

# Distributional Policies and Social Cohesion in a High-Unemployment Setting

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## Abstract

This paper studies the impact of distributional policies on social cohesion. The focus is on South Africa, a country with the highest unemployment rate worldwide and a major destination hub for the forcibly displaced. The paper uses a regression discontinuity design based on the eligibility rule of an unconditional cash transfer program (Old Age Pension) together with multiple rounds of the country's Social Attitudes Survey and estimates the impact of the cash transfer to the local population on over 100 variables capturing different dimensions of social cohesion, while

accounting for multiple hypothesis testing. Results show a limited impact of the transfer on social cohesion. Transfer increases life satisfaction and views favorable towards racial diversity. However, it has only a marginal effect on interpersonal trust and a very small effect on attitudes towards immigration. These findings are consistent with theoretical models where anti-immigrant behaviors are not the result of low-income but rather due to non-wage factors such as ethnic background or language barriers.

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# Distributional Policies and Social Cohesion in a High-Unemployment Setting\*

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# 1 Introduction

South Africa faces enormous challenges integrating international migrants and refugees. This is exemplified by the multiple xenophobic-motivated acts of violence post-apartheid, which have increased in recent years. At least two factors exacerbate this tension. First, the country is a major destination hub for the forcibly displaced. From 2008 until 2012, the country received the largest number of new asylum applications worldwide and it remains a major destination country for asylum seekers according to the [United Nations High Commissioner for Refugees \(2020\)](#). Second, South Africa has the highest unemployment rate of any country in the world, quadrupling the unemployment in Sub-Saharan Africa ([World Bank, 2020](#)). The COVID-19 pandemic is already creating sharp increases in unemployment in many developing countries, where 80% of the world’s refugees are hosted. This could expand the tension between immigrants and refugees with the local population observed in South Africa before 2020. Thus, it is of extreme policy relevance to understand what tools could be used to reduce anti-immigration attitudes overall, prevent social conflict and promote social cohesion in refugee-hosting settings with high unemployment levels such as South Africa. [□](#)

Our research question explores whether distributional policies could promote social cohesion. This is clearly not the only factor that could explain it. Indeed, as discussed below, there are salient historical and structural triggers in the context of South Africa. However, our goal is to be able to causally identify the impact of a distributional policy alone. In particular, we evaluate the role of an unconditional cash transfer program, South Africa’s Old Age Pension (OAP). Focusing on the OAP provides several important contributions to the literature. First, the OAP is a countrywide, means-tested, non-contributory cash grant targeting South African citizens or permanent residents aged 60 or older. As explained later, this criteria permits an identification strategy to estimate the causal impact of the cash transfer, which expands and complements previous work on the economic drivers of anti-immigration attitudes and social cohesion ([Mayda, 2006](#); [Facchini et al., 2013](#)). Second, the OAP is a large transfer. It is between 1.6 and 2 times the monthly median per capita household income of non-eligible individuals and currently provides monthly payments of R1890 (around US\$137) until death. These features allow us to expand recent work that, for example, focused on a smaller (US\$40) short-term (six months) transfer in localized parts of a refugee-hosting country ([Valli et al., 2019](#)). Third, the data source described below allow us to explore possible mechanisms by testing for heterogeneous effects, for example, by the

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<sup>1</sup>Following the literature, in this paper *forcibly displaced* individuals refers to those who have been forced to flee their home. They could cross an international border or not. *Immigrants* refers to individuals moving to a country different from their country of birth.

flow of asylum seekers.<sup>2</sup>

Our identification strategy takes advantage of the eligibility rules for the OAP. In particular, we exploit the discontinuous jump in eligibility at the age of 60.<sup>3</sup> This discontinuity has been well-documented in previous work (e.g., Case and Deaton, 1998; Duflo, 2003; Edmonds, 2006; Bertrand et al., 2003; Hamoudi and Thomas, 2014; Ambler, 2016; Agüero, 2019). The use of a valid identification strategy helps us eliminate the possibility of an effect in the opposite direction: from conflict, displacement or low social cohesion to poverty and income. For examples of recent work focusing on this opposite direction see Foltz and Shibuya (2021) on Mali and Sedova et al. on Nigeria. In that regard, we see our work as complementing these studies. As in the papers about the OAP, we will focus on the sample of Black and Coloured (mixed race) South Africans and employ a *fuzzy* regression discontinuity design (RDD) because the *probability* of receiving the OAP jumps discontinuously at age 60. Yet, we are able to expand on these papers in three ways. First, our time horizon ranges from 2008 to 2017. As such, our time frame covers the changes in the age eligibility criteria that have remained unexplored in prior work. Second, we study the role of the OAP on social cohesion, an outcome never considered before as all prior work has limited the analysis to outcomes affecting the beneficiaries themselves or their immediate families and has ignored broader societal implications of the pension. Third, we take advantage of recent developments in RDD for the case of high mass points in the running variable (age in years) given its discrete nature (Cattaneo et al., 2019; Kolesár and Rothe, 2018).

Another key reason to focus on the OAP is the role that the population under study (those aged 50-70 at the time of the surveys) plays on voting. For example, while this age group represents close to 30% of the registered voters, they are the voters more likely to participate and decide elections (e.g., Nhlapo et al., 2017; Schulz-Herzenberg, 2019). Thus, their opinions and views are important for social cohesion and policy decisions, even when most of the anti-immigration *acts* tend to be conducted by younger groups. Also, Hamoudi and Thomas (2014) show that the OAP plays an important role on household composition as it attracts younger family members to live with grant recipients. Thus, as long as heads of households influence the views of younger co-resident family members, studying the impact of a large cash transfer for the elderly is an important policy question. Furthermore, in South Africa, anti-immigration attitudes do not vary with age, as shown by Facchini et al. (2013). Thus, focusing on an older group of the population allows us to use a strong identification strategy without sacrificing “external validity” given the flat age-gradient on anti-immigration views.

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<sup>2</sup>See Ferguson et al. (2021) for examples of alternative programs to promote social cohesion in developing countries hosting forcibly displaced populations.

<sup>3</sup>Until 2008, women were eligible at 60 and men at 65. By 2010, the age criteria was standardized to 60. Our analysis will take into account these changes. See section 2 for details.

The main data source come from multiple rounds of the South African Social Attitudes Survey (SASAS). The SASAS is a large nationally representative, cross-sectional survey that has been conducted annually by the [Human Sciences Research Council \(HSRC\)](#) and is available until 2017. The survey allows us to consider over 100 variables that we grouped into seven indices (accounting for multiple hypothesis testing) that capture various dimensions of social cohesion previously used in the literature [Valli et al. \(2019\)](#): (i) attitudes on immigrants, (ii) interpersonal trust (iii) trust in institutions, (iv) satisfaction with the government, (v) life satisfaction, (vi) preferences for racial diversity and (vi) social participation.<sup>4</sup>

Our findings suggest that South Africa’s Old Age Pension has no major impact on overall social cohesion. We then show that this result comes from two competing effects. On one hand, we found strong evidence that the pension increases the recipients’ life satisfaction and their attitudes towards racial diversity. We argue that all these effects are consistent with a net gain in income and wellbeing. On the other hand, this increase in wellbeing does not translate into more interpersonal trust and neither on trust on institutions and satisfaction with the government. We do find, however, that the transfer *reduces* social participation. Most importantly, the Old Age Pension does not change attitudes toward immigrants. Based on the theories discussed below, this evidence is consistent with models where anti-immigrant behaviors are less likely to be the result of low-income levels and instead, respond to non-wage factors such as ethnic background or language barriers. This also suggest a critical role of historical triggers for anti-immigrant attitudes.

The rest of the paper is composed of five additional sections. Section [2](#) describes the South African context and presents recent trends in the arrival of the forcibly displaced as well as the distributional policies implemented in the country. The theoretical considerations behind the impact of the Old Age Pension on social cohesion are discussed in section [3](#). The datasets and the identification strategy are presented in section [4](#). The validation of our empirical strategy and main results and shown in section [5](#). Section [6](#) summarizes the findings and the paper’s implications for policy.<sup>5</sup>

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<sup>4</sup>These questions mimic and expand those included in well-known but infrequent surveys such as the Afrobarometer ([Nunn and Wantchekon, 2011](#)), the World Values Survey ([Mayda, 2006](#)) and the International Social Surveys Programme (ISSP).

<sup>5</sup>Online appendix is available here: [https://www.dropbox.com/s/qmsxcohmV0ot9zy/appendix\\_social\\_cohesion.pdf?dl=0](https://www.dropbox.com/s/qmsxcohmV0ot9zy/appendix_social_cohesion.pdf?dl=0)

## 2 Context

### 2.1 Immigration in South Africa

International migration from neighboring countries has been a long feature in South Africa, dating back to the mid 19th century when foreign workers were brought mainly for the booming mining sector (Crush, 2000). This long history has not prevented the issue to become a contested topic today and it is often “entangled in political discourse that blames them [migrants and refugees] for ‘stealing’ local jobs” (World Bank, 2018, p. 3). For instance, the Apartheid regime severely limited foreign workers as they considered them a source of political threat (Facchini et al., 2013). The post-apartheid era, South Africa became once again a destination for foreign workers from the region.<sup>6</sup> Yet as discussed in section 3 there are historical and structural triggers remain in place.

Compared to its neighbors and to other countries in the Sub-Saharan region, South Africa is clearly at a higher level of economic development (see Table 1). For example, the country’s GDP per capita is more than 4.6 times larger than the average country in the region and is substantially richer than its neighbors in Southern Africa. This status, together with its post-Apartheid policies, makes South Africa a common destination of immigrants from neighboring countries fleeing economic, humanitarian and climate crises among other reasons. This is observed in Figure 1. Both, in terms of refugees and asylum seekers the country has seen a massive increase in the past 20 years. The rise was so considerable that from 2008 until 2012, the country received the largest number of new refugees and asylum applications worldwide (United Nations High Commissioner for Refugees, 2020). The massive exodus from Syria and Venezuela in recent years have outpaced the numbers of refugees arriving to South Africa, yet it remains a major destination country for the forced displaced.

Using data from the World Values Survey, Facchini et al. (2013) show that the official discourse from the Immigration Act is at odds with the view of South African voters. The authors find that the share of the population in favor of migration has declined by ten points from 2001 to 2007 and it is supported only by 23 percent of the people. This decline is further confirmed by our own analysis. In Figure 2, we plot our index measuring favorable attitudes towards immigration from 2008 to 2017 created using data from the South African Social Attitudes Survey (see section 4.1 for details on the data and the index creation). This evidence of a less favorable attitudes towards immigrants correlates with the substantial increase in xenophobic attacks in South Africa since 2008 (see Steenkamp (2009); Everatt (2011); Friebel et al. (2013); Mamabolo (2015) for a detailed discussion of these attacks and

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<sup>6</sup>A major change came with the Immigration Act in 2002 (amended in 2004)

possible explanations).<sup>7</sup>

The large influx of people to South Africa occurs in a context of high levels of unemployment. As shown in Figure 3, the country has the largest unemployment rate in the world. This high rate is an outlier even when compared to countries with a similar GDP per capita but also relative to countries in a similar stage of economic development (see Figure B1 for additional comparisons). The high unemployment rate precedes the large influx of immigrants of the last two decades and scholars have discussed the structural nature of its origin (Kingdon and Knight, 2004, 2007; Banerjee et al., 2008).<sup>8</sup>

Our paper seeks to evaluate whether such views towards immigrants in particular, and towards social cohesion overall, can be affected by distributional policies. As discussed below in section 3, there are theoretical arguments to expect that given South Africa’s high unemployment levels, distributional policies could be effective in promoting social cohesion and more favorable attitudes towards immigrants. In this paper we focus on such a policy: South Africa’s Old Age Pension.

