Economics Bulletin

Volume 37, Issue 1

Inherited social capital and residential mobility: A study using Japan panel data

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Abstract

Empirical results based on individual-level data from Japan were studied to determine the effect of social capital on the willingness to leave one's residential area. It was found that social capital accumulated through one's own experience in a residential area is not the only factor that reduces willingness to leave. Social capital inherited from one's parents also negatively influences the desire to move.

Citation: Eiji Yamamura, (2017) "Inherited social capital and residential mobility: A study using Japan panel data", *Economics Bulletin*, Volume 37, Issue 1, pages 579-585
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Submitted: September 16, 2014. **Published:** March 29, 2017.

1. Introduction

Decision-making regarding the geographical relocation of one's residential region can be explored from an economic perspective (Deding and Filges, 2010; Been et al., 2011). Stemming from the development of the psychological aspects of economic behavior, recent studies have analyzed individuals' location choices and their outcomes by considering relevant psychological factors (Barret and Mosca, 2013). People who are not only physically but also mentally supported by local interpersonal networks bear a psychological cost if they lose such connections. In these cases, people are unlikely to move geographically. This paper focuses on this issue.

Social capital can be defined in various ways: community participation, social network, and trust (Putnam, 1993). Existing empirical studies have shown that social capital is negatively associated with individuals' intentions to leave their residential areas (Kan, 2007; Belot and Ermisch, 2009; David et al., 2010). Social capital is thought to be inherited from generation to generation, and then influence economic outcomes.[1] However, little is known about the effect of inherited social capital on the geographical mobility of individuals. Based on novel individual-level data providing information on parents' birth prefectures, this paper attempts to explore the influence of inherited social capital on the willingness of individuals to leave their residential prefectures. The main findings of our estimation indicate that not only social capital but also inherited social capital reduce individuals' willingness to leave their residential areas.

2. Data and model

The individual-level data used in this paper were sourced from the "Survey of Life Satisfaction and Preferences", conducted as part of the Global Center of Excellence Program at Osaka University. The data were gathered using random sampling, with male and female respondents aged 20–69. The data collected include basic information such as age, sex, household income, family members, willingness to migrate, and prefecture of current residence. A novel aspect of this paper is that the data show not only the prefecture where respondents lived at 15 years of age but also the prefecture where their parents were born.

The question concerning the key variable in the present study, willingness to

[1] Algan and Cahuc (2010) examined how social capital inherited from respondents' home countries affects the economic growth rate.

migrate, was only included in surveys conducted in 2009, 2010, and 2012. The sample size of the data used in this paper exceeds 11,000 observations. Table 1 presents the definitions and mean values of variables.

The estimated function takes the following form:

$$Move_{itp} = \alpha_0 + \alpha_1 \, Social\ capital_{itp} + \alpha_2 \, Inherited\ social\ capital_{itp} + \alpha_3 \, Parents\ resided_{itp} + Y'_{itp} B + K'_p C + L'_i D + u_{itp},$$

where $Move_{it}$ represents the dependent variables individual i, year t, and prefecture p. Furthermore, *Move* is a dummy with a value of 1 if the respondent is willing to leave the prefecture where he/she currently lives, otherwise 0. Accordingly, a logistic estimation model is used. The vector of the dummies for residential prefectures captures time invariant residential place fixed effects and is denoted by K_p.[2] In addition, L_i is the vector of the dummies for residential prefectures at 15 years of age. The vector of individual-level control variables is Y, which captures the influence of the various respondents' individual characteristics.[3] The vectors of the regression parameters are denoted as B, C, and D. The error term is denoted by u.

The regression parameters of the key independent variables are denoted by α. *Social capital* is 1 when current residential prefecture is the same prefecture where respondents lived at 15 years of age, otherwise 0. Assuming that the longer people live in an area, the greater their attachment to that area, *Social capital* captures the level of attachment to a residential area.

In the questionnaire, respondents were asked, "In which prefecture were your parents and your spouse's parents born?" Based on the answers, the following variable is made. *Inherited social capital* has a value of 1 when respondents' current residential prefecture is the same as their parents' birth prefecture, otherwise 0.[4] Furthermore, *Social capital* and *Inherited social capital* are mutually exclusive. To capture the influence of respondents' parents' homes, but not respondents' own experiences, *Inherited social capital* has a value of 0 if *Social capital* is 1. Here, we assume that the network inherited from parents (e.g., via relatives or strong community ties) exists when respondents live in their parents' home area even though respondents have not

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[2] Japan consists of 47 prefectures, which represent the main territorial divisions. In addition to current residential prefectures, dummies for prefecture where respondents lived at 15 years of age are included.

[3] Basic social and economic variables are included: income level, dummies for educational background, dummies for occupation, age, dummies for marital status, family structure, gender dummy, and dummies for type of residence.

[4] Here, *Inherited social capital* is 0; current residential prefecture is the same as the prefecture if only the respondent's mother or father come from that prefecture. Further, a person living in a location where their spouse's parents were is not included in the variable.

grown up there.

Parents resided has a value of 1 if respondents and their parents live in the same prefecture at the time the survey was conducted, otherwise 0. Family ties play a critical role by providing support and can substitute for market services. For instance, support for parents when raising their children is very important and therefore family proximity should be taken into account (Compton and Pollak, 2014). *Social capital*, *Inherited social capital,* and *Parents resided* are predicted to reduce the willingness to leave one's residential area. Accordingly, it is predicted that these three variables will be negative.

