

# Social Capital and Its Association with Health and Well-Being: *An Individual-Level Analysis in Seoul, South Korea*

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## Abstract

*The aim of this study is to examine the relationships between social capital and health/well-being in Seoul, South Korea. The data was collected from June 2009 to September 2009. The full sample includes 811 respondents, from all 25 districts in Seoul. Social capital was measured by adopting a structural and cognitive dimension. Structural social capital was measured by network diversity, organization membership, political participation, and volunteer work; cognitive social capital was measured by trust. The results show that the cognitive dimension of social capital is positively associated with all three dependent variables. However, the results are varied in terms of the structural dimension of social capital. Specifically, organization membership and political participation did not affect any dependent variables. The study has provided evidence for the relationship between social capital and health/well-being, and is therefore expected to provide recommendations for future work that should be considered in South Korea.*

**Keywords:** social capital, health, well-being, ordinal logistic model, Seoul, South Korea

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## **Introduction**

The term “social capital” (Bourdieu 1986; Coleman 1988; Kadushin 2004; Lin 1999; Portes 1998; Putnam 1993, 2000; Snijders 1999) has been used and has gained popularity in a variety of fields, since the consideration of social capital could enhance policies or recommend interventions for reducing a variety of social problems (Besser 2009; Beaulieu et al. 2001; Hurtado, Kawachi, and Sudarsky 2011; Paxton 2002; Rose 2000; Snelgrove, Pikhart, and Stafford 2009; Suh 2008). Much research has demonstrated that social capital increases educational achievements and impacts social behaviors, such as finding jobs or voter choices (Granovetter 1973; Beaulieu et al. 2001; Gidengil, Harell, and Erickson 2001). One subject that has increasingly attracted researchers is the effect of social capital on health and well-being. Of the many possible returns of social capital, human well-being is the most important in a person’s life, as well-being is a person’s ultimate life goal. Among the concepts that have emerged over the past decade to improve citizens’ well-being, socioeconomic inequality was the main concern (Mansyur et al. 2008). However, since we have experienced failures of policy or indifferent results of policy that mainly focused on fulfilling citizens’ material needs, scholars, practitioners, and policymakers have recognized that other conditions such as social capital are necessary to improve public health and well-being (Szreter and Woolcock 2004). Some explanations exemplify links between social capital and health/well-being. One example shows that individuals who participate in organizations, know a variety of people, or have confidence in others are less likely to experience health problems and more likely to be satisfied with their lives, since the individuals could share their problems with others in order to resolve them and obtain information. Additionally, social capital may affect the health/well-being of citizens through their collective action to claim better welfare systems (Schultz, O’Brien, and Tadesse 2008). Empirical research supports this idea (Helliwell and Putnam 2004; Veenstra 2005). Although there is a lack of agreement on the concept of social capital (Brunie 2009), causing the association between social capital

and health/well-being to vary, researchers generally agree that social capital is a crucial predictor of health and well-being.

Since social capital is a concept with multiple meanings, the measures vary from research to research. Some researchers, including Vicente Navarro (2002), make the critique that social capital's effect has been exaggerated, since social capital and its association with health and well-being is not found in all situations. One explanation for this problem is that social capital is often measured through a limited set of indicators, since researchers used data that were not designed to measure social capital (Berry and Welsh 2010). Thus, social capital requires careful conceptualization and operationalization. Despite these discrepancies regarding social capital, scholars generally agree that social capital can be categorized into two dimensions: structural and cognitive (Fujisawa, Hamano, and Takegawa 2009; Harpham 2008; Yamaoka 2008; Yip et al. 2007). Structural social capital refers to participation and social networks which can be confirmed objectively. Cognitive social capital is defined by mental processes, such as trust and reciprocity, which can be verified subjectively (Uphoff 2000). Indeed, many empirical studies have adopted the structural and cognitive dimensions of social capital framework.

The concept of well-being itself also invites controversy (Shin and Johnson 1978), as the concept has multiple meanings. Broadly, well-being has two dimensions. Diener (2000) defines well-being as "people's evaluations of their lives—evaluations that are both affective and cognitive"; with the affective component referring to happiness, and the cognitive component referring to life satisfaction. According to Gundelach and Kreiner (2004), happiness and life satisfaction are related as the subdimensions of well-being, but empirically reflect different aspects of well-being. Hence, it is likely that the same independent variables have a different effect on happiness and life satisfaction, and/or different independent variables have an effect on happiness and life satisfaction, so the variables need to be examined separately. Thus, this study included both happiness and life satisfaction as outcome variables and conducted analysis separately. Additionally, empirical studies regarding social capital and its association with health and

well-being are sparse in Asian countries, especially South Korea, compared to Western countries. Thus, more research needs to be conducted in non-Western countries to confirm whether similar associations between social capital and health/well-being could be found in a study done in an Asian country.

The primary purpose of this study is to fill the knowledge gap regarding the association between social capital and health/well-being in non-Western societies. The main study question was “Is social capital associated with health and well-being in Seoul, South Korea after adjustment for sociodemographic and economic characteristics?” Based on the findings, we could draw implications about whether the concept of social capital can be applied to South Korea, and whether the concept can be used to suggest policy recommendations. To examine this research question, a survey was conducted from June 2009 to September 2009. Additionally, this study geographically focused on Seoul because major differences in sociodemographic and socioeconomic situations between Seoul and other regions necessitate separate analyses. Furthermore, as the capital city of South Korea, Seoul merits initial research on the impacts of social capital.

