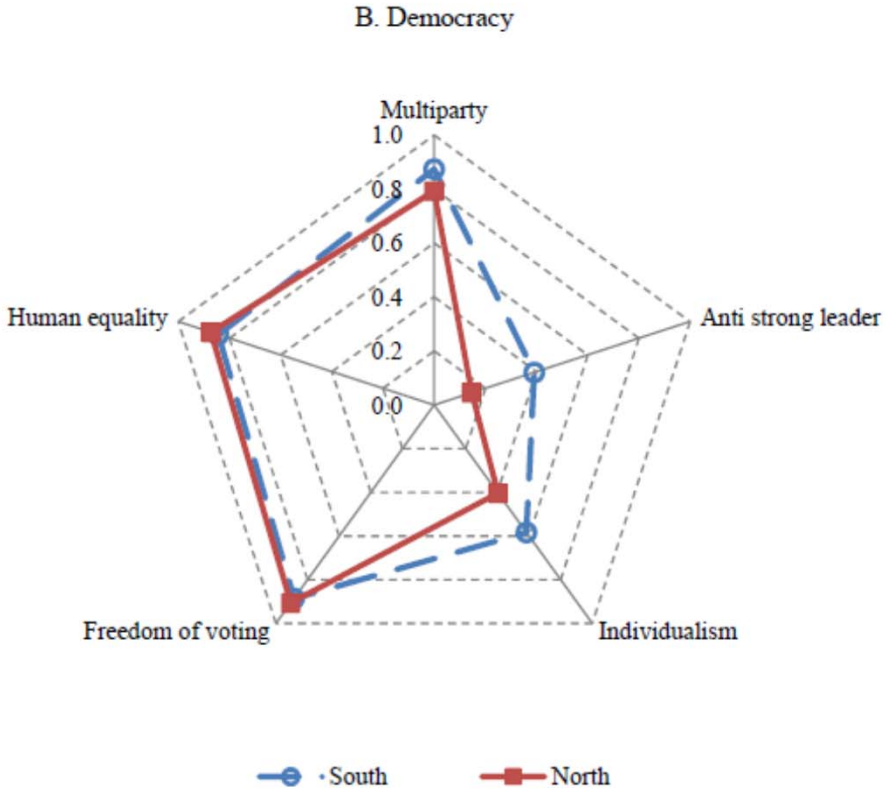
입국 시기	남성			여성			합계
	20-30대	40-50대	계	20-30대	40-50대	계	
전체	**15**	**6**	**21**	**37**	**14**	**51**	**72**

Attitudes toward Institutions

(based on 2011 ~ 2014 data)

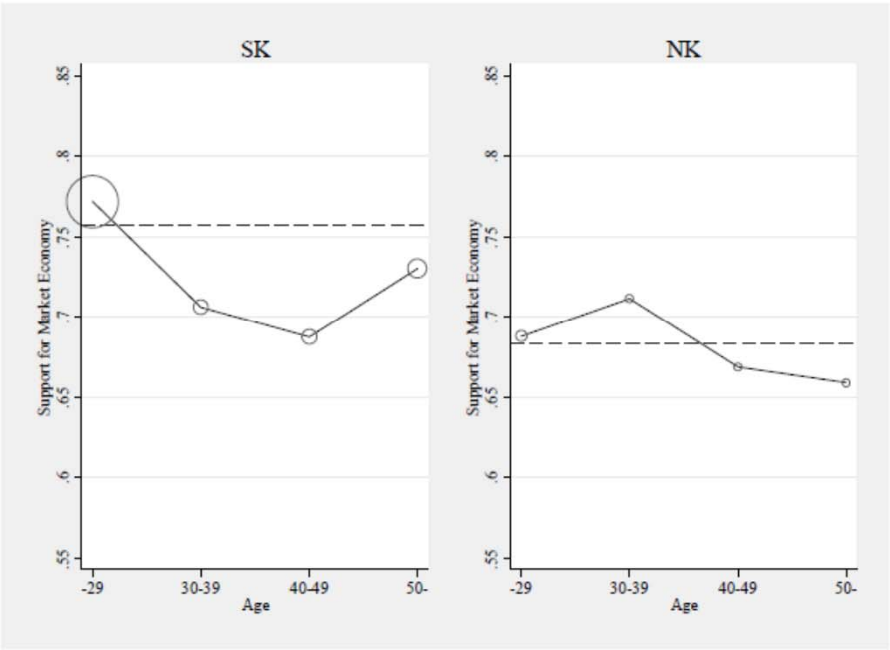
Attitudes toward Institutions: NK and SK



