Measuring Social Cohesion in the Kyrgyz Republic

The Social Cohesion Index

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Abstract:
This paper details the development of a Social Cohesion Index for the assessment of social cohesion in the Kyrgyz Republic within the framework of the "Social Cohesion through Community-Based Development" project. A concept of social cohesion was applied which understands cohesion to be made up of close social relationships, intensive emotional connectedness, and a strong orientation towards the common good. Using baseline survey data from 30 sub-districts (*Ayil Aimak*), exploratory factor analysis and scale standardization were carried out to calculate social cohesion scores for each sub-district and their respective villages. The results show that social cohesion generally appears to range from moderate to moderately high, however the dimensions of *social networks* and *solidarity and helpfulness* in particular can still be improved. Furthermore, correlation analysis revealed relationships between social cohesion and a number of potential determinants and outcomes, hinting at areas where the intervention project could concentrate efforts or advocacy to indirectly impact social cohesion (e.g., through paved routes into communities, improvements in the power supply, encouraging communication in multiple languages). Suggestions for future assessments of social cohesion at the project's midline and endline are also outlined.

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1. Introduction

This report details the development of a Social Cohesion Index within the framework of the "Social Cohesion through Community-Based Development" project. The research component of the project was conducted by the Stockholm International Peace Research Institute (SIPRI) and the University of Central Asia (UCA). The project is funded by the World Bank and the Aga Khan Foundation. The purpose of the Social Cohesion Index is the assessment of social cohesion at the baseline, midline, and endline of the community-based development intervention in 30 sub-districts (*Ayil Aimak*) in the Kyrgyz Republic. Spe-cifically, the Social Cohesion Index will be used to compare control and pilot sub-districts at all time points in order to assess the impact of the intervention project. The Social Cohesion Index as described in this report was calculated using the currently available baseline survey data from 2014, while establishing the groundwork for another such calculation at the mid-line, and with the endline survey data in 2017.

A brief literature review on social cohesion is offered in Section 2, followed by the introduc-tion of the conceptual model of social cohesion in Section 3, and its application to the Kyrgyz Republic in Section 4. Section 5 provides a thorough description of the methods applied to the calculation of the Social Cohesion Index and the follow-up analyses. Following this, Sec-tion 6 details the results in terms of levels of social cohesion at the sub-district and village level, differences in social cohesion, profiles of social cohesion, and potential determinants and outcomes. Section 7 takes a special look at the youth data, which were not incorporated into the Social Cohesion Index. Finally, the report closes with Section 8, reviewing some of the key results and outlining steps for future analyses.

2. Social cohesion in the literature

Over the last decades, social cohesion has arisen as a key concept in academic and political discourse (Beauvais & Jenson, 2002; Chan, To & Chan, 2006; Chiesi, 2004; Hulse & Stone, 2007; Jaschke, 2009; Jenson, 1998; 2010). Despite its increasing relevance and presence in the discourse, however, there are significant discrepancies in the definition of social cohe-sion. This is largely due to the vast variety of factors involved in social cohesion (see, for example, Jenson, 1998), which are often assigned conflicting roles either as determinants, components, or outcomes.

Even so, a systematic review of the literature (Schiefer, van der Noll, Delhey & Boehnke, 2012) revealed a number of areas where there is indeed some consensus around social cohesion. First, while social cohesion is affected by individual behaviors and attitudes, it is an attribute describing social entities rather than individuals. Second, social cohesion operates along a graduated spectrum, where social entities are more or less cohesive. Finally, social cohesion is a multi-dimensional construct that can be measured at multiple levels (i.e. micro, meso, and macro).

Moreover, the literature on social cohesion can be organized into three core and overlap-ping domains: *social relationships*; *connectedness*; and *a focus on the common good*. In the literature, these domains also include additional dimensions of social cohesion, as detailed below.

The literature regarding the first domain of *social relationships* includes such dimensions as: the quality and quantity of social relationships and interactions (i.e., social networks;

Putnam, 2000); trust in others to behave predictably and to be primarily motivated by good intentions (e.g., Chan et al., 2006; Morrone, Tontoranelli & Ranuzzi, 2009); and acceptance of diversity (e.g., Jeannotte et al., 2002; Council of Europe, 2005; Spoonley et al., 2005).

Second, the domain *connectedness* in the literature includes: belonging and identification with certain social groups (e.g., Chan et al., 2006; Kearns & Forrest, 2000); trust in institutions, such as the government, police, and courts; and the perception that everyone in society is treated fairly.

Finally, the literature indicates that *focus on the common good* comprises: a sense of solidarity and willingness to place the needs of the group ahead of one's own (e.g., Chan et al., 2006; Council of Europe, 2004; 2005); a recognition of a social order, rules, and standards (e.g., Jenson, 1998; Kearns & Forrest, 2000; Merton, 1957); and socio-cultural and political participation (e.g., Berger-Schmitt, 2000; Chan et al., 2006; Chiesi, 2004; Council of Europe, 2004; Easterly, Ritzen & Woodstock, 2006; Rajulton, Ravanera & Beaujot, 2007; Ritzen, 2001).

Moreover, Schiefer and colleagues (2012) identified two additional concepts related to social cohesion in the literature: *(in)equality* and *objective and subjective quality of life*. The subject of *(in)equality* is explored by three different measures in the literature: first, the (un)equal distribution of resources within and across societies, specifically in terms of employment, income, education, health, rights, and social services (e.g., Berger-Schmitt, 2000; Berger-Schmitt & Noll, 2000; Council of Europe, 2004; 2005; European Commission, 2001; Jackson et al., 2000); second, the exclusion of certain groups of individuals from social life (e.g., Berger-Schmitt, 2000; Berger-Schmitt & Noll, 2000; Jenson, 2010; Jeannotte et al., 2002); and finally, the level of fractionalization in society (e.g., Easterly et al., 2006). In turn, *objective and subjective quality of life* includes overall well-being, such as happiness and life satisfaction; physical health; and the objective living conditions of particular social groups.

It is important to note that these aspects do not appear to be domains of social cohesion itself, but rather its determinants and/or outcomes. Schiefer and colleagues (2012) argue, for example, that objective living conditions make more sense when considered as a cause of cohesion, while well-being could be a possible effect. In doing so, they cite literature which conceptualizes cohesion either directly impacting well-being and health (e.g., Beauvais & Jenson, 2002; Jenson, 2010; Putnam, 2000) or moderating the impact of poverty and unemployment (e.g., Phipps, 2003; Upperman & Gauthier, 1998).

Finally, the literature also mentions the importance of *shared values* for social cohesion (e.g., Kearns and Forrest, 2000), but there is discussion of whether this approach is outdated (Wenzel, 2001). Furthermore, it is neither clear which values should be shared (e.g., Jenson, 1998; Jaschke, 2009), nor is it known whether a consensus of values is required. Thus, in order to enable instead an empirical analysis of how values influence social cohesion, or how social cohesion influences values (see also Boehnke & Boehnke, 2014), Schiefer and colleagues (2012) argue for the exclusion of shared values from the definition of social cohesion.

3. The Social Cohesion Radar

This extensive systematic review of the literature, combined with consultations with experts from academia and relevant think tanks, resulted in the development of the following streamlined definition of social cohesion:

Cohesion is a descriptive attribute of a collective and expresses the quality of social cooperation. A cohesive society is characterised by close social relationships, intensive emotional connectedness, and a pronounced orientation towards the common good. We define cohesion as a graduated phenomenon, which means that societies may exhibit greater or lesser degrees of cohesion. This degree of cohesion is expressed in the attitudes and the behaviour of the members and social groups within society. Its character is both ideational and relational. (Schiefer et al., 2012)

This definition of social cohesion brings together the extensive and often conflicting literature in order to create a concept that can be empirically applied and adapted across contexts. The visual representation of this definition (see Figure 1) highlights the overlapping nature of the domains of social cohesion found in the literature (i.e., *social relations*, *connectedness*, and a *focus on the common good*) and summarizes their relevant dimensions. Specifically, *social relations* includes social networks, trust in people, and acceptance of diversity. *Connectedness* involves identification, trust in institutions, and a perception of fairness. Finally, a *focus on the common good* includes solidarity and helpfulness, respect for social rules, and civic participation. It is worth noting that measures of material resources, quality of life, and values are excluded from the key domains of social cohesion to allow for more precise distinctions between the determinants, components, and outcomes of social cohesion.

Figure 1: The three domains of social cohesion and their respective dimensions
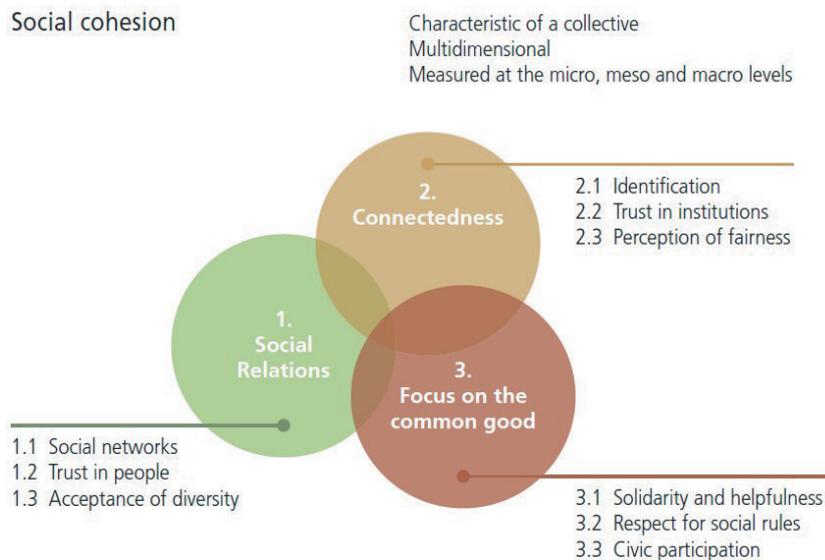
Source: Dragolov, Ignácz, Lorenz, Delhey & Boehnke, 2013a

This streamlined conceptualization, commissioned by the Bertelsmann Stiftung (Foundation), is known as the Social Cohesion Radar. It has served as the framework for two successful empirical investigations of social cohesion over time: a comparison of 34 Western nations (Dragolov, Ignácz, Lorenz, Delhey & Boehnke, 2013a) and a comparison of Germany's 16 federal states (Dragolov, Ignácz, Lorenz, Delhey & Boehnke, 2014). Indicators of the nine dimensions of social cohesion were selected from large-scale cross-sectional surveys (e.g., the Gallup World Poll, World Values Survey) as well as from reliable academic and institutional sources (e.g., Vanhanen's (2011) Measures of Democracy). Using factor analysis, these investigations calculated standardized scores for each of the nine dimensions, which were averaged to create scores for each respective domain and to create an overall index of social

cohesion. These scores were also measured at multiple points in time to assess changes in cohesion over time.

Both of these studies produced clusters of nations or federal states when ranking them according to levels of social cohesion. Overall, the results demonstrated that social cohesion remains relatively stable over time and is a societal characteristic that does not change radically overnight. However, specifically measuring the nine different dimensions provided insights into the specific aspects of social cohesion subject to greater change. Furthermore, these studies offered insights into the determinants and outcomes of social cohesion in society. For example, the international study revealed that economic wealth, an equitable distribution of income, and modernization (particularly the presence of new media) proved to be important preconditions for cohesion. Moreover, life satisfaction was shown to be an outcome of a cohesive society.

Following the successful application of the Social Cohesion Radar in these two studies, two additional studies in new contexts are currently underway. The concept is being used to measure social cohesion at a smaller neighborhood level within the city of Bremen, Germany, as well as among 22 South and Southeast Asian countries. Thus, it is clear that this particular conceptualization of social cohesion can be considered a universally applicable framework allowing comparison across settings. At the same time, it provides a certain degree of context-specific measurement through the selection of indicators relevant to the particular contexts in question.

4. THE SOCIAL COHESION INDEX FOR THE KYRGYZ REPUBLIC

The streamlined concept of social cohesion introduced in Section 3 lends itself particularly well to the development of a Social Cohesion Index for the purposes of the "Social Cohesion through Community-Based Development" project. First of all, the breakdown of the dimensions of social cohesion allow for detailed assessments of the intervention's impact on specific dimensions of social cohesion under *social relations*, *connectedness*, and a *focus on the common good* (see Table 1). This is especially important to consider given that the project's interventions are not expected to affect all dimensions of social cohesion at once, but rather specific areas (SIPRI & UCA, 2015). Thus, the Social Cohesion Index focuses on the specific impacts of the interventions, which might otherwise get lost in a more generalized concept.

Second, the exclusion of measures of material resources, quality of life, and values from the key domains of social cohesion allows for more precise distinctions to be made between the determinants, components, and outcomes of social cohesion. For instance, analyzing the *(un)equal distribution of resources* (specifically in terms of land, employment, income, and education) as potential determinants of social cohesion would be particularly fruitful when developing specific policies and future projects aimed at improving social cohesion in the Kyrgyz Republic. Likewise, analyzing the effect of diversity or fractionalization as a determinant would be especially useful given the project's specific selection of mono-ethnic and multi-ethnic sub-districts.

Finally, the proposed concept of social cohesion is etic in nature, which refers to an epistemological approach that utilizes a universalist, theory-driven methodology of knowledge

generation and cross-national comparison.[1] This approach enables the future application of this concept to other contexts for comparative purposes, both within the Kyrgyz Republic and potentially across Central Asia. At the same time, the selection of indicators based on questionnaires specifically created for the Kyrgyz Republic increases the concept's contextual relevance.

Table 1: The dimensions of social cohesion and their guiding principles

Domain	Dimension	Guideline
1. Social relations create cohesion through a network of horizontal relationships between individuals and societal groups of all kinds, which is characterized by trust and allows for diversity.	1.1 Social networks	People have strong, resilient social networks.
	1.2 Trust in people	People have a high level of trust in others.
	1.3 Acceptance of diversity	People accept individuals with other values and lifestyles as equal members of society.
2. Connectedness promotes cohesion through positive identification with the country, a high level of confidence in its institutions and a perception that social conditions are fair.	2.1 Identification	People feel strongly connected to their country and identify with it.
	2.2 Trust in institutions	People have a high level of confidence in social and political institutions.
	2.3 Perception of fairness	People believe that society's goods are fairly distributed and that they are being treated fairly.
3. Focus on the common good promotes cohesion through actions and attitudes that help the weak, are in keeping with society's rules and allow for a collaborative approach to the organization of society.	3.1 Solidarity and helpfulness	People feel responsibility for others and are willing to help them.
	3.2 Respect for social rules	People abide by the fundamental rules of society.
	3.3 Civic participation	People participate in society and political life and enter into public discussions.

(Source: Dragolov et al., 2013a)

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1   The antonym would be an "emic" approach, which utilizes a particularist, bottom-up methodology.

5. METHODOLOGY

The Social Cohesion Index was developed as an assessment tool to be used at the baseline, midline, and endline of a community-based development intervention in 30 sub-districts in the Kyrgyz Republic. Specifically, it will be used to compare control (n_c =15) and pilot (n_p =15) communities across time points in order to assess the impact of the interventions. The Social Cohesion Index should furthermore enable absolute comparisons of the sub-districts on the dimensions, the domains and the overall index of cohesion both within a time period and over time. In this respect, it takes a different approach than previous studies creating relative scores (Dragolov et al., 2013a; 2014), which allowed comparisons and statements for a given geopolitical entity relative to the rest of the sample but not independent of them. Since it is expected that there might be differences at the village level even within sub-districts, social cohesion scores were generated at both the village and sub-district levels. Furthermore, it should be kept in mind that the methods described here were carried out using the currently available baseline survey data from 2014. The following sections detail the methods and analysis implemented to achieve these goals.

5.1 The data

The baseline survey data were available as responses from face-to-face interviews (in either Russian, Kyrgyz, or Uzbek) in 30 sub-districts using four different but nested questionnaires: a community questionnaire, a household questionnaire, an individual questionnaire (for adults older than 18 years), and a youth questionnaire (for youth between 14 and 17 years).

With particular regard to measuring social cohesion, the village data (N_v = 137) include information on: geography, infrastructure, economic activity, critical events affecting the community, and participation and decision making in community groups. The household data (N_h = 1,986) include relevant information on: household composition, assets and land, consumption and expenditure, income sources, migration and critical events experienced in the household. Relevant social cohesion information in the individual data (N_i = 6,356) include: subjective well-being, education, health, personality, trust, identity and belonging, social networks, civic and political participation, attitudes regarding different social groups, perception of security, labor market activity, and violence and community tensions. Finally, the youth data (N_y = 866) include similar information as the individual data, but to a much more limited extent.

5.2 Indicator selection at face validity

Based on the principle of face validity, a preliminary selection was carried out of appropriate indicators from the community, household, individual, and youth data. For this project, face validity refers to an initial, commonsense judgment of whether an indicator corresponds with the guiding principles for the dimensions of social cohesion (Neumann, 2003). All relevant project members reviewed the initial selection of indicators fitting each dimension, as well as the determinants and outcomes, agreeing with the listed indicators and adding several new indicators. This resulted in a large set of indicators that served as the basis for the Social Cohesion Index scores.

It became clear during this process that while some of the indicators in the youth data matched the indicators in the individual data one-to-one for some dimensions, three of the nine dimensions either did not have any applicable indicators from the youth data or had entirely different indicators than the individual data. This presented a challenge in calculating the Social Cohesion Index. It was deemed unwise to include the youth data only on those dimensions with matching indicators to the individual data because this would lead to varying population groups across dimensions. The possibility of imputing the youth data for those dimensions without applicable indicators based on the adult individual data for those indicators was also discussed. However, it was decided that while statistically possible, it may not be meaningful and the statistical complexity of such a process may outweigh its usefulness for this particular project. For example, if it would be expected that youth have a unique perspective on social cohesion that should be captured with the data, three dimensions would be missing this perspective entirely by imputing the indicators from the adult individual data.

Thus, the youth data were not incorporated into the overall Social Cohesion Index. However, in order to take advantage of the wealth of data collected from the youth, the calculation of single dimensions of social cohesion, specifically those with indicators matching one-to-one with the adult indicators, was carried out. This process and the results are described specifically in Section 7.

5.3 Data preparation

Before proceeding with the empirical indicator selection, an initial dataset was compiled with the preliminary selection of indicators. Data preparation began first with the community data. Given that the community data contained four different datasets, these were first merged into one common community dataset. Following this, respondents with missing data on the indicators were deleted on an item-by-item basis. Then the preselected items were recoded to aid in the interpretation in later steps. For example, if an indicator had four or more categories with ordinal properties, it was considered continuous. However, if it had fewer categories or was nominal in nature, it was dichotomized according to the most relevant category. Additionally, the continuous items were reverse-coded where necessary so that higher numerical values along the response scale represent greater agreement with the statement.

The household data was made up of 15 datasets, some with individual household members as cases and the rest with households themselves as cases. As a first step, the datasets with individual information (hh1a.dta, hh2b.dta, hh5.dta) were aggregated up to the household level using the unique household identifier (hhid). This was done by taking the arithmetic mean of the household for the respective indicator. These aggregated datasets were then merged together with the other household datasets to create one common household dataset. Following this, the same steps for cleaning and recoding were carried out as above. Finally, given that the cases of interest for social cohesion are villages and sub-districts, the household-level data were aggregated to the village level using the unique village identifier (ail_id).[2]

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2   In order to allow for the calculation of the Social Cohesion Index at both the village and sub-district levels, the initial calculations were at the village level before being aggregated up to the sub-district level (see Section 5.5.3).

The individual data consisted of 18 datasets. Each of these datasets were cleaned and recoded as described above, and were then separately aggregated up to the household level using the unique household identifier. This aggregation was first carried out at the household level because the individual data did not contain either village or sub-district unique identifiers. These datasets were then merged into one common dataset of individual data, along with variables from the household dataset which included both village and sub-district (aa_id) unique identifiers. This common dataset was then aggregated to the village level.

As a final step, the combined community, household, and individual datasets were then merged into one complete dataset containing all relevant indicators aggregated at the village level.

5.4 Further reduction of indicators

Once the data preparation was complete, further screening of the indicators for the Social Cohesion Index was conducted using exploratory factor analysis (EFA). EFA is particularly useful in cases where the relationships between indicators and latent constructs are unclear (Byrne, 2012), revealing a pattern of associations between indicators as well as the degree to which the indicators contribute to the overall latent construct (Dragolov et al., 2013b).

There are a number of different methods for conducting factor analysis. In line with previous studies applying this particular conceptual model of social cohesion (Dragolov et al., 2013; 2014), maximum likelihood was used. Maximum likelihood "obtains by successive factoring a set of factors each of which in turn explains as much variance as possible in the population correlation matrix" (Kline, 1994, p. 49). The strength of the contribution of each indicator to the latent construct (i.e., dimension) is revealed by the factor loadings for each indicator, which can be understood as a standardized regression coefficient ranging from -1 to +1, depending on the direction of indicator.

