Measuring Social Capital Using the Position Generator Model (A Case Study of Elite Individuals in Tehran Province- Iran)

Reza Najarzadeh
Assistant Professor
Department of Economics
Tarbiat Modares University
Tehran, Iran

Mohmammad Soleimani
PhD Candidate in Economics
Department of Economics
Tarbiat Modares University
Tehran, Iran

Michael Reed
Professor
Department of Agricultural Economics
University of Kentucky
Lexington, USA

Abstract

The measurement of social capital is a major challenge in social capital research. The Position Generator Technique has been used in this research for the measurement of Elites' social capital. This technique emphasizes the measurement of individual access to social resources and benefits of the social network for every person.
Using data obtained from questionnaires which were distributed among the elite members of the National Foundation of the Elites, the access of individual elite to social capital resources was measured. Then, the high and low prestige social capital of elites was evaluated. The results obtained from this study show that in the population sample, access to social capital is higher among men, married individuals, Ph.D. graduates and those majoring in technical or engineering fields.

Keywords: social capital, position generator, measurement, high prestige social capital, low prestige social capital.

JEL Classification: A13, O12, Z13

1. Introduction

The measurement of qualitative concepts in the area of human sciences has always been challenging. Social capital, as a shared concept in sociology, economics, political science, and management, is not excluded from this rule. The qualitative nature of this concept has led to different definitions of social capital, each with its own distinctive features. Serageldin and Grootaert (2000) believe that the distinctions in the definitions are rather artificial and unnecessary. They believe that all interpretations of social capital have similar characteristics.

In a number of definitions, the concept of social capital is interpreted as part of human action theory and is investigated at the micro level. In other words the object of study is an individual or an agency. In contrast, social capital in some definitions is used as a concept for studying institutional or economic performance at large. These definitions have expanded the measure and level of analysis to nations and societies. Researchers like Putnam (1993), Fukuyama (1995), and Inglehart, (1997), who have conducted studies on nations and communities, are among this group (Ghafari, 2005). In contrast, Colman (1988) and his followers are among those who use micro-level analysis in their research.

Some categorizations divide social capital into micro and macro levels while others divide social capital into micro, mesa and macro levels. Although there are different opinions with regard to the scope of these divisions among scholars, it can be said that the micro-level generally deals with individuals, families, and neighborhoods; intermediary or meso level studies involve organizations and institutions; and the macro-level investigates national aspects of social capital (Svendsen and Hjollund, 2005; Rose, 1999; Narayan and Pritchett, 2000). In its entirety, social capital at the micro-level consists of networks and norms that direct the inter-personal interactions within families and groups; at the mesa level, it is formed by the performance of institutions; and at the macro level it is formed by the performance of the legal codes, government and the like. It should also be mentioned that social capital of these three different levels are inter-related and complementary.

The focus of this study is on social capital at the micro level. At this level social capital investigates the relationships at the individual and family level, and the values that govern them. Grooataert and Bastelaer (2002) define social capital as the horizontal networks that consist of individuals and families, and norms that supervise them. Turner (2000) introduced social capital at micro levels. He believes that social capital at the micro level is formed through face-to-face interactions of people.

At the micro level we should concentrate on the concept of "access to social capital," which has been emphasized in the literature. Flap (1999) was among the first to refer to the concept of "access to social capital." Lin (2001a, b) also refers to this concept. Access refers to a person's use of the accumulated social capital within a society (Van Der Gaag, 2005). In fact, from this perspective social capital is regarded as an asset that belongs to the society or a group which people can utilize for certain economic and social benefits. The level to which social capital is available in the society leads to some benefits for individuals. In order to analyze social capital at the micro level, we need to use the concept of "access" to social capital. This is because social capital and access to social capital are not independent (Lin, 2001 a).

Many researchers have tried to investigate the contributions of social capital for each and every member of a group or society, relying heavily on the insights provided by Lin (2001a). The main objective of the present study is to investigate the contributions of social capital at a personal level. Thus, it introduces a method for measuring individual social capital that focuses on the concept of accessibility to social capital.

Van der Gaag and Snijders (2003) are among the researchers who have attempted to create ways to measure individual social capital. In some of their studies, they have proposed a method called Access-Type Measures. Access-type measures show positive social resources which are reflected in an individual's social networks. These resources and networks cover the life span of a modern individual and they should lead to a series of explicit and multidimensional measures that could be used to study differences in social capital. Based on this method two types of social capital could be distinguished: high prestige social capital and low prestige social capital. High prestige social capital indicates the resources that result from access to those with high prestige and influential jobs. This capital is part of an individual's social network that deals with those people who have higher influences in the society.[1]

This article first provides a general introduction of the technique that is used to measure social capital, the resource generator technique. In section 3 we introduce the data, which are obtained through questionnaires distributed to elites. The next section analyses the results of the survey and determines social capital associated with high and low prestige jobs. Section 5 shows the impact of some individual characteristics on high and low prestige social capital. Conclusions are outlined in the last section. The contribution of this research is in applying a standard technique to measure social capital for a particular group of individuals (the elites). This technique has not been used before in Iran, the location for this study. We believe that the elites in any given society should have a greater voice in policy making decisions. For this reason we have conducted our study on this specific group.