To the best of our knowledge, no previous study has included the social networks measure as a structural social capital dimension and distinguished the subdimensions of well-being as happiness and life satisfaction. For these reasons, this study includes the social network measure as a structural social capital measure, and estimates the impact of social capital on happiness and life satisfaction separately.

## **Social Capital and Health/Well-Being**

Literature linking social capital to health, and more recently, to well-being has been increasing (Helliwell and Putnam 2004; Yamaoka 2008; Yip et al. 2007). Kawachi et al. (2004) reviewed articles which examined the association between social capital and health/well-being, finding that many studies have shown that social capital is related to health and well-being. Although there is an agreement that

social capital is an important determinant of health and well-being, the results varied depending on the definition of the concept and measure of social capital, level of analysis, and researched areas.

Helliwell and Putnam (2004), using data from the World Values Survey from the U.S. Benchmark Survey and a comparable Canadian survey, found that civic engagement, social ties, and trust, which are positively associated with health, have an effect on life satisfaction and happiness. Schultz, O'Brien, and Tadesse (2008), using data from the 2006 Social Capital Community Survey in Duluth, Minnesota, and Superior, Wisconsin, of the United States, examined the relationship between social capital (attitudes on trust, formal group involvement, informal socializing, organized group interaction, social support, and volunteer activity) and health. They found that individual social capital variables are associated with health. Recent research by Berry and Welsh (2010) empirically examined the relationship between social capital and physical functioning, mental health, and general health, using data from Wave 6 of the Household, Income and Labour Dynamics in Australia Survey. They found that social capital is associated with three forms of health. However, such relationships have not been confirmed from all studies. Using data from East Asia (Japan, South Korea, Singapore, and five cities in mainland China and Taiwan) in 2002-2004, Yamaoka (2008) found that while cognitive social capital is positively associated with health and well-being, structural social capital is negatively related to health. Additionally, Baron-Epel et al. (2008), using data from an Israeli health interview survey, which included adult Jews and adult Arabs, examined the association between social capital and health (e.g., social trust, neighborhood safety, perceived helpfulness, trust in authorities, and social support). They found that among Jews, those reporting higher levels of social capital reported better health. On the other hand, among Arabs, only those reporting higher levels of social support reported higher health. Moreover, Harpham, Emma, and Rodriguez (2004), using cross-sectional data from Cali, Colombia, did not find any relationship between social capital and self-reported mental health.

The findings also varied depending on the level of analysis. Some

ecological research has found a relationship between social capital and outcomes related to health (Poortinga 2006b). At the U.S. state level, Kawachi, Kennedy, Lochner, and Prothrow-Stith (1997) found that social capital is associated with self-rated health. Additionally, Veenstra (2002) found that social capital is related to health status in Saskatchewan, Canada. Contrary to these findings, some research did not find the association between social capital and health at the collective level (Veenstra 2000). Some research was conducted using a multilevel analysis. For example, Poortinga (2006a), using data from the European Social Survey, found that although individual levels of social capital are related to self-rated health, the same aggregate measures are not associated at the national level. However, using data from the 2000 and 2002 Health Survey for England, Poortinga (2006b) found that the aggregate social trust's effect on self-rated health was beyond the effect of individual social capital. Yip et al. (2007), using survey data from rural counties of Shandong province in China, found that social capital is associated with health and well-being. Namely, cognitive social capital (i.e., trust) has an effect on psychological health, general health, and well-being, both at the individual and village level. However, organizational membership, which is structural social capital, does not affect health and well-being except for village-level membership in voluntary organizations. Veenstra (2005) conducted similar research by examining the relationship between social capital and three measures of health and well-being (e.g., long-term limiting illness, depressive symptoms, and self-rated health) using multilevel analysis. Results showed that only a measure of depressive symptoms was associated with community-level social capital. Among individual-level social capital measures, trust in politicians and government, and trust in community members were associated with outcome measures, but not participation in voluntary associations. A recent study by Snelgrove et al. (2010), which used data from the British Household Panel Survey, found that area social trust is associated with self-rated health. However, they found no evidence that area civic participation is related to self-rated health.

Although research examining the effect of social capital on health

has been growing, fewer studies have been conducted in Asian countries compared to the studies conducted in Western countries (Ichida et al. 2009). Additionally, the variables used to measure social capital are inconsistent in various studies, thus the effect of social capital on health and well-being is varied. Moreover, the study of social capital and well-being is only recently burgeoning (Yip et al. 2007); therefore, few studies have been conducted to examine their relationships and only a few studies have distinguished between life satisfaction and happiness as a subdimension of well-being.

In sum, there is empirical evidence that shows social capital is beneficial for people's health and well-being with a few exceptions. Thus, we hypothesize that both cognitive and structural social capital are positively associated with health and well-being. Specifically, cognitive social capital is positively associated with health and well-being because increased structural social capital might stimulate information related to health and well-being, or the adoption of healthy behavioral norms (Kawachi and Berkman 2000; Snelgrove et al. 2009). Structural social capital is positively related to health and well-being because it might encourage the diffusion of ideas that promote behaviors and norms amenable to better health and well-being (Mitchell and Bossert 2007).