The factor loadings produced by the EFA were taken as a criterion for retaining indicators for each dimension. To begin, as the generally accepted rule of thumb, the absolute value of the factor loadings of each indicator ideally needed to be equal to or larger than 0.40. However, a meta-study by Peterson (2000) points to 0.25 as the lower bound for an acceptable threshold regarding factor loadings. Thus, for the Social Cohesion Index, 0.40 or greater was considered ideal and 0.25 was considered the cut-off in extreme cases. One-factor solutions were forced in order to always extract the factor that most strongly accounts for the covariation of the indicators. Indicators that did not load above these thresholds on the main factor were disregarded since they tend to belong to other less dominant factors, which were assumed to be external to the concept's dimensions.

Additionally, Cronbach's alpha coefficient of internal consistency was used as a measure of the quality of the constructed dimensions, since it is a widely used validity measure for factor analysis (Manly, 2004). While a Cronbach's alpha of 0.80 to 0.90 is often held as an ideal absolute threshold, relative thresholds, which account for the number of items measuring a latent construct, are arguably more appropriate for the wider social sciences. For the Social Cohesion Index, an alpha of 0.10 times the number of indicators was viewed as sufficient (e.g., 0.50 for a dimension with five indicators) (Nunnally, 1967).

Further considerations for the reduction of indicators included suggestions and comments made by the SIPRI team members to determine their relevance in the Kyrgyz Republic context. Where overlap in the content of the indicators existed, selections were made based on theoretical and empirical grounds.

With the EFA, the initial selection of indicators was validated and any indicators not empirically related to the dimensions were discarded. This left a total of 3 to 8 indicators per dimension with which to calculate the Social Cohesion Index. A detailed overview of the final selection of indicators and their factor loadings can be found in Tables A.1-A.9 in the Appendix.

5.5 Construction of the index

5.5.1 Scale standardization

Once the final set of indicators was chosen, a process of scale standardization was carried out on the response scales of the indicators (at the original non-aggregated community, household, and individual levels) in order to bring them to a common scale ranging from 0 to 10. This enables meaningful absolute comparisons of the social cohesion scores. Dichotomous items (0-1) were multiplied by 10. The scales of continuous items were rescaled with subtraction and multiplication: for example, for an item with an original scale of 1-5, 1 was subtracted, thereby bringing the scale to 0-4 and then the response options were multiplied by 2.5.

5.5.2 Measurement of the dimensions

To calculate scores for each dimension at the village level, the arithmetic mean was calculated on the village level of the scale-standardized indicators for the respective dimension. This resulted in an absolute dimension score for each village bound between 0 (minimum) and 10 (maximum).

5.5.3 Formative index building for domains and the overall index

The formative index building approach (Bollen & Lennox, 1991) was adhered to in calculating the village scores for the three domains and the overall Social Cohesion Index. In this approach, the dimensions serve as the building blocks of cohesion, each adding a distinctive element to its measurement. The theoretical framework consisting of the nine-fold conceptualization regards it as sufficient to subsume the dimensions into a single index without requiring strong empirical associations between the dimensions. This approach is commonly used in social science and economic research, including in the United Nations Human Development Index (UNDP, 2013).

With the dimension scores for each village, the scores for the domain indices and the overall index of cohesion were calculated, again taking the average of the respective dimensions. In other words, a village's overall score on the Social Cohesion Index was calculated by taking the average score of all nine dimensions. Likewise, the construction of the score for each of the domains involved the averaging of the three relevant dimension scores. For example, a village's score for Domain 1 took the average of the scores for Dimensions 1.1, 1.2, and 1.3.

Finally, in order to create scores at the sub-district level, the village dimension scores were further aggregated to the sub-district level by taking the mean of the dimension scores of all villages belonging to a particular sub-district. These sub-district dimension scores were then used to create the domain scores and overall cohesion score in the same manner as described above.

5.6 Analysis of the social cohesion scores

While the Social Cohesion Index lends itself to a variety of different analyses, only a handful are described and carried out here.

5.6.1 Testing differences in social cohesion

Differences in social cohesion scores were tested between the pilot and control groups at the sub-district and village level. For sub-districts this was done using a two-tailed independent samples *t*-test, which compares the means of the same variable for two different groups, with the null hypothesis being that the difference between the means is zero (UCLA: Statistical Consulting Group, 2015). In order to determine whether statistically significant differences exist between pilot and control groups while also taking into account variations in village scores, as well as the nested relationship of villages within sub-districts and treatment groups, hierarchical ANOVAs were conducted. Ideally, there would be no significant differences in social cohesion between the pilot and control groups before the beginning of the intervention.

5.6.2 Profiles of social cohesion

A further step in the analysis involved determining whether sub-districts cluster together to create similar cohesion profiles; that is, whether they have similar strengths and weaknesses with respect to cohesion. This could aid in identifying whether certain combinations of characteristics of sub-districts in particular lend themselves to cohesiveness. Thus, hierarchical cluster analysis was conducted in order to determine which sub-districts clustered together. In doing so, all nine dimension scores were considered, rather than the overall social cohesion score, in order to allow for more detailed differentiation. The analysis was based on the empirical approach of Green and Janmaat (2011), and conducted with Ward's distance as a cluster linkage based on the squared Euclidean distance. Clusters were produced starting with each sub-district, then in the next step the cluster locations nearest to one another form the next cluster, and so on (Cramer, 2003). These clusterings were visualized using dendrograms, and appropriate groupings were indicated by large differences between steps in the dendograms. Profiles were derived with respect to a reasonable cut point, which are typically where large increases occur from one step to the next, especially prior to or following a relatively smaller increase (Dragolov et al., 2016).

5.6.3 Analysis of determinants and outcomes

As a final step in the analysis, potential determinants and outcomes of the overall Social Cohesion Index and the nine dimensions were examined using bivariate correlations. For the

baseline data, it was not possible to infer causality because the potential determinants and outcomes from the questionnaires were measured at the same time point as the indicators of social cohesion. However, it would be possible to increase the plausibility of causality on the basis of appropriate theory. As an example, previous studies have included a number of sets of relevant societal characteristics, such as: wealth and economic situation; income inequality and the welfare state; demography; degree of modernization in social structures; diversity; culture and values; and subjective well-being (Dragolov et al., 2013a). For the present Kyrgyz Republic context, the economic and social service indicators suggested in the Baseline Survey Report (SIPRI & UCA, 2015) were incorporated as much as possible for the determinants, such as access to: employment, education, and transportation. Further indicators addressing well-being, satisfaction, and health were incorporated as potential outcomes.

For this purpose, for each bivariate combination of determinant/outcome indicator and Social Cohesion Index/dimension score, Pearson Product-Moment Correlations (r) were calculated to assess the proportion of variation that can be explained. The degree and direction of the relationship was measured on a scale from -1 to +1, where -1 indicates a perfect negative correlation and +1 a perfect positive correlation. The closer the correlation measure comes to either endpoint, the stronger the relationship between the two variables (Howell, 2007). Cohen's (1992) recommendations for understanding the strength of the correlations were applied: 0.1 represents a "small" correlation, 0.3 represents a "moderate" correlation, while 0.5 represents a "large" correlation size.

6. Results

This section of the report presents the central results of the analyses. First, the level of social cohesion as captured in the overall index, the domains, and the dimensions is described for the sub-districts and briefly for the villages. Second, comparisons of social cohesion across control and pilots groups are detailed. Third, profiles of cohesion across sub-districts are presented. Finally, results regarding the association of the overall Social Cohesions Index and its dimensions with various determinants and outcomes are described.

6.1 Levels of social cohesion

The primary aim of this analysis is to determine what the baseline levels of social cohesion are for the sub-districts under study. Table 2 presents the overall Social Cohesion Index scores of the 30 sub-districts along with their domain and dimension scores. These are arranged by treatment group (i.e., control vs. pilot) and are listed in descending order according to their absolute overall Social Cohesion Index score on a scale from 0 to 10, with 10 being the highest. As a visual aid in the interpretation, scores were divided into quintiles from highest to lowest and color coded as depicted in Figure 2. Information on whether the sub-districts were considered either multi- or mono-ethnic is also provided for context.[3]

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3   According to the Baseline Survey Report (SIPRI & UCA, 2015), a sub-district was considered multi-ethnic when at least 10 percent of the population was not Kyrgyz.

Figure 2: Color coding scheme for Social Cohesion Index scores

> 8 to 10
> 6 to 8
> 4 to 6
> 2 to 4
0 to 2

Overall, one sees in Table 2 that all 30 sub-districts fall into the second and third tiers in their overall Social Cohesion Index (SoCo) scores at the baseline (i.e., with scores greater than 4 up through 8). Visually, large differences in the overall scores between the pilot and control groups are not apparent. Likewise, no clear pattern is observed in the scores of multi-ethnic and mono-ethnic sub-districts. The sub-district of Jany-Nookat finds itself at the top of the overall ranking with a score of 6.83 out of 10, with Kenesh, Terek, Too-Moium, Don Bulak, and Ak Chiy following closely behind. At the bottom of the ranking of the sub-districts are Kok-Jar, Taldy-Suu, Yusupov, Ak-Kuduk, Jerge-Tal, and Chek-Abad, with scores ranging from 5.99 to 5.30. In terms of the overall Social Cohesion Index scores, it is notable that no sub-district reaches an overall score in the top tier (between 8 and 10) and no sub-district has an overall score in the bottom two tiers (between 0 and 4).

Given the similarities of the sub-districts in their overall Social Cohesion Index scores, it is helpful to break down the scores for a more detailed picture. Table 2 also presents the sub-district scores at baseline for each of the three domains of social cohesion – *D1: Social relations*, *D2: Connectedness*, *D3: Focus on the common good* – arranged according to treatment status (i.e., whether the sub-district belonged to the pilot or control group) and ranked in order from highest to lowest overall index scores. This demonstrates that the domain scores for the sub-districts also remain centered around the second and third tiers. The top two overall sub-districts of Jany-Nookat and Kenesh consistently show scores in the second tier for all three domains. The bottom two overall sub-districts, however, display somewhat different patterns. For *connectedness*, Jerge-Tal has a score of 7.65 in the second tier, but a score of 3.66 in the fourth tier for *focus on the common good*. Averaged together with a score of 4.97 for *social relations*, this sub-district's overall score is pulled down into the third tier. Likewise, despite Chek-Abad's second-tier score for *connectedness*, the overall cohesion score falls into the third tier when averaged with the other two domains.

A slightly different picture emerges when the overall Social Cohesion Index scores are broken down even further for each sub-district into the nine dimensions of social cohesion, also displayed in Table 2.

Perhaps the first apparent observation is that the lowest dimensions scores concentrate in two interrelated dimensions: *Dimensions 1.1* and *3.1*. In *Dimension 1.1: Social networks*, nearly all sub-districts fall into the fourth tier of cohesion with scores between 2 and 4 out of 10. Only Jany-Nookat, Kenesh, Mirmahmudov, and Kara-Tash have scores high enough to put them in the third tier. This dimension of *social networks* intends to measure whether people have strong, resilient social networks. In the Kyrgyz Republic context, this was measured using indicators that measured: (1) whether people could easily ask for help if needed; (2) the breadth of their involvement in various social groups; and (3) whether they could depend on their social network to lend them money in an emergency (see Table A.1 in the Appendix).

Table 2: Social cohesion scores for 30 sub-districts at baseline, arranged by treatment group and overall score

Treatment	Ethnic	Village	SoCo	D1	D1.1	D1.2	D1.3	D2	D2.1	D2.2	D2.3	D3	D3.1	D3.2	D3.3
Control	Multi	Jany-Nookat	6,83	6,96	4,49	8,32	8,06	7,21	8,95	7,01	5,67	6,33	4,26	7,33	7,39
Control	Mono	Kenesh	6,79	6,82	4,32	7,53	8,63	7,20	7,91	6,62	7,07	6,36	4,16	7,31	7,60
Control	Mono	Terek	6,78	6,49	2,70	8,25	8,51	7,99	9,50	7,47	6,98	5,87	6,17	6,30	5,13
Control	Multi	Too-Moiun	6,74	6,82	3,77	8,09	8,61	7,59	8,52	6,81	7,45	5,79	3,74	7,31	6,31
Control	Multi	Don Bulak	6,73	6,50	3,72	7,55	8,23	7,55	9,26	6,12	7,27	6,15	5,23	6,98	6,24
Control	Multi	Mirmahmudov	6,63	6,90	4,77	7,70	8,22	7,32	8,69	6,99	6,29	5,68	3,19	7,07	6,79
Control	Mono	Iyri-Suu	6,50	6,17	2,79	7,93	7,78	7,11	7,99	6,52	6,83	6,23	4,39	7,85	6,44
Control	Multi	Savai	6,47	6,07	3,19	7,17	7,83	7,45	7,84	7,44	7,06	5,90	4,43	7,13	6,14
Control	Mono	Baetovo	6,38	6,18	2,85	7,31	8,39	7,69	9,45	7,34	6,27	5,28	4,88	6,72	4,25
Control	Mono	Ugut	6,22	5,39	4,00	5,54	6,64	6,99	9,88	4,75	6,34	6,29	5,36	6,94	6,56
Control	Multi	Ak-Tash	6,21	6,12	2,43	7,82	8,11	7,01	7,95	5,86	7,23	5,49	3,68	7,27	5,52
Control	Mono	Kazybek	6,09	5,22	3,48	5,47	6,71	6,52	7,56	6,59	5,42	6,52	6,11	6,29	7,16
Control	Multi	Tort-Kol	6,02	6,19	3,93	7,70	6,94	6,74	8,71	5,40	6,10	5,13	2,93	6,03	6,43
Control	Mono	Taldy-Suu	5,98	5,40	2,69	6,51	7,00	7,58	9,52	6,56	6,65	4,95	3,09	4,53	7,23
Control	Multi	Chek-Abad	5,30	5,51	3,14	6,74	6,66	6,11	7,24	5,88	5,21	4,27	2,53	6,16	4,12
Pilot	Mono	Ak Chiy	6,73	6,24	3,04	7,26	8,43	7,82	9,72	6,99	6,75	6,11	6,07	6,52	5,76
Pilot	Mono	Changet	6,69	6,29	2,84	8,47	7,54	7,67	8,58	7,43	7,00	6,11	4,13	7,41	6,80
Pilot	Multi	Kara-Tash	6,43	6,85	5,75	7,26	7,55	6,41	8,20	5,18	5,85	6,03	3,86	6,99	7,23
Pilot	Multi	Mady	6,29	6,23	3,71	7,68	7,28	7,24	8,80	6,38	6,53	5,39	3,80	6,10	6,28
Pilot	Multi	Anarov	6,20	6,00	2,74	7,47	7,77	7,67	9,23	7,23	6,56	4,95	3,09	6,16	5,59
Pilot	Multi	Otuz-Adyr	6,16	5,91	3,02	7,06	7,66	7,09	8,82	5,94	6,50	5,49	3,91	6,77	5,80
Pilot	Multi	Sarai	6,15	6,01	3,13	7,07	7,81	6,69	8,42	5,80	5,85	5,74	4,27	6,72	6,23
Pilot	Mono	Karool	6,14	6,28	3,53	8,09	7,23	7,08	8,91	6,78	5,55	5,07	2,59	6,02	6,60
Pilot	Mono	Kara-Suu	6,13	5,97	3,81	6,27	7,83	6,42	7,83	5,10	6,34	5,99	5,46	6,93	5,59
Pilot	Multi	Zarger	6,07	5,89	2,92	7,23	7,53	7,03	9,00	6,37	5,71	5,31	4,44	6,03	5,44
Pilot	Multi	Tepe-Korgon	6,00	5,80	2,57	7,42	7,43	6,94	8,31	6,56	5,94	5,27	4,16	6,21	5,43
Pilot	Mono	Kok-Jar	5,99	5,24	2,01	5,36	8,36	6,84	9,78	5,48	5,27	5,90	4,81	7,56	5,32
Pilot	Multi	Yusupov	5,72	5,49	2,61	5,86	6,99	6,34	7,28	5,99	5,74	5,34	4,98	6,12	4,91
Pilot	Mono	Ak-Kuduk	5,45	5,12	3,03	5,83	6,48	5,77	7,48	4,81	5,01	5,47	5,28	5,18	5,95
Pilot	Mono	Jerge-Tal	5,43	4,97	2,38	6,09	6,45	7,65	9,88	6,44	6,64	3,66	2,72	2,43	5,83
		Mean	6,24	6,03	3,31	7,17	7,62	7,09	8,64	6,33	6,30	5,60	4,26	6,48	6,07
		Standard Deviation	0,41	0,55	0,79	0,85	0,66	0,53	0,78	0,77	0,66	0,62	1,02	1,03	0,85

In terms of the other low-scoring dimension, *Dimension 3.1: Solidarity and helpfulness*, the sub-districts of Terek, Ak Chiy, and Kazybek have the highest scores as compared to the others, placing them in the second tier of cohesion. Fifteen of the sub-districts fall into the third tier of cohesion, and 12 fall into the fourth tier. Of those in the fourth tier, Tort-Kol, Jerge-Tal, Karool, and Chek-Abad stand out as having the lowest scores. This dimension of *solidarity and helpfulness* aims at measuring whether people feel responsibility for others and are willing to help them. In the Kyrgyz Republic, this was measured by indicators related to: (1) whether people gave non-financial help to anyone in the past year; (2) whether they gave financial help in the past year; and (3) whether they judged others in their community as being helpful (see Table A.7 in the Appendix).

A second observation made clear with the help of color coding is that the highest cohesion scores are concentrated in *Dimensions 2.1*, *1.3*, and *1.2*, respectively. In *Dimension 2.1: Identification*, 21 sub-districts fall into the top tier of cohesion, with scores ranging from 9.88 in Jerge-Tal und Ugut to 8.20 in Kara-Tash. The remaining sub-districts of Kenesh, Iryi-Suu, Savai, Ak-Tash, Kara-Suu, Kazybek,Yusupov, Ak-Kuduk, and Chek-Abad have slightly lower scores, though they are still high enough to place them in the second tier. No sub-district falls below the second tier. This dimension of *identification* intends to examine the degree to which people feel connected to their communities and identify with them. In particular, this was measured using indicators measuring whether people see themselves as members of their neighborhoods, village, tribe, ethnic group, and as a citizen of The Kyrgyz Republic (see Table A.4 in the Appendix).

In *Dimension 1.3: Acceptance of diversity*, 10 of the sub-districts' scores place them in the top tier of cohesion. Kenesh, Too-Moium, and Terek round out the top three with scores ranging from 8.63 to 8.51. The remaining 20 sub-districts also have high scores placing them in the second tier, and none of the sub-districts have scores in the bottom three tiers. This dimension of *acceptance of diversity* intends to measure whether people accept individuals with other values and lifestyles as equal members of society. For this analysis, this was assessed using indicators measuring: (1) attitudes regarding people with disabilities, the poor, and the rich; (2) whether people from different social backgrounds get along; (3) whether people treat each other with respect; (4) whether ethnic differences are respected; (5) whether people have meaningful interactions with others from different backgrounds; and (6) whether they view attacks based on ethnic or religious origins as problematic (see Table A.3 in the Appendix).

Dimension 1.2: Trust in people also displays a high range of scores among sub-districts. Jany-Nookat, Terek, Too-Moiun, Changet, and Karool display scores from 8.09 to 8.47, which place them in the top tier of cohesion. Twenty-one sub-districts fall into the second tier for *trust in people*, and the four sub-districts of Ugut, Kazybek, Kok-Jar, and Ak-Kuduk fall into the third tier with scores ranging from 5.36 to 5.54. This particular dimension of *trust in people* attempts to measure whether people have a high level of trust in others, using indicators on: general trust in people; and trust in neighbors, other villagers, others in the same ethnic group, and others in different ethnic groups (see Table A.2 in the Appendix).

For the remaining *Dimensions 2.2: Trust in institutions*, *2.3: Perception of fairness*, *3.2: Respect for social rules*, and *3.3: Civic participation*, all sub-districts displayed scores exclusively in the second and third tiers. There were no extreme scores in either the top or bottom tiers.

6.1.1 Village level social cohesion

Although the main entities of interest for the project are sub-districts, the overall Social Co-hesion Index and the dimension scores were also calculated for the 137 villages making up the 30 sub-districts. Since this analysis is seen as supplementary, and for reasons of space and brevity, these scores are not explored in great detail in this report, but are presented fully in Table A.10 in the Appendix for reference. With few exceptions, the dimension scores for the villages follow the same general pattern as described above for the sub-districts. One also sees that a handful of scores in the bottom tier of cohesion become apparent only at the village level, concentrating in the weakest dimensions of *Dimension 1.1: Social networks* and *Dimension 3.1: Solidarity and helpfulness*.

However, in order to paint a picture of what social cohesion and its dimensions may look like at the village level in the Kyrgyz Republic, the following makes use of ethnographic field-work that was conducted in relation to the larger community-based development project (Schröder, 2016). Based on the qualitative interviews conducted, social cohesion is illustrat-ed in the following paragraphs for two exemplary villages: Kara-Bulak and Ak-Chiy.

