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### Title

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### Permalink

<https://escholarship.org/uc/item/7ws369zq>

### Journal

American Journal of Political Science, 66(2)

### ISSN

0092-5853

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### Publication Date

2022-04-01

### DOI

10.1111/ajps.12590

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Peer reviewed

**Deepening or Diminishing Ethnic Divides?  
The Impact of Urban Migration in Kenya**

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February 19, 2019

**Abstract**

The impact of urban migration on ethnic politics is the subject of longstanding debate. “First generation” modernization theories predict that urban migration should reduce ethnic identification and increase trust between groups. “Second generation” modernization perspectives argue the opposite: urban migration may amplify ethnic identification and reduce trust. We test these competing expectations with a three-wave panel survey following more than 8,000 Kenyans over a 15-year period, providing novel evidence on the impact of urban migration. Using individual fixed effects regressions, we show that urban migration leads to reductions in ethnic identification: ethnicity’s importance to the individual diminishes after migrating. Yet urban migration also reduces trust between ethnic groups, and trust in people generally. Urban migrants become “less ethnic” and more suspicious. The results advance the literature on urbanization and politics, and have implications for the potential consequences of ongoing urbanization processes around the world. [144 words]

Word Count: 9,970 words  
(including References and captions and notes of Tables/Figures)

Urbanization is shifting the landscape of countries around the world. In Africa, the pace of urbanization has been especially rapid. The continent's urban population has doubled since 1999, and by 2040 over 50 percent of the population is projected to reside in urban areas (UN 2014). Although the growing importance of urbanization in Africa and elsewhere in the Global South is obvious, we are only beginning to uncover its political consequences.

A longstanding debate centers on expectations about urbanization's impact on *ethnic politics*. According to "first generation" modernization theories, urban migration should decrease the importance of ethnic identities. As urban migrants work in the urban economy, grow less dependent on land and social ties in rural areas, and come into contact with other groups, ethnic identities are expected to be displaced by broader identities such as class or nation, while trust between groups is expected to increase (Gellner 1983; Green 2014; Lerner 1958, Robinson 2014). "Second generation" modernization theory (Eiffert, Posner, and Miguel 2010), suggests the opposite: urbanization could make ethnic ties more salient (Bates 1983; Melson and Wolpe 1970). This literature emphasizes that urban migrants often compete for jobs and resources with members of other groups and often rely on ethnic networks for jobs, housing, and assistance in urban areas (Bates 1983; Posner 2005). These competitive dynamics, and the instrumental value of ethnic ties in urban areas, can amplify the importance of ethnic identities and reduce trust between groups. The literature thus offers competing expectations. *Does urban migration diminish or amplify ethnic identification? Does it reduce or increase trust across ethnic lines?*

We address these questions using a unique longitudinal survey, the Kenya Life Panel Survey (KLPS), which surveyed over 8,000 Kenyans over a 15-year period.<sup>1</sup> Kenya is an excellent context to test theories about urbanization and ethnicity: it is urbanizing rapidly (Marx, Stoker, and Suri 2016) and ethnicity is salient in politics (Bedasso 2017; Ndegwa 1997), economics (Hjort 2014; Marx, Pons, and Suri 2016), and social life (Kasara 2013). The KLPS captures ethnic identification and trust measured at multiple points in an individual’s life, which allows us to study how migrants change after moving to an urban area, relative to changes among rural residents. To do so, we estimate the impact of urban residence with regression models that include individual (survey respondent) fixed effects.

This analytical approach addresses two serious challenges to testing theories about urban migration’s political impact that have limited prior research. First, the strong possibility of selective migration – those who migrate to urban areas may be “less ethnic” or otherwise different than those who do not – makes it difficult to distinguish the impact of urban migration from the other, potentially unobserved, differences between individuals that reside in urban and rural areas. Individual fixed effects help to address this challenge by controlling for all time invariant differences between respondents, including those that might drive urban migration and those which

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<sup>1</sup> We pre-registered hypotheses, measurement, and model specifications prior to conducting this analysis. We note which analyses were not pre-specified. Although the KLPS data has been analyzed previously for other purposes, none of us had performed the present analysis prior to the posting of the pre-analysis plan. Furthermore, the plan was drafted by one of the authors prior to his ever accessing the KLPS data. Appendix Table A3 presents results for the complete set of pre-specified outcomes.

are unobserved, which increases confidence that selection bias is not driving the results. Second, theories about urbanization and ethnic politics often imply individual-level changes that are expected to occur after migration to urban areas. With our unique panel data, which permits an analysis of individual-level change over time, our approach more precisely tests theory by examining how individuals change following migration to cities.

Our findings on ethnic identification are most consistent with “first generation” modernization theory. Migration to a city significantly *decreased* the importance that respondents attached to their ethnic or tribal origin. This negative effect was especially large for migrants to Kenya’s two major cities, Nairobi and Mombasa, and grew larger with the number of years that individuals resided in urban areas. Urban migration did not, however, reduce the salience of ethnic identity relative to other identities such as class or religion.

Urban migration also significantly *reduced* trust in members of *other* ethnic groups. This reduction was largest in the period before and after Kenya’s hotly contested and ethnically charged 2007 elections and the violence that followed. Thus, consistent with “second generation” expectations, urban residence had a negative effect on inter-ethnic trust during a period of intense political competition between ethnic groups. However, urban migration also reduced general levels of trust in all groups of people, which corroborates Putnam’s (2007) “constrict theory” predicting that urban migration will reduce trust of both in- and out-group members.

Together, these findings highlight that urban migration can have a mixed, nuanced influence on ethnic identification and attitudes. On the one hand, life in urban areas weakens the strength of individuals’ attachment to their ethnic and tribal origin. On the other, the urban experience leads to breakdowns in social trust and a reduction in trust of out-group members. Urban migrants become “less ethnic,” but “more suspicious.”

This paper makes several contributions. First and foremost, we provide the most credible causal evidence of urban migration’s impact that exists in the literature to date. This new empirical evidence has important theoretical implications. Expectations of urbanization’s impact have featured in several bodies of literature, but empirical challenges have made testing these theories difficult. While our findings are consistent with studies documenting less ethnic voting (Conroy-Krutz 2009), rejections of ethnic political appeals (Horowitz and Kim 2016), less ethnic identification (Eiffert, Posner, and Miguel 2010; Robinson 2014), less inter-ethnic trust (Kasara 2013), and a lack of interpersonal ethnic bias (Berge et al. 2018) in Africa’s urban areas, our results stand on firmer ground as evidence of urbanization’s causal influence.<sup>2</sup>

We also advance the general literature on the political consequences of urbanization by showing the effect of urban migration on a range of additional outcomes, including political and civic participation, democratic attitudes, political knowledge and media consumption. Notably, we find no evidence that migration to the cities has an influence on voter turnout, despite the negative association between urban residence and voting that has been documented in some contexts (e.g. Koter 2013).<sup>3</sup> We show that those who move to urban areas were less likely to vote before they migrated. Once we account for this through the individual fixed effects, the negative association between urban residence and voter turnout disappears. We also find no evidence that urban migration impacts democratic values or political efficacy, results which are not consistent with

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<sup>2</sup> The studies noted here are very clear about this limitation, and their main goals are not always to identify the causal impact of urbanization.

<sup>3</sup> In Appendix Table A5, we show using Afrobarometer survey data that there is a negative cross-sectional association between urban residence and voter turnout in Kenya.

“first generation” modernization theory. We do, however, find that urban migration reduces participation in civic organizations. Urban migration also leads to an increase in media consumption and knowledge about politics. In short, we find mixed evidence for expectations about the broader impact of urbanization on political attitudes and behavior that does not correspond neatly with any single theoretical perspective.

## **2. Urbanization and Ethnic Identification and Trust**

Existing theoretical and empirical research highlights that rural-to-urban migration is likely to have important implications for ethnic politics.<sup>4</sup> We are concerned with how migration to urban areas impacts *ethnic identification* – the *importance* individuals attach to their ethnic identity and ethnicity’s *salience* relative to other identities such as class or religion – and *trust* within and between ethnic groups.

