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**From definition to measurement:
Constructing a social cohesion
index for South Africa**

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From definition to measurement: constructing a social cohesion index for South Africa

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Abstract

Social cohesion has increasingly become a subject of interest for international organisations, governments, policy-makers and other practitioners. Whilst social cohesion is not a new concept, finding its origins in the work of Durkheim as early as 1893, it is the case that social cohesion has generated increasing interest from international governance institutions, states and policy-makers since the 1980s. This has often been in response to divisions and cleavages within societies, related to factors including economic downturn, tensions associated with migration, and ethnic or cultural conflict. Few would contest that in many ways, South Africa remains a deeply divided society. It thus perhaps comes as little surprise that, particularly given the declining focus on reconciliation within the national policy agenda, the South African government has increasingly focused on measures to deepen social cohesion through a range of different interventions and initiatives.

However, while there is a widespread agreement that social cohesion influences economic and social development, and that nurturing a more cohesive society is an important policy goal in itself, little progress has been made in trying to measure it and track progress in this domain over time. One of the most severe limitations to this progress is the lack of definitional consensus on social cohesion. Yet, without clear definition of what is meant by social cohesion, it becomes difficult to assess whether social cohesion has improved or worsened. Without measurement, potential key determinants that are most important among a large number of factors that influence social cohesion (e.g., inequality, poverty, violence, gender conflicts, mistrust, and others) remain obscured, making it difficult to formulate policies that can be expected to materially improve social cohesion and achieve inclusive development.

Key words: Social cohesion, South Africa, Public policies

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Introduction

Social cohesion has increasingly become a subject of interest for international organisations, governments, policy-makers and other practitioners. Whilst social cohesion is not a new concept, finding its origins in the work of Durkheim as early as 1893, it is the case that social cohesion has generated increasing interest from international governance institutions, states and policy-makers since the 1980s. This has often been in response to divisions and cleavages within societies, related to factors including economic downturn, tensions associated with migration, and ethnic or cultural conflict. Few would contest that in many ways, South Africa remains a deeply divided society. It thus perhaps comes as little surprise that, particularly given the declining focus on reconciliation within the national policy agenda, the South African government has increasingly focused on measures to deepen social cohesion through a range of different interventions and initiatives. However, while there is a widespread agreement that social cohesion influences economic and social development, and that nurturing a more cohesive society is an important policy goal in itself, little progress has been made in trying to measure it and track progress in this domain over time. One of the most severe limitations to this progress is the lack of definitional consensus on social cohesion. Yet, without clear definition of what is meant by social cohesion, it becomes difficult to assess whether social cohesion has improved or worsened. Without measurement, potential key determinants that are most important among a large number of factors that influence social cohesion (e.g., inequality, poverty, violence, gender conflicts, mistrust, and others) remain obscured, making it difficult to formulate policies that can be expected to materially improve social cohesion and achieve inclusive development.

Building on existing work, Burns et al (2016) propose a working definition of social cohesion as *“the extent to which people are co-operative, within and across group boundaries, without coercion or purely self-interested motivation.”* This definition avoids abuse of the term by refraining from covertly writing into the understanding of “social cohesion” specific normative commitments or empirical hypotheses on which there can be reasonable disagreement. It acknowledges that the question of which other values a society should strive to realise together with cohesion, and the question of which conceivable forms of social cohesion are actually realisable given human constraints, are both different from the question of what social cohesion is, and both require independent investigation.

Of course, the challenge is to move from a definition of social cohesion to its measurement. This is the focus of this paper. Our goal is to construct an index that is simple, easily replicable using available data, can be tracked over time, and can be implemented at different levels of geographic disaggregation, be it national, provincial or local. The extent to which such a goal can be realised depends critically on available datasets. This paper begins this measurement task by utilising four different available datasets individually in order to assess the extent to which a robust, valid social cohesion index can be constructed for South Africa over time.

I. Measuring social cohesion¹

As already noted, social cohesion has increasingly become a subject of interest for international organisations, governments, policy-makers and other practitioners. This is particularly the case in societies experiencing division, tensions and conflict. Given these levels of interest, there have been a number of initiatives around the world focused on measuring and tracking social cohesion, despite the difficulties posed by the lack of conceptual consensus.

This section of the paper provides a succinct overview of a number of these measures in different regions and countries around the world. It also identifies commonalities and differences between these measures, with a view to informing the development of a new social cohesion index for South Africa. Our goal in constructing an index is to construct an index that is simple, easily replicable using available data, can be tracked over time, and can be implemented at different levels of geographic disaggregation, be it national, provincial or local. We end our review of existing measurement approaches by proposing a series of indicators/dimensions which are congruent with our proposed definition of social cohesion, and could be used to construct such a social cohesion index.

II. International review of social cohesion measures and indices

2.1. Measuring social cohesion in Canada

Canada was one of the first countries internationally to introduce social cohesion into the national policy discourse. Much of Canada's current focus on social cohesion is linked to the work of Jenson (1998), who observed a "fraying social fabric" as well as growing tensions over issues of employment and economic insecurity, cultural differences and divisions between people of different socioeconomic groups (Ekos Research Associates Inc., 1995, p. 17, in Jenson, 1998, p. 1).

Jenson (1998, p. 15) proposed that social cohesion was based on five constituent dimensions, which ranged from positive to negative. These constituent dimensions were as follows: belonging / isolation; inclusion / exclusion; participation / non-involvement; recognition / rejection; and legitimacy / illegitimacy. In 2010, Jenson analysed definitions and measures of social cohesion used internationally in a publication for the United Nations Research Institute for Social Development (UNRISD), and focused on four main conceptual dimensions:

¹ Portions of this section of the report draw significantly on the following earlier work: Lefko-Everett, K. (2016). *Towards a Measure of Social Cohesion for Africa*. Concept paper commissioned by the United Nations Development Programme (UNDP) and the Institute for Justice and Reconciliation (IJR), presented at a workshop on 7-8 June 2016, Johannesburg.

1. Social inclusion, as measured by indicators of access to opportunities, resources and amenities, namely financial resources, economic activity, education and human capital, health care and technology;
2. Cultural and ethnic homogeneity, as measured by foreign born population, official languages and an ethnic fractionalisation index;
3. Trust, as measured primarily using public opinion data; and,
4. Participation and solidarity, as measured by electoral participation, membership in voluntary organisations and extent of charitable giving. (Jenson, 2010, pp. 22 – 24)

The advantage of this framework for measurement is its use of data that is readily available and easily comparable in most countries, including for example Gini coefficients, employment rates, life expectancy and voter turnout. However, the framework also relies heavily on “objective” measures of quality of life and incorporates limited public opinion data, outside of measures of trust.