Table 3: Social cohesion scores for the villages of Kara-Bulak and Ak-Chiy

Treatment	Ethnic	Village	SoCo	D1.1	D1.2	D1.3	D2.1	D2.2	D2.3	D3.1	D3.2	D3.3
Pilot	Multi	Kara-Bulak	6,62	4,37	7,44	7,41	8,16	6,66	5,28	4,09	7,32	8,81
Pilot	Mono	Ak-Chiy	6,58	2,90	7,60	8,26	9,57	6,73	6,37	6,18	6,34	5,31

Kara-Bulak is a small, multi-ethnic village with 208 residents, situated in a remote location far from urban centers in the southern *oblast* (i.e., federal state) of Osh. In terms of social cohesion, Kara-Bulak is unique in that none of its dimension scores falls below the third tier. This is especially notable with regard to its comparatively higher third tier scores for *Dimension 1.1: Social networks* and *Dimension 3.1: Solidarity and helpfulness*, which are particularly weak dimensions for many of the other villages studied. Similarly, Kara-Bulak also stands out in terms of its top tier score on *Dimension 3.3: Civic participation*, which is the case for only a handful of other villages.

Indeed, the ethnographic fieldwork revealed evidence of comparatively strong social net-works, solidarity, and civic participation in Kara-Bulak. In the qualitative interviews (*n* = 9), villagers reported that due to the small size of the community, the whole village takes part in planning and attending all important celebrations (e.g., weddings, funerals, Islamic fast-breaking) and there is a sense of "mutual dependency" upon one another. There are also a number of examples of effective community organizing and collective labor efforts in order to meet the larger goals and needs of the community. For instance, the main transit road into the village used to be maintained by the government during Soviet times, but now the re-sponsibility falls to the villagers. This annual collective effort amounts to three days of work for 20 men, and ensures that the road remains passable year-round and that the community is not cut off from urban centers. Likewise, the completion of the village's connection to the electrical grid was also attributed to effective and flexible problem solving in the community. Although life in Kara-Bulak is not without its struggles, these particular aspects of the com-munity appear to enhance social cohesion.

Ak-Chiy, located in the northern *oblast* of Naryn, is another interesting example of what social cohesion looks like at the village level in the Kyrgyz Republic. With a mono-ethnic Kyrgyz population of 567, Ak-Chiy has a nearly "perfect" score on *Dimension 2.1: Identification* and a rare second tier score on *Dimension 3.1: Solidarity and helpfulness*. This identification with the community and sense of solidarity are evident in the qualitative interviews (*n* = 12) conducted in the village. In particular, the village seems to be brought together by a "shared situation of uncertainty" (Schröder, 2016, p. 8) in that the government has deemed the village to be located in a high-risk area for natural disasters and is attempting to relocate the community. Even more, the villagers reported "feelings of excitement and joy" and a "general appreciation for the sense of belonging that rises from common laboring" (p. 9), such as making hay or cleaning the irrigation canals. Further enhancing the sense of solidarity is an appreciation that during such community projects, all levels of the social hierarchy in the village participate. However, the village still demonstrates a typically low fourth tier score on *Dimension 1.1: Social networks*, which supports the finding that there is a "clear understanding of social boundaries, which delineate those to ask for support or invite for a celebration" and those who should not be asked or invited (p. 8). These social boundaries seem to be exacerbated by the economic inequalities that have developed between families since the fall of the Soviet Union. In these ways, aspects of social cohesion are clear in the everyday lives of village residents.

6.2 Testing differences in social cohesion

After calculating the Social Cohesion Index, the next step of analysis involved testing differences in social cohesion scores between the pilot and control groups at baseline. Table 4 presents the results of the independent samples *t*-test comparing control (n_c = 15) and pilot (n_p = 15) sub-districts on the overall Social Cohesion Index as well as for the domains and each of the nine dimension scores. No statistically significant differences in social cohesion were found between the pilot and control sub-districts at baseline. In order to determine whether statistically significant differences exist between pilot and control groups while also taking into account variations in village scores, as well as the nested relationship of villages within sub-districts and treatment groups, hierarchical ANOVAs were conducted. Although variation was found between sub-districts and between villages within both the pilot and the control groups, no significant differences were found across the two treatment groups with regards to overall social cohesion, $F(1, 107) = 2.75$, ns, nor for any of the domains or dimensions (see Table A.11 in the Appendix for full results).

Table 4: Differences in social cohesion between pilot and control groups in 30 sub-districts

	Treatment Groups at Baseline							
	Control		Pilot					
	Mean	SD	Mean	SD	N	df	T	Sig.
SoCo	6.378	0.421	6.106	0.372	30	28	1.882	ns
D1	6.183	0.583	5.886	0.502	30	28	1.494	ns
D1.1	3.484	0.727	3.142	0.868	30	28	1.172	ns
D1.2	7.309	0.889	7.028	0.838	30	28	0.891	ns

| | Treatment Groups at Baseline | | | | | | | |
| | Control | | Pilot | | | | | |
	Mean	SD	Mean	SD	N	df	T	Sig.
D1.3	7.755	0.751	7.488	0.564	30	28	1.098	ns
D2	7.204	0.485	6.977	0.587	30	28	1.155	ns
D2.1	8.598	0.821	8.683	0.792	30	28	-0.286	ns
D2.2	6.490	0.773	6.166	0.790	30	28	1.135	ns
D2.3	6.523	0.698	6.081	0.583	30	28	1.882	ns
D3	5.749	0.627	5.455	0.625	30	28	1.288	ns
D3.1	4.278	1.119	4.238	0.988	30	28	0.105	ns
D3.2	6.748	0.801	6.209	1.210	30	28	1.438	ns
D3.3	6.221	1.058	5.917	0.613	30	28	0.963	ns

Significance of two-tailed independent t-tests: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ns non-significant

6.3 Profiles of social cohesion

Another potentially enlightening analysis involves investigating whether patterns emerge in specific sub-districts that cluster together and exhibit similar cohesion profiles. Here it is important to keep in the mind that these clusters take all nine dimension scores into account in assessing the patterns of social cohesion. Figure 3 presents the clustering of sub-districts at baseline.

Figure 3: Dendogram from hierarchical clustering of sub-districts at baseline
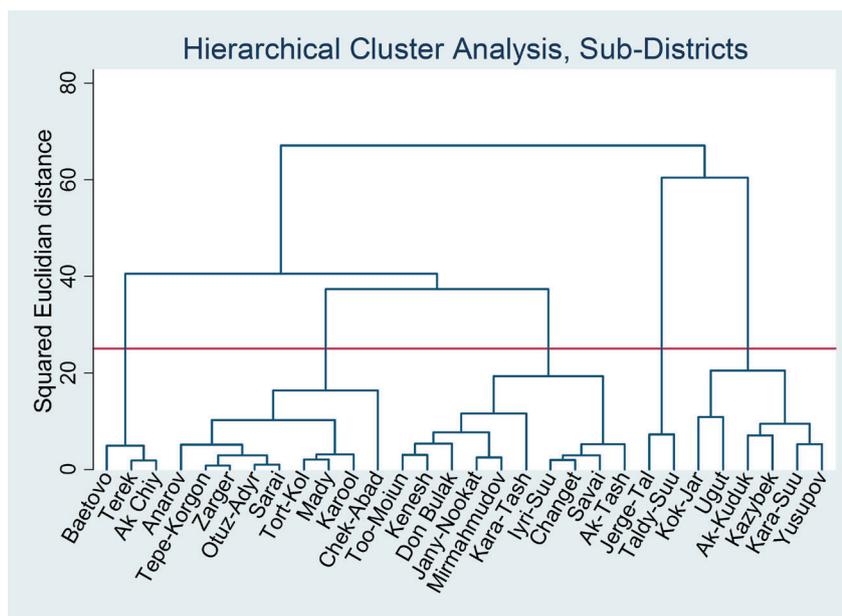
Based on a cut point of 25, the following five sub-district clusters were derived:

- Cluster 1: Ak Chiy, Baetovo, Terek
- Cluster 2: Anarov, Chek-Abad, Karool, Mady, Otuz-Adyr, Sarai, Tepe-Korgon, Tort-Kol, Zarger
- Cluster 3: Ak-Tash, Changet, Don Bulak, Iyri-Suu, Jany-Nookat, Kara-Tash, Kenesh, Mirmahmudov, Savai, Too-Moiun
- Cluster 4: Jerge-Tal, Taldy-Suu
- Cluster 5: Ak-Kuduk, Kara-Suu, Kazybek, Kok-Jar, Ugut, Yusupov

Table 5 presents the average overall Social Cohesion Index as well as the nine dimension scores for the five derived sub-district clusters. These clusters are ranked according to their overall Social Cohesion Index score. Similar to the social cohesion patterns found for sub-districts in Section 6.1, all of the clusters are found in the second and third tier of the overall Social Cohesion Index, with no cluster scoring in either the highest or lowest tiers. Clusters 1, 3, and 2 (in this order) form the top three with scores of 6.63, 6.60, and 6.04, respectively, on a scale of 0 to 10. Conversely, clusters 5 and 4 (also in this order) have the lowest Social Cohesion Index scores of 5.93 and 5.70. Below are more specific descriptions of the clusters in terms of their dimension scores.[4]

Table 5: Social cohesion scores for five profiles of cohesion at baseline

	SoCo	D1.1	D1.2	D1.3	D2.1	D2.2	D2.3	D3.1	D3.2	D3.3
1. Ak-Chiy, Baetovo, Terek	6,63	2,86	7,61	8,44	9,56	7,27	6,67	5,71	6,51	5,05
3. Ak-Tash, Changet, Don Bulak, Iyri-Suu, Jany-Nookat, Kara-Tash, Kenesh, Mirmahmudov, Savai, Too-Moiun	6,60	3,81	7,78	8,06	8,39	6,60	6,77	4,11	7,26	6,65
2. Anarov, Chek-Abad, Karool, Mady, Otuz-Adyr, Sarai, Tere-Korgon, Tort-Kol, Zarger	6,04	3,19	7,38	7,37	8,60	6,26	5,99	3,52	6,24	5,77
5. Ak-Kuduk, Kara-Suu, Kazybek, Kok-Jar, Ugut, Yusupov	5,93	3,16	5,89	7,17	8,30	5,45	5,69	5,33	6,50	5,92
4. Jerge-Tal, Taldy-Suu	5,70	2,53	6,30	6,72	9,70	6,50	6,64	2,91	3,48	6,53
Mean	6,18	3,11	6,99	7,55	8,91	6,42	6,35	4,32	6,00	5,98
Standard Deviation	0,37	0,42	0,75	0,62	0,60	0,59	0,43	1,06	1,30	0,58

6.3.1 Cluster 1: Ak Chiy, Baetovo, Terek

The cluster containing Ak Chiy, Baetovo, and Terek appears to be extremely strong in *Dimension 2.1: Identification* and *Dimension 1.3: Acceptance of diversity*, indicating that there is a strong level of connection within its communities and a high acceptance of others with different values and lifestyles. It is one of only two clusters to have two dimensions reach the top tier of cohesion. However, like all the other clusters, its greatest weakness is *Dimension 1.1: Social networks*, pointing toward weaker and less resilient social networks.

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4   In order to be most useful, these clusters and their scores will need careful interpretation in the context of the Kyrgyz Republic in order to recognize patterns of characteristics among the sub-districts.

6.3.2 Cluster 2: Anarov, Chek-Abad, Karool, Mady, Otuz-Adyr, Sarai, Tepe-Korgon, Tort-Kol, Zarger

Cluster 2 finds itself in the middle of all the other clusters. *Dimension 2.1: Identification* is its strongest dimension, while *Dimension 1.1: Social networks* and *Dimension 3.1: Solidarity and helpfulness* are its weakest dimensions. This indicates that while there is a strong feeling of connectedness, social networks may be less strong, and less of a feeling of responsibility to help others exists.

6.3.3 Cluster 3: Ak-Tash, Changet, Don Bulak, Iyri-Suu, Jany-Nookat, Kara-Tash, Kenesh, Mirmahmudov, Savai, Too-Moiun

Cluster 3, the largest cluster of all with 10 sub-districts, also demonstrates two particular strengths among the dimensions, though to a slighter lesser degree than Cluster 1: *Dimension 2.1: Identification* and *Dimension 1.3: Acceptance of diversity* both reach the top tier of scores. While its weakest dimension is *Dimension 1.1: Social networks*, it actually scores the highest in this dimension as compared to the other clusters.

6.3.4 Cluster 4: Jerge-Tal, Taldy-Suu

The smallest cluster with only two sub-districts, Cluster 4 finds itself with the lowest overall Social Cohesion Index, but with the highest score among all the clusters on *Dimension 2.1: Identification* with 9.70 out of 10. Even so, three of its dimensions have scores that fall in the fourth tier: *Dimension 1.1: Social networks, Dimension 3.1: Solidarity and helpfulness,* and *Dimension 3.2: Respect for social rules*. Only this particular cluster finds itself with such a low score on this last dimension, indicating a perception that the fundamental rules of society are not followed.

6.3.5 Cluster 5: Ak-Kuduk, Kara-Suu, Kazybek, Kok-Jar, Ugut, Yusupov

Finally, Cluster 5 has its highest score in *Dimension 2.1: Identification* and its lowest score in *Dimension 1.1: Social networks*. Otherwise, the rest of its dimensions score in the second and third tiers.

6.4 Potential determinants and outcomes

While it is not possible to test causal relationships between social cohesion and its hypothesized determinants and outcomes with the current baseline data at only one time point, it is nevertheless helpful to examine existing correlations. This sheds light on the particular societal characteristics that could influence social cohesion, and/or on which characteristics social cohesion could influence in turn. Nine different thematic sets of relevant characteristics were examined: (1) wealth and economic situation, (2) access to education, (3) spatial structure, (4) modernization, (5) demography, (6) diversity, (7) community characteristics, (8) well-being, and (9) personality traits. The following sections describe in detail the correlations with overall social cohesion, and break them down respectively to their correlations with the dimensions. While not all correlations will be discussed in the following text, Table

6 presents all of the statistically significant correlations for the overall social cohesion score and the nine dimension scores.

6.4.1 Characteristics related to wealth and economic situation

The analysis revealed a large positive correlation between the proportion of the community that is employed and higher scores on the Social Cohesion Index ($r = 0.573$, $p < 0.01$), so that sub-districts with higher levels of employment have higher levels of overall social cohesion (see Figure 4). Fittingly, in particular, employment significantly correlates with *Dimension 1.1: Social networks* ($r = 0.402$, $p < 0.05$), *Dimension 1.3: Acceptance of diversity* ($r = 0.404$, $p < 0.05$), *Dimension 3.1: Solidarity and helpfulness* ($r = 0.367$, $p < 0.05$), and *Dimension 3.2: Respect for social rules* ($r = 0.336$, $p < 0.10$). Employment was defined in these data as working, either (1) for someone who is not a household member; (2) on one's own farm or in one's own business or that of a household member's; or (3) by farming, fishing, hunting, and so on. Previous studies have also demonstrated such a correlation between employment and social cohesion. While in some cases this correlation disappears once the overall wealth (Dragolov et al., 2013a) or historical differences (in Germany this refers to the East vs. West legacy; Dragolov et al., 2014) are accounted for, others have shown that social cohesion actually affects the level of employment (Dragolov et al., 2016), rather than the other way around. This is something that may only become clear with the addition of the midline and endline data and time-lagged correlation analysis.

Figure 4: Baseline association of employment and social cohesion in sub-districts
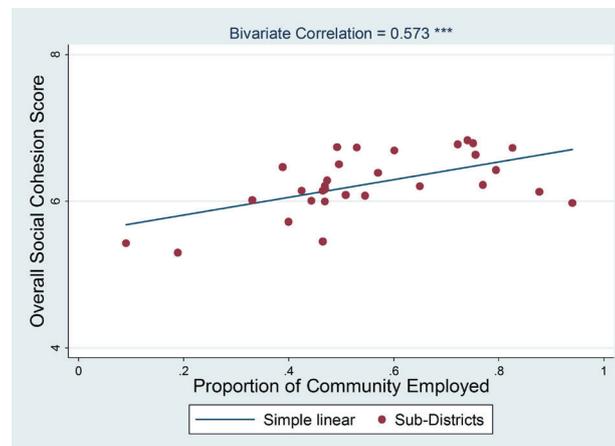
6.4.2 Characteristics related to access to education

The analysis revealed a moderate positive correlation between characteristics related to access to education and higher scores on the overall Social Cohesion Index. Specifically, the percentage of 16 to 17 year olds attending 10th to 11th grade is positively related to social cohesion ($r = 0.385$, $p < 0.05$), so that sub-districts with higher levels of 16 to 17 years olds in school also have higher levels of overall social cohesion (see Figure 5). Focusing in on the specific dimensions, the correlations with this indicator of education are also moderate for *Dimension 1.1: Social networks* ($r = 0.316$, $p < 0.10$) and *Dimension 3.1: Solidarity and helpfulness* ($r = 0.326$, $p < 0.10$). One could therefore speculate that education enhances the strength of social networks and solidarity with others.

Figure 5: Baseline association of 16-17 year olds attending grades 10 to 11 and social cohesion in sub-districts
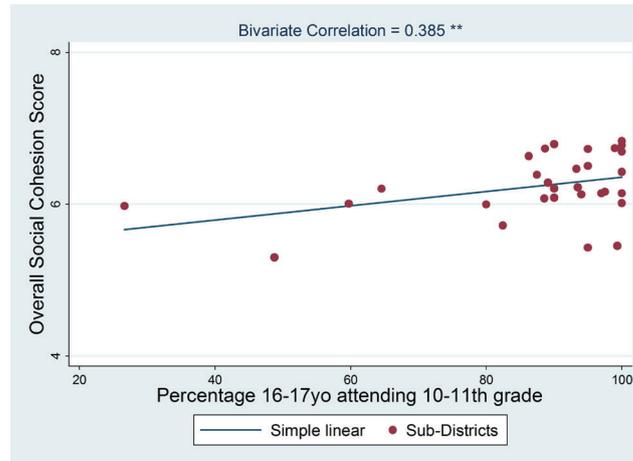
6.4.3 Characteristics related to spatial structure

A moderate positive correlation was found between characteristics related to spatial structure and scores on the Social Cohesion Index. For example, the sub-districts where more of the main routes to its communities are paved or partially paved have higher levels of social cohesion than those sub-districts where more of the main routes are footpaths ($r = 0.343$, $p < 0.10$) (see Figure 6). In particular, this seems to be related to *Dimension 1.1: Social networks* ($r = 0.376$, $p < 0.05$), *Dimension 1.2: Trust in others* ($r = 0.411$, $p < 0.05$), and *Dimension 3.2: Respect for social rules* ($r = 0.443$, $p < 0.05$). One could speculate that paved or partially paved paths into communities increase access to and exchange with other communities, thus enhancing social networks and trust of others in the sub-district.

