

Social capital among public housing residents: A comparative study between mixed-income communities and independent public housing complexes

Hee-Jung Jun & Hyung Jeong

Sungkyunkwan University

Abstract

This study aims to examine whether there is a difference in social capital among public housing residents in mixed-income communities compared to those in independent public housing complexes. This study utilizes data from the 2021 Seoul Public Housing Residents Panel Study and employs logistic regression analyses. The empirical analysis shows that public housing residents living in mixed-income communities (i.e., social-mix housing complexes and buy-to-rent public housing) exhibit greater social capital compared to those living in independent public housing complexes. This finding suggests that living in mixed-income communities has an effect on enhancing social capital among public housing residents and thus helps alleviate problems associated with public housing.

Keywords: public housing, social capital, social exclusion

Introduction

Social capital is a crucial element for achieving positive outcomes in economic, social, and political realms, promoting sustainable communities (Fukuyama, 2000). However, public housing residents often experience lower levels of social capital, accompanied by social exclusion and discrimination. This phenomenon could be linked to the inherent structural issues in public housing. In many countries, public housing residents face social isolation and stigma, a situation mirrored in Seoul, Korea. Due to limited residential land, public housing in Korea is typically comprised of high-rise buildings within large complexes, making them distinct from conventional housing. Also, antisocial activities have been observed in public housing sites along with concentrated poverty. These problems together can negatively affect social capital among public housing residents.

In response to these challenges, Korea has developed various public housing programs. Initially, public housing primarily involved the construction of large complexes.

However, over time, the approach evolved to include social-mix housing complexes that integrate private and public housing units. Additionally, the government has started *buy-to-rent public housing*, purchasing existing low-rise detached houses for public housing from the private housing sector and thus moving away from the development of new, large-scale complexes. These later iterations of public housing may have a different impact on the social capital of residents, potentially alleviating some of the associated problems.

Despite the significant influence of public housing on residents' quality of life, there is a scarcity of research exploring how living in different types of, in particular, public housing in mixed-income communities is associated with the level of social capital. Addressing this gap, this study asks a research question, "*Is there a difference in social capital among public housing residents in mixed-income communities compared to independent public housing complexes?*"

To investigate the effect of public housing in mixed-income communities on social capital, this study utilizes data from the 2021 Seoul Public Housing Residents Panel Study, conducted by the Seoul Housing and Communities Corporation (SH). The logistic regression analyses show that public housing residents living in mixed-income communities exhibit greater social capital compared to those living in independent public housing complexes. This finding suggests that social mix indeed has an effect enhancing social capital among public housing residents and thus helps relive problems associated with public housing.

Literature Review

Public housing and social capital

As subsidized affordable housing, public housing is a major supply-side housing program for low-income households in many countries. For example, there are approximately

1.2 million public housing units in the United States, which makes up roughly 15-17% of the total federally subsidized affordable housing stock in the U.S. Approximately 17% of households in the UK live in social housing. In Korea, the number of public housing has been increasing and currently over 1.5 million units along its efforts for broader social welfare initiatives to ensure more affordable housing availability.

Since the Korean government introduced its first systematic public housing in 1989, the public housing program has been diversified over time and includes various types of public housing. The types of public housing are differentiated mostly by income level. The longer-term public housing (either permanent or maximum 50 years of residence) targets the lowest-income class, which pays only 30% of market rate rent while national public rental housing is for those who can afford 60-70% of market-rate rent living for a maximum 30 years.

The most critical issue about public housing across the countries has been concentrated poverty. Wilson (1980) points out that neighborhoods with high poverty rates struggle from a lack of role models and economic resources and thus lead residents not to being able to escape from poverty and learn socially acceptable behaviors. Like this case, large-scale public housing also concentrates poverty and caused various social problems. Pruitt-Igoe, the infamous public housing development in the US, is the representative case exemplifying problems associated with concentrated poverty. As a large-scale public housing development, the public housing site stood out in the neighborhood and thus residents experienced social stigma and isolation and the neighborhood struggled from crime and disinvestment.

Social capital refers to social relationships that facilitates collaboration and cooperation and thus allows to achieve socially, economically, and politically desirables

outcomes. Although differently defined by researchers, major components of social capital include trust, network, norms of reciprocity. Then, what is the state of social capital among public housing residents?