## 2.2 Distributional policies

The Old Age Pension (currently called Old Age Grant) is a monthly cash transfer for older adults.<sup>9</sup> It is non-contributory, so payments are drawn from the central government’s general revenue and not from a person’s savings, labor history or payroll deductions. In that sense, it is a clear distributional policies from the general funds to older individuals.<sup>10</sup> The current eligibility rules are based on age (60 and older) and applicants must be South African citizens or permanent residents.<sup>11</sup> People receiving any other social grant for themselves and those cared for in a state institution are not eligible. The Old Age Pension (OAP) is also means-tested: pensioners cannot earn more than R86,280 if single or R172,560 if married. Also, they cannot have assets worth more than 1,227,600 (single) or R2,455,200 if married. The pension provides a monthly transfer of R1,890 (around US\$136.5). Grantees can have their payments suspended when their circumstances change or after their case is reviewed negatively. Other causes for suspension of the grant include failing to cooperate when their grant is reviewed,

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<sup>7</sup>According to the The African Centre for Migration & Society at the University of the Witwatersrand, 5.3% of the current working age people (15-64) were born outside South Africa (2020 ACMS Fact Sheet).

<sup>8</sup>See Biavaschi et al. (2018) as well as World Bank (2018) for a discussion of the impact of immigrants on the South African labor market.

<sup>9</sup>See Lund (1993) and Case and Deaton (1998) for a detailed discussion of the grant including its origin and how it changed towards the end of the Apartheid regime.

<sup>10</sup>For a discussion of other types of cash transfer programs worldwide see Fiszbein and Schady (2009) and Hanlon et al. (2012).

<sup>11</sup>In recent years it has been extended to refugees living in South Africa. However, refugees are underrepresented in surveys preventing us from study the impact of the pension for this population.

fraud or misrepresentation or if there was a mistake when their grant was approved. The grant ends when the person dies, is admitted to a state institution, leaves the country, or does not claim it for three consecutive months.<sup>12</sup>

The OAP provides a large cash transfer. Ambler (2016) estimates that the amount is two times the “monthly median per-capita household income of noneligible older women and 1.6 times the monthly median per-capita income of noneligible older men” (p. 904). Until 2007, women were eligible at 60 but men only at 65. Starting in 2008, men have become eligible sooner: 63 in 2008, 61 in 2009. Since 2010, the age criteria was standardized to 60 for all. As explained below, our analysis covers the years 2008 to 2017. Given the changes in age eligibility cutoff during this period, we re-center the age criteria in each year to zero.

Due to its wide coverage (with over 3 million grantees), its large amount and eligibility rules, there is an ample literature evaluating its impacts. Many studies have focused on the labor market impacts (Bertrand et al., 2003; Posel et al., 2006; Lam et al., 2006; Ranchhod, 2006; Ardington et al., 2009; Abel, 2019), while others have studied the effect on children (Duffo, 2003; Edmonds, 2006), household composition (Edmonds et al., 2005; Hamoudi and Thomas, 2014; Ambler, 2016), private transfers within family members (Jensen, 2004), mental health (Agüero, 2019) as well as the pension take up patterns and changes in the allocation of income to food, schooling, transfers, and savings (Case and Deaton, 1998). Our focus on social cohesion and attitudes towards immigrants sets us apart from prior work on the impacts of the Old Age Pension as our paper is the first to explore outcomes that matter for people outside the beneficiaries themselves or their families.

The Old Age Pension is not the only welfare grant provided by the South African government. The Child Support and the Care Dependency grants focus on children (from birth to age 17) and currently provide R460 (per month per child) and R1,890, respectively.<sup>13</sup> The Foster Child grant covers children under 18 who have been placed under custody by a court as a result of being orphaned, abandoned, at risk or abused.<sup>14</sup> This grant provides R,1050 (per month per child). The Grant-in-aid consists of a monthly payment of R460 for those living on a social grant but cannot look after themselves. This additional grant is to pay the person taking care on the recipient.<sup>15</sup> None of these grants have an eligibility criteria that relates to the OAP’s. However, there are two grants whose age eligibility does coincide with

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<sup>12</sup>For additional rules and details please visit <https://www.gov.za/services/social-benefits-retirement-and-old-age/old-age-pension>. Accessed on May 15, 2021.

<sup>13</sup>For more information on the Child Support, a need-based grant, please see <https://www.gov.za/services/child-care-social-benefits/child-support-grant>. The Care Dependency grant is to take care of a child who has a severe disability and is in need of full-time and special care. For details visit <https://www.gov.za/services/services-residents/parenting/child-care/care-dependency-grant>.

<sup>14</sup><https://www.gov.za/services/child-care-social-benefits/foster-child-grant>.

<sup>15</sup>See also <https://www.gov.za/services/social-benefits/grant-aid>. Accessed on May 15, 2021.

the Old Age Pension. First, there is the War Veterans grant. This is provided to those aged 60 or more who fought in World World II or the Korean War.<sup>16</sup> This is not a binding grant for the Black and Coloured populations under study. Finally, the Disability Grant focuses on people aged 18 and 59 and for those who have a physical or mental disability that impedes them to work for a period of longer than six months.<sup>17</sup> The grant provides a month payment of R,1890 (same as the OAP). However, as shown below, this grant covers a small fraction of the population under study. See section 5.1 for more details on how does this affect the interpretation of our findings.

### 3 Theoretical motivation

#### 3.1 Historical and structural triggers for xenophobic violence

While the focus of this paper is on the role of cash transfers as way to increase social cohesion and reduce anti-immigration attitudes, there is important scholarship that argues for historical and structural causes for these attitudes that we want to briefly acknowledge.<sup>18</sup> For instance, the Apartheid laws heavily controlled the movement of the black majority in South Africa and they were confined to live in townships right outside urban areas. There is an important strand of the literature that argues that current foreign migrants but also internal migrants are seen as actors without a “legitimate” claim to urban spaces (e.g., Landau, 2012). Others have argued that the lack of trust towards public institutions creates non-state authorities claiming *de facto* control of parts of the territory including urban areas (Monson and Arian, 2012; Kihato, 2011). Furthermore, Misago (2009) discusses how in urban impoverished contexts, violence is the socially acceptable way of manifesting and dealing with grievances. These can manifest against the government or against other people.

Structural causes have also been proposed. For example, Crush and Ramachandran (2010) point out that government failures to address endemic poverty, lack of jobs, shelter, and basic services “led to the scapegoating of foreign migrants by frustrated citizens” (p. 16). Recent quantitative work using correlation analysis suggest that poverty, relative deprivation as well as frustration with the government are some of the triggers for anti-immigrant attitudes (e.g., Fauville and Segatti, 2011; Claassen, 2017). Additionally, Pillay et al. (2008) concludes that “poverty is clearly exacerbating tensions” (p. 12). Our paper seeks to con-

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<sup>16</sup>For details and other requirements see <https://www.gov.za/services/social-benefits-retirement-and-old-age/war-veterans-grant>.

<sup>17</sup><https://www.gov.za/services/social-benefits/disability-grant>.

<sup>18</sup>We want to thank a reviewer for suggesting we add this discussion and for sharing a private document from which this sub-section draws heavily.

tribute to this literature by providing a causal analysis of the role of cash transfers on social cohesion and anti-immigration attitudes. The next subsection summarizes the economic theories behind these possible effects.<sup>19</sup>

### 3.2 The role of cash transfers

Theoretically, cash transfers to poor citizens of the hosting nation could reduce negative attitudes towards immigration and contribute to conflict reduction as well as increase social cohesion. For example, consistent with work on structural triggers summarized above, Mamabolo (2015) and others, have argued that the xenophobic attacks of 2008 in South Africa were driven by –but not limited to– poverty and unemployment. Under such view, distributional policies that reduce poverty via income transfers, as in the case of the Old Age Pension, should lead to more favorable views towards immigrants.

In economics, the positive role of cash transfers to natives is derived from models where individuals form their opinion based on the impact that immigration has on their utility (e.g. Mayda, 2006). However, in these models, the impact is uneven across the population and depends on the skill composition of immigrants relative to natives in the destination country. When migrants are on average less skilled than natives, they will hurt unskilled natives and benefit skilled ones through an effect on wages. Thus, unskilled (and poor) natives benefiting from a cash transfer would have a more pro-immigration attitude than a counterfactual situation where they do not have access to such transfer. Instead, when migrants are on average more skilled than natives, as in the South African case (Facchini et al., 2013), the skilled natives would be the ones with more negative views about migrants, leaving the effect of cash transfer to the poor with an unspecified sign, including zero.

There is another theoretical argument that could reduce, if not mute, the effect of large a government transfer on attitudes towards immigrants even if when poverty is the main driver. Barro (1974) and Becker (1974) show that public support programs could displace or “crowd out” private support. In their models, the reduction in private support could completely undo any gain from the public transfer. This crowding out effect is highly relevant to the South African context where there is an extensive tradition of within-family transfers (e.g., Posel, 2001; Bowles and Posel, 2005; Hall and Posel, 2019). In fact, Jensen (2004) finds evidence of crowding out in the OAP. He estimates that for each rand from the pension to the elderly there is a 0.25–0.30 rand reduction in private transfers from children living away from home. This behavioral change could limit the impact of the OAP on social cohesion.

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<sup>19</sup>For additional discussions about these two triggers as well as for additional analysis of see the work by The African Centre for Migration & Society at the University of the Witwatersrand. For a list of their publications see <http://www.migration.org.za>. This sections cites many of those papers.

A similar null effect from cash transfers could also be obtained if the main driver of the anti-immigrant sentiment is based on non-wage factors such as sharing a common ethnic background (Epstein and Gang, 2010), language barriers (Bauer et al., 2005) or crime (Mayda, 2006). This would also be the case based on the historical triggers discussed earlier. In all these cases, cash transfers would have a limited effect on preventing social conflict and promoting social cohesion, even if the transfers increase income and reduce poverty. All this theoretical ambiguity about the impact of distributional policies, such as cash transfers, demands an empirical evaluation. In the next section we describe the data and the identification strategy that would allow to estimate the causal effect of the Old Age Pension on social cohesion.

## 4 Research design

### 4.1 Data sources

We use two main data sources to evaluate the impact of the Old Age Pension on social cohesion. The first dataset is composed by multiple rounds of the General Household Survey (GHS). The GHS is an annual (cross-sectional) household survey designed to measure the living circumstances of South African households.<sup>20</sup> As such, the GHS collects data on education, health and social development, housing, household access to services and facilities, food security, and agriculture. Relevant to our project, the GHS has a dedicated module measuring access to all social programs including the Old Age Pension. We use this information to validate our identification strategy in order to estimate the causal impact of distributional policies on social cohesion. To match the time frame of the dataset used to measure social cohesion, we use GHS from 2008 to 2017.

The second source of data is the South African Social Attitudes Survey (SASAS). This is a nationally representative, repeated cross-sectional survey conducted annually by the Human Sciences Research Council (HSRC) since 2003.<sup>21</sup> The survey is designed to serve as a “time series” so it maintains a consistent sample design and questionnaire to track “the speed and direction of change in underlying public values and the social fabric of modern South Africa” according to SASAS website. Each round of SASAS interviews individuals 16 and older, regardless of nationality or citizenship, in all nine provinces. Relevant to the calculation of the standard errors for our analysis, the sample has been drawn from the HSRC’s Master Sample, which consists of a sampling frame from 1,000 Population Census

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<sup>20</sup>The data is available from Data First’s website: <https://www.datafirst.uct.ac.za/dataportal/index.php/catalog>

<sup>21</sup>The surveys are available from HSRC’s website <http://www.hsrc.ac.za/en/departments/sasas>

enumeration areas (EAs). Every year, a sub-sample of 500 EAs are randomly drawn from the Master Sample, stratified by province, geographical sub-type and majority population group.

For the purpose of our paper, the SASAS questionnaire contains a standard set of demographic characteristics including age at the time of the survey as well as over 100 variables to measure a variety of social, economic and political values over time.<sup>22</sup> In this regard, SASAS is the South African equivalent to the International Social Survey Programme (ISSP) used by scholars to understand social cohesion and attitudes towards immigrants.