### **Conceptualization of Social Capital**

The concept of social capital has been developed over a long period of time through studies by a number of researchers (Van der Gaag and Snijders 2005). However, there is no consensus on the notion of social capital (Brunie 2009). The premise of the social capital definition is simple and straightforward: social capital embeds in and derives from networks of people (Bekkers et al. 2008). Scholars generally agree with this definition (Bourdieu 1986; Coleman 1988, 1990; Erickson 1996; Lin 1999, 2001a, 2001b; Portes 1998; Putnam 1993, 2000). However, the differences of social capital concepts and measures have emerged as well because some scholars (Paxton 1999;

Portes 1998; Putnam 2000) define social capital as the trust and reciprocity derived from social networks of participation (Carpiano 2006) or as the networks themselves (Bourdieu 1986; Burt 1992; Flap and Volker 2001; Lin 2001a, 2001b).

One group of researchers (Coleman 1998, 1990; Paxton 1999; Putnam 1993, 2000) understands social capital to derive from participation. Participation includes a number of different tasks and activities (Berry and Welsh 2010). It contains civic engagement, including volunteering and organizational involvement (Putnam 1995; Van der Gaag 2005) and political participation (Lofors and Sundquist 2007; Rich 1999). Putnam, a political scientist, has influenced most<sup>1</sup> research that understands social capital as being derived from participation, which increases trust, reciprocity, and *vice versa* (Magee 2009). Putnam (2000), in his recent book, *Bowling Alone*, defines social capital as “connections among individual’s social networks and the norms of reciprocity and trustworthiness that arise from them.” He argues that high degrees of trust, dense social networks, and high degrees of participation in collective action, such as volunteering or associational membership, indicate the presence of social capital. Miyata, Ikeda, and Kobayashi (2008) pointed out that the crucial point of Putnam’s argument is that civic engagement is derived from diverse networks because people who know a wide range of others are likely to participate in the civic field, since at least some of the people they know are interested in political issues. Moreover, people who connect with a variety of others tend to participate in civic life because this enhances their trust in others as well as their value of reciprocity.

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1. Some researchers have categorized social capital into bonding, bridging, and linking. Bonding social capital refers to relations between individuals with similar identities. Bridging social capital refers to relationships between individuals who are not alike. And political participation can be understood as “linking social capital,” which is defined as the “norms of respect and networks of trusting relationships between people who are interacting across explicit, formal or institutionalized power or authority gradients in society” (Szreter and Woolcock 2004). Thus, it embraces relationships which connect people across vertical power differentials (Lofors and Sundquist 2007). An example of linking social capital is political participation, such as voting participation and political action (Chuang and Chuang 2008).



Another group of scholars (Burt 1992; Erickson 1996; Lin 2001) see social capital as an additional pool of resources embedded in the social networks of individuals, which can be useful for accomplishing individual goals (Van der Gaag 2005). Thus, social capital could be defined as “the total expected value of the benefits that this individual can obtain from his ties to other individuals” (Snijders 1999). Lin (2001b), a prominent scholar in this perspective, defines social capital as “resources embedded in one’s social networks, resources that can be accessed or mobilized (used) through ties in the networks.” Thus, one can capture the embedded resources through one’s social networks, which are useful for a certain purpose. In addition to these differences, the theoretical concept of social capital is divided into micro and macro levels (Yamaoka 2008).

What becomes clear from the research presented above is that the concept of social capital is a very wide concept with complex meanings. In this study, we understand that the discrepancies regarding social capital broadly derive from whether researchers see participation related to factors such as civic engagement and political participation, and intercorrelated with trust as a source of social capital or personal networks as a source of social capital. And within the participation perspective, there is a discrepancy in whether scholars regard social capital as a collective or an individual asset, or both. To better understand and measure social capital, social capital needs to be categorized into structural and cognitive dimensions (Chuang and Chuang 2008; Mitchell and Bossert 2007).

Since the aim of this study is to examine the effects of social capital on health and well-being at the individual level, this study conceptualizes social capital at the individual level. At this level, social capital refers to social resources derived and captured from one’s social networks, contrary to the macro-level social capital, which refers to the social resource of a group of people. To reconcile discrepancies regarding the concepts of social capital and measure social capital concretely, this study adopts structural and cognitive distinctions of social capital. The structural dimension reflects behavioral manifestations of social capital, which are associated with various forms of participation and

social networks. The cognitive dimension reflects subjective attitudes of social networks, such as trust and reciprocity (Uphoff 2000).

