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Abstract

This paper uses data collected across the five waves of the National Income Dynamics Study (NIDS), covering 2008-2017, to update a measure of social cohesion for South Africa. This updating exercise is important in validating the measure and establishing its credibility and potential use amongst policymakers. The index suggests that social cohesion has been improving over time in South Africa, albeit the gains have been small. These gains have been driven primarily by improvements in perceived trust, and more recently, as shown in the data for Wave 5, by reduced perceptions of inequality. Conversely, our results suggest that a sense of belonging has been eroded over time. Controlling for individual and time fixed effects, we examine the underlying individual and household characteristics that are correlated with these changes in dimensions of the social cohesion index. Our key results suggest that access to employment and earned income are positively associated with individual perceptions of trust, equality and a sense of belonging. Moreover, service delivery, particularly electrification, street lights, and refuse collection, has contributed positively towards building social cohesion. We also consider the use of national symbols and holidays to promote social cohesion. The results show that individuals interviewed soon after Freedom Day report significantly lower levels of trust but significantly higher levels of perceived equality than individuals interviewed later. Conversely, individuals interviewed soon after Heritage Day report significantly higher levels of trust than those interviewed later. Since public holidays are exogenously given, and interview date is, for the most part, also exogenous, these results certainly suggest that there may be short-term effects associated with the experience of a particular public holiday that undermine or promote social cohesion.

Introduction

Social cohesion has been the subject of research since the late 19th century. Increasingly, it has also attracted the interest of international organisations, governments and policy-makers since the 1980s and 90s, as high levels of social cohesion have been linked with positive outcomes such as democratic stability and participation (Cuellar, 2009; Dhéret, 2015; Beauvais & Jenson, 2002), economic growth and greater productivity (Easterly, Ritzan & Woolcock, 2009; Dhéret, 2015; Beauvais & Jenson, 2002) and an overall good quality of life for citizens (Pervaiz, Chaudhary & van Staveren, 2013; Dragolov, *et al* (b)). Conversely, it has been argued that highly cohesive societies can be insular and even xenophobic, and some remain deeply sceptical and assert that social cohesion is a concept invoked to distract citizens from material inequalities,¹ and to settle fears of powerful economic elites who belong to minority groups. Social cohesion is thus clearly a contentious idea. Nonetheless, its prominence in public policy and discourse mandates definition and measurement in order to settle these debates.

This paper contributes to this literature by using data collected across the five waves of the National Income Dynamics Study (NIDS), covering 2008 to 2017, to construct a simple, easily replicable measure of social cohesion for South Africa, based on a method proposed in the literature by Langer, *et al* (2016). The obvious advantage of using NIDS lies in the panel structure of the data, which allows a deeper understanding of the change in social attitudes and values of the same individuals over time, as well as exploration of the kinds of factors that induce such changes.

However, it should be made explicit that social cohesion is a complex notion, and despite an expansive body of literature, there is no universal consensus on a single definition of the term (Schefer & van der Noll, 2016; Dragolov, *et al*, 2013b). In order to not stay trapped in debates about definition, we adopt the definition proposed by Burns, *et al* (2017) which defines social cohesion as *the extent to which people are co-operative, within and across group boundaries, without coercion or purely self-interested motivation*. Burns, *et al* (2017) argue that 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 disagreement². Rather, this definition allows us to differentiate questions on which other values a society should strive to realise

¹ In the U.K. context, Peter Ratcliffe (2011: 33) has suggested the policy buzzword of “community cohesion” was used to distract attention from material inequalities under the New Labour government.

² The uncoerced, non-self-interested co-operativeness across society which, by common hypothesis, tends to generate peace and prosperity, can conceivably be realised in a large number of different ways. The articulation of a society into sub-groups and the relations between those sub-groups, as well as attitudes towards one another of members of sub-groups and members of society as a whole, can take many different forms while still exhibiting uncoerced, non-self-interested co-operativeness.

together with cohesion, and questions on which forms of social cohesion are realisable given human constraints, from the question of what social cohesion is. It acknowledges that these require independent investigation. Burns, et al (2017) argue that their definition resonates with the concept of *ubuntu*, and with the qualitative results from a series of focus groups run with South African citizens to discuss the concept of social cohesion.

Adopting the above definition, we use data collected across the five waves of the National Income Dynamics Study (NIDS) to update a measure of social cohesion for South Africa. This updating exercise is important in validating the measure and establishing its credibility and potential use amongst policy makers. The index suggests that social cohesion has been improving over time in South Africa, albeit the gains have been small. These gains have been driven primarily by improvements in perceived trust, and more recently, as shown in Wave 5, by reduced perceptions of inequality. Conversely, our results suggest that a sense of belonging has been eroded over time.

We also explore which kinds of individual and household characteristics might build trust, improve perceptions of equality, and promote belonging, which are the underlying pillars of social cohesion. Employment at the individual level, translating into higher earned income in the household, is a key driver in all three domains. Moreover, access to services has important positive associations with the dimensions of social cohesion. Access to street lights, refuse collection, and electrification correlate positively with two of the three social cohesion index (SCI) dimensions, suggesting that prioritising these services may be important in shifting social cohesion.

While service delivery and employment are two mechanisms through which social cohesion might be increased, we also examine an alternative strategy, namely the use of national symbols and holidays to promote a shared identity. Public holidays are often used as a form of commemoration and celebration of the past alongside other forms of public consciousness such as statues, museums and flags. However, public holidays are unique in that they disrupt the usual routine and bring history and aspiration to the forefront of the broad national consciousness in a way that other forms or symbols (often localised and unnoticed) do not. We exploit the fact that public holidays are exogenously determined as is, for the most part, the date of interview for subjects participating in the NIDS. We explore how proximity of survey interview date to Freedom Day (a holiday in celebration of South Africa's first inclusive democratic elections) affects the underlying elements of social cohesion. In addition, we explore the effects of proximity of interview date to Heritage Day on social cohesion. The results show that individuals interviewed soon after Freedom Day report

significantly lower levels of trust but significantly higher levels of perceived equality than individuals interviewed later. Conversely, individuals interviewed soon after Heritage Day report significantly higher levels of trust than those interviewed later. Since public holidays are exogenously given, and interview date is, for the most part, also exogenous, these results certainly suggest that there may be short-term effects associated with the experience of a particular public holiday.

Constructing a measure of social cohesion

We use all five waves of the NIDS data (2008-2017) to construct a measure of social cohesion, based on the approach adopted by Langer, et al (2016), who conceptualise social cohesion as being comprised of three pillars or dimensions, namely, individual perceptions of trust, equality and identity. Langer, et al (2016) rely on the Afrobarometer data to construct their measure of social cohesion. 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. As such, it is better-suited, perhaps, than NIDS to measure social cohesion. However, in earlier comparative work, Burns, *et al* (2017) use data collected from four different datasets – NIDS, South African Reconciliation Barometer (SARB), Afrobarometer, and South African SAYAS - to construct four dataset-specific measures of social cohesion for South Africa. Despite differences in the variables used to construct the indices, they find a large degree of consistency in trends in the overall index and its constituent components over time across the four datasets. This is encouraging, since consistency is an important characteristic of a robust indicator.

Building on this work, in this paper, we limit ourselves to using NIDS to construct a measure of social cohesion for South Africa over the five waves for which data is present. We select questions from NIDS that are similar to the Afrobarometer questions that provide the variable used by Langer, *et al* (2016), and are the same questions used in the comparative exercise undertaken by Burns, *et al* (2017). The questions are categorized to reflect the three pillars of the Langer, et al (2016) index, namely, trust, perceived equality, and identity.

Perceptions of equality

Table 1 documents the NIDS questions used to construct a measure of perceived equality. We measure perceived equality by using the NIDS data from the ladder question which asks the respondent to position themselves on a six rung ladder of relative income at different points in time (past, present, and future). If one characterises rungs 3 and 4 as being the midpoint, that is, about the same position as the average South African, then rungs one and two represent a position of perceived relative income disadvantage, while rungs five and six represent a position of perceived relative

advantage. We code all individuals who report themselves to be on rung 3 or 4 with a value of 1, and all others (relative advantage and disadvantage) as zero. In other words, this variable reflects individuals who do not perceive themselves as significantly different than the mean or median citizen in income terms. Those coded as zero we would expect to be more aware of the presence of inequality, since they perceive themselves to be at the tails of the income distribution.

We also construct a measure of mobility optimism using this ladder question. Our measure of optimism captures the relative distance any given individual expects to travel up the ladder in the next five years. For example, an individual who ranks themselves as currently being on step 3, but who anticipates being on step 5 in five years' time, will have an optimism score of 2/6. An individual currently on step 5 who anticipates moving to step 6 will have an optimism score of 1/6.

Finally, respondents were also asked to classify their household's income position relative to other households in their village/suburb. Again, all individuals who reported their household to be average are coded as one (no perceived difference relative to others, on average) while all others are coded as zero. This latter measure is similar to a measure used by Langer, *et al* (2016).

Table 1: NIDS questions used to construct a measure of perceived equality.