As such, SASAS offers a very large set of variables to measure social cohesion. To estimate the impact of OAP on a these variables, we employ two ways to account for the multiple number of outcomes considered. First, we create indices for each family of outcomes resembling the grouping proposed by Valli et al. (2019).<sup>23</sup> Let  $s$  refers to one of our seven indices so that  $s = 1, \dots, 7$ . Specifically, these indices are (i) attitudes toward immigration; (ii) interpersonal trust; (iii) confidence in institutions; (iv) satisfaction in government; (v) life satisfaction; (vi) attitudes towards racial diversity and (vii) social participation. These indices are further aggregated to create an overall measure of social cohesion, by taking the average of all these indices. For each index  $s$  there are  $J_s$  variables. In Table B1 we describe the list of 108 variables considered (by index) and their summary statistics. To construct the indices, we define each outcome  $j$  in index  $s$  so that higher values correspond with better outcomes (i.e., more social cohesion) following the methodology Kling et al. (2007). We standardize each outcome ( $y_{ijs}$ ) into a Z-score by subtracting the mean ( $\mu_j^c$ ) and dividing it by the standard deviation ( $\sigma_j^c$ ). Both  $\mu_j^c$  and  $\sigma_j^c$  are computed over the control group (those not yet eligible for the OAP based on age and depending on the prevalent age cutoff in each survey year). The average of these Z-scores is the index. Formally, for each  $s$ , the index  $SCI_{ijs}$  is created based on Equation (1) below:

$$SCI_{ijs} = \frac{1}{J_s} \sum_j \frac{y_{ijs} - \mu_j^c}{\sigma_j^c} \quad j = 1, \dots, J_s; \quad s = 1, \dots, 7 \quad (1)$$

Second, we correct for the potential issue of simultaneous inference using multiple hypothesis testing. Based on Benjamini and Hochberg (1995), we apply the concept of a false discovery rate (FDR) to allow inference when conducting many tests. Intuitively, FDR allows a researcher to tolerate a certain number of tests to be incorrectly discovered. An FDR adjusted q-value of 0.05 implies that 5 percent of *significant* tests result in false positives

<sup>22</sup>In addition to the core module, each year a specific theme is included in response to current events.

<sup>23</sup>As discussed by these authors, there “there has not been a unified understanding of the specific components or of the measurement of the concept” (p. 129) of social cohesion. Thus, the inclusion of a vast set of indicators provides the most comprehensive way to measure it.

compared with an unadjusted p-value of 0.05 that implies 5 percent of *all tests* result in false positives. In the regression tables we show standard errors based on unadjusted p-values as well as FDR adjusted q-values that address the multiple hypotheses being tested in a given family of outcomes.

## 4.2 Identification strategy

Evaluating the impact of distributional policies such as the Old Age Pension on social cohesion represents a challenge due to the possible presence of unobserved variables. For example, if people who applied and received the pension tend to be more (or less) in favor of social cohesion, then it would not be possible to separate the impact of the cash transfer from their beliefs. What is needed is an exogenous variation that facilitates (or limits) access to the pension in a way that is independent of social cohesion beliefs. Such variation is obtained by the eligibility rules of the Old Age Pension.

As discussed in section 2, a critical condition to receive the pension is based on age. For example, since 2010, those aged 60 or more are eligible. Those younger than 60 are not. Of course, as explained before, age is not the only condition for the pension, but at the cutoff, it alters the *probability* of receiving the grant in a discontinuous way. Our identification strategy uses this sudden probability jump in access to the pension in a *fuzzy* Regression Discontinuity Design (RDD). Thus, those age 59 serve as the counterfactual for pension recipients aged 60. For all other ages away from 60, we expect the probability to vary smoothly with age. Since we re-center the data based on the cutoff age in each survey year, those aged -1 years younger than the cutoff serve as the counterfactual for pensioner just eligible. This is the same identification strategy employed in previous work using the Old Age Pension (e.g., Edmonds, 2006; Ambler, 2016). The fuzzy RDD allows us to predict access to the pension and we use that prediction to estimate the impact on social cohesion by Two-Stage Least Squares (2SLS). Formally, our identification strategy is represented by these two equations:

$$E[OAP_{it}|Age_{it}] = \gamma 1(Age_{it} \geq \bar{a}_t) + f(Age_{it}) + \theta_1 x_{it} \quad (2)$$

$$SCI_{it} = \beta E[OAP_{it}|Age_{it}] + g(Age_{it}) + \theta_2 x_{it} + e_{it} \quad (3)$$

The first stage is given by Equation (2), where the probability of receiving the Old Age Pension for person  $i$  observed in survey year  $t$  is measured by a binary variable ( $OAP_{it}$ ). Based on the eligibility rules, this probability depends on age and this is captured by a flexible polynomial on the running variable:  $f(Age_{it})$ . To account for the discontinuous change in the probability at the cutoff, which varies over time ( $\bar{a}_t$ ), we include the indicator variable

$1(\text{Age}_{it} \geq \bar{a}_t)$  that becomes a one when the statement inside the parenthesis is true and zero otherwise. This jump is captured by  $\gamma$ , which is expected to be positive. The equation includes a few controls (vector  $x_{it}$ ) such as fixed effects by province of residence and by survey year as well as controls for gender (male or female) and race (Black or Coloured). Given the nature of the coverage of the Old Age Pension, in both datasets we restrict our working sample to these two races and to those aged  $\pm 10$  years around the cutoff according to the survey year and eligibility rules.

The second stage is shown in Equation (3). This equation will be estimated for each measure of social cohesion (*SCI*) as captured by the aggregate index, the seven (sub) indices as well as their individual components. As before, the model includes polynomials on age,  $g(\text{Age}_{it})$ , and the previous controls ( $x_{it}$ ). The parameter of interest is  $\beta$  and represents the magnitude and sign of the impact of Old Age Pension on our measures of social cohesion. In both equations we cluster the standard errors by the surveys' primary sample unit following the discussion by Kolesár and Rothe (2018) for inference when the assignment variable (age) is discrete. In the next section we present evidence in favor of our identification strategy as well as the results of applying it to the datasets discussed earlier.

## 5 Results

### 5.1 First stage: access to the Old Age Pension

Several assumptions are needed to validate our identification strategy. To do so, we use the General Household Surveys as they contained very rich information regarding access to all the distributional policies in South Africa. The first assumption is that the probability of access to the Old Age Pension must discontinuously jump at the cutoff age ( $\bar{a}_t$ ). This is clearly shown in the top left panel of Figure 4. To account for changing values of  $\bar{a}_t$  over time, we show the running variable as deviations (in years) from the year-specific cutoff. We can see that individuals younger than the mandated cutoff age do not receive the pension. As expected, the probability jumps from zero to 60 percent at the cutoff, the first age of eligibility. This sudden jump helps validate our identification strategy visually. Note that the probability does not reach one because there are other criteria that matter as explained in section 2.

The regression counterpart of this graphical analysis is shown in Table 2. In column (1), we consider a bandwidth of 10 years to each side of the cutoff together with the simplest spline for  $f(\text{Age}_{it})$  as a linear function (but different for each side of the cutoff) and without the  $x_{it}$  controls. The estimated increase in the probability of receiving the Old Age Pension

is around 67 percentage points and statistically significant at the one percent. Adding all the controls, as in column (2), does not change our findings.

Another assumption to validate our identification strategy requires all other “baseline” variables to be smooth around the cutoff. If that is not the case, one cannot isolate the effect of the pension from those characteristics. This is shown graphically in the reminder panels of Figure 4 as well as in Figure 5. In the former, we plot the probability of receiving all other welfare grants available in South Africa. As discussed in section 2, eligibility for all other welfare programs focused on younger individuals and therefore there is no jump at the OAP cutoff. The exception is the Disability Grant that ends at 59. However, as shown in Figure 4, take up is low (under 17 percent). This means, as in all previous papers analyzing the impact of the pension, that the effect of the Old Age Pension is net of the differences with respect to the Disability Grant.

Figure 5 also helps validate the assumption showing the smoothness around the cutoff for all the control variables: gender, province of residence, survey year and race. The regression counterparts are shown in Table B2. Out of 16 tests only two report statistically significant results (but at only at 10% and 5%). Yet, none are significant when adjusting the analysis to account for the discrete nature of the running variable as shown by the local randomization estimates at the bottom of the table. We conducted multiple additional robustness tests to further validate our identification strategy. See Appendix A for details. The extensive set of robustness checks accounting for the discrete nature of the assignment variable shows that for the case of the Old Age Pension such additional considerations do not differ from the estimates treating it as a continuous at least within the bandwidth used in previous work (e.g., Ambler, 2016; Agüero, 2019).

## 5.2 Distributional policies and social cohesion

We now focus on the effect of the pension on social cohesion. We consider a reduced-form approach using data from SASAS between 2008 to 2017. That is, we are interested in whether we observe a discontinuity in the outcomes of interest around the cutoff of the running variable. To obtain the 2SLS one would have to divide our reduced-form estimates by the 0.60, the jump in the probability of receiving the Old Age Pension at the cutoff.<sup>24</sup>

We first analyze the impact on the social cohesion overall index. This is done by combining all 108 variables into seven indices and using the latter to create an overall index. We start with a visual inspection as shown in the top left panel Figure 6. There is almost no evidence of a jump in the social cohesion index at the cutoff. In Figure 7 we report the esti-

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<sup>24</sup>This approach is equivalent to a two-sample instrumental variable. See Inoue and Solon (2010) for details.

mated coefficient (with the 95% confidence interval) and Table 3 complements it (column 1). In both cases, we see a small positive effect. At the cutoff the social cohesion index increases by 1.7 percent of a standard deviation ( $0.017\sigma$ ) but it is not statistically significant.

The same can be said about the impact on attitudes towards immigrants. Figure 6 also shows no major jump at the cutoff and the point estimate reports a positive but even smaller effect on the index. As shown in Figure 7 and Table 3, the estimated effect on this index is around  $0.006\sigma$  and not statistically different from zero. When exploring the 21 variables used to create this index we see very small effects (Figure 8 and Table B5). Two exceptions are worth mentioning. First, we found that the OAP increases the view that immigrants bring skills (column 11 of Table B5). This is statistically significant at the 10 percent level. However, when considering the q-value adjustment for multiple hypothesis testing, this positive effect cannot be separate from mere chance given the large number of outcomes. Something different is observed for the impact about the view that the government should welcome immigrants. We find an increase of 6.1 percent at the cutoff relative the mean of the control group ( $=0.125/2.034$ ). This is significant at the one percent using traditional p-values but also after accounting for multiple hypothesis testing. Thus, this positive effect is not driven by chance. The implied 2SLS would be an increase of 10.2 percent due to the OAP.

Nonetheless, the overall small or even null effect on social cohesion and on attitudes towards immigrants would be consistent with the three theories discussed in section 3. For instance, following Mayda (2006), the poor would be less likely to have a more pro-immigration attitude with an income transfer given the higher skills set of immigrants to South Africa. Also, this small impact would be consistent with the crowding-out effect of the OAP reported by Jensen (2004). Third, if anti-immigration attitudes are more rooted on non-wage factors such as ethnic background (Epstein and Gang, 2010), language barriers (Bauer et al., 2005) or crime (Mayda, 2006) or on historical triggers (see section 3), cash transfers would not affect social cohesion much. By exploring the other components of the social cohesion index we would rule out the first two explanations in favor of the third: the role of non-wage factors.

Our findings are in line with recent work in other developing countries using credible identification strategies. For example, Valli et al. (2019) use a clustered randomized controlled trial and find that cash transfers to locals in a refugee-hosting setting such as Ecuador has no impact on social cohesion. However, for papers using alternative strategies, our results point to a much smaller effect (e.g., Pavanello et al., 2016). Yet, drawing a strong comparison is always limited by the differences in the historical, cultural and structural issues across

settings.<sup>25</sup>

We now focus on the other components of the social cohesion index. For interpersonal trust, the impact is positive ( $0.043\sigma$ ) but imprecise given the large standard errors. The same is observed when looking at the five variables that create the index (see Figure 9 and Table B6). We arrive to the same conclusion when considering the impact on either trust in government institutions –both in the index and its 15 components (Figure 10 and Table B7)– or satisfaction with government policies (Figure 11 and Table B8) and its 11 variables.