2.2. Scanlon-Monash Index of Social Cohesion, Australia

The Scanlon-Monash Index (SMI) was developed by the Scanlon Foundation, the Australian Multicultural Foundation and Monash University, recognising the long-term migration patterns into the country and the importance of upholding social policies protecting multiculturalism and diversity (Markus, 2014). The SMI is based on a national public opinion survey conducted annually since 2009, which measures social cohesion according to five main domains and related sub-concepts:

1. Belonging, referring to shared values, importance/identification with Australian culture and way of life, trust, and a sense of belonging;
2. Social justice and equity, measured mainly through approval of national policies related to income support, perceptions of income inequality and economic opportunities, and trust in the government;
3. Participation, including civic membership and cooperation but mainly measured within the political sphere, through voting, signing petitions, contacting elected representatives and participating in a boycott or protest;
4. Acceptance/rejection and legitimacy, including experiences of discrimination, attitudes towards migrants and minorities, evaluation of government policies and optimism/pessimism about the future.

5. Worth, as measured by life satisfaction, happiness and future expectations. (Markus, 2014)

When compared, for example, with the measurement framework proposed by Jenson (2010), the SMI is based solely on public opinion data and does not incorporate objective measures of quality of life. Although there are conceptual similarities between the dimensions and measures of social cohesion, the SMI also introduces a number of indicators drawn from social psychology, including evaluations of personal happiness and outlook on the future.

2.3. Bertelsmann Social Cohesion Radar

The Bertelsmann Foundation is based in Germany, and like the SMI, has developed a Social Cohesion Radar (SCR) based mainly on public opinion data, as well as other types of data sources, including expert assessments and research studies. Rather than a regular standalone survey, the SCR is compiled using data from a variety of different sources, including the European Quality of Life Survey, World Values Survey, Gallup World Poll and Eurobarometer, among many others. The SCR compares results for 34 “advanced societies” (27 European Union [EU] member states and seven other countries belonging to the Organisation for Economic Cooperation and Development [OECD]), over four time periods from 1989 to 2012 (Dragolov *et al*, 2013a, p. 20; Dragolov *et al*, 2013b).

The SCR differs from many other international measures of social cohesion in its use of a very focused, narrow definition that “consciously excludes material wealth, social inequality and well-being” and focuses rather on “captur[ing] a specific quality of a society, rather than favourable living conditions in general” (Dragolov *et al*, 2013a, p. 13). The SCR defines social cohesion as consisting of three main elements:

1. **Resilient social relations**, as measured by the strength of social networks, trust between people and acceptance of diversity;
2. **Emotional connectedness**, as measured by identification with the country, trust in institutions and perceptions of fairness; and,
3. **A focus on the common good**, as measured by levels of solidarity and helpfulness, willingness to abide by social rules and extent of participation in society. (Dragolov *et al*, 2013a, pp. 13-15)

This narrow, focused conceptualisation is advantageous from a measurement perspective, particularly where other definitions of social cohesion are very broad and all-encompassing. However, the focus of the SCR is on developed countries, and there may be value in including quality of life measures when determining levels of social cohesion in deeply unequal societies with high levels of poverty, such as South Africa.

2.4. Social Cohesion and Reconciliation (SCORE) Index

The Social Cohesion and Reconciliation (SCORE) index was first developed and implemented by the Action for Cooperation and Trust programme in Cyprus to explore relationships between the communities of Turkish and Greek Cypriots, with support from the United Nations Development Programme (UNDP) and USAID (UNDP, 2015, p. 9). The index has since been used in Bosnia-Herzegovina and Nepal, with plans for future roll-out in Kenya, Israel and the Palestinian territories (SeeD, 2015).

The SCORE index measures both social cohesion and reconciliation, which it presents as the key conditions necessary for peace in any society. Unlike most of the other measures reviewed in this paper, the SCORE index uses primarily open-ended survey questions administered through face-to-face interviews (UNDP, 2015, pp. 17; 28). Focusing on only one aspect of the index, social cohesion is defined as the “nature of the coexistence between individuals within a given social group and the institutions that surround them”, and indicators used for measurement within the index are as follows (UNDP, 2015, p. 17):

1. Perceptions of corruption;
2. Trust in institutions (e.g. judicial system, parliament, police);
3. Feeling represented by institutions (e.g. parliament, politicians) and included in decision-making processes;
4. Human security, including safety from violence, security of income, feeling that needs are met, freedom of association and freedom to express own views; and,
5. Civic life satisfaction, including satisfaction with the administration of justice, state of the economy and direction of peace talks. (UNDP, 2015, pp. 22; 32-33)

SCORE’s methodological approach in using open-ended questions allows for very rich and nuanced data with the potential to significantly deepen our understanding of social cohesion. However, on a large national or international scale, this methodology may also bring practical and resource challenges related to the collection and analysis of data.

2.5. Kenyan Social Cohesion Index

The Kenyan Social Cohesion Index (SCI) was developed by the National Cohesion and Integration Commission (NCIC), which was established following the outbreak of several months of post-election violence during 2007 and 2008 in which more than 1,500 people were killed (Cox *et al*, p. 1). Like the Australian SMI, the Kenyan SCO is primarily based on a nationally representative public opinion survey, which was conducted for the first time in 2013.

The SCI measures social cohesion according to six main components, with related sub-dimensions and elements (NCIC, 2014, p. 11; 20):

1. Prosperity, referring to population wellbeing, economic disparities and marginalisation (including GDP index, life expectancy education, etc.);
2. Equity, referring to equality, access, participation and solidarity (including access to infrastructure, basic services, and government jobs, and perceptions about inequality);
3. Peace and peaceful coexistence (including law and order, absence of social tension or ethnic violence, lack of crime, etc.);
4. Diversity and the extent of social bonds in a diverse society (including relationships across ethnic groups, inter-marriage, social protection and pride in ethnic customs);
5. Identity, referring to national identity and tolerance (including importance of ethnic identity, national identity, and voting in elections); and,
6. Trust, referring to both interpersonal relations and institutions (including people of different ethnic groups and religious, and a range of institutions).

The Kenyan SCI is one of the few dedicated measures of social cohesion in Africa, and as such is an important model for understanding and tracking social change, particularly in a post conflict context. However, the measures included are very broad and there is extensive focus on quality of life indicators, which can translate into diffuse results.

2.6. South African Social Cohesion Barometer

As discussed earlier in this paper, the South African government has taken a number of steps in recent years to introduce social cohesion into the national policy framework, including through the NDP. A Social Cohesion Barometer (SCB) was developed in 2011 by the Human Sciences Research Council (HSRC), with support from The Presidency, using data from the South African Social Attitudes Survey (SASAS).

The SCB measures social cohesion through three main domains, and using both public opinion and behavioural data (Struwig *et al*, 2011, pp. 1; 4):

1. **Economic domain**, including employment, income, education, health, access to basic services, extent of socioeconomic conflict and perceptions about affirmative action, among others;
2. **Socio-cultural domain**, including social networks, personal wellbeing, perceptions about discrimination, tolerance, fear of crime and extent of interracial contact; and,

3. **Civic domain**, including national identity, evaluations of regime performance, confidence in institutions, approval of elected representatives, political interest and participation, and citizenship norms.

The SCB provides an important baseline for the measure of social cohesion in South Africa, and SASAS is a particularly rich data source. However, like the Kenyan SCI, the SCB includes a very wide range of measures and indicators, and as such risks diffuse results.