## **Data and Analysis**

### *Data*

We conducted a telephone survey from June 2009 to September 2009 to collect the data for the present study. The target respondents consisted of Seoul citizens who are 20 years of age and over. In the main, a stratified sampling method was used. Seoul's 25 districts were divided into two strata. Twenty-five districts in Seoul were categorized into two artificial regions, the Gangnam region, which includes the Gangnam-gu, Seocho-gu, and Songpa-gu districts, and all other regions. We stratified the population size by the two artificial regions based on official census data. The Gangnam region is relatively wealthier and more urbanized than the other regions. By conducting a stratified sampling method, this variation can be considered in further analysis. Within the two artificial regions, the households were randomly chosen using a telephone book. Then, the respondents were selected using the birthday rule, which selects a respondent whose birthday was closest to the interview date. If the respondent did not want to or could not participate in the survey by phone for any reason, the respondent was asked to answer the questionnaire via e-mail. Additionally, we used the quota sampling method to gather data from seniors because the age group of 20-50 was initially overrepresented. By doing this, the present study gathered 1,432 cases of individual data (response rate: 54.3% including the e-mail surveys). However, 671 cases had to be dropped because their answers were substantially incomplete. The full sample includes 811 respondents, aged from 20 to 79 years, from all 25 districts in Seoul.

Measures

All variables were self-reported. Dependent variables included subjective life satisfaction, subjective happiness, and subjective health. Independent variables included social capital variables (i.e., network diversity, organization membership, political participation, volunteer work, and trust) and other variables, such as socioeconomic and demographic variables that are possibly related to each dependent variable as control variables (Dolan, Peasgood, and White 2008; Harpham, Emma, and Elizabeth 2002; Helliwell and Putnam 2004). Table 1 presents the summary of variables that are used in the present study.

Table 1. Summary of Variables

Characteristics		Variables
Social capital	Cognitive	Trust
	Structural	Network diversity, organization membership, political participation, and volunteer work
Health		Self-rated health
Well-being		Self-rated life satisfaction and happiness
Socioeconomic status		Region, gender, age, education, marital status, religion, employment status, home ownership, and household income

1) Social Capital Variables

A. Structural Dimension

Network diversity, the dimension of structural social capital, was measured by using the position generator (Lin and Dumin 1986). This method, used by Lin and Dumin (1986), has been widely employed by empirical studies (Erikson 1996; Gidengil et al. 2001; Flap and Boxman 2005) and has been proven to have adaptability and flexibility to specific substantive settings (Erickson 2004). The original question-

naire used Choi's occupational prestige scale (Choi 2001) including 25 occupations, which describes the context of Korean society. The included 25 occupations are as follows: doctor, assemblyman, professor, owner of a large company, lawyer, local governor, clergy, pharmacist, school teacher, producer, entertainer, journalist, small-business owner, officer (armed forces), police officer, employee of a large company, nurse, computer programmer, technician, shop owner, skilled worker, salesman, driver, farmer, and construction worker. Network diversity was measured by summing the number of occupations accessed through the respondents' social networks. Thus, the range of the network diversity was 0-25.

Organization membership was measured as another measure of the dimension of structural social capital. Organization membership was measured by asking the respondents to indicate whether they are members of the listed organizations. The listed organizations are hobby clubs, sports clubs, environmental/animal protection organizations, social clubs, human rights organizations, business organizations, consumer protection groups, alumni associations, hometown organizations, and labor unions. Respondents were subdivided into two groups: people who do not have any organization membership (coded = 0), and people who have organization membership (coded = 1).

The level of political participation was measured by adding up the responses to three statements: "Do you have any political party which you advocate for?"; "Are you a member of any political party?"; and "Did you vote in the 2007 presidential election?" Items were measured on a binary scale (yes = 1, no = 0). This additive scale was then recoded to a dummy variable, with score 0 reflecting a low level (coded = 0), and scores from 1 to 3 reflecting a high level (coded = 1). Volunteer work was measured with one item, which is similar to previous studies (Hurtado et al. 2011; Schultz et al. 2008). The respondents were asked how many times they usually participate in volunteer work in a year. The original 5-point scale was recoded to a dummy variable in which no volunteer work (coded = 0) reflected score 1, and high volunteer work (coded = 1) included scores 2 to 5.

## B. Cognitive Dimension

Trust, a dimension of cognitive social capital, was measured by two items related to trust and reciprocity: "Most people are trustworthy," and "If I provide useful help and information to someone, somebody will help me when I need help." These items were measured on a scale of 1-10, where 1 represented "strongly disagree" and 10 represented "strongly agree." A combined mean variable was calculated for the two items and used for further analysis (inter-item correlation = .42).

## 2) Sociodemographic and SES Variables

Variables analyzed included gender, age, education, marital status, religious faith, personal income, employment status, and home ownership, which proved to have an impact on subjective life satisfaction, subjective happiness, and subjective health in literature (Blanchflower and Oswald 2000, 2004; Dolan, Peasgood, and White 2008; Fu 2005; Helliwell and Putnam 2004; Layard 2003; Yamaoka 2008).

Gender was categorized as male (coded = 1) or female (coded = 0). Age was measured by asking the respondent's age and used as a continuous scale. Education was measured as the highest grade completed on a three-point scale, including: (1) high school or below, (2) college or university, and (3) graduate school, with the high school or below group used as the reference. Marital status was originally classified into four categories. This was recoded as a dichotomous variable (1 = being married, 0 = others).<sup>2</sup> Religious faith was used as a dummy variable (1 = belonging to any, 0 = none). Household income was used as a continuous scale. Employment status was used as a dummy variable (1 = full-time worker, 0 = part-time worker). Home ownership was categorized into four parts: (1) family's property, (2) deposit based, (3) monthly rent, and (4) others. This was recoded as a dichotomous variable (1 = family's property, 0 = others). Finally, the districts were

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2. Originally, marital status was measured as single, married, divorced and separated, and others. Only 3 respondents (0.3%) answered on divorced and separated and no one answered on others. Thus, we recoded it as a dummy variable.

designated as the Gangnam region (coded = 1) or the non-Gangnam region (coded = 0).