When considering life satisfaction the effects are different (Figure 12 and Table B9). The increase in the index at the cutoff is a notable  $0.086\sigma$  and statistically different from zero. The implied 2SLS suggest that the OAP increases this index by  $0.14\sigma$ . Half of the 14 variables of this index report a significance robust to the adjustment for multiple hypothesis testing. This means that beneficiaries do perceive an improvement in their wellbeing as a result of the grant. This is consistent with prior work focusing on other outcomes. For example, Duflo (2003) finds that anthropometric measures of girls increase when their grandmother receives the pension. Agüero (2019) shows that the pension improves the mental health status of the recipients. Ambler (2016) reports an increase in women’s income (and less on men due to labor force withdrawal). Edmonds (2006) finds results consistent with the pension lifting liquidity constraints by studying the rise in school enrollment of children of beneficiary families. All this evidence suggests that there is a clear monetary gain from the pension despite the crowding out effect found by Jensen (2004).

This is further reinforced by our findings on racial diversity. This index jumps by  $0.028\sigma$  at the age cutoff, significant at the 10 percent, with an implied 2SLS estimate of  $0.047\sigma$ . Exploring the 35 variables that composed this index we find positive impacts on trusting Black South African and considering Coloured as friendly that remain significant even after accounting for multiple hypothesis testing (Figure 13 and Table B10). This suggests that cash transfers can alter beliefs about other people, but this is limited to people “closer” to them as our sample centers only on Black and Coloured South Africans.

Our last index of social cohesion focuses on social participation (see Figure 14 and Table B11). We observe a statistically significant *decline* (at the 10 percent) at the age cutoff of about  $0.04\sigma$ . We found that recipients are less likely to contact the media, the government or participate in a protest. Again, this is consistent with the increase in overall wellbeing discussed above.

These findings are robust to changes in the bandwidth as expected given the analysis of the first stage. For instance, in Figure 15 we limit the analysis to observations within

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<sup>25</sup>See also Lehmann and Masterson (2015) for an evaluation of transfers to refugees instead of the hosting population.

three years of the cutoff age. As observed there, the effects are in line with the main results, except for the much larger standard errors due to the smaller sample size.

Finally, we also explore whether the effects vary by the intensity of the flow on immigrants. To do so, we merge the data from United Nations High Commission of Refugees (used in Figure 1) and interacted each of them with the splines (polynomials on  $Age_{it}$ ) as well as the indicator variable for the cutoff age:  $1(Age_{it} \geq \bar{a}_t)$ . In Figures 16 and 17, we respectively consider number of refugees and number of asylum seekers. The interaction with these variables does not have an impact on social cohesion, supporting our main findings.

## 6 Policy and program implications

Whether distributional policies can lead to more social cohesion is a critical question given the large amount of people forcibly displaced worldwide who are facing severe anti-immigrant reactions from the local population. We answer this question in the context of South Africa, a country that is a major hub of refugees and asylum seekers and that has seen an increase in xenophobic behaviors since 2008. The country has the largest unemployment rate worldwide and a widespread and important distributional policy that permits a rigorous causal estimation of its impact. Exploring whether cash transfers policies could provide an effective tool to reduce anti-immigration attitudes and promote social cohesion in refugee-hosting settings with high unemployment rates is of even more relevance given the economic decline and increase in refugees expected in many developing countries due to the COVID-19 pandemic.

Our findings show that the South Africa's Old Age Pension has a limited impact on social cohesion. However, this hides two competing forces. On the one hand, we found an increase in the recipients' life satisfaction and in their attitudes towards racial diversity, including in-group trust. These impacts are consistent with a net gain in income and wellbeing. This is despite the crowding out effect reducing private transfers within family members to elder individuals documented elsewhere. On the other hand, this increase in wellbeing does not translate into more interpersonal trust and neither on trust or satisfaction with the government. We identify a decline in social participation. Overall, there is no change in attitudes toward immigrants, except for a higher desire that the government welcomes more foreigners. Based on our results and the previous literature on South Africa's Old Age Pension, this unconditional cash transfer program has improved welfare and life satisfaction but did not improve social cohesion. Whether similar results would be observed for cash transfers programs conducted in different contexts remains an open question and should be explored in future research.

This suggest that the anti-immigrant behaviors in South Africa are less likely to be related

to income and more about non-wage factors such as ethnic background or language barriers or crime but also to historical triggers given the legacy of Apartheid. It is a pending question whether cash transfers could improve social cohesion in other contexts or where inequality and unemployment are less salient. Other strategies should be explored too. For example, King et al. (2010) review the effectiveness of community-driven development and curriculum interventions on improving social cohesion in sub-Saharan Africa and find mixed results. Koehler (2021) proposes “access to employment and income programmes, and equitable access to social services and social infrastructure” (p. 643) echoing suggestions made by Schuettler and Caron (2020) on employment channels. Future work should address these alternative strategies in more detail while finding credible identification strategies to isolate those effects from possible confounders.

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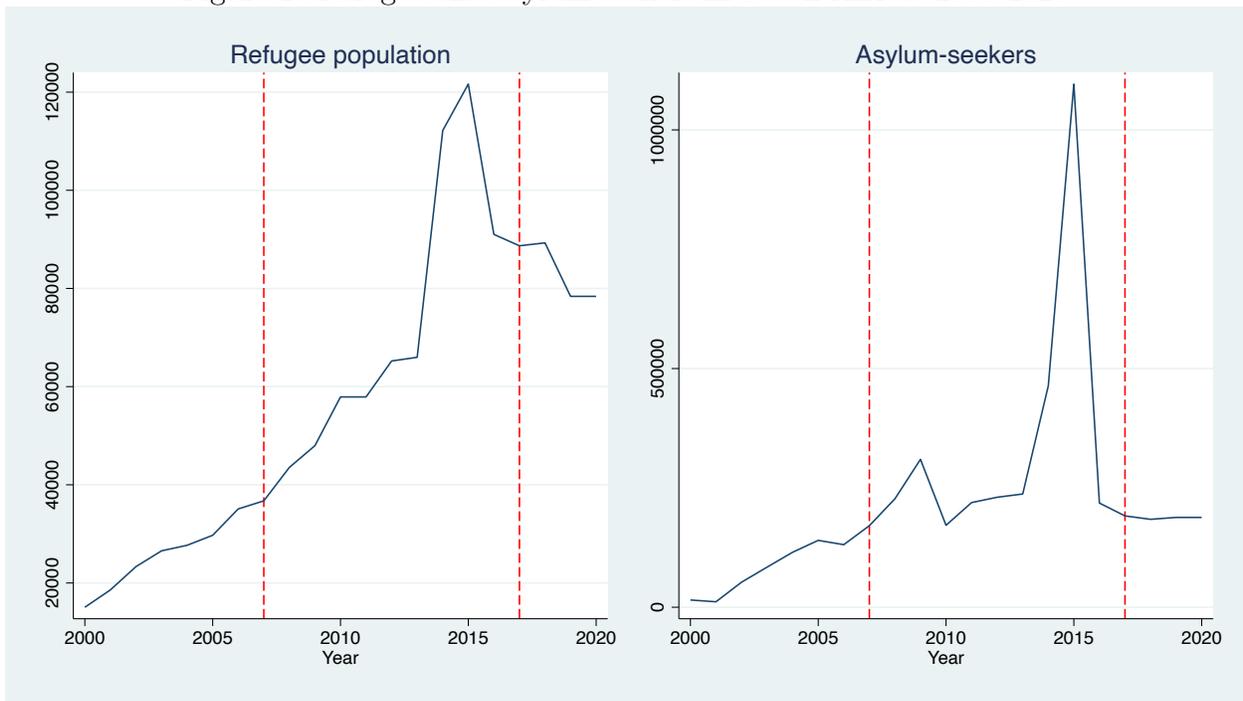
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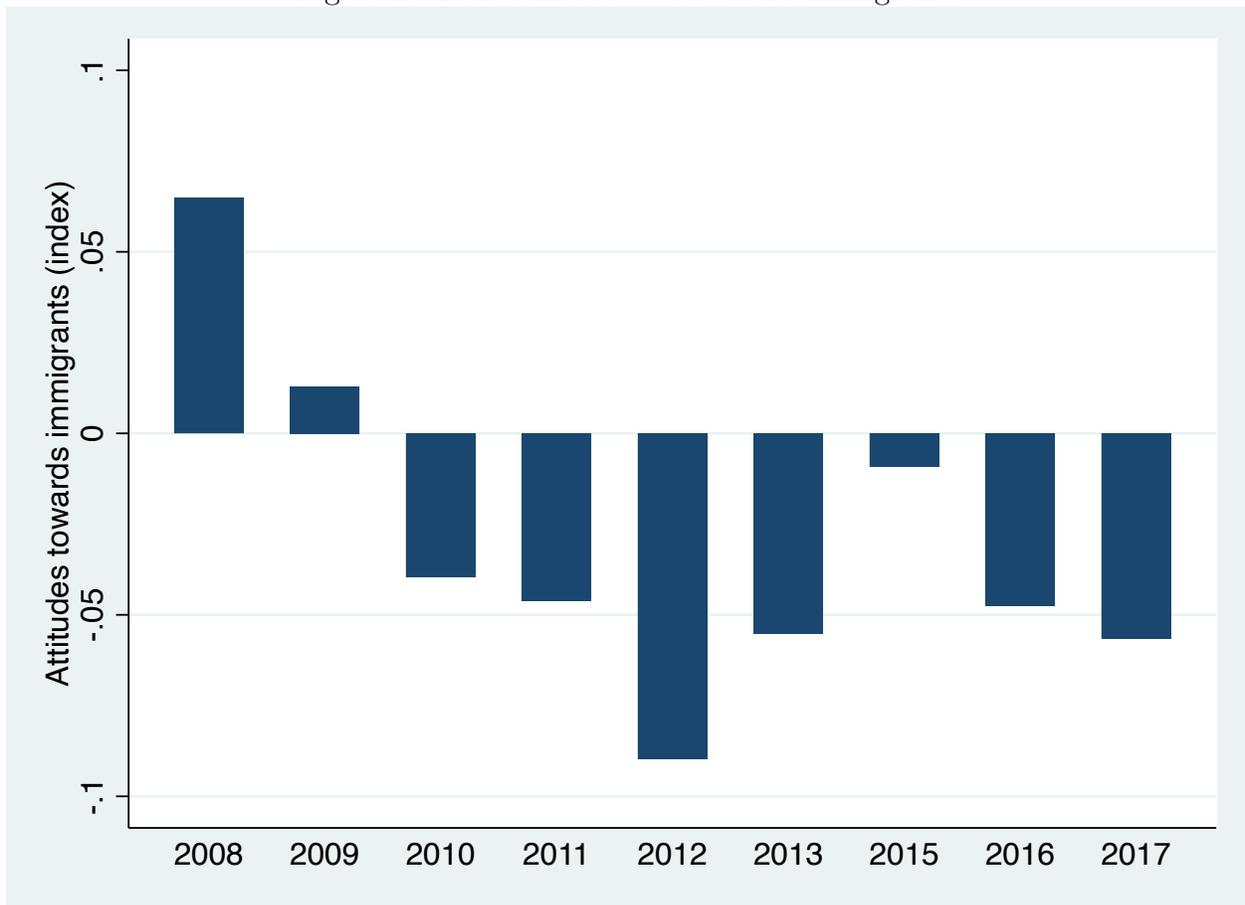
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Figure 1: Refugee and asylum-seekers in South Africa: 2000-2020



