How do neighbors influence investment in social capital? : Homeownership and length of residence

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Abstract

This paper uses individual data from Japan to explore how the circumstances of where a person resides is related to the degree of their investment in social capital. Controlling for unobserved area-specific fixed effects and various individual characteristics, I found; (1) Not only that homeownership and length of residence are positively related to investment in social capital, but also that rates of homeowners and long-time residents in a locality increase in an individual's investments in social capital. (2) The effects of local neighborhood homeownership and local length of residence are distinctly larger than that of an individual's.

Keywords: Social Capital, homeownership, length of residence.
JEL classification: D71, R11, R23.

Introduction

It is increasingly acknowledged that social capital plays a critical role in human behavior, thereby influencing economic outcomes (e.g., Putnam 1993, 2000; Fukuyama 1995)[1]. Researchers in the field of regional studies have recently drawn attention to the issue of social capital (e.g., Glaeser and Redlick 2008; Kilkenny 2006; Westlund 2007). Based on standard economic theory, social capital formation can be analyzed using an investment model where the amount of social capital depends on an individual's decision regarding investment (Glaeser et al. 2002). By considering the spatial dimension, empirical works have attempted to investigate how social capital is accumulated based on individual decision making; suggesting homeowners are more likely to invest in social capital as a result of their lower mobility rates (DiPasquale and Glaeser 1999; Hilber 2007). On the other hand, evidence has been presented that household social ties with neighbors, which can be regarded as a kind of social capital, generate benefits for residents[2]. This benefit disappears if a household moves, reinforcing low residential mobility (Kan 2007). This indicates that individual decision making is influenced by the degree of accumulated social capital among neighbors. It follows from arguments such as those above that under circumstances where a larger amount of social capital is formed, a person is less likely to move and hence is more inclined to invest in social capital.

Not only an individual's features but also neighbor characteristics are expected to have a critical effect on individual behavior concerning individual investment in social capital[3]. Few researchers, with the exception of DiPasquale

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[1] Some works have criticized the ambiguity of the definition of social capital and pointed out drawbacks in measurement (e.g., Paldam 2000; Durlauf 2002a, 2002b).

[2] Social network considered as social capital appears to make a contribution to technological diffusion among colleagues (Yamamura 2008a).

[3] It is found that people are less inclined to cooperate to resolve collective problems in more heterogeneous communities (Alesina & La Ferrara, 2000; Yamamura 2008b).

and Glaeser (DiPasquale and Glaeser 1999), attempt to investigate the effects of homeownership and the length of residence on individual investment in social capital. Furthermore, although investment in social capital appears affected by socio-economic conditions, investigations have not been conducted outside of western countries. How social capital is accumulated in countries outside the west needs to be investigated to determine the extent to which socio-economic conditions influence results. This paper uses individual level data from Japan to investigate not only the effects of individual homeownership and the length of residence, but also those of neighbors, and then compares the former with the latter.

The organization of the remainder of this paper is as follows: In section 2, a simple theoretical model is presented. Section 3 describes data, the method of analysis and the estimation strategies. The results of the estimations and their interpretation are provided in section 4. The final section offers concluding remarks.

Basic model

In this paper, social capital is considered to be formed through aggregated individual investment for social activities such as involvement in a neighborhood association. Furthermore, this paper is based on the idea that rational behavior taken by an individual leads to investment in social capital (Glaeser et al., 2002)[4].

In the model, individual social capital is represented as the stock of a variable, S. Each individual gets a per-period utility flow of $SR(H)$, where $R(H)$ is a differentiable function with neighbor (or individual) immobility. $SR(H)$ captures market returns. It is known that an interpersonal social network and trust are formed through long-term interactions among people, resulting in a decrease in transaction cost (Hayami, 2001). It seems reasonably argued that the lack of population mobility leads to stable and long-term interpersonal

[4] Glaeser et al (2002) applies standard optimal investment to analyze the social capital formation.

relationships. Accordingly, I assume $R'(H) > 0$.