Modernization theory predicts that urbanization should decrease the importance and salience of ethnic identity. As urban migrants gain more wealth, exposure to diverse forms of information, and jobs in the urban economy, ethnic identities are expected to be supplanted by other identities such as class or nation (Gellner 1983; Lerner 1958). Furthermore, because urban migrants are less dependent on land in rural areas, a domain of “traditional” ethnic elites, ethnic identification may have less instrumental value for those residing in urban areas (Green 2014). And, because many migrants live and work in ethnically diverse contexts, increased opportunities for contact with other groups could increase inter-group trust (Allport 1954; Kasara 2013; Robinson 2017), diminishing the importance of ethnic identities in social, economic, or political

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<sup>4</sup> Ethnic identities are those associated with real or perceived descent-based attributes.

life. Together, this literature suggests that rural-to-urban migration should reduce the importance and salience of ethnic identities, and increase trust between ethnic groups.

By contrast, “second generation” modernization theories predict that urbanization will increase the importance and salience of ethnic identities. This literature emphasizes that ethnic identification, and patterns of ethnic mobilization in politics, appeared to be a product of modernization processes (Kasfir 1979), including urban migration. There are several potential drivers of this pattern. First, migrants to urban areas often compete for jobs, resources, and political power, and such competition is often structured along ethnic lines (Bates 1983). Second, migrants to urban areas often rely on ethnic networks to obtain jobs, housing, and social assistance (Posner 2005), which can heighten ethnic identification. Third, experiences of discrimination<sup>5</sup> or marginalization on the basis of ethnicity in urban areas could increase the salience of ethnicity (Bates 1983). In short, heightened competition between ethnic groups, and the potential instrumental value of ethnic bonds, in urban centers could increase the importance of ethnic identity and reduce trust between groups.

Second-generation research highlights that ethnicity often becomes more salient because of political competition and mobilization (Bates 1983; Eifert, Miguel, and Posner 2010). Thus, the impact of urban residence could be greatest during periods of intense political competition. It also follows that the nature of political mobilization in urban areas could condition the impact of urban migration. Although early empirical work in African cities substantiates the second-generation position (Wolpe 1974), more recent research suggests that populist, class-based campaign

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<sup>5</sup> For example, Marx, Stoker, and Suri (2016) provide evidence of ethnic discrimination in housing prices in Nairobi, Kenya.



strategies are on the rise in Africa's urban areas (Resnick 2014). If political elites in urban areas are increasingly engaged in mobilization around class-based identities, rather than ethnic ones, we might find reductions in ethnic identification among urban migrants (Thachil 2017).

Patterns of electoral mobilization can, moreover, vary within cities. Klaus and Paller (2017) show that neighborhood ethnic demography shapes Ghana's political parties' decisions to adopt exclusionary (ethnic) or inclusive forms of mobilization in Accra, Ghana's capital. Nathan (2016) shows how neighborhood ethnic demography and socio-economic characteristics condition the extent of ethnic voting in Accra. This heterogeneity could make it less likely to observe overall changes in ethnic identification and trust among urban migrants.

In summary, competing theories generate different predictions about the influence of urbanization on ethnic identification and trust. The empirical literature testing these expectations generally relies on cross-sectional analyses that compare the attitudes of urban residents to rural ones. Across a number of countries, Robinson (2014) shows that urban Africans are more likely to privilege national over ethnic identity. Kasara (2013), focusing on the impact of ethnic group segregation on inter-ethnic trust, finds that inter-ethnic trust is lower in Kenya's urban areas. Eifert, Miguel and Posner (2010), focusing on how electoral competition impacts ethnic identification, show that urban residents in Africa are less likely to identify ethnically than rural ones. Conroy-Krutz (2009) finds evidence that ethnic voting is less prevalent in urban areas. Horowitz and Kim (2016) show that urban Kenyans are more likely to reject ethnic appeals by politicians, an effect that increases with the length of time living in Nairobi.

While this existing evidence supports the notion that there are differences between urban and rural residents, a major challenge is determining whether these differences are driven by selection – by the differences between people who choose to migrate to urban areas and those who

do not – or by changes that are caused by urban migration, which constrains our ability to adjudicate between competing theoretical perspectives. A central goal of this paper is to address this key challenge.

### **3. Urbanization and Ethnic Politics in Kenya**

We study the impact of urban migration in Kenya. In 1960, before independence, about 7 percent of Kenyans lived in an urban area (UN 2014). Since then, the urban population has grown to about 27 percent (World Bank 2016).<sup>6</sup> Kenya’s largest city is Nairobi, the capital, with over 3.1 million residents (KNBS 2009). This size makes Nairobi smaller than a “mega-city” such as Lagos, Nigeria (about 21 million), but comparable to more typical large urban centers in Africa, such as Abidjan (Cote d’Ivoire), Accra (Ghana), Addis Ababa (Ethiopia), and Dar es Salaam (Tanzania). The other major city in Kenya is Mombasa (938,000), a port city in the east (KNBS 2009).

Kenya is an ethnically diverse country with roughly 42 ethnic groups. Five groups, the “Big Five”, make up about 65 percent of the population: Kikuyu (17 percent), Luhya (14 percent), Kalenjin (13 percent), Luo (10 percent), and Kamba (10 percent) (KNBS 2009). While rural areas tend to be ethnically segregated, urban migrants often live and work in ethnically diverse neighborhoods in urban areas (Marx, Stoker, and Suri 2016).

Ethnic divisions have been salient in Kenya since the colonial period. Since independence in 1963, ethnic divisions have played a central role in political competition (Bedasso 2017; Ndegwa 1997). These dynamics have continued and in some ways intensified since the introduction of competitive multiparty politics in the early 1990s (Bedasso 2017). While Kenya

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<sup>6</sup> This degree of urbanization is on par with other East African nations (UN, 2014).

has for the most part avoided large-scale ethnic violence, lower level outbreaks of violence have been common.

The notable exception was the post-election violence following the 2007 presidential elections, a close and ethnically charged contest that pitted incumbent Mwai Kibaki (a Kikuyu) against Raila Odinga (a Luo). After Kibaki was declared winner, suspicions of electoral fraud led to the outbreak of violence that killed approximately 1,200 people and internally displaced hundreds of thousands (Gibson and Long 2009). The violence was largely structured along ethnic lines and occurred in urban and rural areas, including Nairobi (Jenkins 2012).

Ethnic divisions are also consequential in Kenya's economic and social life. Ethnic differences have been shown to reduce the productivity of workers operating collaboratively in Kenyan firms (Hjort 2014), to reduce the output of teams working on election campaigns (Marx, Pons, and Suri 2016), and to inhibit the capacity of communities to produce local public goods (Miguel and Gugerty 2005). Socially, trust between ethnic groups in the country is relatively low (Kasara 2013). As documented below, many Kenyans also care about their ethnic origin. In the first round of the survey data we analyze, 81 percent report that their ethnic or tribal origin is "very important" to their life, while only 2 percent report that it is not important.

#### **4. The Kenya Life Panel Survey**

The Kenya Life Panel Survey (KLPS) is a longitudinal dataset containing educational, health, nutritional, demographic, labor market, and other information for thousands of Kenyan youth. The sample is comprised of individuals who participated in one of two previous randomized non-governmental organization programs – one which provided merit scholarships to upper primary school girls in 2001 and 2002 (the Girls' Scholarship Program or GSP; Kremer, Miguel,

and Thornton 2009), and one which provided deworming medication to primary school students during 1998-2002 (the Primary School Deworming Program, or PSDP; Miguel and Kremer 2004, Baird et al. 2016).

These programs were located in rural parts of Busia District (now Busia County) in western Kenya. As such, the survey sample is comprised of those who were in primary school in rural Busia in the late 1990s and early 2000s.<sup>7</sup> As of the 2009 census, 13 percent of Busia's population lived in an urban area, primarily Busia Town (population of about 40,000) (KNBS 2009). Levels of development in Busia are relatively low: the poverty rate is about 64 percent, relative to the national rate of 45 percent, and life expectancy is about 9 years lower than the national average.<sup>8</sup> The majority of the population in Busia are ethnic Luhya (61 percent), Teso (29 percent), and Luo (6 percent) (KNBS 1989).<sup>9</sup> Although Luhya politicians have never held the presidency, the group's size has made it important in national politics. The Luhya's importance was underscored in 2002, when both major presidential candidates selected ethnic Luhyas as their vice presidential running mates.

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<sup>7</sup> Follow-up survey rounds track individuals to their current residence, however – throughout Kenya and beyond.

<sup>8</sup> See the Busia County official webpage: [http://www.busiacyounty.go.ke/?page\\_id=144](http://www.busiacyounty.go.ke/?page_id=144).

<sup>9</sup> We use 1989 census figures here because district-level ethnicity figures from the 2009 census are not publicly available.