2. Review of Literature: Position Generator Technique

In designing instruments to measure social capital we need to pay close attention to certain details and issues.

---

[1]These kinds of ties are in relation to "instrumental action" (Lin, 2001a). In contrast, low prestige social capital refers to resources that are obtained by those with low prestige jobs. This type of social capital includes actions that are regarded as "Expressive actions."

- The instruments need to unveil the distribution of social capital among the people under study (Flap, 1999; Lin, 2001b). They need to demonstrate the degree to which each individual uses and has access to social capital (Van der Gaag, 2004; Van der Gaag, 2005).
- The instruments must address the different aspects of social capital and should take into account the diversity of social capital and its variables (Erickson, 1996).
- The instruments must be used as independent variables to predict social and economic pay-offs such as educational achievements, job placements, quality life styles, etc. They should also be able to be used as dependent variables so they can be explained and predicted through an individual's characteristics (Van der Gaag, 2005).
- While being simple and applicable, the instruments must possess strong theoretical foundations and be applicable to particular cultures and conditions in each society (Fine, 2002).

Survey studies are usually conducted to assess bilateral trust among members of a social system and their willingness to be part of civil institutions or similar organizations. The majority of applied studies on social capital has either been conducted through the use of questionnaires and interviews with pre-selected samples or has analyzed the statistics obtained from other studies (Van der Gaag, 2004). These methods are called non-stylized as they have mainly used an inductive approach. It should be noted that many of the attempts to build measures for social capital have led to the introduction of individual inductive measures that deal with only one or a number of aspects of social capital. These measures have failed to take into account all aspects of social capital resulting in major shortcomings and deficiencies. Building multi-aspect measures requires close attention to the performance of social capital as a whole (Van der Gaag and Snijders, 2003). The ideal measures must lead to a series of indicators that each deal with a specific benefit of social capital.

In contrast to the above inductive methods, there are other ways and techniques that can be used to identify the resources available for a person within a society. These methods are of a deductive nature. These methods choose different indicators associated with each aspect of social capital based on a particular foundation, and employ them to construct a complete measure. It should be mentioned that the implementation of both inductive and deductive methods are usually based on surveys (interviews and questionnaires). There are different measurement instruments to construct multiple social capital criteria (measuring access to social capital). Among them three instruments are more well-known thanks to their positive features and applicability. This article uses a Position Generator method, but the other two methods are also briefly mentioned.

1. Name Generator (McCallister and Fischer, 1978): This instrument aims to explain egocentric social networks and considers these networks as the starting point for making the list of social resources. This method provides a complete description of social capital including all its details and provides a complete picture of relationships and resources. In this technique, the respondent is asked to provide the name and characteristics of individuals whom he or she can get help from or consult with for important tasks (Marsden, 1979), or with whom they feel close (Wellman, 1979). People that the individual introduces are those who form the members of his or her social network. Then, a number of questions are asked about these members in order to clarify their characteristics and the type of relationship with the respondent and with each other. This stage is known as "name interpreter". The results of this type of the questionnaire are used to determine the density, congruity, and combination of the network along with the overall features of the network of the informant. [2]

2. Position Generator (Lin and Dumin, 1986): This technique mainly focuses on the existence of social resources within the networks rather than certain connections (Lin and Dumin, 1986; Lin, Fu and Hsung, 2001). This method measures a network's access to particular jobs that are indicative of a series of social resources that are created within a society based on job prestige (Lin, 1982; 2001a). The overall objective of this instrument is to identify the diversity of resources available within a network for an individual. In this technique an individual's access to different jobs and depth of the relationship that the individual has with the job-holder is measured.

---

[2]The advantage of this method lies in its ability to provide detailed descriptive data on social capital. In contrast, it should be noted that it is difficult both for the respondents and for the interviewers to carry out this method. It is also a costly method that is dependent on the interviewer's characteristics and thus it is fragile. For instance, Van Tillburg (1998) has demonstrated that during the interview process, interviewers with higher education tend to obtain more names out of the respondents. As a whole, this technique is mostly used where the researcher seeks to obtain detailed information about the contents of the networks.

This instrument shows to what extent the individual has access to high prestige jobs and the level of diversity within their network (more explanation is to be provided on this method later in the article).