The social capital stock follows the dynamic budget constraint, $S_{t+1} = \delta S_t + I_t$. $1-\delta$ represents the depreciation rate. The level of investment in t period, I_t, has a time cost $C(I_t)$, where $C(\cdot)$ is increasing and convex. The opportunity cost of time is, w, which represents the wage rate if the labor supply is inelastic. Individuals discount the future with a discount factor β. Individual lifespan is denoted as T. An individual's maximization problem can be expressed as:

$$\max_{I_0, I_1, \ldots, I} \sum_{t=0}^{T} \beta^t [S_t R(H) - wC(I_t)],$$
$$s.t. \quad S_{t+1} = \delta S_t + I_t \quad \forall t.$$

An individual maximizes their objective function, taking H as fixed. The first-order condition associated with this investment problem is given by:

$$wC'(I_t) = \frac{1-(\beta\delta)^{T-t+1}}{1-\beta\delta} R(H).$$

This first-order condition suggests a comparative statistic result. Social capital increases with neighbor (or individual) immobility, H. It follows from this result that neighbor (or individual) homeownership and length of residence are positively associated with an individuals' investment in social capital. However, it is unclear whether the effects of neighbor immobility on an individual's investment are larger than those of individual immobility. To examine this, empirical estimations are conducted in the following sections.

Data and Methods

Data

This paper used individual level data containing information related to areas such as social capital index, years of living at the current address, homeownership, demographic (age and sex) and economic (occupation, household income) status[5]. This data was constructed from the Social Policy and Social

[5] The data for this secondary analysis, "Social Policy and Social Consciousness survey (SPSC), Shogo Takekawa," was provided by the Social Science Japan Data

Consciousness (SPSC) survey conducted in all parts of Japan in 2000. Five thousand adults (aged 20 years old or older) were invited to participate in a survey that utilized stratified two-stage random sampling. The survey eventually collected data on 3991 adults, a response rate of 79.8 %[6]. Sample points were divided into 11 areas. In each area, according to their population size, cities and towns are divided into 4 groups such as the 13 metropolitan cities, cities with 200 000 people or greater, cities with 100 000 people or greater, and towns and villages. Therefore, 4 population groups exist within each of the 11 areas. Hence, area-population groups can be divided into 44, which are defined as local groups in this paper. As shown later, variables to capture neighbor characteristics are calculated in accord with these local groupings.[7].

Table 1 includes variable definitions and basic statistics. Following the discussion in Putnam (2000), the degree of civic engagement is considered as investment for social capital in this research. Thus, social capital was measured using the question "Are you actively involved in the activity of a neighborhood association?" Responses ran from 0 (not at all) to 3 (Yes, actively involved). Homeowner was measured using the question "What is your type of residence?". The responses were "I own my home", "I reside in a home owned by a parent" and "others". For the basic estimation, I defined homeownership as being a home owned by individuals or their parents.

Econometric Framework and Estimation Strategy

I see from Table 2 (1) that a homeowner is significantly more likely to invest in social capital. Table 2 (2) shows that a person living at their current address longer than 20 years is more inclined to invest in social capital. These results are

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[6] Respondents did not respond to all questions and therefore 3075samples were used for regression estimations.

[7] According to the data used in this research, 4 areas do not contain metropolitan cities. Thus, only 40 local groups exist in the data.

in line with the evidence provided by earlier report that barriers to mobility give individuals an incentive to investment in social capital (DiPasquale and Glaeser 1999; Hilber 2007).

I now explore how the local circumstance of individuals, captured by neighbor homeownership and length of residence, are related to an individuals' investment in social capital. Following the model used by DiPasquale and Glaeser (1999), the estimated function takes the following form:

$$SC_{im} = \alpha_0 + \alpha_1 HOME_{im} + \alpha_2 LIVE20_{im} + \alpha_3 LIVE10_{im} + \alpha_4 AVHOME_{im} + \alpha_5 AVLIVE20_{im} + \alpha_6 AVLIVE10_{im} + \alpha_7 CHILD_{im} + \alpha_8 MARRI_{im} + \alpha_9 DIV_m + \alpha_{10} AGE_{im} + \alpha_{11} INCOME_{im} + \alpha_{12} UNIV_{im} + \alpha_{13} MALE_{im} + e_m + u_{im},$$

where SC_{im} represents the dependent variable in resident i, and area m. α's represents regression parameters. e_m represents unobservable area specific effects that are controlled by dummy variables. u_{im} represents the error term. In addition to the OLS model, the Ordered Probit model is also employed since the dependent variable is qualitative and ranges from 0 to 3.

