DEVELOPING METHODOLOGY TO MEASURE SOCIAL CAPITAL IN URBAN COMMUNITIES IN KYRGYZSTAN

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Soros Foundation Kyrgyzstan and the American University of Central Asia founded SILK in 2019 with the purpose of developing innovative approaches to social change and social justice in Central Asia. Hosted by the American University of Central Asia (AUCA), the Lab brings together research and development organizations to conduct research, publish reports, organize events, make recommendations for public policies, and make use of advanced technologies such as data science to create marketable solutions.

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- Develop innovative approaches to understanding problems and developing solutions
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- Collaborative projects that bring together institutions and sectors
- Results of research will be shared at public events and released to the public domain
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About the author

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Abstract

A review of the social capital literature revealed many ways to measure social capital, as well proved that there is no agreed-upon best method or any single instrument that captures all aspects of social capital. As social capital plays a vital role in our cities, there is a need to develop a reliable tool to measure it and produce an index to allow comparisons between areas. Urban Social Capital Assessment Tool (U-SCAT) was developed based on the A-SCAT methodology with some survey questions taken from other methodologies, but significantly modified and adapted to the cultural context of Kyrgyzstan. The pilot study was conducted in the Archa-Beshik neighborhood, as well as two neighborhoods in Bishkek via online forms. Study participants included 7 residents of different neighborhoods in Bishkek city for cognitive interviews, as well as 32 participants in the Archa-Beshik neighborhood, and 28 respondents in the online survey. The expert interviews were conducted with 11 practitioners, researchers and founders of the existing methodologies. The 17-item tool has demonstrated high internal consistency (Cronbach's alpha α=0.91). Also, seven questions on demographic data are provided to allow descriptive analysis for researchers and practitioners. U-SCAT is a psychometrically valid and reliable tool to measure social capital in urban communities in Kyrgyzstan. It has the potential to be employed by policymakers, researchers and government institutions, as well as it is ready for large scale testing and validation.

Keywords: neighborhood social capital, community, index development, Kyrgyzstan

Background

Social capital has been the focus of many researchers and practitioners to assess its impact on the well-being of individuals and communities. However, due to multiple interpretations of the concept, it has resulted in a variety of ways to measure it across different contexts. To date, there is no social capital measurement instrument that has been developed and cognitively tested in urban communities in Kyrgyzstan. The study has been initiated with the hypothesis that social capital is in decline in Bishkek city. As a result of extensive migration, internal mobility, commercialization of public and private spheres, the society has become more heterogeneous and socially stratified (Miles, 2009), which makes it less able to form strong social connections and retain high levels of trust and societal norms.

Social capital has a number of important benefits to activate individual and societal assets to achieve healthy and prosperous communities. In addition, social capital is a prerequisite for social innovation, which aims to solve current problems taking into consideration societal, environmental and economic implications. Social capital has been long neglected within both academic and institutional dialogues in Kyrgyzstan in particular, and the Central Asian context in general, which has resulted in a limited understanding of its potential to increase the quality of life in communities.

This study attempted to answer two questions: 1) What are the components of social capital in the urban context in Kyrgyzstan?, and 2) What is a reliable and robust methodology to measure social capital in urban communities? The purpose of this study was to identify a manageable list of components of social capital in urban communities, develop instruments to measure them, and construct an index scale to allow comparison between different urban neighborhoods.

Conceptualization

What is Social Capital?

Social capital is a relatively recent theoretical concept that has been primarily developed by Pierre Bourdieu (1986), James Coleman (1990), and Robert Putnam (2001). The main difference in their approaches to studying social capital is that some treat social capital as the property of the individual (Bourdieu), some treat it as the collective property (Putnam), and some see it as having both individual and collective attributes (Coleman).

Pierre Bourdieu examined social capital through the prism of social inequality and symbolic power theories, as he focused on unequal access to resources and social constraints based on individual position in the society. For him, social capital is a property of an individual, rather than a collective asset, and is only available to those who have a position of power to reap the benefits from the social networks (Bourdieu, 1986). Thus, it is not so much about the quality of social networks, as more about having a social status to gain benefits from those social networks. James Coleman connected the theory of social capital with economic theory. He used rational choice theory to explain that individuals engage in social interactions and networks as long as benefits persist (Coleman, 1990). Thus, in one way similar to Bourdieu, Coleman claims that social capital helps an individual achieve certain benefits, however, unlike Bourdieu, Coleman sees social capital rooted in the social structures as a collective asset, not solely possessed by the individuals. He claims that when an individual contributes to the whole community, benefits can be reaped by everyone in the group, and not only by those who invest in the organizations of networks and social relationships. For instance, if there are self-organized watch groups in the neighborhood that help lower the crime rate, everyone in the area benefits from it even without directly participating in it (Coleman, 1990). Considering it as a collective asset, social capital then can be embedded even in larger organizational structures, such as institutions, companies, local communities. Finally, Robert Putnam looks at social capital through the prism of sociology and political science in the context of civil society. In both studies he conducted, in Italy and the United States, he focused more on the impact of communities and civic engagement on the development of democracy,

rather than individual impact. Putnam considers social capital to be a communal attribute that "features of social organizations, such as networks, norms, and trust that facilitate actions of cooperation for mutual benefit" (Putnam, 2001). However, in recent studies, Putnam has been criticized for relying on a wide range of indicators to measure social capital, from national voting turnout to informal personal relationships, such as picnic parties, to formal associations, such as voluntary or trade union organizations (Claridge, 2009).