3. Resource Generator (Snijders, 1999): In this approach the objective is to access a particular fixed list of social resources, each of which represent one of the sub-categories and aspects of social capital, covering different aspects of human life (Van der Gaag and Snijders, 2003). In this technique the informants are directly asked questions on the resources in their networks which they can access. This questionnaire is similar to the one for position generator. The difference is that the questions measure accessibility to resources and not to jobs and positions. The advantage of this generator lies in the fact that it is easier to administer than the name generator method and its interpretation is more explicit than the position generator method. However, it is difficult to design a questionnaire for this method because access to resources and the significance of these resources vary randomly based on the community or the group under study. In short the biggest challenge of this instrument is to find a comprehensive list of the important resources in different areas of everyday living (Soleimani, 2008).

In the present study, the position generator method is chosen from among the three techniques mainly due to the fact that the administration of the questionnaires pertaining to name generator is quit time consuming and costly. In fact, position generator is operationally more appropriate as it can be conducted through the use of a questionnaire and, in contrast to name generator, it does not require detailed interviews with the informants. As a result, it is quicker and less costly. On the other hand, designing a resource generator questionnaire faces certain theoretical issues -- for example, a comprehensive list of the resources that an individual needs to have in any given society. Obtaining such a list for the questionnaires requires sufficient understanding of the features of the environment under study and the inclusion of the most significant resources to the informants; whereas the position generator is easier to implement after this step.[3] Furthermore many studies and articles, particularly those that deal with certain groups of a society such as students and entrepreneurs, have used the position generator method (Campbell, Marsden and Hurlbert, 1986; Campbell and Lee, 1991).

The theoretical foundation of the position generator is based on the concept of social resources. Lin(2001b) believes that social resources are hidden within their social network and access to such resources; so making use of them is essential for an individual's success. Success depends on a person's access to social resources and the position generator technique emphasizes the availability of such resources and measures them. Thus the output of this method is the level of access an individual has to a series of social resources that are obtained in a society based on a certain position (job prestige). The higher the access to social resources, the higher would be an individual's ability to form and create a network. In fact, in this generator, the ability of a person to create networks is measured. Having relationships with a larger number of people (or bigger ego-centered social networks) constitutes higher ability for networking, which is indicative of the person's higher social capital (Lin, Fu and Hsung, 2001). It should be mentioned that this generator also takes into account the diversity of the networks as it concentrates on different layers of social interactions and social ties.

Questionnaires are used to conduct the position generator method. A number of jobs are provided to the informants and they are asked if any family member, friend or acquaintance occupy these positions. Therefore, the person's access to social resources is measured. This technique is administered easily and quickly, and it is possible to design the questionnaire according to the features of different groups. However, questionnaire designers need to have a clear picture of social resources obtained by having certain positions and prestige. Position generator is an instrument that has strong and defendable theoretical foundations among sociologists (Flap, 1999).

3. Data and Questionnaires

The data in this article are extracted from the results of questionnaires based on position generator that were distributed among the elites. In order to design this questionnaire, the scales were localized based on Iran's conditions and were provided to university lecturers, academic scholars, and staff for assessment. Twenty-seven jobs (items) were eventually included in the final version of the questionnaire. The questionnaire was distributed among elites at universities and was then finalized after resolving certain ambiguities.

---

[3]It should be mentioned that theoretically the resource generator is a better method but only if supporting theoretical studies on ranking of resources are available for different social groups.

The position generator questionnaire used in this study is based on the results of studies conducted in Netherlands (Boxman et al., 1991; Moerbeek, 2001; Van der Gaag, 2004) and Germany (Volker, 1995; Volker and Flap, 1999). It was assumed that the series of jobs chosen is an appropriate representation of all the jobs in the country and that having access to them provides social resources for the elites. The questions involve whether the informant (the elite person) knows anyone holding these jobs. "Knowing" means if the informant would be able to remember the name of the person (job holder) and easily start a conversation when encountering them. Then the individual is asked to indicate whether the job-holder is a family member, a friend, or an acquaintance. The exact interpretation of this categorization, and distinguishing between family members, friends or acquaintances, is entrusted upon the informants (Ven der Gaag, 2004).

In analyzing the results, responses to the questionnaires are coded as follows: (0) No one; (1) an acquaintance; (2) A friend; (3) A family member. Having this ascending ranking of ties, only the stronger types of ties are coded. When the respondent has chosen both friend and acquaintance, the code for a friend (i.e., 2) is picked. When both friend and family member are selected, the code for a family member is picked.

The statistical population of this survey includes all people who are identified by the National Foundation of Elites in Tehran as elites. Based on the report by the National Foundation of the Elites (2011), 9577 elites and special talents were identified in September 2011. Following this line and based on statistical formulas (Babbie, 2013), a sample size of 368 people was selected. The general characteristics of the sample are presented in the table 1. More than 66% of the informants are men; 36% are single, 50% are married and 14% did not identify their marital status. The majority of the people in the sample hold PhD or Master's degrees (88%). They are mainly in technical and engineering fields (41%). Almost one-third (32%) of the respondents are students and most respondents are between 25 to 47 years old (average age is 30 years).