Individual homeownership dummy, HOME, is used to capture the homeowner effect. If a homeowner tends to invest in social capital, the anticipated sign of HOME is positive. As discussed by DiPasquale and Glaeser (1999), HOME is possibly correlated with unmeasured factors included in u_{im}. HOME is thus thought to be an endogenous variable, resulting in estimation bias[8]. A person residing in a home owned by a parent is less likely to suffer endogenous bias since it is exogenously determined whether a parent is a homeowner or not. Therefore, I omit the samples where an individual is the homeowner and newly define the dummy variable, which takes 1 if one's parent is the homeowner, otherwise 0, as

[8] DiPasquale and Glaeser (1999) considered the average group homeownership rate as an exogenous variable and used it as an instrument variable. Similar results are obtained if the same estimation method is employed using the data used for this research, although estimation results are not reported. I regard such a group average variable as more useful for capturing the neighborhood effect as an independent variable.

HOME, to conduct alternative estimations aiming to alleviate endogenous bias[9]. To capture the effect of length of residence, individual long resident dummies such as LIVE20 and LIVE 10 are used. According to Kan (2007), length of residence can be considered as the degree of integration into the neighborhood. People integrated into the neighborhood are thought to be inclined to invest in social capital since the return from the investment is expected to be large. Hence, coefficients of LIVE20 and LIVE10 are predicted to take the positive signs. What is more, longer time residents are more inclined to invest in social capital so that the magnitude of LIVE20 is anticipated to be larger than LIVE10.

The rate of neighborhood homeownership can be regarded as the degree of local population immobility, since homeownership creates a barrier to mobility. As a consequence, homeowners have a tendency to invest in social capital (DiPasquale and Glaeser 1999). By definition, the rate of long-time residence is also thought to reflect local population immobility. Long-time residents are likely to have long-term relationships with neighbors since people will move if they fail to construct good relationships with their neighbors[10]. Hence, neighborhood homeownership and length of residence are thought to be proxies for accumulated social capital. Neighborhood homeownership and length of residence are measured by group average HOME rate (AVHOME) and group average LIVE20 and LIVE10 rates (AVLIVE20 and AVLIVE10) within a local group, respectively. To exclude an individual *i*'s effect from *i*'s local group average, *i*'s sample is

[9] Sample size is 3075 when all samples are used. Among these, samples are 2349 when HOME takes 1. So, the homeownership rate is 76% in all samples. More precisely, 2349 homeownerships are made up of 1878 individual homeownerships and 471 of parent ownership. Therefore, the sample size used in the alternative estimations becomes 1197 since the individual homeownership samples are omitted. In this case, the parent homeownership rate becomes 39%.

[10] People would suffer from ostracism if they infringe social norms considered as local rules, leading to people following norms (Hayami 2001). Such a 'community mechanism' seems to be, to a certain extent, effective even in modern Japanese society (Yamamura 2008c).

omitted from the samples when local average values are calculated. These variables would take positive signs if ample social capital within a community where a person resides encourages a person to invest in social capital.

People with children are likely to have opportunities to interact with other parents through PTA meetings and various events for children held by community associations, leading the sign for CHILD to become positive. Several control variables are also included to capture individual characteristics: marital status, age, male's dummy, and university graduation dummy.

Estimation Results and their Interpretation

Tables 3 and A1 presented in the Appendix report results using all samples. Alternative estimation results are presented in Tables 4 and A2, where I omit samples where a person is the homeowner and use the dummy variable, which takes 1 if a parent is the homeowner, otherwise it takes 0, as HOME. If homeownership creates a barrier to mobility, the length of residence is correlated with homeownership, resulting in multicollinearlity. Therefore, in Tables 3, 4, A1, and A2, column (3) reports results when AVLIVE20 and AVLIVE10 are excluded, and column (4) results when AVHOME is excluded to compare the full model in column(2) with columns(3) and (4).