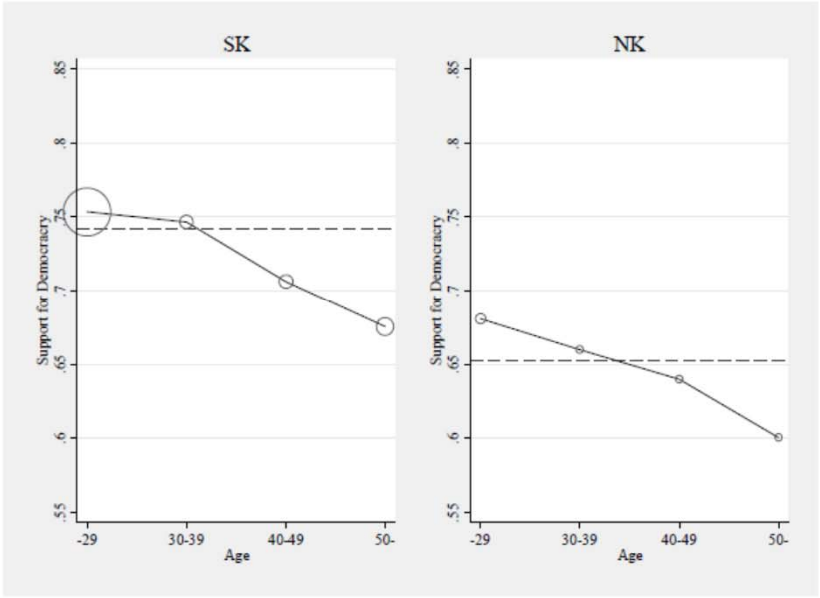


Attitudes toward Institutions by Age: NK and SK

A. Market Economy

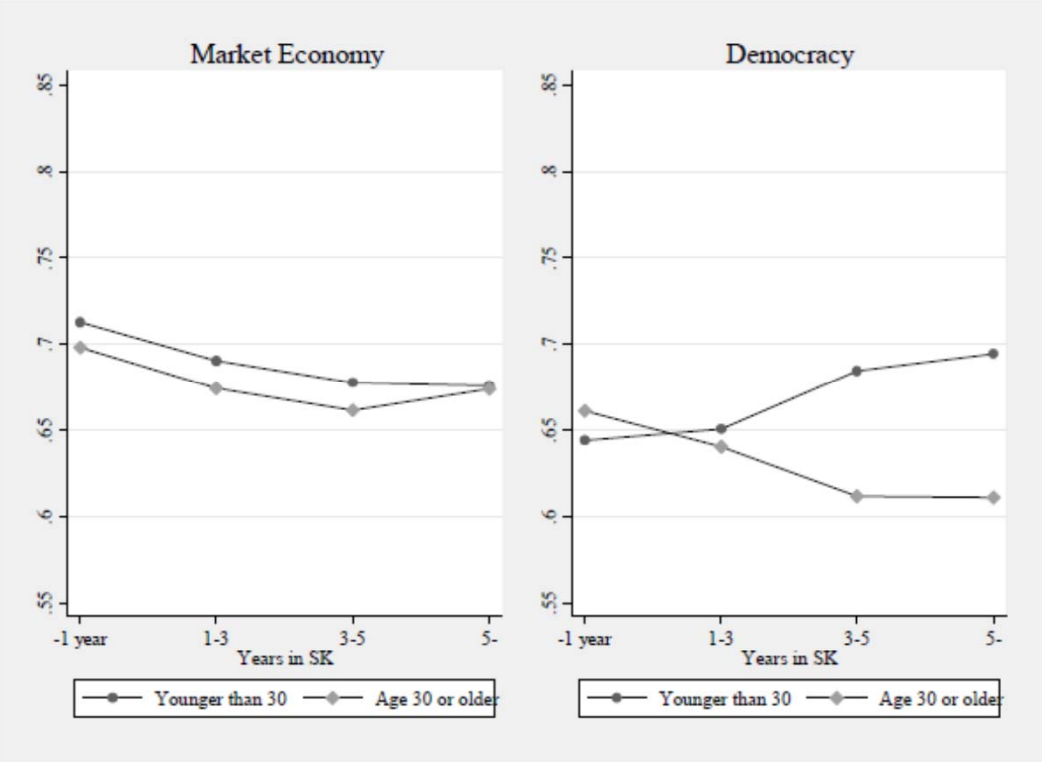


B. Democracy



Notes: The size of circle is proportionate to the number of observations in each age group within each sample of SK or NK.

Attitudes toward Institutions over Years in South Korea by Age at SK Arrival: NK and SK



Distributional Preferences

(based on 2011 ~ 2013 data)

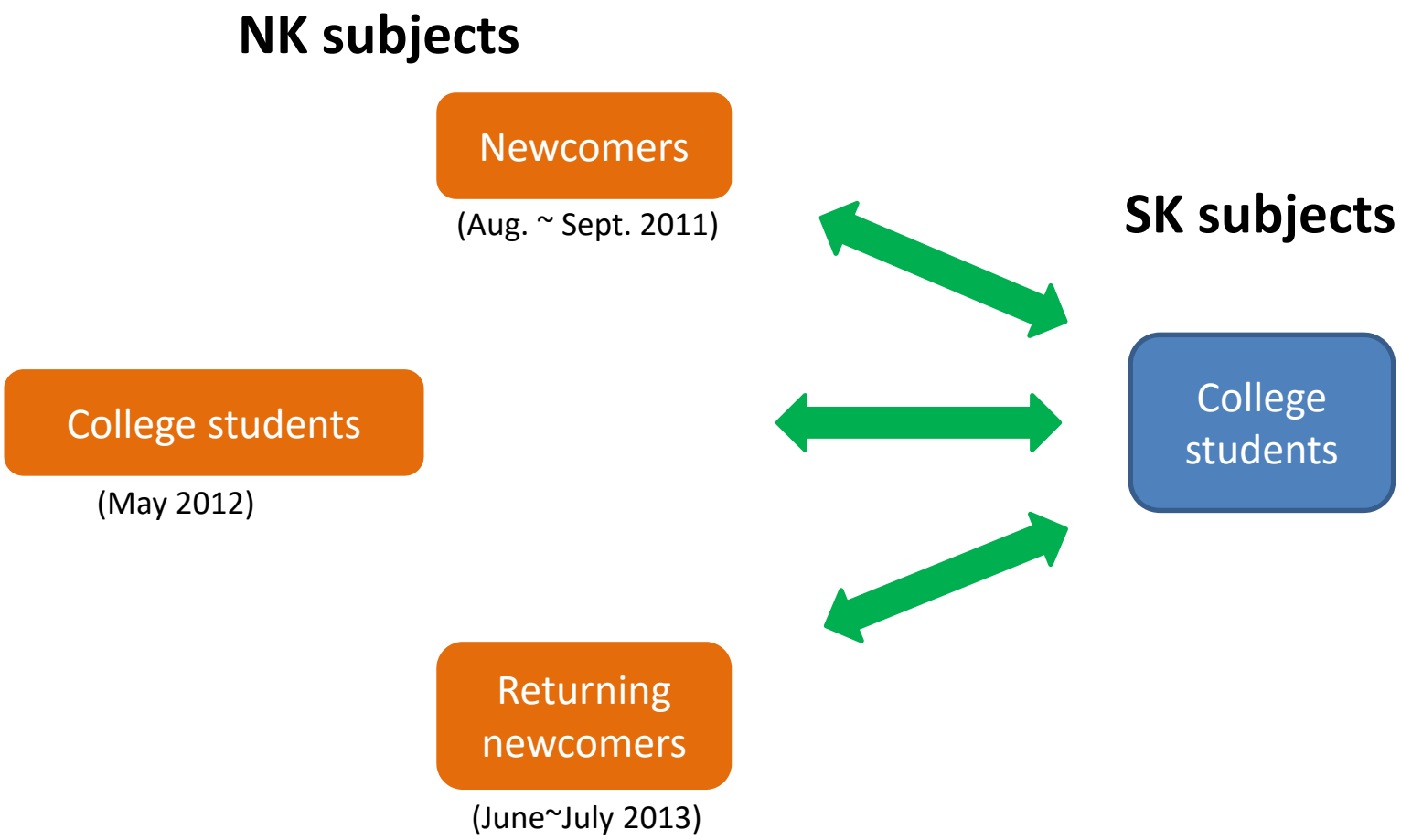
Distributional Preferences

NK → SK
SK → NK

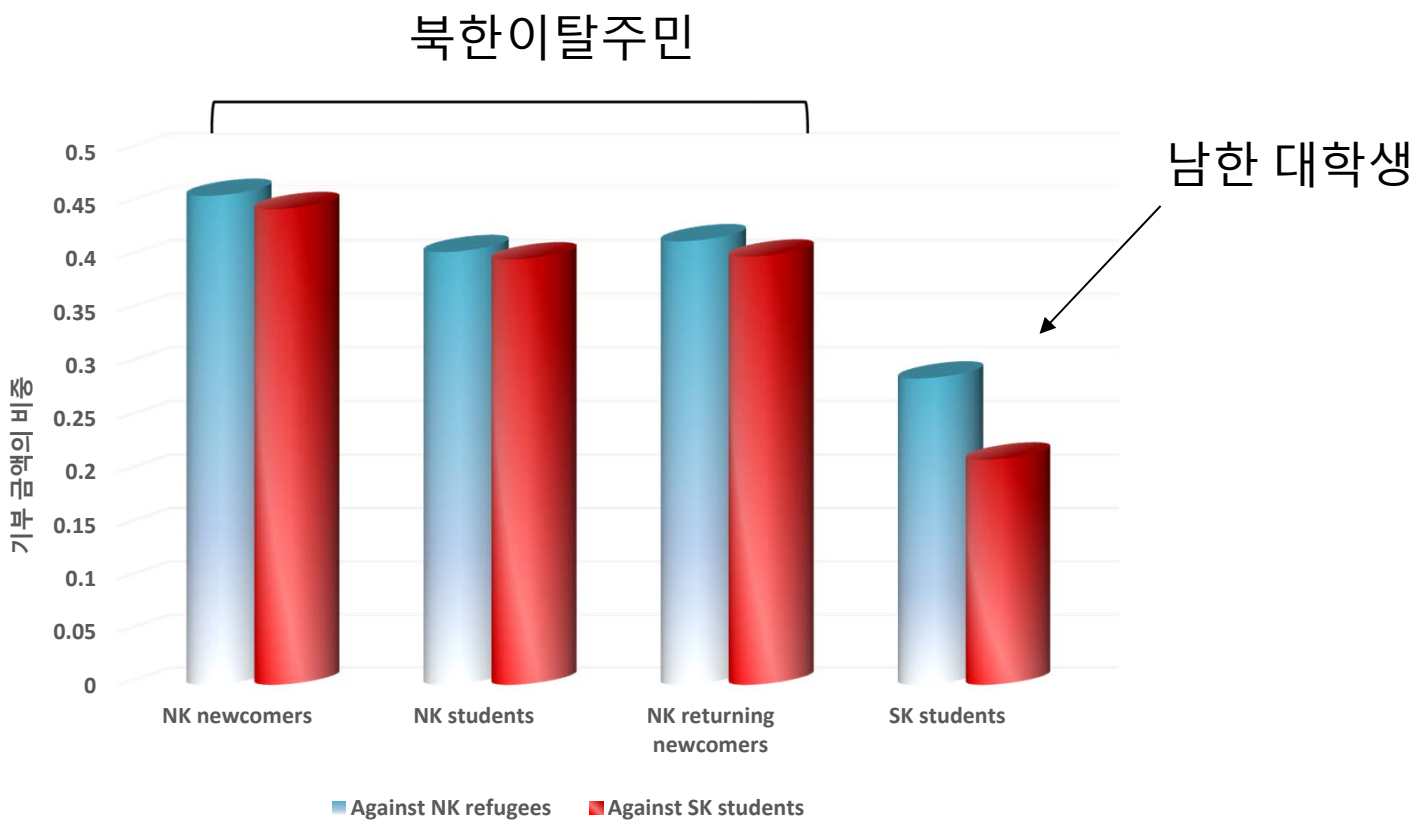
SK → SK

NK → NK

Sampling Structure of Subjects



Distributional Preferences



Institutions, Competitiveness and Human Capital

(based on 2015 data)

Introduction

- Competition is an essential way of allocating scare resources in a society.
- It requires individuals to be equipped with proper levels of human capital.
  - cognitive ability;
  - non-cognitive skills (in particular, competitiveness)
- Institutions have significant influences on the formation of human capital.
- We explore the potential link between institutions and competitiveness.

Introduction

- Previous studies show that competitiveness varies by
  - Gender (e.g., Gneezy, Nierderle, and Rustichini, 2003; Nierderle and Vesterlund, 2011)
  - Working environments / experiences (Leibbrant, Gneezy, and List, 2013)
- The division of Korea into North and South is an interesting case for the link between institutions and competitiveness.
  - Capitalism is based on private ownership and competition through markets.
  - Socialism is based on state ownership and central planning which aims to maintain full employment.

Our Approach

- We recruit three different (relatively comparable) groups of Koreans: **North Korean refugees (NK)**, **South Korean (SK)**, and **Korean Chinese (CK)**.

- We combine economic experiments with traditional surveys.

  - An experiment on competitiveness

  - A test of cognitive ability

  - Information on socio-demographics as well as on life experiences under different institutions

Experiments and Survey

In an experimental session with three Koreans, we conduct the following

Experiments

1. Individual real-effort task
2. Group real-effort task
3. Elicitations of subjective winning probabilities and risk preferences

Raven test for cognitive abilities

Surveys

Experiment 1: individual real-effort task

- The individual real-effort task consists of three stages with a simple, tedious task.

- In each stage, subjects count 0s in 20 of 7×7 tables within 5 minutes:

0	1	0	1	0	0	0
1	1	1	0	0	1	0
0	1	0	1	1	0	0
1	0	1	0	1	0	1
0	0	1	1	1	0	0
0	1	0	0	0	1	0
1	1	0	1	1	0	0

Experiment 1: individual real-effort task

Stage 1: Piece-rate scheme or Tournament scheme (order is randomly allocated)

Under piece-rate:

- 1,000 KRW (about $1)×(# of correct answers)

Under tournament:

- Matched with an anonymous participant.
- 2,000 KRW (about $1)×(# of correct answers) if win and 0 otherwise.

Stage 2: Choice of payment scheme

- Randomly assigned with a bonus point in the range {0,1,…,10}
- Choose either piece-rate or tournament scheme.
- If piece-rate is selected, **1,000 KRW (about $1)×(# of correct answers + bonus)**
- If tournament is selected, the individual competes with the opponent in Stage 2 who does not have a bonus; **2,000 KRW (about $1)×(# of correct answers + bonus)** if win and 0 otherwise

Experiment 2: belief elicitation

- After the individual task (and before knowing the outcome of Stage 2), subjects were asked about their beliefs of winning if the tournament had been selected.

- This belief elicitation is incentivized (Hossain and Okui, 2013).

  - Prediction error is computed from a subject's report and a true event.

  - If this prediction error is smaller than a randomly generated number, the subject receives a fixed amount (2,000 KRW).

Experiment 3: risk preferences

- We use a multiple price list design to elicit risk preferences (Holt and Laury, 2002).

	Lottery A				Lottery B			
Problem	Pr{Prize 1}	Prize 1	Pr{Prize 2}	Prize 2	Pr{Prize 1}	Prize 1	Pr{Prize 2}	Prize 2
1	0.1	5000	0.9	4000	0.1	10000	0.9	0
2	0.2	5000	0.8	4000	0.2	10000	0.8	0
3	0.3	5000	0.7	4000	0.3	10000	0.7	0
4	0.4	5000	0.6	4000	0.4	10000	0.6	0
5	0.5	5000	0.5	4000	0.5	10000	0.5	0
6	0.6	5000	0.4	4000	0.6	10000	0.4	0
7	0.7	5000	0.3	4000	0.7	10000	0.3	0
8	0.8	5000	0.2	4000	0.8	10000	0.2	0
9	0.9	5000	0.1	4000	0.9	10000	0.1	0
10	1	5000	0	4000	1	10000	0	0

Raven Progressive Matrices Test (Raven, 1962)

- 24 Raven Matrices Test in paper within 10 minutes.

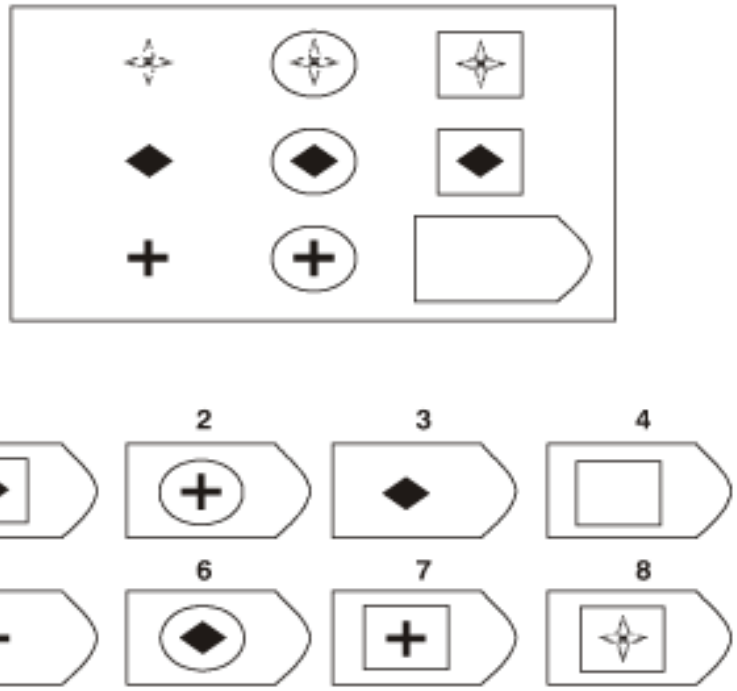
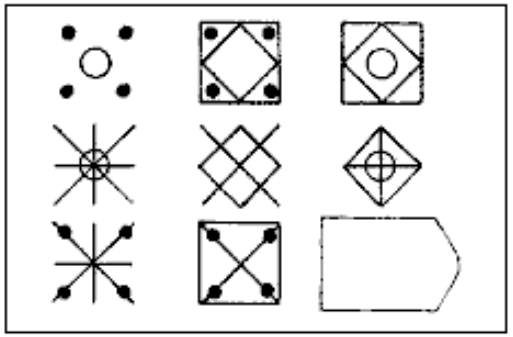
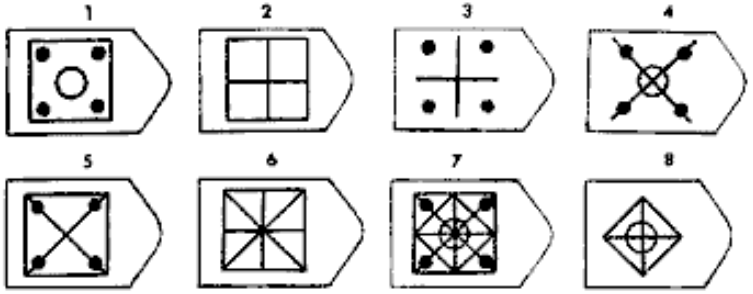


Figure 2 - Raven's progressive matrices

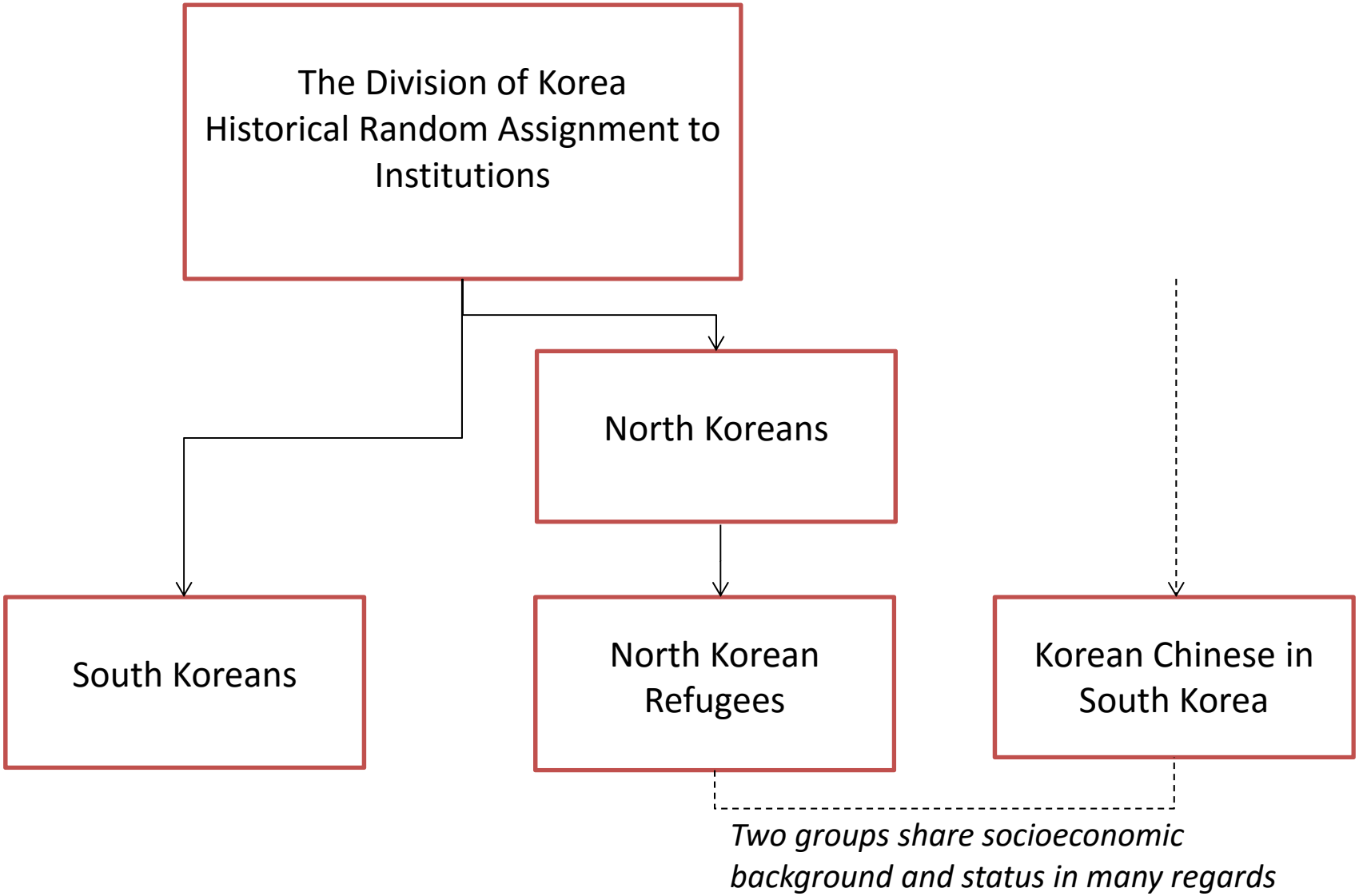




Recruitment

- We recruited a representative sample of North Korean refugees in South Korea (191 NK subjects).
- South Korean citizens were sampled to match with the composition of gender and age groups of North Korean refugees (193 SK subjects).
- To lessen concerns of income differences, we over-sampled low-income South Korean.
- Korean Chinese in South Korea were sampled in the same way (72 CK subjects).

Subjects


The Division of Korea
Historical Random Assignment to Institutions
North Koreans
South Koreans
North Korean Refugees
Korean Chinese in South Korea
Two groups share socioeconomic background and status in many regards

Characteristics of Subjects

	NK	CK	SK
Female	0.660	0.708	0.710
Age	37.45	33.60	34.76
Married	0.298	0.306	0.425
Secondary education	0.524	0.145	0.319
Post-secondary education	0.262	0.850	0.597
Health status: bad	0.304	0.125	0.140
Religious	0.597	0.417	0.585
Number of household members	2.382	2.903	3.150
Employed	0.639	0.792	0.798
Unemployed	0.136	0.111	0.078
Out of labor force	0.225	0.097	0.124
Stock market participation	0.084	0.139	0.275
Credit card holding	0.382	0.333	0.705
Online shopping	0.429	0.611	0.933
Financial literacy	0.670	0.722	0.819
Institutional literacy	0.572	0.588	0.550
Monthly household income	1.500	2.117	4.425
Monthly household income per capita	0.794	1.007	1.645
Monthly household expenditure	1.050	1.542	3.340
Household wealth	132.677	185.321	351.812
Number of subjects	191	72	193

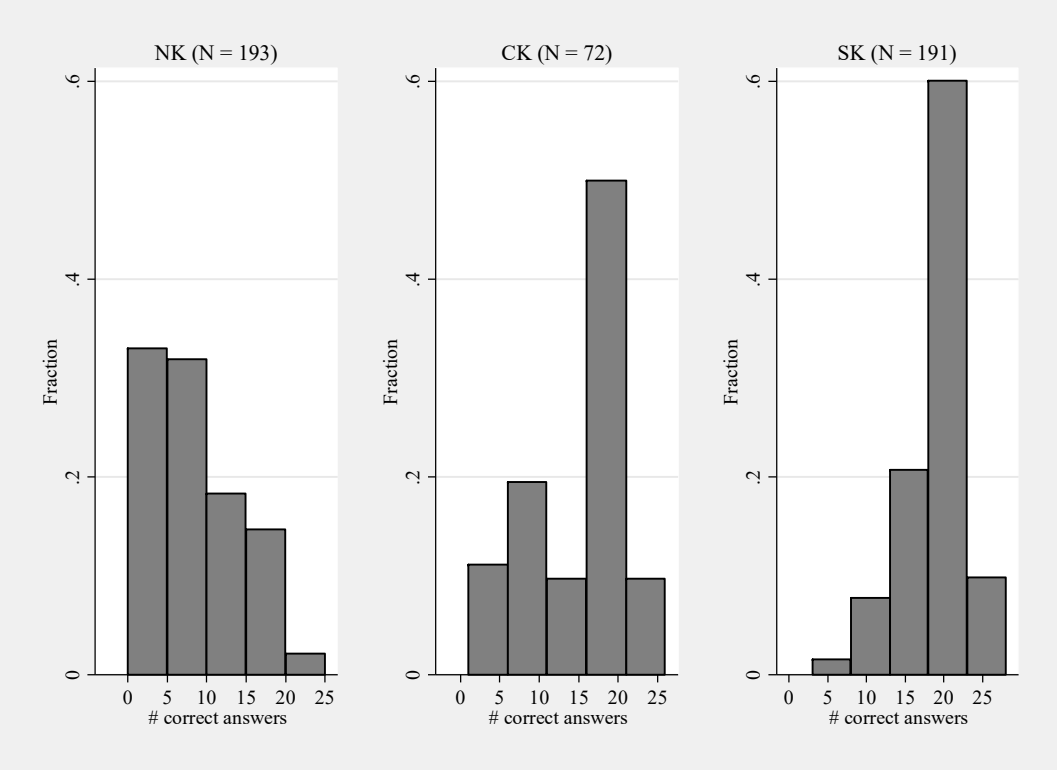
Characteristics of NK Subjects

	NK
Years in SK	7.121
	(3.776)
Military in NK	0.147
Communist party member	0.131
Education in NK	
Primary or below	0.100
Some secondary	0.115
Secondary	0.524
Some post-secondary	0.157
Tertiary	0.105
China border provinces	0.791
Observations	191

Kim et al. (2015)

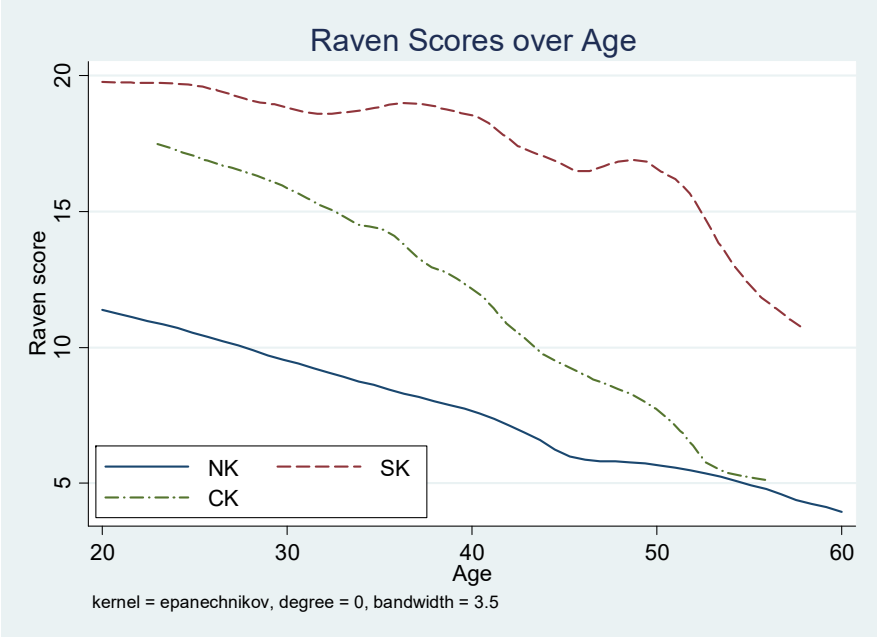
	Census[1]	Refugees[2]	Newcomers
Year	2008	2011	2011
Sample Size	24,052,231	20,358	133
Female[3] (%)	51.2	68.6	63.2
Age Composition[3] (%)			
0-9	14.8	3.9	0.0
10-19	17.0	11.6	3.8
20-29	14.9	27.4	35.3
30-39	16.2	32.1	23.3
40-49	14.9	15.6	20.3
50-59	9.2	4.8	11.3
60 and above	13.0	4.6	6.0
Birth or residential providence in North Korea			
Border[3][4] (%)	30.3	78.2	82.6
Marital status			
Married[5] (%)	65.4	35.3	24.8
Highest educational attainment obtained in North Korea[5] (%)			
Primary (including no education)	7.5	8.8	3.0
Secondary (incomplete)	71.9[6]	66.0[6]	6.0
Secondary (complete)			58.6
Post-secondary (up to 3 additional years)	9.9	13.5	24.8
Tertiary or higher	10.7	9.4	7.5
No response	0.0	2.2	0.8

Result 1: Cognitive Abilities



	NK	CK	SK
Raven matrices test	8.089	14.028	18.233
	(5.357)	(6.132)	(3.881)

Result 1: Cognitive Abilities



	(1)	(2)
NK	-10.144***	-8.866***
	(0.478)	(0.535)
CK	-4.205***	-4.018***
	(0.772)	(0.667)
age		-0.235***
		(0.021)
female		-0.783*
		(0.433)
Monthly HH income		0.176**
		(0.085)
# of household members		0.222*
		(0.124)
Constant	18.233***	25.473***
	(0.280)	(0.944)
Observations	456	456
R-squared	0.474	0.592

- There are huge gaps in Raven test scores among three Koreans.
- These gaps remain significant, after controlling basic characteristics.

Result 2: Individual Task

Stage 1 & 2

Stage 3

	NK	CK	SK	SK - NK	SK - CK	CK - NK
Piece rate	10.79	12.86	12.92	2.13	0.06	2.07
	(3.76)	(3.76)	(3.56)			
Tournament	11.35	12.67	13.62	2.27	0.95	1.32
	(3.64)	(3.54)	(3.45)			
Tournament - Piece rate (%)	0.05	-0.02	0.05	0.00	0.07	-0.07
Bonus	4.91	5.13	4.74	-0.16	-0.38	0.22
	(3.22)	(2.96)	(3.21)			
Choice of Tournament	0.45	0.63	0.65	0.20	0.02	0.17
Piece rate	11.69	13.22	13.57	1.89	0.35	1.54
	(4.20)	(4.31)	(3.85)			
Tournament	13.19	14.44	16.06	2.87	1.61	1.26
	(3.41)	(3.28)	(2.83)			
Tournament - Piece rate (%)	0.12	0.09	0.17	0.05	0.08	-0.03

Regression Analysis: Willingness to Compete

- Preferences for competition are largely explained by the difference in subjects' beliefs of winning in the tournament.
- Task-related ability (performance in tournament) explain partly the difference in preferences for competition.
- Risk aversion and irrationality are negatively associated with willingness to compete.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NK	-0.197***	-0.125**	-0.136**	-0.099*	-0.008	-0.009	0.103*
	(0.041)	(0.050)	(0.049)	(0.055)	(0.050)	(0.041)	(0.056)
CK	-0.023	-0.012	-0.031	-0.013	0.008	0.000	0.052
	(0.109)	(0.095)	(0.093)	(0.089)	(0.088)	(0.083)	(0.078)
Age		-0.014***	-0.014***	-0.012***	-0.008**	-0.007**	-0.005
		(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Female		-0.115*	-0.105*	-0.112*	-0.058	-0.042	-0.035
		(0.058)	(0.054)	(0.053)	(0.054)	(0.055)	(0.053)
Household income		0.010	0.007	0.005	0.005	0.004	0.002
		(0.008)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)
Number of HH members		0.012	0.016	0.014	0.010	0.010	0.007
		(0.010)	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)
Bonus			0.032***	0.032***	0.012**	0.011**	0.014***
			(0.005)	(0.005)	(0.004)	(0.005)	(0.004)
Task-specific ability				0.023***	0.004	0.004	0.001
				(0.006)	(0.005)	(0.005)	(0.005)
Prob of winning					0.781***	0.766***	0.711***
					(0.088)	(0.087)	(0.086)
H&L inconsistent choices						-0.071	-0.041
						(0.040)	(0.044)
Number of safe choices						-0.019*	-0.019**
						(0.009)	(0.008)
General cognitive ability							0.015***
							(0.004)
Constant	0.648***	1.138***	0.979***	0.622***	0.182	0.287*	-0.007
	(0.041)	(0.147)	(0.150)	(0.166)	(0.147)	(0.134)	(0.162)
Observations	456	456	456	456	456	456	456
R-squared	0.036	0.127	0.169	0.194	0.330	0.343	0.358

Overconfidence

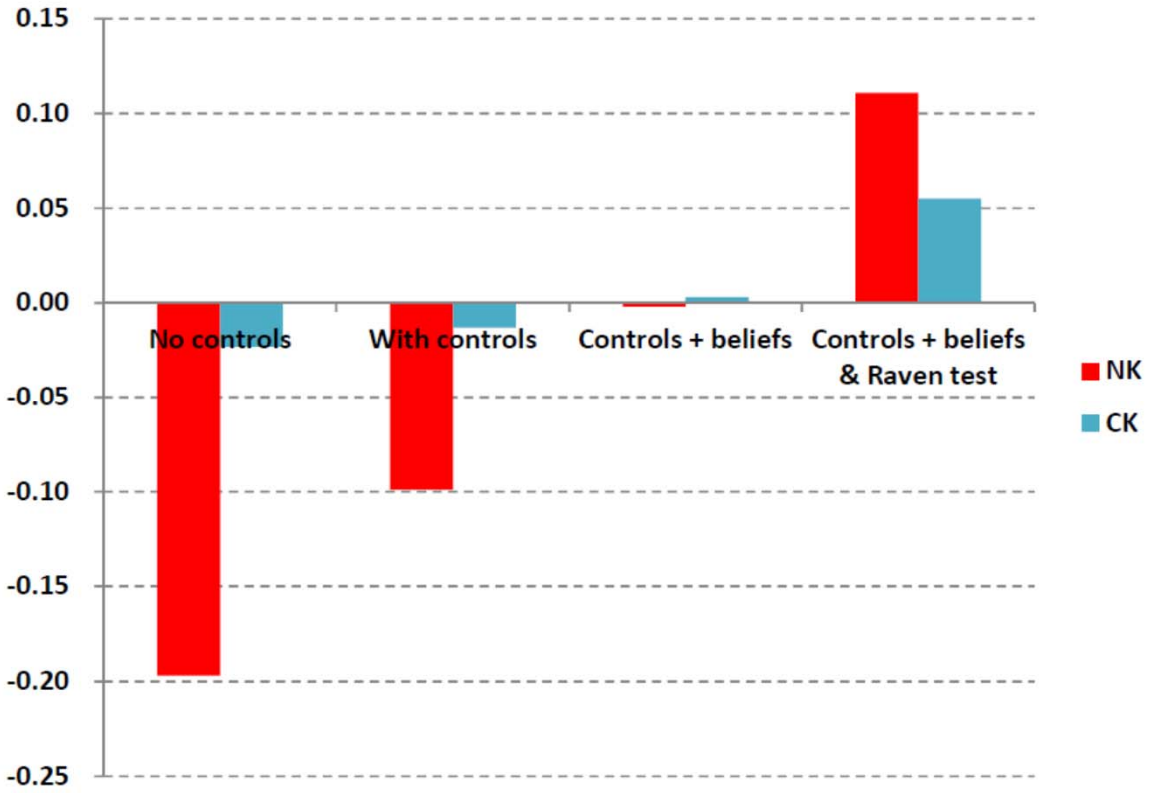
	NK	CK	SK
C. Belief elicitation			
Prob of winning	0.601	0.749	0.781
	(0.282)	(0.250)	(0.276)
Subjective - empirical prob.	-0.119	-0.084	-0.045
	(0.318)	(0.258)	(0.253)
Overconfidence	0.173	0.139	0.155
Underconfidence	0.424	0.347	0.269

Regression Analysis: Beliefs of Winning

- The NK-SK differences in Subjects' beliefs of winning are largely explained by the variations in Raven score.
- Task-related ability and random bonus shock affects beliefs of winning.
- Older people and female have lower beliefs of winning in the tournament.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NK	-0.180***	-0.147***	-0.156***	-0.148***	-0.109**	-0.095**	-0.009
	(0.019)	(0.031)	(0.034)	(0.043)	(0.039)	(0.042)	(0.041)
CK	-0.033	-0.031	-0.045**	-0.043*	-0.024	-0.019	0.019
	(0.034)	(0.023)	(0.016)	(0.020)	(0.023)	(0.022)	(0.027)
Age		-0.008***	-0.008***	-0.008***	-0.006***	-0.005***	-0.003**
		(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Female		-0.070***	-0.062***	-0.070***	-0.076***	-0.069***	-0.061***
		(0.020)	(0.018)	(0.016)	(0.016)	(0.016)	(0.015)
Household income		0.004	0.002	0.002	-0.001	-0.000	-0.002
		(0.008)	(0.007)	(0.008)	(0.007)	(0.007)	(0.006)
Number of HH members		0.004	0.007	0.006	0.004	0.004	0.002
		(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)
Bonus			0.026***	0.026***	0.025***	0.025***	0.026***
			(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
Own group strongest				-0.012	-0.008	-0.005	-0.006
				(0.030)	(0.031)	(0.033)	(0.032)
Own group weakest				-0.089***	-0.078***	-0.084***	-0.075***
				(0.021)	(0.020)	(0.021)	(0.020)
Task-specific ability					0.024***	0.024***	0.021***
					(0.003)	(0.003)	(0.003)
H&L inconsistent choices						-0.049	-0.025
						(0.037)	(0.036)
Number of safe choices						-0.004	-0.003
						(0.004)	(0.004)
General cognitive ability							0.011***
							(0.003)
Constant	0.781***	1.070***	0.944***	0.973***	0.594***	0.605***	0.361***
	(0.020)	(0.082)	(0.080)	(0.084)	(0.107)	(0.112)	(0.092)
Observations	456	456	456	456	456	456	456
R-squared	0.088	0.171	0.250	0.264	0.346	0.352	0.378

Channels: Differences in Preferences for Competition



Discussion

- The experience of socialism in N. Korea affects an inclination to compete mainly through human capital measured by Raven test results.

- Controlling such human capital, N. Koreans are more likely to compete. Why?

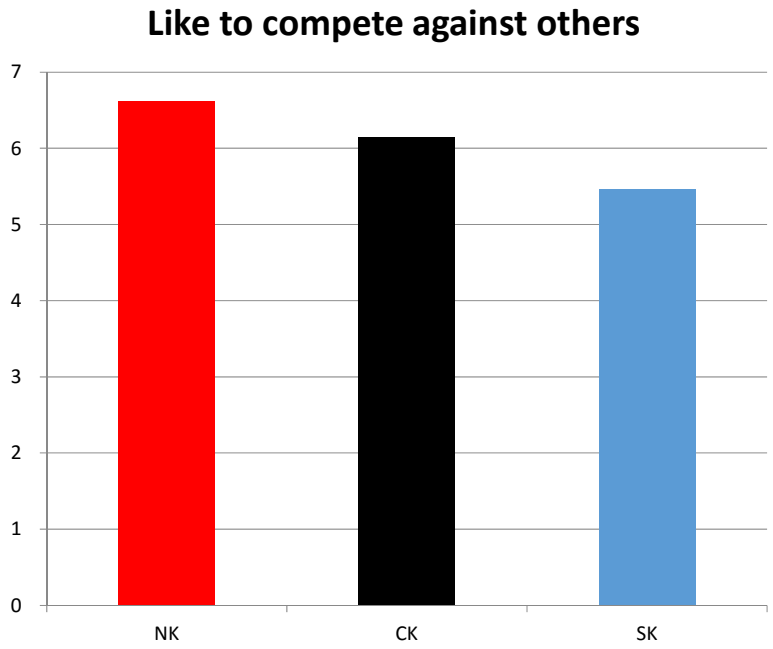
  - Unique N. Korean system?
  - Minority in S. Korea? But normally minority is less competitive.
  - Risk seeker? But controlled.

- Institutions and their effects should be de-bundled and decomposed.

  - Institutions are not residuals.
  - Heterogeneity in institutions (different socialist systems) should be taken into account.

Robustness Check: Subjective Attitudes toward Competition

	(1)	(2)	(3)
NK	1.141***	1.048***	1.328***
	(0.240)	(0.272)	(0.344)
CK	0.681**	0.696**	0.822**
	(0.300)	(0.318)	(0.339)
Age		0.018	0.026**
		(0.011)	(0.013)
Female		-0.928***	-0.904***
		(0.232)	(0.233)
Monthly HH income		-0.005	-0.010
		(0.038)	(0.038)
# of HH		0.020	0.013
		(0.061)	(0.061)
Raven score			0.032
			(0.025)
Constant	5.472***	5.454***	4.650***
	(0.139)	(0.522)	(0.826)
Observations	456	456	456
R-squared	0.048	0.086	0.089



Sample Selection Issue I:
Selection into Competition by NK Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
Prob of winning	0.578***	0.598***	0.596***	0.607***	0.592***	0.580***
	(0.135)	(0.134)	(0.135)	(0.128)	(0.128)	(0.129)
H&L inconsistent choices	-0.012	-0.006	-0.011	-0.004	-0.026	-0.035
	(0.048)	(0.044)	(0.044)	(0.042)	(0.049)	(0.052)
Number of safe choices	-0.021**	-0.021**	-0.021*	-0.020*	-0.019*	-0.020**
	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)
General cognitive ability	0.007	0.006	0.005	0.007	0.005	0.003
	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Secondary education in NK		-0.143	-0.145	-0.109	-0.047	0.005
		(0.129)	(0.130)	(0.135)	(0.144)	(0.156)
Post-secondary education in NK		-0.149	-0.142	-0.131	-0.087	0.035
		(0.132)	(0.129)	(0.129)	(0.133)	(0.139)
Border provinces			0.083	0.083	0.081	0.094
			(0.061)	(0.063)	(0.058)	(0.064)
Military service in NK				-0.153	-0.157	-0.134
				(0.150)	(0.153)	(0.148)
Communist party member				0.157	0.174	0.144
				(0.142)	(0.139)	(0.148)
Any education in SK					0.140*	0.079
					(0.071)	(0.081)
Years in SK						0.023**
						(0.009)
Years in a third country						0.019
						(0.013)

Sample Selection Issue II: Winning Probability

No variables related to N. Korea are significant.

	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.003*	-0.004**	-0.004**	-0.004	-0.004	-0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Female	-0.102***	-0.111***	-0.111***	-0.104***	-0.102***	-0.097***
	(0.019)	(0.020)	(0.020)	(0.030)	(0.029)	(0.027)
Household income	-0.000	0.002	0.002	0.002	0.002	0.001
	(0.015)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Number of HH members	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003
	(0.010)	(0.009)	(0.009)	(0.008)	(0.008)	(0.008)
Bonus	0.023***	0.023***	0.023***	0.023***	0.023***	0.023***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Own group strongest	-0.017	-0.020	-0.020	-0.021	-0.020	-0.021
	(0.030)	(0.031)	(0.031)	(0.032)	(0.033)	(0.034)
Own group weakest	-0.064**	-0.060**	-0.060**	-0.061*	-0.059**	-0.059**
	(0.025)	(0.026)	(0.026)	(0.028)	(0.026)	(0.023)
Task-specific ability	0.018***	0.018***	0.018***	0.018***	0.017***	0.017***
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)
H&L inconsistent choices	-0.005	-0.006	-0.006	-0.008	-0.012	-0.010
	(0.057)	(0.056)	(0.057)	(0.061)	(0.061)	(0.061)
Number of safe choices	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
General cognitive ability	0.015***	0.016***	0.016***	0.015***	0.015***	0.015**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Secondary education in NK		0.066	0.065	0.054	0.065	0.073
		(0.048)	(0.049)	(0.043)	(0.059)	(0.061)
Post-secondary education in NK		0.049	0.049	0.044	0.052	0.062
		(0.035)	(0.033)	(0.038)	(0.044)	(0.059)
Border provinces			0.005	0.005	0.004	0.006
			(0.033)	(0.032)	(0.031)	(0.031)
Military service in NK				0.047	0.046	0.045
				(0.084)	(0.081)	(0.084)
Communist party member				-0.037	-0.034	-0.033
				(0.111)	(0.108)	(0.111)
Any education in SK					0.024	0.020
					(0.050)	(0.053)
Years in SK						0.003
						(0.008)
Years in a third country						-0.001
						(0.005)

Raven Score

	(1) SK	(2) CK	(3) NK	(4) NK
Age	-0.020***	-0.043***	-0.024***	-0.025***
	(0.004)	(0.006)	(0.004)	(0.005)
Female	-0.132**	-0.018	-0.043	-0.048
	(0.066)	(0.141)	(0.089)	(0.106)
Household income	0.010	0.019	0.028	0.025
	(0.010)	(0.047)	(0.023)	(0.025)
Number of HH members	0.012	0.032	0.044	0.036
	(0.016)	(0.035)	(0.030)	(0.030)
Secondary education	1.135***	-0.179	-0.224	-0.196
	(0.124)	(0.237)	(0.138)	(0.157)
Post-secondary education	1.156***	0.274	0.054	0.139
	(0.104)	(0.226)	(0.150)	(0.182)
Border provinces				0.055
				(0.101)
Military service in NK				0.179
				(0.155)
Communist party member				-0.275*
				(0.143)
Years in SK				0.026**
				(0.013)
Years in a third country				0.009
				(0.013)
Reasons for defection: political				0.064
				(0.101)
Reasons for defection: recommendation				-0.075
				(0.137)
Reasons for defection: family				-0.062
				(0.129)
Family members left in NK				0.010
				(0.103)

Discussion

- The quantity and quality of education in NK is lower than that of SK? Probably.
- Are refugees lower-educated North Korean? (selection) Maybe.
- Traumatic experiences in NK or in transit to SK have adverse impacts on cognitive abilities? Partly.
- The North Korean famine during the late-1990s has severe impacts on the formation of cognitive skills? Not in this sample.

Concluding Remarks

- We recruit three Koreans (NK refugees, SK, CK) to investigate institutional impacts on the formation of human capital (cognitive and non-cognitive).
  - In this paper, we focused on a specific non-cognitive skill, "competitiveness."

- There is a substantial gap in cognitive ability between North and South Koreans.

- Preferences for competition in a simple task appear similar among three Koreans, after controlling for task-specific ability and belief about winning tournament. But it turns out NK refugees are *more competitive* than SK subjects, after controlling general cognitive abilities.