Figure 6: Baseline association of paved main routes and social cohesion in sub-districts
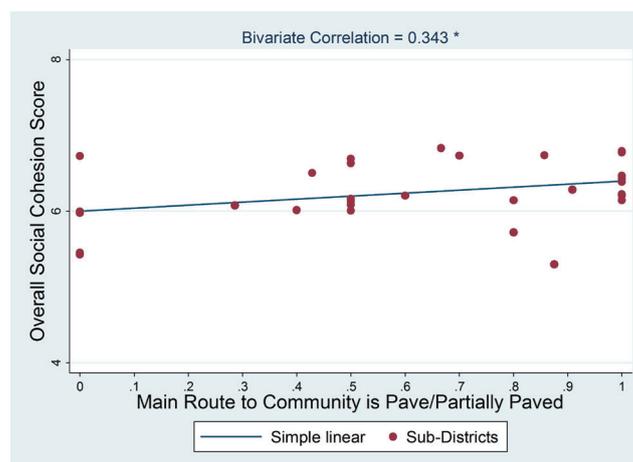
6.4.4 Characteristics related to modernization

A number of moderately strong correlations were also found between characteristics of modernization and social cohesion. For example, ownership of mobile phones is positively correlated with the overall Social Cohesion Index ($r = 0.438$, $p < 0.05$), so that higher levels

Table 6: Baseline correlations of social cohesion scores with relevant determinants and outcomes for sub-districts

					Sub-Districts (N = 30), Correlations (r)					
	SoCo	D1.1	D1.2	D1.3	D2.1	D2.2	D2.3	D3.1	D3.2	D3.3
Wealth and economic situation										
Proportion who are employed	0.573***	0.402**	-	0.404**	-	-	-	0.367**	0.336*	-
Number of festive events hosted by households	-	0.554***	-	-	-	-	-	-	-	0.553***
Percentage of households who own cars	-	0.315*	-	0.330	-	-	-	-	-	-
Proportion of homes with mud/earth as main material	-	-0.411**	-	-	-	-	-	-	-	-
Quality of drinking water	-	0.420**	-	-	-	-	-0.316*	-	-	-
Household income from all sources	-	-	0.529***	0.321*	-0.326*	-	-	-	0.391**	-
Index of market access	-	-	-0.373**	-	0.420**	-	-	0.355*	-	-
Proportion with pit latrines or no toilet facilities	-	-	-	-	0.381**	-	-	-	-	-
Number of rooms in dwellings	-	-	-	-	-0.540*	-	-	-	-	-
Area of dwelling space (qm)	-	-	-	-	-0.540*	-	-	-0.378**	-	-
Amount spent on largest festive events	-	-	-	-	-	-	-	-	-	0.341*
Access to education										
Percentage of 16-17 year olds attending 10-11th grade	0.385**	0.316*	-	-	-	-	-	0.326*	-	-
Percentage of 0-5 year olds attending pre-school	-	-	-	-	-	-	-	0.401**	-	-
Proportion who can write easily	-	0.358*	-	-	-	-	-	-	-	0.391**
Proportion who can read easily	-	-	-	-	-	-	-	-	-	0.338*
Proportion who read books for fun	-	-	-0.429**	-	0.551***	-	-	-	-	-
Education level (ISCED-Scale)	-	-	-	-	0.505***	-	-	-	-	-
Number of skill trainings attended in past year	-	-	-	-	0.431**	-	-	-	-	-
Spatial structure										
Proportion of main routes to communities paved	0.343*	0.376**	0.411**	-	-	-	-	-	0.443**	-
Average community land area (hectares)	-	0.505***	-	-	-0.337*	-	-	-	-	0.335*
Distance to next livestock market (meters)	-	-	-0.470***	-0.376**	-	-	-	-	-	-
Distance to nearest accessible border (km)	-	-	-0.479***	-	0.452**	-	-	0.407**	-0.323*	-
Distance to nearest urban center (km)	-	-	-	-	0.486***	-	-	0.319*	-0.307*	-
Distance to next school (km)	-	-	-	-	-	-	-	-0.307*	-	-0.348*
Proportion of communities with public transportation	-	-	-	-	-0.492***	-	-	-	-	-
Elevation (m)	-	-	-	-	0.499**	0.337*	-	-	-0.438**	-
Percentage of households with access to safe water	-	-	-	-	-	-	-	-	-0.437**	-

(continued)

				Sub-Districts (N = 30), Correlations (r)						
	SoCo	D1.1	D1.2	D1.3	D2.1	D2.2	D2.3	D3.1	D3.2	D3.3
Modernization										
Proportion of households with mobile phones	0.438**	-		0.311*		-	0.397**	-	0.351*	-
Proportion of communities with mobile phone service	0.399**	-	-	-	-	-	-	-	-	0.446**
Frequency of disruption to electricity supply	-0.346*	-	-	-	-0.595***	-	-	-	-	-
Proportions of communities with landline service			-0.320*	-	0.401**	-	-	0.424**	-	-
Proportion of households with landline phones	-	-	-	-	0.386**	-	-	-	-0.676***	-
Demography										
Household size	0.319*	0.469***	0.504***	-		-	-	-0.311*	0.369**	0.341*
Number of households in community	-	0.374**	0.338*	-	-	-	-	-	-	-
Number of years spent in community	-	0.388**	-	-	-	-	-	-	-	-
Number of people in community	-	-	0.325*	-	-	-	-	-	-	-
Number of households in sub-district	-	-	0.372**	-	-0.322*	-	-	-	-	-
Population of sub-district	-	-	0.410**	-	-0.307*	-	-	-0.315*	-	-
Community characteristics										
Proportion of communities w/ peace-building activities	-	0.570***	-	-	-	-	-	-	-	0.395**
Number of groups in community	-	0.681***	-	-	-	-	-	-	-	0.738***
Communities making decisions with all members	-				0.363**	-	0.409**	-	-	-
Proportion of communities with assistance programs	-				0.408**	-	-	-	-	-
Diversity										
Number of languages of communication	0.495***	-	0.477***	0.337*	-	-	-	-	0.373**	0.542***
How well is ethnic history of country known	-	0.431**	0.446**	-	-0.430**	-	0.311*	-	0.531***	0.362**
Proportion of Kyrgyz in households	-	-	-	-	0.376**	-	-	0.323*	-	-
Percentage of Kyrgyz in communities	-	-	-	-	0.366**	-	-	0.380**	-	-
Well-being										
Satisfaction with household's standard of living	0.480***	0.568***	0.396**	0.321*	-	0.400**	-	-	-	0.335*
Satisfaction with health	0.310*	0.708***	0.398**	-	-	-	-	-0.412**	-	0.414**
Satisfaction with life overall	-	0.393**	-	-	0.441**	-	-	-	-	-
Number of traumas experienced in past year	-	-	-0.590***	-	-	-	-	-	-	-
Number of days missed of work due to illness	-	-	-0.464**	-	-	-	-	0.466**	-	-
Number of illness is last 12 months	-	-	-0.381	-	-	-	-	0.615***	0.322*	-
Number of chronic illnesses	-	-	-0.562***	-	-	-	-	0.503***	-	-
Satisfaction with area as a place to live	-	-	-	-	-	-	-	-	-	0.663***

(continued)

| | Sub-Districts (*N* = 30), Correlations (*r*) | | | | | | | | |
	SoCo	D1.1	D1.2	D1.3	D2.1	D2.2	D2.3	D3.1	D3.2	D3.3
Big Five personality traits										
Openness	0.314*	-	-	-	-	-	0.491***	-	0.433**	-
Agreeableness	0.431**	0.386**	**0.509***	0.351*	-	0.313*	-	-	0.408**	-
Conscientiousness	**0.600***	-	-	**0.606**	-	-	0.379**	-	0.457**	-
Extraversion	-0.464***	-0.366**	-0.335*	-	-0.387**	-0.377**	-	-	-	-0.369**
Neuroticism	-0.340*	-0.484***	-	-	-	-	-	-	-	-0.322*

The table shows only the significant correlation coefficient *r* for the simple correlation. Correlations of 0.50 or greater are bolded. Significance of two-tailed correlations:
* p < 0.10, ** p < 0.05, *** p < 0.01. For mean, standard deviation, and minimum-maximum for each determinant or outcome, see Table A.12 in the Appendix.

of mobile phone ownership in sub-districts are correlated to higher levels of social cohesion (see Figure 7).[5] This is also positively related to *Dimension 1.3: Acceptance of diversity* (r = 0.311, p < 0.10), *Dimension 2.3: Perception of fairness* (r = 0.397, p < 0.05), and *Dimension 3.2: Respect for social rules* (r = 0.351, p < 0.10). Similarly, sub-districts with more communities with mobile phone service demonstrate higher social cohesion (r = 0.399, p < 0.05).[6] When examining the dimensions, this is related specifically to *Dimension 3.3: Civic participation*. Together, these correlations point to the possibility that access to mobile phone technology enhances communication and thereby increases social cohesion in this particular context. Additionally, it appears that sub-districts with greater frequencies of disruption to households' electrical supply in the previous year have lower overall levels of social cohesion (r = -0.346, p < 0.10).[7] In particular, this appears to be strongly related to *Dimension 2.1: Identification* (r = -0.595, p < 0.01), so that sub-districts that are more often subject to disruptions in electricity have lower levels of identification.

Figure 7: Baseline association of modernization and social cohesion in sub-districts

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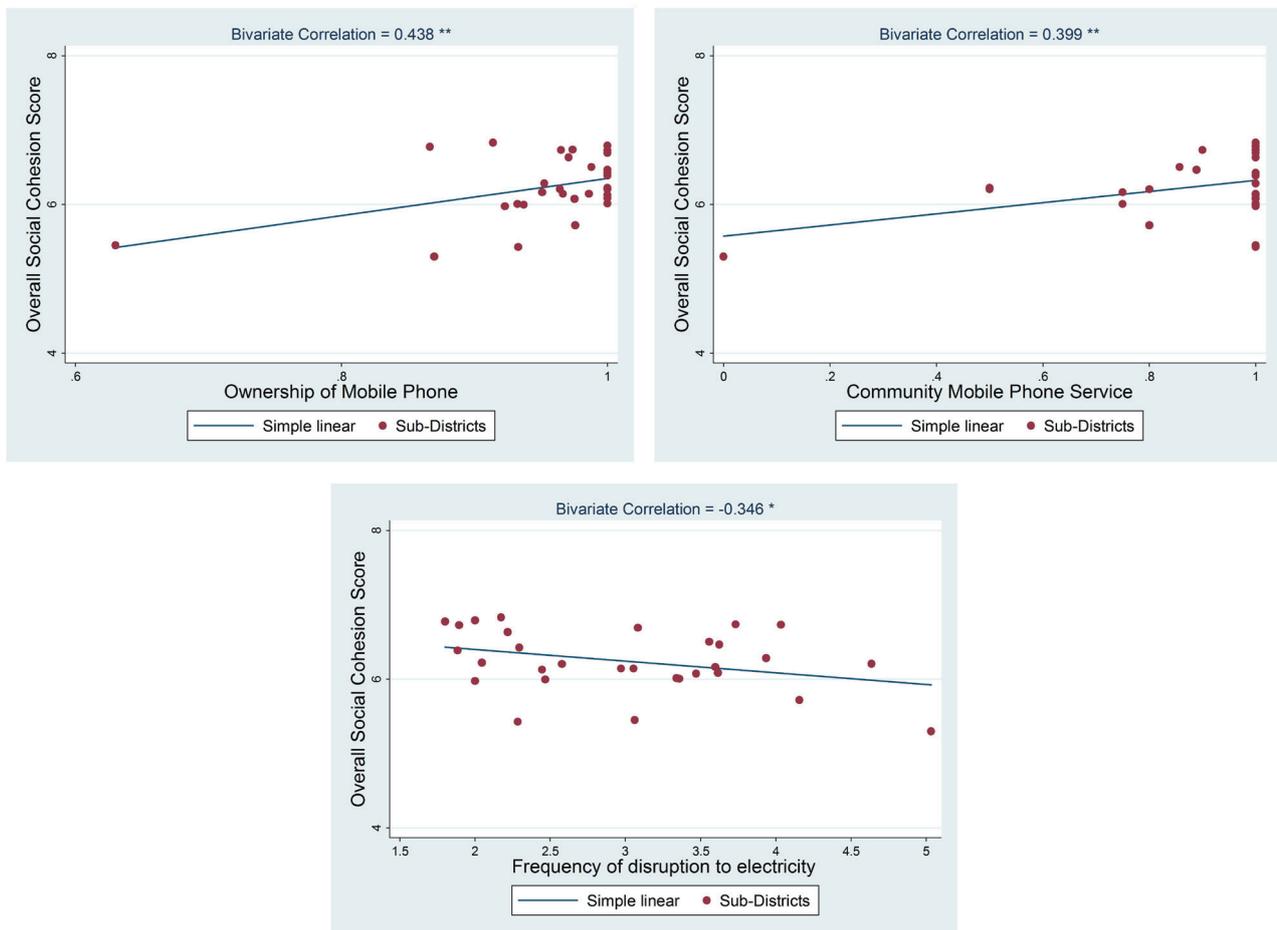
5   If the sub-district with the most extreme level of mobile phone ownership is removed as an outlier, the correlation remains moderately strong but becomes non-significant (r = 0.269, p = 0.159). However, given that the data is aggregated at the sub-district level and represents the reality of a number of villages, it is recommended to retain the outlier.

6   If the sub-district with the most extreme level of community mobile phone service is removed as an outlier, the correlation becomes non-significant (r = 0.117, p = 0.545). It is also recommended here to retain the outlier for the reasons explained in the previous footnote.

7   Frequency of disruption to the electrical supply was measured on a scale from 1 (Never) to 6 (Everyday).

6.4.5 Characteristics related to demography

A moderately strong correlation was found between characteristics of demography and the Social Cohesion Index. Specifically, the sub-districts with a higher average household size demonstrate moderately higher overall social cohesion ($r = 0.319$, $p < 0.10$) (see Figure 8). This is moderately to strongly related to a number of the dimensions, such as *Dimension 1.1: Social networks* ($r = 0.469$, $p < 0.01$), *Dimension 1.2: Trust in others* ($r = 0.504$, $p < 0.01$), *Dimension 3.1: Solidarity and helpfulness* ($r = -0.311$, $p < 0.10$), *Dimension 3.2: Respect for social rules* ($r = 0.369$, $p < 0.05$), and *Dimension 3.3: Civic participation* ($r = 0.341$, $p < 0.10$). Here it is worth noting that while most of the correlations are positive, only the correlation with Dimension 3.1 is negative, so that as average household size increases, scores on solidarity and helpfulness for sub-districts decrease. One could speculate that in sub-districts with a higher average household size, the residents are more reliant on their own household members and require less help from other residents.

Figure 8: Baseline association of household size and social cohesion in sub-districts
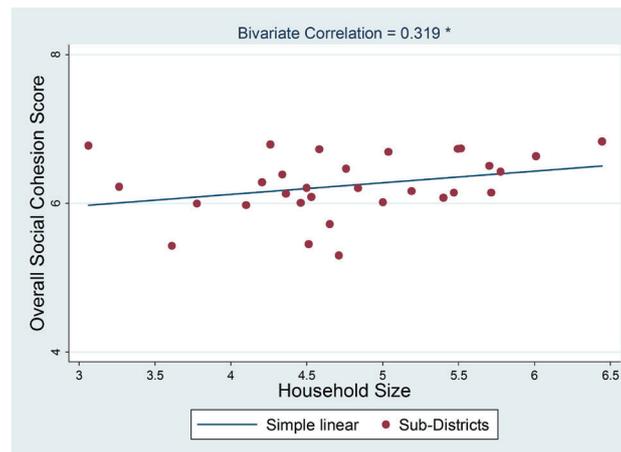
6.4.6 Characteristics related to diversity

In terms of diversity, the number of languages used for communication is positively associated with social cohesion ($r = 0.495$, $p < 0.01$), so that the sub-districts where it is possible to communicate in multiple languages have higher levels of social cohesion (see Figure 9). When examining the particular dimensions, *Dimension 1.2: Trust in people* ($r = 0.477$, $p < 0.01$), *Dimension 1.3: Acceptance of diversity* ($r = 0.337$, $p < 0.10$), *Dimension 3.2: Respect for social rules* ($r = 0.373$, $p < 0.01$), and *Dimension 3.3: Civic participation* ($r = 0.542$, $p < 0.01$) demonstrate moderate to strong correlations with multiple languages. It could therefore be speculated, that these multiple languages enable communication and participation in the community, ultimately enhancing social relationships and a focus on the common good.

Figure 9: Baseline association of number of languages spoken and social cohesion in sub-districts
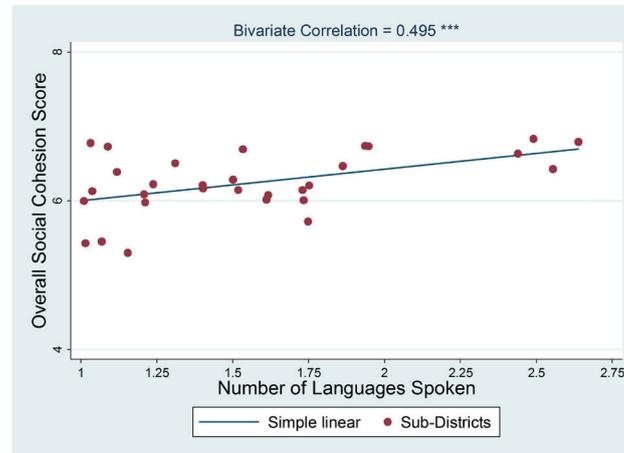
6.4.7 Characteristics related to well-being

Two characteristics of well-being have moderately positive associations with social cohesion. Sub-districts reporting greater satisfaction with households' standard of living have higher scores on the Social Cohesion Index ($r = 0.480$, $p < 0.01$) (see Figure 10). Specifically, there are moderate to strong correlations between this and *Dimension 1.1: Social networks* ($r = 0.568$, $p < 0.01$), *Dimension 1.2: Trust in people* ($r = 0.396$, $p < 0.05$), *Dimension 1.3: Acceptance of diversity* ($r = 0.321$, $p < 0.10$), *Dimension 2.2: Trust in institutions* ($r = 0.400$, $p < 0.05$), and *Dimension 3.3: Civic participation* ($r = 0.335$, $p < 0.10$). Likewise, sub-districts with higher overall social cohesion also have a greater satisfaction with their health ($r = 0.310$, $p < 0.10$) (see Figure 10). In particular, there is a very strong positive correlation between satisfaction with health and *Dimension 1.1: Social networks* ($r = 0.708$, $p < 0.01$), moderate correlations with *Dimension 1.2: Trust in people* ($r = 0.398$, $p < 0.05$) and *Dimension 3.3: Civic participation* ($r = -0.412$, $p < 0.05$), and a negative correlation with *Dimension 3.1: Solidarity and helpfulness*. Generally, these results support previous research demonstrating that those societies with higher levels of social cohesion also tend to be happier and more satisfied with their lives (Delhey & Dragolov, 2015), however the negative relationship between *solidarity and helpfulness* and satisfaction with health is worth exploring further.

Figure 10: Baseline association of well-being and social cohesion in sub-districts
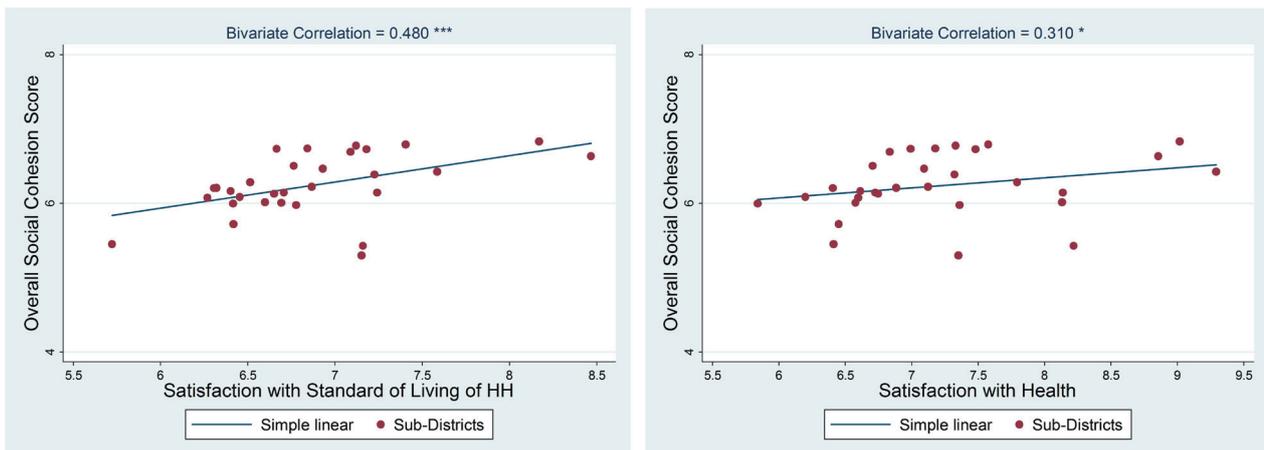
6.4.8 Characteristics related to personality

Interestingly, moderate to strong correlations were found between all of the Big Five personality traits (for a historical overview, see Goldberg, 1993) and social cohesion.[8] Here it is important to stress that the strength of particular personality traits is assessed in the aggregate as they happen to be found at sub-district level, not the strength of personality traits of individuals. This differentiation is key because while aggregate-level correlates of personality "can be understood as a simple extension of individual-level personality…[,] individual associations do not invariably translate" to the aggregate level (Terracciano & McCrae, 2006, p. 180). Thus these results cannot be interpreted to determine which combination of an individual's personality traits best support cohesion, but rather which combination of traits at the aggregated sub-district level best support cohesion. Thus, these results require additional multi-level analyses focused on nested sources of variability (i.e., individuals within sub-districts; Snijders & Bosker, 1999) that are beyond the scope of this report. The results presented here should therefore be interpreted with caution.

To begin, scores on openness are moderately positively correlated with the Social Cohesion Index, so that sub-districts with populations who demonstrate higher levels of openness to new ideas, curiosity, and broad interests exhibit higher levels of social cohesion ($r = 0.314$, $p < 0.10$) (see Figure 11). Likewise, sub-districts with populations with greater levels of agreeableness (e.g., being a team player, altruistic, trusting) also have higher levels of social cohesion ($r = 0.431$, $p < 0.05$). Correspondingly, conscientiousness is strongly positively associated with social cohesion, so that sub-districts with more conscientiousness (e.g., dependability, discipline, cautiousness) in the population are more socially cohesive ($r = 0.600$, $p < 0.01$). Negative correlations were found between both extraversion and neuroticism and social cohesion. For example, higher degrees of extraversion (e.g., assertiveness, sociability, talkativeness) were correlated with lower levels of social cohesion ($r = -0.464$, $p < 0.01$), as were higher degrees of neuroticism (e.g., excitability, reactiveness, worry) ($r = -0.340$, $p < 0.10$).