According to the ecological model, individuals' behaviors are influenced by individual and environmental characteristics (Handy & Xing, 2011). As social capital is also trust, network, and norms of reciprocity that individuals form with others, social capital can be also shaped by individual characteristics as well environmental characteristics. At the individual level, studies find that income, gender, age, education, and family types are related to social capital. For example, Bean (2005) finds that trust is lower among the youngest and the oldest age groups while middle-aged group exhibits higher trust in Australia. Tranter and Skrbiš (2009) find that education is positively relation to interpersonal trust. While public housing can positively affect social capital by providing housing stability, more studies are finding that living in public housing is associated with a low level of social capital. For example, Donoghue and Tranter (2012) find that social capital measured in trust is generally lower for public housing residents. Mullins and Western (2002) find that tenure is a key factor affecting non-housing outcomes and living in public housing results in lower perceived quality of life, health status, perceived health, employment status, and educational attainment, greater fear and experience of crime, and poverty rate.

Putnam (2000) also argues that a built environment is important in forming social capital. In the US, conventional suburban developments have been criticized as people spend more time in car and thus not provide opportunities to meet neighbors for casual talks. In supporting this criticism, a large number of studies find that social capital is greater in walkable neighborhoods (e.g., Leyden, 2003; Lund, 2002; Owen et al., 2007; Wood et al., 2008). By contrast, Jun and Hur (2015) finds that while perceived walkability enhances social

capital, physical walkability lowers social capital because of the spatial intersection between where physical walkability is greater (i.e., the inner-city neighborhoods in the US) and where socio-economic distress (e.g., higher poverty and crime rates) is greater. This study suggests that distressed socio-economic environment that is associated with concentrated poverty is likely to lower social capital. Given that the most critical issue about public housing is originated from concentrated poverty, social capital is likely to be lower in large-scale public housing.

Social capital and mixed-income communities

Developing mixed-income communities has been the alternative to the problems associated with concentrated poverty. For example, the HOPE VI in the US is to rebuild severely distressed public housing with market-rate rental housing, thereby developing mixed-income communities. Also, the UK requires including affordable housing for low-income class in building market-rate housing. Korea more recently adopted mixed-income development, so-called *social-mix policy*, in building large apartment complexes.

There are a few studies examining the effect of social mix policies. For example, Jun and Jeong's (2018) study is one of the few that examines the effect of mixed types on residential satisfaction. They find that the level of social mix, which varies from including only public housing in housing complexes (the lowest level) to including both public housing and market-rate housing in the same housing complex, either non-randomly (the medium level) or randomly (the highest level), exhibits a U-shaped relationship with residential satisfaction. In other words, residential satisfaction is higher in housing complexes with no social mix and with the greatest social mix, compared to those with a medium-level social mix. They posit that residential satisfaction is higher in complexes without social mix

because people generally prefer homogeneity and thus are more satisfied living in communities at similar income levels. Sohn and Ahn (2022) examine whether social conflicts exist in socially mixed housing complexes and find that the types of mixtures significantly influence these conflicts. Jun and Han (2020) compare the effect of discrimination on stress among public housing residents living in social-mix housing complexes with those in independent public housing complexes. They find that discrimination has a lesser effect on stress in social-mix housing complexes than in independent public housing complexes and posit that the structural differences of the social-mix housing complexes explain the variations in social networks and social control that reduce stress from discrimination among public housing residents. Although these studies provide insights into the effects of mixed-income communities on housing, they do not directly examine social capital among public housing residents in mixed-income communities.

Mixed-income communities differ from large-scale public housing complexes both in socio-economic and physical environments. Buy-to-rent public housing units located in low-rise residential areas alongside other private housing units, as well as public housing in social-mix housing complexes, are relatively hard to distinguish from ordinary housing in their neighborhoods. Additionally, public housing residents, particularly those in social-mix housing complexes, often live with higher-income families. In Korea, given that housing prices in low-rise residential areas are typically lower than those in large-scale housing complexes, not all buy-to-rent public housing residents live with higher-income families. Nevertheless, there is still a possibility that those living in buy-to-rent public housing may live with higher-income families, as buy-to-rent public housing units are allocated to the lowest-income class.

Based on the logic that we discussed above, we propose the following hypothesis:

Social capital is greater among public housing residents living in mixed-income communities than in independent public housing complexes.