Further research has expanded social capital into structural (networks) and cognitive (norms and trust) dimensions (Nahapiet and Goshal, 1998). These dimensions have been used by the majority of the authors to study social capital and construct methodologies for measuring it. Structural dimension could be articulated as the "quantity of social relationships" and it characterizes individuals and their social network. It is an objective and observable construct of "what people do" that facilitates collective actions, information sharing through the social structures and networks, group membership and civic engagement. Cognitive dimension of social capital can be regarded as the quality of social relationships, as it defines the level of trust, shared norms and attitudes in the community, making it more a subjective and intangible component (Uphoff 2000). While cognitive elements predispose people toward mutually beneficial collective action, structural elements of social capital facilitate such action (Krishna, 2004).

Understanding various dimensions of social capital can help to identify what factors influence a particular type of social capital (e.g. cognitive and structural). For instance, Amegbor et. al (2020) found the positive influence of neighborhood high cognitive social capital on the levels of depression in South Africa and Japan, while structural social capital was associated with higher mental distress. However, Stafford et al. (2008) found the reverse effect in the United Kingdom, where cognitive social capital was associated with higher mental distress among the population. Therefore, when analyzing the level of social capital of urban communities, it will be possible to identify what type of social capital is prevalent in the community, monitor the change of the dimensions of social capital over time, as well as monitor the dynamics between different types of social capital. Moreover, it will be possible to analyze and understand what factors (e.g. development projects, urban interventions, and other socio-economic events) could

potentially influence each dimension of social capital.

To summarize, social capital has been thoroughly studied through the access to resources and power (Bourdieu), through the social structures which individuals use to achieve their interests (Coleman), and through the social networks that bring people together and create norms of trust and reciprocity (Putnam). Summarizing, Pisani et.al. (2017) claim that social capital is formed by social norms and networks which people use to facilitate cooperation, trust and reciprocity. Thus, it is an intangible resource that does not belong to an individual or group per se, but rather "is formed and transmitted via their social relations among family members, friends, neighbors, colleagues, communities and citizens" which determines collective means and everyday behavior. For the present study, social capital is conceptualized as "networks of social relations that can provide individuals and groups access to resources and various types of support and potentially increase their individual and collective well-being".

Why is a Social Capital important?

Social capital plays an important role in the development of communities and their everyday lives. It allows access to and dissemination of information and other resources through social networks. Social capital facilitates cooperative norms, which in turn can contribute to favorable places of more effective urban interventions (Hasan et.al, 2020). Moreover, social capital has a dynamic nature - it can increase and decrease over time, meaning it is possible to create and design favorable spatial and social conditions for its growth. In particular, communities with high levels of social capital,

1. Are more likely to have *effective civic institutions* and prosper (Putnam, 2001), maintain law and order, and impose informal social control to prevent violent crime and vandalism;

2. Are more likely to have a higher *"collective efficacy"* by having a higher social cohesion level and being able to address challenges and opportunities that have community-wide benefits (e.g. maintenance of public spaces, improvements to apartment building heating systems, adoption of environmentally sustainable practices) (Sampson et al.,1997)

3. Are more likely to have ***better access to various types of resources***, such as information, support and care, economic opportunities, public safety, and citizen participation.

4. Are more likely to be ***resilient to stressors***. Communities with more trust, civic engagement, and stronger networks recover more quickly than fragmented, isolated ones in situations of difficulties (Aldrich, 2014). It became especially relevant in the times of the spread of COVID-19, where the study in the United States found that higher social capital and trust lead to better COVID-19 responses.[1]

1. https://www.jec.senate.gov/public/index.cfm/republicans/analysis/?id=AD81A492-AEDD-419A-8B25-7F2AB2620BCA

5. Are likely to have individuals with ***higher resilience to mental distress and better psychological wellbeing***, especially older adults who are less likely to be depressed and more likely to be supported through existing social support mechanisms. Moreover, individuals in communities with higher social capital are more likely to have a ***longer life expectancy*** (Amegbor et. al, 2020).

Social capital in the urban context

The importance of social capital in cities has been explored by several authors, as early as in 1961 by one of the most prominent urban thinkers Jane Jacobs. In her book, she referred to the importance of neighborhood cohesion and creation of viable public spaces in the urban context. Urban space is the context where the majority of our interactions occur. Despite being highly connected via virtual networks, geography still plays an important role in our everyday life. Urban communities can deploy social connections to improve the quality of life in their neighborhoods. Not only social capital influences our social and urban behavior, it is also that urban design can impact social capital through implementing design principles and interventions that foster social interaction in neighborhoods and public places (Claridge, 2009). Designing certain elements in the space can contribute to the increase of the levels of trust and collective action, which could reinforce a sense of belonging and societal norms. Thus, social capital is crucial for the urban context as it allows to,

1. *Identify potential sites for interventions* for urban planners, designers and researchers. Those neighborhoods that have high levels of social capital, will be more willing to collaborate and more active in participation and implementation, leading to a more effective intervention. Moreover, development projects by the World Bank proved that donors are more likely to invest in areas with high social capital, where collective action contributes to greater development effectiveness (Pisani et.al., 2017);

2. *Map social capital scores across neighborhoods* in the city to gain a bigger picture when selecting sites for the interventions. For instance, when a project is aiming to increase social capital – it will be possible to identify communities with low levels of social capital. Similarly, if the intervention aims to test innovative ideas, it might be more reasonable to choose sites with higher social capital for more effective and quicker results.