Question	Answers	Coding for index
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? (and on which step do you expect to be 5 years from now?)	6 = Richest	Proportion of respondents who answered three or four
	5	
	4	
	3	
	2	
	1 = Poorest	
How would you classify your household in terms of income, compared with other households in your village/suburb?	1 = Much Above Average	Proportion of respondents who answered "Average"
	2 = Above Average	
	3 = Average	
	4 = Below Average	
	5 = Much Below Average	
Optimism/Hope (constructed from ladder question)	Compares current rung on ladder to expected position in 5 years' time	How far respondent expects to travel up the ladder: (Position in 5 yrs – current position)/6

Identity

There are large differences in our approach in the identity domain compared to Langer, et al (2016). While the Afrobarometer survey asks individuals directly about their local identity relative to their national/South African identity, these kinds of questions are absent in NIDS. Thus, we are forced to construct a measure of identity that (weakly) proxies for an individual’s sense of belonging or rootedness in their community and combine it with a reflection of their overall life satisfaction (or subjective well-being). Simply put, out of necessity, identity is reconceptualised to “belonging”. Respondents were asked to characterise how strong their preference was to continue living in their current neighbourhood. Individuals who report a strong or moderate preference to stay are coded as 1, while those who are neutral or express a desire to leave are coded as zero. We combine this with a measure of life satisfaction. Individuals were asked to report their life satisfaction using a 10-point scale. All individuals who reported a satisfaction level of 5 or above (above average satisfaction), are coded as 1, while those expressing below average satisfaction are coded as zero. Table 2 shows the questions used to construct our measure of belonging and the associated coding. Our approach here represents a significant conceptual departure from Langer, et al (2016) and is because of data limitations. The extension of preference to stay in a neighbourhood to a measure of preference to stay in the broader community or even the country is tenuous. Neighbourhood attributes, particularly in South Africa’s socio-economically and racially segregated spatial patterns, does little to convince one of the connection to the broader societal level feelings of belonging. However, we contend that an individual who feels marginalised or excluded within their neighbourhood due to their local identity is more likely to express a desire to leave their neighbourhood and to report lower levels of life satisfaction.

Table 2: Survey questions in NIDS used to construct a measure of identity/belonging

Question	Answers	Coding for index
Think about the area (village or suburb) in which you live. How strong is your preference to continue living in this area?	1 = Strong Preference to Stay	Proportion of respondents who answered "Strong Preference to Stay" or "Moderate Preference to Stay"
	2 = Moderate Preference to Stay	
	3 = Unsure	
	4 = Moderate Preference to Leave	
	5 = Strong Preference to Leave	
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?	10 = Very Satisfied	Proportion of respondents who answered five to ten
	9	
	8	
	7	
	...	
	4	
	3	
	2	
1 = Very Dissatisfied		

Trust

Finally, in the domain of trust, NIDS does not include any questions relating to institutional trust but does ask individuals to report their trust, in community members and strangers respectively, to return a lost wallet. These questions are similar to the Afrobarometer questions about trust in relatives, neighbours, and strangers. Here, individuals who report it likely that a lost wallet would be returned are coded as 1, while those who report lower levels of trust (unlikely that wallet will be returned) are coded as zero. Table 3 describes the questions used to construct our measure of trust and the associated coding.

Table 3: Survey questions in NIDS used to construct measure of Trust

NIDS		
Question	Answers	Coding for index
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?	1 = Very Likely	Proportion of respondents who answered "Very Likely" or "Somewhat Likely"
	2 = Somewhat Likely	
	3 = Not Likely	
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?	1 = Very Likely	Proportion of respondents who answered "Very Likely" or "Somewhat Likely"
	2 = Somewhat Likely	
	3 = Not Likely	

Descriptive statistics

Before presenting the index itself, we present descriptive statistics for the key variables that comprise the index for the five waves of NIDS in Table 4. Figure 1 presents the same data graphically.

Table 4: Descriptive statistics

Variables	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5				
Trust Pillar (aggregated)	0.22	0.28	***	0.25	***	0.26	***	0.29	***
Trust neighbour to return wallet	0.29	0.36	***	0.30	*	0.33	***	0.37	***
Trust stranger to return wallet	0.14	0.19	***	0.20	***	0.19	***	0.21	***
Equality Pillar	0.40	0.40		0.40		0.43	***	0.45	***
Equal position on ladder	0.48	0.52	***	0.52	***	0.54	***	0.55	***
Optimism re future mobility	0.31	0.24	***	0.24	***	0.28	***	0.29	***
Income equal to others in neighbourhood	0.41	0.41		0.43	***	0.44	***	0.48	***
Belonging Pillar	0.71	0.66	***	0.66	***	0.72	*	0.70	**
Prefers to stay in neighbourhood	0.73	0.77	***	0.77	***	0.78	***	0.74	
Satisfied with life (score /1)	0.68	0.56	***	0.55	***	0.66	**	0.65	***
Observations	16870	21566		19108		23246		27845	

NOTES: This table reports mean differences in attitudes used to compile the three pillars (trust, equality, and belonging) of the Social Cohesion Index.

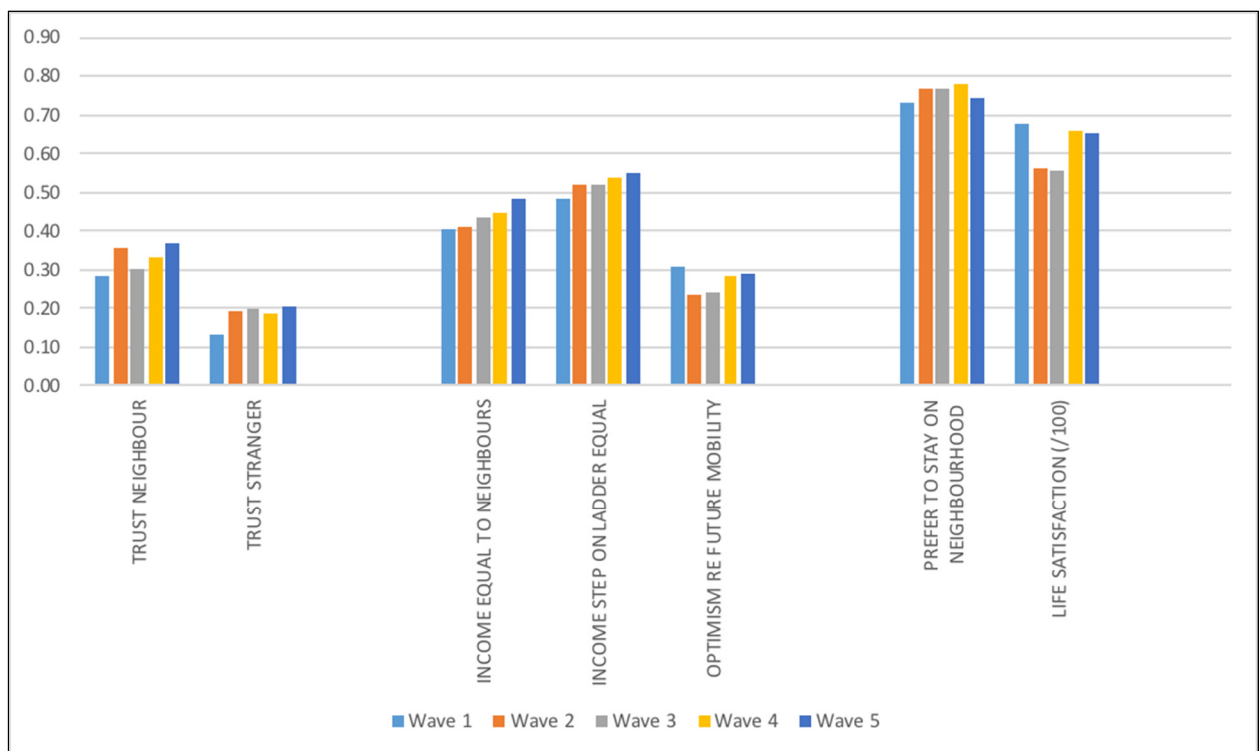
Differences in means are relative to Wave 1 (2008) of NIDS. *** p < 0.01, ** p < 0.05, * p < 0.1

Trust levels are low on average. Around a third of respondents report that they think it is likely that a lost wallet would be returned to them if it were found by someone who lived in their community. This low level of reported trust is fairly consistent across the five waves, and never exceeds 40%. Despite these low levels of community trust, approximately three quarters of citizens report a preference to remain living in their current neighbourhoods, and there is little variation in this measure across the five waves. Unsurprisingly, respondents' trust that a lost wallet would be returned by a stranger is lower, with only 1 in 5 respondents agreeing with this statement, and again, there is little variation across the waves.

There is some variation in reported life satisfaction. While over two-thirds of respondents report above average satisfaction with their lives in Waves 1, 4 and 5, life satisfaction declines significantly in Waves 2 and 3. Why this is the case is not immediately clear. Turning to perceived income equality, in the pooled sample across all five waves, just over half of all respondents characterised themselves as being on rung 3 or 4 at the time of the interview (52%). This varied from 48% in Wave 1, increasing to 55% by Wave 5. Interestingly, only 4% of respondents classified themselves as being on Rung 5 or 6 (thereby enjoying a relatively advantaged income position) compared to 45% who reported

themselves in a position of relative income disadvantage. On average, most respondents expect to advance between one or two steps³ up the income ladder in the next 5 years. This is fairly consistent across the 5 waves, although the trend does seem to be towards greater optimism concerning future mobility. Finally, just over 40% of respondents reported their household income to be about the same as other households in their neighbourhood (Income equal), and again, this perception improves slightly over time, reaching nearly 50% of the sample by Wave 5.