### *Dependent Variables*

Subjective life satisfaction was measured by one item. The respondents were asked: "All things considered, how satisfied are you with your life as a whole?" The original 10-point scale was recoded, where "low" encompassed 1 to 5 (coded = 1), "average" encompassed 6-7 (coded = 2), and "high" encompassed 8 to 10 (coded = 3). Subjective happiness was measured by one item. "Considering everything, would you say that you are very happy?" The original item was measured on a scale of 1-10, with 1 representing strongly disagree and 10 representing strongly agree. The responses of 1 to 5 (coded = 1) were classified as "low," 6 to 7 (coded = 2) were classified as "average," and 8 to 10 (coded = 3) were classified as "high." Subjective health was assessed by one question: "How is your health in general?" The original 10-point scale was recoded, where the responses of 1 to 5 (coded = 1) representing "low," 6 to 7 (coded = 2) representing "average," and 8 to 10 (coded = 3) reflecting "high."<sup>3</sup> This measure is a good predictor of physical and mental health (Idler and Benyamini 1997).

### *Statistical Analysis*

The aim of this study is to examine whether social capital affects self-rated health and well-being. To achieve this goal, ordinal logistic regression analysis was performed for each dependent variable since each dependent variable is an ordinal level. By conducting ordered

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3. Using the original 10-point scale, preliminary analysis was conducted to ensure that there was no violation of the assumption of the proportional odds assumption on each dependent variable. Both an approximate LR test (Wolfe and Gould 1998) and a Wald test by Brant (1990) suggested that each model rejected the null-hypothesis that the  $\beta$ s are equal across each regression (Long and Freese 2006). Thus, we recoded each dependent variable. The median scores of self-rated health, life satisfaction, and happiness were 7, respectively.

logistic analysis, the association between social capital and self-rated health/well-being, after controlling for other variables, was confirmed. We estimate the following ordinal logistic model:

$$\Pr(Y = j | x) = F(\alpha_j - x\beta) - F(\alpha_{j-1} - x\beta) \tag{1}^4$$

Where

$$x\beta = \beta_1 \text{gangnam} + \beta_2 \text{male} + \beta_3 \text{edu1} + \beta_4 \text{edu2} + \beta_5 \text{married} + \beta_6 \text{religion} + \beta_7 \text{income} + \beta_8 \text{employment} + \beta_9 \text{home} + \beta_{10} \text{network} + \beta_{11} \text{membership} + \beta_{12} \text{participation} + \beta_{13} \text{volunteer} + \beta_{14} \text{health}$$

Note: edu1: college or university, edu2: graduate school

In equation (1), Y refers to relevant dependent variables and  $\beta$ 's function as regression parameters. When we conduct ordinal logistic analyses for life satisfaction and happiness, health is included as an independent variable. The odds ratio (OR), 95 % confidence interval (CI) and p values are presented. The OR reflected an increase in the odds of a higher number of self-reported health and well-being. All analyses were conducted using STATA v.10 statistical package. All tests were two-tailed, with a significant level at 5%. Descriptive statistics of responses are presented first.

Results

Descriptive Statistics

Table 2 provides the descriptive statistics of responses. About 17.3%

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4. For an m-alternative ordered model, we define  $y_i = j$  if  $\alpha_{j-1} \leq x\beta_i + \varepsilon_i < \alpha_j$  for  $j = 1$  to  $m$  where  $\alpha_0 = -\infty$  and  $\alpha_m = \infty$ . Then  $\Pr(y = j | x) = \Pr(\alpha_{j-1} \leq x\beta + \varepsilon < \alpha_j | x)$  which leads to equation number 1. F is the cumulative distribution fuction (c.d.f.) of  $\varepsilon_i$ . The cut-points  $\alpha_1$  through  $\alpha_{m-1}$  are estimated. For the ordinal logit model, F is logistic with  $\text{Var}(\varepsilon) = \pi^2/3$ . Stata excludes an intercept from the regressors (Cameron and Trivedi 2010).

Table 2. Descriptive Statistics of Responses

Variables	N (Mean)	Percentage
<i>Control variables</i>		
Region (Gangnam)	141	17.3 %
Gender (male)	424	52.3 %
Age	(37.5)	–
Education		
(high school or below)	137	16.9 %
(college or university)	543	67.0 %
(graduate school)	131	16.1 %
Marital status (married)	446	55 %
Religion (faith in religion)	442	52 %
Employment status (employed full time)	674	83.1 %
Home ownership (family’s property)	409	50.4 %
Household income (won)	(375.4)	–
<i>Social capital variables</i>		
Network diversity	(9.0)	–
Organization membership (belonging to)	669	82.2 %
Level of political participation (high)	622	77 %
Volunteer work (high)	437	54 %
Trust	(6.2)	–

of the respondents reported living in the Gangnam district. The gender distribution of the sample shows that male (52.3 %) and female (47.7 %) are distributed approximately equally. The mean age was about 37.5. The majority (83.9 %) had attained the educational level of above high school. More than half of the respondents (55 %) were married. About 55 percent of respondents had faith in a religion. High proportions (83.1 %) of the respondents were full-time workers. Slightly more than half of respondents (50.4 %) reported that they own a house as family property (including the respondent’s own). The mean monthly household income was 3,754,000 (*won*).<sup>5</sup> The mean network diversity was about 9. Thus, the respondent knows approximately 9