2.7. Afrobarometer Social Cohesion Index

The Afrobarometer is a continental public opinion survey conducted in 37 countries over six time periods since 2001. In 2015, researchers based at Leuven University in Belgium used Afrobarometer datasets to construct two social cohesion indices: a national average SCI; and a Social Cohesion Index Variance-Adjusted (SCIVA), which takes into account the degree of ethnic diversity within countries. These indices analyse social cohesion according to three dimensions (Langer *et al*, 2015, p. 2):

1. **Inequality**, as measured by perceptions about inequality and fair treatment by government;
2. **Trust**, including between people, across groups and in the state; and,
3. **Identity**, as measured by strength of adherence to national and group identities. (Langer *et al*, 2015)

The SCI and SCIVA represent important progress in the challenging task of comparative analysis of social cohesion. However, its focus is narrow and limited by existing data contained within the Afrobarometer, therefore potentially excluding important indicators about the quality of social relationships and peace.

2.8. Commonalities and differences between social cohesion measures

The previous section of this paper provided an overview of seven different measures of social cohesion, which have been operationalised around the world. Each takes a different conceptual approach to defining social cohesion, which is often construed as consisting of multiple dimensions, elements, domains, and/or components. Following this review, a number of dimensions/sub-dimensions can be identified as appearing in multiple definitions and measures of social cohesion (Lefko-Everett, 2016):

- Trust (inter-personal, inter-group, institutional)
- Belonging/social inclusion

- Identity (strength; value; national and group)
- Solidarity/approval of social support
- Perceived inequality
- Safety and peace (from violence, conflict and crime)
- Civic and political participation
- Tolerance and acceptance of diversity
- Discrimination (experiences, perceptions, practice)

III. Connecting definition to measurement

Based on a comprehensive review of the literature, Lefko-Everett (2016) proposes that a measure of social cohesion for Africa should consist of six main dimensions, as follows:

1. Inclusion, which refers primarily to access and participation in economic and social life, and includes quality of life indicators;
2. Belonging, referring to identity, shared norms and values, and feelings of acceptance and belonging in society;
3. Social relationships, referring to social networks, trust, and the acceptance and value placed on diversity in a society;
4. Participation, referring to active involvement in political life;
5. Legitimacy², referring to trust in institutions and feelings of representation; and,
6. Security, referring to feelings of safety from political or social violence.

² For Jenson (1998, pp. 16-17), legitimacy is a critical dimension of social cohesion because of inevitable value differences between people in modern pluralist societies. Institutions, both public and private, which are perceived as legitimate, play an important role in mediating conflict and ensuring participation and equality of opportunity which, Jenson maintains, contribute to collective identity and a shared sense of belonging.

Leveraging the work of Lefko-Everett (2016), and taking into account our proposed definition of social cohesion, we find that elements of dimensions (1)-(5) above are key to operationalising our definition of social cohesion, but do not think that security is an appropriate dimension. To restate and elaborate upon our proposed definition:

Social Cohesion is the extent to which people are co-operative, within and across group boundaries, without coercion or purely self-interested motivation.

Central to our definition is the notion of group boundaries and inter- and intra-group interactions. These highlight the importance of belonging and identity (which is often conferred by particular group memberships), as well as robust social relations made manifest through interpersonal trust, and social networks. The notion of being “co-operative” in our definition is conceived concretely as help given to others as well as civic membership that has a directed purpose³, but also as arising due to shared values and norms which induce co-operative relationships between individuals through consensus building. As already stated, we explicitly exclude security from our measurement domain as it is not congruent with our definition.

The purpose of this paper is to now connect definition to measurement, and operationalise it. To this end, we propose to use four different data sets to construct a social cohesion index that accords as far as possible with our proposed definition. We propose to use four different datasets to construct a social cohesion index. The point of multiple data sets is to allow us to compare how robust our index is across different data sets, and to also allow us to try to deal somewhat with any data deficiencies specific to a single data set. Ultimately, we may consider the merits of combining data from different data sets to produce a single index, but this can only happen ex-post. Below we provide a brief description of the four datasets we will use.

3.1. Commonalities and differences between social cohesion measures

The Afrobarometer data is a multi-year, multi-country series of nationally representative cross-sectional surveys that measure citizen attitudes on democracy, governance and socio-economic issues. South Africa has been a longstanding member of the Afrobarometer network, with the most recent round of the Afrobarometer survey being conducted in South Africa in 2015. The total sample in 2015 comprised 2,400 adults ages 18 and above, and the sample was a nationally representative, random, clustered, stratified, multistage area probability sample. The sample was stratified by province, race, and urban-rural location, and weighted to account for individual selection probabilities. (Source: Data Codebook for a Round 6 Afrobarometer Survey in South Africa, <http://afrobarometer.org/data/331>). However, data is available across multiple years, namely, 2000, 2002, 2006, 2008, 2011 and 2015. A further advantage of using the Afrobarometer data is that large portions of the questionnaire remain consistent across survey rounds. Together, this makes it feasible to construct a social cohesion index and track it over time.

3 We do not include voting and political participation here.

3.2. South African Youth Attitude Survey (SASAS)

The South African Social Attitudes Survey (SASAS) is a nationally representative, repeated cross-sectional survey that has been conducted annually by the Human Sciences Research Council (HSRC) since 2003. Much like the Afrobarometer, SASAS collects demographic, socio-economic and attitudinal behavior of South African citizens concerning the country's political and economic institutions. Each round of SASAS is designed to yield a representative sample of between 3500-7000 individuals, aged 16 and older, who are resident in South Africa at the time of the survey, regardless of nationality or citizenship. The sample is drawn from the HSRC's Master Sample, and enumeration areas are stratified by province, geographical sub-type and majority population group.

3.3. South African Reconciliation Barometer (SARB)

The South African Reconciliation Barometer (SARB) is an annual, nationally representative public opinion survey conducted by the Institute for Justice and Reconciliation, which provides data on citizen attitudes to issues of governance, transformation, social cohesion and reconciliation. The survey has been conducted annually since 2003, with a great deal of consistency in terms of questions asked over time, although the survey did undergo a significant re-design process in 2013/14. The survey employs a multi-stage cluster design, whereby enumerator areas (EAs) are randomly selected and, within each of these, households are then randomly selected for visitation. In 2016, the final sample of adult respondents was 2219.

3.4. National Income Dynamics Study (NIDS)

NIDS is a nationally representative panel data set of South Africa that collects data every two years. The first wave was conducted in 2008 with a nationally representative sample of over 28 000 individuals in 7300 households across South Africa. NIDS is repeated every two years, with the fifth wave of NIDS due to be released in 2018. The obvious advantage of NIDS lies in the panel structure of the data, which in turn, allows a deeper understanding of the change in social attitudes and values over time (of the same individuals), as well as the ability to explore the kinds of factors that induce such changes. NIDS collects a range of socio-economic, demographic and health information, as well as having a module devoted to aspects of social cohesion.