4. The Analysis of the Results

4.1. Holistic Results Obtained from the Position Generator Questionnaire

Table 2 below provides a summary of the responses to the position generator questionnaire. Since the statistical sample is selected from among the elites in Iran, it is natural for this group of people to have higher access to certain types of jobs and thus have greater connections with high prestige jobs. Table 2 shows that the highest number of "Yes" responses relates to elites knowing researchers and those working in research organizations (79%) and the lowest number of "Yes" responses belongs to truck drivers. People surveyed have the highest degree of access through researchers and have the lowest degree through truck drivers.

4.2 Determining the Prestige of Jobs

In order to quantify the results of the surveys (using the resource generator technique) the prestige of each job must be determined. Van der Gaag and Snijders (2003) used the standard categorization of jobs by the Dutch Central Office of Statistics in order to determine the prestige associated with each job. This categorization is based on Sixma and Ultee's prestige measures (1992) and is the result of surveys conducted in different jobs (Bakker et al., 1997). Since there is no official ranking of job prestige in Iran, a questionnaire was used to measure the prestige of jobs included in the position generator. The questionnaire was sent out to 26 scholars in the areas of humanities and sociology. Each respondent was asked to rank people's perspectives of the prestige associated with each job (the minimum score was 1 and the maximum score was 27). Seventeen scholars provided their feedback and the mean prestige scores given to each job is shown in Table 3. "Unskilled Labor" has the lowest prestige, with an average score of 4.59, and "member of parliament" has the highest prestige, with an average score of 25.6.

Based on the survey results jobs are divided into four categories of low prestige, average prestige, good prestige, and high prestige. The last column of Table 3 indicates the prestige category for each job. There are five jobs in the first category, ten in the average category, six in the good category and six in the high prestige category.

4.3. Determining Social Capital Associated with High and Low Prestige Jobs

Based on the results obtained from the resource generator questionnaire as well as the prestige level obtained from the prestige determination questionnaire it became possible to measure the level of social capital. In many previous works, the concept of "total accessed prestige" is used as the main index and measure for social capital. Total accessed prestige refers to the volume of social capital (Flap and De Graaf, 1986; Hsung and Hwang, 1992) which is calculated as a cumulative prestige for all the jobs accessible for each individual.

The two concepts of high prestige social capital and low prestige social capital are also used to assess individual social capital. Van der Gaag (2004, ch. 6) was the first to use these two concepts to assess social capital with the position generator. For this research these two indexes are obtained respectively from the sum of "jobs in the high prestige category to which the informant has access" and "jobs in the low prestige category to which the informant has access". The reliability of these indices was examined using Cronbach Alpha coefficient in SPSS. Table 4 indicates the values of this coefficient for the indexes of high prestige social capital, low prestige social capital, and the total index of social capital (Total Accessed Prestige). Using Cronbach Alpha for these indexes, it was found that elimination of each of the items (questions) decreases reliability level. Thus the best state for each of the indexes is to take into account all the items identified in Table 4.

Table 5 demonstrates the holistic information of the three measures of social capital obtained from the questionnaire. In order to compare between different types of social capital indexes, it is necessary to normalize the existing data. The mean of high prestige social capital for the elites is 0.65 and the mean of low prestige social capital is 0.53. The mean of the total index of social capital is 0.61. So, the level of high prestige social capital is higher than both low prestige social capital and total social capital.

Table 6 deals with the respondents' degree of access to individuals with various positions. More than 98% of the people have access to at least one person in a high prestige position and 94% have access to at least one person with a low prestige position. On the other hand, 52% of the elites have access to all high prestige positions (6 jobs) and 45% have access to all low prestige jobs. The higher level of access to the people with high prestige jobs is mainly the result of the holistic attributes of the statistical population in this study. Since many of the elites work in high prestige positions themselves, they have higher access to people with the same type of jobs.

Table 7 shows how access to high and low prestige social capital varies by individual characteristics. Men have slightly higher access to high prestige positions than women, whereas women have slightly higher access to low prestige positions. In general women have higher total social capital in comparison to men. Individuals with PhD degrees on average have higher prestige social capital and total social capital. Students enjoy higher social capital (both in low prestige and high prestige measures) in comparison to non-students. Single people have lower social capital in comparison to married people.

Social capital differs some among different academic majors. Those in science on average have the highest high social prestige. Technical and engineer majors have the highest low prestige social capital. It is interesting that with regard to the total measure of social capital, there is little difference among the three academic groups as science majors have 5.84, technical and engineering majors have 5.84, and humanities majors have 5.79.