3. *Improve design of urban projects.* Analyzing how various urban interventions impact social capital can help designing better urban initiatives in the future (Pisani et.al., 2017). This will allow to identify those design principles that helped to increase social capital in communities in order to implement and replicate them in other interventions. Similarly, the analysis could identify what projects and initiatives have decreased social capital to avoid further implementing them in other places.

4. *Use social capital with other indicators* for comparative analysis, such as crime rates, walkability, public safety, community health, etc.

Measuring Social Capital

Social capital is well established in theoretical discourse, however, the variety of conceptual debates has resulted in difficulties in creating measurable components. There are no robust, widely-accepted, "international" ways to measure social capital across different contexts. Moreover, as social capital is a multidimensional concept, many tools and methodologies have been developed based on a variety of social capital components, as well as across different contexts and fields.

Overview of existing methodologies

Some measurement tools and indexes are based on previous studies of the developed methodologies, while others use the data of the selected variables from existing questionnaires from national and worldwide surveys. For instance, many studies rely on the World Values Survey, which has been conducted across countries since 1981, however, the research outcomes based on some selected indicators from the survey do not meet the theoretical conceptualization of social capital. Other studies rely on suitable proxy measures, such as Putnam (1993) who ranked social capital in Italian regions with the help of a set of measures including, density of membership in formal organizations. Other researchers have been developing methodologies based on theoretical reviews. Social Capital Assessment Tool (SCAT) was developed by Anirudh Krishna and Elizabeth Shrader in 2000, which was later adapted and integrated into SOCAT instrument by the World Bank. SOCAT consists of three parts (community profile, household survey with 60 questions, and organizational profile), which makes it a very lengthy tool. Later, A-SCAT was developed on the basis of the household survey from SOCAT tool. A-SCAT was widely adapted by the researchers, and resulted in various versions like SASCAT, SASCAT-B (adapted for Bangladesh), SASCAT-I (adapted for India). Other methodologies, such as Personal Social Capital Scale (PSCS), are aimed at calculating individual social capital, which were also adapted for different contexts. The full overview of the methodologies can be found in Appendix. There are also tools such as Name Generators, Position Generators, Resource Generators that use surveys to discover the size of the social network of a respondent by naming a certain number of people with whom they share a particular

type of social relationship, or people who have specific jobs (e.g., lawyer, teacher), or people who can provide various resources such as information, influence, support, etc. Social network analysis is used nowadays as a quantitative method to map and measure relationships that exist between people and groups, such as size, structure, diversity, and density. However, these methods do not capture many important aspects of relationship qualities (e.g., closeness, support, trust, values and norms).

Hasan et. al (2019) suggested "a better measurement of social capital should include a battery of indicators that enumerate not only the span of one's social network and the embedded resources that he/she has access to but also the quality of the social relationships" (structural and cognitive social capital). In addition, social capital is a culturally sensitive concept and it should be adapted and examined considering cultural and social context (Zhang et.al, 2019).

Why it is important to measure social capital?

Social capital has the potential to be employed both by academic and non-academic actors. There are several benefits to having the ability to quickly and reliably measure levels of social capital.

1. *Comparative picture about social dynamics.* Periodic measurements of social capital over time can be used to provide a comparative picture about social dynamics, as well as to determine what inputs or factors led to what results in particular, and to track the changing nature of the social dynamic in general.

2. *Analysis of policies and projects.* Data on social capital can contribute to the analysis of policies and projects. Local governments might be particularly interested in determining whether social capital could help in developing initiatives and interventions.

3. *Reinforcement of positive behaviour.* Information about the level of social capital of the community can create incentives for inhabitants to develop their social capital even more, as well as it will be possible to compare the indexes of social capital of

different neighborhoods in the city, thus motivating them to be "the best neighborhood".

4. *Measuring the effectiveness of urban interventions.* A consistent metric of social capital will allow researchers to test the effectiveness of their interventions in urban areas. Clear and comparable, quantitative, before and after intervention data will help motivate inhabitants and organizations to invest resources into the development of urban areas.

5. *Selecting sites for testing new ideas.* Knowing which communities have higher levels of social capital can help with the selection of pilot sites for testing new ideas. Successful pilots will help convince other communities to try those ideas in their communities.

6. *Enter the institutional dialogue*. Standardized metric will allow social capital to enter the institutional dialogue, as well as take its place in policy and public decision making processes.

7. *Enter the academic dialogue*. Evaluation of the impact of urban projects on social capital will contribute to the literature on urban development and social cohesion, in the Central Asian context in particular.

Developing methodology – U-SCAT

The aim of the study was to develop a valid and reliable measurement tool for calculating social capital index in urban communities in Kyrgyzstan. The following criteria were identified for the final version of the instrument:

1. It is a standardized tool to measure social capital in urban communities in Kyrgyzstan (confined urban areas, e.g. neighborhood, district, community);
2. It has a single index (measure) of social capital as an outcome;
3. It has a solid theoretical foundation for its methodology;
4. It is sensitive to the local culture;
5. It allows comparison of a variety of different projects with a simple and concrete index;
6. It is easy to implement and does not contain too many survey questions;
7. It is available for the use for researchers and development workers.

As a multidimensional phenomenon, it makes it hard to measure social capital with a single item. Therefore, a reliable measurement requires multiple items that are combined into an index. An "index" is a quantitative composite measure of several indicators that aims to provide a simplified, coherent, multidimensional value for social capital. A mixed methods approach was applied to develop and validate the tools: (1) Establishment of the theoretical background; (2) Survey design; (3) Cognitive interviewing and cultural adaptation; (3) Pilot testing; (4) Index construction.