Figure 1: Trends in perceived trust, equality and belonging over 5 waves of NIDS



Putting it all together

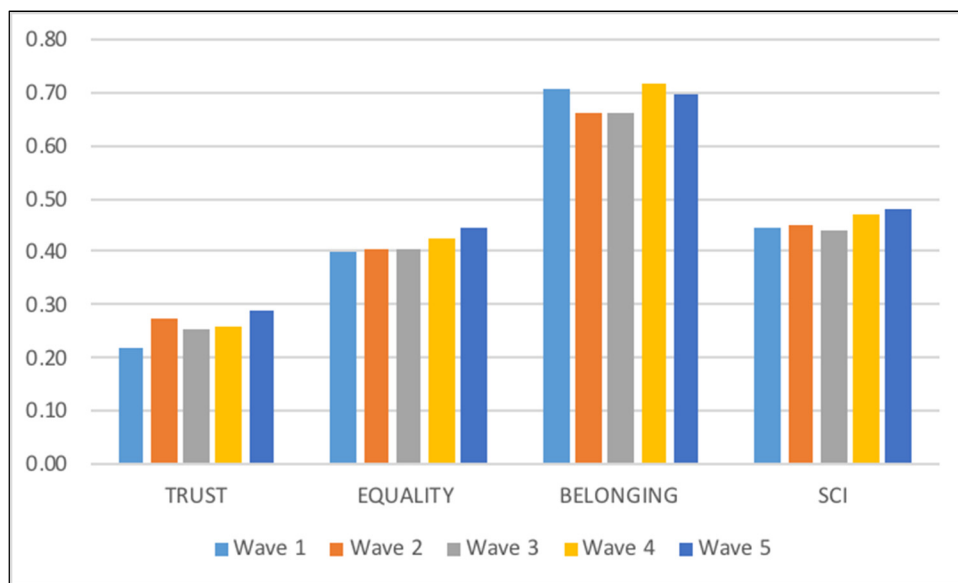
The final SCI is weighted equally among the three pillars – perceived equality, trust, and identity. The equality measure is calculated by averaging the responses of interest across the relevant equality questions, namely, household relative income position in the community, perceived individual income rank, and optimism concerning future income prospects. The trust component is calculated in a similar fashion – we obtain an average response for each trust question (since all are coded as 1/0), and then we calculate the average across the different trust measures to obtain the trust component for the index. This means that the trust indicator reflects the weighted average of the belief that a lost wallet would likely be returned either by a stranger or someone living in one’s own community. Again, this

³ For example, an expected move of 1 rung would be 1/6 (17%) while an expected move of 2 rungs would be 2/6 (33%).

indicator has a positive interpretation – higher values indicate higher trust. The identity measure reflects a sense of belonging and life satisfaction. This indicator reflects the average of two variables, namely, the number of individuals who report high life satisfaction and the number of individuals who report a preference to stay in their current neighbourhoods.

Figure 2 presents a graphical depiction of the constituent pillars of the SCI, as well as the index itself. Interestingly, since 2012 (Wave 3), all three dimensions/pillars have shown some improvement. Reported trust has increased, as have perceptions of equality, and a sense of belonging. However, relative to baseline, the story is more varied. Trust initially increased between Wave 1 and 2, then declined slightly in Wave 3, before increasing again. But relative to baseline, trust levels shown by data in any given wave have been significantly higher. Perceptions of equality have been slower to change, in the sense that relative to Wave 1, differences in the mean perception of equality only becomes significant in Waves 4 and 5. Conversely, the sense of belonging initially declined significantly relative to baseline, recovering only in Waves 4 and 5. Despite these trends, it is also worth noting, however, that the magnitude of the changes has been relatively small. This is to be expected given that these data reflect changes in perceptions and attitudes of the same individuals over time, and thus, one would expect less variation than found in data from a series of repeated cross-sections⁴.

Figure 2: Variations in perceived trust, equality and belonging by NIDS wave

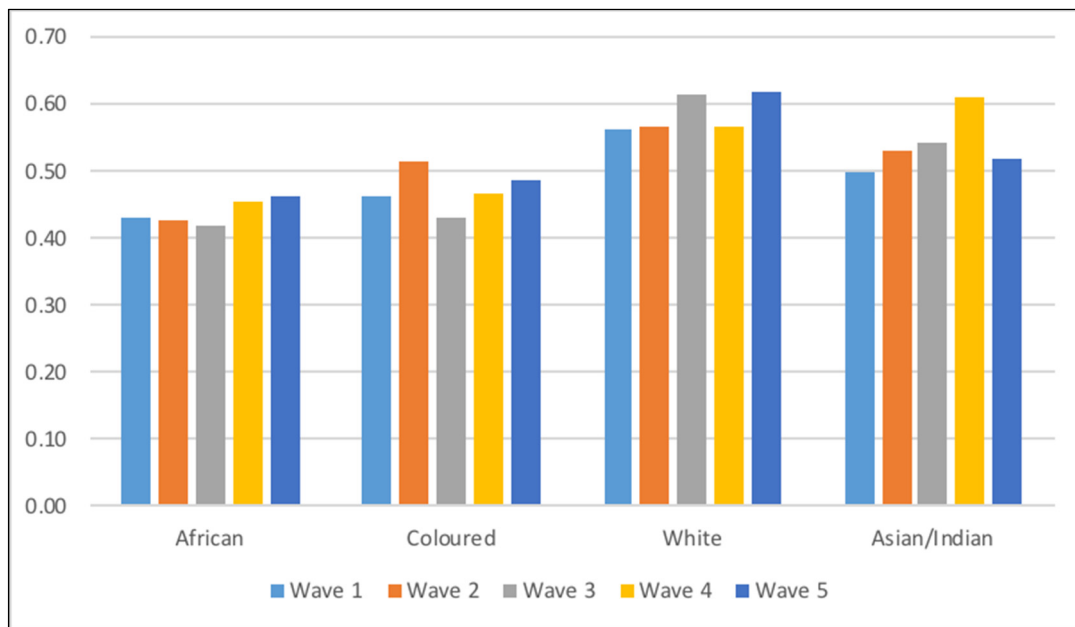


A final issue worthy of consideration is that it may be important to adjust the SCI to control for variation in the survey responses and perceptions of individuals from different sub-groups. If there

⁴ Burn,s et al (2017) demonstrate this to be the case in their comparative exercise using 4 different datasets.

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 (Langer, et al, 2016). In earlier work, Burns, et al (2017) have demonstrated that, in the South African context, the largest variations in responses to the survey questions used to construct the social cohesion index typically is by race⁵. The same holds true for NIDS. This is demonstrated in Figure 3 which uses the data from the 5 waves of NIDS and constructs a social cohesion index for each race group. What is clear is that there is a fair degree of variation in the magnitude of the SCI by race group as well as variation in the trend over time, and this stems from underlying differences in responses to questions that result in the variables that comprise the SCI pillars.

Figure 3: Social cohesion index by race sub-group

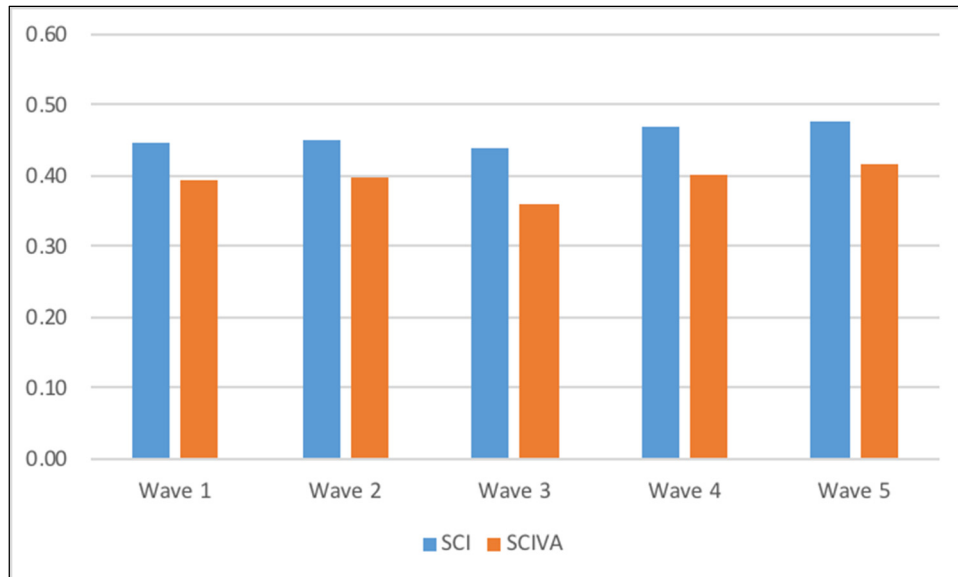


Thus, following Langer, *et al* (2016), we produce a Variance Adjusted SCI (SCIVA) by producing a SCI for different race groups, and then modify the national SCI by the co-efficient of variation among the sub-groups. This allows for the computation of an inequality-adjusted SCI at the national level (much like the inequality adjusted Human Development Index). Figure 4 presents the estimates of the unadjusted and variance-adjusted SCI for each dataset. Across all five waves, the effect of controlling for variation in sub-group responses has the effect of reducing the national SCI, and reducing the difference in the final SCI estimates between datasets. The results suggest that between 2008 and 2010 social cohesion may have improved. This accords well with existing narratives around the

⁵ See Table Appendix A1 for mean estimates of underlying SCI pillars by race group.

effects of the 2010 World Cup. However, between 2010 and 2012, social cohesion appears to have dipped slightly before recovering and following an upward trajectory⁶.

Figure 4: SCI vs SCIVA



Determinants of key indicators that constitute social cohesion

The importance of measuring and tracking social cohesion over time should not be underestimated. This is an important objective in its own right as it allows policymakers to assess whether particular policy initiatives and programmes improve or worsen social cohesion, using a quantitative and consistent measure. There are a vast array of policy possibilities that might be marshalled in the fight to reduce persistent poverty and address structural inequality. Therefore rigorously measuring and tracking social cohesion provides a disciplining rule to help in the prioritisation of these possibilities. Understanding the interplay between persistent inequality and structural poverty and social cohesion provides a strong, and necessary, disciplining framework within which to make important policy choices.

With this in mind, we now explore which kinds of individual and household characteristics might build trust, improve perceptions of equality, and promote belonging. Simply put, identifying the kinds of characteristics that positively correlate with these dimensions of social cohesion may provide useful insights in terms of which kinds of policy levers might be more effective at building social cohesion.

⁶ Again, it is important to note that similar trends are documented by Burns, et al (2017) across 4 different datasets, suggesting that even though the NIDS questions may not be ideally suited to measuring social cohesion, they do a decent job of picking up the trend.

Tables 5 and 6 report the results from OLS regressions⁷ which explore whether there are any significant socio-demographic predictors of individual perceptions of trust, belonging, and perceived equality. The data are pooled across all five waves of NIDS, and we control for individual and time fixed effects. Our sample includes all observations across the waves for comparability with the indicators reported above. That is, the in-text regressions are on an unbalanced panel. For completeness, we report identical specifications limited only to respondents who are surveyed in all five waves of NIDS in the Appendix Table A3 (i.e. the balanced sample –). Our results are largely unchanged.