5. The Impact of Education, Gender, Age, and Marital Status on Social Capital

The results from the position generator surveys can be used to investigate the effects of the exogenous variables on social capital. The impact of education, gender, age and marital status on high and low prestige social capital is explained using two separate models with the same independent variables:

HPSC = C(1) + C(2)*MW + C(3)*MS + C(4)*OY +C(5)*DM+C(6)*DP

Where HPSC is high prestige social capital; MS, MW, EDU, and OY are, respectively, marital status, gender, education and age of the informants; C (1) to C (5) are the coefficients of the model. The variable for gender (MW) is a dummy variable; 0 for men and 1 for women. The variable of marital status (MW) is 0 for single people and 1 for married.Two dummy variablesare used for Education: DM (1 for MA graduate and 0 for others) and DP (1 for Ph.D. graduate and 0 for others). The model is estimated in E-Views using the ordinary least squares (OLS) method. The results are shown in Table 8.

The dependent variable measures an individual's social capital, so the model should be interpreted as the extent to which the independent variables increase a person's access to social resources. Gender has a negative and highly significant effect as women have lower access to high prestige social capital. Being married also has a highly significant and positive effect on high prestige social capital. Older people have higher access to high prestige social capital, though the impact is small.The level of education (having an MA or Ph.D. degree) improves access to social resources for high prestige people (i.e., high prestige social capital). This effect is significant at the 10% level.

The R^2 and adjusted R^2 are 0.31 and 0.29, respectively, so the explanatory power of the model is relatively good (since it is based on cross-sectional data).

170

There are many individual differences that cannot be captured by the model (which is expected). Yet it is clear that the independent variables are explaining individual differences in access to high prestige social capital. Growiec and Growiec (2007) argue that survey data also have a high degree of error so some of the unexplained variation could be due to sampling errors.

The model for low prestige social capital has the same specification:

LPSC =C(1) + C(2)* MW + C(3)*MS + C(4)*OY +C(5)*DM+C(6)*DP

Where LPSC indicates low prestige social capital. Table 9 shows the estimation results from the E-views software using OLS.

Notice in Table 9 that being female has a positive and significant effect on low-prestige social capital. This is the opposite that was found with high prestige social capital. It seems that there are certain limitations within women's individual social networks. They have lower access to high prestige positions and their major interactions are with "people who have low prestige jobs". The impact of marital status on low prestige social capital is similar to the previous model; it is positive and significant. The effect of age on low prestige social capital is significant and positive too. People who have an MA degree have more access to low prestige jobs as compared with people who have a Ph.D. degree.

The level of education has a negative effect on low prestige social capital, so increasing the level of education reduces the access one has to resources created by those in low prestige jobs. This is opposite the effect that was obtained with regard to the impact of education for high prestige social capital.

6. Conclusion

This study uses data obtained from questionnaires distributed among the elite members of the National Foundation of the Elites in Tehran province in order to measure people's social capital, i.e., the access that elites have to social capital resources. We considered two types of social capital access, low and high prestige. The results indicate that for elites in Iran (Tehran province) access to social capital is higher among men, married people, PhD graduates and those majoring in engineering and technical fields. The impact of some individual variables, such as education, gender, age, and marital status, was assessed for these two types of social capital. The findings are similar to previous studies from other countries -- education resulted in the formation of more diverse social relationships, but they were more superficial and weaker. Most of these relationships are of an instrumental nature and should be considered as instrumental actions (Lin, 2001a).

Gender (being a female) has a negative effect on high prestige social capital and positive effect on low prestige social capital. Men are more successful in having access to high prestige positions in comparison to women. This confirms the results of other studies that show men are more successful in forming stronger ties. In general the existence of certain institutional rules in social and economic environments limits women's ties and social relationships, though those ties could be deeper in many societies.

The results of the econometric estimations show that marital status and age both have positive impacts on social capital. However, it should be noted that if the age scope of the informants were to include retired and senior citizens, one may see a decrease in the access of high prestige social capital as age increases. This effect for older people was not demonstrated since the oldest informant in this study was 47 years old.

Finally, it should be noted that due to the significance of paying more attention to social capital in the country, conducting more survey studies to determine the size of social capital at the micro, meso and macro levels should provide proper grounds for observing the status of social capital in the country. It is recommended to use different methods of assessing social capital in order to find the best method and technique through comparison. In addition, other studies could be conducted using the position generator technique for other groups and jobs.

References

Bakker, B.; Sieben, I.; Nieuwbeerta, P.; Ganzeboom, H. (1997) Matenvoor prestige, sociaaleconomische status ensocialeklassevoor de Standaardberoepenclassicatie 1992. [Scales for prestige, socio-economic status and social class for the Standard Occupational Classification 1992] SocialeWetenschappen 40(1):1-22.

Babbie, E. R. (2013)Thepractice of social research, 13th Edition, Cengage Learning Pub.

Boxman, E.; De Graaf, P.M.; Flap, H.D. (1991) The impact of social and human capital on the income attainment of Dutch managers. Social Networks 13:51-73.

Campbell, K.E.; Lee, B.A. (1991) Name generators in surveys of personal networks. Social Networks 13:203-221.