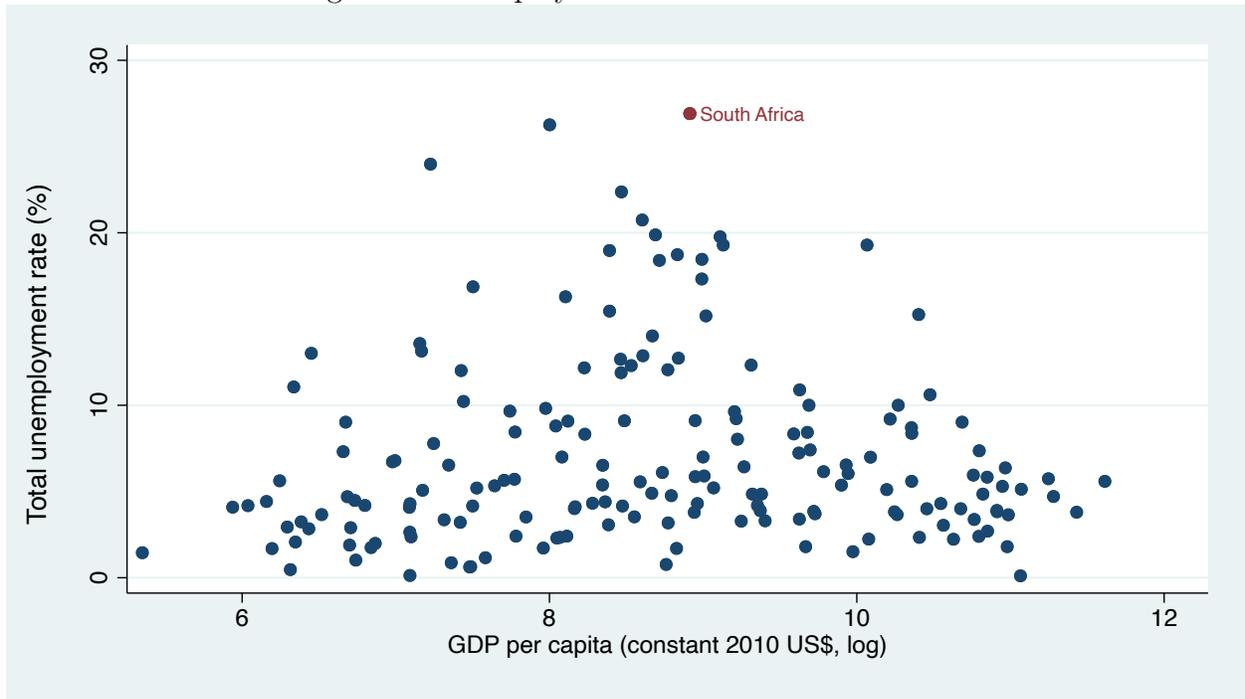
Note: Authors' calculation based on data from the United Nations High Commission of Refugees. Obtained from <https://www.unhcr.org/refugee-statistics/download/?url=fkIpe3>.

Figure 2: Trends in attitudes toward immigrants



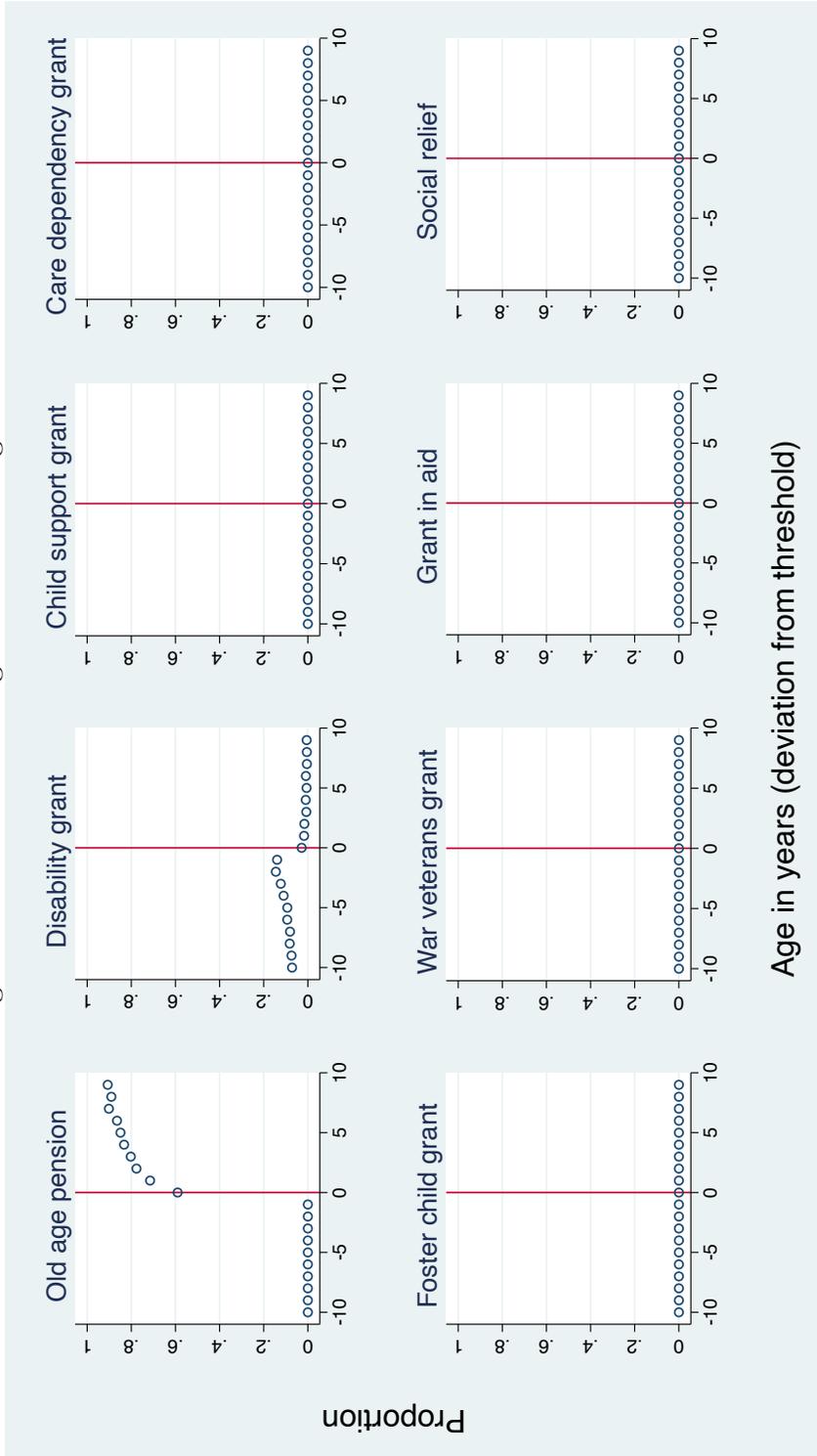
Note: See text for details on the construction of the index. Higher values represent more positive attitudes towards immigrants. Sample is restricted to Blacks and Coloured within  $\pm 10$  years of the age cutoff for the Old Age Pension in each year. Data source: South African Social Attitudes Survey 2008-2017.

Figure 3: Unemployment rate and Income: 2018



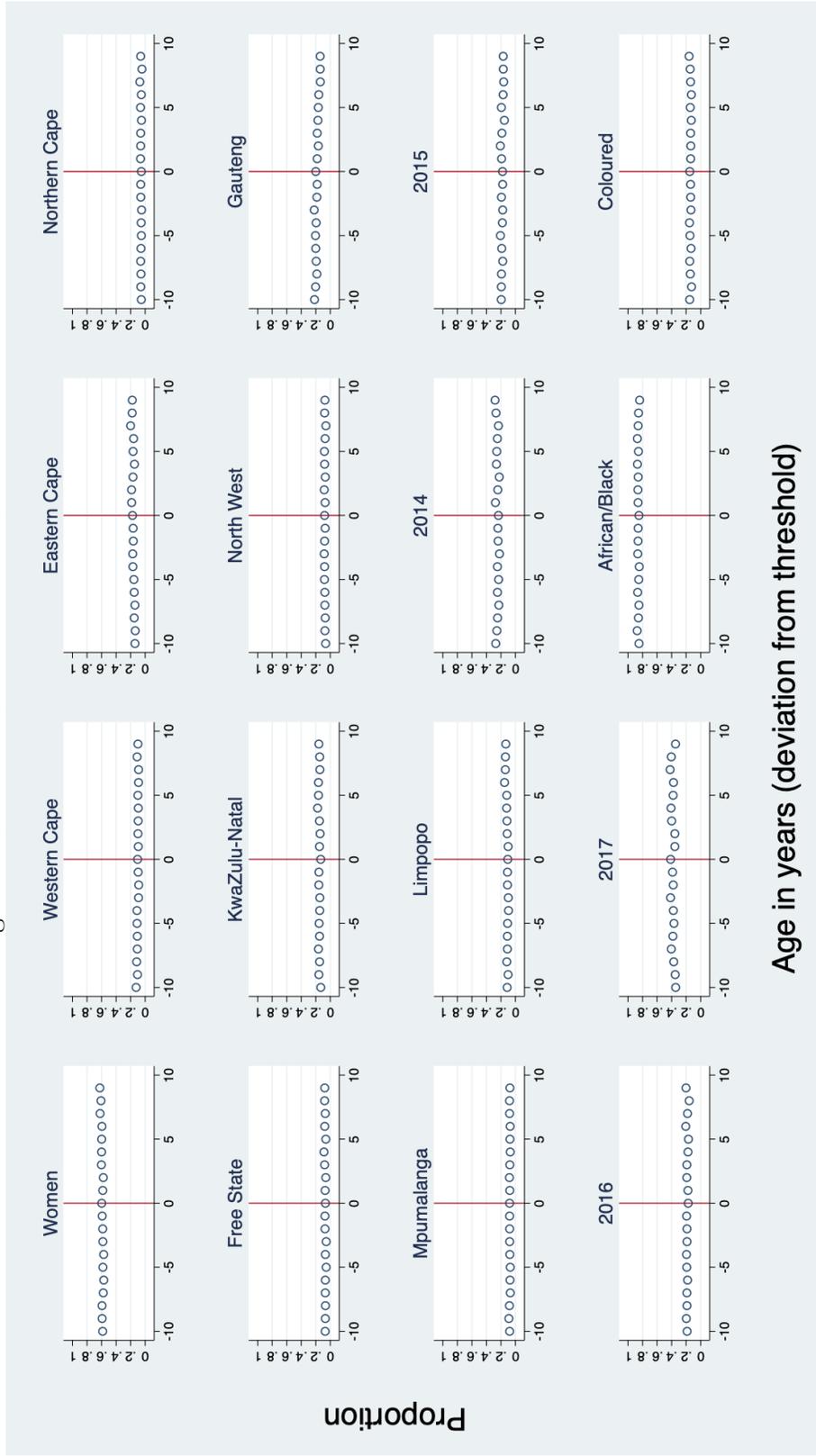
Note: Each symbol represents a country. Total unemployment rate is based on ILO estimates. Data source: World Bank's World Development Indicators.

Figure 4: Access to Old Age Pension and age



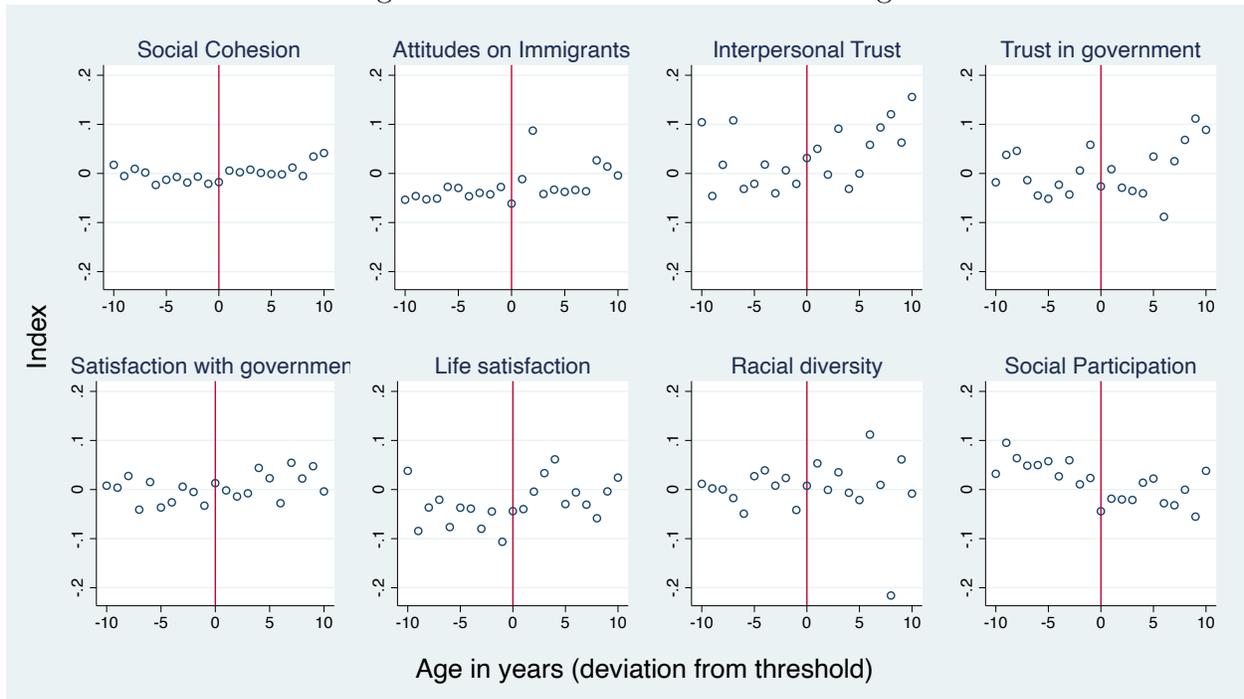
Note: Each circle represents the average participation for the welfare programs by age measured as deviations from the cutoff age in each survey year. The red vertical lines show the standardized cutoff age. Data source: General Household Survey 2014-2017.