3. Results

Table 2 shows the marginal effects and z-values obtained by conducting a logistic estimation model. Column (1) indicates the results when all control variables are included. For a robustness check, columns (2) and (3) present the results when some control variables are excluded. We focus on the results of the key variables to examine the effects of the three types of social capital studied in this study, *Social capital*, *Inherited social capital*, and *Parents resided*. In columns (1)–(3), the odds ratios of these variables are smaller than 1 and statistically significant. This suggests that social capital reduces the incentive to leave one's residential prefecture, which is consistent with previous research (Kan, 2007; Belot and Ermisch, 2009; David et al., 2010). Furthermore, the odds ratios of *Social capital* is 0.40, while that of *Inherited social capital* is 0.32. This implies that people with *Social capital* being 1 are less likely to leave their residential prefecture by 2.5 times than those with *Social capital* being 0. This implies that people with *Inherited Social capital* being 1 are less likely to leave their residential prefecture by 3.0 times than those with *Inherited Social capital* being 0. The effect of *Inherited social capital* is sizable even after controlling for other types of social capital.

4. Conclusions

The novel dataset used in this study provided information not only on respondents' home prefectures but also those of their parents. This enabled us to distinguish between respondents' attachment to their home prefecture and that associated with the prefectures of their parents. The empirical results of this study show that (1) respondents who live in the prefecture where their parents also live are more likely to be unwilling to leave, (2) respondents who live in the area where they grew up are more likely to be unwilling to leave, and (3) respondents who live in the

same area where their parents were born are also unwilling to leave, even though they themselves did not grow up there. In Japan, students can enjoy and have an advantage of social network which was built by their parents when they search job. Through the network, students find the job. Further, the network reduces the information asymmetry between job seekers and person who offer the job, which solve the market failure. These findings imply that the social capital inherited from parents provides people with significant benefits to live in certain areas.

It should be noted that only 1 % of individuals have met the conditions needed for an inherited social capital value of 1, which is considered as a very selective group. So, it is necessary to conduct the re-estimation about the finding of this paper based on another sample which include higher ratio of those with inherited social capital. What is more, it is unclear whether the proxy variable used in this paper reflect the degree of building up strong social ties or networks. In the re-estimation, it is required to use the proxy of the inherited social capital to more clearly reflect the degree of strong social ties. These are remaining issue to be addressed in the future work.

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Table 1. Variable definitions and mean values

Variable	Definition	Mean
Willingness to move	Value of 1 if respondent is willing to move to other prefectures, otherwise 0	0.12
Social capital	Value of 1 if respondent's current residential prefecture is the same as when aged 15, otherwise 0	0.76
Inherited social capital	Value of 1 if respondent's current residential prefecture is the same prefecture where their father and mother were born, otherwise 0 (value is 0 if *Home* is 1)	0.01
Parents resided	Value of 1 if respondents live in the prefecture where their parents reside, otherwise 0	0.75
Age	Respondent's age	50.8
Income	Household income (millions of yen)	6.55
Unmarried	Value of 1 if respondent is unmarried, otherwise 0 (%)	0.14
Divorced	Value of 1 if respondent is divorced, otherwise 0 (%)	0.05
Widowed	Value of 1 if respondent is widowed, otherwise 0 (%)	0.03
Family size	Number of people living in the household	3.74
Presence of child	Value of 1 if respondent has a child under 12 years old, otherwise 0	0.25
High school	Value of 1 if respondent's highest educational qualification is high school, otherwise 0.	0.50
Junior college	Value of 1 if respondent's highest educational qualification is junior university, otherwise 0	0.15
University	Value of 1 if respondent's highest educational qualification is university or graduate school, otherwise 0	0.26

Table 2. Determinants of willingness to move (logistic model)

Variable	(1)	(2)	(3)
Social capital	0.40***	0.39***	0.39***
	(−6.28)	(−6.66)	(−6.65)
Inherited social capital	0.32**	0.31**	0.31**
	(−2.53)	(−2.57)	(−2.58)
Parents resided	0.73**	0.74**	0.74**
	(−2.25)	(−2.17)	(−2.17)
Age	0.96***	0.96***	0.96***
	(−8.80)	(−10.5)	(−10.4)
Income	1.00	1.00	1.00
	(0.11)	(0.32)	(0.34)
Unmarried	1.06	1.04	1.04
	(0.60)	(0.48)	(0.47)
Divorced	1.22	1.28*	1.28*
	(1.52)	(1.97)	(1.96)
Widowed	1.19	1.13	1.12
	(0.92)	(0.65)	(0.65)
Family size	1.10	1.00	1.01
	(0.73)	(0.38)	(0.43)
Child(ren)	0.76***	0.75***	0.75***
	(−3.13)	(−3.26)	(−3.30)
High school	1.81***	1.83***	1.83***
	(3.66)	(3.91)	(3.89)
Junior college	2.04***	2.08***	2.07***
	(4.04)	(4.35)	(4.34)
University	2.18***	2.22***	2.20***
	(4.49)	(4.86)	(4.82)
Dummies for type of residence [a]	Included	Not included	Not included
Dummies for occupation[b]	Included	Not included	Not included
Dummies for size of residential city[c]	Included	Included	Not included
Pseudo-R square	0.08	0.08	0.08
Observations	11,090	11,652	11,652

Note. In all results, the model includes constants, gender dummy, year dummies, dummies for current residential prefecture, and dummies for prefecture where respondents resided at 15 years of age. These are not reported in Table 2. Values without parentheses are odds ratios. Values in parentheses are z-statistics calculated using robust standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

a. There are eight residence categories.

b. There are 13 occupation categories.

c. There are four categories of size of residential city.