Three rounds of KLPS data collection have been completed, during 2003-2007 (KLPS-1)<sup>10</sup>, 2007-2009 (KLPS-2), and 2011-2014 (KLPS-3).<sup>11</sup> Figure 1 describes the timeline. During this time period, Kenya held two general elections: the aforementioned 2007 election that resulted in post-election violence and an election in 2013.<sup>12</sup> Kenyans also voted in two constitutional referenda: a 2005 referendum in which voters rejected the proposed constitutional changes, and a 2010 referendum that led to the adoption of a new constitution.

-- Figure 1 about here --

The timing of KLPS-2 is worth noting, as the survey was conducted in two waves – one before and one after the violence surrounding the 2007 elections. Importantly, survey participants were assigned to each wave at random, creating representative subsamples. In our empirical analyses, we use survey-wave fixed effects to control for differences that may be driven by exposure to the post-election violence and other time specific events.

Tracking rates in the KLPS are high, especially given the low-income country setting. Tracking was performed in two phases, following the methodology of the well-known Moving to Opportunity study in the U.S. (Orr et al. 2003; Kling, Liebman, and Katz 2007). As a result, we

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<sup>10</sup> KLPS-1 data collection entailed first surveying the PSDP sample of respondents (2003-2005), and then the GSP sample of respondents (2005-2007).

<sup>11</sup> KLPS-2 was collected for the deworming subsample only. Thus, three rounds of data have been collected for the deworming program subsample, and two rounds for the scholarship program subsample.

<sup>12</sup> Kenya holds concurrent presidential and parliamentary elections.

report “effective tracking rates” here.<sup>13</sup> In particular, KLPS-1 (PSDP sample) achieved an effective tracking rate of 84.4%, KLPS-1 (GSP sample) achieved 84.0%, KLPS-2 achieved 82.5%, KLPS-3 (PSDP sample) achieved 87.3%, and KLPS3 (GSP sample) achieved 84.3%.<sup>14,15</sup>

The KLPS includes a number of political outcomes that are relevant for the present study. A recent study of the impacts of the GSP featured analysis of some of these political outcomes using the first data collection round (KLPS-1) for the scholarship program subsample (Friedman et al. 2015). We detail the survey items and outcome variables in Section 5.1 below.<sup>16</sup>

## 5. Empirical Strategy and Measurement

As specified in our pre-analysis plan, the main regression model is:

$$Y_{it} = \alpha + \beta Urban_{it} + X'_{it} \theta + \delta_i + \gamma_t + \varepsilon_{it} \quad (1)$$

where  $Y_{it}$  is an outcome for individual  $i$  at time  $t$ ;  $Urban_{it}$  is an indicator variable that takes a value of 1 if the individual resides in an urban area (or Nairobi/Mombasa in some specifications) at time  $t$ ;  $\gamma_t$  are survey round and wave fixed effects to control for time period effects (proximity to elections, seasonal effects, and so on); and  $\delta_i$  are individual fixed effects.  $X'_{it}$  is a vector of time-

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<sup>13</sup> For more detail on this approach, see Baird et al. (2008).

<sup>14</sup> There is a tracking rate for KLPS-1 because it was conducted several years after the non-governmental programs that defined the KLPS sample were implemented.

<sup>15</sup> Tracking rates among fully female samples (like the GSP) are typically lower in this context, where women in this age group frequently move for marriage and informal employment opportunities.

<sup>16</sup> These are also detailed in our pre-analysis plan.

varying individual controls, including age, an indicator for participation in a randomized vocational training voucher intervention which launched in 2008 (between KLPS Rounds 2 and 3), and treatment status in that program.<sup>17</sup> Regressions are weighted to maintain initial population proportions, in order for the results to be interpreted as broadly representative of the sample of rural western Kenya youth from the original evaluations. Error terms are clustered at 1998/2001 primary school level (corresponding to the level of randomization for the earlier programs from which these KLPS respondents were drawn).

This analytical approach improves upon cross-sectional analysis on two critical dimensions. Crucially, the individual fixed effects control for all time invariant differences between respondents, including those that are unobserved and may drive the decision to move to an urban area. This increases our confidence that selection bias into urban migration is not driving the results. In addition, this approach captures whether urban migration is associated with individual-level changes in outcomes, which provides a more precise test of the theory.

To interpret  $\beta$  as a causal effect, we must invoke the standard panel data “parallel trends” assumption (Angrist and Pischke 2008). That is, we must consider that possibility that urban migration is confounded with individual-level time trends. For example, if urban migrants are trending toward becoming “less ethnic” or more (less) trusting before they leave rural areas, this

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<sup>17</sup> Note that all individuals in the overall KLPS sample participated in one of two additional evaluations, as described in section 2. However, as both of these interventions were completed prior to the first round of KLPS data collection, participation and treatment status do not vary over time in the analysis dataset used here, and are absorbed in the individual fixed effects. For more information on the vocational training intervention, see Hicks et al. (2013).

would bias the estimates of urbanization’s impact. Although we cannot completely rule this out with our data – trends before KLPS-1 are not measured – we provide two pieces of evidence that support the plausibility of a causal interpretation. First, we show below (Table 2) that the importance of ethnic identity and trust are not significant individual-level predictors of subsequent urban migration. Urban migrants therefore look similar to rural residents on our key outcomes before they move. Second, we examine trends in ethnic identification and trust across the three KLPS rounds (Figures 2-4). As discussed below, these figures provide some evidence of parallel trends that precede the divergence between urban and rural residents that we find in the data.

Another potential concern is that fixed effects estimates are driven by the subset of individuals observed to be living in both rural and urban areas at some point in the panel dataset, and are thus “local” effects for this subgroup of movers. This reliance on a subgroup for identification also implies that fixed effects estimates may be less precise than their cross-sectional analogues. Fortunately, as we show below, a large proportion of the sample move between rural and urban areas, resulting in estimates that are both quite precise and representative of the sample.

In summary, although there are reasons to be cautious about a causal interpretation, the individual fixed effects analyses meaningfully improve upon cross-sectional approaches, putting us on firmer empirical footing when assessing the political consequences of urban migration.

## **5.1 Measurement**

We employ two main measures of urban residence. First, following Hicks et al. (2017), we use a survey-based measure to define an *urban resident*. In particular, KLPS-3 respondents are asked whether they live in a “town/city” or “rural area”, and we consider the residence to be urban if they report living in a town/city. We use the town/city they specify to generate a list of urban areas. The



list contains more than 15 towns and cities with populations ranging from about 30,000 to over 3 million (the latter being Nairobi). Although KLPS Rounds 1 and 2 did not share this same town/city versus rural area reporting dichotomy, we apply the list of towns generated using the KLPS-3 data to the other two rounds for consistency. Second, we analyze a measure which only considers *Nairobi and Mombasa* – the two major cities in Kenya – to be urban.

We measure *ethnic identification* in two ways. Our main measure captures the *importance* of ethnic identity with a survey item that reads as follows: “Is your ethnic or tribal origin somewhat important, very important or not very important to your life?” We create a three-point scale where 1 means “not very important,” 2 means “somewhat important,” and 3 “very important.” This measure is available in all three KLPS rounds (Appendix Table A1).

Second, we measure *the salience* of ethnic identity relative to other identities with the following open-ended question:<sup>18</sup>

“We have spoken to many people and they have all described themselves in different ways. Some people describe themselves in terms of their language, religion, race, gender, and others describe themselves in economic terms, such as working class, middle class, or a farmer. Besides being a Kenyan, which specific group do you feel you belong to first and foremost?”

Enumerators coded responses into one of five categories: ethnicity/language, religion, class/occupation, gender, and other. We create a binary variable that takes a value of 1 if the response is in the ethnicity/language category, and 0 otherwise.

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<sup>18</sup> This item is included in early rounds of the Afrobarometer surveys, and has been analyzed by Eifert, Miguel, and Posner (2010).

The salience survey item was only included in Wave 2 of KLPS-2 and in KLPS-3 (see Appendix Table A1). The sample is therefore limited to those who were randomly assigned into Wave 2 in Round 2 and we can only analyze changes from Rounds 2 to 3 in this sub-sample. We are therefore more cautious in drawing general conclusions from the results on this item.<sup>19</sup>

To measure *trust*, we use survey items capturing trust in “most people,” co-ethnics, members of other tribes, members of the respondent’s church/mosque, and members of other churches/mosques. The items are in a similar format: for example, “in general, can you trust members of your tribe?” Response options are yes (1) or no (0). We create a trust index and analyze each item individually. These items were included in all three KLPS rounds.