I now discuss Table 3 that shows the results of OLS estimations. Looking at the first row shows that HOME has positive signs in all estimations, and is statistically significant at the 1 % level. This implies that a homeowner is more likely to invest in social capital, which is consistent with DiPasquale and Glaeser (1999). As anticipated, LIVE20 and LIVE10 yield positive signs in all estimations although LIVE10 is not statistically significant. As anticipated, the magnitude of LIVE20 is obviously larger than that of LIVE10. It follows from this that a barrier to mobility caused by individual characteristics enhances social capital investment. With respect to neighbor effects captured by AVHOME, AVLIVE20, and AVLIVE10, AVHOME produces significant positive signs in columns (2) and (3). It is also interesting to observe that the values of AVHOME are about 4 times larger than those of HOME, which implies that neighbor homeownership makes a

greater contribution to increases in social capital formation than does individual homeownership. AVLIVE20 and AVLIVE10 show positive signs, despite being statistically insignificant in column (2). If AVHOME is excluded, as exhibited in column (4), both continue to yield positive signs and AVLIVE20 becomes statistically significant at the 1 % level. Consistent with the prediction, AVLIVE20 is larger than ALIVE10. What is more, values of AVLIVE20 and AVLIVE10 are clearly larger than LIVE20 and LIVE10. Therefore, the neighbor length of residence effect is thought to be larger than the individual's length of residence effect. CHILD shows the anticipated positive sign and is statistically significant at the 1 % level, suggesting parents are more likely to being integrated into the community, such as through involvement with the PTA. Most of the results concerning other variables, with the exception of UNIV which takes negative signs, are consistent with existing work (DiPasquale and Glaeser 1999).

I now turn to the results of Table 4 where samples are restricted. I concentrate attention on homeownership and length of residence. In all estimations, HOME and LIVE20 continue to exhibit significant positive signs although LIVE10 becomes negative. When I compare these with the full sample estimations seen in Table 3, the values of HOME are slightly over 0.20 and are almost at the same level as HOME shown in Table 3. Those of LIVE20 are 0.12, larger than those of LIVE20 in Table 3. Overall, the results of individual homeownership and length of residence are robust when the endogenous bias of HOME is controlled for. As for AVHOME, it produces the expected positive signs and is statistically significant at the 1 % level. Values of AVHOME are approximately 1, almost the same as those of AVHOME in Table 3. Both ALIVE20 and ALIVE10 take positive signs and ALIVE20 in column (4) is statistically significant at the 1 % level. Compared with the full sample estimations in Table 3, values of AVLIVE 20 are almost the same as in Table 3, while values of AVLIVE10 show 0.60, larger than ALIVE10 in Table 3. Considering what has been observed overall in Tables 3 and , the effects of neighbor homeownership and length of residence are distinctly larger than those of an individual's homeownership effects, and continue to be held after alleviating the endogenous bias of individual homeownership. I can

derive the argument from this that individuals are inclined to invest in social capital under circumstances where their community is a tightly knitted one based on long-term social ties with neighbors. In other words, a large amount of accumulated social capital enhances an individual's investment in social capital. The evidence from the U.S. provided by DiPasquale and Glaeser (1999) did not find that the local homeownership rate significantly affects social capital investment, while their model predicts that local homeownership rates will affect investment in social capital. Thus the evidence from the U.S is contrary to that from Japan provided by this research. One reason why the neighbor effect is different between U.S. and Japan might be that U.S is racially more heterogeneous and so the neighborhood effect is decreased.

As shown in the APPENDIX, the results of Ordered Probit estimations shown in Tables A1 and A2 correspond to those of the OLS estimations in Tables 3 and 4, respectively. The results obtained by Ordered Probit estimations are similar to the OLS estimations, implying that the results of OLS are robust to alternative estimations and therefore strongly support the argument noted above.