IV. Dimensions by Dataset and Availability

Table 1 below outlines the dimensions of social cohesion that are covered in each dataset. The extent to which people are *co-operative* is captured by the "Co-operation" dimension, which typically includes questions on individual organizational memberships, and civic participation. The importance of *within and across group boundary* interactions is captured in the dimensions of identity, belonging and social relations, which in turn comprises interpersonal trust and the extent

of inter-group contact. The extent to which these interactions occur *without co-ercion or pure self-interest* is reflected in perceptions of equality and institutional trust. Of course, since none of these surveys were explicitly designed to measure social cohesion, the assignment of questions to dimensions is imperfect and variable. In those cases where similar dimensions are captured in different datasets, it is important to be clear that there is still significant variation in the number and wording of questions associated with each dimension for each dataset. Finally, Table 1 makes clear that some datasets may be better suited for the purpose of measuring social cohesion than others. For example, the available data in SARB and SASAS certainly cover more dimensions than NIDS or Afrobarometer. Yet, we think there is value in including these additional datasets precisely to interrogate the extent to which coverage of dimensions (or the absence of data in some dimensions) makes a difference to the overall index. If it turns out that one is able to find similar trends and results using datasets with less comprehensive coverage, this in itself is an important finding that holds implication for the future design of questionnaire modules on social cohesion.

Table 1: Dimensions available by dataset

Dimensions	NIDS	SARB	Afrobarometer	SASAS
Co-operation		x	x	x
Identity		x	x	x
Belonging	x	x	x	x
Social relationships				
Inter-group contact		x	x	x
Interpersonal trust	x	x		x
Perceived equality	x			
Institutional trust		x	x	x

Table 2 indicates data coverage by year for each dataset. Again, it is evident that data coverage in SARB and SASAS is more regular than in Afrobarometer and NIDS. As such, these two datasets may be good prospects going forward for the ongoing, regular measurement and tracking of social cohesion in South Africa.

Table 2: Data availability by dataset

Year	NIDS	SARB	Afrobarometer	SASAS
2008	x		x	x
2009		x		x
2010	x	x		x
2011		x	x	x
2012	x	x		x
2013		x		x
2014	x			x
2015			x	

V. Computing the Index

Before presenting the results of this data exercise, it is worth making clear how the index is actually constructed. For each dataset, the relevant survey weights are applied after having identified the relevant questions associated with each dimension (See appendix for a list of questions used from each dataset). It should be noted that even for a given dataset, there may be some variation over time, as adjustments were made to questionnaires in different years. For each question, we create a dummy variable that accords with a response that favours social cohesion, and then calculate the proportion of the sample that indicate this response. For a given year, we compute the arithmetic mean across available indicators to produce a mean score for each dimension. Once we have a mean score for each dimension, we take the geometric mean across dimensions, giving equal weight to each dimension in the final index, to compute the final SCI for a given year. This yields an index that ranges in value from zero to one, with one signaling a highly cohesive society whilst the converse holds true for a score of zero.

5.1. Building blocks of the index: comparing dimensions by dataset

Figures 1 through 4 below present descriptive data on the arithmetic means for each dimension by year for each dataset. These plots are instructive for a number of reasons. Firstly, it is evident that for a given dimension, there is a great deal of consistency in the survey responses across time, even where subsequent surveys rely on independent cross-sections of respondents. For example, in the SARB data, responses indicating a sense of belonging range between 62-68 % over subsequent survey rounds, exhibiting a remarkable degree of stability in response. This is true for most dimensions across the datasets, which produces a great degree of confidence in the consistency and reliability of the data over time. Moreover, across datasets, there is some consistency. For example, measures of identity tend to have consistently high arithmetic means over time, whilst measures of co-operation tend to be lower on average. Measures of institutional trust also tend to display a decline over time across all datasets. This suggests considerable consistency in the responses of survey respondents across these different surveys.

However, there are a few key places where the data series show dramatic changes in the arithmetic means. Consider the “Social relationships” dimension in the SARB data which shows a dramatic decrease in the mean in 2011, followed by a return to previous levels thereafter. Similarly, the “Belonging” dimension in the SASAS data shows a dramatic decline in mean scores from 2009 onwards, whilst the “Social Relationships” dimensions shows a large increase in means scores from year 2010 onwards. In these instances, the dramatic change in mean scores is caused by the removal or additional of questions to the questionnaire. This is important to be aware of in computing the final index as this could have significant effects in any given year⁴.

Figure 1: SARB dimensions by year

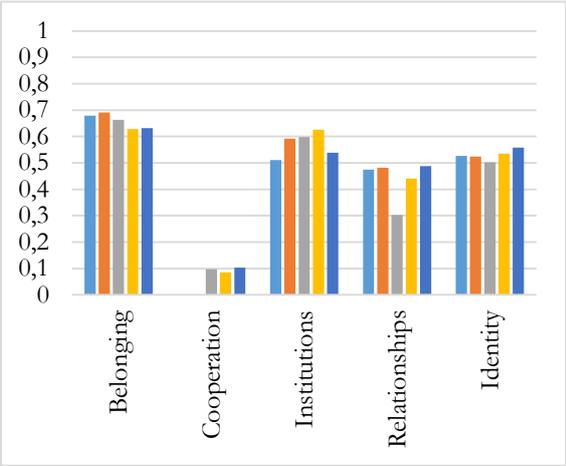


Figure 2: SASAS dimensions by year

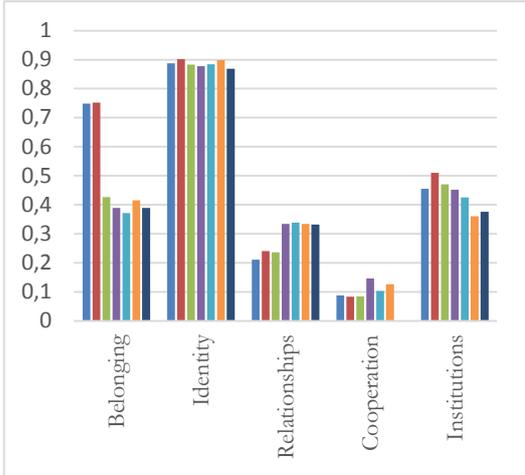


Figure 3: Afrobarometer dimensions by year

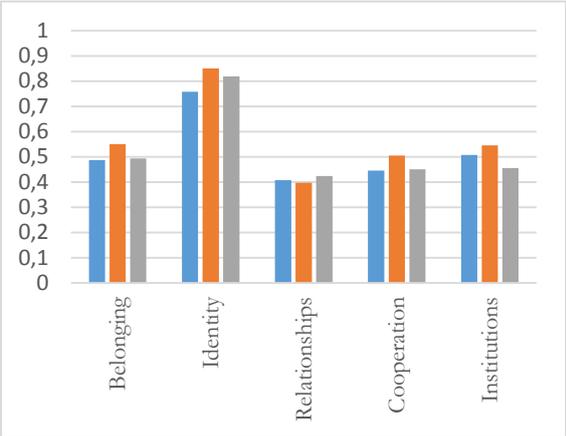
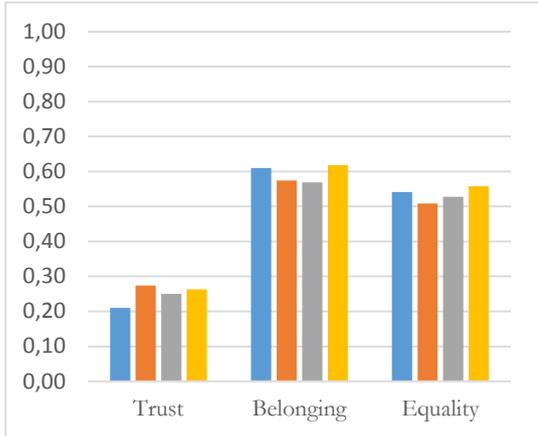


