

VASIL POPOVSKI*
SLOBODAN LEVKOVSKI**

**SOCIAL CAPITAL AND PEOPLE WILLINGNESS TO CONTRIBUTE
FOR ENVIRONMENT PROTECTION IN REPUBLIC OF NORTH
MACEDONIA**

Abstract

This paper is focused on association between different types of individual social capital and people's willingness to improve the living environment in North Macedonia. Social capital on individual level is analysed via two dimensions: structural social capital and cognitive social capital. The structural social capital is measured by size, type and frequency of using networks and also as activity in community activities, while cognitive social capital is measured by quality of social relationships such as different types of trust and norms, sense of belonging and togetherness, lacking of solidarity, helpfulness, participation in problem solving activities. Willingness to contribute for environment protection is measured by proxy measure of people's willingness to pay bigger taxes for environment protection. Data was gathered in the period of 20th December 2023 till 20th January 2024. Through the research, total of 1,453 citizens in North Macedonia gave valid responses of the questionnaire that were used for analysis. The analysis suggests that personal activity in community lead activities, norms of cooperation, participation in problem solving activities for quality of life and perceived participation of others in community activities, have statistically significant positive association with willingness to pay bigger taxes for environment protection.

Keywords: social capital, environment, sustainable development

JEL Classification: Z13, Q58, C20

* PhD, Institute of Economics-Skopje, University Ss. Cyril and Methodius-Skopje, Republic of North Macedonia. E-mail: vasil@ek-inst.ukim.edu.mk

** PhD, SOS Children's Village N.Macedonia, Republic of North Macedonia, E-mail: bobilevkovski@gmail.com

INTRODUCTION

Many researches and international organizations are focused on environment protection. This is the focus of SDGs of United Nations. Therefore, there is a huge interest in research focused on contributing factors for environment protection.

There are a lots of studies in different fields such as sociology and economics that are analysing how socio-economic phenomena influence environment. In these studies, for explaining the variation of environment protection on individual level are used individual characteristic and demographics such as age, gender, employment, education and income. Also, there are studies that explain variation through social capital. Because social capital is a very complex and multidimensional concept, a lot of researchers are using proxy measures for analysing its particular individual aspects and associations to other concepts. Multidimensionality is the reason why it is needed to analyse different aspects of social capital and their association with environment protection.

Contribution in the research topic of association of social capital and environment protection is very important, since there is the lack of research on the subject in North Macedonia. It is very important to make national analysis because of the cultural differences between the countries that can produce different conclusions about the subject. Also, in the current research papers, usually there is included only a couple of aspects of social capital or proxy measure. This paper will try to include many aspects and measure of social capital to grasp more complex view of the concept and its association with environment protection on individual level.

Research subject of this paper is individual social capital and its association with willingness to contribute for environment protection by paying higher taxes. The goal of this paper is to determine which of the different dimensions of social capital are associated with individual environment protection willingness. General hypothesis of the paper is: individual social capital is positively associated with willingness to pay higher taxes for environment protection. In order to achieve the goals of the paper and to prove the hypothesis, this paper will elaborate about individual social capital, it will present some research findings about the subject, and will make a multiple linear regression analysis. The conclusion follows in the final part.

1. CONCEPT OF SOCIAL CAPITAL

When defining social capital, there are different approaches and understandings, mostly due to different epistemological and ontological foundations, different fields of interest and context, different perspectives of benefit and different methodologies and measurement of the concept. In different conceptual approaches, there is significant diversity and complexity in defining social capital. Definitions in the literature, suggest that five different conceptual approaches can be observed: the interpersonal network-oriented approach, the resource-oriented approach, the normative approach, the Pierre Bourdieu approach, and the heterodox approach. Although the authors take a certain approach, often when defining social capital, the definitions may contain a combination of different approaches.

The interpersonal network approach focuses on the structure of networks between people and groups of people. Authors such as Ronald Burt (2000) and Mark Granovetter (1973), who have this approach to definition, consider that social capital is the relationships between individuals, that is, their interpersonal network from which a certain benefit arises. Interpersonal network analysis includes mapping interpersonal connections, network configuration, and determining network quality such as segregation, density, leadership.

The approach to conceptualizing social capital focused on resources has elements of the approach focused on interpersonal networks, but with the main difference that this approach gives the main importance to the resources that are available and can be mobilized through interpersonal networks. According to Nan Lin, the main proponent of this approach, resources are defined as wealth, status, power, or a network of interpersonal relationships of people that are directly or indirectly related to individuals (Lin, 2001, p. 30-40).