5. 1,300 *won* is around US\$1.



different people whose occupations are different from their own. About 82.2% of respondents had at least one organizational membership. More than half of the respondents (54%) reported that they participated in volunteer work in the last year at least one time. More than half of the respondents (54%) answered that they did at least one form of political participation in the last year. Finally, the degree of agreement regarding trust and reciprocity was about 6.2.

### *Social Capital and Health*

Table 3 presents the results of the relationships between social capital and self-rated health after adjustments for the control variables. In the ordinal logistic regression model, network diversity, volunteer work, and trust are statistically related to health among social capital variables (OR = 1.05, 95% CI = 1.02-1.08; OR = 1.37, 95% CI = 1.02-1.85, OR = 1.65, 95% CI = 1.49-1.84, respectively). Thus, more network diversity and higher trust are associated with an increased probability of higher self-rated health. Similarly, a person with a high level of volunteer work participation reported a higher self-rated health compared to a person who did not do volunteer work. Among control variables, being older is associated with a decreased probability of higher health (OR = 0.98, 95% CI = 0.96-0.99).

### *Social Capital and Well-Being*

Since life satisfaction and happiness are different dimensions of well-being (Pavot and Diener 1993; Gundelach and Kreiner 2004), ordinal logistic regression analysis was conducted separately for life satisfaction and happiness. Additionally, self-rated health was included as a control variable.<sup>6</sup> Although the causality between health and well-

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6. Both a likelihood-ratio test for life satisfaction ( $LR\chi^2 = 9.35$ ,  $df = 8$ ,  $p = 0.314$ ) and for happiness ( $LR\chi^2 = 11.88$ ,  $df = 8$ ,  $p = 0.157$ ) and a Wald test for life satisfaction ( $\chi^2 = 10.07$ ,  $df = 8$ ,  $p = 0.260$ ) and for happiness ( $\chi^2 = 11.98$ ,  $df = 8$ ,  $p = 0.151$ ) suggested that the categories of self-rated health are evenly spaced. Thus, self-rated health was treated as an interval variable (from 1 = poor to 10 = good).

Table 3. Ordinal Logistic Regression of Social Capital on Self-Rated Health (N = 811)

Self-Rated Health		
Variables	Odds ratio	95 % CI
<i>Control variables</i>		
Region (Gangnam)	1.34	0.94-1.91
Gender (male)	1.31	0.99-1.73
Age	0.98*	0.96-0.99
Education		
(college or university)	0.91	0.62-1.35
(graduate school)	0.96	0.59-1.57
Marital status (married)	0.72	0.52-10.01
Religion (faith in religion)	0.97	0.73-1.30
Household income	1.00	0.99-1.01
Employment (employed full-time)	1.08	0.72-1.60
Home ownership (family's property)	1.15	0.87-1.52
<i>Social capital variables</i>		
Network diversity	1.05**	1.02-1.08
Organization membership (belonging to)	0.98	0.67-1.42
Political participation (high)	1.02	0.74-1.42
Volunteer work (high)	1.37*	1.02-1.85
Trust	1.65***	1.49-1.84
Cut point 1 <sup>a</sup>	1.81***	(0.48)
Cut point 2 <sup>a</sup>	3.66***	(0.50)

Notes: 1) \*p < 0.05; \*\*p < 0.01, \*\*\*p < 0.001.

2) <sup>a</sup>: β coefficient (standard error).

being is controversial, the causal link of health affecting well-being is more plausible (Dolan, Peasgood, and White 2008). Adding self-rated health decreases the influence of network diversity and trust on life satisfaction and happiness as expected (result not shown). Among social capital variables, network diversity and trust are statistically associated with life satisfaction even after health was included (OR = 1.08, 95 % CI = 1.05-1.11; OR = 1.49, 95 % CI = 1.33-1.66, respectively). Thus, an additional increase in network diversity per indi-

vidual increases the likelihood of individuals to report average or high life satisfaction. Additionally, a one unit increase in trust enhances the odds of reporting a higher life satisfaction. In terms of control variables, gender (OR = 0.68, 95% CI = 0.51-0.91), having a college or university degree (OR = 1.51, 95% CI = 1.00-2.29), household

Table 4. Ordinal Logistic Regression of Social Capital on Subjective Well-Being (n = 811)