Conclusions

How and the extent to which the incentive to invest in social capital increases when individuals own their home has been well investigated. However, little is known about the effects of a neighbor's homeownership on individual investment in social capital. This paper aims to explore how the circumstances of where a person resides are related to the degree of their own investment in social capital using data of the 3 075 adult participants in the 2000 Social Policy and Social Consciousness (SPSC) survey. Controlling for unobserved area-specific fixed effects and various individual characteristics, I found;

(1) Not only that an individual's homeownership and length of residence are positively related to their investment in social capital, but also that the rates of homeownership and long-time residence in a locality increase an individual's investments in social capital.

(2) The effect of local neighbor homeownership and length of residence are

remarkably larger than that of an individual's homeownership.

Empirical study provided evidence that the effect of a neighborhood's immobility on social capital formation is larger than those of an individual's when a person makes a decision regarding investment. What came out most clearly from this investigation was that not only an individual's characteristics but also positive externality stemming from neighborhood immobility have crucial roles in social capital formation and thus should be considered in any study related to social capital.

The endogenous problem of homeownership appears to cause estimation bias but was not sufficiently controlled in this study. Therefore, suitable instruments need to be determined and then two-stage estimation conducted. Further, this study was limited to Japan and the findings provided thus far cannot be easily generalized. The findings of this study are not fully congruent with the findings from the U.S. (DiPasquale and Glaeser 1999). To better verify the generality of the arguments presented here, study comparing results from other countries with different socio-cultural backgrounds needs to be conducted using larger sample sizes. These are issues remaining to be addressed in future studies.

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TABLE 1

Variable definitions and descriptive statistics

Variables	Definition	Mean	Max	Min
SC	The degree of involvement in the activities of a neighborhood association runs from 0 (not at all) to 3 (actively involved).	1.35	3	0
HOME	Takes 1 if one is a homeowner, otherwise takes 0.	0.76	1	0
LIVE20	Takes 1 if a person has lived at their current address for longer than 20 years, otherwise takes 0.	0.62	1	0
LIVE10	Takes 1 if a person has lived at their current address for between 10 and 20 years, otherwise takes 0.	0.17	1	0
AVHOME	Average value of HOME within an area. (Total HOME in the locality minus own HOME)/(Number of samples minus 1)	0.76	0.98	0.43
AVLIVE20	Average value of LIVE20 within an area. (Total LIVE20 in the locality minus own LIVE20)/(Number of samples minus 1)	0.61	0.89	0.26
AVLIVE10	Average value of LIVE10 within an area. (Total LIVE10 in the locality minus own LIVE10)/(Number of samples minus 1)	0.17	0.26	0.04
CHILD	Takes 1 if a person has child, otherwise takes 0.	0.77	1	0
MARRI	Takes 1 if one has a spouse, otherwise takes 0.	0.75	1	0
DIV	Takes 1 if one experienced divorce, otherwise takes 0.	0.03	1	0
AGE	Ages	49	96	20
INCOME	Household income [a]	0.65	0.23	0
UNIV	Takes 1 if one graduated from university, otherwise takes 0.	0.15	1	0
MALE	Takes 1 if one is male, otherwise takes 0.	0.47	1	0

Note: [a] 10 Million yen

TABLE 2

Social capital and characteristics of residents.

(1) Comparison of social capital between homeowner and non-homeowner.

	Homeowner	Non-homeowner	t-value
SC	1.46	1.01	12.6 **

Note: ** indicates significance at the 1 per cent level.

(2) Comparison of social capital between people living at their current address for longer than 20 years and others.

	Longer than 20 years	Others	t-value
SC	1.48	1.15	10.4 **

Note: ** indicates significance at the 1 per cent level.