In addition to these variables, we create a broader set of outcome measures capturing political and civic participation, religiosity and religious identity, attitudes about democracy, political knowledge, and access to the media. Appendix Table A1 lists and provides details on these measures. Where appropriate, we combine survey questions into indices (as indicated in the table). In all such instances, we present the results on the index and, in Appendix Table A2, present results on the individual components.<sup>20</sup>

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<sup>19</sup> This item was not included in our pre-analysis plan.

<sup>20</sup> In the main tables, we report the sample that is consistent across the entire index for the subcomponents. To construct indices, we employ the following procedure: a) for each sub-question in a family of variables, first align answers so that higher numbers always have a consistent meaning (i.e., ‘good’ or ‘bad’); b) calculate the mean and standard deviation of responses to each sub-question among those who live in rural areas (pooling rural observations across all rounds); c) create normalized variables that have the rural mean subtracted off and are

## 5.2 Descriptive Statistics

Table 1 presents descriptive statistics (means and standard deviations) for each urbanization measure as well as the key ethnicity and trust outcomes that we focus on below. Overall, 35 percent of the sample lived in an urban area at the time of survey enumeration. This percentage increases from 32 percent in KLPS-1 to 38 percent in KLPS-3. About 15 percent were living in Nairobi or Mombasa at the time of survey. Only 5 percent lived in one of these major cities in KLPS-1, reflecting the baseline sampling from rural schools. This proportion increases to 14 percent in KLPS-2 and 25 percent by KLPS-3. On average, our respondents lived in urban areas for 3.5 years, a figure that increases from 2 years in KLPS-1 to almost 5 years by KLPS-3. In total, 49 percent of the sample is observed living in both rural and urban areas in the panel dataset (25 percent using the Nairobi/Mombasa definition); the fixed effects estimates are generated among these movers, who compose a sizeable portion of our dataset.

-- Table 1 about here --

The importance of ethnic identity is very high in the sample, with an average of 2.85 (scale from 1-3). This figure starts at 2.79, moves up to 2.92 in KLPS-2, and then shifts down slightly to 2.86 in KLPS-3. About 38 percent report that ethnicity is the identity category that they most identify with, a figure that starts off quite high (53 percent in KLPS-2 survey wave 2, right after the ethnically charged 2007 elections), and drops to 31 percent in KLPS-3. Regarding trust, trends on the index show that general levels of trust in this sample diminished over the study time period.

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divided by the rural standard deviation; and d) calculate the raw mean of the normalized variables across all sub-questions.

Trust in other ethnic groups is relatively low: about 23 percent agree that most people from other tribes can be trusted. This figure is lowest in KLPS-2 (21 percent), which was conducted around the 2007 elections. Finally, trust in coethnics diminished substantially over the study period. In KLPS-1, 75 percent agreed that most members of their own tribe could be trusted. This drops to 52 percent in KLPS-2 and just 40 percent in KLPS-3.

## **6. Results**

### **6.1 Predictors of Migration to an Urban Area**

We first present results on the predictors of migration to an urban area and to Nairobi/Mombasa (Table 2). The dependent variable is the binary measure of urban residence, or residence in Nairobi/Mombasa, and the independent variables are lagged. Results indicate how individual characteristics measured in a survey round predict residence in an urban area in the next survey round.<sup>21</sup>

The most robust result is that those with more education are more likely to migrate. Each year of education attained increases the probability of urban migration by about 3-4 percentage points; thus, those who complete primary schooling (8 years) are about 12-16 percentage points more likely to migrate than are those with only four years of schooling. Those with fewer children in their household are less likely to migrate. Women and those who are married also appear less likely to migrate, although these results are not robust across models. There is also suggestive

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<sup>21</sup> Appendix Table A3 presents the same analyses, restricting the sample to be the same in all columns. The results are comparable to Table 2.

evidence that those who have a job or own a business are less likely to move, while those who are engaged in farming are more likely to move.

-- Table 2 about here --

We also examine how political attitudes and behaviors predict urban migration (columns 3 and 6). The importance of ethnic and tribal origin is not associated with subsequent urban migration. Democratic attitudes and trust also do not predict urban migration. Voting in the previous election is negatively correlated with a future move to a city; although this association is not statistically significant, the direction is relevant given research highlighting that voter turnout rates are often lower in Africa's urban areas.

## **6.2 Participation, Attitudes, Knowledge, and Media Consumption**

We now present estimates of urban migration's impact on political and civic participation, democratic attitudes, political knowledge, and media consumption (Table 3). To demonstrate the benefit of our approach, we compare the fixed effects estimates to cross-sectional estimates using the same dataset.<sup>22</sup>

-- Table 3 about here --

We find no evidence of an impact of rural-urban migration on voter turnout (row 1).<sup>23</sup> The negative association between urban residence and voting – evident (but not statistically significant) in the cross-sectional regressions and the Kenyan Afrobarometer data (see Appendix Tables A5-

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<sup>22</sup> We also conduct tests to determine whether the fixed effects estimates are statistically different than the cross-sectional estimates. In most but not all cases, we cannot reject equality.

<sup>23</sup> We include the 2005 and 2010 constitutional referenda as national elections in this analysis.

A9) – thus appears to be driven by selection. Once we account for differences between those living in urban and rural areas through the use of individual fixed effects, there is a positive, though not statistically significant, connection between urban residence and voting.

We find no evidence that urban migration has an impact on the political participation index or any of its components. For example, there is no effect of urban migration on the likelihood of attending protests or demonstrations or on having political discussions with friends and family (Appendix Table A2); that said, the political participation effects are relatively imprecisely estimated compared to other outcomes. By contrast, migration to urban areas does significantly reduce civic participation ( $p < 0.05$ ), an effect that is especially large for Nairobi/Mombasa residents ( $p < 0.01$ ). These effects are driven by three components of the index: membership in bible study groups, school committees or groups, and sports teams.

There is no evidence that migration to an urban area increases pro-democracy attitudes or influences attitudes about political violence. We also examine satisfaction with authority, economics and politics, political efficacy, and attitudes about political authority and find that urbanization has no effect on these attitudes. Urban migration does, however, lead to substantial increases in political knowledge and media consumption ( $p < 0.01$ ), and these are particularly large for migration to Nairobi/Mombasa.

### **6.3 Ethnic Identification and Trust**

We now turn to our main analyses estimating the impact of rural-to-urban migration on ethnic identification and trust (Table 4). Row 1 of Table 4 presents results on the importance of ethnic identity (standardized). Migration to urban areas significantly reduces the importance individuals attach to their ethnic or tribal origin ( $p < 0.05$ ). The effect size is not trivial given the

salience of ethnicity in the Kenyan context: about 0.10 standard deviations. The coefficient's magnitude doubles (in absolute value) when we focus on migration to Nairobi and Mombasa: the effect is about 0.20 standard deviations ( $p < 0.01$ ). The negative effect of urban residence grows larger (in absolute value) with every year that the respondent resides in an urban area ( $p < 0.05$ ). For instance, the effect size among those who spent 7.5 years in an urban area (one standard deviation above the mean) is about 0.30 standard deviations. This is equivalent to a reduction in the stated importance of ethnic or tribal origin from 2.86 (the reported mean among those in rural areas) to 2.75.

-- Table 4 about here --

To further investigate these results, Figure 2 presents the unadjusted means of the importance of ethnic identity variable (standardized) by survey round for four different groups of respondents (using the general urban measure). Panel A compares trends among those who lived in rural areas in all 3 rounds (circles) to those who were rural in round 1 but urban in rounds 2 and 3 (triangles). Both groups were at the same level in round 1. Both trend upward from round 1 to round 2, likely because the 2007 election heightened the importance of ethnicity for all respondents. Then, from round 2 to round 3, these groups diverge considerably, with the importance of ethnic identity significantly smaller in the urban group. Panel B compares trends in the always rural sample to those who were rural in round 1, urban in round 2, but then rural in round 3 (diamonds). The patterns from round 1 to round 2 are very similar to those observed in the left panel: both groups show increases during this period. However, the trend from round 2 to round 3 differs substantially from Panel A, as those who lived in urban areas in round 2 but rural areas in round 3 converge with the always rural sample. Panel C compares the always rural group to those who were rural in rounds 1 and 2 but urban in round 3 (squares). Those who eventually

move to an urban start out with a somewhat higher attachment to their ethnicity in round 1. The groups trend upward and begin to converge in round 2. In round 3, the groups diverge, and the urban population attaches significantly lower levels of importance to their ethnic identity.