Methods

Study area and data

The study area is the City of Seoul, the capital city, of Korea where population size is about 10 million as of 2022. To analyze the effect of mixed-income communities on social capital among public housing residents, this study utilizes data from the 2021 Seoul Public Housing Residents Panel Study, conducted by the Seoul Housing and Communities Corporation (SH). The SH is the entity that builds and manages public housing units for the City of Seoul. As of 2024, SH manages 221,681 public housing units (SH, 2024). The dataset encompasses data on elements of social capital, details on the physical aspects of the housing and neighborhood, and demographic characteristics. This comprehensive dataset is well-suited to evaluate the hypotheses presented in this study.

Methods and variables

To test the proposed hypotheses, we ran ordered logistic regression analyses as the dependent variables were measured as an ordinal variable on a 4-point Likert scale. The dependent variables are the three elements of social capital: trust, network, and norms of reciprocity. For the trust variable, we used the survey question, “Do you think you can trust the neighbors where you live?,” which has responses 1) very unlikely(=1) 2) unlikely(=2) 3) likely(=3) 4) very likely(=4). For the network variable, we used the survey question, “Do you network with your neighbors,” which has responses 1) I don't know who my neighbors are at all(=1) 2) I know who my neighbors are, but I don't greet them(=2) 3) I greet my neighbors or have light conversations with them(=3) 4) I am familiar with my neighbors'

family matters or visit them frequently (=4). For the norms of reciprocity variable, we used the survey question, “Would you be willing to assist your neighbors when they need help?,” which has responses 1) very unlikely(=1) 2) unlikely (=2) 3) likely (=3) 4) very likely (=4).

The primary independent variable is the types of public housing, which include buy-to-rent public housing that are socially mixed in ordinary neighborhoods, public housing within social-mix housing complexes, and independent public housing complexes. The proportion of each type of public housing is shown in Table 1. About 50% of total public housing in the sample is located in independent public housing complexes that refer to a non-mixed-income community. Approximately 30% of the public housing units in the sample are situated within social-mix housing complexes. These units can be categorized into two types: a randomly mixed type, where mixing occurs within a single building, and a non-randomly mixed type, where the mixing is organized by distinct buildings. Approximately 20% of the public housing units in the sample are buy-to-rent public housing, which were purchased from the private sector and are now leased as public housing.

<Table 1> Public housing type in the sample

Income mix	Type	N	%
Mixed-income community	Social-mix housing complex	387	30.0
	Randomly mixed	216	16.9
	Non-randomly mixed	167	13.1
	Buy-to-rent public housing	258	20.2
Non-mixed-income community	Independent public housing complex	638	49.9
Total		1279	100.0

Control variables comprise housing satisfaction with indoor facilities, housing satisfaction with outdoor facilities, neighborhood satisfaction, and demographic

characteristics, including sex(male=1), age (in years), education attainment (no education=1 to graduate school=6), marital status (married=1), employment (employed=1), years of residence (in years), household size, and household income (10,000 Korean Won).¹ Given that one's health status can affect social interactions, we also included the subjective health rating variable, which ranges from very unhealthy to very healthy (5-point Likert scale).

Descriptive statistics

Table 2 shows the descriptive statistics. The means of the trust, network, and norms of reciprocity variables are around 2.8, which suggests that the public housing residents are likely to trust their neighbors, greet their neighbors or have light conversations with them, and be willing to assist them when they need help.

For the control variables, all the means of the satisfaction with indoor housing facilities, satisfaction with outdoor housing facilities, and neighborhood satisfaction variables are around 3, which suggests that the survey respondents assess 'fairly good' for their residential environments. The mean age of the survey respondents is 63 years old. Male and employed people account 50% of the respondents. The mean year of residence is

¹ The study conducted exploratory factor analysis (EFA) to consolidate the variables associated with satisfaction with indoor housing facilities, satisfaction with outdoor housing facilities, and neighborhood satisfaction, which were composed of multiple measurement items in the survey. Satisfaction with indoor housing facilities included four items: leakage and waterproofing status, painting and flooring status, heating and cooling system, and barrier-free design. Satisfaction with outdoor facilities included four items assessing satisfaction with amenities, green spaces, parking facilities, and security status. Neighborhood satisfaction comprised seven items measuring satisfaction with accessibility to public transportation, convenience, public facilities, cultural facilities, medical facilities, park, social welfare facilities, school and childcare facilities. The EFA employed principal component analysis and varimax rotation, with factor extraction based on Eigen values exceeding 1.0. The analysis revealed that housing satisfaction with indoor facilities and housing satisfaction with outdoor facilities were grouped into 'Factor 1' and 'Factor 2', each consisting of four survey items. Also, neighborhood satisfaction was categorized as 'Factor 3' with seven measurement items. Each factor was created as a single variable by averaging the satisfaction levels of the measurement items.