Campbell, K.E.; Marsden, P.V.; Hurlbert, J.S. (1986) Social resources and socioeconomic status. Social Networks 8:97-117.

CBS (Central Bureau of Statistics) (1993) Standaardberoepenclassicatie 1992 [Standard Occupational Codes for 1992] 's-Gravenhage (The Hague, Netherlands): SDU uitgeverij (SDU Press)/ CBS-publikaties.

Erickson, B.H. (1996) Culture, class, and connections. American Journal of Sociology, 102:217-251.

Esmaeeli, R. (2006) Investigation of indices of social development and its ranking in cities in Isfahan province.PhD dissertation. Department of Social Sciences, Faculty of Literature and Humanities, Isfahan University, Supervisor: Dr. Rabani and Dr. Kalantari. Advisor: DrArizi and DrGhasemi (in farsi).

Fine, B. (2002) Thosesocial capitalists. Antipode, pp. 796-799.

Flap, H. (1999) Creation and returns of social capital: A new research program. La Revue Tocqueville XX(1):5-26.

Flap, H. (2002) No man is an island. In: Lazega, E.; Favereau, O. (eds.) Conventions and structures. Oxford: University Press.

Flap, H.; De Graaf, N.D. (1986) Social capital and attained occupational status. Netherlands Journal of Sociology 22:145-161.

Ghafari, G. (2005) Measurement and explanation of social capital in Iran, Research Project Requested by The Ministry of Domestic Affairs (available at the library of the Ministry of Domestic Affairs)(in farsi).

Grootaert, C.; Narayan, D.;Jones, V. N.;Woolcock, M (2004) Measuring social capital. World Bank Working Paper No. 18.

Growiec, J.; Growiec, K.(2007) Social capital, well-being, and earnings: theory and evidence from Poland, Warsaw, Poland, Foundation of Polish Science,

Harper, R. (2002).The measurement of social capital in the United Kingdom.Office for National Statistics.

Hsung, R-M; Hwang, Y-J. (1992) Job mobility in Taiwan: job search methods and contacts status. XII Int. Sunbelt Soc. Network Conf. San Diego, February.

Kawachi, I.; Kim, D.; Coutts, A.;Subramanian, S. V. (2004) Commentary: Reconciling the three accounts of social capital. International Journal of Epidemiology, 33(4), 682–690 [discussion 700-684].

Lin, N. (1982) Social resources and instrumental action. In: Marsden, P.V and Lin, N. (eds.) Social structure and network analysis. Beverly Hills, CA : Sage.

Lin, N. (2001a) Social capital: a theory of social structure and action. Cambridge: Cambridge University Press.

Lin, N. (2001b) Building a network theory of social capital. In: Lin, N.; Cook, K.; Burt, R.S. (eds.) Social capital: theory and research. New York: Aldine De Gruyter.

Lin, N.; Dumin, M. (1986) Access to occupations through social ties. Social Networks 8:365-385.

Lin, N.; Fu, Y.; Hsung, R. (2001) Theposition generator: measurement techniques for social capital. In: Lin, N.; Cook, K.; Burt, R.S. (eds.) Social capital: theory and research. New York: Aldine De Gruyter.

Lofors, J.;Sundquist, K. (2007) Low linking social capital as a predictor of mental disorders. Social Science and Medicine, 64: 21-34.

Marsden, P.V. (1987) Core discussion networks of Americans. American Sociological Review 52:122-131.

McCallister, L.; Fischer, C. (1978) A procedure for surveying personal networks. Sociological Methods and Research 7:131-148.

Moerbeek, H. (2001) Friends and foes in the occupational career. Nijmegen: Ph.D. dissertation.

National Foundation of the Elites (2011) Report on programs and performance of the national foundation of the Elites (September 2011), Public Relations of the National Foundation of the Elites (in farsi).

Piran, P.;Moosavi, M. T.;Shiyani, M. (2007) Conceptual work base and conceptualization of social capital (focus on Iran). Social Welfare Quarterly, Year 6, No. 23 (in farsi).

Serageldin, I.; Grootaert, C. 2000 Defining social capital: an integrative view in, Social capital a multifaceted perspective, edited by Dasgupta,P.

Soleimani, M. (2008) Measuring the effects of social capital on economic growth in Islamic Republic of Iran, MA thesis (in farsi).

Turner, J. (2000) The formation of social capital, in Dasgupta, P.;Serageldin, I. (Eds.), Social Capital: A Multifaceted Perspective. Washington, DC: The World Bank.

Van der Gaag, M.P.J. (2005)The measurement of individual social capital. Groningen: Ph.D. dissertation.

Van der Gaag, M.P.J.; Snijders, T.A.B., 2005 The resource generator: Social capital quantification with concrete Items. Social Networks 27(1):2005:1-29

Van der Gaag, M.P.J.;Snijders, T.A.B. (2003) A comparison of measures for individual social capital. Paper presented at the conference "Creation and returns of social capital"; October 30-31, Amsterdam, The Netherlands.

Van Der Gaag, M.P.J. (2004) The measurement of individual social capital. Ph.D. dissertation

Van Der Gaag, M.P.J.; Snijders, T.A.B. (2003a) Proposals for the measurement of individual social capital. Forthcoming in: Flap, H.; Volker, B. (eds.)Creation and returns of Social Capital. London: Routledge.

Volker, B. (1995) Should auld acquaintance be forgot...? Institutions of Communism, the Transition to Capitalism and Personal Networks: The Case of East Germany. Amsterdam: Ph.D. dissertation.

Volker, B.; Flap, H. (1999) Getting ahead in the GDR: social capital and status attainment under communism. ActaSociologica 41(1):17-34.

Wellman, B. (1979)The community question, American Journal of Sociology, 84, 1201-1231.

Table 1: Characteristics of the Sample

		Number
Gender	Female	124
	Male	244
Marital status	Single	133
	Married	183
	not mentioned	52
Degree	Master's	37
	MA	165
	PhD	159
	Others or not mentioned	7
Majors	Science	91
	technical and Engineering	151
	Humanities	80
	Others or not mentioned	46
Number of students (those who have mentioned it)		117
Total		368

Table 2: Summary of the results of Position Generator Questionnaire (Sample size of 368 people)

Item number	Do You Know Anyone In The Following Position?	Number of "yes"		Type of relationship if the answer is Yes					
				Acquaintance		Friend		Family member	
		N	%	N	%	N	%	N	%
1	Lawyer, Solicitor	285	77%	87	24%	126	34%	72	20%
2	Physician	244	66%	76	21%	60	16%	108	29%
3	Member of Parliament	142	38%	115	87%	11	3%	8	2%
4	Manager of a Governmental Organization	244	66%	79	22%	119	32%	46	13%
5	Head of Office for a Manager (Excluding Where You Work)	180	49%	98	27%	42	11%	40	11%
6	IT Specialist	175	48%	71	19%	60	16%	44	12%
7	Director of R&D Department of a Factory	202	55%	103	28%	82	22%	17	5%
8	CEO of a Manufacturing Company	235	64%	118	32%	65	18%	52	14%
9	Head of a Guild	101	27%	73	72%	25	25%	3	3%
10	Supplier of Professional Software (Related to Your Field of Study)	135	37%	60	16%	60	16%	15	4%
11	Head of an importing company of laboratory equipment and materials	120	33%	61	17%	43	12%	16	4%
12	Member of Research Organization (Excluding Where You Work)	291	79%	139	48%	103	35%	49	17%
13	Banker (or a Person Who Works at a Higher Position for a Bank)	236	64%	72	20%	111	30%	53	14%
14	Author/Artist/Musician	231	63%	88	24%	93	25%	50	14%
15	Cleric or a Person Who Could Answer Your Sharia Question	259	70%	85	23%	77	21%	97	26%
16	Real Estate Agent	164	44%	127	35%	14	4%	3	1%
17	Police Officer	195	53%	114	31%	50	14%	31	8%
18	Someone who has an insurance company (Representative)	207	56%	56	15%	92	25%	59	16%
19	Mechanic	233	63%	81	22%	19	5.2%	133	36%
20	Nurse (Medical Personnel at a Hospital)	77	21%	37	10.%	22	6.0%	18	5%
21	The Head of a Cleaning Company	159	43%	69	19%	20	5%	70	19%
22	Hairdresser/ Barber	236	64%	121	33%	80	22%	35	10%
23	Restaurant or Catering Company Owner	229	62%	116	32%	93	25%	20	5%
24	Driver of a public transport vehicle	176	48%	49	13.3%	29	8%	98	27%
25	Truck Driver	73	20%	67	18.2%	4	1%	2	1%
26	Facilities Repair Specialist (Plumber, Electrician, Etc.)	155	42%	107	29%	31	8	17	5%
27	Unskilled Laborer	87	23%	73	20%	8	2%	6	2%

Table 3: Job Prestige Ranking

Job	Mean of scores	ranking	category
Unskilled labor	4.6	1	1
Truck Driver	6.5	2	1
Real Estate Agent	7.5	3	1
Hairdresser/ Barber	8.5	4	1
Driver of a Public Transport Vehicle	8.8	5	1
Mechanic	10.6	6	2
Facilities Repair Specialist (Plumber, Electrician, Etc.)	11.2	7	2
Police Officer	11.6	8	2
Suppler of Professional Software (Related to Your Field of Study)	13.1	9	2
Banker (or a Person Who Works at Higher Positions of Banks)	14.3	10	2
Nurse (Medical Personnel at a Hospital)	14.7	11	2
The Head of a Cleaning Company	14.8	12	2
Someone who has an insurance company (Representative)	14.9	13	2
Head of Office for a Manager (Excluding Where You Work)	15.0	14	2
Restaurant Or Catering Company Owner	15.2	15	2
IT Specialist	17.6	16	3
Cleric or a Person Who Could Answer Your Sharia Question	17.9	17	3
Member of Research Organization (Excluding Where You Work)	18.1	18	3
Head of an Importing Company of Laboratory Equipment And Materials	18.9	19	3
Director of R&D Department of a Factory	19.0	20	3
Head of a Guild	19.5	21	3
Manager of a Governmental Organization	22.0	22	4
Lawyer, Solicitor	22.4	23	4
CEO of a Manufacturing Company	22.6	24	4
Physician	22.9	25	4
Author/Artist/Musician	24.3	26	4
Member of Parliament	25.6	27	4

Table 4: Reliability of Indexes Using Cronbach Alpha

Index	Cronbach Alpha Coefficient	Standard Cronbach Alpha Coefficient	Number of Items
High Prestige Social Capital	0.827	0.849	6
Low Prestige Social Capital	0.829	0.856	5
Total Index of Social Capital (Total Accessed Prestige)	0.817	0.832	27

Table 5: Holistic Information Pertaining to Measures of Social Capital

	Min	Max	Mean	Normalized mean	Standard deviation	Coefficient of variation	Skewness
High Prestige Social Capital	0.00	6.00	3.89	0.65	1.49	0.38	-0.459
Low Prestige Social Capital	0.00	5.00	2.65	0.53	1.43	0.54	-0.459
Total Index of Social Capital (Total Accessed Prestige)	1.40	9.50	5.83	0.61	1.63	0.28	-0.489

Table 6: Maximum and Minimum of Access to High and Low Prestige Jobs

		High Prestige Positions
People Who Have Access to at Least One Person	Number	360
	percent	98%
People Who Have Access to All Positions	number	52
	percent	14%

Table 7: Social Capital in Sub-Groups of the Elites

		N	High Prestige Social Capital			Low Prestige Social Capital			Total Index of Social Capital (Total Accessed Prestige)		
			Min	Max	mean	Min	Max	mean	Min	Max	mean
Gender	Female	124	0	6	3.65	0	5	2.67	1.7	9.1	5.86
	Male	244	0	6	4.01	0	5	2.64	1.4	9.5	5.81
Degree	Master's	37	0	6	3.54	0	5	2.74	1.7	9.3	5.78
	MA	165	0	6	3.96	0	5	2.73	1.4	9.1	5.92
	PhD	159	0	6	4.08	0	5	2.64	1.6	9.5	5.96
	Student	117	0	6	3.64	0	5	2.61	1.5	9.2	5.8
	Non-student	251	0	6	4.01	0	5	2.67	1.4	9.5	5.85
Marital status	Single	133	0	6	3.99	0	5	2.70	1.4	9.5	5.85
	Married	183	0	6	3.83	0	5	2.64	1.5	9.2	5.82
Majors	Science	91	0	6	3.94	0	5	2.60	1.7	9.1	5.84
	Technicaland Engineering	151	0	6	4.01	0	5	2.69	1.6	9.5	5.84
	Humanities	80	0	6	3.77	0	5	2.66	1.4	9.2	5.79

Table 8: Effects of Variables on High Prestige Social Capital

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.117645	0.036861	3.192053	0.0000
MW	-0.016361	0.001623	-10.08182	0.0000
MS	0.005494	0.001524	3.604597	0.0004
OY	0.076022	0.012903	5.881824	0.0000
DM	0.037196	0.020819	1.786637	0.0751
DP	0.115596	0.059402	1.947273	0.0526

R-squared	0.319291	Mean dependent variable	2.238040
Adjusted R-squared	0.298927	S.D. dependent variable	0.449088
S.E. of regression	0.012073	Akaike info criterion	-5.973704
Sum squared residuals	0.038332	Schwarz criterion	-5.893525
Log likelihood	809.4632	Hannan-Quinn criterion.	-5.941504
F-statistic	74117.15	Durbin-Watson stat	2.002673
Prob(F-statistic)	0.000000		

Table 9: Effects of Variables on Low Prestige Social Capital

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.365795	0.050264	7.277443	0.0000
MW	0.062698	0.022707	2.761125	0.0062
MS	0.054625	0.020786	2.627996	0.0091
OY	0.014222	0.000736	19.33576	0.0000
DM	-0.030060	0.011552	-2.602170	0.0097
DP	-0.061205	0.022575	-2.711192	0.0071

R-squared	0.341726	Mean dependent variable	0.455078
Adjusted R-squared	0.323507	S.D. dependent variable	0.166618
S.E. of regression	0.164648	Akaike info criterion	-0.747956
Sum squared residuals	7.129695	Schwarz criterion	-0.667777
Log likelihood	106.6001	Hannan-Quinn criterion.	-0.715756
F-statistic	2.290334	Durbin-Watson stat	1.990751
Prob (F-statistic)	0.046229		