These patterns further bolster the evidence that urban migration reduced the importance of ethnic identity. They also allow us to examine the parallel trends assumption required for a causal interpretation. Although we cannot observe trends before round 1, all four groups were trending similarly from round 1 to round 2. The trends are especially comparable when we focus on the left and center panels, where all three groups trend similarly from almost identical starting points in round 1. The divergence between urban and rural residents emerges in round 3. The figure thus provides some evidence to support a causal interpretation of the estimates.

-- Figure 2 about here --

Although urban migration reduced the absolute importance of ethnicity, there is no evidence that it altered the salience of ethnicity relative to other identities (Table 4, row 2). We note, however, that this analysis draws upon a limited subsample.<sup>24</sup> In addition, while cross-sectional analyses suggest that urban migration is associated with a reduction in religiosity, this result is not robust to the inclusion of individual fixed effects: the coefficients drop substantially in magnitude and are no longer statistically significant.

The remainder of Table 3 present results for trust. Residence in any urban area has no impact on the Trust Index, or on any of its components. Ethnic identity does not appear to become less important simply because trust in other groups increases. Migration to one of the two major

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<sup>24</sup> The number of observations reported is at the respondent-round level. Data for this outcome is only available for half of the KLPS-2 sample.



cities did, however, significantly reduce trust ( $p < 0.05$ ). In particular, migration to Nairobi or Mombasa had a negative impact on trust in other ethnic groups ( $p < 0.05$ ), evidence that the experience of living in these major cities decreased trust in out-group members. Notably, migration to major cities has a negative impact on all components of the trust index, including a significant negative impact on trust in members of the respondent's own church or mosque ( $p < 0.05$ ). Urbanization appears to reduce trust in most people, consistent with Putnam's (2007) "constrict theory".

To examine the trust results in more depth, Figure 3 presents the unadjusted means of the trust index by survey round among the four groups introduced in Figure 2. The patterns are similar to those in Figure 2. In Panels A and B, the always rural group is more trusting than the groups that eventually move to an urban area. All three groups trend down at about the same rate from round 1 to round 2, perhaps because of the 2007 elections. Notably, those who remain in the urban areas in round 3 continue trending down in their trust (triangles in Panel A), while those in the rural always sample and those who return to rural areas in round 3 (diamonds in Panel B) trend back upward in trust. In Panel C both groups start from about the same position and trend down similarly in round 2. While the always rural group shows increases in round 3, the group that moves to an urban area continues to show reductions in trust. These patterns strengthen the causal evidence that urban migration reduces trust, though some caution is still required.

-- Figure 3 about here --

In Figure 4, we illustrate the proportion of each group that believes that most members of *other* ethnic groups can be trusted. While all groups show downward trends from round 1 to round 2, the reductions in trust of non-coethnics are most pronounced among those living in urban areas during round 2 (Panels A and B). This suggests that the negative impact of urban migration on

trust in out-group members appears to be mainly driven by round 2. Since round 2 was conducted in close temporal proximity to the intensely contested and ethnically charged 2007 elections, this pattern appears to corroborate “second generation” expectations: that urban migration makes ethnic differences more relevant in contexts of high political competition. Consistent with this notion, the events leading up to and following the 2007 elections had a greater impact on urban residents’ trust in other tribes than it did on rural residents.

-- Figure 4 about here --

One might be concerned that the trends in Figure 4 are mainly driven by the post-election violence in 2007-08, especially since much – though not all – of the violence occurred in urban areas. However, the patterns are nearly identical for those who were randomly assigned to be interviewed during Wave 1 of KLPS-2, which took place *before* election day and thus preceded the post-election violence. The patterns in Figure 4 therefore appear to reflect the impact of more general forms of heightened national political and electoral competition.

Finally, as pre-specified, we examine robustness to a multiple comparisons adjustment. Across the main outcome indices analyzed in Tables 3 and 4, we compute False Discovery Rate (FDR) adjusted q-values that limit the expected proportion of rejections within a set of hypotheses that are Type I errors. These results are presented in Appendix Table A4. The main results on ethnic identification and trust are largely robust to this adjustment, with some reductions in statistical significance that do not substantively alter the broad interpretation.

## **6.4 Heterogeneity**

Table 5 presents results of heterogeneity analyses for the importance of ethnicity outcomes. We first analyze interactions between urban residence and age, gender, and socio-economic status

(SES), the three interactions that were pre-specified in the pre-analysis plan. Since SES at the time of the survey may be endogenous to urban migration, we use parents' education as a proxy for individual SES. Overall, urban migration appears to reduce the importance of ethnic identity for everyone, though there is evidence that the effect is larger for older respondents and, in the case of Nairobi and Mombasa, people whose parents had higher levels of education. In the final columns, we also include interactions with the respondent's own education and sector of employment. These outcomes could be endogenous to urban migration, and so these analyses are more exploratory and suggestive. We find no significant interactions. Table 6 presents the same results on trust. Once again, we do not find strong evidence of heterogeneous effects.

-- Table 5 about here --

-- Table 6 about here --

Together, Tables 5 and 6 provide evidence that the effects we identify generalize to a broad range of people, and are not being driven by particular sub-groups in our sample.

## **7. Conclusion**

Urbanization plays a central role in the literature on the political economy of development and political change. We advance this literature by presenting novel evidence on the impact of rural-to-urban migration on ethnic identification and trust, relationships about which two important bodies of literature offer competing expectations. We also present results on urbanization's impact on a range of other key political outcomes, including political participation, democratic attitudes, and political knowledge. Importantly, the evidence is based on analyses of panel data that allow us to control for individual fixed effects and to track how individuals change over time as they migrate to and from urban areas. We are therefore on firmer ground interpreting our results

causally.

A central finding is that urban migration significantly reduced the importance individuals attach to their ethnic identity. This effect, which corroborates first generation modernization theory, was largest among migrants to major cities and those who reside in urban areas for longer periods of time. However, another central result is that rural-to-urban migration significantly reduced social trust. Notably, urban migrants became significantly less trusting of members of other ethnic groups, especially in a period of intense electoral competition and in major cities, a finding that is more consistent with second generation modernization expectations. In short, urban migrants became less attached to their own ethnic identity, but more suspicious of members of other groups, and other people in general.

These findings suggest several areas where additional research will be fruitful. One concerns generalizability. The three-wave panel data that we analyze is unusual in this literature and permits a research design with a relatively high degree of internal validity. However, the data include individuals sampled (at baseline) from one district in one country, which constrains our ability to make confident generalizations. Second, as noted above, a limitation of the fixed effects approach is that it does not allow us to estimate our key relationships among non-movers. Given the current empirical literature, we believe this cost is well worth the increased internal validity that our research strategy affords. Furthermore, the historical and contemporary role of ethnicity in Kenya's political, economic, and social dynamics make it a "least likely" case in which to discover individual-level changes in ethnic attitudes. If urban migration can reduce the importance of ethnic identity in Kenya, we expect it would also do so in other contexts where ethnic identification is less deep-rooted, though future research should conduct similar analyses in other environments.

Future research could also examine in more depth the mechanisms driving the relationships that we identify, as well as the reasons why urban migration simultaneously reduces ethnic identification and inter-ethnic trust. Regarding the latter, our findings provide speculative evidence about the role of the political context (Thachil 2017). The evidence suggests that urban residence had the largest negative impact on trust in members of other tribes in the time period surrounding the 2007 elections (Figure 4), a period of heightened competition between groups. It also suggests that the negative impact of urban residence on ethnic identification was largely driven by changes that occurred in KLPS-3 conducted from 2011-14 (Figure 2). As Horowitz and Kim (2016) have argued, this latter time period is one characterized by the emergence of new social norms against tribalism and ethnic politics in Kenya, largely in response to the trauma of the 2007 violence. Since these social norms may be emerging more strongly in the urban areas, this could explain the timing of the ethnic identification results. In short, the political context associated with KLPS-2 may have facilitated a negative impact of urbanization on inter-group trust, while the political context associated with KLPS-3 may have been more conducive to a negative impact of urban migration on ethnic identification. Future research could more directly test how and why the political and social context conditions the impact of urban migration.

Finally, future research should examine how changes in ethnic identification and trust translate into broader transformations in ethnic voting behavior and ethnic-based political mobilization. As Nathan (2016) emphasizes, reductions in ethnic identification in urban areas are not guaranteed to eliminate ethnic voting or political mobilization along ethnic lines. If voters in urban areas continue to have instrumental incentives to support coethnics or face pressure from social networks to support coethnic candidates, ethnicity can remain salient in electoral politics even as psychological attachments to ethnic identity and individual ethnic bias both diminish

(Nathan 2016, Berge et al 2018). Nevertheless, there is evidence of a more class-based politics emerging in some cities in Africa and elsewhere in the Global South. It will be important for future research to investigate how and when the individual-level changes in ethnic identification and trust associated with urbanization that we have identified result in transformations in the nature of ethnic politics.