13.6 years old and the average household size is 2.45. The mean of the subjective health rate is around 3, which indicates that the survey respondents are characterized by having average health status.

<Table 2> Descriptive statistics

	Var.	Mean	Std.	Min	Max
Dependent var.	Trust	2.80	.44	1.00	4.00
	Network	2.82	.58	1.00	4.00
	Norms of reciprocity	2.85	.49	1.00	4.00
Independent var.	Social-mix housing complex	0.30	-	0	1.00
	Buy-to-rent public housing	0.20	-	0	1.00
	Independent public housing complex	0.50	-	0	1.00
Control var.	Satisfaction with indoor housing facilities	3.14	.64	1.00	4.00
	Satisfaction with outdoor housing facilities	3.18	.66	1.00	4.00
	Neighborhood satisfaction	3.00	.51	1.00	4.00
	Male	.58	.49	.00	1.00
	Age	62.51	12.98	31.00	96.00
	Educational attainment	3.68	1.15	1.00	6.00
	Married	.48	.50	.00	1.00
	Employed	.53	.50	.00	1.00
	Year of residence	13.63	7.44	1.00	33.00
	Household size	2.45	1.28	1.00	7.00
	Family income	2658.59	2052.05	.00	12000.00
	Subjective health rate	3.04	.96	1.00	5.00

Results

Table 3 shows the ordered logistic regression analyses that examine the effect of living in mixed-income communities on each of the trust, network, and norms of reciprocity variables by including the buy-to-rent public housing and social-mix housing complex

variables. First, the trust model shows that the buy-to-rent public housing variable is statistically significant and positively associated with trust while the social-mix housing complex variable is not statistically significant. The network model shows that the social-mix housing complex variable is statistically significant and positively associated with the network while the buy-to-rent public housing variable is not statistically significant. Finally, both of the social-mix housing complex and buy-to-rent public housing variables are not statistically significant on norms of reciprocity. Although the effects of social-mix housing complex and buy-to-rent public housing variables, which indicate different types of mixed-income communities, are not consistent across the three models of trust, network, and norms of reciprocity, the results from the ordered logistic regression analyses, in general, suggest that social capital is greater for those living in mixed-income communities than for those living in independent public housing complexes.

Regarding the control variables, we found that satisfaction with outdoor facilities and neighborhood facilities are positively related to trust and norms of reciprocity. Male is less likely to network with their neighbors and have norms of reciprocity compared to female as expected. We also found that age, employment, marriage, year of residence, and subjective health rate are positively related to social capital.

<Table 3> Ordered logistic estimates: Pooled-sample models

		Trust	Network	Norms of reciprocity	
		B (S.E.)	B (S.E.)	B (S.E.)	
Dependent variable	Cut 1	1.233 (1.904)	.290 (.940)	-1.118 (.972)	
	Cut 2	5.811*** (.990)	1.945** (.937)	2.212** (.936)	
	Cut 3	11.763*** (1.064)	6.849*** (.966)	7.058*** (.969)	
Independent var.(ref.=Independent public housing)	Social-mix housing complex	-.027 (.195)	.642*** (.188)	.096 (.190)	
	Buy-to-rent public housing	.941*** (.241)	-.010 (.224)	.376 (.229)	
Control var.	Satisfaction with indoor housing facilities	.153 (.136)	-.015 (.131)	.058 (.133)	
	Satisfaction with outdoor housing facilities	.497*** (.165)	.104 (.156)	.266* (.159)	
	Neighborhood satisfaction	.344** (.161)	.249 (.155)	.632*** (.157)	
	Male	-.152 (.179)	-1.248*** (.181)	-.602*** (.174)	
	Age	.038*** (.008)	.026*** (.008)	-.009 (.007)	
	Education	-.028 (.080)	-.038 (.078)	-.048 (.075)	
	Married	.285 (.225)	.518** (.215)	.576*** (.216)	
	Employed	.388** (.184)	-.113 (.181)	.258 (.180)	
	Year of residence	.004 (.011)	.048*** (.011)	.017 (.011)	
	Household size	.124 (.089)	.021 (.084)	.100 (.086)	
	Family income	7.243E-5 (5.265E-5)	-4.720E-6 (4.792E-5)	-5.503E-6 (5.010E-5)	
	Subjective health rate	.286*** (.090)	.260*** (.087)	.334*** (.087)	
	Summary Statistics	Degrees of freedom	14	14	14
		LL, full(unrestricted)	1443.059	1826.267	1676.371
LL, constants-only(restricted)		1540.471	1958.526	1791.846	
X2 value		97.412	132.259	115.475	
Pseudo-R2s	Cox&Snell	.073	.098	.086	
	Nagelkerke	.105	.125	.115	
	McFadden	.063	.068	.064	