1. Theoretical background

First, it is necessary to define social capital and to determine its components based on a theoretical basis. The literature about social capital was reviewed, including the key works, as well as in the context of urban development and Post-Soviet geography. In addition, review of 14 existing methodologies to measure social capital was carried out in order to identify the most suitable instrument to adapt for the context of Kyrgyzstan. The review resulted in a database of the existing methodologies, including survey questions for each (See Appen-

dix). For the selection of a measurement tool to adapt to the context, the following criteria were established: 1) the tool is relevant to the urban context; 2) the tool does not have too many survey questions; 3) the tool has a solid theoretical background in the methodology; 4) the tool is considered to be acceptable by specialists in the area (based on the citations and experts interviews); 5) the tool meets the standard statistical requirements of accuracy, validity and reliability. As a result, A-SCAT1[2] was chosen as the basis for developing the survey questions for our methodology, as well as some survey questions were taken from other instruments which were connected to the urban context. The founder of the A-SCAT, Trudy Harpham, has provided the original questionnaire, along with the description of the components used in the methodology. Further, interviews with the experts and founders of the instruments were conducted to identify current discourses on social capital theory and its measurement (See Appendix for the full list of experts). As the outcome of the first stage, the first draft of the questionnaire was developed, including 17 questions.

2. A-SCAT was developed by Trudy Harpham on the basis of SOCAT (World Bank Social Capital Assessment Tool). A-SCAT is one of the most wide-spread tool adapted by the researchers in different contexts. It has 351 citations on Scopus, as well as its founder Trudy Harpham has been cited more than 2.961 times in relation to social capital research publications.

Besides the selection of the tool, the goal of reviewing the existing tools was to identify common themes and components of social capital in literature and practice. While terminology varied between researchers, it was possible to extract these common features, which were finally used in the methodology for U-SCAT: (1) Social Interaction; (2) Collective Action; (3) Civic Participation; (4) Trust; (5) Social Support; (6) Social cohesion (See Appendix for full description of each component).

2. Survey design

The survey consists of two parts – Demographic section and Social Capital section. The demographic section contains questions about age, sex, employment, length of residence, ownership of home, living alone or with someone and languages used to communicate with neighbors. Social Capital questions include 17 items subdivided into structural dimension (10 questions) and cognitive dimension (7 questions). Structural social capital questions used 4-point Likert scale type responses, while the cognitive questions were designed using 3-point Likert scale type responses. The questionnaire is the main instrument to get data based on quantified indicators of social capital. It is available for use as an online Google Form survey, as well as PDF

and Microsoft Word files, for printing hard copies.

3. Cognitive interviewing and cultural adaptation

To improve the validity of survey questions, the study implemented rapid cognitive interviewing (RCI) to test the questions for understanding in the cultural context. Cognitive interviewing is "the administration of draft survey questions while collecting additional verbal information about the survey responses, which is used to evaluate the quality of the response or to help determine whether the question is generating the information that its author intends" (Agampodi et al., 2019) This is a process of asking the interviewee to provide additional information about their perception of the question (See Appendix for the instructions for cognitive interviews). Seven interviews with local residents in different neighborhoods of Bishkek were conducted to test the questions. As a result of cognitive interviewing, two questions were eliminated and four questions were reformulated. In the question "If there were a problem that affected the entire neighborhood, for example, theft, would residents of the neighborhood work together to solve it?", the example of theft was added to replace the previous term "violence", as the majority of the respondents commented that violence would normally not get reported among the neighbors. Answer options "I don't know" were eliminated from the response scale, as it was revealed that people tend to choose this option when they do not have enough time to answer, or they simply did not understand the question and did not try to clarify its meaning. During the survey, it will be possible for the interviewer to register the option "I don't know", however, it will not be mentioned verbally.

Moreover, it was revealed that respondents differently understood the word "neighborhood". Thus, four types of localities were identified, which were addressed by the respondents when answering questions about social capital:

- *Yard:* yard often refers to the space between apartment blocks. Usually, these are several buildings located opposite to each other, thereby constructing a closed space of the courtyard (dvor in Russian).

- *Street:* street refers to the section of the street where private

houses are located. Usually it is a section of a street between intersections with other streets at its ends, where a certain number of houses are concentrated, thereby making up a closed community of neighbors.

- *Quarter:* quarter is a collection of several streets. The boundaries of the quarter are clearly demarcated by local territorial administrations (MTUs), where each quarter is headed by a local authority representative (kvartalnyi in Russian).

- *District:* district is an administrative-territorial unit in a city, for example, Sverdlovsky, Pervomaisky, etc.

Before conducting the survey, it is necessary to determine the type of geographic community to be investigated and, at the beginning of the interview, the respondent should be asked to think in terms of their locality (yard / street), except for questions that specifically refer to broader understandings of the area (district / quarter).

As an outcome of the second stage, the questionnaire was modified, two questions were added, which resulted in the final 17 questions about social capital. Apart from some questions, the rest of the items were interpreted with the same intended meaning as was expected. As Agampodi et al. (2019) suggested, respondents better understood and reacted to the adjectival response scales which use more descriptive answers (always, often, sometimes, rarely and never), as well as answers that included specific examples and contexts from everyday life.

Pilot testing

The questionnaire was piloted by students of the American University of Central Asia (Redesign the Commons and Project Management class) in the Archa-Beshik neighborhood in May 2021. The sample consisted of 32 respondents, which was considered to be sufficient since the goal of the pilot was to test the survey questions and collect sample data for statistical analysis of the items and further index development. Another round of the testing the survey was done via online forms, with bigger sample sizes in Salieva/ Almatinskaia and Jibek Jolu/ Molodaya Gvardia areas.

Index construction

Commonly, the index is constructed by the summation method - adding multiple scores into a single summary score (like in the case with SCAT tool), or by averaging and normalizing the values. For the purpose of this study, each indicator is given equal weight in measuring the construct. Following the guidelines by OECD on constructing composite indices, there are two steps to follow after establishing a theoretical framework and data collection, which are reliability analysis and normalization (OECD, 2008).

Correlation analysis. For reliability analysis, the Cronbach coefficient alpha (c-alpha) was used to estimate the internal consistency and reliability of items in a survey (scale is from 0 to 1, where 1 indicates the greatest internal consistency). Correlation coefficients are calculated between the survey items of the same component (using a statistical analysis software - SPSS) to discover if they are associated with each other, and based on that association, which items need to be kept or eliminated from the index. If the correlation coefficients of the items are 0.70 or higher, it is a good evidence that all of the items are highly related and should be kept in an index. Reliability analysis was conducted each time the scale and subscales were reduced. Based on the pilot study, the internal reliability (Cronbach's Alpha) of the 17-item scale resulted in .91, which refers to "excellent" internal consistency ($\alpha \geq .90$). Reliability scores for the individuals factors was Social Interaction = .93, Collective Action = .84, Civic Participation = .80, Trust = .91, Social Support = .78, Social cohesion = .78.

Average scores. 3- and 4-point Likert scale responses were used to measure structural and cognitive components, the mean scores of which were calculated for each respondent and each component.

Normalization. Lastly, the components of the Social Capital Index were normalized with a range of 1 to 10 to get a standard and uniform view of the index. One being the minimum score while 10 being the highest score. Formula 1 is used to normalize the index.

$$X_normalized = (b - a) * \frac{X-y}{z-y} + a$$

(Formula 1)

Where X is the current score, y is the minimum numerical values in the current list, z is the maximum numerical value in the current list, a is the minimum value which is 1 in this equation, and b is maximum values which is 10 in this equation. Setting upper and lower bounds can reduce spurious variability. Normalization makes data comparable among indicators to make the information meaningful. Thus, each respondent has an individual score for social capital. Each component of social capital also has its own score. As a result, an overall index for the neighborhood is calculated as the average of the respondents' score.

Discussion

To date, this study is the first attempt to measure social capital in the urban communities in Kyrgyzstan. The study opens up the potential of application of social capital theory in the Central Asian perspective. The index scale demonstrates high internal consistency and reliability. Cultural adaptation was based on in-depth cognitive interviews which is rarely administered in the development of social capital tools. As a result of the development and cultural adaptation of the tool, it was revealed that any instrument developed in a new cultural setting has to be carefully tested and modified before its implementation.

The potential of using U-SCAT is to map the neighborhoods' scores on the map of Bishkek to visualize the data, as well as provide a descriptive information about each neighborhood regarding its scores for the social capital components. This will allow to compare sub-components of different neighborhoods, e.g. where the highest Collective Action score is, or where the lowest level of Trust is. As in Figure 1 the results of Archa-Beshik survey sample is visualized on the map, including overall index and indices for sub-components.

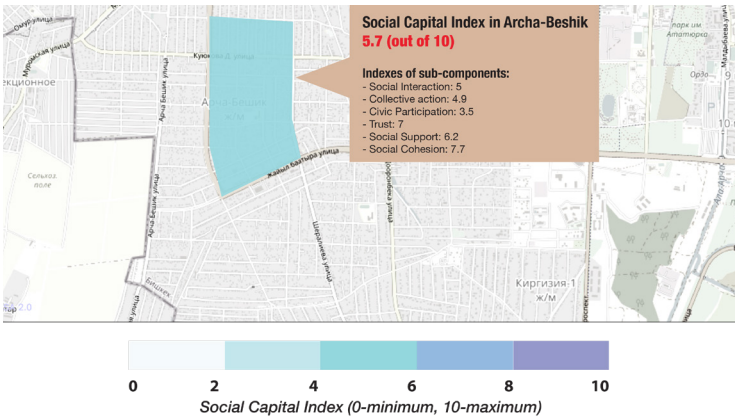

Figure 1.

Archa-Beshik Social Capital Index on the map of Bishkek colored according to the index score.

Figure 2 shows the potential of mapping different districts with color gradations according to U-SCAT. For this map, the data sample was derived from the survey in Archa-Beshik and from online surveys in Salieva/ Almatinskaya streets, and Jibek-Jolu/ Molodaya Gvardia streets with smaller samples. Therefore, the accuracy and representation of the data is not the focal point of the visualization, it is to demonstrate the possibilities of applying U-SCAT application across the municipal sub-districts of the city.

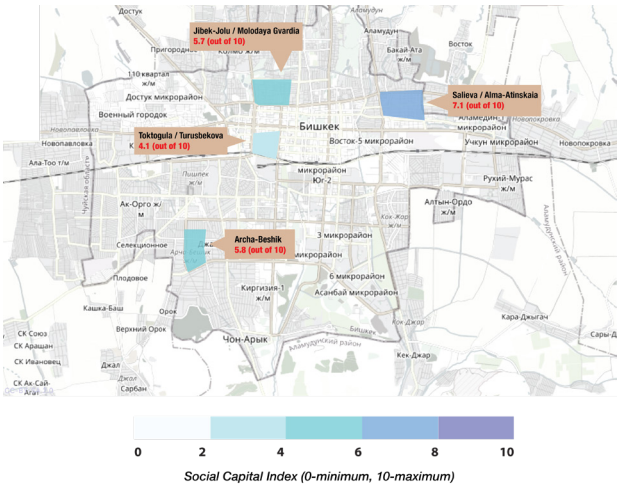

Figure 2.

Four neighborhoods with Social Capital Index scores in Bishkek.

Limitations of the study

First of all, the constructed scale, as many other scales developed in an empirical way can be regarded as simplistic in its nature. Simplicity is its strength and weakness at the same time. Weakness implies the fact that no scale can fully represent social and human interactions, which are intangible and qualitative characteristics of communities. However, from a rationalist point of view, there is a need for a concrete index to measure the phenomenon in order to make it clear and employ it. Second, a larger sample size for the next pilot study is necessary to re-test the reliability of the scale and its components, as well as derive more meaningful descriptive statistics of the sample. To sum up, the construct should be replicated and tested in other neighborhoods, and potentially other cities in Kyrgyzstan, and further in Central Asia.

Next steps

1. A second pilot study with a bigger sample size will be conducted in three locations in Bishkek city - a city center neighborhood, a micro-dictrict and a novostroika (new settlement). Different urban fabric and settings will allow a deeper analysis of the components, as well as their correlation with the demographic data. It will also provide the first data to be mapped and visualized on the map of Bishkek. In the micro-district (Kok Jar), the survey will be experimentally conducted with the involvement of a local community leader (domkom) to understand its further potential on a broader scale.
2. Academic publication based on the three above-mentioned pilot studies will be written and published in an academic journal with the aim of advancing the literature on social capital and index development, particularly in Central Asian context.
3. A proposal will be developed for deploying the Social Capital Index in all municipal territorial units in Bishkek.

Recommendations

For researchers:

- To use U-SCAT together with other variables to gain insights about the impact of social capital on various phenomena, and vice versa.

- To use U-SCAT as an innovative platform for testing the potential of creating a citizen science initiative[3] in Bishkek. The idea is to involve citizens in the data collection in their own neighborhoods. This would also allow the economical collection of data across the cities in Kyrgyzstan.

For practitioners:

- To use U-SCAT and calculate Social Capital Index before and after implementation of projects and initiatives in urban areas in Kyrgyzstan for impact analysis.

- To develop a website or application for calculation of Social Capital Index along with data analysis and visualizations in the forms of charts, graphs and maps. This will allow a broader access to the U-SCAT tool, as well as more interaction with the data and its use in different contexts and organizations.

- To use Social Capital Index data to identify potential aggregations of localities for developing creative clusters, as suggested by the creative class research (Hoyman and Faricy, 2008), as physical location plays a pivotal role in the formation and perpetuation of social capital.

For local authorities:

- To involve local community leaders in deploying U-SCAT and conducting data gathering in the territories for which they are responsible. Like any other form of capital, social capital needs to be properly maintained. It can be done through different mechanisms and interventions, however one of the key aspects of its activation and maintenance is the local community leaders.

3.

Citizen science is the involvement of the public in scientific research – whether community-driven research or global investigations.

Source: https://citizenscience.org

In the study of communities in India over a 7-year period, Krishna (2007) found that social capital is mainly generated internally by the local leaders, not so much by the outsider organizations and initiatives. In the pilot study of Archa-Beshik, the data shows that younger people do not trust much their neighbors, but they do quite considerably trust their local community leaders and authorities.

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APPENDIX

1. LIST OF THE INTERVIEWED EXPERTS

No.	Name	Position and affiliation	Email
1	Trudy Harpham	A-SCAT founder, Emeritus Professor at London South Bank University, UK	t.harpham@lsbu.ac.uk
2	Anirudh Krishna	SCAT founder, SOCAT World Bank founder, Professor of Public Policy and Political Science at Duke University	ak30@duke.edu
3	Kate Scrivens	OECD, Analyst	katherine.scrivens@oecd.org
4	Tristan Claridge	Principal Social Capital & Organizational Culture Specialist at Social Capital Research & Training	tristan@claridgemedia.co.nz
5	Alexander Dill	The World Social Capital Monitor founder, Basel Institute of Economics and Commons	dill@commons.ch
6	Anar Musabaeva	Political scientist and journalist, Kyrgyzstan	Contacted via private contact.

2. LIST OF U-SCAT INSTRUMENTS

- *Guidebook*: See the original version attached along with this report (PDF file)
- *Tools for analysis:* See the original versions attached along with this report (SPSS file, Excel file)
- *Questionnaire - online form:* https://forms.gle/671Johg3L6PsQwk67
- *Questionnaire - hard copy*: See the summary below, and the original version attached along with this report (PDF file).