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**Table 1: Summary statistics on urbanization, ethnicity and trust in the KLPS**

Outcome	Num Obs	Mean	Std.Dev.
Indicator for residence in urban area <sup>1</sup>	19,259	0.353	0.478
KLPS 1	7,040	0.316	0.465
KLPS 2 (PSDP)	5,050	0.360	0.480
KLPS 3	7,169	0.384	0.486
"Mover" <sup>2</sup>	6,936	0.490	0.500
Indicator for residence in Nairobi/Mombasa	19,259	0.146	0.353
KLPS 1	7,040	0.049	0.215
KLPS 2 (PSDP)	5,050	0.139	0.345
KLPS 3	7,169	0.251	0.433
"Mover" <sup>2</sup>	6,936	0.232	0.422
Cumulative time spent urban area (in years)	19,195	3.538	3.961
KLPS 1	7,040	2.109	2.834
KLPS 2 (PSDP)	5,013	3.622	3.758
KLPS 3	7,142	4.931	4.564
Importance of ethnic identity	19,090	2.853	0.416
KLPS 1	7,050	2.789	0.460
KLPS 2 (PSDP)	4,788	2.917	0.302
KLPS 3	7,252	2.864	0.439
Ethnic identity most important	9,835	0.376	0.484
KLPS 1	--	--	--
KLPS 2 (PSDP W2 only)	2,589	0.532	0.499
KLPS 3	7,246	0.308	0.462
Trust index	19,357	-0.026	0.706
KLPS 1	7,052	0.165	0.673
KLPS 2 (PSDP)	5,072	-0.099	0.71
KLPS 3	7,233	-0.157	0.696
Trust in other ethnic groups	19,357	0.233	0.423
KLPS 1	7,061	0.230	0.421
KLPS 2 (PSDP)	5,079	0.207	0.405
KLPS 3	7,256	0.257	0.437
Trust in own ethnic group	19,357	0.559	0.497
KLPS 1	7,061	0.747	0.435
KLPS 2 (PSDP)	5,079	0.520	0.500
KLPS 3	7,257	0.400	0.490

**Notes:** <sup>1</sup>The primary measure of "urban" used throughout our analysis is a measure of urban location (within Kenya only) that is self-defined in the survey by the KLPS respondent. This definition includes residence in cities and large towns in Kenya. <sup>2</sup>"Mover" is defined as a respondent that was surveyed in a rural area during at least one survey round, and an urban area during at least one other survey round.

**Table 2: Predictors of urbanization**

	Urban			Nairobi/Mombasa		
	(1)	(2)	(3)	(4)	(5)	(6)
Indicator for female	0.002 (0.015)	-0.021 (0.022)	-0.020 (0.038)	-0.013 (0.014)	-0.037* (0.015)	-0.068 (0.036)
Age (lagged)	0.009** (0.003)	-0.003 (0.005)	-0.009 (0.010)	0.008** (0.003)	-0.006 (0.003)	-0.018** (0.006)
Years education attained (lagged)	0.046** (0.004)	0.037** (0.008)	0.044** (0.010)	0.031** (0.003)	0.032** (0.005)	0.032** (0.009)
Indicator for married at survey (lagged)	-0.032 (0.023)	-0.032 (0.026)	-0.023 (0.044)	-0.046** (0.016)	-0.018 (0.017)	-0.045 (0.031)
Num children at survey (lagged)	-0.054** (0.010)	-0.038* (0.016)	-0.024 (0.019)	-0.028** (0.010)	0.000 (0.013)	0.016 (0.015)
Indicator for hh farmed in last 12 months (lagged)		-0.080 (0.164)	0.470** (0.054)		0.106* (0.050)	0.323** (0.044)
Indicator for had a job or business at survey (lagged)		-0.085 (0.077)	-0.202 (0.138)		-0.105 (0.070)	-0.307* (0.123)
Indicator for worked in agric at survey (lagged)		0.016 (0.074)	0.127 (0.147)		0.042 (0.069)	0.202 (0.127)
Indicator for worked in retail at survey (lagged)		0.040 (0.069)	0.220 (0.162)		0.071 (0.068)	0.259 (0.160)
Indicator for worked in unskilled at survey (lagged)		0.099 (0.085)	0.147 (0.138)		0.091 (0.076)	0.140 (0.119)
Indicator for worked in skilled at survey (lagged)		0.155 (0.091)	0.033 (0.147)		0.113 (0.094)	0.124 (0.128)
Indicator for worked in professional at survey (lagged)		0.048 (0.113)	0.139 (0.167)		0.045 (0.107)	0.140 (0.134)
Indicator for worked in other at survey (lagged)		-0.041 (0.194)	0.316 (0.402)		0.153 (0.190)	0.517 (0.383)
Indicator for crop destruction in last 12 months (lagged)		-0.019 (0.018)	-0.012 (0.032)		-0.020 (0.014)	0.004 (0.026)
Indicator for hh was displaced in last 12 months (lagged)		-0.045 (0.064)	0.028 (0.098)		0.001 (0.041)	0.087 (0.106)
1998 standardized test score		-0.007 (0.011)	0.030 (0.019)		0.001 (0.007)	0.028 (0.016)
Importance of ethnic and tribal origin (lagged)			0.000 (0.023)			0.008 (0.018)
Trust index (lagged)			0.010 (0.024)			-0.000 (0.018)
Democratic attitudes index (lagged)			0.008 (0.026)			-0.028 (0.023)
Indicator for voted previous national election (lagged)			-0.047 (0.033)			-0.018 (0.030)
Survey round and wave fixed effects	Yes	Yes	No	Yes	Yes	No
Number of observations	8112	3621	989	8112	3621	989

**Notes:** This table displays results of cross-sectional regressions, using the PSDP sample only. See the notes in Table 1 for our definition of urban residence. Additional controls include an indicator for assignment to the PSDP treatment group, an indicator for participation in the vocational training voucher program (lagged), and an indicator for assignment to the vocational training voucher treatment group (lagged). All regressions are weighted to maintain initial population proportions, and standard errors are clustered by the baseline primary school. \*  $p < 0.05$ ; \*\*  $p < 0.01$ . Columns (1), (2), (4), and (5) contain the sample from KLPS Rounds 2 and 3, and columns (3) and (6) contain the sample from KLPS Round 3 only (thus, survey round fixed effects are not needed for the latter columns). Columns (2) and (5) contain a 1998 standardized test score measure, which was only available for a subset of the baseline sample, and thus greatly reduces sample size in comparison to the previous column.

**Table 3: Results for participation, attitudes, knowledge, and information consumption**

	Cross-Sectional Regressions			Fixed Effect Regressions			
	Urban <sup>1</sup>	Nairobi/ Mombasa	Num Obs	Urban <sup>1</sup>	Nairobi/ Mombasa	Control grp mean (s.d.) <sup>2</sup>	Num Obs
	(1)	(2)		(3)	(4)		
Indicator for voted in previous national election, among voting age <sup>3</sup>	-0.012 (0.012)	-0.018 (0.015)	10746	0.016 (0.032)	0.031 (0.043)	0.498 (0.500)	7838
<i>Political Participation Index</i>	-0.043* (0.018)	-0.053** (0.019)	8910	-0.102 (0.098)	-0.106 (0.125)	-0.002 (0.713)	7638
<i>Civic Participation Index</i>	-0.065** (0.013)	-0.175** (0.018)	10201	-0.080* (0.039)	-0.208** (0.060)	0.006 (0.488)	6226
<i>Democratic Attitudes Index</i>	0.020 (0.017)	0.011 (0.022)	10714	-0.009 (0.054)	-0.026 (0.070)	0.002 (0.598)	8051
Indicator for agrees "It is sometimes necessary to use violence in support of a just cause"	-0.025** (0.009)	-0.030* (0.012)	13221	-0.027 (0.021)	-0.058 (0.030)	0.239 (0.426)	8506
<i>Satisfaction with Kenya Index</i>	-0.026 (0.023)	-0.036 (0.028)	10641	0.001 (0.053)	0.019 (0.070)	-0.126 (0.682)	8026
Indicator for (strongly) agrees should question leaders	0.046** (0.010)	0.062** (0.014)	13221	0.010 (0.027)	0.049 (0.035)	0.585 (0.493)	8506
<i>Political Efficacy Index</i>	0.024 (0.020)	-0.004 (0.020)	10754	0.035 (0.068)	0.002 (0.090)	-0.023 (0.688)	8059
<i>Media Consumption Index</i>	0.187** (0.018)	0.336** (0.030)	15887	0.159** (0.026)	0.298** (0.041)	-0.019 (0.662)	8820
Political Knowledge	0.063** (0.005)	0.083** (0.007)	15800	0.033** (0.009)	0.052** (0.012)	0.595 (0.275)	8717