The normative approach is aimed at the nature of the social organization, that is, the norms, values and beliefs that influence the way of social interaction. The main authors who apply this approach, such as James Coleman (1988), Robert Putnam (1995), Francis Fukuyama (1999), through this way of defining social capital indicate the degree of cooperativeness and trustworthiness of individuals.

Pierre Bourdieu's (1986) approach differs from others in that it focuses on the structures that enable unequal access to institutional resources. Through this approach, which is based on the theory of social reproduction, social capital allows an individual to exercise power over a group of people or individuals who mobilize resources. In fact, this approach talks about how an individual who has a high position in a certain social structure can have many benefits due to the application of power to others.

There are also a number of approaches that do not fit into the previous categorizations. Examples of a heterodox approach to social capital are the definition of social capital as goodwill directed towards individuals or a group of people (Adler and Kwon, 2002, p.19); sympathy for others (Robison et al., 2002, p.3); psychological states, perceptions and behaviors (Kostova and Roth, 2003, p.300).

Regarding the definitions, Norman Uphoff (1998) divides social capital into two related categories: structural and cognitive. The structural category is related to various forms of social organization such as roles, rules, former principles, procedures, as well as a wide variety of interpersonal networks that contribute to cooperation and collective activities that contribute to common benefit. The cognitive category derives from mental processes and ideas, together with culture and ideology, that is, norms, values, behaviors and beliefs that contribute to collective cooperation that contributes to common benefit. The first category enables interpersonal cooperation, and the second category predisposes it. In practice it is unlikely that one category exists without the other, although there are some examples.

In this paper, we will follow Uphoff distinction of social capital of structural and cognitive social capital on individual level that include nearly all the approaches of definition of social capital mentioned above. The idea is to include all of the different and complex measures of this concept and to analyse which element have the most significant impact on the environment protection.

2. SOCIAL CAPITAL AND PRO-ENVIRONMENTAL BEHAVIOUR

Environmental quality is often associated with people's pro-environmental behavior (Steg et al., 2014, p.105). Studies show that individuals differ systematically in their tendency towards environmental attitudes and behaviors, which are influenced by the socio-spatial context. This raises the question of which of the factors of pro-environmental behaviors that are related to the individual's place of residence outweighs the factors related to the individual's character (Videras et al., 2012, p.37). Empirical findings indicate a greater probability of pro-environmental activities of individuals who have more extensive interpersonal ties (Macias and Williams, 2016, p.403-412) or individuals who have so-called family "green" ties (Videras et al., 2012, p.39). One of the more robust findings in the literature is that strong interpersonal ties in a place of residence increase the likelihood of people taking actions to improve the environment, such as recycling or not using harmful products at all. These connections are reflected through the time spent with neighbors in leisure time, which the authors Macias and Williams (2016, p.403-412) proved to be the most significant factor in increasing the probability of pro-environmental behavior. The benefit of these meetings is the exchange of information about developments in the place of residence and feedback (Aral and Van Alstyne, 2011, p.95).

The influence of behavioral norms can be activated through the increased level of awareness in a certain community, regarding involvement in activities to contribute to the environment (McKenzie-Mohr, 2000, p.534). Pressure from norms, combined with demonstrated behavior in the community, can motivate people to engage in environmental conservation practices (Miller and Buys, 2008, p.555). Countries that have higher levels of social trust tend to recycle or use organic food more, which indicates the impact of social trust on collective action to preserve the environment (Bjørnskov and Sønderskov, 2013, p.1230).

In South Korea's research on the influence of social capital and people's behavior towards environmental conservation, (Cho and Kang, 2017, p.299-306) found that interpersonal networks between residents in a settlement directly influence their intention and the capacity to undertake environmental conservation practices. Finally, the authors point to a sense of community as a factor that has an impact on increasing volunteering in environmental conservation activities.

Macias and Williams (2016, p.403-412) explore the relationship between social capital and people's pro-environmental behavior, willingness to sacrifice for environment and involvement in organized environmental activism. The authors prove that, although trust does not have a statistically significant relationship with people's pro-environmental behaviours, it is a major influencing factor on the effort to make sacrifice for environment, that is, generalized trust is positively related to paying higher taxes and product prices, cutting back on living standards and doing activities that are good for the environment. The impact of trust in government is statistically significant for the same variables that are affected by generalized trust, with the exception of cuts in living standards. Likewise, participation in religious gatherings is positively associated with the willingness to pay higher taxes and product prices.

Building on the above authors, some of the authors (Hao et al., 2019, p.854-858) make an analysis of the impact of social capital on environmental concerns in China. Their findings confirm the thesis of Macias and Williams that socializing with relatives and friends has a positive influence on economic sacrifice for nature protection. If an individual's peers predominate in pro-environmental attitudes, then those values and attitudes can easily spread through interpersonal networks. The results in their paper also indicate the positive impact of trust with economic sacrifice for nature protection. The positive relationship of trust shows how trust helps ensure compliance with collective rules when people perceive environmental health as a shared interest. The conclusion that trust positively affects the economic sacrifice of individuals for nature protection is also indicated in Yogo's analysis that refers to African countries (Yogo, 2015, p.667).

Through the literature review, it can be seen that the greatest focus of the research so far has been placed on the time spent with friends, the structure of interpersonal relationships, generalized trust and trust in neighbours and behavioural norms. In the next part, the paper will try to add on the previous research, but also to expand the research by including a number of proxy measures of structural and cognitive social capital and determining their connection with environmental protection.

3. EMPIRICAL RESEARCH ABOUT SOCIAL CAPITAL AND WILLINGNESS TO IMPROVE ENVIRONMENT IN REPUBLIC OF NORTH MACEDONIA

Main purpose of this paper is to contribute to scientific evidence of association of different types of individual social capital to individual willingness to contribute for environment protection in Republic of North Macedonia. In addition, in using different proxy measures for measurement of structural and cognitive social capital on individual level, this paper makes significant contribution to the research focused on enhancing willingness for better environment. These kind of research topics are very rare in Republic of North Macedonia.

3.1. Research methodology

Research was conducted on a sample of citizens in N. Macedonia above 16 years of age, in order to prove the association of individual social capital with individual willingness to contribute for environment protection. The research was conducted in the period of 20th December 2023 till 20th January 2024. In order to gather data, questionnaire was developed in google forms and distributed via e-mail, social media, platforms for communications using snowballing technique. The questionnaire consisted 30 questions regarding demographics, structural social capital, cognitive social capital and willingness to contribute for environment protection. Through the research, total of 1,453 citizens in N.Macedonia gave valid responses of the questionnaire that were used for analysis.

Data are used to perform linear regression analysis. As control variables for the linear regression analysis, are used demographic variables: age, education, income and gender. Willingness to contribute for environment protection is measured by proxy measure using the question” How willing are you to pay bigger taxes for environment protection”, on a scale from 0 (Not at all) to 5 (completely willing). This measure is the dependent variable in the regression analysis.

As independent variables are used measures for structural and cognitive social capital. Structural social capital is measured by: number of close friends, number of other friends, type of friends regarding their similarity in education and income, frequency of time spent with friends and personal activity in community activities, that are measured on a scale from 1 to 5, except the last variable is measured on a 1 to 6 scale. Cognitive social capital is measured

by: different types of trust such as generalized, personalized, neighborhood and institutionalized trust on a scale from 0 to 10; norms of cooperation on a scale from 1 to 5 and norms of reciprocity on a scale from 1 to 10; sense of belonging, sense of togetherness and lacking of solidarity on a scale from 1 to 5; perceived helpfulness of other on a scale from 1 to 5; participation in problem solving activities for quality of life and perceived participation of other in community activities on a scale from 1 to 5.

3.2. Analysis of the results

In order to analyze the association of different levels of individual social capital and subjective well-being at youth in social risk, linear regression analysis was developed:

$$(1) \quad Y = \beta + \beta_p X_{ip} + \epsilon$$

Multiple linear regression model contains one dependent variable – willingness to contribute for environment protection. As independent variables are different measures for structural and cognitive social capital, and controlling demographics variables.

Multiple linear regression model was developed. The econometric model contains all mentioned variables. From this model (Table 1) it can be seen that determination coefficient is $R^2 = 0.1197$ which mean that 11.97% of the variation in willingness to contribute for environment protection can be explained by the variation in independent variables. This model has statistically significant F-test, suggesting that at least one independent variable is associated with the dependent variable, and that this model is statistically significant. The results suggest that independent variable from structural social capital – personal activity in community lead activities, has statistically significant positive association with willingness to pay bigger taxes for environment protection. Independent variables from cognitive social capital – norms of cooperation, participation in problem solving activities for quality of life and perceived participation of others in community activities, have statistically significant positive association with willingness to pay bigger taxes for environment protection. Demographic variables age, education and income have statistically significant positive association with willingness to pay bigger taxes for environment protection, and gender have statistically significant negative association with the dependent variable, meaning that woman are more likely to pay bigger taxes for environment protection.

Table 1. Multiple linear regression analysis

Dependent variable: Willingness tax		
Method: Least Squares		
Sample: 1453		
Observations: 1453		
Variables	Coefficient	Probability (P)
Constant	0,2827	0,3802
Age	0,0112	0,0004
Education	0,1015	0,0351
Income	0,1406	0,0000
Gender	-0,2780	0,0002
Cl_friends	-0,0137	0,7278
Ot_friends	0,0223	0,4440
Type_fr_income	0,0676	0,0586
Type_fr_education	0,0444	0,1843
Friends_freq	-0,0244	0,4559
Personal_activity	0,0733	0,0033
Gen_trust	0,0021	0,9059
Personalized_trust	-0,0043	0,7978
Neighbour_trust	-0,0070	0,7980
Inst_trust	0,0350	0,1347
Norms_cooperation	0,1030	0,0464
Norms_reciprocity	0,0160	0,2888
Belonging	-0,0139	0,6641
Togheterness	0,0004	0,9925
Lack_of_solidarity	0,0425	0,1405
Help_community	-0,0165	0,6781
Participation	0,1133	0,0004
Action_others	0,1247	0,0052
R2		0,1197
F-statistic		8,8360
Prob(F-statistic)		0,0000
Durbin-Watson stat		1,9290

Note: bold means significant at 5% level.

Source: Author's research

Independence of observations is confirmed out of this analysis with Durbin-Watson stat with value 1.9290. Also, it can be noted that this model does not contain multicollinearity since all the values from the multicollinearity test have VIF coefficient lower than 10.

3.3. Discussion

Analysis shows that only personal activity in membership in community activities for enhancing life in the living place, as an element of the structural social capital, is positively associated to willingness for paying bigger taxes for environment protection. This can indicate that the people which are more aware of community and are active in organizations, have higher will to protect the environment. Other indication is that the people that are more active in community organizations, learn more about the environment and quality of life and nature, so they are more willing to contribute to environment protection. This finding doesn't show causality, only association. Other elements of structural social capital don't have positive statistical association with the dependent variable. This is opposite from the existing literature which indicate that time spent with friends is positively related with the dependent variable (Macias and Williams, 2016). In North Macedonia this may indicate that people do not exchange information on environmental protection and are not encouraged between them to pay higher taxes for environment protection. Also, interesting finding is that institutionalized trust on local level is not statistically significant variable, which means that trust in institutions is not related with paying bigger taxes for environment protection.

Cognitive social capital have three variables that have statistically positive association with the dependent variable. When norms of cooperation are developed, people work with each other and do more about their place of living and environment. They have higher motivation to enhance the environment. Participation in solving problems in community and also perceived participation of other people in community problem solving activities, can enhance the social cohesion, build values and shared vision and goals about preserving nature and environment, which can contribute to willingness to pay bigger taxes together. The analysis shows that in North Macedonia, regarding social capital and its association with environment protection via paying bigger taxes for environment, it is more important that people to be community active, to participate in community problem solving activities and community organizations, to cooperate between each other, than to spent more time with

friends or have bigger number of friends or have more trust in institutions or people. It should be invested in community activism and cooperation in order to collect more financial capital in order to protect the environment.

This analysis has limitations that need to be addressed in the next papers. First limitation is the cross-sectional analysis which cannot show causality of the variables. Other papers should use panel data to address this limitation. With these data, it can be developed path analysis and structural equation modelling in order to find all complex dynamics between variables and causal mechanism. Second limitation is the challenge of measuring social capital. Each of the variables are measured by proxy measures. In other papers it can be develop more complex measures for each variable with more questions and then by using factor analysis to be made better measurements of each variable. In order to have better analysis, triangulation is also needed. To include qualitative analysis as support method is needed. Finally, the next papers should be focused more on social capital and environmental lifestyle and behavior, not just willingness to contribute by paying bigger taxes.

CONCLUSION

This paper showed theoretical concepts of social capital on individual level through two dimensions: structural and cognitive individual social capital and its association with individual willingness for environmental protection. The association of these concepts was analyzed through research on 1,453 citizens of Republic of North Macedonia.

Multiple linear regression analysis was conducted in order to gain results. From the econometric model can be concluded that independent variable from structural social capital – personal activity in community lead activities, and independent variables from cognitive social capital – norms of cooperation, participation in problem solving activities for quality of life and perceived participation of others in community activities, have statistically significant positive association with willingness to pay bigger taxes for environment protection. Demographic variables age, education and income have statistically significant positive association with willingness to pay bigger taxes for environment protection, and gender have statistically significant negative association with the dependent variable, meaning that woman are more likely to pay bigger taxes for environment protection.

Results of this paper show that in Republic of North Macedonia should be invested in community activism and people's cooperation in order to collect more financial capital which can be used to develop measures for environment protection. This is in line with Sustainable Development Goals which every country obliged to achieve.

References

1. Adler, P.S., Kwon, S.-W., 2002. Social Capital: Prospects for a New Concept. *Acad. Manage. Rev.* 27, 17.
2. Aral, S., Van Alstyne, M., 2011. The Diversity-Bandwidth Trade-off. *Am. J. Sociol.* 117, 90–171.
3. Bjørnskov, C., Sønderskov, K.M., 2013. Is Social Capital a Good Concept? *Soc. Indic. Res.* 114, 1225–1242.
4. Bourdieu, P., 1986. The Forms of Capital, in: Biggart, N.W. (Ed.), In J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education*. Wiley, pp. 241–258.
5. Burt, S. Ronald, 2000, *The Network Structure Of Social Capital*, *Research in Organizational Behavior*, Volume 22, Pages 345-423.
6. Cho, S., Kang, H., 2017. Putting Behavior Into Context: Exploring the Contours of Social Capital Influences on Environmental Behavior. *Environ. Behav.* 49, 283–313.
7. Coleman, J.S., 1988. Social Capital in the Creation of Human Capital. *Am. J. Sociol.* 94, S95–S120.
8. Fukuyama, F., 2000. Social Capital and Civil Society. *IMF Work. Pap.* 00, 1.
9. Granovetter, S. Mark, 1973, *American Journal of Sociology*, Vol. 78, No. 6, pp. 1360-1380.
10. Hao, F., Michaels, J.L., Bell, S.E., 2019. Social Capital's Influence on Environmental Concern in China: An Analysis of the 2010 Chinese General Social Survey. *Sociol. Perspect.* 62, 844–864.
11. Kostova, T., Roth, K., 2003. Social Capital in Multinational Corporations and a Micro-Macro Model of Its Formation. *Acad. Manage. Rev.* 28, 297.
12. Lin, N., 2001. *Social Capital: A Theory of Social Structure and Action*, 1st ed. Cambridge University Press.
13. Macias, T., Williams, K., 2016. Know Your Neighbors, Save the Planet: Social Capital and the Widening Wedge of Pro-Environmental Outcomes. *Environ. Behav.* 48, 391–420.

14. McKenzie-Mohr, D., 2000. Fostering sustainable behavior through community-based social marketing. *Am. Psychol.* 55, 531–537.
15. Miller, E., Buys, L., 2008. Retrofitting commercial office buildings for sustainability: tenants' perspectives. *J. Prop. Invest. Finance* 26, 552–561.
16. Putnam, R.D., 1995. Bowling Alone: America's Declining Social Capital. *J. Democr.* 6, 65–78.
17. Robison, L.J., Schmid, A.A., Siles, M.E., 2002. Is Social Capital Really Capital? *Rev. Soc. Econ.* 60, 1–21.
18. Steg, L., Bolderdijk, J.W., Keizer, K., Perlaviciute, G., 2014. An Integrated Framework for Encouraging Pro-environmental Behaviour: The role of values, situational factors and goals. *J. Environ. Psychol.* 38, 104–115.
19. Uphoff, N., 2000. Understanding Social Capital: learning from the analysis and experience of participation. *Soc. Cap. Multifaceted Perspect. Sociol. Perspect. Dev. Ser.* 215–252.
20. Yogo, U.T., 2015. Trust and the willingness to contribute to environmental goods in selected African countries. *Environ. Dev. Econ.* 20, 650–672.