TABLE 3

Determinants of investment for social capital: All samples (OLS model)

Variables	(1)	(2)	(3)	(4)
HOME	0.24**	0.19**	0.19**	0.22**
	(5.91)	(4.72)	(4.72)	(5.39)
LIVE20	0.17**	0.17**	0.17**	0.16**
	(3.80)	(3.71)	(3.77)	(3.61)
LIVE10	0.01	0.01	0.01	0.007
	(0.19)	(0.28)	(0.32)	(0.15)
AVHOME		0.91**	1.01**	
		(4.44)	(6.18)	
AVLIVE20		0.28		1.03**
		(0.93)		(3.94)
AVLIVE10		0.22		0.33
		(0.48)		(0.70)
CHILD	0.31**	0.30**	0.30**	0.31**
	(5.69)	(5.59)	(5.59)	(5.66)
MARRI	0.20**	0.19**	0.19**	0.20**
	(3.69)	(3.60)	(3.59)	(3.72)
DIV	-0.09	-0.08	-0.08	-0.08
	(-0.95)	(-0.87)	(-0.89)	(-0.87)
AGE	0.007**	0.008**	0.008**	0.007**
	(6.10)	(6.25)	(6.27)	(6.12)
INCOME	-0.02	-0.01	-0.01	-0.01
	(-0.49)	(-0.39)	(-0.41)	(-0.38)
UNIV	-0.08*	-0.06	-0.06	-0.07
	(-1.78)	(-1.42)	(-1.42)	(-1.60)
MALE	-0.01	-0.01	-0.01	-0.01
	(-0.44)	(-0.57)	(-0.57)	(-0.54)
Area [a]	YES	YES	YES	YES
Adj R- square	0.13	0.14	0.14	0.13
Sample size	3075	3075	3075	3075

Notes: Numbers in parentheses are t-statistics. * and ** indicate significance at 5 and 1 per cent levels, respectively (one-sided tests). A constant term is included when an estimation was conducted but its result is not reported to save space. * and ** indicate significance at 5 and 1 per cent levels, respectively.

a.YES means that dummy variables are included to control for area specific effects.

TABLE 4
Determinants of investment for social capital: Living in home owned by parents (OLS model)

Variables	(1)	(2)	(3)	(4)
HOME	0.26**	0.21**	0.20**	0.23**
	(4.24)	(3.31)	(3.30)	(3.81)
LIVE20	0.12*	0.12*	0.12*	0.12*
	(1.94)	(1.91)	(1.94)	(1.85)
LIVE10	-0.03	-0.02	-0.02	-0.03
	(-0.46)	(-0.37)	(-0.37)	(-0.43)
AVHOME		0.89**	0.98**	
		(2.75)	(3.68)	
AVLIVE20		0.35		0.97**
		(0.81)		(2.57)
AVLIVE10		0.60		0.60
		(0.84)		(0.84)
CHILD	0.35**	0.35**	0.35**	0.35**
	(4.25)	(4.21)	(4.22)	(4.25)
MARRI	0.16*	0.15*	0.15*	0.16*
	(1.95)	(1.84)	(1.81)	(1.93)
DIV	-0.009	-0.01	-0.01	-0.003
	(-0.07)	(-0.09)	(-0.15)	(-0.03)
AGE	0.007**	0.006**	0.007**	0.006**
	(3.35)	(3.29)	(3.31)	(3.28)
INCOME	-0.06	-0.07	-0.07	-0.06
	(-0.91)	(-1.01)	(-1.01)	(-0.93)
UNIV	-0.04	-0.02	-0.02	-0.03
	(-0.56)	(-0.30)	(-0.30)	(-0.42)
MALE	0.004	-0.003	-0.002	0.003
	(0.08)	(-0.06)	(-0.05)	(0.01)
Area [a]	YES	YES	YES	YES
Adj R- square	0.10	0.11	0.11	0.11
Sample size	1197	1197	1197	1197

Notes: Numbers in parentheses are t-statistics. * and ** indicate significance at 5 and 1 per cent levels, respectively (one-sided tests). A constant term is included when an estimation was conducted but its result is not reported to save space. * and ** indicate significance at 5 and 1 per cent levels, respectively.

a.YES means that dummy variables are included to control for area specific effects.