Figure 5: Smoothness test: covariates



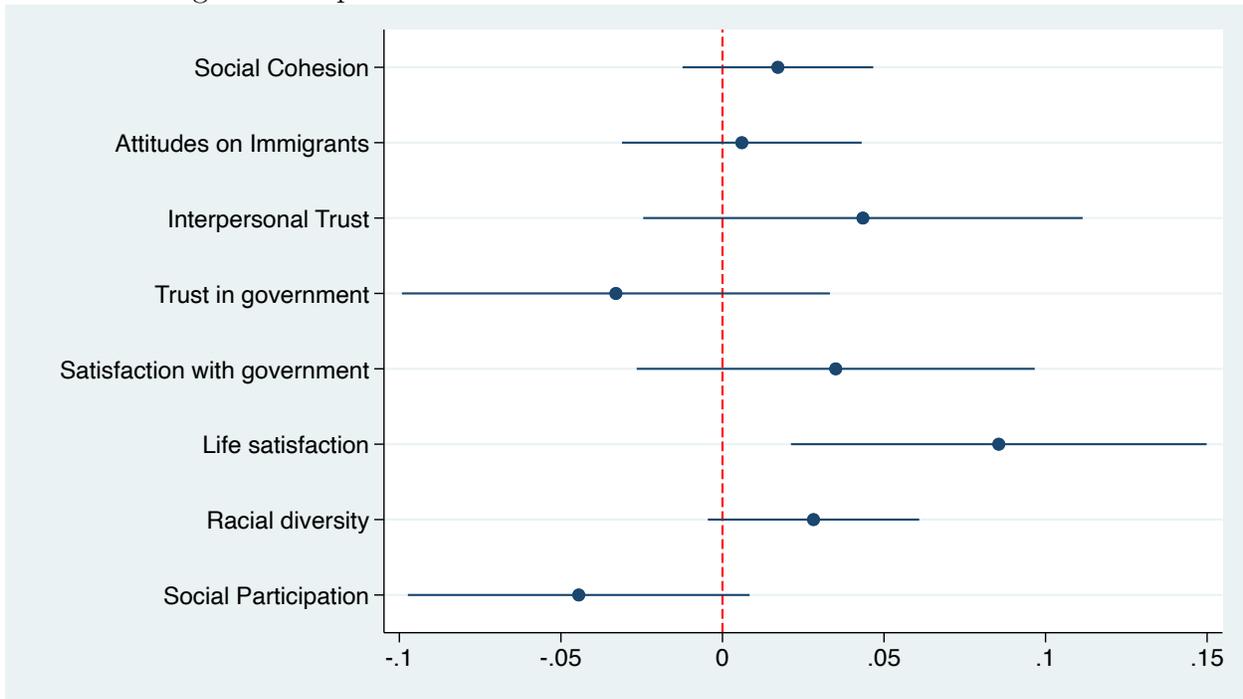
Note: Each circle represents the average participation for the selected variables by age measured as deviations from the cutoff age in each survey year. The red vertical lines show the standardized cutoff age. Data source: General Household Survey 2014-2017.

Figure 6: Social cohesion indices and age



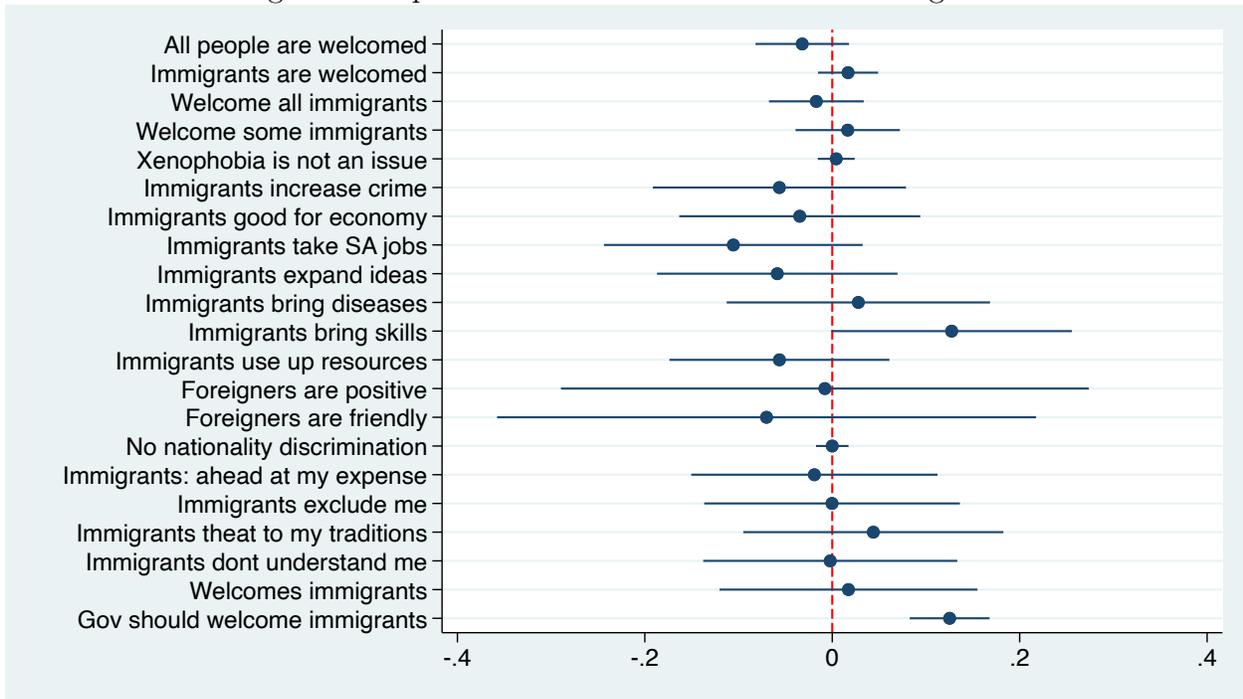
Note: Each circle represents the average value for the selected indices by age measured as deviations from the cutoff age in each survey year. The red vertical line shows the standardized cutoff age. Data source: South African Social Attitudes Survey 2008-2017.

Figure 7: Impact on social cohesion indices: reduced form estimates



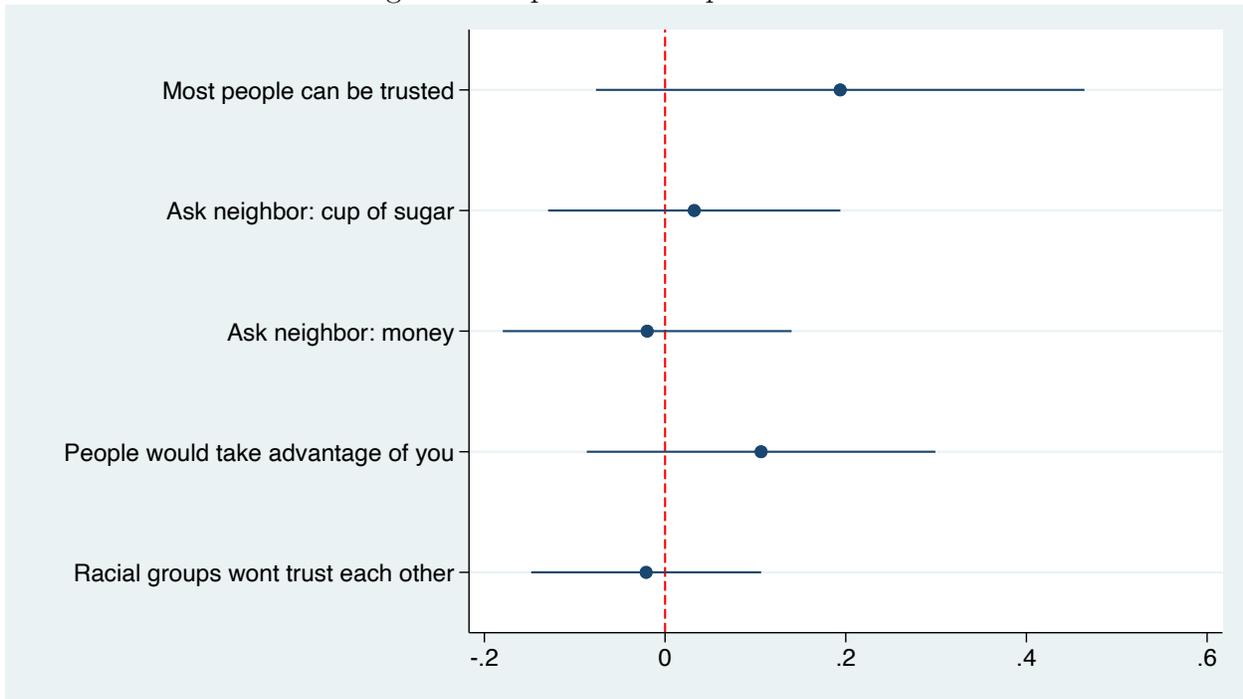
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 8: Impact on about attitudes towards immigrants



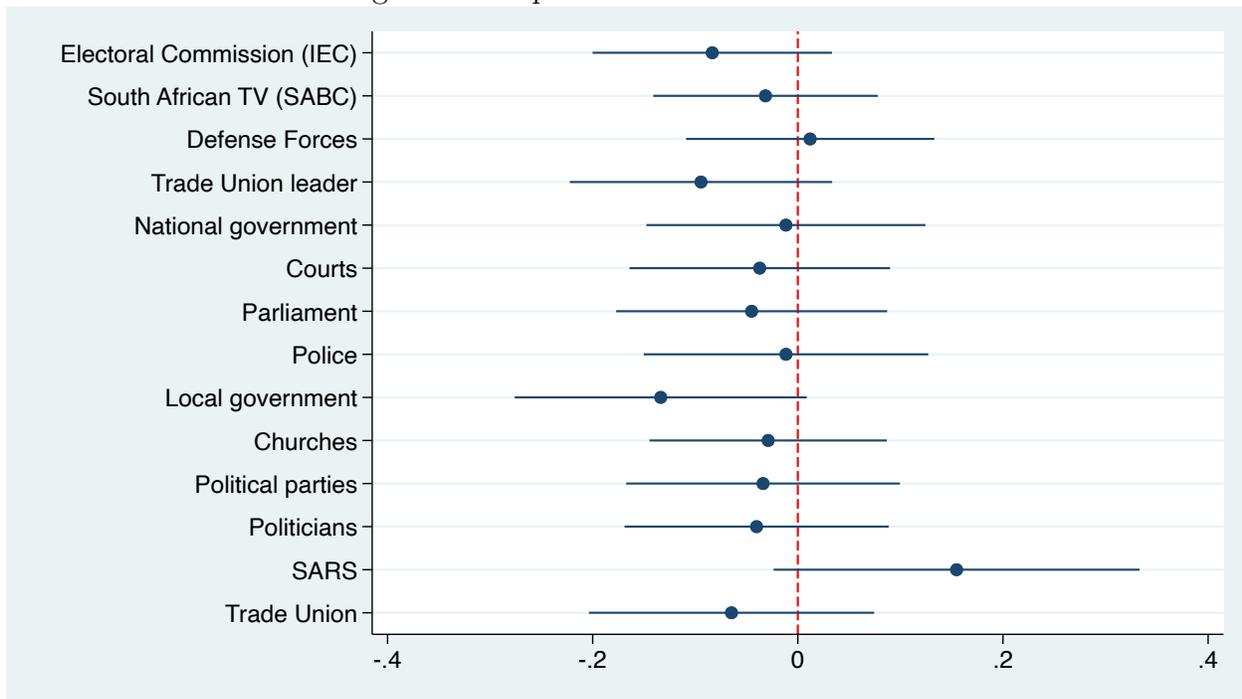
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 9: Impact on interpersonal trust