Figure 4: NIDS dimensions by year



Having computed the arithmetic means for each dimension, the final step in computing the index is to take the geometric mean across the dimensions for a given year. Figures 5 through 7 present the constituent dimensions and the final social cohesion index for each data set for 2008, 2011 and 2012 respectively. These years were chosen as they are years in which all four datasets have

⁴ For Afrobarometer and NIDS, the mean scores in dimensions are fairly consistent over time.

available data. Despite the differences in data availability and phrasing of questions across the different datasets, there is a remarkable degree of consistency between the final SCI measures. In every year, the final SCI ranges in value from 0.35 to 0.50, with Afrobarometer and NIDS datasets typically producing a higher SCI index than SASAS and SARB (which have greater diversity of questions). This occurs despite a fair degree of variation in the mean scores by dimension across the datasets, suggesting that this simple aggregation method may be quite robust to dealing with data heterogeneity.

Figure 5: SCI index 2008

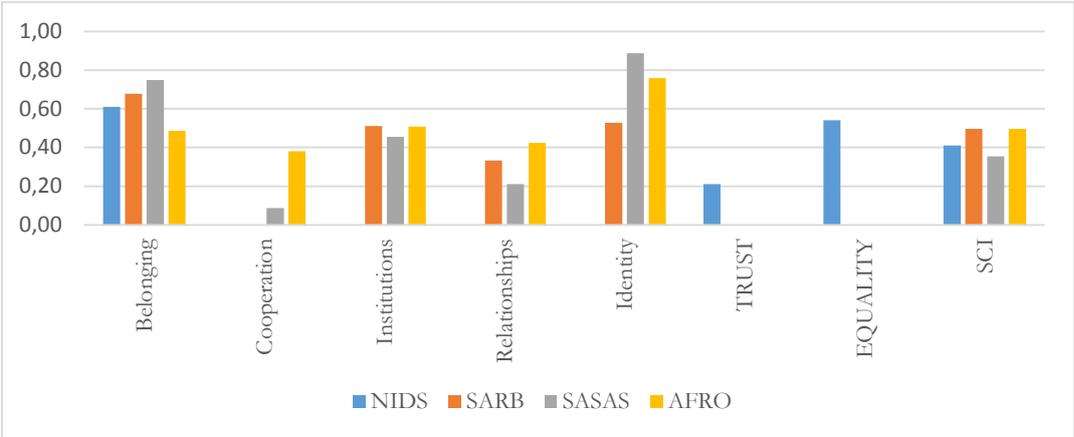


Figure 6: SCI index 2008

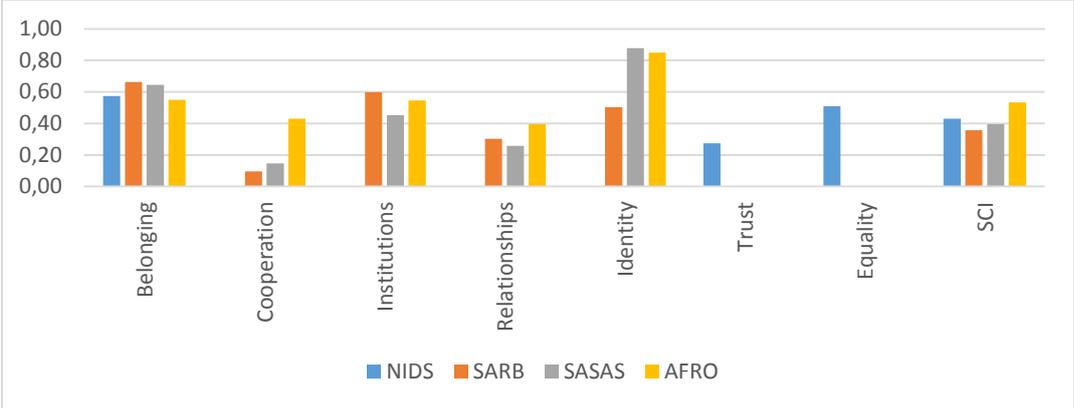
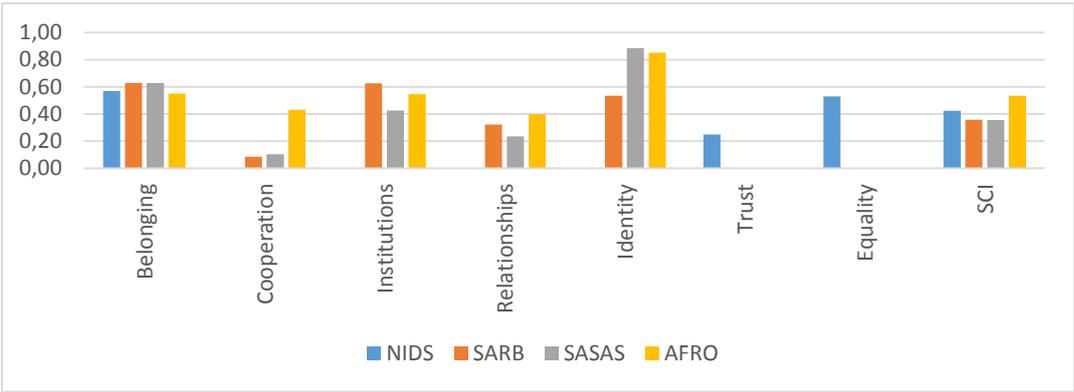


Figure 7: SCI index 2008



As demonstrated in Table 2, each of these four datasets typically comprises repeated cross-sectional data, with the exception of NIDS which is a longitudinal panel. Thus, it is also possible to compute SCI indices over multiple years for each dataset and examine whether similar time trends emerge. Figure 8-11 present SCI by dataset over time. Interestingly, there appears to be a cyclical pattern to the value of the SCI index, with it rising between 2008 and 2010/11 and declining in 2012/13. The SASAS and NIDS data both suggest an increase in the index in 2014. This does not match the Afrobarometer trend, and it is not possible to assess this using the SARB data. Still, across all four datasets, there is an increase in social cohesion between 2008 and 2010/11. This occurs despite differences in survey design, question coverage and survey purpose. Repeating this exercise with longer time series data would allow further exploration of the extent to which these similarities in trends can be replicated across different datasets.