Taken together, it could be speculated that greater openness, agreeableness, and conscientiousness of a population may particularly enhance social relations and a focus on the common good at the core of social cohesion, while the tendency towards neuroticism may negatively affect social relations and connectedness. The negative correlation between extraversion and social cohesion, however, does not lend itself quite as straightforwardly to speculation. While it may be assumed that greater sociability and talkativeness (i.e., extraversion) of a population would enhance social cohesion, in this particular Kyrgyz Republic context, it is rather higher levels of independence and reservation (i.e., introversion) that appear to do so.

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8   These personality traits were assessed in the baseline data using the 10-item Big Five Inventory (Rammstedt & John, 2007).

Figure 11: Baseline association of aggregated personality and social cohesion in sub-districts
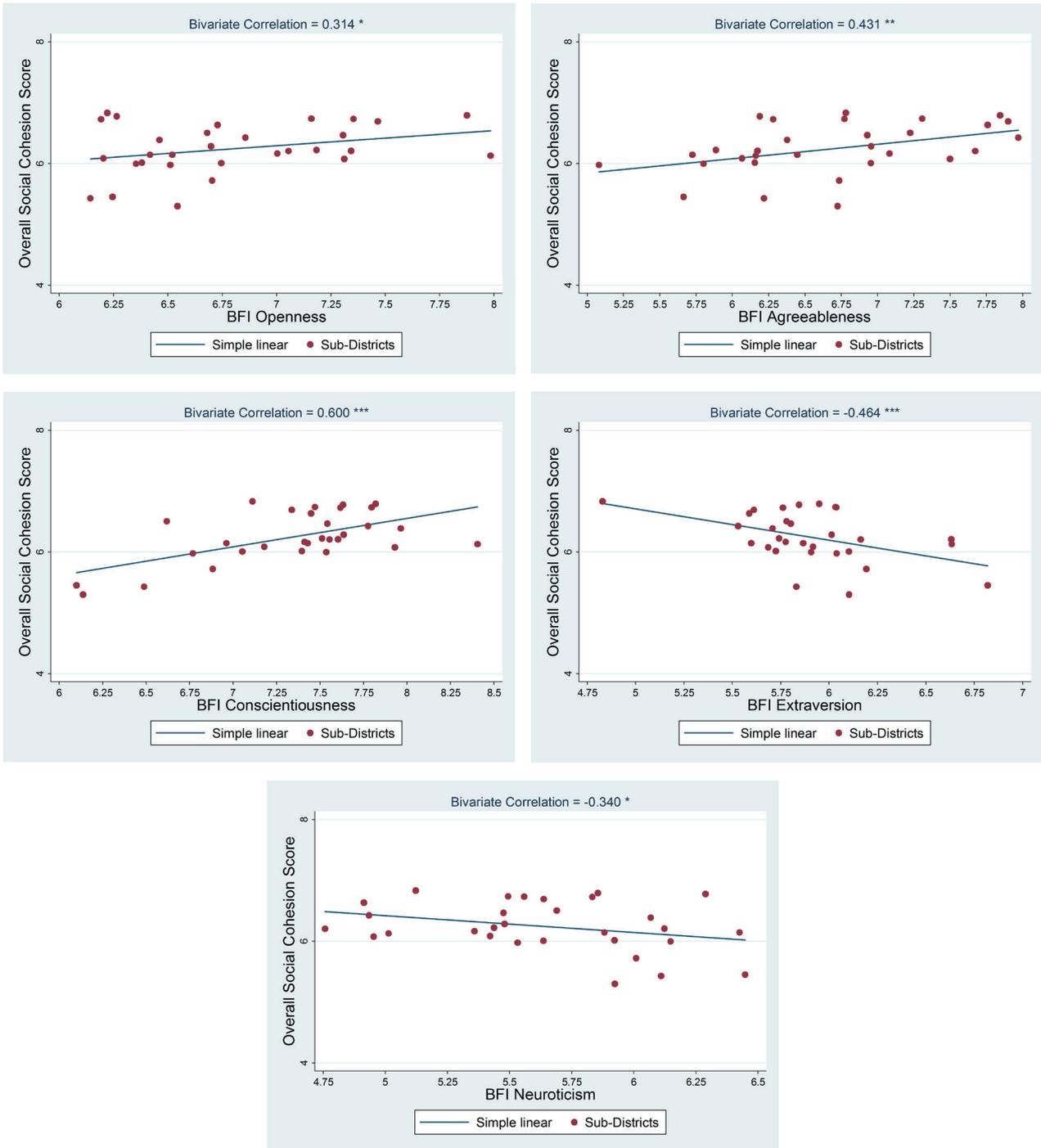
7. YOUTH DATA

As described in Section 5.2, the youth data were not incorporated into the Social Cohesion Index as such. However, the calculation of single dimensions of social cohesion was carried out, specifically for those five dimensions with indicators matching one-to-one with the adult indicators: *Dimension 1.2: Trust in others*, *Dimension 1.3: Acceptance of diversity*, *Dimension 2.1: Identification*, *Dimension 2.2: Trust in institutions*, and *Dimension 3.2: Respect for social rules*. The following sections describe the steps taken in this process, the relevant dimension scores for youth, a comparison with the adult scores, and potential determinants and outcomes of the relevant dimensions for youth.

7.1 Data preparation, reduction of indicators, and measurement of dimensions

The data preparation for the community and household data occurred exactly as described in Section 5.3. The youth data itself consisted of 10 datasets. Each of these datasets were cleaned and recoded, and then separately aggregated up to the household level using the unique household identifier. This aggregation was first carried out at the household level because the youth data did not contain either village or sub-district unique identifiers. These datasets were then merged into one common dataset of youth data, along with variables from the household datasets which included both village and sub-district unique identifiers. This common dataset was then aggregated to the village level. Again, as in the main analysis, the final step merged community, household, and youth datasets into one complete dataset containing all relevant indicators aggregated at the village level.

The process of empirically reducing indicators for the five relevant youth dimensions occurred exactly as described in Section 5.4. This exploratory factor analysis left a total of 4 to 7 indicators per dimension with which to calculate the dimension scores. For *Dimension 1.2: Trust in others*, *Dimension 2.1: Identification*, and *Dimension 3.2: Respect for social rules*, the process found the exact same indicators as the adult data. For *Dimension 1.3: Acceptance of diversity*, seven indicators were identified rather than the eight in the adult data, but otherwise the indicators were the same. Finally, for *Dimension 2.2: Trust in institutions*, trust in the media rather than trust in the Rayon administration was included, partially because the latter indicator was not available in the youth data. Otherwise the indicators for this dimension remained the same. A detailed overview of the final selection of indicators and their factor loadings for the relevant dimension for youth can be found in Tables A.13-A.17 in the Appendix.

The standardization of indicators and measurement of the relevant dimension scores for youth, including their aggregation up to the sub-district level, were carried out as detailed in Sections 5.5.1 and 5.5.2. However, it is important to note that because information was not available for all dimensions of the index, the calculation of the domain and overall index scores was not possible.

7.2 Youth dimension scores

The relevant youth dimension scores for the 30 sub-districts are presented in Table 7. These are arranged by treatment group (i.e., control vs. pilot) and diversity classification (i.e., multi-ethnic vs. mono-ethnic). Upon viewing the table, it is clear that all of the sub-district scores

on these dimensions are in the third tier or higher, but otherwise there is no visible pattern in scores according to treatment group or diversity classification.

Table 7: Relevant youth dimension scores for 30 sub-districts at baseline, arranged by treatment group and diversity classification

Treatment	Ethnic	Sub-District	D1.2	D1.3	D2.1	D2.2	D3.2
Control	Mono	Baetovo	9,50	8,60	9,61	7,82	7,64
Control	Mono	Terek	9,11	8,41	9,17	8,25	8,47
Control	Mono	Ugut	5,36	6,85	9,42	7,78	7,64
Control	Mono	Taldy-Suu	6,51	6,97	9,48	6,57	6,84
Control	Mono	Kazybek	5,21	7,07	7,74	7,09	6,76
Control	Mono	Iyri-Suu	6,89	8,72	9,21	5,20	8,33
Control	Mono	Kenesh	7,37	8,67	8,49	6,71	9,60
Control	Multi	Too-Moiun	8,52	8,06	9,18	6,13	8,37
Control	Multi	Chek-Abad	7,58	7,01	7,95	6,24	6,76
Control	Multi	Don Bulak	7,69	7,59	8,17	6,53	7,28
Control	Multi	Tort-Kol	7,59	6,66	9,26	5,99	6,23
Control	Multi	Jany-Nookat	8,27	8,76	9,17	7,96	9,17
Control	Multi	Mirmahmudov	7,69	8,22	8,65	6,83	9,31
Control	Multi	Ak-Tash	7,86	7,31	7,73	5,58	8,73
Control	Multi	Savai	7,58	7,66	7,72	7,69	8,26
Pilot	Mono	Ak Chiy	7,97	8,23	9,64	7,08	7,97
Pilot	Mono	Jerge-Tal	5,67	6,75	10,00	5,93	5,07
Pilot	Mono	Kok-Jar	6,54	8,05	9,66	6,32	8,57
Pilot	Mono	Ak-Kuduk	5,92	7,55	7,43	5,21	6,52
Pilot	Mono	Kara-Suu	5,68	7,66	8,43	6,18	9,40
Pilot	Mono	Karool	8,50	6,43	8,61	7,44	6,17
Pilot	Mono	Changet	5,85	8,15	8,98	6,40	6,38
Pilot	Multi	Anarov	7,30	8,80	9,58	6,62	8,35
Pilot	Multi	Tepe-Korgon	7,69	7,82	8,14	6,67	7,46
Pilot	Multi	Yusupov	7,14	7,54	7,37	6,65	6,62
Pilot	Multi	Zarger	7,35	7,43	8,69	6,53	7,17
Pilot	Multi	Kara-Tash	7,31	8,51	8,10	5,70	9,09
Pilot	Multi	Mady	7,94	7,45	8,82	6,50	7,29
Pilot	Multi	Otuz-Adyr	7,14	7,51	8,64	5,82	8,30
Pilot	Multi	Sarai	7,25	7,90	8,46	5,99	6,97
		Mean	7,27	7,75	8,72	6,58	7,69
		Standard Deviation	1,04	0,67	0,72	0,78	1,11

As with the adult sub-district scores presented in Section 6.1, *Dimension 2.1: Identification* appears to be the strongest dimension, with 24 sub-districts falling in the top tier and the remaining falling in the second tier, indicating a strong feeling of identity with others. The sub-district of Jerge-Tal even reaches a score of 10 out of 10 on *identification*. *Dimension 1.3: Acceptance of diversity* also maintains its status as a strong dimension for the youth, with nearly an even split between the top two tiers. What appear slightly different in the youth scores, however, are the mostly top and second tier scores for *Dimension 3:2: Respect for social rules*, appearing to make this dimension stronger for youth than for the adults.

When focusing on the village-level dimension scores for youth, the same general picture emerges as described above (see Table A.18 in the Appendix). What stands out, however, are a handful of fourth tier scores on *Dimension 2.2: Trust in institutions* and *Dimension 3.2: Respect for social rules*.

7.3 Testing differences in youth dimension scores

After calculating the dimension scores, the next step involved testing differences between the youth pilot and control groups at baseline. As described in Section 5.6.1, ideally there would be no statistically significant differences between these groups before the beginning of the intervention. Table 8 reveals the results of the independent samples *t*-test comparing control (n_{cy} = 15) and pilot (n_{py} = 15) sub-districts for youth for each of the relevant dimension scores. No statistically significant differences were found between the pilot and control sub-districts at baseline for any of the relevant dimension. Hierarchical ANOVAs were also conducted to also take into account variations in village scores. While some variation was found between sub-districts in both the pilot and control groups, no significant differences were found between treatment groups for any of the relevant dimensions (see Table A.19 in the Appendix for full results).

Table 8: Differences in relevant dimension scores between youth pilot and control groups in 30 sub-districts

| | Treatment Groups at Baseline (Youth) | | | | | | | |
| | Control | | Pilot | | | | | |
	Mean	SD	Mean	SD	N	df	T	Sig.
D1.2	7.516	1.184	7.017	0.895	30	28	1.301	ns
D1.3	7.772	0.762	7.719	0.613	30	28	0.206	ns
D2.1	8.730	0.701	8.703	0.782	30	28	0.100	ns
D2.2	6.824	0.923	6.336	0.559	30	28	1.752	ns
D3.2	7.958	1.034	7.422	1.191	30	28	1.316	ns

Significance of two-tailed independent t-tests: *** p < 0.001, ** p <0.01, * p<0.05, ns non-significant

Perhaps most interesting for this project is the comparison of the relevant dimension scores between adults and youth, as it provides a sense of whether certain dimensions of social cohesion appear different for youth than for adults. Table 9 details the results of the independent samples *t*-test comparing youth (n_y = 30) and adult (n_a = 30) scores at the sub-district

level for each of the relevant dimensions. Nearly all of the dimensions demonstrated strikingly similar scores for adults and youth, with the exception of *Dimension 3.2: Respect for social rules*. For this dimension, the youth have a significantly higher score of 7.7 as compared to a score of 6.5 for the adults (p < 0.001), and a comparison of the village scores between adults and youth revealed the same results (see Table A.20 in the Appendix). This means that youth perceive the fundamental rules of society being abided by to a greater degree than adults. More specifically, this dimension was measured for both groups by indicators examining: (1) feelings of safety walking alone at night or during the day; (2) the peacefulness of their neighborhood; and (3) the perception of violence in the last 12 months. Here it could be the case that youth have lower normative expectations of social rules, which allows them to perceive a higher relative level of acceptance of social rules than is the case among adults.

Table 9: Differences in relevant dimension scores between adults and youth in 30 sub-districts

	Groups at Baseline							
	Youth		**Adult**					
	Mean	**SD**	**Mean**	**SD**	**N**	**df**	**T**	**Sig.**
D1.2	7.266	1.062	7.169	0.861	60	58	-0.392	ns
D1.3	7.746	0.679	7.622	0.667	60	58	-0.713	ns
D2.1	8.717	0.730	8.641	0.794	60	58	-0.387	ns
D2.2	6.580	0.789	6.328	0.786	60	58	-1.239	ns
D3.2	7.690	1.129	6.478	1.045	60	58	-4.314	***

Significance of two-tailed independent t-tests: *** p < 0.001, ** p <0.01, * p<0.05, ns non-significant

7.4 Potential determinants and outcomes of dimensions for youth

Existing correlations were also tested between potential determinants and outcomes and the relevant dimensions for the youth data. The same nine thematic sets of societal characteristics were examined as described in Section 6.4. For reasons of brevity, only the broader patterns of correlations will be discussed below, but Table 10 presents all of the statistically significant correlations with each of the five relevant dimensions for youth. In general, the correlations for the youth reflect similar patterns as for the adults, unless otherwise mentioned.

For *Dimension 1.2: Trust in others*, over half of the 16 significant correlations are concentrated in the thematic sets of both demography and well-being. Specifically, number of households in the community (r = 0.424, p < 0.05), number of people in the community (r = 0.365, p < 0.05), number of households in the sub-district (r = 0.392, p < 0.05), and the overall population of the sub-district (r = 0.425, p < 0.05) are all moderately and positively correlated with *trust in others*. Taken together, being surrounded by higher numbers of people goes hand-in-hand with greater *trust in others*. Likewise, trust in others is moderately to strongly correlated with greater satisfaction with standard of living (r = 0.340, p < 0.10), lower numbers of experienced traumas (r = -0.702, p < 0.01), fewer missed days of school due to illness (r = -0.397, p < 0.05), fewer illnesses in the past year (r = -0.488, p < 0.01), and fewer chronic illnesses (r = - 0.395, p < 0.05). In sum, *trust in others* is related to higher levels of well-being.

Likewise, over half of the 13 correlations with *Dimension 1.3: Acceptance of diversity* are related to characteristics of wealth and economic situation, as well as to spatial structure. In particular, a greater number of events hosted by households ($r = 0.489$, $p < 0.01$), a higher percentage of households owning cars ($r = 0.354$, $p < 0.10$), and fewer homes made of mud or earth in the community ($r = -0.315$, $p < 0.05$) are related to a greater *acceptance of diversity*. A higher proportion of communities having public transportation ($r = 0.365$, $p < 0.05$), as well as shorter distances to the next town hall ($r = -0.351$, $p < 0.10$) and livestock market ($r = -0.359$, $p < 0.10$) are also related to *acceptance of diversity* for youth. While the results regarding wealth and economic characteristics are similar, there is less of an emphasis on spatial structure for the adult data.

Dimension 2.1: Identification demonstrated 23 significant correlations spread across nearly all nine thematic sets. Interestingly, *identification* seems to be higher in sub-districts with comparative disadvantages in terms of wealth and spatial structure. Just to name a few examples, lower levels of household income ($r = -0.342$, $p < 0.10$), smaller dwelling spaces ($r = -0.475$, $p < 0.01$), and greater distances to the nearest urban centers ($r = 0.545$, $p < 0.01$) are associated with higher levels of *identification,* as is a smaller sub-district population ($r = -0.333$, $p < 0.05$). On a positive note, higher levels of identification are also associated with greater levels of satisfaction with life ($r = 0.482$, $p < 0.01$) and health ($r = 0.415$, $p < 0.05$).

Unsurprisingly, *Dimension 2.2: Trust in institutions* proves to be correlated with characteristics that are closely related to the functioning of institutions. As an example, higher levels of *trust in institutions* are related to higher percentages of 0-5 year olds attending pre-school ($r = 0.411$, $p < 0.05$), less frequent disruptions to the electrical supply ($r = -0.415$, $p < 0.05$), and communities making decisions in cooperation with all members rather than decisions made by only a select few ($r = 0.326$, $p < 0.10$). It is important to note that these relationships were not significant in the adult data.

No discernible pattern emerges in the correlations with *Dimension 3.2: Respect for social rules*. Instead, the 13 significant correlations are spread throughout all nine thematic sets of societal characteristics, the strongest of which include a positive correlation with the sub-district personality trait of conscientiousness ($r = 0.547$, $p < 0.01$) and the average number of events hosted by households ($r = 0.523$, $p < 0.01$).

Table 10: Baseline correlations of relevant youth dimension scores with determinants and outcomes for sub-districts

	Sub-Districts ($N = 30$), Correlations (r)				
	D1.2	D1.3	D2.1	D2.2	D3.2
Wealth and economic situation					
Number of festive events hosted by households	-	0.489***	-	-	**0.523***
Percentage of households who own cars	-	0.354*	-	-	0.466*
Proportion of homes with mud/earth as main material	-0.329*	-0.315*	-	-	-
Household income from all sources	0.460**	-	-0.324*	-	-
Index of market access	-	-	0.490***	0.309*	-
Number of rooms in dwellings	-	-	**-0.547***	-	-

	Sub-Districts (*N* = 30), Correlations (*r*)				
	D1.2	D1.3	D2.1	D2.2	D3.2
Area of dwelling space (qm)	-	-	-0.475***	-	-
Proportion with pit latrines or no toilet facilities	-	-	0.412**	-	-
Access to education					
Percentage of 0-5 year olds attending pre-school	-	-	-	0.411**	-
Proportion who read books for fun	-0.350*	-	-	-	-
Education level (ISCED-Scale)	-	-	-	-	-0.317*
Spatial structure					
Proportion of main routes to communities paved	0.471***	-	-0.313*	0.367**	-
Average community land area (hectares)	-	-	-0.392**	-	0.379**
Distance to next livestock market (meters)	**-0.610***	-0.359*	-	-	-
Distance to next town hall of the community (meters)	-	-0.351*	-	-	-
Distance to nearest accessible country border (km)	-	-	0.427**	-	-
Distance to nearest urban center (km)	-	-	**0.545***	-	-
Distance to next main road (km)	-	-	-	-0.413**	-
Proportion of communities with public transportation	-	0.365**	-0.483***	-	-
Elevation (m)	-	-	0.469***	-	-
Percentage of households with access to safe water	-	-	-0.338*	-	-
Modernization					
Frequency of disruption to electricity supply	-	-0.364**	**-0.604***	-0.415**	-
Proportion of communities with landline service	-	-	0.316*	-	-
Proportion of households with landline phones	-	-	0.420**	-	-0.352*
Proportion of households with internet connection	-	-	-	-	0.326*
Demography					
Number of households in community	0.424**	0.386**	-	-	0.357*
Number of years spent in community	-	-	-	-	-
Number of people in community	0.365**	0.318*	-	-	-
Number of households in sub-district	0.392**	-	-0.351**	-	-
Population of sub-district	0.425**	-	-0.333**	-	-
Community characteristics					
Proportion of communities with peace-building	-	0.344*	-	-	-
Number of groups in community	-	-	-	-	-
Communities making decisions with all members	-	-	0.339*	0.326*	-
Communities have meetings to solve problems	-	-	0.415**	0.443**	-
Proportion of communities with assistance programs	-	-	-	-	0.362**

	Sub-Districts (*N* = 30), Correlations (*r*)				
	D1.2	**D1.3**	**D2.1**	**D2.2**	**D3.2**
Number of years lived in the community	0.344*	-	-	-	-
Diversity					
Number of languages of communication	0.312*	-	-	-	0.403**
How well is ethnic history of country known	-	-	-0.375**	-0.495***	-
Proportion of Kyrgyz in households	-	-	-	-	-
Percentage of Kyrgyz in communities	-	-	0.422**	-	-
Well-being					
Satisfaction with household's standard of living[a]	0.340*	0.450**	0.400**	0.480***	**0.509***
Satisfaction with health	-	-	0.415**	-	-
Satisfaction with life overall	-	-	0.482***	-	-
Number of traumas experienced in past year	**-0.702***	-	-	-	-
Number of days missed of work due to illness	-0.397**	-	-	-	-
Number of illness is last 12 months	-0.488***	-	-	-	-
Number of chronic illnesses	-0.395**	-	-	0.308*	-
Big Five Personality Traits					
Openness	-	-	-	-	0.424**
Agreeableness	-	0.483***	-	-	**0.501***
Conscientiousness	-	0.420**	0.309*	-	**0.547***
Extraversion	-	-	**-0.514***	-	-
Neuroticism	-	-	-	-0.380**	-

Table shows the correlation coefficient r for the simple correlation. Correlations of 0.50 or greater are bolded. Significance of two-tailed correlations: * p < 0.10, ** p < 0.05, *** p < 0.01.