*p<.1; **p<.05; ***p<.01

For the robustness of the models, we also differentiated the effect of randomly and non-randomly-mixed housing complexes as shown in Appendix 1. The randomly- and non-randomly-mixed housing complex variables are positively related to only network. These relationships are consistent with the result that the social-mix housing complex variable is positively related to network as in Table 3.

We also ran additional models to examine the relationship between public housing units in mixed-income communities and social capital by excluding those living in independent public housing complexes from the sample and including the non-randomly-mixed housing complex among social-mix housing complexes as the reference variable as shown in Table 4. We found that the buy-to-rent public housing variable is positively related to trust while it is negatively related to network. That is, the public housing residents living in buy-to-rent public housing are more likely to trust their neighbors but less likely to network with their neighbors compared to those living in social-mix housing complexes, especially, non-randomly mixed housing complexes. Given that the pooled sample models in Table 3 indicate that the social-mix housing complex variable, not the rent-to-buy variable, is also positively related to trust, the larger network may be due to various networking opportunities in large-scale housing complexes compared to low-rise residential areas. The randomly-mixed housing complex variable was not statistically significant in all of the trust, network, and norms of reciprocity, thereby suggesting that the level of social capital is likely to be similar between public housing residents living in randomly- and non-randomly-mixed housing complexes among social-mix housing complexes.

<Table 4> Ordered-logit estimates: Mixed-income community models

		Trust	Network	Norms of reciprocity
		B (S.E.)	B (S.E.)	B (S.E.)
Dependent variable	Cut 1	.788 (1.539)	-1.993 (1.420)	-1.818 (1.443)
	Cut 2	4.562*** (1.472)	-.489 (1.414)	1.597 (1.395)
	Cut 3	10.367*** (1.558)	4.666*** (1.436)	6.480*** (1.431)
Independent var. (ref.=Non-randomly- mixed housing complex)	Randomly-mixed housing complex	.318 (.270)	-.421 (.280)	.232 (.266)
	Buy-to-rent public housing	.987*** (.344)	-.864** (.342)	.416 (.331)
Control var.	Satisfaction with indoor housing facilities	-.048 (.192)	.016 (.188)	-.244 (.188)
	Satisfaction with outdoor housing facilities	.425* (.219)	-.095 (.212)	.379* (.212)
	Neighborhood satisfaction	.414* (.223)	.191 (.221)	.835*** (.218)
	Male	-.210 (.252)	-1.164*** (.252)	-.653*** (.243)
	Age	.026** (.011)	.005 (.011)	-.014 (.011)
	Education	.015 (.118)	-.018 (.116)	.013 (.111)
	Married	.289 (.313)	.727** (.304)	.532* (.299)
	Employed	.677** (.263)	.009 (.262)	.533** (.257)
	Year of residence	.008 (.034)	.071** (.035)	-.010 (.033)
	Household size	.009 (.116)	-.173 (.112)	-.060 (.112)
	Family income	5.286E-5 (6.891E-5)	3.513E-5 (6.552E-5)	5.558E-5 (6.538E-5)
	Subjective health rate	.288** (.132)	.355*** (.131)	.281** (.128)
	Summary Statistics	Degrees of freedom	14	14
LL, full(unrestricted)		737.815	895.286	832.440
L1, constants-only(restricted)		777.909	953.172	917.505
X2 value		40.094	57.886	85.065
Pseudo-R2s	Cox&Snell	.061	.086	.124
	Nagelkerke	.086	.112	.163
	McFadden	.052	.061	.093

*p<.1; **p<.05; ***p<.01

Conclusion

Public housing is essential for meeting the housing needs of low-income families. Yet, when public housing is concentrated in large complexes, it can centralize poverty, leading to social isolation and stigma for the residents, and potentially causing adverse effects on nearby areas. These structural issues can reduce social capital among public housing residents. As an alternative to the problems associated with concentrated poverty in large-scale public housing complexes, subsidized housing units have been provided in mixed-income communities, such as social-mix housing complexes and buy-to-rent public housing in Korea.