Figure 8: SASAS

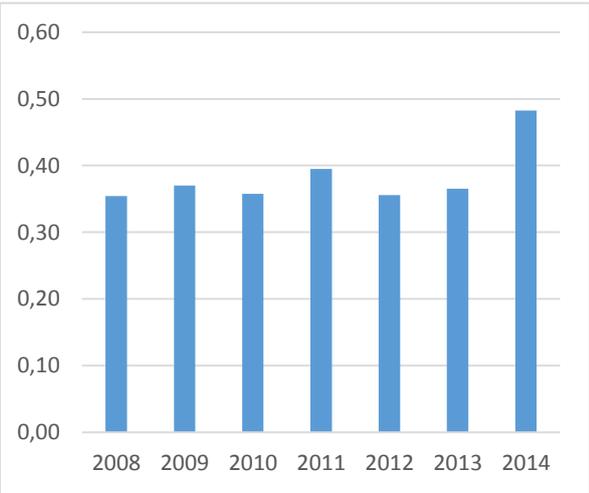


Figure 9: Afrobarometer

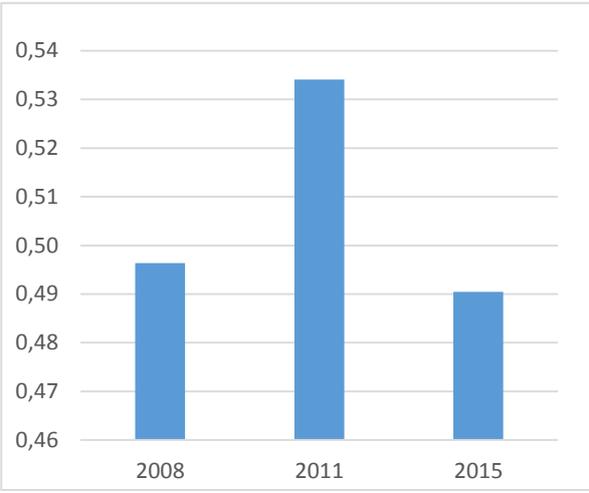


Figure 10: NIDS

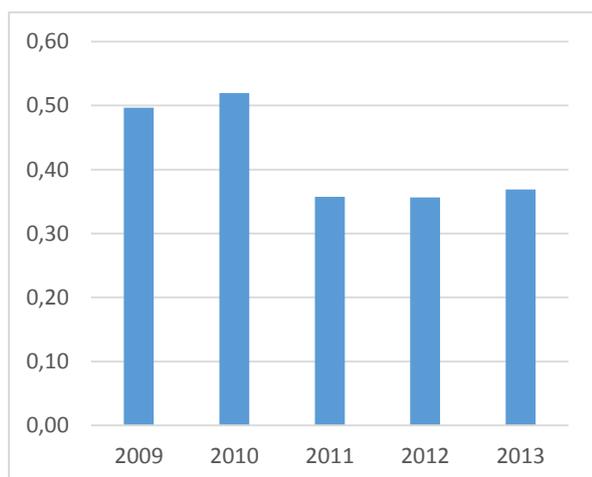
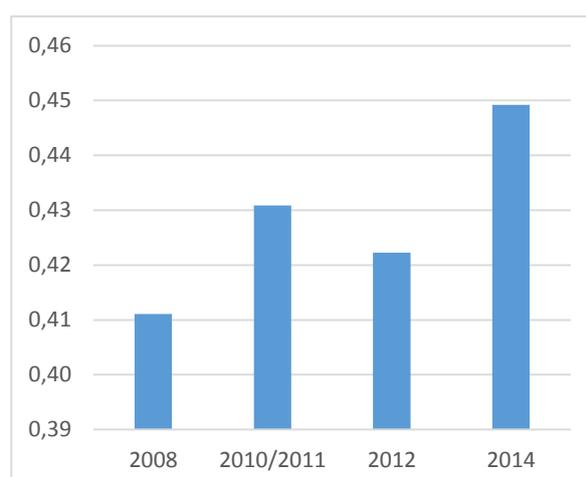


Figure 11: SARB



A final issue worthy of consideration is that it may be important to adjust the SCI to control for variation in the survey responses and perceptions of individuals from different groups. As Langer et al (2016) point out, if there is considerable variation in responses across groups, this would suggest a society that is less cohesive than one where there is a high degree of consistency in responses irrespective of group affiliation. Table 3 below provides data from Afrobarometer Round 5 for illustrative purposes. This table presents the mean dimension scores and the SCI for different subgroups, namely, by age, race and gender. Arguably, these are all potentially important cleavages in society where one might expect to see divergent responses. What table 3 makes clear, however, is that in this instance, variation in mean scores and subgroup SCI indices only emerge in relation to race.

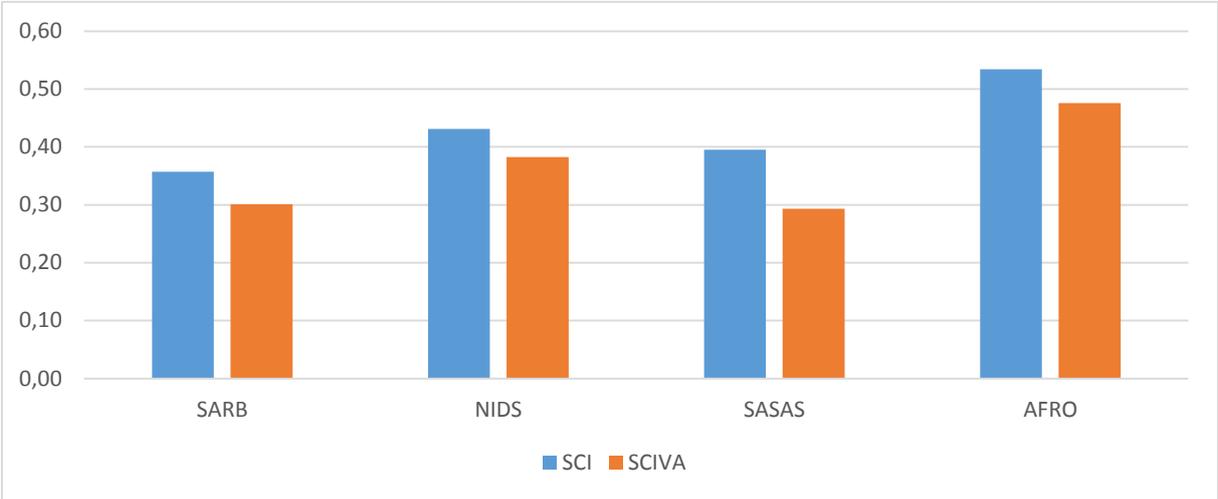
Table 3: SCI by subgroup (Afrobarometer, Round 5)

	Youth	Non-Youth	Male	Female	Black	White	Coloured	Indian /Asian
Belonging	0.56	0.54	0.56	0.54	0.56	0.53	0.54	0.44
Identity	0.85	0.85	0.84	0.86	0.86	0.82	0.88	0.77
Relationships	0.38	0.41	0.39	0.41	0.4	0.4	0.39	0.39
Cooperation	0.39	0.48	0.46	0.4	0.48	0.19	0.32	0.3
Institutions	0.56	0.53	0.55	0.54	0.55	0.57	0.58	0.39
SCI	0.53	0.54	0.54	0.53	0.55	0.45	0.51	0.43

We test this in all four datasets and find this to be a robust finding. Thus, following Langer et al (2016), we produce a Variance Adjusted SCI (SCIVA) by producing an SCI for different race groups, and then modify the national SCI by the co-efficient of variation among the sub-groups. This allows for the computation of an inequality-adjusted SCI at the national level (much like the inequality adjusted Human Development Index). Figure 12 below presents the estimates of the

unadjusted and variance-adjusted SCI alongside each other for each dataset. Across all four datasets, the effect of controlling for variation in subgroup responses has the effect of reducing the national SCI, and reducing the difference in the final SCI estimates between datasets.