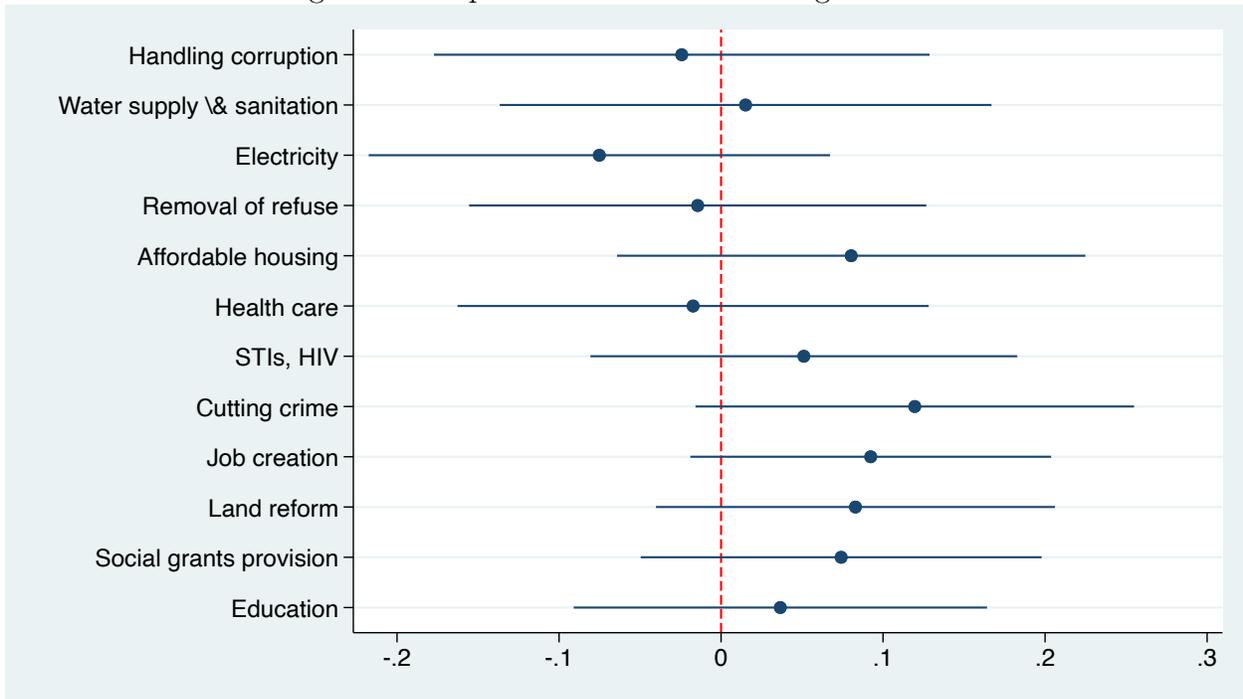
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 10: Impact on trust in institutions



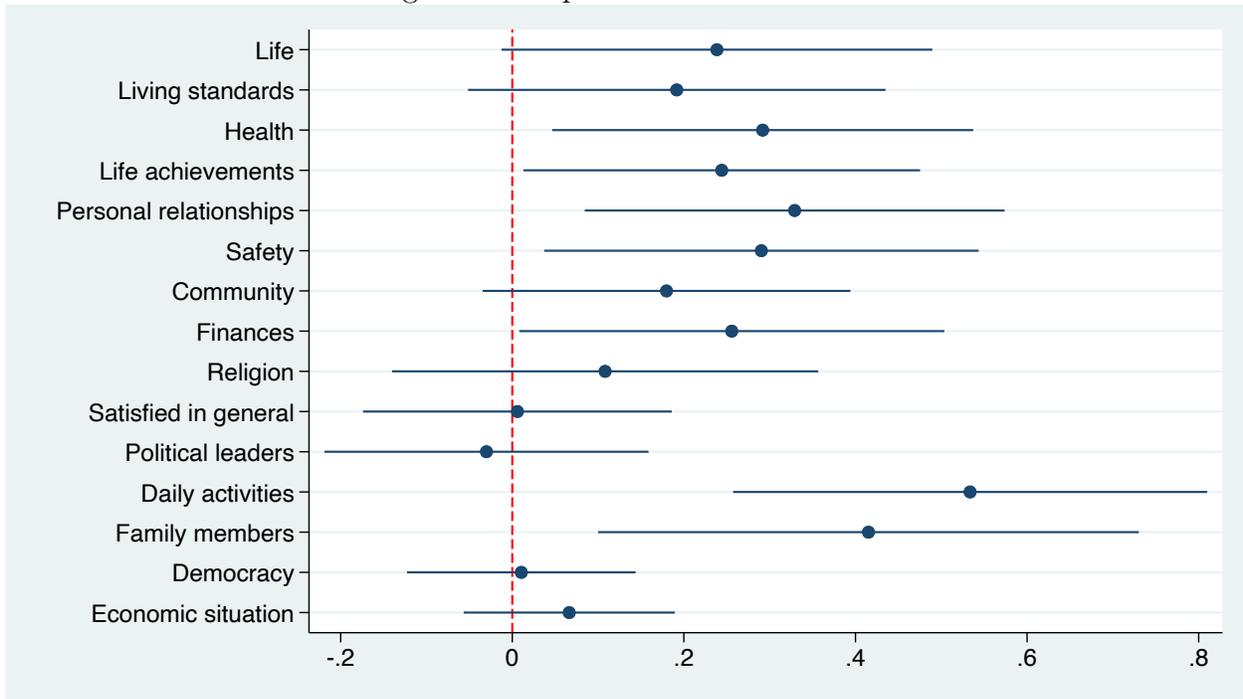
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 11: Impact on satisfaction with government



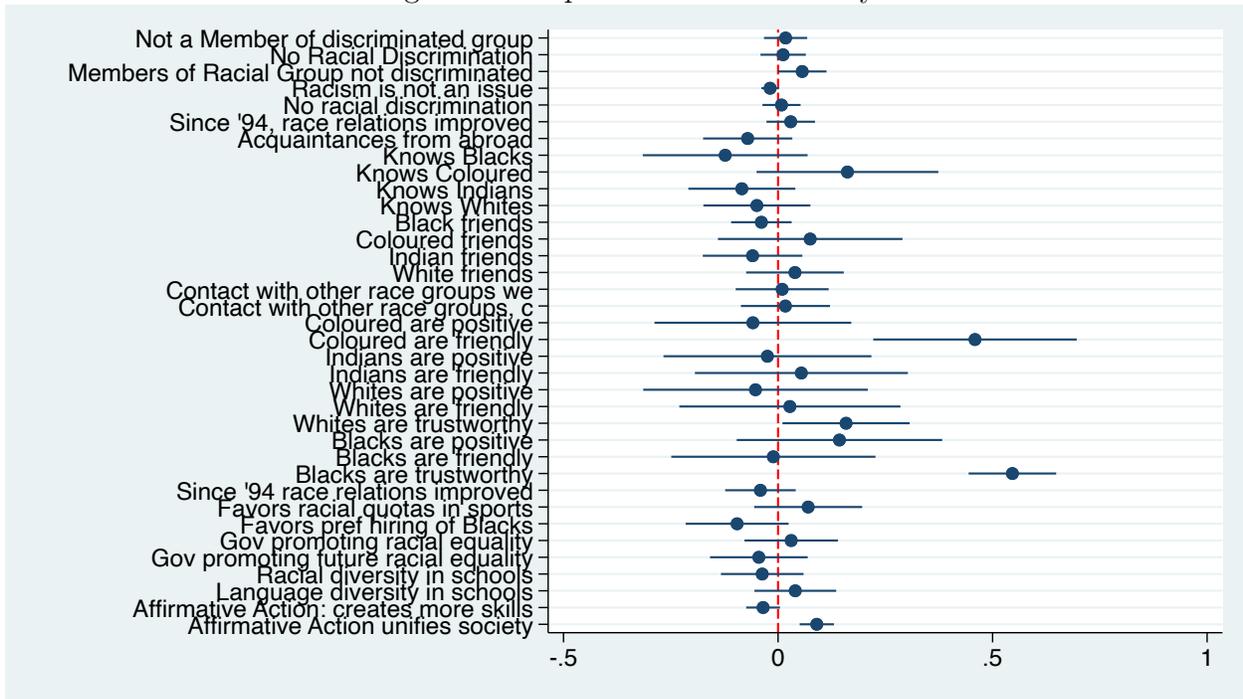
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 12: Impact on life satisfaction



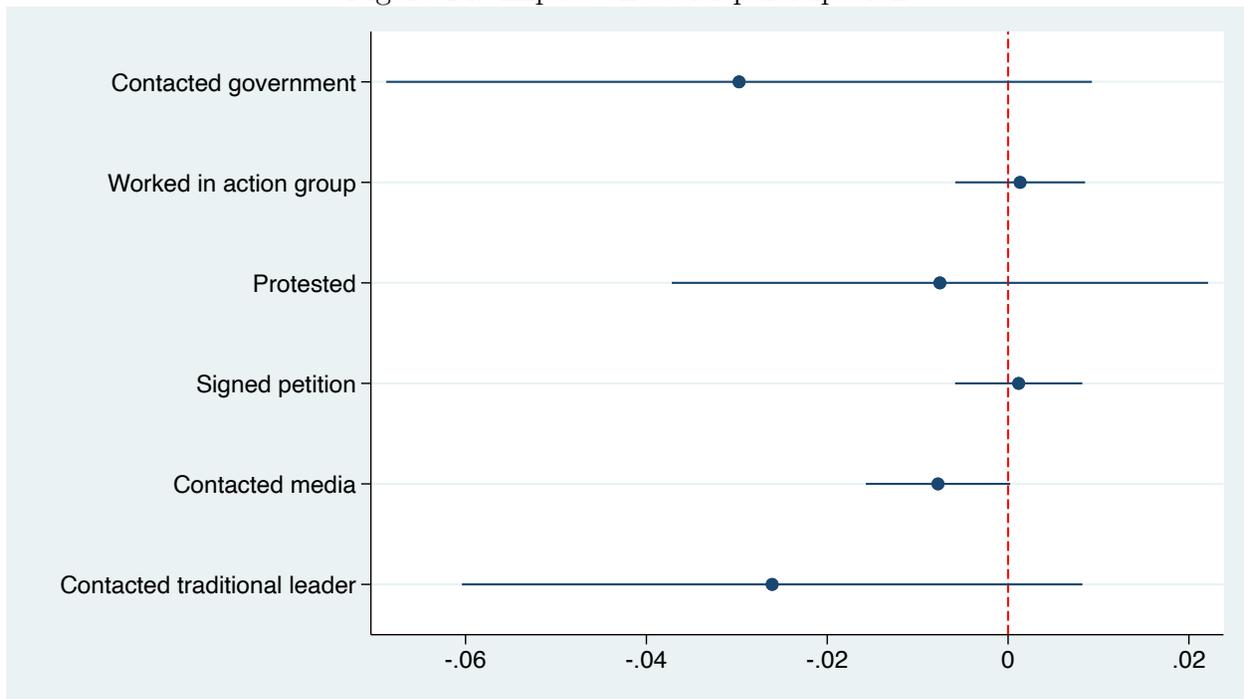
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 13: Impact on racial diversity