Importantly, these regressions examine the predictors of an individual response in any given social cohesion indicator domain, that is, what predicts the likelihood that an individual is trusting, perceives no income inequality in their position relative to the average South African, and feels a sense of rootedness and life satisfaction in their existing community. Table 5 examines the correlation between individual characteristics and the SCI dimensions, whilst Table 6 examines the correlation between household attributes⁸ and the SCI dimensions. In every instance we focus only on those results which are robust across specifications.

Individual characteristics

Our results suggest that older individuals are significantly less trusting, and are less likely to perceive themselves as having the same economic standing as others (the average). However, older individuals are more likely to report a greater sense of belonging⁹. These results are robust to the inclusion of household controls (Columns 4-6).

Interestingly, education is not significantly associated with any of the underlying dimensions of the SCI index. Rather, individuals who are employed are significantly more likely to report perceived equality, and are significantly more likely to report a stronger sense of belonging, although this effect disappears once household controls are included. Similar trends are seen in terms of grant income receipt, although the co-efficients lose statistical significance once household controls are included.

⁷ See Appendix A2 for descriptive statistics by wave of the variables included as controls in the regressions.

⁸ While the estimates come from a common set of regressions, we present the results separately because of the length of the regression table. In Appendix A4 we report the full regression with all controls, including geographic characteristics which are not reported in the in-text tables.

⁹ We include a quadratic age term, but the co-efficient is negligible and so we do not focus on it.

In table 5 we also report the time fixed effects for the individual components of the SCI. As reported earlier, reported trust has shown significant improvements in each subsequent wave of NIDS relative to Wave 1. In contrast, perceptions of equality have been far more static, suggesting that shifting perceptions of inequality may be far harder to do. Finally, the results suggest that, over time, individuals sense of belonging has weakened considerably relative to Wave 1.

Table 5: Correlation between individual characteristics and SCI dimensions

VARIABLES	(1) Trust Others	(2) Perceived Equality	(3) Sense of Belonging	(4) Trust Others	(5) Perceived Equality	(6) Sense of Belonging
Age in Years	-0.98** (0.49)	-0.99*** (0.35)	0.83** (0.41)	-1.18** (0.50)	-0.82** (0.35)	1.03** (0.42)
Age in Years Squared	0.00 (0.00)	0.00** (0.00)	0.00*** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)
Years of Completed Education	-0.49 (0.53)	-0.02 (0.36)	-0.02 (0.43)	-0.51 (0.56)	-0.09 (0.37)	-0.09 (0.44)
Years of Completed Education Squared	0.04 (0.03)	0.01 (0.02)	-0.02 (0.02)	0.03 (0.03)	0.00 (0.02)	-0.02 (0.02)
Employed	-1.58*** (0.46)	3.14*** (0.34)	1.50*** (0.40)	-0.56 (0.62)	1.29*** (0.45)	0.88 (0.54)
Grant Income (IHS)	-0.16** (0.08)	0.11* (0.05)	0.12* (0.06)	-0.11 (0.08)	0.06 (0.06)	0.02 (0.07)
Married	0.80 (0.84)	1.83*** (0.60)	2.62*** (0.69)	1.02 (0.86)	1.32** (0.61)	2.14*** (0.70)
Wave 2 (2008)	11.12*** (1.25)	-0.57 (0.88)	-9.17*** (1.05)	11.08*** (1.28)	-1.69* (0.90)	-10.09*** (1.07)
Wave 3 (2010-2011)	10.09*** (2.07)	2.00 (1.46)	-10.72*** (1.74)	10.98*** (2.12)	-0.45 (1.49)	-12.62*** (1.78)
Wave 4 (2104-2015)	10.00*** (3.26)	6.85*** (2.29)	-5.80** (2.74)	11.61*** (3.34)	2.99 (2.34)	-8.82*** (2.79)
Wave 5 (2017)	15.72*** (4.32)	9.66*** (3.05)	-10.53*** (3.63)	17.61*** (4.41)	5.05 (3.10)	-14.22*** (3.70)
Constant	49.33*** (15.55)	64.09*** (11.04)	34.90*** (13.19)	58.11*** (16.11)	23.45** (11.39)	4.33 (13.65)
Observations	93,683	96,073	96,798	91,376	93,653	94,376
R-squared	0.42	0.49	0.45	0.42	0.50	0.46
Sample Dependent Variable Mean	24.69	39.25	69.26	24.78	39.30	69.31

NOTES: Controls for geographic variables for settlement type (rural) and province variables are included in all regressions. Columns 4, 5 and 6 include various household controls as reported in Table 6. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Household characteristics

We turn now to the associations between household level attributes and dimensions of the social cohesion index. Individuals in households with higher household income report lower perceived inequality, and a stronger sense of belonging. This accords with the broader literature on the links between economic growth, prosperity, and social cohesion, namely that one might expect higher social cohesion as incomes rise. Importantly though, notice that the share of grant income as a proportion of total household income does not have the same effect, and in fact, is significantly and negatively associated with trust. Moreover, in the balanced sample (Appendix Table A3), the share of household income from grants is negatively associated with perceptions of equality. So the source of the income, being earned rather than unearned, may be important in terms of social cohesion. This underlines the earlier result concerning the association between employment at the individual level and the dimensions of the SCI. Moreover, to the extent that old age is correlated with grant receipt (in the form of the OAP), this result concerning share of grant income in household income is consistent with the earlier result of a trust deficit for older individuals.

Some of the more important results have to do with household access to services. In particular, there is a significant positive correlation between perceived equality and household access to piped water, electricity, refuse collection by government and street lights. Similarly, a sense of belonging is stronger for households with access to electricity, refuse collection and offsite toilets. Individuals with access to piped water and access to street lights also report significantly higher trust.

Conversely, individuals in households with access to electricity report significantly lower levels of trust. Why this should be the case is not immediately clear, although one might speculate that, with electrification, one becomes more aware of activities in one's immediate vicinity, or possibly, one becomes a target. Individuals in households with access to offsite flush toilets report significantly lower trust levels too. This is not surprising in light of recent service delivery protests, and unhappiness over sanitation infrastructure in particular.

Taken together, there are a few key insights. First, the nature of the service is important. Street lights, refuse collection, and electrification positively correlate with two of the three SCI dimensions, suggesting that prioritising these services may be important in increasing social cohesion. Second, services that may be perceived to have a "free" component, such as piped water (with the free basic allocation) or street lights (a classic public good) promote trust in strangers, whilst services from which

one can be excluded (such as access to electricity due to affordability constraints) and poor quality services, such as offsite toilets, reduce trust.¹⁰

Table 6: Correlation between household characteristics and SCI dimensions

VARIABLES	(1) Trust Others	(2) Perceived Equality	(3) Sense of Belonging
Household Income (IHS)	-0.42 (0.28)	3.33*** (0.20)	2.20*** (0.25)
Proportion of Household that is Female	0.54 (1.24)	0.93 (0.88)	0.28 (1.07)
Dependency Ratio	0.52 (1.37)	1.86* (0.97)	3.51*** (1.15)
Average Years of Completed Education	0.20 (0.16)	0.46*** (0.11)	0.14 (0.14)
Average Number Employed	-2.37*** (0.90)	1.17* (0.64)	0.25 (0.77)
Share of Household Income from Grants	-1.74** (0.83)	-0.89 (0.58)	1.07 (0.71)
Access to Piped Water	2.75*** (0.69)	0.88* (0.49)	-0.86 (0.60)
Access to Electricity	-4.37*** (0.62)	2.35*** (0.43)	2.36*** (0.52)
Access to Street Lights	1.83*** (0.55)	2.30*** (0.39)	-0.33 (0.47)
Flush toilet onsite	0.90 (0.84)	-0.73 (0.58)	0.61 (0.72)
Flush toilet offsite	-2.72*** (0.84)	0.52 (0.58)	1.61** (0.73)
Received Government Housing Subsidy	-1.10** (0.56)	-0.43 (0.41)	0.68 (0.48)
Refused Collected by Government	-0.19	1.19**	4.00***
Constant	58.11*** (16.11)	23.45** (11.39)	4.33 (13.65)
Observations	91,376	93,653	94,376
R-squared	0.42	0.50	0.46
Sample Dependent Variable Mean	24.78	39.30	69.31

NOTES: Controls for geographic variables for settlement type (rural), province variables, wave dummies and individual attributes (see Table 5) are included in all regressions. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

¹⁰ The qualitative results regarding service provision remain in the balanced sample, although statistical significance in most cases is reduced.

Public holidays as an alternative mechanism to promote social cohesion

While service delivery and employment are two mechanisms through which social cohesion might be increased, we turn our attention now to an alternative strategy, namely the use of national symbols and holidays to promote a shared identity. Symbols exist - in the form of national flags, museums, statues, and public holidays - to influence the population's consciousness in commemoration, mourning, celebration, or aspiration for the future. For instance, South Africa is often referred to as the "rainbow nation" in celebration of the unity of the country's myriad diverse racial and cultural identity groups to counter Apartheid's divisive racial and ethnic agenda.

Worldwide, the annual calendar is punctuated by days of national commemoration, celebration, and remembrance. In economics, these days are often considered only in terms of the economic costs of lost revenue and profit from the closure of businesses. However, the impact of public holidays need not only be represented as its pecuniary costs. With their proliferation and disruption of ordinary life for the vast majority of a country's citizens, public holidays may also have an impact on how citizens perceive their history, role and place, that is, their identity within their society.

To explore this idea, John (2011) exploits the exogenous variation in rainfall on the 4th of July in the USA during childhood as an explanatory variable for voter turnout and partisan preference in adulthood. The author hypothesises that rainfall on America's celebratory date of the constitution reduces civic participation, as measured by voter behaviour. Moreover, the author contends that these environmental factors affect partisanship in election campaigns, which therefore affects the choice between America's leading political parties. John (2011) shows that rainfall on the 4th of July during formative years reduces voter turnout for the cohort affected by this during childhood, and leads to greater Republican Party disposition in party choice.