Figure 12: SCI versus SCIVA (2011)



VI. Correlating SCI and outcome indicators of interest

Since there is a widespread agreement that social cohesion influences economic and social development, in this final section, we explore the correlation between our SCI indices and a number of economic and social variables. In order to have enough variation in our correlations, we do this analysis at the provincial level, that is, we examine the correlation between provincial SCI and provincial measures of economic and social development. As far as possible, we try to match data in the same year. Where this is not possible, we provide multiple correlations with different waves of data for comparison purposes. For example, we correlate our GDP per capita measure for 2013 with the NIDS SCI for both Wave 3 (2012) and Wave 4 (2014).

The exploratory results reported in Tables 4 and 5 are very encouraging. In most cases, the sign on the correlation co-efficient moves in the correct direction, and for some cases, the magnitude of the correlation is sizeable. For example, higher levels of GDP per capita are mostly correlated with higher levels of social cohesion, whilst conversely, higher incidence of poverty displays a negative correlation. Higher levels of labour force participation are positively correlated with social cohesion whilst higher unemployment displays a negative association. However, it is worth noting that the Afrobarometer dataset estimates do not correlate as one would expect for the 2008-9 data, whilst the same holds true for the SASAS data in relation to 2011-2014, and typically show the opposite sign in each of these cases. Why this should be the case is not immediately obvious.

We also include three measures from the Municipal IQ. These include the incidence of service delivery protests, a municipal productivity index (MPI) and the compliance and governance index (CGI). The MPI combines financial and non-financial data to assess the ability of individuals to engage with local economies. It does not reflect directly on municipal competence, but rather how spending patterns of a municipality reinforce and affect socio-economic contexts. In contrast, CGI focuses on how well municipalities are meeting basic planning, reporting, financial management and capacity requirements. The results suggest that lower levels of social cohesion are associated with a higher incidence of service delivery protests, but that MPI and CGI are positively associated with social cohesion. Simply put, municipal policy and competence are closely associated with higher social cohesion.

Finally, the association between social cohesion and crime is a little ambiguous. There appears to be a negative correlation between the incidence of crime and social cohesion as measured by NIDS and Afrobarometer, but this does not hold for SARB and SASAS. It is not immediately clear why this should be the case, but may well have to do with problems in the timing of and coverage of the provincial crime statistics.

Table 4: Correlation between provincial indicators of economic welfare and social cohesion, 2008-2009

	Year	2008	2008	2008	2009	2009	2008-2009	2008-2009	2008-2009
Dataset		GDP/capita ¹	Unemployment rate ²	Labour force participation rate ³	Headcount poverty ⁴ (%)	Poverty gap ⁵ (%)	Total crimes	Contact crime	Property crime
SARB	Corr with 2009 SCI	0.5	-0.72	0.58	-0.69	-0.67	0.77	0.72	0.76
	Corr with 2010 SCI	0.48	-0.44	0.44	-0.61	-0.55	0.71	0.63	0.69
NIDS	Corr with 2008 SCI	0.36	0.06	0.19	-0.19	-0.15	-0.04	-0.15	-0.03
	Corr with 2010 SCI	0.57	-0.45	0.51	-0.42	-0.48	-0.05	-0.2	-0.07
SASAS	Corr with 2008 SCI	0.09	0.02	0.06	0.02	0.04	0.05	0.05	0.04
	Corr with 2009	0.14	0.06	0.1	-0.07	-0.02	0.31	0.42	0.35
	Corr with 2010 SCI	0.39	-0.36	0.34	-0.29	-0.25	0.29	0.21	0.28
AFRO	Corr with 2008 SCI	-0.43	0.48	-0.38	0.53	0.45	-0.58	-0.43	-0.55

¹ <http://www.statssa.gov.za/publications/P0441/P04413rdQuarter2014.pdf>; <http://www.statssa.gov.za/publications/P0302/P03022006.pdf>;
<http://www.statssa.gov.za/publications/P0302/P03022014.pdf>; <http://www.statssa.gov.za/publications/P0302/P03022008.pdf>;
<http://www.statssa.gov.za/publications/P0302/P03022013.pdf>

² http://www.statssa.gov.za/?page_id=1854&PPN=P0211

³ http://www.statssa.gov.za/?page_id=1854&PPN=P0211

⁴ <http://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf>

⁵ <http://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf>

Table 5: Correlation between provincial indicators of economic welfare and social cohesion, 2011-2013

	Year	2013	2012	2012	2011	2011	2014	2014	2013
Dataset		GDP/capita	Unemployment rate	Labour force participation rate	Headcount poverty (%)	Poverty gap (%)	Compliance and Governance Index ⁶	Municipal Productivity index ⁷	No. service delivery protests ⁸
SARB	Corr with 2011	0.35	0.29	0.27	-0.32	-0.27	-0.07	0.21	0.18
	Corr with 2012	0.41	0.35	0.16	-0.19	-0.17	-0.25	0.17	-0.03
	Corr with 2013	0.42	-0.24	0.14	-0.16	-0.13	0.11	0.23	-0.34
NIDS	Corr with 2012	0.33	-0.24	0.29	-0.38	-0.35	0.41	0.27	-0.27
	Corr with 2014	0.23	-0.02	0.14	-0.01	-0.01	0.21	0.02	-0.19
SASAS	Corr with 2011	0.35	-0.38	0.32	-0.22	-0.23	0.43	0.34	-0.33
	Corr with 2012	-0.29	0.32	-0.37	0.5	0.5	-0.55	-0.48	-0.09
	Corr with 2013	-0.04	-0.38	-0.13	0.17	0.18	0.41	-0.26	0.46
	Corr with 2014	-0.27	-0.46	-0.4	0.38	0.41	-0.15	-0.25	-0.39
AFRO	Corr with 2011	0.19	0.53	0.25	-0.09	-0.14	-0.31	0.25	-0.58

⁶ <https://africacheck.org/wp-content/uploads/2014/03/201312021614519448.pdf>

⁷ <https://www.overstrand.gov.za/en/media-section/news/100-overstrand-best-performer-in-sa>

⁸ <https://www.overstrand.gov.za/en/media-section/news/100-overstrand-best-performer-in-sa>

Conclusion

This paper uses data collected from four different datasets, none of which were explicitly designed to measure social cohesion, to construct a measure of social cohesion based. This paper is a first attempt at relying on readily available, large-scale, nationally representative data in South Africa to construct such an index. Despite some differences in the variables used to construct the indices, we find a large degree of consistency in trends in the index and its constituent components over time across the four datasets. This is encouraging, since consistency is an important characteristic of a robust indicator. Results suggest that social cohesion in South Africa increased between 2008 and 2011, although the trend thereafter is less clear and a longer time series is required. Moreover, we also find suggestive evidence that higher levels of per capita income and employment are positively associated with higher social cohesion and that poverty, unemployment and service delivery protest are negatively correlated with social cohesion. In addition, municipal policy and competence are closely associated with higher social cohesion. Whilst this work is exploratory, it is encouraging, and suggests exciting new opportunities for future research to begin to take seriously the link between social cohesion and economic and social development.