Variables	Life Satisfaction		Happiness	
	Odds ratio	95% CIO	Odds ratio	95% CI
<i>Control variables</i>				
Region (Gangnam)	1.16	0.80-1.68	1.33	0.92-1.93
Gender (male)	0.68**	0.51-0.91	0.75	0.56-1.00
Age	0.99	0.98-1.01	0.98*	0.96-0.99
Education				
(college or university)	1.51*	1.00-2.29	1.25	0.83-1.86
(graduate school)	1.30	0.78-2.16	1.16	0.71-1.92
Marital status (married)	1.36	0.96-1.92	1.50*	1.06-2.11
Religion (faith in religion)	1.19	0.89-1.60	1.12	0.84-1.50
Household income	1.00*	1.00-1.00	1.00	0.99-1.00
Employment				
(employed full-time)	0.66	0.43-1.01	0.70	0.46-1.06
Home ownership				
(family's property)	1.32	0.99-1.77	1.28	0.96-1.70
Health	1.49***	1.36-1.64	1.38***	1.26-1.51
<i>Social capital variables</i>				
Network diversity	1.08***	1.05-1.11	1.07***	1.04-1.10
Organization membership				
(belonging to)	1.18	0.80-1.72	1.12	0.77-1.63
Political participation (high)	1.31	0.94-1.83	1.39	0.99-1.95
Volunteer work (high)	1.05	0.77-1.43	1.10	0.81-1.49
Trust	1.49***	1.33-1.66	1.43***	1.28-1.60
Cut point 1 <sup>a</sup>	4.94***	(0.57)	3.40***	(0.55)
Cut point 2 <sup>a</sup>	7.39***	(0.61)	5.52***	(0.57)

Notes: 1) \*p < .05; \*\*p < .01; \*\*\*p < .001.  
2) <sup>a</sup>: β coefficient (standard error).

income (OR = 1.00, 95 % CI = 1.00-1.80), and health (OR = 1.49, 95 % CI = 1.36-1.64) are statistically related to life satisfaction. Hence, being male is associated with a decreased probability of higher life satisfaction. Respondents who have college or university degrees reported higher life satisfaction compared to those who were educated at the high school level or below. Household income increases the odds ratio of higher life satisfaction. In terms of happiness, network diversity and trust are statistically significant (OR = 1.07, 95 % CI = 1.04-1.10, OR = 1.43, 95 % CI = 1.28-1.60, respectively) social capital variables. Thus, a one unit increase in network diversity enhances in the odds ratio of higher happiness. Additionally, respondents with a high level of trust are more likely to report higher happiness. Among control variables, age (OR = 0.98, 95 % CI = 0.96-0.99), marital status (OR = 1.50, 95 % CI = 1.06-2.11), and health (OR = 1.38, 95 % CI = 1.26-1.51) are associated with happiness. Accordingly, being older is associated with a decreased probability of higher happiness. Respondents who are being married are more likely to report higher happiness. Among independent variables, self-rated health has relatively the largest influence on life satisfaction and happiness (result not shown). Additionally, except for network diversity and trust, none of the social capital variables are associated with life satisfaction and happiness, irrespective of whether self-rated health is included. The results are shown in Table 4.

### *Discussion*

There is evidence that age, gender, education level, income, employment status, marital status, religiosity, and place of residence are related to health and well-being (Bartley 1994; Helliwell and Putnam 2004; Mansyur et al. 2008). Although there are suggestions that economic and social conditions are important factors in one's health and well-being, by themselves they are insufficient (Phongsavan et al. 2006). Thus, a significant amount of research has recently been conducted, and increasingly more research is examining the relationship between social capital and health/well-being in order to fill the gap. However, many questions still remain unanswered and there are few

studies conducted for non-Western countries. The aims of this study were to confirm social capital's associations with health and well-being in Seoul, South Korea. We were especially concerned with whether social capital originated and studied in mainly Western societies has the same effect on health and well-being in non-Western countries. To achieve this research goal, a survey was conducted and ordinal logistic regression analysis was performed in Seoul, South Korea.

Our analyses provide evidence supporting the fact that the cognitive dimension of social capital is positively associated with all three dependent variables. However, the results are varied in terms of the structural dimension of social capital. Specifically, organization membership and political participation did not have an effect on any dependent variables. This tendency was also found in several studies that reported that organization membership does not have strong effect on health and well-being (Yip et al. 2007) and even has a negative effect on health (Yamaoka 2008). Several explanations are possible to explain these results. One possible explanation is that since many studies only included organization membership as a structural social capital measure, previous studies did not capture the effect of the other structural social capital variables such as social networks, allowing for the possibility that the previous studies overestimated the organization membership's effect on health and well-being. Thus, previous studies might have failed to consider more sophisticated social capital measures. It is also possible that since the organization membership measurement was originally developed in Western society, it is suitable for only Western societies. Additionally, the cultural aspect of South Korea might cause this result. Since hierarchical culture is prominent in South Korea compared to Western societies, some organizations might apply stress to lower-level members, especially in organizations where admission and quitting is not the member's individual decision. Although we did not measure health behavior, it is possible that some organizations encourage health behaviors such as drinking alcohol, which possibly affects health and well-being in return, as some studies suggest (Chuang and Chuang 2008). Since we

measured organization membership with a single item, it was not possible to distinguish the type of organizations and it might cause some bias. Finally, we assumed that political participation could positively affect one's health and well-being, because people who have higher levels of political participation could claim, solve, or change well-being issues related to policies that favor them. However, it is also possible that they experienced policy failures related to governmental programs, or even experienced policy decisions that operate against their wishes that could possibly negatively affect well-being in return. Thus, it is likely that respondents who have the same level of political participation have inconsistent experiences regarding their political participation.