**Notes:** Columns (1)-(2) present the results of cross-sectional regressions of the outcome measure (left-hand column) on a measure of urban location at time of survey, age, education level, and indicators for female, participated in the PSDP, was assigned to the treatment group in that program, was assigned to treatment in the GSP, participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and a full set of indicators for KLPS survey round and wave. Columns (3)-(4) present the results of fixed effect regressions of the outcome measure on a measure of urban location at the time of survey and age, as well as indicators for participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and KLPS survey round and wave. Outcome measures are constructed as described in Appendix Table A1, with any normalizations performed among the rural sample (as defined by "urban"). All regressions are weighted to maintain initial population proportions, and standard errors are clustered by baseline primary school. \* p < 0.05; \*\* p < 0.01. See Appendix Table A3 for results on the full set of pre-specified outcomes (including index components). <sup>1</sup>"Urban" is a measure of urban location that is self-defined in the survey by the respondent, and includes cities and large towns in Kenya. <sup>2</sup>The control group mean is calculated among the full sample of individuals who are living in a rural area at the time of survey administration (according to our primary measure of urban location). It is not restricted to the fixed effects regression sample, which is why values presented are not mean 0, standard deviation 1. <sup>3</sup>For the regressions of voted in previous election, urban location is defined at the time of the election, rather than at the time of the survey. For individuals interviewed in KLPS-1 in 2007 prior to the 2007 election, the outcome is defined as "indicator for intended to vote in the 2007 presidential election" rather than "Voted in the 2002 referendum".

**Table 4: Results for ethnicity, religion, and trust**

	Cross-Sectional Regressions			Fixed Effect Regressions				Num Obs
	Urban <sup>1</sup>	Nairobi/ Mombasa	Num Obs	Urban <sup>1</sup>	Nairobi/ Mombasa	Total years urban <sup>2</sup>	Control grp mean (s.d.) <sup>3</sup>	
	(1)	(2)		(3)	(4)	(5)		
Importance of ethnic and tribal origin (normalized)	-0.072** (0.023)	-0.120** (0.035)	18092	-0.093* (0.038)	-0.197** (0.067)	-0.041** (0.010)	0.014 (0.980)	8933
Indicator for language/ethnicity most important in self-identification	0.014 (0.013)	-0.001 (0.015)	8898	0.047 (0.057)	0.062 (0.103)	0.001 (0.019)	0.381 (0.486)	7629
<i>Religious identification index</i>								
Importance of religion (normalized)	-0.079** (0.018)	-0.116** (0.021)	8491	-0.067 (0.119)	-0.031 (0.117)	-0.024 (0.030)	0.059 (0.576)	7452
Indicator for increased religiosity over previous 12 months	-0.021 (0.029)	-0.037 (0.034)	8491	-0.079 (0.164)	-0.122 (0.157)	-0.034 (0.052)	0.063 (0.849)	7452
Indicator for increased religiosity over previous 12 months	0.054** (0.013)	0.018 (0.017)	8491	0.063 (0.082)	0.050 (0.085)	0.006 (0.021)	0.320 (0.466)	7452
<i>Trust Index</i>								
Indicator for believes most people can be trusted	-0.020 (0.016)	-0.056** (0.018)	18361	-0.019 (0.022)	-0.075* (0.034)	-0.006 (0.008)	0.014 (0.709)	8956
Indicator for trusts members of own tribe	-0.000 (0.007)	-0.002 (0.009)	18361	-0.009 (0.009)	-0.003 (0.016)	0.000 (0.003)	0.105 (0.306)	8956
Indicator for trusts members of other tribes	-0.004 (0.012)	-0.022 (0.013)	18361	-0.006 (0.018)	-0.026 (0.026)	-0.005 (0.005)	0.583 (0.493)	8956
Indicator for trusts members of other churches/ mosques	-0.007 (0.010)	-0.025* (0.012)	18361	-0.004 (0.013)	-0.044* (0.021)	-0.002 (0.004)	0.246 (0.430)	8956
Indicator for trusts members of own churches/ mosques	-0.018* (0.009)	-0.039** (0.014)	18361	-0.012 (0.016)	-0.066* (0.026)	-0.006 (0.005)	0.690 (0.463)	8956
Indicator for trusts members of other churches/ mosques	-0.017 (0.010)	-0.042** (0.014)	18361	-0.007 (0.019)	-0.032 (0.023)	-0.001 (0.005)	0.358 (0.480)	8956

**Notes:** For general table notes, see the notes for Table 3. Column (5) additionally presents results of fixed effect regressions, defining the measure of urban location as the cumulative number of years spent in an urban area. <sup>1</sup>"Urban" is a measure of urban location that is self-defined in the survey by the respondent, and includes cities and large towns in Kenya. <sup>2</sup>Urban measure here includes the total number of years spent in an urban area. Results are substantively the same if we instead use a measure of the length of most recent spell in an urban area (not shown). <sup>3</sup>The control group mean is calculated among the full sample of individuals who are living in a rural area at the time of survey administration (according to our primary measure of urban location). It is not restricted to the fixed effects regression sample, which is why values presented are not mean 0, standard deviation 1.

**Table 5: Results for importance of ethnicity - heterogeneity and mechanisms**

	Urban <sup>1</sup>		Nairobi/Mombasa			
	(1)	(2)	(3)	(4)	(5)	(6)
Indicator for urban residence	-0.139*	-0.142*	-0.140	-0.231*	-0.212	-0.158
	(0.068)	(0.068)	(0.079)	(0.116)	(0.116)	(0.145)
Indicator for urban * female	0.082	0.091	0.093	0.147	0.163	0.134
	(0.084)	(0.085)	(0.087)	(0.130)	(0.134)	(0.146)
Indicator for urban * age (demeaned)	-0.016*	-0.017*	-0.012	-0.015	-0.017	-0.014
	(0.007)	(0.007)	(0.009)	(0.016)	(0.015)	(0.019)
Indicator for urban * parent education (demeaned)		-0.017	-0.014		-0.042*	-0.037*
		(0.012)	(0.012)		(0.017)	(0.017)
Indicator for urban * Indicator for works in agriculture			0.130			-0.837
			(0.185)			(0.937)
Indicator for urban * Indicator for works in retail			0.104			0.168
			(0.096)			(0.153)
Indicator for urban * Indicator for works in unskilled trade			0.096			-0.013
			(0.138)			(0.179)
Indicator for urban * Indicator for works in skilled trade			-0.070			-0.028
			(0.166)			(0.206)
Indicator for urban * Indicator for works in professional			-0.427			-0.441
			(0.222)			(0.274)
Indicator for urban * Indicator for works in other			0.757			0.731
			(0.675)			(0.644)
p-value on joint test of urban * employment sector			0.236			0.352
Survey round and wave fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of individuals (FE)	8933	8719	8667	8933	8719	8667

**Notes:** Columns (1)-(6) present the results of fixed effect regressions of the outcome measure on a measure of urban location at the time of survey and all terms included in the interactions, as well as indicators for participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and KLPS survey round and wave. The outcome measure is "importance of ethnic and tribal origin", and is constructed as described in Appendix Table A1 and the notes for Table 3. All regressions are weighted to maintain initial population proportions, and standard errors are clustered by the baseline primary school. \*  $p < 0.05$ ; \*\*  $p < 0.01$ . <sup>1</sup>"Urban" is a measure of urban location that is self-defined in the survey by the respondent, and includes cities and large towns in Kenya.