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Appendix

Questions used from NIDS

Equality		
<p>Please imagine a six step ladder where the poorest people in South Africa stand on the bottom (the first step) and the richest people in South Africa stand on the highest step (the sixth step). On which step are you today?</p>	6 = Richest	Proportion of respondents who answered three or four
	5	
	4	
	3	
	2	
	1 = Poorest	
<p>How would you classify your household in terms of income, compared with other households in your village/suburb?</p>	1 = Much Above Average	Proportion of respondents who answered "Average"
	2 = Above Average	
	3 = Average	
	4 = Below Average	
	5 = Much Below Average	
<p>Please imagine a six step ladder where the poorest people in South Africa stand on the bottom (the first step) and the richest people in South Africa stand on the highest step (the sixth step). On which step do you expect to be 2 years from now?</p>	6 = Richest	Proportion of respondents who expected to be on a higher income step
	5	
	4	
	3	
	2	
	1 = Poorest	

Trust (Relationships)

<p>Imagine you lost a wallet or purse that contained R200 and it was found by a complete stranger. Is it very likely, somewhat likely or not likely at all to be returned with the money in it?</p>	1 = Very Likely	<p>Proportion of respondents who answered "Very Likely" or "Somewhat Likely"</p>
2 = Somewhat Likely		
3 = Not Likely		
<p>Imagine you lost a wallet or purse that contained R200 and it was found by someone who lives close by. Is it very likely, somewhat likely or not likely at all to be returned with the money in it?</p>	1 = Very Likely	<p>Proportion of respondents who answered "Very Likely" or "Somewhat Likely"</p>
2 = Somewhat Likely		
3 = Not Likely		

Belonging

<p>Think about the area (village or suburb) in which you live. How strong is your preference to continue living in this area?</p>	1 = Strong Preference to Stay	<p>Proportion of respondents who answered "Strong Preference to Stay" or "Moderate Preference to Stay"</p>
	2 = Moderate Preference to Stay	
	3 = Unsure	
	4 = Moderate Preference to Leave	
	5 = Strong Preference to Leave	
<p>Using a scale of 1 to 10 where 1 means "Very dissatisfied" and 10 means "Very satisfied", how do you feel about your life as a whole right now?</p>	10 = Very Satisfied	<p>Proportion of respondents who answered five to ten</p>
	9	
	8	
	7	
	6	
	5	
	4	
	3	
	2	
	1 = Very Dissatisfied	

Questions used from SARB¹⁶

Belonging
In South Africa, all religious groups enjoy equal rights.
My mother tongue language gets the recognition it deserves in a democratic South Africa
Cooperation
Please think back on the last year. How often, if ever, have you participated in demonstrations (added 2011)?
Institutions
Please indicate how much confidence you have in local government
Please indicate how much confidence you have in Parliament
Please indicate how much confidence you have in the police
Please indicate how much confidence you have in the legal system in general
Social Relationships
On a typical day during the week, whether at work or otherwise, how often do you talk to people of racial groups other than yours?
If you had a choice, would you want to talk to people of racial groups other than yours?
Identity
Are people of racial groups other than yours are untrustworthy?
When you think of yourself and your daily interaction with others, which group do you primarily belong to?
When you think of yourself and your daily interaction with others, which group do you secondarily belong to?
How important is this primary identity to you?
It is desirable to create one united South African nation out of all the different groups who live in this country?
It is possible to create one united South African nation out of all the different groups who live in this country?

¹⁶ Notes: Negatively framed variables are inverted. For instance "Do you think (group is untrustworthy?)", strongly agree, agree and neutral are coded as zero and disagree and strongly disagree are one. Therefore, in total, 30% of people think people in (group) are trustworthy. For all other questions, positive is coded as one, negative and neutral as zero. "what is your primary/secondary identity" is transformed into; "Do you identify as a South African as your primary/secondary group?"

Questions from Afrobarometer

Belonging
In general, how do you rate: Your living conditions compared to those of other South Africans?
In your opinion, how often, in this country: Are people treated unequally under the law?
How often are respondent's identity group treated unfairly by the government? (Re_R4)

Identity
Which of the following best expresses your feelings?
You would want your children to think of themselves as South African.
Being South African is a very important part of how you see yourself.
People should realize we are South Africans first, and stop thinking of themselves in terms of the group they belong to.
It is desirable to create one united South African nation out of all the different groups who live in this country.
It is possible to create such a United African nation.

Social Relationships
Member: A religious group (e.g. church, mosque)?
Member of voluntary association or community group
Approve/Disapprove: If the country returned to the old system we had under apartheid.

Cooperation
Attended a community meeting in the past year?
Got together with others to raise an issue in the past year?

Institutional trust
Trust parliament/national assembly

Trust your Elected Local Government Council?
Trust the police?
Trust the Courts of Law?

Questions from SASAS

Belonging	
	Would you describe yourself as being a member of a group that is discriminated against in this country?
	How often do you feel racially discriminated against?
	How often do you feel that members of your race group are racially discriminated against?
	People of other race groups in SA are trying to get ahead economically at expense of my group
	People of other race groups in South Africa tend to exclude members of my group from positions of power and responsibility.
	The traditions and values that are important to people of my race are under threat because of the influence of other races in this country.

Identity	
	I would rather be a citizen of South Africa than of any other country in the world.

Cooperation	
	During the last 12 months, have you... taken part in a protest march or demonstration?

Institutions	
	Level of trust: National government
	Level of trust: Courts
	Level of trust: Parliament
	Level of trust: The police
	Level of trust: Your local government

Relationships	
	Generally speaking, would you say that most people can be trusted, or that you cannot be too careful in dealing with people?
	Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?
	Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?
	People of different racial groups do not really trust or like each other.
	People of different racial groups will never really trust or like each other.
	Describe how you feel about white people in general?
	Describe how you feel about black people in general?
	Describe how you feel about coloured people in general?
	Describe how you feel about Indian people in general?
	Describe how you feel about foreigners living in South Africa in general?
	How many acquaintances do you know who have come to live in South Africa from another country?
	How many black people do you know, at least as acquaintances?
	How many coloured people do you know, at least as acquaintances?
	How many Indian people do you know, at least as acquaintances?
	How many white people do you know, at least as acquaintances?
	Of people you know who have come to live in SA from another country, how many are friends?
	Of the black people that you know, how many would you consider to be friends?
	Of the coloured people that you know, how many would you consider to be friends?
	Of the Indian people that you know, how many would you consider to be friends?
	Of the white people that you know, how many would you consider to be friends?

	When I come into contact with other race groups we almost always interact as equals.
	When I come into contact with other race groups, contact is almost always friendly.
	Agree or disagree, in your neighbourhood people generally treat each other with respect and consideration in public?
	How comfortable would you be asking a neighbour to lend you a cup of sugar if you needed it?
	If you were short of money, how comfortable would you be asking a neighbour if you could borrow R20?

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