In this study, there is strong evidence that higher levels of trust are related to higher levels of self-rated health. In terms of structural social capital, network diversity and volunteer work are positively related to self-rated health. However, none of the other social capital measures were related to health. With regard to control variables, this study yields results that were consistent with previous studies. Old age is related to a low self-reported health as expected.

In terms of well-being, this study estimates social capital's effect on life satisfaction and happiness separately. Several researchers assumed that the two dimensions of well-being are the same; thus, they used the two terms interchangeably. However, the results suggested that each dependent variable was influenced by different variables. Although network diversity and trust were the most important predictors of both life satisfaction and happiness as expected, the influences of the independent variables changed with the fluctuations of each dependent variable. Specifically, gender, education, and household income were only related to life satisfaction. On the other hand, age and marital status were associated with only happiness. According to Helliwell and Putnam (2004), happiness reflects short-term, situation-dependent expressions of mood, compared to life satisfaction, which reflects long-term expressions of mood. Thus, it is a rather tentative conclusion that life satisfaction and happiness are different. Further research is necessary to establish a concrete conclusion.

There are some possible explanations as to why social capital affects self-rated health and well-being. One explanation is that, like previous studies suggest, separation, lack of trust, and lack of social contact, which are all indicators of social capital, were negatively associated with health and well-being as well (Kawachi 1999; Dolan, Peasgood, and White 2008). Since affluent people have access to multiple types of social capital, and could easily access social resources such as medical care, emotional support, and information that provide a variety of solutions to solve their problems, they are, thus, less likely to experience and feel sadness and frustration. Overall, the current study's results indicate that the linkage between social capital to health and well-being in Seoul, South Korea are more associated with personal network and trust compared to organization and political participation. This result indicates rather tentative policy implications that, with regard to the types of social capital, policy should be focused on improving citizens' health and well-being in Seoul. Our study suggests that policies should be considered for enhancing and strengthening citizens' personal networks and trust since this is a precursor of improving one's health and well-being in Seoul. Given the fact that even the most affluent societies in the world are not exempt from economic inequality problems, policies which solely aim at solving material deprivations are insufficient to enhance population health and well-being. Thus, policymakers should consider balancing between material assistance and social capital.

All research has limitations, including the present study. In order to generalize the analysis, we must acknowledge several limitations of the study. First, while this study used the probability sampling method, quota sampling method was also used, which may have caused sampling bias. Additionally, this study was based on a telephone survey to collect data. The bias may have occurred because people with unlisted numbers were excluded from the survey. This study used an e-mail survey as well. Thus, it may be possible that people who are not familiar with using e-mail or cannot access the Internet were denied a chance to participate in the survey. Second, the data set for the current study are cross-sectional samples. An impor-

tant weakness of cross-sectional studies is that one cannot draw conclusions about the direction of the confirmed relationships, so the causality tends to be tentative. Thus, the cross-sectional characteristic of the data prevented exploration into the causal relationships between social capital and health/well-being. Although it is generally assumed that social capital has an effect on health and well-being, a reverse relationship may also be possible. It seems possible that the respondents who reported measures of higher social capital did so because they perceived a higher level of health and well-being.

Third, it is generally agreed that social capital is not only an individual characteristic, but also a group characteristic as well (Fujisawa, Hamano, and Takegawa 2009; Snelgrove, Hynek, and Mai 2009). However, this study lacks the data to examine the group characteristic of social capital's association with health and well-being. This prevents us from reaching a concrete decision on the relationships between social capital and health and well-being since an individual analysis is not able to confirm the contextual effects. A lot of research provides evidence that collective social capital has an effect on health and well-being. Thus, multilevel modeling, which enables the inclusion of different levels of variables and cross-level interaction, should be considered in the future study. Fourth, the results may not be generalizable to all of South Korea. Since the dataset was gathered only from Seoul, it does not provide sufficient evidence to generalize the results in South Korea. Future research needs to consider a nationally representative sample. Finally, the data was based on self-reporting. Thus, the data involves subjective appraisal by the respondents, which is more uncertain than objective measure (Poortinga 2006b).

There are also several limitations derived from the measures of interest variables. In terms of social capital measures, the present study does not distinguish expressive and instrumental memberships of voluntary organizations. Since different characteristics of voluntary organizations can affect subjective well-being and health differently, it is recommended to measure them separately in future studies. Additionally, in terms of the position generator, the current study only chose 25 occupations; thus, it is possible to overlook other occupations that may



serve as a crucial factor in establishing social capital for some people. Although the present study tries to consider the dimensions of the variety of occupations as Erikson (2004) argues, it may be subject to bias. With regard to the health measure, this study only included self-rated health reportings. Thus, we are not able to compare this study to other studies that used other health measures. Further research needs to consider multiple health outcomes, such as mental health. Additionally, we also used a single measure for each happiness and life satisfaction variable. Thus, the study is vulnerable to measurement error, which is a possible reason to cause bias. Future studies should measure well-being with multiple items to guarantee better reliability and validity of the variable.

These limitations aside, this study has provided additional evidence of the relationship between social capital and health and well-being, and suggestions of which future work should be considered in South Korea.

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