8. CONCLUSIONS AND FUTURE STEPS

The results reveal that overall, social cohesion scores in the surveyed sub-districts range in the second and third tiers with no extremes in either direction. In looking forward to the measurement of social cohesion at the midline and endline, there does indeed appear to be enough room for the interventions to improve the sub-districts' scores. Specifically Dimensions 1.1: Social networks and Dimension 3.1: Solidarity and helpfulness are identifiable areas where the project's interventions could focus their efforts on improvement. Moreover, both pilot and control sub-districts and villages have similar starting points with regard to levels of social cohesion, which offers a helpful baseline for demonstrating the effects of an intervention.

Regarding the measurable dimensions for youth, the majority of dimensions demonstrated scores similar to those of adults. However, scores for Dimension 3.2: Respect for social rules did prove to be significantly different, indicating a different perception of how well social

rules are abided by in sub-districts that should be kept in mind. For the future midline and endline surveys, it may be worth considering adding the indicators used in the adult data for Dimensions 1.1, 2.3, and 3.3 to the youth survey (see Tables A.1, A.6, and A.9 in the Appendix). In cases where the indicators do not apply to youth, age appropriate indicators with the same intent could be developed and included. In this way, the full Social Cohesion Index could be calculated for youth at midline and endline, allowing for further comparisons with the adult data.

With respect to adding items to the midline and endline surveys, two main possibilities arise. First, it may be possible to expand items related to Dimension 3.2: Respect for social rules to include additional social norms beyond the perception of security. For example, the measurement of Dimension 3.2 at the sub-district level in the German city of Bremen included a list of questions on whether the respondents considered certain issues to be a problem in their sub-district (e.g., graffiti, litter, noise, harassment) (Arant, Larsen & Boehnke, forthcoming). This could be adapted to fit the issues faced by villages in the Kyrgyz Republic.[9] Second, while the measurement of *Dimension 3.3: Civic participation* included an item assessing participation in a variety of civic as well as political activities (i.e., I423), future surveys could include additional civic-oriented items. For example, the abovementioned project in the city of Bremen utilized items regarding the degree to which respondents engage in activities that uphold the interests of their sub-district and its inhabitants, as well as how strongly respondents are interested in the issues facing their sub-district. If added to future surveys, these items would then need to be examined in a factor analysis along with the previously chosen indicators to see if they are empirically related to the dimensions of interest.

The results of the cluster analysis will benefit from interpretation by those with expertise in the local context of the Kyrgyz Republic and on the specific sub-districts involved in the project, revealing additional common characteristics among sub-districts falling into the same clusters of cohesion. Specifically, further comparison of the common characteristics of the sub-districts which cluster together is necessary, taking into account both information available in the community data (e.g., infrastructure, community activities), and other relevant sources of information outside of the project.

The analysis of potential determinants and outcomes demonstrates that a number of factors are associated with the levels of social cohesion in the sub-districts. These may hint at areas where the project could concentrate efforts or advocacy to indirectly impact social cohesion (e.g., through paved routes into communities, improvements in the power supply, encouraging communication in multiple language). Likewise, the correlations with various personality traits aggregated to the sub-district level highlight that a diversity of personalities is needed at the sub-district level to enhance social cohesion in the Kyrgyz Republic. In order to make the most of these findings on personality traits, additional multi-level analyses focused on nested sources of variability (i.e., individuals within sub-districts; Snijders & Bosker, 1999) are recommended.

In this report, due to the cross-sectional nature of the baseline data, potential determinants and outcomes are analyzed purely based on theoretical and empirical expectations of their

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9   However, it should be noted that a similar series of questions from the individual survey (i.e., I902.1-7), albeit at a more extreme level (e.g., physical attacks, kidnapping), was considered in the selection of indicators for the Social Cohesion Index and did not hold up empirically.

causal relationship with social cohesion. However, this situation can be improved after the collection of midline and endline data. With additional time points, time-lagged correlations can be calculated to improve the confidence in the causality of factors as determinants or outcomes of social cohesion (Dragolov et al., 2016). In essence, this means that the *determinants* that were measured at baseline can be correlated with the Social Cohesion Index at midline or endline. Likewise, for *outcomes*, the Social Cohesion Index from baseline can be correlated with outcome measures from the midline or endline data.

If no additional items are added to the midline and endline surveys, future calculations of the Social Cohesion Index should be carried out in the manner described in this report, with the exception of the steps related to indicator selection. The comprehensive process of face validity and empirical selection of indicators at baseline using exploratory factor analysis provides a solid and consistent set of indicators from which to calculate the Social Cohesion Index in the future. However, if new potential indicators are added to the midline and endline surveys, their relationship to the dimension should be empirically tested with exploratory factor analysis alongside the indicators selected at baseline. Care should be taken to ensure that the previously selected indicators remain across all time points.

The comparison of social cohesion across time points for both the pilot and control groups can be analyzed using a dependent samples *t*-test or repeated measures ANOVA. It should be noted, however, that past studies have demonstrated that social cohesion is a fairly stable concept and does not demonstrate drastic changes over short periods of time (Dragolov et al., 2013a; 2014). Thus, significant changes over the short time period between baseline and midline should not be expected.

Additionally, although conducted entirely separately from the calculation of the Social Cohesion Index, the qualitative interviews carried out during the ethnographic fieldwork for the overall project were helpful in understanding what social cohesion may look like in everyday life at the village level. If further ethnographic fieldwork for the project is to be conducted, whether in the form of interviews or observations, it would be particularly interesting if the conceptual model of social cohesion described in this report were applied as a framework. In this way, both qualitative and quantitative methods could be used to create a much more nuanced picture of social cohesion in the Kyrgyz Republic.

One of the fundamental aspects of the proposed concept of social cohesion applied in this report is that it is a characteristic of social entities rather than of individuals (Schiefer et al., 2012). Practically, this means that the community, household, and individual data were aggregated in this report to the village and sub-districts levels for the calculation of the Social Cohesion Index. For these conceptual reasons, the Social Cohesion Index is not disaggregated across various social groups (e.g., ethnicity, gender, and age). What should be possible, however, is the determination of which individual competencies or needs are worth targeting in community interventions in order to facilitate an increase in the social cohesion of social entities on different societal levels. Multi-level analyses of relationships between characteristics of individuals and social cohesion on the village and sub-district level are necessary to facilitate this.

Finally, in terms of the indicators empirically selected for the measurement of the Social Cohesion Index, there was a great deal of overlap with similar or identical indicators from the

panel study Life in Kyrgyzstan (indicated by asterisks in Tables A.1-A.9 in the Appendix). This underscores the possibility of calculating a similar Social Cohesion Index with the Life in Kyrgyzstan data. Given the panel structure of the Life in Kyrgyzstan study, collecting information on the same 3000 households and 8000 individuals yearly across all seven federal states (*oblasts*) of the country (DIW Berlin & SIPRI, 2016), this would offer a unique opportunity to track community changes in social cohesion over time.

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10. APPENDIX

Table A.1: Exploratory Factor Analysis – Dimension 1.1 – Social networks

Variable	Label	Loading
d11_i401*	If you suddenly needed 2000 Som, how many people you know would lend you the entire amount?	0.3023
d11_i408	How likely is it that you will easily ask for help from your neighbors, friends or co-workers?	0.6695
d11_i413*	Number of groups you belonged to during the last 12 months? (e.g., professional union, neighborhood committee, Sherine, etc.)	0.6616

Alpha = 0.522

Table A.2: Exploratory Factor Analysis – Dimension 1.2 – Trust in people

Variable	Label	Loading
d12_i3011*	In general, you can trust people.	0.4870
d12_i3022*	How much do you generally trust your neighbors?	0.4870
d12_i3023*	How much do you generally trust people in your village?	0.7561
d12_i3024*	How much do you generally trust people from your own ethnic or linguistic group?	0.8304
d12_i3025*	How much do you generally trust people from other ethnic or linguistic groups?	0.7961

Alpha = 0.824

Table A.3: Exploratory Factor Analysis – Dimension 1.3 – Acceptance of diversity

Variable	Label	Loading
d13_i3061	People from different social backgrounds get on well together.	0.5066
d13_i3062	I have meaningful interactions with people from different backgrounds.	0.4844
d13_i3063	Ethnic differences between people are respected.	0.4437
d13_i3064	People treat one another with respect and consideration.	0.4096
d13_i3065	I consider it to be a problem if people are being attacked because of their ethnic origin or religion.	0.4772
d13_i3033*	Please rate your attitudes towards people with disabilities.	0.8501
d13_i3034	Please rate your attitudes towards poor people.	0.9232
d13_i3035*	Please rate your attitudes towards rich people.	0.5904

Alpha = 0.8432

* Similar or identical indicator available in the Life in Kyrgyzstan survey.

Table A.4: Exploratory Factor Analysis – Dimension 2.1 – Identification

Variable	Label	Loading
d21_i3053*	I see myself as a member of my neighborhood.	0.9428
d21_i3054	I see myself as a member of my village.	0.9497
d21_i3056*	I see myself as a member of my tribe.	0.7568
d21_i3057*	I see myself as a member of my ethnic group.	0.6201
d21_i3058*	I see myself as a citizen of Kyrgyzstan.	0.4885

Alpha = 0.879

Table A.5: Exploratory Factor Analysis – Dimension 2.2 – Trust in institutions

Variable	Label	Loading
d22_i3026*	How much do you generally trust the head of aiyl okmotu?	0.7847
d22_i3027	How much do you generally trust the Rayon administration and services?	0.8746
d22_i3028*	How much do you generally trust the government of the Kyrgyz Republic?	0.9318
d22_i3029*	How much do you generally trust the President of the Kyrgyz Republic?	0.8604
d22_i30210*	How much do you generally trust the Jogorku Kenesh of the Kyrgyz Republic?	0.8818
d22_i30211*	How much do you generally trust the Aiyl Kenesh in your area?	0.8163
d22_i30212*	How much do you generally trust the police?	0.7219

Alpha = 0.943

Table A.6: Exploratory Factor Analysis – Dimension 2.3 – Perception of fairness

Variable	Label	Loading
d23_i503_5	I think the Ayil Kanesh and Aiyl Okmotu treat all types of people fairly.	0.689
d23_i503_7	All community members are given an opportunity to participate in the meetings and discussion initiated by the Aiyl Okmotu and Aiyl Kanesh.	0.615
d23_i507*	Do you think Ayil and Rayon administrations and public service providers are attentive and make enough efforts to solve your problems?	0.384

Alpha = 0.544

* Similar or identical indicator available in the Life in Kyrgyzstan survey.

Table A.7: Exploratory Factor Analysis – Dimension 3.1 – Solidarity and helpfulness

Variable	Label	Loading
d31_i3015	Most people in this community are willing to help if you need it.	0.312
d31_i404_yn*	Do you give any financial help during the last 12 months?	0.703
d33_i409_yn*	Did you give any non-financial help (e.g., homework or baby care, repairing house, preparing celebrations) during the last 12 months?	0.639

Alpha = 0.419

Table A.8: Exploratory Factor Analysis – Dimension 3.2 – Respect for social rules

Variable	Label	Loading
d32_i601_b1*	I feel safe when walking alone in the neighborhood during the day.	0.9100
d32_i601_b2*	I feel safe when walking alone in the neighborhood during the night.	0.6008
d32_i601_b4*	My neighborhood is overall peaceful.	0.4921
d32_i601_b5*	The level of violence increased during the last 12 months.	-0.5466

Alpha = 0.711

Table A.9: Exploratory Factor Analysis – Dimension 3.3 – Civic participation

Variable	Label	Loading
d33_i430*	In general, how interested in politics are you?	0.3015
d33_i434*	Do you vote in national and local elections?	0.7196
d33_i435*	Have you voted in the last election in Ayil Kenesh?	0.7805
d33_i423_yn*	Have you taken part in any of the following activities in the last 12 months? (e.g., political activities, community-based projects, worked for an NGO, distributed information, protests and demonstrations, etc.)	0.4501

Alpha = 0.492

* Similar or identical indicator available in the Life in Kyrgyzstan survey.

Table A.10: Social cohesion scores for 137 villages, arranged by treatment status and overall score

Treatment	Ethnic	Village	SoCo	D1	D1.1	D1.2	D1.3	D2	D2.1	D2.2	D2.3	D3	D3.1	D3.2	D3.3
Control	Multi	Kerkidan	7,50	7,50	2,89	9,94	9,66	8,99	10,00	7,92	9,05	6,00	3,47	7,49	7,05
Control	Multi	Ken-Say	7,25	7,59	2,79	9,99	10,00	8,75	10,00	7,81	8,43	5,41	3,39	7,50	5,33
Control	Multi	Sary-Tash	7,23	7,31	5,84	7,25	8,84	7,44	8,61	6,57	7,15	6,95	5,73	7,37	7,76
Control	Multi	Teoles	7,20	6,98	4,70	6,94	9,32	8,20	9,52	6,61	8,48	6,42	6,73	6,87	5,65
Control	Multi	Jany-Nookat	7,11	7,27	4,37	8,95	8,50	8,10	9,19	8,96	6,17	5,96	3,98	7,34	6,57
Control	Multi	Savay	7,00	6,12	2,39	8,68	7,30	8,26	9,76	8,10	6,94	6,63	4,34	9,14	6,41
Control	Multi	Kara-Darya	6,97	6,45	3,79	6,90	8,66	7,99	9,36	6,11	8,50	6,48	6,82	6,97	5,64
Control	Multi	Ozgorush 6090	6,93	6,68	2,77	8,97	8,30	8,43	8,77	7,98	8,53	5,70	4,09	6,94	6,05
Control	Multi	Muchurino	6,93	6,27	2,58	8,59	7,65	7,91	10,00	6,91	6,82	6,61	4,76	9,29	5,79
Control	Mono	Por	6,90	6,69	4,05	7,30	8,73	7,30	8,00	6,67	7,22	6,73	4,12	7,50	8,56
Control	Multi	Bekse-Jol	6,88	6,55	4,07	7,38	8,20	7,64	8,62	6,06	8,22	6,46	6,91	6,87	5,60
Control	Multi	Kara-Koktu	6,85	6,72	3,24	8,81	8,11	8,53	9,38	9,31	6,91	5,29	2,75	7,20	5,91
Control	Multi	Baryn	6,84	6,62	3,52	8,30	8,04	8,03	8,99	8,97	6,15	5,87	3,48	7,26	6,88
Control	Multi	Temir-Koruk	6,84	7,17	4,62	8,73	8,17	6,86	9,64	5,31	5,64	6,49	4,66	7,27	7,54
Control	Multi	Chimbay	6,84	6,75	4,89	6,96	8,41	7,63	8,71	6,14	8,03	6,13	6,32	6,74	5,33
Control	Multi	Aral	6,83	7,18	5,35	7,33	8,86	7,52	8,67	6,67	7,22	5,80	3,47	7,14	6,78
Control	Mono	Terek	6,78	6,49	2,70	8,25	8,61	7,99	9,50	7,47	6,98	5,87	6,17	6,30	5,13
Control	Multi	Budaylyk	6,73	7,09	5,59	7,33	8,33	6,98	8,57	6,28	6,09	6,13	3,37	7,22	7,79
Control	Multi	Kapchygai	6,69	7,04	5,13	7,39	8,61	7,18	8,56	6,58	6,40	5,85	3,52	7,25	6,78
Control	Multi	Den-Bulak	6,69	6,65	2,74	8,98	8,21	7,35	9,76	6,96	5,33	6,07	3,60	8,69	5,91
Control	Mono	Kenesh	6,68	6,95	4,58	7,76	8,53	7,10	7,81	6,57	6,92	5,99	4,20	7,12	6,65
Control	Multi	Naiman	6,66	7,45	5,22	8,55	8,60	7,10	7,52	6,56	7,22	5,44	3,40	7,16	5,76
Control	Mono	Ak-Terek	6,64	5,95	2,71	7,59	7,56	7,28	7,74	7,28	6,82	6,70	6,35	7,51	6,23
Control	Mono	Jiyde	6,63	6,28	3,24	7,03	8,56	7,46	9,15	5,68	7,54	6,17	5,94	6,22	6,35
Control	Multi	Kydrsha	6,63	5,99	4,02	5,76	8,21	7,74	5,62	8,99	8,63	6,16	5,59	6,99	5,90
Control	Multi	Kechken-Jar	6,62	5,92	3,83	5,93	8,00	7,39	4,46	9,38	8,35	6,56	5,81	7,44	6,42
Control	Mono	Orkaygan	6,59	5,90	2,02	8,08	7,58	7,66	7,30	8,08	7,59	6,20	3,88	8,02	6,71
Control	Mono	Kara-Kolot	6,58	5,82	1,96	8,14	7,37	7,59	7,22	7,94	7,60	6,33	3,45	9,10	6,46
Control	Multi	Bakmal	6,56	6,31	3,66	7,10	8,16	6,93	9,25	5,33	6,21	6,45	6,52	5,86	6,96
Control	Multi	Kyzyl-Teyit	6,54	6,43	4,49	7,29	7,51	6,67	8,03	6,76	5,21	6,53	4,15	7,38	8,05
Control	Multi	Oktiabr 6061	6,54	5,79	3,85	5,59	7,94	7,50	6,01	8,58	7,92	6,31	5,64	7,19	6,12
Control	Multi	Syrt	6,53	6,40	2,23	8,13	8,83	7,49	7,95	7,08	7,43	5,69	3,31	7,78	5,99
Control	Multi	Haus	6,53	6,25	3,42	7,25	8,09	7,53	8,06	7,04	7,49	5,79	4,36	7,66	5,35
Control	Multi	Jany-Abad	6,49	6,47	4,25	8,46	6,71	7,36	9,62	5,95	6,52	5,63	2,31	5,67	8,90