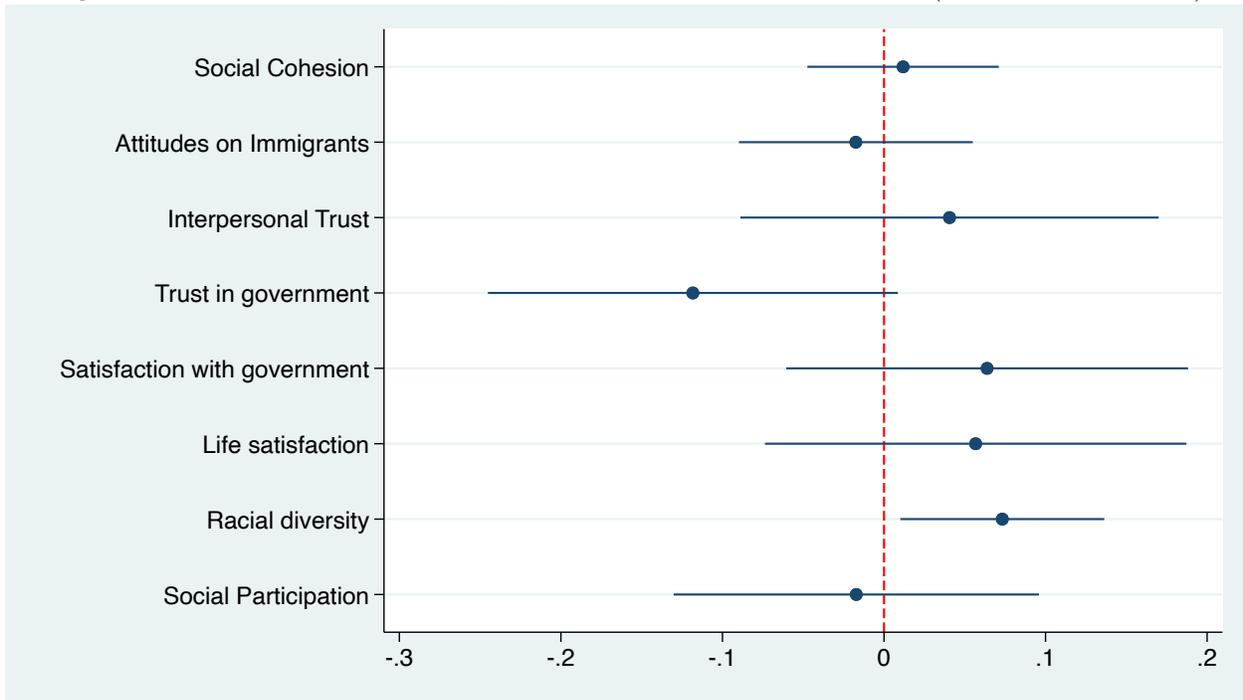
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 14: Impact on social participation



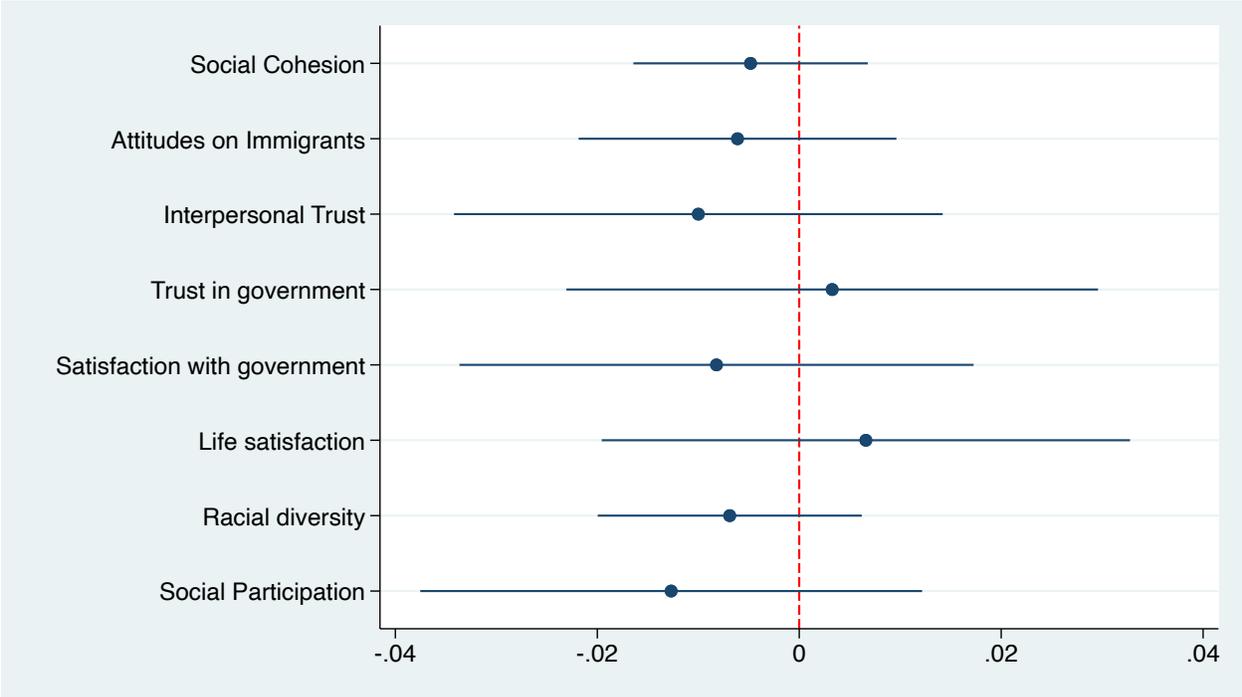
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 15: Robustness checks: Impact on social cohesion indices (smaller bandwidth)



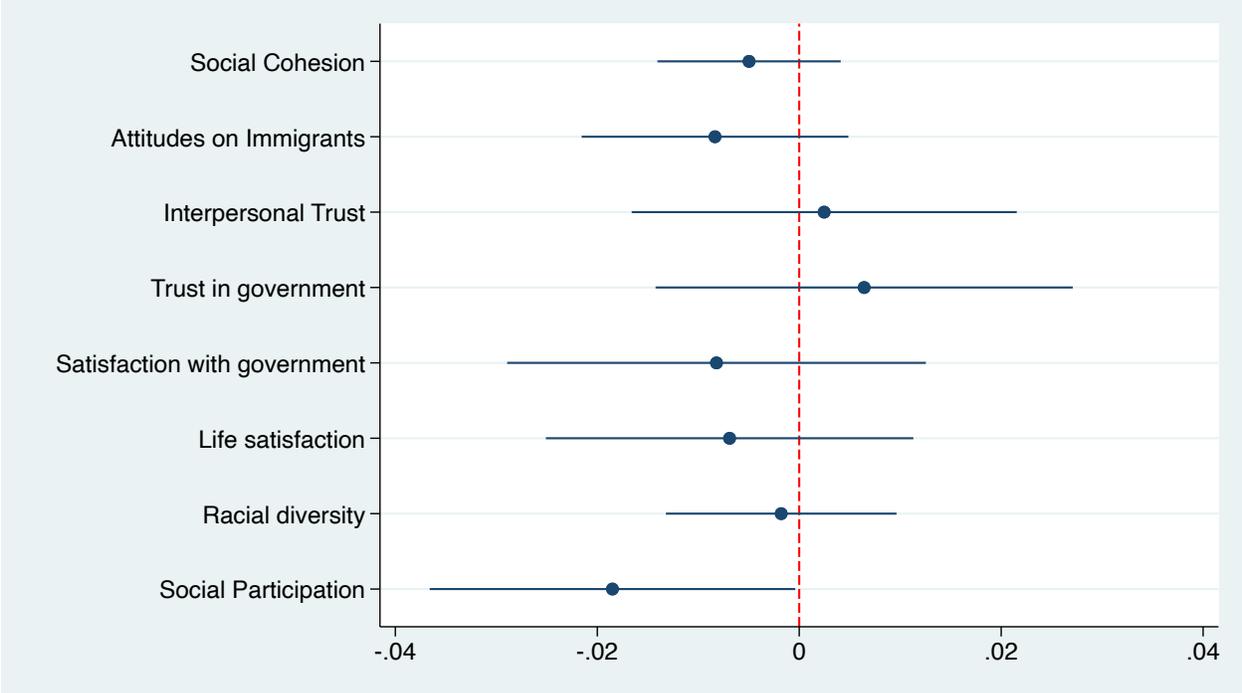
Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Sample was limited to ages within three years of the eligibility cutoff. Data source: South African Social Attitudes Survey 2008-2017.

Figure 16: Heterogenous effects: Impact on social cohesion indices by immigration flow (refugees)



Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) interacted with the number of refugees by year (in ten thousands) together with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Figure 17: Heterogenous effects: Impact on social cohesion indices by immigration flow (asylum seekers)



Note: Each circle reports the estimate at the threshold ( $Age \geq \bar{a}$ ) interacted with the number of asylum seekers by year (in hundred thousands) together with the confidence intervals at the 95%. Each regression includes splines and controls for gender, race and province of residence fixed effects. Data source: South African Social Attitudes Survey 2008-2017.

Table 1: Economic Development in South Africa and neighboring countries (2018)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Botswana	Eswatini	Lesotho	Mozambique	Namibia	South Africa	Sub-Saharan Africa	Zimbabwe
GDP per capita	3,763	2,897	722	340	4,516	6,556	1,420	1,219
Infant mortality	52	67	93	117	45	48	79	60
Under-5 mortality	77	98	123	175	69	68	128	97
Life expectancy	57	53	52	49	58	59	54	55

Note: Authors' calculations based on World Bank's World Development Indicators. GDP per capita is measured in constant 2010 US\$. Infant and under 5 mortality is per 1,000 live births. Life expectancy (in years) is at birth.

Table 2: First stage: Old Age Pension and age

	(1)	(2)	(3)	(4)
	Old age pension	Old age pension	Old age pension	Old age pension
Age $\geq \bar{a}$	0.669*** [0.009]	0.670*** [0.009]	0.590*** [0.013]	0.591*** [0.012]
Controls	No	Yes	No	Yes
Observations	46010	46010	4711	4711
$R^2$	0.722	0.726	0.420	0.434
$\bar{Y}_c$	0.000	0.000	0.000	0.000
Bandwidth	(-10,9)	(-10,9)	(-1,0)	(-1,0)

Note: Robust standard errors (in brackets) are clustered at the primary sample unit level. All regressions include linear splines and controls for gender, race as well as province of residence and survey year fixed effects.  $\bar{Y}_c$  refers to the mean of the dependent variable (column title) among the non-eligible population (Age <  $\bar{a}_t$ ). \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

Table 3: Impact on social cohesion indices: Reduced form

	(1)	(2)	(3)
	Social Cohesion	Attitudes on Immigrants	Interpersonal Trust
Age $\geq \bar{a}$	0.017 [0.015]	0.006 [0.019]	0.043 [0.035]
Observations	4419	4419	4419
$R^2$	0.026	0.039	0.031
$\bar{Y}_c$	-0.005	-0.042	0.014
	(4)	(5)	(6)
	Trust in government	Satisfaction with government	Life satisfaction
Age $\geq \bar{a}$	-0.033 [0.034]	0.035 [0.031]	0.086*** [0.033]
Observations	4419	4417	4418
$R^2$	0.072	0.035	0.052
$\bar{Y}_c$	-0.004	-0.007	-0.044
		(7)	(8)
		Racial diversity	Social Participation
Age $\geq \bar{a}$		0.028* [0.017]	-0.044* [0.027]
Observations		4419	4419
$R^2$		0.073	0.047
$\bar{Y}_c$		0.000	0.047

Note: Robust standard errors (in brackets) are clustered at the primary sample unit level. All regressions include linear splines and controls for gender, race as well as province of residence and survey year fixed effects.  $\bar{Y}_c$  refers to the mean of the dependent variable (column title) among the non-eligible population (Age  $< \bar{a}_t$ ). \* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .