Self-rated health and health care utilisation of immigrant in Canada : a causal influence of social capital ?

Caroline Berchet (LEDa-LEGOS, Université Paris Dauphine)

Audrey Laporte (Université de Toronto)

Florence Jusot (Université de Rouen)

DAUPHINE
UNIVERSITÉ PARIS

Introduction (1)

- **Objectives:**

    -To study social determinants of immigrant health or health care use in Canada

    -To assess the causal impact of social capital on their health conditions

    - To shed some light on the complex relationship between social capital, human capital and health.

    → Does the effect of social capital differ according to immigrant level of human capital?

- **Rational:**

    - Immigrant population in Canada: 21% of the total population (OCDE, 2010)

    - According to empirical studies, immigrant are in better health that the native population but their health declines with an increased lenght of stay.

    (McDonald and Kennedy, 2004; Newbold and Danforth, 2003; Zhao 2007)

Introduction (2)

- **Social determinants of immigrants health :**
- Disadvantaged economic condition in the host country

> (Goldberg & al, 2002; Marmot & Wilkinson, 2006; Perrin-Haynes, 2008; Dunn & Dyck, 2000, Newbold & Danforth, 2003)

- A lower social integration and more broadly a lower social capital than native population

> (Gee, Kobayaski & Prus, 2007; McDonal & Neily, 2007; Zambrana & al., 1994; Leclere, Jensen & Biddlecom, 1994)

→ Previous studies in Canada have proved the positive association between social capital and immigrant health

- **Contribution to the existing literature**

-To prove the causal influence of social capital on immigrant health in Canada
-To explore whether or not the influence of social capital differs according to migrant level of human capital.

Data (1)

- **The Longitudinal Survey of Immigrant in Canada**

  - National survey conducted to provide a dynamic picture of the integration experience of recent immigrant in Canada

  -Immigrants arrived between October 2000 and September 2001 from a foreign country and who were 15 years old or more

  - 3 waves : 7 700 immigrants

Wave 1	6 months after arrival
Wave 2	2 years after arrival
Wave 3	4 years after arrival

  - Modification of certain questions between waves:

    Most of the estimation are based on waves 2 and 3
    Use of wave 1 to capture initial condition

Data (2)

- **2 dependent variables**

- **Self assessed health**= 1 if individuals report a good, very good or excellent health status

   "In general, would you say your health is excellent, very good, good, fair, poor ?"

- **Health care use**= 1 if individuals report having used health care services

Question asked to 21% of the sample

Wave 1 : *"Did you receive medical or dental attention in Canada for this/any of these problem(s)?"*

Question asked to all sample

Wave 2 and 3 : *"Since your last interview, have you received any medical attention (visited or contacted a doctor, hospital or clinic)?"*

Data (3)

- **Independent variables**

 - **Social Capital :** Participation in a range of social activities
      = 1 if individual is involved in social activity during the wave

"Are you a member, or have you taken part in the activities of any groups or organizations in Canada (a religious group, ethnic association, sports club, ..)?"

- **Others covariates**

     - Demographics
     - Socio-economics and health insurance
     - Immigrant status, place at birth, English proficiency
     - Others social interactions (Information received, having family upon landing)

Descriptive statistics (1)

Characteristics	Wave 1	Wave 2	Wave 3
Good SAH	97,0	94,6	92,0
Poor SAH	3,0	5,4	8,0
Received Medical attention	20,2	72,9	72,1
No medical attention	79,8	27,1	27,9
Get involved in organisation			
Yes	23,3	27,8	31,0
No	76,8	72,2	69,0
Activity status			
Working	52,1	74,4	80,1
Homemaker	15,5	10,3	9,8
Student	18,4	9,2	4,7
Retired	3,0	2,8	2,9
Looking for job	9,7	2,1	1,1
Other activity status	1,4	1,2	1,4
English speaking			
Poorly	15,0	9,4	9,5
Fairly well	20,1	16,7	16,5
Well	25,0	27,7	27,3
Very well and fluent	33,5	40,8	42,2
Can't speak	6,5	5,5	4,5

Descriptive statistics (1)

Characteristics-time invariant	
Sex	
Female	50,5
Male	49,5
Educational level at landing	
Less or up to High school	26,3
Equivalent to college	15,6
University or more	58,2
Immigrant Class	
Family class	27,1
Economic class	66,2
Refugee class	6,7
Region of origin	
America	4,1
Europe	15,3
Asia	63,9
Middle East	3,9
Africa	9,2
Carraibe	3,1
Oceania/Australia	0,5