We exploit a related strategy here to assess the extent to which public holidays as "sites of memory" (Marschall, 2013) might be effective in changing the underlying perceptions of citizens concerning trust, equality and belonging. During South Africa's transitional negotiations from Apartheid to a democratic dispensation, the debate around the festive calendar focused explicitly on the tension between remembrance as aspirational or commemorative with regard to public holidays. At the dawn of democracy, the government embarked on an endeavour to reconstitute and organise the festive calendar to reflect the "the essence of the historical experience of the people of South Africa" and "foster a spirit of accommodation, mutual acceptance, forbearance and, reconciliation" to "promote both unity and diversity (RSA, 1994a:4)". The goal of the democratic government's festive calendar

was to unite a divided nation, either through explicit framing towards social cohesion (e.g. Reconciliation Day), or implicit historical neutrality or future aspirations (e.g. Youth Day and Human Rights Day). However, the public narrative of events organised on these days and representation in the media and political spaces may undermine the neutrality of these national holidays. It is possible that the framing has positive effects on nation building. However, contemporaneous practices of celebration/commemoration and representation could as easily undermine this goal.

We exploit the fact that public holidays are exogenously determined, as is, for the most part, the date of interview for subjects participating in the NIDS. We use this strategy to assess the impact of these days on the survey responses to questions concerning the underlying dimensions of social cohesion as identified in this paper.

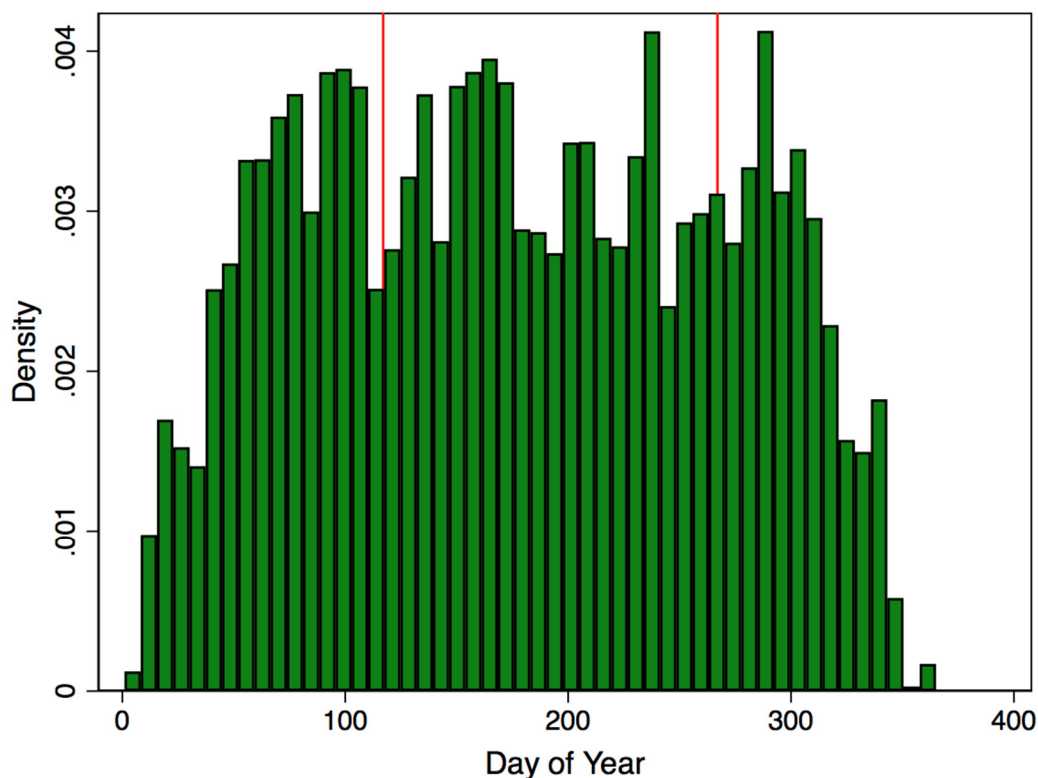
To estimate the effects of public holidays, we create a continuous variable which measures the days elapsed since the last Heritage Day (or Freedom Day, depending on which public holiday we reference) and the date on which the respondent was interviewed. We first benchmark the interview date relative to 1 January for the year in which the interview occurred. For instance, interviews on the 10th of January are on the 10th day of the year and those on the 31st of December are on the 365th day of the year. Similarly, we benchmark Freedom Day as the 117th day of the year, and Heritage Day as the 267th day of the year. For interviews that happen after Freedom Day, we calculate days elapsed by subtracting 117 from the interview day. For example, for an interview that happens on 5 May (day 125), days elapsed since Freedom Day would be 8. The same procedure is followed in relation to interviews that occur after Heritage Day (we subtract 267 from the interview benchmark day).

For interviews that take place prior to the public holiday in question, we follow a similar process and calculate the days elapsed since the holiday in the previous year. Our resulting variable, labelled “Days since holiday” takes on values from zero for interview dates that occur on Freedom Day or Heritage Day, to 365 for interview days that occur on the day immediately before the holiday. The maximum days of 365 arise from the fact that being interviewed on the 116th day of the year (the day before Freedom Day) means that the respondent is interviewed 365 days since Freedom Day of the preceding year. We only focus on days since the holiday (a past orientated measure) as opposed to the converse of days until the holiday (a future orientated measure), since we are interested in whether the experience of the public holiday and its associated rituals and celebrations can impact underlying perceptions associated with social cohesion. Moreover, any measure of “Days until the next holiday” is perfectly collinear to a measure of Days since the holiday” (the further away from a past Freedom

Day one is, the closer one is to the next Freedom Day) and so there is no sense in including both in the same regression..

In Figure 5 we present the distribution plot of the day of the year on which the individual interview occurred. We pool the data over the five waves of the NIDS. The red vertical lines represent the day of the year in which Freedom Day occurs (day 117 and the leftmost red line) and the same for Heritage Day (day 267 and the rightmost red line). Interview days are concentrated from about March to September of the years, with relatively few interviews occurring at the beginning and the end of the year. For our purposes, the plot demonstrates that there is good variation in this measure.

Figure 5: Distribution of day of the year of interview



NOTES: Figure 5 shows the distribution of the day of the year in which a respondent is interviewed, pooled over the five waves of the NIDS. Red lines indicate the day of the year in which Freedom and Heritage Day are observed. The leftmost line represents Freedom Day (117th day of the year) and the rightmost line represents Heritage Day (267th day of the year).

In Table 7, we present separate OLS regression results that examine the impact of proximity of interview date to Freedom Day or Heritage Day, respectively, on our underlying pillars for the social cohesion index. As before, dependent variables are scaled to be between 0 and 100. We transform our “Days since holiday” measure into weeks. Thus the variable takes on values between 0 and 52 and

the coefficient is interpreted as the impact of a one week increase in time elapsed between the public holiday and interview date on the relevant dependent variable. In all the regressions to follow, we include time and individual fixed effects with the full set of controls for individual and household characteristics, as in Tables 5 and 6 reported earlier.

The results show that individuals interviewed soon after Freedom Day report significantly lower levels of trust but significantly higher levels of perceived equality than individuals interviewed later. Conversely, individuals interviewed soon after Heritage Day report significantly higher levels of trust than those interviewed later. Since public holidays are exogenously given, and interview date is, for the most part, also exogenous, these results certainly suggest that there may be short term-effects associated with the experience of a particular public holiday.

Why these co-efficients should take these particular signs is, of course, a matter for speculation. Arguably, the idea that Heritage Day might promote trust is certainly in keeping with the ethos of the day which is all about celebrating shared histories and diversity. Similarly, the fact that individuals interviewed soon after Freedom Day report a greater sense of equality but lower levels of trust may be in keeping with the ethos of Freedom Day which celebrates the arrival of democracy and voting rights for all South Africans (i.e. equality under the law), but may also serve as a stark reminder of unfulfilled promises of the post-apartheid societal vision and promise of a better life for all, thereby eroding trust. There are, of course, other possible explanations. However, the key point here is that the celebration of public holidays, a key mechanism leveraged by governments to influence public consciousness in particular ways, seems to have an effect on perceptions of the key pillars associated with social cohesion.

Table 7: Public holidays and social cohesion

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Freedom Day			Heritage Day		
	Trust Others	Perceived Equality	Sense of Belonging	Trust Others	Perceived Equality	Sense of Belonging
Weeks Since Holiday	0.05*** (0.01)	-0.03*** (0.01)	0.01 (0.01)	-0.05*** (0.01)	0.00 (0.01)	-0.01 (0.01)
Date of Interview	-0.01 (0.02)	-0.02 (0.01)	0.01 (0.02)	-0.02 (0.02)	-0.02 (0.01)	0.00 (0.02)
Month of Interview	0.36*** (0.07)	-0.39*** (0.05)	-0.08 (0.06)	0.23*** (0.07)	-0.34*** (0.05)	-0.12** (0.06)
Wave 2 (2008)	10.55*** (1.29)	-1.01 (0.91)	-9.89*** (1.08)	10.61*** (1.29)	-1.00 (0.91)	-9.86*** (1.08)
Wave 3 (2010-2011)	11.09*** (2.12)	-0.44 (1.49)	-12.53*** (1.78)	10.96*** (2.12)	-0.31 (1.49)	-12.55*** (1.78)
Wave 4 (2014-2015)	11.79*** (3.34)	2.46 (2.34)	-9.27*** (2.80)	11.66*** (3.34)	2.08 (2.34)	-9.29*** (2.80)
Wave 5 (2017)	18.36*** (4.42)	3.86 (3.11)	-14.88*** (3.71)	18.39*** (4.42)	3.46 (3.11)	-14.85*** (3.71)
Constant	57.90*** (16.18)	21.56* (11.45)	1.27 (13.72)	61.76*** (16.13)	18.19 (11.41)	2.43 (13.68)
Observations	91,376	93,653	94,376	91,376	93,653	94,376
R-squared	0.43	0.50	0.46	0.43	0.50	0.46
Sample Dependent Variable Mean	24.78	39.30	69.31	24.78	39.30	69.31

NOTES: Full set of controls for individual and household characteristics included and not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

In Tables 8 and 9, we reproduce this analysis for different sub-samples defined by race, in order to consider whether individuals from different identity groups, as defined by the apartheid state, respond differently to these public holidays. The results show that all survey participants interviewed soon after Freedom Day, irrespective of race, exhibit significantly lower trust levels than those interviewed later (Table 8). Conversely, only Black and Coloured survey participants interviewed soon after Freedom Day perceive greater equality than those interviewed later, while there is no significant effect for White respondents. Finally, Coloured and White respondents interviewed soon after Freedom Day express a significantly higher sense of belonging than those interviewed later, while the converse holds true for Black citizens.