Treatment	Ethnic	Village	SoCo	D1	D1.1	D1.2	D1.3	D2	D2.1	D2.2	D2.3	D3	D3.1	D3.2	D3.3
Control	Mono	Kors-Etti	6,48	5,91	2,20	8,71	6,82	7,08	7,08	8,09	6,08	6,44	4,57	8,80	5,94
Control	Mono	Kyrgyzstan	6,47	6,75	2,88	8,88	8,46	6,79	7,58	6,71	6,08	5,87	3,67	7,57	6,37
Control	Mono	Kaindy-Bulak	6,42	6,46	3,01	7,67	8,69	7,78	9,23	7,78	6,34	5,02	4,26	6,71	4,08
Control	Multi	Ak-Shor	6,38	6,59	3,50	7,76	8,51	7,22	9,18	5,62	6,85	5,32	2,88	7,22	5,87
Control	Mono	Baetov	6,35	5,91	2,70	6,95	8,09	7,59	9,68	6,90	6,19	5,55	5,50	6,74	4,42
Control	Multi	Ak-Tash	6,34	6,16	3,03	7,53	7,91	7,46	8,09	6,57	7,72	5,40	3,54	7,19	5,45
Control	Multi	Djeke-Miste	6,32	6,26	3,29	7,77	7,73	7,40	8,34	6,87	6,98	5,31	3,03	6,50	6,39
Control	Mono	Ugut	6,30	5,42	3,96	5,58	6,72	7,03	9,89	4,71	6,48	6,46	5,39	7,11	6,87
Control	Multi	Kyzyl-Shark	6,28	6,22	3,31	8,36	7,00	6,87	8,82	7,50	4,28	5,76	2,24	7,08	7,97
Control	Multi	Makarenko	6,19	5,87	3,27	7,14	7,20	6,98	7,42	6,97	6,54	5,73	4,61	7,24	5,35
Control	Multi	Kurba-Kara	6,18	6,21	3,09	7,81	7,73	7,20	8,20	6,75	6,64	5,15	3,47	6,40	5,57
Control	Mono	Jany-Koch	6,18	5,23	3,49	5,86	6,33	6,60	7,67	6,49	5,65	6,70	6,74	6,31	7,05
Control	Mono	Baigenchek	6,15	5,37	4,04	5,51	6,55	6,96	9,88	4,79	6,21	6,12	5,32	6,77	6,25
Control	Mono	Taldy-Suu	6,14	5,61	2,75	6,52	7,57	7,37	9,13	6,31	6,66	5,43	3,63	5,49	7,17
Control	Multi	Agronom	6,13	6,52	4,09	7,87	7,60	7,46	8,93	7,17	6,28	4,42	2,71	5,55	5,00
Control	Mono	Jangakty	6,13	6,57	4,52	7,07	8,12	5,94	9,84	1,89	6,09	5,88	2,88	7,71	7,04
Control	Multi	Jylkeldi	6,08	6,09	1,84	8,12	8,31	6,57	7,81	5,15	6,75	5,59	3,82	7,35	5,59
Control	Multi	Kyimyl	6,07	6,33	4,24	8,60	6,15	6,60	8,50	5,96	5,35	5,28	1,73	4,63	9,49
Control	Multi	Shoro-Bashat	6,01	6,09	3,24	8,00	7,03	7,05	9,20	5,71	6,22	4,89	2,39	6,45	5,81
Control	Mono	Kazybek	6,00	5,21	3,47	5,07	7,08	6,44	7,45	6,69	5,20	6,34	5,49	6,26	7,27
Control	Mono	Pervomaiskoe	5,96	5,50	2,92	6,80	6,77	7,53	9,43	6,70	6,47	4,84	2,63	4,50	7,38
Control	Multi	Ana-Kyzyl	5,93	6,00	4,14	7,97	5,90	6,95	8,96	6,21	5,69	4,84	2,12	4,99	7,40
Control	Multi	Yntymak 6062	5,89	5,27	1,92	7,51	6,39	6,63	7,88	6,27	5,75	5,78	5,20	6,42	5,72
Control	Multi	Boston	5,89	6,65	4,74	6,79	8,41	6,12	9,49	2,14	6,72	4,91	3,81	6,83	4,08
Control	Multi	Chapaeva	5,86	6,73	5,75	7,03	7,40	5,69	7,98	4,14	4,96	5,16	2,54	6,35	6,58
Control	Multi	Babashulu	5,84	5,88	3,76	5,18	8,72	6,06	9,02	3,12	6,05	5,58	4,28	5,91	6,56
Control	Mono	Ozgorush 4018	5,84	5,09	2,39	6,22	6,67	7,83	10,00	6,67	6,83	4,59	3,01	3,61	7,15
Control	Multi	Sultan-Abad	5,83	5,47	3,54	4,95	7,91	6,68	9,80	3,60	6,64	5,33	4,22	6,00	5,78
Control	Multi	Kochubaevo	5,75	5,94	3,06	7,98	6,76	7,32	8,17	7,35	6,45	4,00	2,78	5,55	3,67
Control	Multi	Pahtachy	5,54	5,83	3,14	7,15	7,20	7,01	8,01	6,54	6,47	3,78	2,18	5,82	3,34
Control	Multi	Jakshylyk	5,45	5,69	3,24	6,87	6,95	5,45	7,01	5,13	4,20	5,21	2,87	7,65	5,13
Control	Multi	Jar-Kyshlak	5,24	5,51	3,04	6,94	6,55	5,74	7,17	5,63	4,42	4,47	2,90	6,72	3,79
Control	Multi	Teleiken	4,95	5,19	2,62	6,95	6,00	5,26	6,35	5,26	4,16	4,40	2,66	6,37	4,18
Control	Multi	Maksym-Tobu	4,84	4,97	3,37	5,13	6,41	5,69	6,31	5,11	5,66	3,84	1,89	5,75	3,89
Control	Multi	Kukalapash	4,49	4,47	2,58	4,98	5,85	4,94	5,92	4,88	4,01	4,05	2,29	5,88	3,98

Treatment	Ethnic	Village	SoCo	D1	D1.1	D1.2	D1.3	D2	D2.1	D2.2	D2.3	D3	D3.1	D3.2	D3.3
Pilot	Multi	Kyrgyz-Chek	7,65	7,92	5,08	9,53	9,14	8,93	9,45	8,68	8,67	6,10	5,52	7,24	5,55
Pilot	Multi	Kaarman	7,25	7,38	5,96	7,29	8,86	7,64	8,52	6,63	7,78	6,73	5,46	7,25	7,47
Pilot	Multi	Savay-Aryk	7,15	7,06	3,78	8,48	8,93	8,45	8,64	7,81	8,90	5,95	4,41	6,69	6,74
Pilot	Multi	Arap	7,04	6,87	2,70	8,96	8,94	8,73	9,31	8,56	8,32	5,51	4,19	6,27	6,07
Pilot	Multi	Jany-Ayil	7,02	6,76	3,68	8,04	8,56	8,10	8,99	7,89	7,43	6,21	4,28	7,88	6,46
Pilot	Mono	Osturuu	6,97	6,76	3,44	8,17	8,67	8,00	9,77	6,57	7,67	6,15	4,93	5,82	7,69
Pilot	Multi	Jany-Aravan	6,97	6,99	2,74	9,19	9,02	8,90	9,95	9,36	7,38	5,02	2,61	7,42	5,03
Pilot	Mono	Jangy-Tilek	6,87	6,23	3,17	6,93	8,60	8,08	9,87	7,24	7,13	6,29	5,96	6,70	6,20
Pilot	Multi	Oktiabr 6043	6,76	6,93	5,22	6,83	8,74	7,96	9,63	5,36	8,89	5,38	2,81	7,58	5,75
Pilot	Multi	Kirova	6,72	6,67	4,48	6,77	8,78	7,12	9,17	6,14	6,03	6,36	5,96	5,84	7,29
Pilot	Multi	Oktiabr 6007	6,71	6,48	3,59	7,49	8,34	7,84	9,01	6,97	7,54	5,80	5,01	6,70	5,71
Pilot	Multi	Noigut	6,62	6,98	5,84	7,32	7,78	6,60	8,28	5,93	5,59	6,29	4,09	7,17	7,62
Pilot	Multi	Kara-Bulak	6,62	6,41	4,37	7,44	7,41	6,70	8,16	6,66	5,28	6,74	4,09	7,32	8,81
Pilot	Mono	Ak-Chiy	6,58	6,25	2,90	7,60	8,26	7,56	9,57	6,73	6,37	5,94	6,18	6,34	5,31
Pilot	Multi	Erke-Kashka	6,58	6,15	3,58	7,04	7,83	6,81	8,27	6,41	5,74	6,78	7,56	5,99	6,79
Pilot	Multi	Yntymak 6054	6,56	6,25	3,67	7,46	7,62	7,77	8,40	7,18	7,74	5,66	4,05	6,68	6,25
Pilot	Mono	Orto-Aryk	6,47	6,40	4,47	6,87	7,86	7,42	8,93	6,46	6,87	5,59	4,60	6,43	5,72
Pilot	Mono	Changet	6,41	5,81	2,25	8,77	6,41	7,34	7,40	8,29	6,33	6,08	3,32	9,00	5,91
Pilot	Multi	Yangi-Abad	6,35	5,82	2,73	7,50	7,23	6,69	7,91	6,88	5,30	6,53	6,50	6,81	6,29
Pilot	Multi	Internatsional	6,29	5,88	2,74	7,49	7,42	7,17	9,20	6,35	5,96	5,82	4,83	6,20	6,45
Pilot	Multi	Otuz-Adyr	6,24	6,28	3,51	7,87	7,47	7,21	9,14	5,56	6,92	5,23	2,77	6,33	6,59
Pilot	Multi	Kara-Tash	6,23	6,73	5,67	7,20	7,32	6,22	8,11	4,42	6,12	5,76	3,64	6,81	6,83
Pilot	Multi	Joosh	6,22	6,36	3,78	8,45	6,85	7,33	9,61	6,18	6,21	4,97	2,47	5,20	7,23
Pilot	Multi	Kara-Debe	6,20	5,42	2,63	6,22	7,40	7,20	8,05	6,95	6,61	6,00	5,03	6,89	6,07
Pilot	Multi	Kairat	6,20	5,92	3,05	7,54	7,18	7,45	8,51	7,41	6,44	5,21	3,62	6,34	5,67
Pilot	Multi	Mady	6,18	6,08	3,60	7,84	6,80	7,22	9,43	6,44	5,78	5,25	2,35	5,54	7,86
Pilot	Multi	Prisavay	6,18	5,91	2,94	7,44	7,35	6,96	8,26	6,25	6,37	5,66	3,86	7,05	6,07
Pilot	Mono	Kek-Jar	6,16	5,36	2,61	5,19	8,28	6,76	9,99	5,16	5,12	6,37	5,69	7,51	5,92
Pilot	Mono	Dyikan	6,14	5,91	3,78	5,99	7,96	6,39	7,87	4,79	6,53	6,10	5,24	7,08	5,99
Pilot	Multi	Aiuu	6,12	6,01	2,37	7,13	8,53	6,79	9,85	5,93	4,59	5,56	5,45	6,32	4,91
Pilot	Mono	Kara-Suu	6,12	6,02	3,83	6,54	7,69	6,45	7,78	5,41	6,15	5,88	5,68	6,78	5,19
Pilot	Multi	Telman	6,11	5,83	3,82	7,28	6,40	6,73	7,31	6,63	6,25	5,75	4,07	7,08	6,10
Pilot	Mono	Myrza-Aryk	6,09	6,26	3,23	8,64	6,91	7,35	9,21	7,03	5,81	4,67	1,85	4,99	7,16
Pilot	Multi	Sasyk-Unkur	6,09	5,72	2,10	7,53	7,52	8,21	10,00	7,41	7,22	4,34	2,64	6,02	4,36
Pilot	Multi	Kysh-Abad	6,05	5,99	3,44	6,75	7,78	6,76	9,17	5,21	5,90	5,40	2,94	7,65	5,63
Pilot	Multi	Uchkun	6,03	5,88	3,53	8,03	6,10	7,31	9,14	7,02	5,78	4,90	2,45	4,83	7,41

Treatment	Ethnic	Village	SoCo	D1	D1.1	D1.2	D1.3	D2	D2.1	D2.2	D2.3	D3	D3.1	D3.2	D3.3
Pilot	Multi	Chertik	6,02	5,68	2,18	6,98	7,87	8,06	10,00	6,95	7,23	4,32	2,61	5,50	4,85
Pilot	Mono	Karool	6,02	6,20	2,83	8,80	6,96	6,80	8,86	6,98	4,56	5,06	2,16	6,03	6,99
Pilot	Multi	Yangi-Lul	6,00	5,83	3,02	6,97	7,52	6,49	8,10	6,36	5,03	5,68	5,47	5,36	6,19
Pilot	Multi	Erkin	6,00	6,41	2,74	7,63	8,85	6,34	7,97	5,83	5,22	5,25	3,19	6,64	5,92
Pilot	Mono	Sheraly	5,99	6,26	3,57	8,03	7,19	6,76	8,65	6,67	4,95	4,96	1,76	6,62	6,51
Pilot	Multi	Asanchek	5,91	5,85	3,59	7,87	6,08	7,10	8,51	7,31	5,49	4,77	2,60	5,22	6,49
Pilot	Multi	Nichke-Say	5,89	5,43	3,22	7,09	5,97	7,30	8,72	8,02	5,16	4,95	2,22	6,16	6,46
Pilot	Multi	Laglan	5,88	5,30	2,05	7,49	6,37	6,28	7,26	6,46	5,10	6,06	5,30	6,51	6,37
Pilot	Multi	Toktogul	5,88	5,90	2,89	7,32	7,51	6,61	8,99	4,80	6,03	5,12	5,24	5,07	5,04
Pilot	Mono	Ak-Kuduk	5,87	5,14	4,01	5,38	6,05	6,31	8,19	5,30	5,44	6,14	6,76	5,07	6,60
Pilot	Multi	Teeke	5,86	5,44	2,67	7,03	6,63	6,84	8,54	5,16	6,83	5,31	5,16	5,75	5,02
Pilot	Multi	Zarger	5,85	5,70	2,73	7,04	7,34	6,60	8,34	5,31	6,17	5,23	5,81	5,21	4,68
Pilot	Multi	Kyzyl-Abad	5,83	5,41	2,66	6,68	6,88	7,09	8,81	6,17	6,29	4,99	2,68	7,05	5,25
Pilot	Mono	Ak-Kiya	5,82	5,12	1,40	5,54	8,44	6,93	9,57	5,80	5,41	5,42	3,93	7,61	4,72
Pilot	Multi	Aravan 6010	5,80	5,49	2,02	7,43	7,01	6,71	7,48	6,03	6,63	5,20	4,19	6,26	5,14
Pilot	Multi	Achchi	5,76	5,41	1,73	6,61	7,88	8,15	9,88	6,74	7,83	3,72	2,51	4,04	4,61
Pilot	Multi	Uigur-Abad	5,74	5,88	3,11	7,45	7,09	7,14	8,36	6,45	6,60	4,21	2,33	5,83	4,48
Pilot	Multi	Konurat	5,73	5,21	1,68	6,25	7,68	6,30	9,39	4,16	5,35	5,68	4,29	7,00	5,74
Pilot	Multi	Chagyr	5,72	5,61	2,79	7,31	6,74	6,78	8,10	5,77	6,46	4,77	2,89	6,67	4,76
Pilot	Multi	Sotsialism	5,67	5,73	2,59	6,85	7,76	6,21	8,56	5,22	4,85	5,08	4,75	5,27	5,21
Pilot	Multi	Jany-Kyzyl-Suu	5,65	5,50	2,00	6,25	8,26	6,00	10,00	3,85	4,15	5,44	4,57	6,64	5,11
Pilot	Multi	Furkat	5,62	5,37	2,46	6,74	6,91	6,22	8,32	4,82	5,52	5,25	4,81	6,20	4,74
Pilot	Multi	Aravan 6001	5,59	5,46	2,77	6,57	7,04	6,40	8,13	5,99	5,08	4,92	3,58	6,00	5,16
Pilot	Multi	Kuturgan	5,57	5,51	2,48	6,44	7,60	6,34	9,63	5,27	4,11	4,86	4,46	5,22	4,89
Pilot	Multi	Kesov	5,56	5,37	1,81	7,05	7,25	6,14	7,47	5,82	5,12	5,16	2,92	7,04	5,53
Pilot	Mono	Jerge-Tal	5,49	5,12	2,25	6,62	6,49	7,77	9,77	6,51	7,04	3,59	2,54	2,41	5,83
Pilot	Mono	Vosmoe-Marta	5,37	5,24	2,67	6,44	6,61	5,51	6,48	4,76	5,29	5,35	5,08	5,09	5,87
Pilot	Mono	Cholok-Kayin	5,36	4,83	2,52	5,56	6,41	7,53	10,00	6,37	6,23	3,73	2,91	2,45	5,83
Pilot	Mono	Shoro	5,13	4,99	2,52	5,69	6,77	5,48	7,78	4,38	4,28	4,92	4,00	5,37	5,38
Pilot	Multi	Karrak	5,12	4,94	2,13	6,48	6,21	5,55	6,28	5,51	4,84	4,86	5,48	5,34	3,75
Pilot	Multi	Tepe-Korgon	5,03	5,10	2,25	6,95	6,11	5,10	6,17	5,12	4,00	4,89	4,40	6,67	3,61
Pilot	Multi	Sutkor	4,41	4,39	1,74	5,87	5,56	4,78	5,36	5,03	3,95	4,05	2,67	6,30	3,18
		Mean	6,23	6,08	3,32	7,30	7,61	7,09	8,54	6,37	6,35	5,54	4,08	6,54	6,00
		Standard Deviation	0,58	0,67	0,99	1,04	0,91	0,82	1,10	1,31	1,17	0,75	1,36	1,10	1,15

Table A.11: Comparing pilot and control groups while considering variations in village scores, as well as the nested relationship of villages within sub-districts and treatment groups

Source	df	SS	MS	F	Sig.
Social Cohesion					
Among treatment groups	1	1.984	1.939	2.75	ns
Among sub-districts within treatment groups	28	19.731	0.705	3.16	***
Among villages within sub-districts within treatment groups	107	23.883	0.223	-	-
Total	136	45.932	-	-	-
Domain 1					
Among treatment groups	1	2.478	2.478	2.51	ns
Among sub-districts within treatment groups	28	27.638	0.987	3.46	***
Among villages within sub-districts within treatment groups	107	30.549	0.286	-	-
Total	136	61.534	-	-	-
Dimension 1.1					
Among treatment groups	1	3.930	3.930	1.99	ns
Among sub-districts within treatment groups	28	55.261	1.974	2.93	***
Among villages within sub-districts within treatment groups	107	72.124	0.674	-	-
Total	136	133.495	-	-	-
Dimension 1.2					
Among treatment groups	1	1.868	1.868	0.90	ns
Among sub-districts within treatment groups	28	58.045	2.073	2.53	***
Among villages within sub-districts within treatment groups	107	87.682	0.819	-	-
Total	136	147.231	-	-	-
Dimension 1.3					
Among treatment groups	1	1.885	1.885	1.22	ns
Among sub-districts within treatment groups	28	43.345	1.548	2.47	***
Among villages within sub-districts within treatment groups	107	67.018	0.626	-	-
Total	136	113.569	-	-	-
Domain 2					
Among treatment groups	1	1.220	1.220	1.11	ns
Among sub-districts within treatment groups	28	30.906	1.104	1.95	***
Among villages within sub-districts within treatment groups	107	60.546	0.566	-	-
Total	136	92.556	-	-	-
Dimension 2.1					
Among treatment groups	1	0.307	0.307	0.13	ns

Source	df	SS	MS	F	Sig.
Among sub-districts within treatment groups	28	65.670	2.345	2.51	***
Among villages within sub-districts within treatment groups	107	99.945	0.934	-	-
Total	136	166.915	-	-	-
Dimension 2.2					
Among treatment groups	1	2.350	2.350	1.17	ns
Among sub-districts within treatment groups	28	56.204	2.007	1.21	ns
Among villages within sub-districts within treatment groups	107	177.366	1.658	-	-
Total	136	235.629	-	-	-
Dimension 2.3					
Among treatment groups	1	5.450	5.450	2.91	ns
Among sub-districts within treatment groups	28	52.401	1.871	1.58	ns
Among villages within sub-districts within treatment groups	107	126.663	1.184	-	-
Total	136	187.223	-	-	-
Domain 3					
Among treatment groups	1	2.246	2.246	1.54	ns
Among sub-districts within treatment groups	28	40.969	1.463	4.81	***
Among villages within sub-districts within treatment groups	107	32.532	0.304	-	-
Total	136	76.348	-	-	-
Dimension 3.1					
Among treatment groups	1	0.012	0.012	0.00	ns
Among sub-districts within treatment groups	28	107.965	3.856	2.85	***
Among villages within sub-districts within treatment groups	107	144.631	1.352	-	-
Total	136	252.692	-	-	-
Dimension 3.2					
Among treatment groups	1	8.377	8.377	2.92	ns
Among sub-districts within treatment groups	28	80.422	2.872	4.21	***
Among villages within sub-districts within treatment groups	107	73.073	0.683	-	-
Total	136	166.953	-	-	-
Dimension 3.3					
Among treatment groups	1	2.929	2.929	1.04	ns
Among sub-districts within treatment groups	28	78.927	2.819	3.01	***
Among villages within sub-districts within treatment groups	107	100.232	-	-	-
Total	136	182.057	-	-	-

Two treatment groups; 15 sub-districts per treatment group; 1-11 villages per sub-district. Significance of two-tailed nested analysis of variance: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ns non-significant.