Analytic strategy (step 1)

- **Two random effect Probit models**

Association between social capital and the likelihood to report a good health or to have used health care (based on waves 2 and 3 only):

$$\begin{cases} h_{it} = 1 & \text{Si} \quad h_{it}^* > 0 \\ h_{it} = 0 & \text{Otherwise} \end{cases}$$

$$h_{it}^* = \alpha_1 X_{it} + \alpha_2 S_{it} + u_i + v_{it}$$

S_{it} : Social participation; X_{it} : Others covariates

v_{it} : Time variant individual effect; u_i : time Invariant unobserved effect

1. On the whole population

2. By educational level : Highly educated (University degree) VERSUS Less educated

- To test whether or not the association between social capital and health differ by migrant level of human capital (HC)

- Depending on the sign and significance of $\hat{\alpha}_2$: Complementary or substitution

→If $\hat{\alpha}_2 \leq 0$ in health production of highly educated then substitution between SC and HC

Results – First step
Health – Whole pop.

Migrants in the first quintile of income report a lower health status

Immigrants from Asian and Middle-Est countries are in poorer health while American immigrants are in better health

Less educated migrants report a lower health status

Refugee are in poorer health

Characterictics	Good Health Status mfx	
Age	-0,033	***
Gender (ref: Male)		
Female	-0,470	***
Income quintile (Ref: Fith Quintile)		
First Quintile	-0,468	***
Second Quintile	-0,291	**
Third Qintile	-0,161	*
Fourth Quintile	-0,176	**
Miss Income	-0,050	
Region of Origin (Ref: Europe)		
Americ	0,391	**
Asia	-0,340	***
Middle East	-0,312	**
Africa	0,032	
Carraibe	-0,173	
Oceania/Australia	0,332	
Educational Level at landing (Ref: Uni)		
Less than high scool	-0,172	**
College	-0,021	
Immigrant Class (Ref: Economic immigrant)		
Family Immigrant	0,020	
Refugee Immigrant	-0,498	***
Having reveived information	0,121	**
Taking part in organisation	0,090	*
Time dummies (ref wave 3)		
Wave 2	0,258	***

Results – First step
Health care – Whole pop.

Migrants in first quintile of income have a lower use of health care services

Migrant with a health insurance use more often health care

Those looking for a job are less likely to use health care services while retired have a higher use

Immigrants family have a higher likelihood to use health care services

Characterictics	Medical attention mfx	
Good Health Status t	-0,812	***
Age	0,007	***
Gender (ref: Male)		
Female	0,426	***
Income quintile t (Ref: Fith Quintile)		
First Quintile	-0,145	**
Second Quintile	-0,148	**
Third Qintile	-0,091	**
Fourth Quintile	-0,037	
Miss Income	-0,068	
Health insurance (ref: Not having insurance)		
Having health insurance	0,065	*
Activity Status (Ref: Working)		
Homemaker	0,164	**
Student	0,074	
Retired	0,469	***
Looking for job	-0,256	**
Other activity status	0,252	**
Immigrant Class (Ref: Economic immigrant)		
Family Immigrant	0,231	***
Refugee Immigrant	0,035	
Having family	0,160	***
Having reveived information	0,123	***
Taking part in organisation	0,111	***
Time dummies (ref wave 3)		
Wave 2	0,042	

Results – Social capital by educational level

	Health status	Health care use
Control for :		
Time variant covariates	v	v
Time invariant covariates	v	v
Helath status	-	v
Less educated (<University degree)		
Participation in social activity		
No	Ref.	Ref.
Yes	0,18**	0,06
More educated (>=University degree)		
Participation in social activity		
No	Ref.	Ref.
Yes	-0,04	0,14***

Analytic strategy (step 2)

- **Simultaneous bivariate Probit with identifying variables**

→ Does social capital has a causal impact on immigrant health condition?

$$
\begin{cases}
H_{it}^* = \alpha_1 H_{it-1} + \alpha_2 H_{i0} + \alpha_3 X_{it} + \alpha_4 S_{it} + v_{it}^h \\
S_{it}^* = \beta_1 X_{it} + \beta_2 S_{it-1} + \beta_3 S_{i0} + \beta_4 Z_{i0} + v_{it}^s
\end{cases}
$$

= Simultaneous estimation of both equations
To take into account the endogeneity of social capital and unobserved heterogeneity:

Health/health care equation	-Lagged value of health/health care - Initial value of health/health care (wave 1)
Instrumental equation	- Lagged value social capital - Initial value of social capital (V1) - Frequency of meeting with friends (V1) - Services that have help the settlement (V1)

→ Estimation on general population and then by educational level

Results – Step 2 (Health and participation – Whole pop.)