Table 8: Freedom Day: Sub-Sample Analysis

	Freedom Day								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SAMPLE	Black African	Coloured	White	Black African	Coloured	White	Black African	Coloured	White
VARIABLES	Trust Others			Perceived Equality			Sense of Belonging		
Weeks Since Holiday	0.03** (0.01)	0.06** (0.03)	0.17* (0.09)	- 0.03*** (0.01)	-0.06*** (0.02)	0.06 (0.07)	0.03*** (0.01)	-0.06** (0.02)	-0.16*** (0.06)
Date of Interview	-0.03 (0.02)	0.08* (0.04)	-0.18 (0.14)	-0.02 (0.02)	-0.03 (0.04)	-0.07 (0.09)	0.01 (0.02)	-0.04 (0.04)	-0.01 (0.08)
Month of Interview	0.37*** (0.07)	-0.06 (0.19)	0.45 (0.45)	- 0.39*** (0.05)	-0.43*** (0.16)	-0.71** (0.32)	0.00 (0.06)	-0.69*** (0.17)	-0.45 (0.28)
Wave 2	10.10*** (1.46)	14.24*** (3.03)	-12.20 (8.08)	-1.27 (1.00)	-0.78 (2.58)	2.81 (5.68)	- 12.72*** (1.23)	-1.51 (2.67)	-1.76 (5.17)
Wave 3	10.70*** (2.38)	5.34 (5.10)	3.23 (13.71)	-0.43 (1.63)	-0.98 (4.35)	-0.96 (9.41)	- 16.19*** (2.02)	-5.09 (4.48)	0.25 (8.92)
Wave 4	12.48*** (3.73)	-4.65 (8.39)	-11.73 (22.21)	2.51 (2.55)	2.48 (7.11)	-1.80 (15.20)	- 13.94*** (3.15)	-2.29 (7.33)	3.11 (14.49)
Wave 5	18.92*** (4.94)	-0.18 (10.97)	-9.35 (29.99)	3.35 (3.40)	7.46 (9.33)	-3.89 (20.45)	- 21.35*** (4.18)	-3.07 (9.59)	0.40 (19.40)
Constant	59.50*** (17.61)	1.50 (43.01)	-66.70 (158.76)	21.41* (12.17)	23.98 (36.21)	5.27 (108.88)	-21.75 (15.05)	39.68 (38.69)	98.85 (104.70)
Observations	74,519	12,368	3,392	76,409	12,639	3,463	77,076	12,689	3,466
R-squared	0.41	0.44	0.65	0.48	0.50	0.62	0.43	0.46	0.62
Sample Dependent Variable Mean	25.39	17.22	37.88	37.85	42.80	53.59	66.70	79.40	87.72

In table 9, we repeat this analysis in relation to Heritage Day. Again, we see some variation in the behavioural response of respondents based on their race group. Survey participants interviewed soon after Heritage Day express significantly higher levels of trust than those interviewed later, and this is true across all race groups. Conversely, proximity of interview date to Heritage Day has little correlation with perceptions of equality, with only Coloured participants expressing significantly lower perceived equality the closer to Heritage Day they were interviewed. Finally, in terms of a sense of belonging, Black respondents interviewed soon after Heritage Day exhibit a significantly greater sense

of belonging than those interviewed later, while the converse holds true for Coloured participants. White respondents are the least affected by the experience of public holidays in relation to their survey responses.

Table 9: Heritage Day: Sub-Sample Analysis

Heritage Day									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SAMPLE	Black African	Coloured	White	Black African	Coloured	White	Black African	Coloured	White
VARIABLES	Trust Others			Perceived Equality			Sense of Belonging		
Weeks Since Holiday	-0.03** (0.01)	-0.06** (0.03)	- 0.24*** (0.08)	-0.01 (0.01)	0.04* (0.02)	-0.03 (0.06)	-0.03*** (0.01)	0.07*** (0.02)	0.01 (0.05)
Date of Interview	-0.03 (0.02)	0.08* (0.04)	-0.20 (0.14)	-0.02 (0.02)	-0.02 (0.04)	-0.07 (0.09)	0.01 (0.02)	-0.03 (0.04)	-0.02 (0.08)
Month of Interview	0.29*** (0.07)	-0.27 (0.20)	-0.44 (0.49)	- 0.34*** (0.05)	-0.27* (0.16)	-0.86** (0.35)	-0.09 (0.06)	-0.46*** (0.17)	-0.25 (0.32)
Wave 2	10.11*** (1.46)	14.53*** (3.05)	-10.90 (8.10)	-1.31 (1.01)	-0.73 (2.59)	2.84 (5.69)	- 12.70*** (1.24)	-1.95 (2.67)	-1.36 (5.19)
Wave 3	10.58*** (2.38)	5.21 (5.12)	2.66 (13.66)	-0.34 (1.63)	-0.54 (4.36)	-0.94 (9.42)	- 16.28*** (2.02)	-5.12 (4.48)	0.12 (8.93)
Wave 4	12.38*** (3.74)	-4.31 (8.41)	-14.68 (22.15)	1.86 (2.56)	2.56 (7.13)	-1.28 (15.24)	- 14.15*** (3.16)	-2.79 (7.33)	0.56 (14.53)
Wave 5	18.92*** (4.94)	0.43 (10.99)	-13.91 (29.87)	2.76 (3.40)	7.36 (9.35)	-3.02 (20.51)	- 21.43*** (4.19)	-3.86 (9.59)	-3.73 (19.50)
Constant	61.92*** (17.56)	9.20 (43.05)	-73.79 (157.94)	17.72 (12.14)	18.68 (36.33)	13.62 (108.53)	-19.60 (15.02)	31.58 (38.76)	69.93 (104.69)
Observations	74,519	12,368	3,392	76,409	12,639	3,463	77,076	12,689	3,466
R-squared	0.41	0.44	0.66	0.48	0.50	0.62	0.43	0.46	0.62
Depvar mean	25.39	17.22	37.88	37.85	42.80	53.59	66.70	79.40	87.72

Conclusion

This paper uses data collected across the five waves of the National Income Dynamics Study (NIDS), covering 2008-2017, to update a measure of social cohesion for South Africa. This updating exercise is important in validating the measure and establishing its credibility and potential use by policymakers. Moreover, the paper demonstrates that it is possible to rely on existing nationally representative data to begin to measure, albeit imprecisely, and track social cohesion, a variable of key policy import, in South Africa.

The index suggests that social cohesion has been improving over time in South Africa, although the gains have been small. These gains have been driven primarily by improvements in perceived trust, and more recently, as shown in Wave 5, by reduced perceptions of inequality. Conversely, our results suggest that a sense of belonging has been eroded over time. Controlling for individual and time fixed effects, we examine the underlying individual and household characteristics that are correlated with these changes in the dimensions of the social cohesion index. Our key results suggest that access to employment and earned income are positively associated with individual perceptions of trust, equality, and sense of belonging. Moreover, service delivery, particularly electrification, street lights, and refuse collection, contributes positively to building social cohesion.

We also consider the use of national symbols and holidays to promote social cohesion. The results show that individuals interviewed soon after Freedom Day report significantly lower levels of trust but significantly higher levels of perceived equality than individuals interviewed later. Conversely, individuals interviewed soon after Heritage Day report significantly higher levels of trust than those interviewed later. Since public holidays are exogenously given, and interview date is, for the most part, also exogenous, these results certainly suggest that there may be short term-effects associated with the experience of a particular public holiday. However, there is variation in these responses by race group, suggesting the experience of the symbolic value of public holidays is not uniform for all citizens, and that opportunities may exist to leverage these public occasions even further in the bid to build social cohesion.

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APPENDIX

A1: Underlying dimensions of SCIVA

WAVE	AFRICAN			COLOURED			WHITE			INDIAN/ASIAN		
	TRUST	EQUALITY	BELONGING	TRUST	EQUALITY	BELONGING	TRUST	EQUALITY	BELONGING	TRUST	EQUALITY	BELONGING
Wave 1	0.22	0.38	0.67	0.13	0.44	0.81	0.31	0.49	0.88	0.17	0.52	0.79
Wave 2	0.28	0.37	0.62	0.26	0.47	0.79	0.26	0.56	0.87	0.14	0.57	0.88
Wave 3	0.25	0.38	0.62	0.16	0.42	0.70	0.40	0.55	0.88	0.23	0.56	0.84
Wave 4	0.26	0.41	0.69	0.14	0.47	0.79	0.32	0.51	0.85	0.43	0.57	0.82
Wave 5	0.28	0.43	0.68	0.22	0.48	0.75	0.44	0.55	0.86	0.35	0.54	0.63

A2: Mean descriptive statistics for regression controls by Wave: Unbalanced Sample

In this table we report the mean characteristics of all adult respondents across the five waves of NIDS. Therefore, mean characteristics are not necessarily compared to those in the regression analysis.