Table A.12: Descriptive statistics of determinants and outcomes for 30 sub-districts

	Sub-Districts (*N* = 30)		
	Mean	**SD**	**Min-Max**
Wealth and economic situation			
Proportion who are employed	0.555	0.196	0.091-0.941
Number of festive events hosted by households	0.822	0.748	0.083-3.349
Percentage of households who own cars	47.501	15.174	13.667-71
Proportion of homes with mud/earth as main material	0.827	0.137	0.486-1
Quality of drinking water	3.382	0.532	1.890-4.330
Household income from all sources	19,642.42	5019.354	7223.19-27,002.58
Index of market access	5.133	1.357	3-7
Proportion with pit latrines or no toilet facilities	0.986	0.036	0.812-1
Amount spent on largest festive events	12,667.87	8090.7117	1250-46,461.54
Access to education			
Percentage of 16-17 year olds attending 10-11th grade	87.704	16.900	26.667-100
Percentage of 0-5 year olds attending pre-school	26.577	21.086	5.8-90
Proportion who can write easily	0.941	0.559	0.695-1.000
Proportion who can read easily	0.945	0.566	0.699-1.000
Proportion who read books for fun	0.345	0.179	0.094-0.843
Education level (ISCED-Scale)	3.333	0.208	3.009-3.761
Number of skill trainings attended in past year	1.205	0.109	1.030-1.519
Spatial structure			
Proportion of main routes to communities paved	0.6107	0.354	0-1
Size of communities' land (hectares)	330.205	266.667	32.5-1276.5
Distance to next livestock market (meters)	8301.535	9059.756	191.177-36,846.15
Distance to nearest accessible country border (km)	108.478	107.213	5.375-355
Distance to nearest urban center (km)	71.333	43.591	10-190
Distance to next school (km)	769.713	475.103	252.188-2509.934
Number of rooms in dwellings	4.017	0.693	2.323-5.138
Area of dwelling space (qm)	107.961	23.518	69.746-161.784
Proportion of communities with public transportation	0.486	0.401	0-1
Elevation (m)	242	650.235	0-2120
Percentage of households with access to safe water	62.456	23.509	0-100
Modernization			
Proportion of households with mobile phones	0.9556	0.072	0.630-1
Proportion of communities with mobile phone service	0.892	0.219	0-1

	Sub-Districts (*N* = 30)		
	Mean	**SD**	**Min-Max**
Frequency of disruption to electricity supply	3.012	0.879	1.8-5.031
Proportions of communities with landline service	0.402	0.405	0-1
Proportion of households with landline phones	0.010	0.034	0-0.174
Demography			
Household size	4.777	0.802	3.063-6.446
Number of households in community	548.624	352.750	130-1659.667
Number of years spent in community	37.0667	4.012	24.987-45.898
Number of people in community	2765.196	1828.894	536-8685
Number of households in sub-district	2261.767	1588.382	211-6568
Population of sub-district	11268.37	7843.465	967-27,619
Community characteristics			
Proportion of communities with peace activities	0.359	0.301	0-1
Number of groups in community	3.632	1.094	2-5.917
Communities making decisions with all members	0.661	0.224	0.222-1
Proportion of communities with assistance programs	0.851	0.285	0-1
Diversity			
Number of languages of communication	1.564	0.483	1.009-2.639
How well is ethnic history of country known	1.781	0.265	1.190-2.256
Percentage of Kyrgyz in communities	82.248	18.509	42-100
Well-being			
Satisfaction with household's standard of living[a]	6.871	0.562	5.724-8.469
Satisfaction with health	7.242	0.842	5.839-9.293
Satisfaction with life overall	6.987	0.795	5.582-8.646
Number of traumas experienced in past year	2.994	1.566	0.736-7.462
Number of days missed of work due to illness	2.299	1.669	0.051-6.708
Number of illness is last 12 months	0.737	0.411	0.183-1.923
Number of chronic illnesses	0.307	0.154	0.086-0.726
Satisfaction with area as a place to live	0.974	0.037	0.822-1
Big Five Personality Traits			
Openness	6.798	0.508	6.144-7.985
Agreeableness	6.678	0.749	5.083-7.972
Conscientiousness	7.338	0.528	6.099-8.406
Extraversion	5.908	0.371	4.829-6.819
Neuroticism	5.649	0.463	4.758-6.449

Table A.13: Exploratory Factor Analysis – Dimension 1.2 – Trust in people (Youth)

Variable	Label	Loading
d12_y301_1	In general, you can trust people.	0.5552
d12_y302_2	How much do you generally trust your neighbors?	0.5908
d12_y302_3	How much do you generally trust people in your village?	0.8989
d12_y302_4	How much do you generally trust people from your own ethnic or linguistic group?	0.7582
d12_y302_5	How much do you generally trust people from other ethnic or linguistic groups?	0.6578

Alpha = 0.7966

Table A.14 Exploratory Factor Analysis – Dimension 1.3 – Acceptance of diversity (Youth)

Variable	Label	Loading
d13_y403_1	People from different social backgrounds get on well together.	0.6891
d13_y403_3	Ethnic differences between people are respected.	0.4093
d13_y403_4	People treat one another with respect and consideration.	0.6061
d13_y403_5	I consider it to be a problem if people are being attacked because of their ethnic origin or religion.	0.5498
d13_y303_3	Please rate your attitudes towards people with disabilities.	0.6025
d13_y303_4	Please rate your attitudes towards poor people.	0.6902
d13_y303_5	Please rate your attitudes towards rich people.	0.5111

Alpha = 0.7740

Table A.15: Exploratory Factor Analysis – Dimension 2.1 – Identification (Youth)

Variable	Label	Loading
d21_y402_3	I see myself as a member of my neighborhood.	0.7487
d21_y402_4	I see myself as a member of my village.	0.8788
d21_y402_6	I see myself as a member of my tribe.	0.8538
d21_y402_7	I see myself as a member of my ethnic group.	0.6719
d21_y402_8	I see myself as a citizen of Kyrgyzstan.	0.6368

Alpha = 0.8713

Table A.16: Exploratory Factor Analysis – Dimension 2.2 – Trust in institutions (Youth)

Variable	Label	Loading
d22_y302_6	How much do you generally trust the head of aiyl okmotu?	0.7163
d22_y302_7	How much do you generally trust the government of the Kyrgyz Republic?	0.9310
d22_y302_8	How much do you generally trust the President of the Kyrgyz Republic?	0.8992
d22_y302_9	How much do you generally trust the Jogorku Kenesh of the Kyrgyz Republic?	0.8851
d22_y302_10	How much do you generally trust the Aiyl Kenesh in your area?	0.7548
d22_y302_11	How much do you generally trust the police?	0.7211
d22_y302_20	How much do you generally trust the media?	0.4125

Alpha = 0.9060

Table A.17: Exploratory Factor Analysis – Dimension 3.2 – Respect for social rules (Youth)

Variable	Label	Loading
d32_y602_1	I feel safe when walking alone in the neighborhood during the day.	0.9116
d32_y602_2	I feel safe when walking alone in the neighborhood during the night.	0.356
d32_y602_4	My neighborhood is overall peaceful.	0.5554
d32_y602_5	The level of violence increased during the last 12 months.	-0.5219

Alpha = 0.6334

Table A.18: Dimension scores youth for 137 villages, arranged by treatment and ethnic groups

Treatment	Ethnic	Village	D1.2	D1.3	D2.1	D2.2	D3.2
Control	Mono	Baetov	9,00	8,97	9,22	7,22	8,61
Control	Mono	Kaindy-Bulak	10,00	8,24	10,00	8,41	6,67
Control	Mono	Terek	9,11	8,41	9,17	8,25	8,47
Control	Mono	Ugut	5,22	6,75	8,83	8,89	7,78
Control	Mono	Baigenchek	5,50	6,94	10,00	6,67	7,50
Control	Mono	Kazybek	5,22	7,38	7,22	6,75	7,36
Control	Mono	Jany-Koch	5,20	6,76	8,27	7,43	6,17
Control	Mono	Taldy-Suu	7,00	7,14	9,50	6,31	8,75
Control	Mono	Ozgorush 4018	5,78	6,67	10,00	6,67	5,83
Control	Mono	Pervomaiskoe	6,76	7,10	8,95	6,73	5,93
Control	Mono	Kenesh	7,41	9,05	8,41	6,75	9,91
Control	Mono	Por	7,33	8,30	8,57	6,67	9,29
Control	Mono	Jiyde	6,13	8,75	9,18	6,84	7,10
Control	Mono	Ak-Terek	6,40	8,10	9,00	6,44	7,33
Control	Mono	Jangakty	7,56	7,56	9,78	3,62	8,22
Control	Mono	Kara-Kolot	5,80	9,90	9,33	2,14	9,17
Control	Mono	Kors-Etti	8,50	8,65	8,50	7,14	9,38
Control	Mono	Kyrgyzstan	7,89	9,21	10,00	7,94	7,92
Control	Mono	Orkaygan	5,93	8,86	8,67	2,29	9,17
Control	Multi	Haus	8,67	8,41	9,78	7,94	8,61
Control	Multi	Ak-Shor	7,83	7,38	9,67	4,52	8,33
Control	Multi	Djeke-Miste	8,33	6,43	10,00	4,29	7,08
Control	Multi	Kerkidan	10,00	9,40	10,00	8,10	10,00
Control	Multi	Naiman	8,17	8,81	7,50	5,77	9,58
Control	Multi	Sary-Tash	7,33	8,01	8,19	6,87	8,33
Control	Multi	Syrt	9,33	7,94	9,11	5,40	6,67
Control	Multi	Kochubaevo	7,56	6,75	8,67	7,42	6,94
Control	Multi	Agronom	9,00	7,54	10,00	7,62	7,64
Control	Multi	Jakshylyk	7,33	6,07	7,17	4,76	6,35
Control	Multi	Jar-Kyshlak	7,00	6,63	6,95	5,65	6,43
Control	Multi	Kukalapash	6,67	6,39	7,00	6,27	6,15
Control	Multi	Maksym-Tobu	7,78	7,98	8,67	5,60	6,67
Control	Multi	Pahtachy	8,67	8,10	9,11	7,62	8,06
Control	Multi	Teleiken	6,67	6,67	6,00	5,00	5,83
Control	Multi	Ak-Tash	7,33	7,14	7,67	5,71	9,17
Control	Multi	Jylkeldi	8,38	7,48	7,80	5,44	8,29
Control	Multi	Kyzyl-Shark	8,89	7,54	8,11	8,49	5,97
Control	Multi	Ken-Say	9,56	9,52	10,00	7,54	10,00
Control	Multi	Kechken-Jar	6,06	8,13	7,25	7,54	8,75
Control	Multi	Kurba-Kara	7,83	7,50	6,50	7,86	7,50
Control	Multi	Kydrsha	6,00	8,10	4,67	9,52	9,17
Control	Multi	Oktiabr 6061	6,07	7,90	6,33	8,43	9,17
Control	Multi	Yntymak 6062	8,00	7,62	7,08	6,67	8,33
Control	Multi	Savay	8,73	6,14	10,00	8,43	7,08
Control	Multi	Sultan-Abad	7,11	6,51	9,56	4,76	8,33
Control	Multi	Jany-Nookat	10,00	9,52	10,00	9,76	9,79
Control	Multi	Kyzyl-Teyit	6,33	8,75	8,17	5,83	9,38
Control	Multi	Temir-Koruk	8,47	8,00	9,36	8,29	8,33
Control	Multi	Chapaeva	7,89	7,86	8,22	4,96	8,61
Control	Multi	Aral	7,33	8,57	8,61	6,67	9,93
Control	Multi	Baryn	9,00	7,38	10,00	9,29	10,00
Control	Multi	Budaylyk	7,27	9,19	8,40	6,71	8,83
Control	Multi	Kapchygai	7,33	8,73	8,67	6,67	9,31
Control	Multi	Kara-Koktu	7,33	7,62	8,00	6,67	9,17

Treatment	Ethnic	Village	D1.2	D1.3	D2.1	D2.2	D3.2
Control	Multi	Bakmal	4,50	9,29	10,00	4,40	6,04
Control	Multi	Babashulu	4,89	9,37	8,00	3,17	9,17
Control	Multi	Bekse-Jol	9,13	6,57	6,27	7,38	6,75
Control	Multi	Jany-Abad	8,67	6,83	9,67	6,19	5,42
Control	Multi	Den-Bulak	8,44	8,10	10,00	7,62	8,61
Control	Multi	Kara-Darya	7,47	7,43	8,03	6,52	7,92
Control	Multi	Muchurino	8,93	7,14	10,00	7,90	8,38
Control	Multi	Ozgorush 6090	8,00	8,57	8,78	7,94	9,44
Control	Multi	Teoles	8,83	6,57	6,00	7,02	6,04
Control	Multi	Chimbay	8,00	5,95	5,00	7,14	5,00
Control	Multi	Shoro-Bashat	7,22	6,03	8,78	6,03	5,83
Control	Multi	Ana-Kyzyl	8,17	5,71	8,67	7,98	5,10
Control	Multi	Boston	6,47	7,90	9,73	2,52	7,83
Control	Multi	Kyimyl	9,00	6,03	9,78	7,06	3,89
Control	Multi	Makarenko	7,08	7,62	9,33	6,37	8,51
Pilot	Mono	Ak-Chiy	7,97	8,13	9,41	7,23	7,86
Pilot	Mono	Jangy-Tilek	7,97	8,34	9,88	6,92	8,07
Pilot	Mono	Cholok-Kayin	5,11	6,67	10,00	5,63	5,00
Pilot	Mono	Jerge-Tal	6,22	6,83	10,00	6,23	5,14
Pilot	Mono	Ak-Kiya	6,39	8,21	9,50	6,35	9,44
Pilot	Mono	Kek-Jar	6,69	7,88	9,82	6,30	7,69
Pilot	Mono	Kara-Suu	5,78	7,59	9,11	6,51	9,17
Pilot	Mono	Dyikan	5,57	7,72	7,74	5,85	9,63
Pilot	Mono	Vosmoe-Marta	6,00	6,83	5,78	5,08	3,61
Pilot	Mono	Ak-Kuduk	5,67	9,05	9,67	6,43	10,00
Pilot	Mono	Shoro	6,08	6,79	6,83	4,11	5,94
Pilot	Mono	Changet	7,21	7,62	7,96	6,79	5,57
Pilot	Mono	Osturuu	4,50	8,69	10,00	6,01	7,19
Pilot	Mono	Karool	9,00	6,31	10,00	6,90	6,25
Pilot	Mono	Myrza-Aryk	9,20	6,48	9,60	7,17	5,83
Pilot	Mono	Orto-Aryk	7,93	6,16	6,76	7,75	6,57
Pilot	Mono	Sheraly	7,89	6,79	8,06	7,94	6,03
Pilot	Multi	Aravan 6001	5,89	8,28	9,33	2,70	7,36
Pilot	Multi	Achchi	6,94	9,29	9,58	6,96	6,77
Pilot	Multi	Kara-Bulak	7,19	9,32	9,00	6,46	9,40
Pilot	Multi	Sasyk-Unkur	7,07	7,78	10,00	7,36	8,29
Pilot	Multi	Jany-Aravan	9,42	9,36	10,00	9,60	9,95
Pilot	Multi	Karrak	5,12	6,82	7,57	7,94	4,75
Pilot	Multi	Oktiabr 6007	7,81	8,91	9,33	7,45	9,29
Pilot	Multi	Erke-Kashka	8,00	7,99	8,08	7,22	5,46
Pilot	Multi	Sutkor	6,44	6,11	5,22	3,97	5,69
Pilot	Multi	Aravan 6010	8,33	7,86	6,67	6,67	7,92
Pilot	Multi	Tepe-Korgon	6,68	6,62	6,33	4,81	5,93
Pilot	Multi	Arap	8,53	8,48	8,80	8,29	7,50
Pilot	Multi	Internatsional	8,08	8,21	8,25	6,49	8,13
Pilot	Multi	Kesov	8,33	7,90	7,02	6,27	8,92
Pilot	Multi	Uigur-Abad	7,45	6,65	7,64	5,95	7,07
Pilot	Multi	Chertik	7,44	8,24	10,00	7,10	9,75
Pilot	Multi	Yangi-Abad	7,39	7,98	8,61	6,59	7,08
Pilot	Multi	Yangi-Lul	7,60	8,50	8,50	7,90	5,33
Pilot	Multi	Kyrgyz-Chek	9,70	9,19	10,00	9,70	8,58
Pilot	Multi	Asanchek	6,78	6,35	8,44	5,95	5,56

Treatment	Ethnic	Village	D1.2	D1.3	D2.1	D2.2	D3.2
Pilot	Multi	Joosh	9,29	7,45	9,81	6,43	4,70
Pilot	Multi	Kaarman	7,21	8,57	8,71	6,50	9,11
Pilot	Multi	Laglan	7,63	6,79	6,41	6,55	8,65
Pilot	Multi	Mady	8,00	7,54	10,00	4,13	8,06
Pilot	Multi	Oktiabr 6043	7,17	8,10	9,78	6,27	9,10
Pilot	Multi	Sotsialism	6,89	7,24	8,62	5,63	7,38
Pilot	Multi	Teeke	7,01	6,61	6,67	6,11	8,33
Pilot	Multi	Uchkun	9,89	6,03	9,67	7,78	3,47
Pilot	Multi	Chagyr	7,83	8,08	8,92	6,49	7,29
Pilot	Multi	Otuz-Adyr	8,02	6,29	9,51	5,52	6,03
Pilot	Multi	Kara-Debe	6,44	7,78	8,78	7,14	8,89
Pilot	Multi	Kyzyl-Abad	7,53	7,24	8,87	6,48	8,92
Pilot	Multi	Kysh-Abad	6,93	7,90	8,40	4,33	8,67
Pilot	Multi	Savay-Aryk	8,64	8,01	7,82	6,41	8,22
Pilot	Multi	Furkat	6,79	7,23	8,22	5,48	9,06
Pilot	Multi	Yntymak 6054	6,89	7,78	7,50	7,30	8,06
Pilot	Multi	Jany-Kyzyl-Suu	5,83	7,89	10,00	3,91	8,54
Pilot	Multi	Kirova	6,53	9,10	9,73	5,19	7,92
Pilot	Multi	Erkin	7,95	9,35	8,44	6,46	8,38
Pilot	Multi	Prisavay	7,50	7,02	7,67	6,98	6,39
Pilot	Multi	Konurat	6,57	7,60	8,47	5,14	6,75
Pilot	Multi	Telman	7,71	6,46	8,00	6,19	5,44
Pilot	Multi	Kara-Tash	6,89	8,49	7,67	5,10	8,56
Pilot	Multi	Noigut	7,73	8,52	8,53	6,31	9,63
Pilot	Multi	Aiuu	6,67	8,65	10,00	6,11	7,78
Pilot	Multi	Jany-Ayil	7,83	8,29	9,17	6,71	7,50
Pilot	Multi	Zarger	6,83	7,18	8,30	6,62	6,44
Pilot	Multi	Kairat	7,33	6,86	8,00	7,05	8,96
Pilot	Multi	Kuturgan	6,61	7,34	9,83	5,99	7,78
Pilot	Multi	Nichke-Say	8,98	6,93	7,91	7,24	4,72
Pilot	Multi	Toktogul	7,20	6,76	7,60	5,97	7,00
		Mean	7,43	7,70	8,60	6,50	7,63
		Standard Deviation	1,21	0,97	1,24	1,43	1,54

Table A.19: Comparing pilot and control groups while considering variations in village scores for youth, as well as the nested relationship of villages within sub-districts and treatment groups

Source	df	SS	MS	F	Sig.
Dimension 1.2					
Among treatment groups	1	4.986	4.986	1.74	ns
Among sub-districts within treatment groups	28	80.147	2.862	2.58	***
Among villages within sub-districts within treatment groups	107	118.804	1.110	-	-
Total	136	201.486	-	-	-
Dimension 1.3					
Among treatment groups	1	0.068	0.068	0.04	ns
Among sub-districts within treatment groups	28	49.245	1.759	2.38	***
Among villages within sub-districts within treatment groups	107	78.932	0.738	-	-
Total	136	128.359	-	-	-
Dimension 2.1					
Among treatment groups	1	0.033	0.033	0.02	ns
Among sub-districts within treatment groups	28	57.334	2.048	1.43	ns
Among villages within sub-districts within treatment groups	107	152.771	1.428	-	-
Total	136	210.117	-	-	-
Dimension 2.2					
Among treatment groups	1	4.467	4.467	2.02	ns
Among sub-districts within treatment groups	28	61.766	2.206	1.09	ns
Among villages within sub-districts within treatment groups	107	217.163	2.096	-	-
Total	136	280.771	-	-	-
Dimension 3.2					
Among treatment groups	1	7.381	7.381	1.78	ns
Among sub-districts within treatment groups	28	116.342	4.155	2.22	***
Among villages within sub-districts within treatment groups	107	200.144	1.87	-	-
Total	136	323.599	-	-	-

Two treatment groups; 15 sub-districts per treatment group; 1-11 villages per sub-district. Significance of two-tailed nested analysis of variance: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ns non-significant.

**Table A.20: Differences in relevant dimension scores
between youths and adults in 137 villages**

| | Groups at Baseline | | | | | | | |
| | Youth | | Adult | | | | | |
	Mean	SD	Mean	SD	N	df	T	Sig.
D1.2	7.427	1.217	7.299	1.040	274	272	-0.932	ns
D1.3	7.697	0.972	7.609	0.914	274	272	-0.775	ns
D2.1	8.601	1.242	8.542	1.108	274	272	-0.414	ns
D2.2	6.501	1.437	6.370	1.316	274	272	-0.782	ns
D3.2	7.633	1.543	6.542	1.108	274	272	-6.724	***

Significance of two-tailed independent t-tests: *** $p < 0.001$, ** $p < 0.01$, * $p<0.05$, ns non-significant