APPENDIX

TABLE A1

Determinants of investment for social capital (Ordered Probit model)

Variables	(1)	(2)	(3)	(4)
HOME	0.30**	0.24**	0.24**	0.27**
	(5.89)	(4.70)	(4.70)	(5.37)
LIVE20	0.21**	0.20**	0.21**	0.20**
	(3.74)	(3.66)	(3.71)	(3.55)
LIVE10	0.01	0.01	0.02	0.008
	(0.17)	(0.28)	(0.31)	(0.13)
AVHOME		1.11**	1.24**	
		(4.41)	(6.11)	
AVLIVE20		0.35		1.26**
		(0.91)		(3.90)
AVLIVE10		0.29		0.41
		(0.50)		(0.73)
CHILD	0.39**	0.38**	0.38**	0.38**
	(5.74)	(5.64)	(5.63)	(5.71)
MARRI	0.25**	0.24**	0.24**	0.25**
	(3.76)	(3.68)	(3.66)	(3.80)
DIV	-0.10	-0.09	-0.09	-0.09
	(-0.85)	(-0.76)	(-0.78)	(-0.77)
AGE	0.009**	0.009**	0.009**	0.009**
	(6.10)	(6.26)	(6.28)	(6.12)
INCOME	-0.02	-0.02	-0.02	-0.02
	(-0.53)	(-0.42)	(-0.44)	(-0.42)
UNIV	-0.09*	-0.07	-0.07	-0.08
	(-1.66)	(-1.31)	(-1.32)	(-1.48)
MALE	-0.01	-0.02	-0.02	-0.02
	(-0.42)	(-0.55)	(-0.54)	(-0.52)
Area [a]	YES	YES	YES	YES
Pseudo R-square	0.05	0.06	0.06	0.05
Sample size	3075	3075	3075	3075

Notes: Numbers in parentheses are z-statistics. * and ** indicate significance at 5 and 1 per cent levels, respectively (one-sided tests). * and ** indicate significance at 5 and 1 per cent levels, respectively.

a.YES means that dummy variables are included to control for area specific effects.

APPENDIX

TABLE A2

Determinants of investment for social capital: Living in home owned by parents (Ordered Probit model)

Variables	(1)	(2)	(3)	(4)
HOME	0.32**	0.26**	0.26**	0.29**
	(4.23)	(3.30)	(3.29)	(3.79)
LIVE20	0.15*	0.15*	0.15*	0.14*
	(1.86)	(1.85)	(1.86)	(1.78)
LIVE10	-0.05	-0.04	-0.04	-0.05
	(-0.57)	(-0.47)	(-0.46)	(-0.54)
AVHOME		1.11**	1.21**	
		(2.76)	(3.63)	
AVLIVE20		0.40		1.17**
		(0.73)		(2.47)
AVLIVE10		0.72		0.70
		(0.80)		(0.79)
CHILD	0.44**	0.44**	0.44**	0.44**
	(4.27)	(4.23)	(4.24)	(4.27)
MARRI	0.20*	0.19*	0.19*	0.20*
	(2.00)	(1.89)	(1.85)	(1.99)
DIV	-0.004	-0.005	-0.01	0.003
	(-0.03)	(-0.03)	(-0.03)	(0.02)
AGE	0.008**	0.008**	0.008**	0.008**
	(3.29)	(3.25)	(3.27)	(3.22)
INCOME	-0.09	-0.10	-0.10	-0.09
	(-1.00)	(-1.08)	(-1.09)	(-1.02)
UNIV	-0.03	-0.01	-0.01	-0.02
	(-0.44)	(-0.19)	(-0.20)	(-0.30)
MALE	0.01	0.004	0.005	0.008
	(0.21)	(0.07)	(0.08)	(0.13)
Area [a]	YES	YES	YES	YES
Pseudo R-square	0.05	0.05	0.05	0.05
Sample size	1197	1197	1197	1197

Notes: Numbers in parentheses are z-statistics. * and ** indicate significance at 5 and 1 per cent levels, respectively (one-sided tests). * and ** indicate significance at 5 and 1 per cent levels, respectively.

a.YES means that dummy variables are included to control for area specific effects.