Section 1. Demographics

Your sex:
- Female
- Male

Your age:
- until 18
- from 18 to 25
- from 26 to 35
- from 36 to 45
- from 46 to 55
- over 55

Who do you live with?
- Alone
- Family
- Friends
- Other (specify)

How long have you lived in this neighborhood?
- Less than 6 months
- From 6 months to 1 year
- From 1 year to 5 years
- From 5 to 10 years
- More than 10 years

Are you renting or owning your place of residence?
- I own it
- I rent it
- Other (specify)

What is your current employment status?
- Employed
- Unemployed
- Student
- Housewife/ husband
- Retired

What is your preferred language with neighbors?
- Kyrgyz
- Russian
- Uzbek
- Other (specify)

Section 2. Social Capital

1. How many neighbors do you know?
- I know most of the people living in my neighborhood
- I know around half of the people living in my neighborhood
- I know a few people in my neighborhood, but most are strangers
- I do not know people in my neighborhood

2. How often do you talk with any of your neighbors?
- Several times a week
- Once a month
- Several times a year
- Never

3. In the past 12 months, how often did you help with or attend activities organized in your neighborhood? (subbotniks, general meetings, concerts, religious meetings, open wedding celebration, kudaa etc.)
- Once or several times a month
- Several times a year
- Once a year
- Never

4. Are you an active member of any local group, organization or association in the neighborhood? (for example, do you organize or go to the meetings, do you volunteer)
- Yes, very active

Often active
Only sometimes active
No, not at all

5. What proportion of people contribute their time to take care of the infrastructures in your neighborhood (e.g. repairing a road or street lighting, taking care after a community garden)?
Most of the people
About half
Less than half
No one

6. If there were a problem that affected the entire neighborhood, for example robbery, would residents of the neighborhood work together to solve it?
Yes, most of the people would work together
Some would work together
Not for this problem, but maybe for other
No, people would not work together

7. How often in the past year have you joined together with others in the neighborhood to address a common issue?
Frequently
A couple of times
Once
Never

8. Do you agree that in your neighborhood, it is generally expected for people to actively participate in the neighborhood life and help in community activities?
Agree
Only around half of the people
Only for very few people
Disagree

9. In the last year have you done any of the following:
Voted in the last municipal or local elections
Participated in the neighborhood activities (subbotnics, sports, culture, political)
Spoken with other people about a problem in the neighborhood or the city
Talked with a local authority or organization about a problem in the neighborhood

10. Do you believe you can affect local government decisions that affect your neighborhood?
Yes, a lot
Yes, but not always
Just a bit
No

11. In general, do you trust people in your neighborhood?
Yes, I trust people
I only trust certain people
No, I don't trust most people in my neighborhood

12. Do you think that most people would try to take advantage of you if they got the chance?
Disagree
Only some people
Agree

13. In general, how much do you trust your local leaders (MTU, domkom)?
A lot
A bit
Not at all
I don't know my local community leader

14. How often do people in your neighborhood help each other out these days?
- Most of the time
- Sometimes
- Never

15. If you needed help to improve something in your area (community garden, road, organize subbotnik), how easy will it be for you to ask for help from your neighbors?
- Easy
- Not very easy, but possible
- Difficult

16. Do the majority of people in this community generally get along with each other?
- Mostly, yes
- Only some people
- No

17. Do you feel as though you are really part of this neighborhood?
- Yes
- A bit
- No

3. DESCRIPTION OF THE COMPONENTS OF U-SCAT
SOCIAL COMPONENTS

Component	Description of the component	Survey question	Indicator	Source
STRUCTURAL SOCIAL CAPITAL				
Social interaction	Social capital cannot be generated by individuals alone. It depends on the level of sociability and capacity to form new networks. Social interaction is the overall and preliminary criteria to analyze the social environment of the community. It also involves question on membership in community groups, which provides the opportunity for individuals to socialize and interact with others, as well as make new connections. The types range from informal (e.g., neighbor networks/ "chai" groups) to the formal (e.g. TSJ, religious groups) network.	(1) How many neighbors do you know?	Degree of knowing people living in the neighborhood	GSCS
		(2) How often do you talk with any of your neighbors?	Frequency of interactions of people living in the neighborhood	GSCS
		(3) In the past 12 months, how often did you help with or attend activities organized in your neighborhood? (subbotniks, general meetings, concerts, religious meetings, open wedding celebration, kudaa etc.)	Frequency of participation in social activities	A-SCAT, adapted
		(4) Are you an active member of any local group, organization or association in the neighborhood? (for example, do you organize or go to the meetings, do you volunteer)	Degree of activity of people in the social groups or organizations	A-SCAT
Collective action	Collective action is an attribute of "collective efficacy" and the willingness of a group of people to be proactive to enhance their conditions for the common good. When people act in community interest, it leads to reduced theft, fraud and crime, as well as can improve public amenities and common goods.	(5) What proportion of people contribute their time to take care of the infrastructures in your neighborhood (e.g. repairing a road or street lighting, taking care after a community garden)?	Number of people involved in collective actions	Civic Survey
		(6) If there were a problem that affected the entire neighborhood, for example robbery, would residents of the neighborhood work together to solve it?	Degree of cooperation of people	A-SCAT, adapted
		(7) How often in the past year have you joined together with others in the neighborhood to address a common issue?	Frequency of collective actions	A-SCAT
		(8) Do you agree that in your neighborhood, it is generally expected for people to actively participate in the neighborhood life and help in community activities?	Perceived cooperation and involvement in the community	GSCS
Civic participation	Civic participation are activities performed individually through formal or informal networks which allow the formation of actual connections between inhabitants, or with institutions.	(9) In the last year have you done any of the following (refer to the list of citizenship activities in the questionnaire)	Citizenship activities performed by the individual	A-SCAT, adapted
		(10) Do you believe you can affect local government decisions that affect your neighborhood?	Perceived influence of people of the institutions	A-SCAT

COGNITIVE SOCIAL CAPITAL				
Trust	Trust is differentiated between trust towards neighbors (generalized trust) and key service providers (institutionalized trust). Generalized trust is fundamental to assess the well-being of a community, while institutionalized trust is key to understanding the ability of service providers to deliver inhabitants the services they need at the quality level they expect (OECD, 2017).	(11) In general, do you trust people in this neighborhood? (Horizontal trust)	Degree of social trust between people	A-SCAT
		(12) Do you think that most people would try to take advantage of you if they got the chance?	Perceived degree of fairness between individuals	A-SCAT
		(13) In general, how much do you trust your local leaders (MTU, domkom)?	Degree of institutionalized trust	A-SCAT, adapted
Social support	Social support represent the norms that govern inhabitants to provide particular types of support to each other.	(14) How often do people in your neighborhood help each other out these days?	Degree of help provided between people	GSCS
		(15) If you needed help to improve something in your area (community garden, road, organize subbotnik), how easy will it be for you to ask for help from your neighbors?	Perceived support between people	GSCS, adapted
Social cohesion	Social cohesion measure the quality of social relations in terms of level of social harmony. It is the feeling of being supported, valued, connected to the community. It is a determinant which predispose neighbors to act on common values and maintain informal control.	(16) Do the majority of people in this community generally get along with each other?	Degree of social harmony between people	SASCAT
		(17) Do you feel as though you are really part of this neighbourhood?	Degree of sense of belonging	A-SCAT

4. OVERVIEW OF EXISTING METHODOLOGIES

Name	Author	Social capital components	Survey
Social Capital Assessment Tool (SCAT)	Anirudh Krishna (1997)	1. Structural social capital 2. Cognitive social capital	3 questions on structural social capital 3 questions on cognitive social capital
SOCAT, developed for the World Bank	Krishna and Shrader (1999)	1. Structural social capital 2. Cognitive social capital 3. Social cohesion (it is an output of SC!)	3 instruments: 1. Community profile (focus groups) 2. Household survey (60 questions) 3. Organizational profile (focus groups)
A-SCAT	Harpham, Grant, & Thomas (2002)	1. Structural social capital 2. Cognitive social capital	7 questions on structural 11 questions on cognitive social capital. Duration - 15 minutes
SASCAT	De Silva et al. (2006)	1. Structural social capital 2. Cognitive social capital	5 questions on structural social capital 4 questions on cognitive social capital. Duration - 4 minutes
SASCAT-B	Story, Taleb, Ahasan, & Ali (2015)	1. Structural social capital 2. Cognitive social capital	7 questions on structural social capital 5 questions on cognitive social capital. Duration - 8 minutes
SASCAT-I	Hasan, et.al (2019)	1. Structural social capital 2. Cognitive social capital	7 questions on structural social capital 5 questions on cognitive social capital. Duration - 8 minutes
Personal Social Capital Scale (PSCS)	Chen et al. (2009)	1. Bonding social capital 2. Bridging social capital	10 items with a total of 42 sub-items.
PSCS 16		1. Bonding social capital 2. Bridging social capital	Bonding: 8 items Bridging: 8 items
Global Social Capital Survey (GSCS)	Narayan and Cassidy (2001)		7 dimensions of social capital:
Social Capital Index (SCI)	Jenny Onyx and Paul Bullen	1. Structural social capital 2. Cognitive social capital	68-question survey with 8 elements: Participation in local community Proactivity in a social context Feelings of trust and safety Neighbourhood connections Family and friends connections Tolerance of diversity Value of life Work connections
The UK Social Capital Measurement Framework,	Harper and Kelly (2003)	1. Structural social capital 2. Cognitive social capital	5 dimensions: Social participation (networks) Social networks and social support (networks) Reciprocity and trust (shared norms and values) Civic participation (co-operation) Views of the local area (shared norms and values)
The Barometer of Social Capital	(Sudarsky, 1999)	No division.	10 dimensions of social capital: Institutional trust Civic participation Mutuality and reciprocity Horizontal relationships Hierarchy Social control Civic republicanism Political participation

General Social Survey on Social Engagement (GSS)	United States - National Opinion Research Center (1972)	No division.	9 sections: Well-being Cultural background Social participation Civic Participation Main Activity of Respondent Education of Respondent, Spouse/Partner and Parents Activities of Spouse/Partner Housing Characteristics of Respondent Other Characteristics
World Social Capital Monitor	UNDP	No division.	8 questions: The social climate The trust among people The will to (co)-finance public goods by austerity measures The will to (co)-finance public goods by taxes and contributions The will to invest in local economy, SME and cooperatives The helpfulness among people The friendliness among people The hospitality among people

5. RAPID COGNITIVE INTERVIEWING INSTRUCTIONS

Rapid cognitive interviewing (RCI) was undertaken to improve the understanding of questions by the participants and further improve the wording, phrasing and the categories of U-SCAT tool. The RCI was implemented first with 7 residents in Bishkek via phone calls, and later among the 22 individuals in the community in the Archa-Beshik neighborhood. The following steps were performed:

a) Introduction: The interviewer explains the objective of the discussion
b) Question: Fist the initial question is asked to the respondent
c) Individual comprehension and interpretation: The interviewer asks explanations of some specific words from the question
d) Paraphrasing: The interviewer asks, "If you were asking this question to your neighbor, how would you say it?"

In addition, the following questions were asked to understand the concept of the neighborhood and community among the respondents:

1. What do you understand as a neighborhood/ area?
2. What does community mean to you?