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
<i>Individual Characteristics</i>					
Trust Others	0.22	0.28	0.25	0.26	0.29
Sense of Belonging	0.71	0.66	0.66	0.72	0.70
Perceived Equality	0.40	0.40	0.40	0.43	0.45
Day of Years	120.39	213.53	201.63	192.96	150.96
Weeks Since Freedom Day	34.27	19.31	13.12	28.72	27.28
Weeks Since Heritage Day	25.17	32.48	34.36	18.38	27.51
Female	0.52	0.51	0.51	0.51	0.51
Age in Years	26.94	27.19	27.57	27.88	28.31
Black African	0.79	0.79	0.80	0.80	0.81
White	0.09	0.09	0.09	0.08	0.08
Coloured	0.09	0.09	0.09	0.09	0.09
Indian/Asian	0.03	0.03	0.03	0.02	0.02
Years of Completed Education	6.83	7.02	7.15	7.43	7.71
Employed	0.43	0.38	0.41	0.47	0.47
Grant Income	97.94	129.50	159.40	178.27	203.97
Married	0.21	0.21	0.27	0.28	0.28
<i>Household Characteristics</i>					
Household Income	6105.06	9009.77	7864.59	10071.15	12511.73
Average number of women	0.46	0.45	0.45	0.44	0.44
Dependency Ratio	0.29	0.28	0.27	0.26	0.25
Average years of completed education	7.62	7.95	8.15	8.56	8.94
Average Employment	0.49	0.46	0.49	0.55	0.55
Share of Household Income from Grants	0.19	0.17	0.18	0.15	0.14
Access to Piped Water	0.91	0.94	0.93	0.92	0.93
Access to Electricity	0.82	0.81	0.87	0.89	0.90
Access to Street Lights	0.55	0.57	0.59	0.58	0.62
Access to Onsite Flush Toilet	0.28	0.48	0.39	0.36	0.41
Access to Offsite Flush Toilet	0.32	0.16	0.27	0.29	0.25
Government Housing Subsidy	0.08	0.16	0.17	0.18	0.17
Refuse collected	0.60	0.61	0.65	0.63	0.67
Rural	0.34	0.34	0.33	0.34	0.32
Observations	18619	22992	25229	28458	32098

A3: Individual and Household Correlations: Full Specification of Balanced Sample

VARIABLES	(1) Trust Others	(2) Perceived Equality	(3) Sense of Belonging	(4) Trust Others	(5) Perceived Equality	(6) Sense of Belonging
Age in Years	-1.32** (0.65)	-1.17** (0.45)	0.43 (0.54)	-1.47** (0.67)	-0.89* (0.46)	0.64 (0.55)
Age in Years Squared	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Years of Completed Education	0.61 (0.82)	0.21 (0.55)	-0.11 (0.64)	0.49 (0.85)	0.14 (0.56)	-0.17 (0.65)
Years of Completed Education Squared	-0.04 (0.05)	0.00 (0.03)	-0.00 (0.04)	-0.03 (0.05)	-0.00 (0.03)	-0.00 (0.04)
Employed	2.41*** (0.61)	3.19*** (0.44)	1.90*** (0.52)	-2.14** (0.84)	1.28** (0.60)	1.13 (0.71)
Individual Government Grant Income (IHS)	-0.15 (0.10)	0.22*** (0.07)	0.25*** (0.08)	-0.04 (0.11)	0.21*** (0.08)	0.17* (0.09)
Married	0.73 (1.04)	1.52** (0.76)	1.87** (0.86)	0.98 (1.07)	1.01 (0.78)	1.45 (0.89)
Rural	-2.39 (1.52)	0.26 (1.10)	2.77** (1.38)	-1.54 (1.70)	2.50** (1.21)	4.25*** (1.51)
Household Income (IHS)				-0.48 (0.39)	3.32*** (0.28)	1.92*** (0.33)
Average Number of Women in Household				0.04 (1.67)	0.76 (1.18)	1.23 (1.41)
Dependency Ratio				-0.22 (1.78)	2.01 (1.27)	2.96** (1.46)
Average Years of Completed Education				0.06 (0.21)	0.23 (0.15)	-0.01 (0.18)
Average Employment				-1.22 (1.19)	1.09 (0.86)	0.63 (1.01)
Share of Household Income from Government Grant				-3.80*** (1.23)	-2.39*** (0.87)	0.77 (1.07)
Access to Piped Water				4.11*** (0.94)	0.36 (0.66)	-1.91** (0.79)
Access to Electricity				-3.66***	2.79***	2.72***

				(0.83)	(0.58)	(0.69)
Streetlights in neighbourhood				1.19	1.95***	-0.05
				(0.73)	(0.53)	(0.63)
Flush Toilet Onsite				2.97***	-0.33	0.05
				(1.14)	(0.79)	(0.97)
Flush Toilet Offsite				-0.84	0.85	1.46
				(1.15)	(0.81)	(0.98)
Recipient of Government Housing				-1.65**	-0.24	0.54
				(0.75)	(0.55)	(0.64)
Refuse Collected by Officials				-0.33	0.68	3.14***
				(0.92)	(0.68)	(0.83)
Wave 2	12.20**			11.93**		
	*	0.34	-8.09***	*	-1.18	-8.55***
	(1.64)	(1.15)	(1.36)	(1.68)	(1.17)	(1.39)
Wave 3	10.96**			11.54**		
	*	2.69	-9.34***	*	-0.47	-10.85***
	(2.74)	(1.90)	(2.26)	(2.80)	(1.94)	(2.31)
Wave 4	12.22**			13.27**		
	*	8.03***	-3.42	*	3.21	-5.95
	(4.33)	(2.99)	(3.56)	(4.43)	(3.04)	(3.63)
Wave 5	17.84**			18.90**		
	*	12.38***	-5.95	*	6.49	-9.10*
	(5.74)	(3.98)	(4.73)	(5.86)	(4.05)	(4.82)
Constant	66.39**			73.14**		
	*	74.36***	42.64**	*	31.73*	15.71
	(24.27)	(16.87)	(20.16)	(25.10)	(17.38)	(20.83)
Observations	32,531	33,368	33,602	31,608	32,395	32,629
R-squared	0.23	0.33	0.29	0.24	0.34	0.30
Sample Dependent Variable Mean	24.41	38.22	69.87	24.56	38.27	69.85

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

A4: Individual and Household Correlations: Full Specification of Unbalanced Sample

VARIABLES	(1) Trust Others	(2) Perceived Equality	(3) Sense of Belonging	(4) Trust Others	(5) Perceived Equality	(6) Sense of Belonging
Age in Years	-0.98** (0.49)	-0.99*** (0.35)	0.83** (0.41)	-1.18** (0.50)	-0.82** (0.35)	1.03** (0.42)
Age in Years Squared	0.00 (0.00)	0.00** (0.00)	0.00*** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)
Years of Completed Education	-0.49 (0.53)	-0.02 (0.36)	-0.02 (0.43)	-0.51 (0.56)	-0.09 (0.37)	-0.09 (0.44)
Years of Completed Education Squared	0.04 (0.03)	0.01 (0.02)	-0.02 (0.02)	0.03 (0.03)	0.00 (0.02)	-0.02 (0.02)
Employed	-1.58*** (0.46)	3.14*** (0.34)	1.50*** (0.40)	-0.56 (0.62)	1.29*** (0.45)	0.88 (0.54)
Grant Income (IHS)	-0.16** (0.08)	0.11* (0.05)	0.12* (0.06)	-0.11 (0.08)	0.06 (0.06)	0.02 (0.07)
Married	0.80 (0.84)	1.83*** (0.60)	2.62*** (0.69)	1.02 (0.86)	1.32** (0.61)	2.14*** (0.70)
Household Income (IHS)				-0.42 (0.28)	3.33*** (0.20)	2.20*** (0.25)
Average Number of Females in Household				0.54 (1.24)	0.93 (0.88)	0.28 (1.07)
Dependency Ratio				0.52 (1.37)	1.86* (0.97)	3.51*** (1.15)
Average Years of Completed Education				0.20 (0.16)	0.46*** (0.11)	0.14 (0.14)
Average Number Employed				-2.37*** (0.90)	1.17* (0.64)	0.25 (0.77)
Share of Household Income from Grants				-1.74** (0.83)	-0.89 (0.58)	1.07 (0.71)
Access to Piped Water				2.75*** (0.69)	0.88* (0.49)	-0.86 (0.60)
Access to Electricity				-4.37*** (0.62)	2.35*** (0.43)	2.36*** (0.52)
Access to Street Lights				1.83*** (0.55)	2.30*** (0.39)	-0.33 (0.47)
Flush toilet onsite				0.90	-0.73	0.61

				(0.84)	(0.58)	(0.72)
Flush toilet offsite				-2.72***	0.52	1.61**
				(0.84)	(0.58)	(0.73)
Received Government Housing Subsidy				-1.10**	-0.43	0.68
				(0.56)	(0.41)	(0.48)
Refused Collected by Government				-0.19	1.19**	4.00***
				(0.68)	(0.49)	(0.61)
Rural	-1.49	-0.72	2.74***	-1.32	1.93**	5.13***
	(1.02)	(0.74)	(0.95)	(1.18)	(0.84)	(1.06)
Western Cape	-3.69	1.54	5.89*	-2.60	-0.26	5.51*
	(3.27)	(2.41)	(3.03)	(3.40)	(2.45)	(3.09)
Eastern Cape	-5.73**	6.79***	4.39*	-3.66	7.78***	5.19**
	(2.76)	(1.97)	(2.49)	(2.90)	(2.03)	(2.60)
Northern Cape	4.67	4.17	9.28**	3.12	3.43	7.64**
	(4.07)	(3.01)	(3.72)	(4.17)	(3.06)	(3.85)
North West	2.87	-1.28	10.00***	3.77	-2.12	9.24***
	(3.03)	(2.17)	(2.98)	(3.15)	(2.24)	(3.07)
Mpumalanga	9.80***	0.33	3.95	10.34***	-0.44	3.16
	(3.01)	(1.98)	(2.61)	(3.10)	(2.04)	(2.67)
Limpopo	10.69***	-0.34	2.17	11.44***	1.04	2.13
	(2.37)	(1.62)	(2.10)	(2.49)	(1.68)	(2.21)
Free State	8.32**	3.40	2.05	9.29**	3.69	1.41
	(3.50)	(2.50)	(3.01)	(3.68)	(2.54)	(3.08)
Kwa-Zulu Natal	-0.34	-0.29	3.32	0.38	0.28	3.34
	(2.40)	(1.77)	(2.28)	(2.49)	(1.79)	(2.34)
Wave 2	11.12***	-0.57	-9.17***	11.08***	-1.69*	-10.09***
	(1.25)	(0.88)	(1.05)	(1.28)	(0.90)	(1.07)
Wave 3	10.09***	2.00	-10.72***	10.98***	-0.45	-12.62***
	(2.07)	(1.46)	(1.74)	(2.12)	(1.49)	(1.78)
Wave 4	10.00***	6.85***	-5.80**	11.61***	2.99	-8.82***
	(3.26)	(2.29)	(2.74)	(3.34)	(2.34)	(2.79)
Wave 5	15.72***	9.66***	-10.53***	17.61***	5.05	-14.22***
	(4.32)	(3.05)	(3.63)	(4.41)	(3.10)	(3.70)
Constant	49.33***	64.09***	34.90***	58.11***	23.45**	4.33
	(15.55)	(11.04)	(13.19)	(16.11)	(11.39)	(13.65)
Observations	93,683	96,073	96,798	91,376	93,653	94,376
R-squared	0.42	0.49	0.45	0.42	0.50	0.46
Sample Dependent Variable Mean	24.69	39.25	69.26	24.78	39.30	69.31