At the beginning of this study, we asked a research question, “*Is there a difference in social capital among public housing residents in mixed-income communities compared to independent public housing complexes?*” Based on this research question, we compared to social capital among public housing residents living in mixed-income communities with those living in independent public housing complexes by utilizing the SH data and logistic regression analyses.

The empirical analysis reveals that residents of public housing in mixed-income communities exhibit higher social capital than those in independent public housing complexes. We found that trust is greater among those living in buy-to-rent public housing located in low-rise residential areas, which are naturally mixed-income communities compared to those living in independent public housing complexes. Additionally, networks are more extensive among residents of social-mix housing complexes, which are designed to create mixed-income communities by housing both public and private units within the same complex.

Based on the findings in this study, we suggest some policy implications for public housing policy. First, public housing should be designed to facilitate integration between its residents and the general population, enabling those living in public housing to have more social interactions. Considering that social capital underpins socioeconomically desirable outcomes, public housing should be developed in mixed-income communities. This can be achieved by encouraging more buy-to-rent public housing and developing social-mix housing complexes that positively influence social capital among residents. Second, A more structured approach should be implemented to integrate public housing with private housing. Although the empirical analysis shows that social capital is generally greater for those living in mixed-income communities, it is not consistent across the three elements of social capital. Trust is greater only for those living in buy-to-rent public housing while network is greater only for those living in social-mix housing complexes compared to those living in independent public housing complexes. Norms of reciprocity did not exhibit a difference across different types of public housing. Given that all three elements of social capital are important for socially sustainable community development, it is important that public housing is designed to evenly increase each element of social capital.

This study contributes to the literature by comparing social capital among public housing residents living in mixed-income communities with those in independent public housing complexes, thereby exploring the impact of mixed-income communities on social capital. Nevertheless, this study still has limitations, including missing some factors that might affect social capital among public housing residents. For example, neighborhood characteristics such as income diversity can influence social capital. Future studies will need to consider more specific information about not only the characteristics of individual public housing units but also the characteristics of the neighborhoods where these units are located.

Appendix 1. Ordered-logit estimates: Pooled sample models diving into randomly and non-randomly-mixed housing complexes

		Trust	Network	Norms of reciprocity	
		B (S.E.)	B (S.E.)	B (S.E.)	
Dependent variable	Cut 1	1.258 (.1097)	.287 (.939)	-1.116 (.973)	
	Cut 2	5.838*** (.992)	1.942** (.936)	2.214** (.937)	
	Cut 3	11.796*** (.1068)	6.850*** (.965)	7.063*** (.970)	
Independent var. (ref.=Independent public housing complex)	Randomly-mixed housing complexes	.118 (.237)	.456** (.221)	.186 (.228)	
	Non-randomly-mixed housing complexes	-.172 (.236)	.787*** (.237)	.000 (.233)	
	Buy-to-rent public housing	.944*** (.241)	-.019 (.224)	.376 (.229)	
Control var.	Satisfaction with indoor housing facilities	.135 (.137)	.007 (.132)	.044 (.135)	
	Satisfaction with outdoor housing facilities	.502*** (.165)	.102 (.157)	.270* (.159)	
	Neighborhood satisfaction	.357** (.162)	.228 (.155)	.639*** (.157)	
	Male	-.136 (.179)	-1.262*** (.181)	-.594*** (.175)	
	Age	.039*** (.008)	.025*** (.008)	-.009 (.007)	
	Education	-.030 (.080)	-.033 (.078)	-.050 (.075)	
	Married	.264 (.226)	.539** (.215)	.563*** (.217)	
	Employed	.399** (.184)	-.121 (.181)	.264 (.180)	
	Year of residence	.004 (.011)	.047*** (.011)	.017 (.011)	
	Household size	.130 (.089)	.016 (.084)	.104 (.086)	
	Family income	6.857E-5 (5.285E-5)	2.968E-7 (4.809E-5)	-7.839E-6 (5.023E-5)	
	Subjective health rate	.285*** (.090)	.262*** (.087)	.334*** (.087)	
	Summary Statistics	Degrees of freedom	15	15	15
		LL, full(unrestricted)	1441.893	1825.855	1675.8541
LL, constants-only(restricted)		1540.471	1958.526	1791.846	
X2 value		98.578	132.671	115.992	
Pseudo-R2s	Cox&Snell	.074	.099	.087	
	Nagelkerke	.106	.126	.115	
	McFadden	.064	.068	.065	

*p<.1; **p<.05; ***p<.01

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