Characteristics	SAH (t)		SP (t)	
Good health status lag	1,070	***	-	
Good health Status wave1	0,458	***	-	
First Quintile	-0,302	**	-0,092	
Second Quintile	-0,186	**	-0,109	**
Single	0,080		0,184	**
Family Immigrant	0,091		-0,256	***
Refugee Immigrant	-0,143	*	-0,085	
Not speaking english	-0,119	*	-0,314	***
Social participation (t)	0,525	**	-	
Instrumental Variables				
Taking part in organisation lag			0,601	***
Taking part in organisation			0,338	***
Meeting friends (ref: Less than weekly)				
At least once a week			0,068	
Most things that have help you (ref: Nothing)				
Social Relationship			0,003	
Job and housing			0,065	
Education			0,030	
Governement programs/Immigramt serv			0,172	*
Personnal quality			0,161	*
Other			0,168	*
Rho	-0,277	**		

Results – Step 2 (Health care and participation – Whole pop.)

Characteristics	Recours		SP (t)	
Received care lag	0,423	***	-	
Received care in wave 1	0,071		-	
Good Health Status t	-0,552	***	0,090	
Age	0,005	**	0,007	**
Female	0,292	***	0,054	
Having health insurance	0,075	**	0,042	
Family Immigrant	0,182	***	-0,255	***
Refugee Immigrant	-0,051		-0,080	
Not speaking english	-0.002		-0,308	***
Social participation (t)	0,396	**	-	
Instrumental Variables				
Taking part in organisation lag			0,604	***
Taking part in organisation			0,332	***
Meeting friends (ref: Less than weekly)				
At least once a week			0,074	*
Most things that have help you (ref: Nothing)				
Social Relationship			0,008	*
Job and housing			0,056	
Education			0,028	
Governement programs/Immigramt serv			0,169	*
Personnal quality			0,155	*
Other			0,166	*
Rho	-0,189	**		

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Results – Step 2 by human capital level

	Health status	Health care use
Control for :		
Lagged and initial value	v	v
Time variant covariates	v	v
Time invariant covariates	v	v
Helath status	-	v
Identifying variable	-	v
Less educated (<University degree)		
Participation in social activity		
No	Ref.	Ref.
Yes	0,96***	0,361
More educated (>=University degree)		
Participation in social activity		
No	Ref.	Ref.
Yes	0,26	0,42***

Discussion/Conclusion

• Social capital has a causal effect on immigrant health condition which varies according to human capital level:

1. Substitution effect between social capital and human capital for HEALTH :

    -Social capital does not provide health return if human capital is important

    -More educated migrant are more efficient producer of health (Grossman)

    -Less educated migrant may rely more on social network to achieve information on health behavior or to get psychosocial support

2. Complementary effect between social capital and human capital for HEALTH CARE :

-Human capital provides economic resources and better abilities

-Social capital may be inefficient to increase health care use below a certain level of human capital

• In using identifying variables, we have seen that services from government programs or from social assistance enable to increase immigrant social capital.

    → It can thus be considered as a political tool

Thanks for your attention

Appendix (Tests about instruments)

TEST	SAH et CS p-value	Recours et CS p-value
Test of exogeneity	0,062	0,011
Test of overidentification	0,242	0,508
Test of weak instrument	0,000	0,000

Tests prove that social capital is endogeneous et indicate that our set of identifying variables are valid

Appendix

- **What is the most useful thing that was done to help you settle in Canada?**

Nothing	8,99
Social Relationship (having family, friends, etc)	39,16
Finding a Job, help to find a job, place to live	16,68
Education/language	11,97
Public services for immigrant from government	5,54
Personnal quality	6,39
Other	5,32
Non reponse	5,94

- **Frequency of meeting friends:**

Daily	28,1
At least once per week	49,6
Less	13,5
No friends	8,9

- **Did you receive any information that helped you adjust to life in Canada?**

Information received	W2	W3
Yes	75,1	61,9
No	24,9	38,1