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

A5: Public Holidays Full Balanced Sample

VARIABLES	Freedom Day			Heritage Day		
	(1) Trust Others	(2) Perceived Equality	(3) Sense of Belonging	(4) Trust Others	(5) Perceived Equality	(6) Sense of Belonging
Weeks Since Holiday	0.04* ** (0.02)	-0.04*** (0.01)	0.04*** (0.01)	-0.03* (0.02)	-0.01 (0.01)	-0.03** (0.01)
Date of Interview	-0.02 (0.03)	-0.01 (0.02)	0.05** (0.02)	-0.02 (0.03)	-0.01 (0.02)	0.05** (0.02)
Month of Interview	0.29* ** (0.09)	-0.36*** (0.07)	-0.00 (0.08)	0.17* (0.09)	-0.29*** (0.07)	-0.11 (0.08)
Wave 2	11.52 *** (1.70)	-0.51 (1.18)	-8.48*** (1.40)	11.57* ** (1.70)	-0.49 (1.18)	-8.40*** (1.40)
Wave 3	11.62 *** (2.80)	-0.42 (1.94)	-10.73*** (2.31)	11.50* ** (2.80)	-0.22 (1.94)	-10.78*** (2.31)
Wave 4	13.12 *** (4.43)	3.16 (3.05)	-6.61* (3.64)	13.27* ** (4.44)	2.53 (3.05)	-6.63* (3.64)
Wave 5	19.23 *** (5.87)	5.83 (4.06)	-9.90** (4.83)	19.49* ** (5.87)	5.27 (4.06)	-9.76** (4.83)
Constant	71.81 *** (25.20)	31.58* (17.46)	10.02 (20.91)	76.22* ** (25.13)	26.92 (17.42)	13.45 (20.87)
Observations	31,608	32,395	32,629	31,608	32,395	32,629
R-squared	0.24	0.34	0.30	0.24	0.34	0.30
Sample Dependent Variable Mean	24.56	38.27	69.85	24.56	38.27	69.85

NOTES: Full set of controls for individual and household characteristics included and not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

A6: Freedom Day Full Balanced Racial Sample

VARIABLES	Freedom Day								
	Black African	Coloured	White	Black African	Coloured	White	Black African	Coloured	White
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Trust Others			Perceived Equality			Sense of Belonging		
Weeks Since Holiday	0.04** (0.02)	0.05 (0.04)	0.10 (0.12)	-0.04*** (0.01)	-0.07** (0.03)	0.10 (0.09)	0.04*** (0.02)	-0.02 (0.03)	-0.07 (0.08)
Date of Interview	-0.04 (0.03)	0.17*** (0.06)	-0.03 (0.21)	-0.01 (0.02)	-0.06 (0.06)	-0.09 (0.14)	0.06** (0.03)	-0.03 (0.06)	0.07 (0.12)
Month of Interview	0.29*** (0.10)	-0.02 (0.28)	0.19 (0.65)	-0.34*** (0.07)	-0.47* (0.24)	-0.69 (0.48)	0.04 (0.09)	-0.60** (0.24)	0.01 (0.38)
Wave 2	10.27*** (1.90)	21.26*** (4.16)	-11.05 (11.54)	-0.81 (1.28)	-0.34 (3.68)	11.77 (8.62)	-10.49*** (1.57)	-3.41 (3.62)	1.97 (7.11)
Wave 3	10.76*** (3.11)	12.66* (7.12)	3.91 (20.01)	-0.03 (2.08)	-3.80 (6.36)	12.79 (14.07)	-13.61*** (2.58)	-6.71 (6.18)	14.85 (12.01)
Wave 4	12.59** (4.89)	8.92 (11.89)	-9.40 (31.65)	3.46 (3.26)	0.77 (10.43)	15.28 (22.50)	-10.08** (4.03)	-5.58 (10.14)	21.81 (19.31)
Wave 5	18.36*** (6.48)	16.34 (15.53)	-6.50 (42.76)	5.79 (4.34)	5.73 (13.66)	22.87 (30.02)	-14.72*** (5.35)	-6.87 (13.29)	24.06 (25.71)
Constant	71.64*** (27.36)	29.60 (70.80)	-212.36 (282.07)	31.61* (18.39)	6.14 (62.58)	28.20 (187.86)	-11.77 (22.78)	43.18 (66.04)	171.76 (170.46)
Observations	26,674	4,048	630	27,333	4,132	653	27,557	4,141	654
R-squared	0.23	0.29	0.40	0.33	0.35	0.32	0.27	0.30	0.34
Sample Dependent Variable Mean	25.33	17.56	36.11	37.21	42.10	53.07	67.49	81.70	88.76

NOTES: Full set of controls for individual and household characteristics included and not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

A7: Heritage Day Full Balanced Racial Sample

VARIABLES	Heritage Day								
	Black African	Coloured	White	Black African	Coloured	White	Black African	Coloured	White
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Trust Others			Perceived Equality			Sense of Belonging		
Weeks Since Holiday	-0.01 (0.02)	-0.05 (0.04)	-0.22** (0.11)	-0.01 (0.01)	-0.01 (0.03)	-0.05 (0.08)	-0.05*** (0.02)	0.05 (0.03)	-0.05 (0.08)
Date of Interview	-0.05 (0.03)	0.16*** (0.06)	-0.06 (0.21)	-0.00 (0.02)	-0.05 (0.06)	-0.10 (0.14)	0.06** (0.03)	-0.03 (0.06)	0.06 (0.12)
Month of Interview	0.21** (0.10)	-0.19 (0.29)	-0.51 (0.71)	-0.28*** (0.07)	-0.40 (0.25)	-0.91* (0.52)	-0.09 (0.08)	-0.46* (0.24)	-0.05 (0.44)
Wave 2	10.30*** (1.90)	21.56*** (4.17)	-10.43 (11.53)	-0.85 (1.28)	0.59 (3.72)	11.50 (8.59)	- (1.58)	-3.92 (3.64)	2.65 (7.06)
Wave 3	10.63*** (3.11)	12.68* (7.13)	1.86 (20.02)	0.13 (2.08)	-2.54 (6.38)	12.42 (14.08)	- (2.58)	-7.02 (6.18)	14.65 (12.09)
Wave 4	12.87*** (4.90)	9.34 (11.89)	-15.59 (31.75)	2.63 (3.26)	1.86 (10.48)	15.38 (22.64)	-10.36** (4.04)	-6.18 (10.15)	19.42 (19.65)
Wave 5	18.65*** (6.48)	17.07 (15.54)	-15.17 (42.93)	5.12 (4.34)	6.83 (13.72)	23.25 (30.20)	- (5.36)	-7.75 (13.31)	20.38 (26.23)
Constant	75.28*** (27.28)	37.61 (70.72)	-254.84 (280.68)	26.99 (18.35)	4.56 (63.02)	41.71 (187.55)	-8.44 (22.75)	36.46 (66.23)	140.02 (170.81)
Observations	26,674	4,048	630	27,333	4,132	653	27,557	4,141	654
R-squared	0.23	0.29	0.41	0.33	0.35	0.32	0.28	0.30	0.34
Sample Dependent Variable Mean	25.33	17.56	36.11	37.21	42.10	53.07	67.49	81.70	88.76

NOTES: Full set of controls for individual and household characteristics included and not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1



The Southern Africa Labour and Development Research Unit (SALDRU) conducts research directed at improving the well-being of South Africa's poor. It was established in 1975. Over the next two decades the unit's research played a central role in documenting the human costs of apartheid. Key projects from this period included the Farm Labour Conference (1976), the Economics of Health Care Conference (1978), and the Second Carnegie Enquiry into Poverty and Development in South Africa (1983-86). At the urging of the African National Congress, from 1992-1994 SALDRU and the World Bank coordinated the Project for Statistics on Living Standards and Development (PSLSD). This project provide baseline data for the implementation of post-apartheid socio-economic policies through South Africa's first non-racial national sample survey.

In the post-apartheid period, SALDRU has continued to gather data and conduct research directed at informing and assessing anti-poverty policy. In line with its historical contribution, SALDRU's researchers continue to conduct research detailing changing patterns of well-being in South Africa and assessing the impact of government policy on the poor. Current research work falls into the following research themes: post-apartheid poverty; employment and migration dynamics; family support structures in an era of rapid social change; public works and public infrastructure programmes, financial strategies of the poor; common property resources and the poor. Key survey projects include the Langeberg Integrated Family Survey (1999), the Khayelitsha/Mitchell's Plain Survey (2000), the ongoing Cape Area Panel Study (2001-) and the Financial Diaries Project.

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