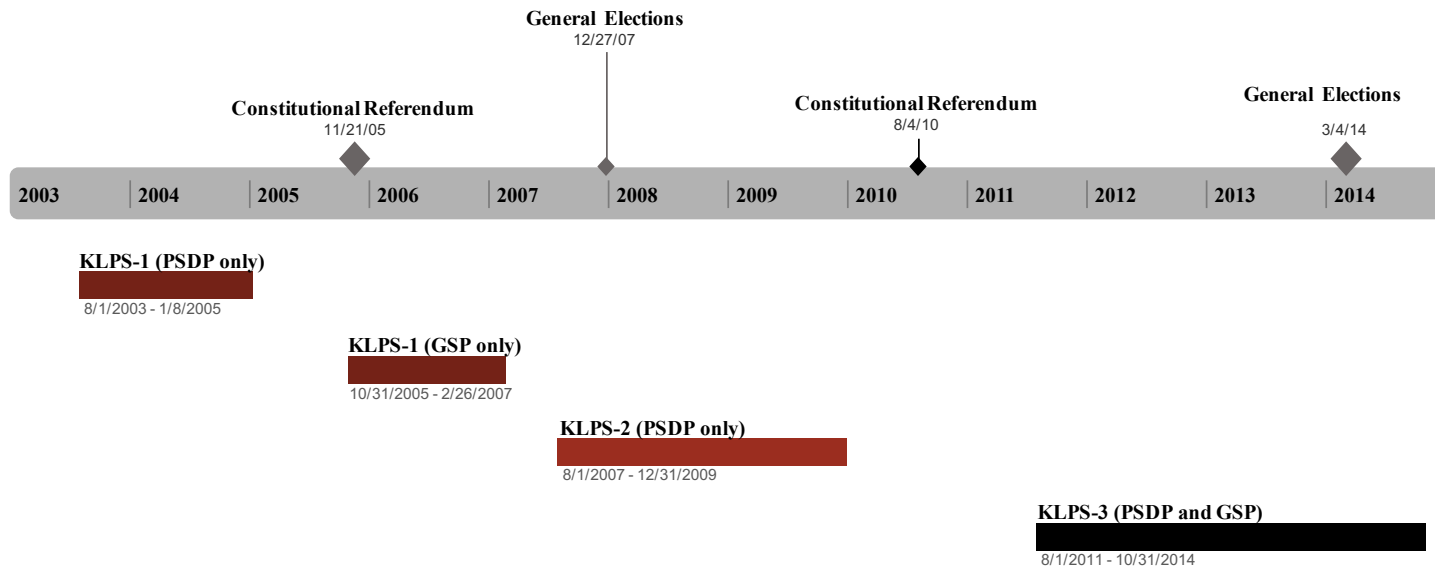
**Table 6: Results for trust index - heterogeneity and mechanisms**

	Urban <sup>1</sup>		Nairobi/Mombasa			
	(1)	(2)	(3)	(4)	(5)	(6)
Indicator for urban residence	-0.053 (0.031)	-0.049 (0.030)	-0.081 (0.043)	-0.089 (0.054)	-0.074 (0.054)	-0.077 (0.064)
Indicator for urban * female	0.062 (0.045)	0.056 (0.045)	0.093 (0.052)	0.029 (0.073)	0.024 (0.072)	0.026 (0.078)
Indicator for urban * age (demeaned)	-0.013 (0.007)	-0.013 (0.007)	-0.015 (0.008)	0.000 (0.008)	-0.002 (0.009)	-0.003 (0.011)
Indicator for urban * parent education (demeaned)		-0.005 (0.008)	-0.004 (0.009)		-0.006 (0.011)	-0.003 (0.011)
Indicator for urban * Indicator for works in agriculture			0.113 (0.099)			-0.057 (0.286)
Indicator for urban * Indicator for works in retail			-0.022 (0.067)			-0.008 (0.079)
Indicator for urban * Indicator for works in unskilled trade			0.072 (0.086)			0.024 (0.122)
Indicator for urban * Indicator for works in skilled trade			0.112 (0.115)			0.066 (0.101)
Indicator for urban * Indicator for works in professional			-0.035 (0.117)			-0.121 (0.114)
Indicator for urban * Indicator for works in other			0.037 (0.577)			-0.181 (0.421)
p-value on joint test of urban * employment sector			0.681			0.886
Survey round and wave fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of individuals (FE)	8956	8739	8685	8956	8739	8685

**Notes:** Columns (1)-(6) present the results of fixed effect regressions of the outcome measure on a measure of urban location at the time of survey and all terms included in the interactions, as well as indicators for participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and KLPS survey round and wave. The outcome measure is "trust index", and is constructed as described in Appendix Table A1 and the notes for Table 3. All regressions are weighted to maintain initial population proportions, and standard errors are clustered by the baseline primary school. \* p < 0.05; \*\* p < 0.01. <sup>1</sup>"Urban" is a measure of urban location that is self-defined in the survey by the respondent, and includes cities and large towns in Kenya.

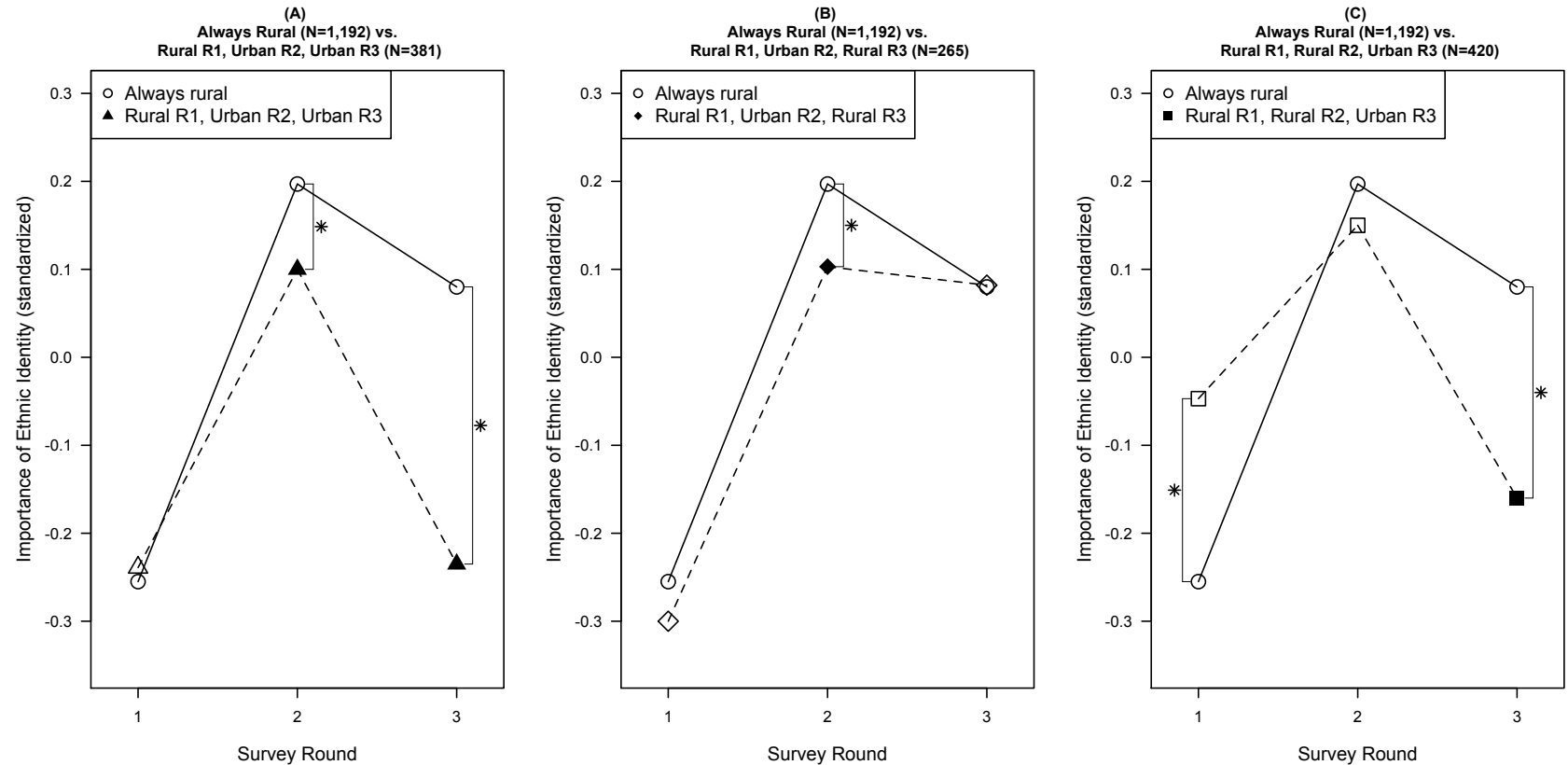


Figure 1: Timeline of Data Collection and Political Events



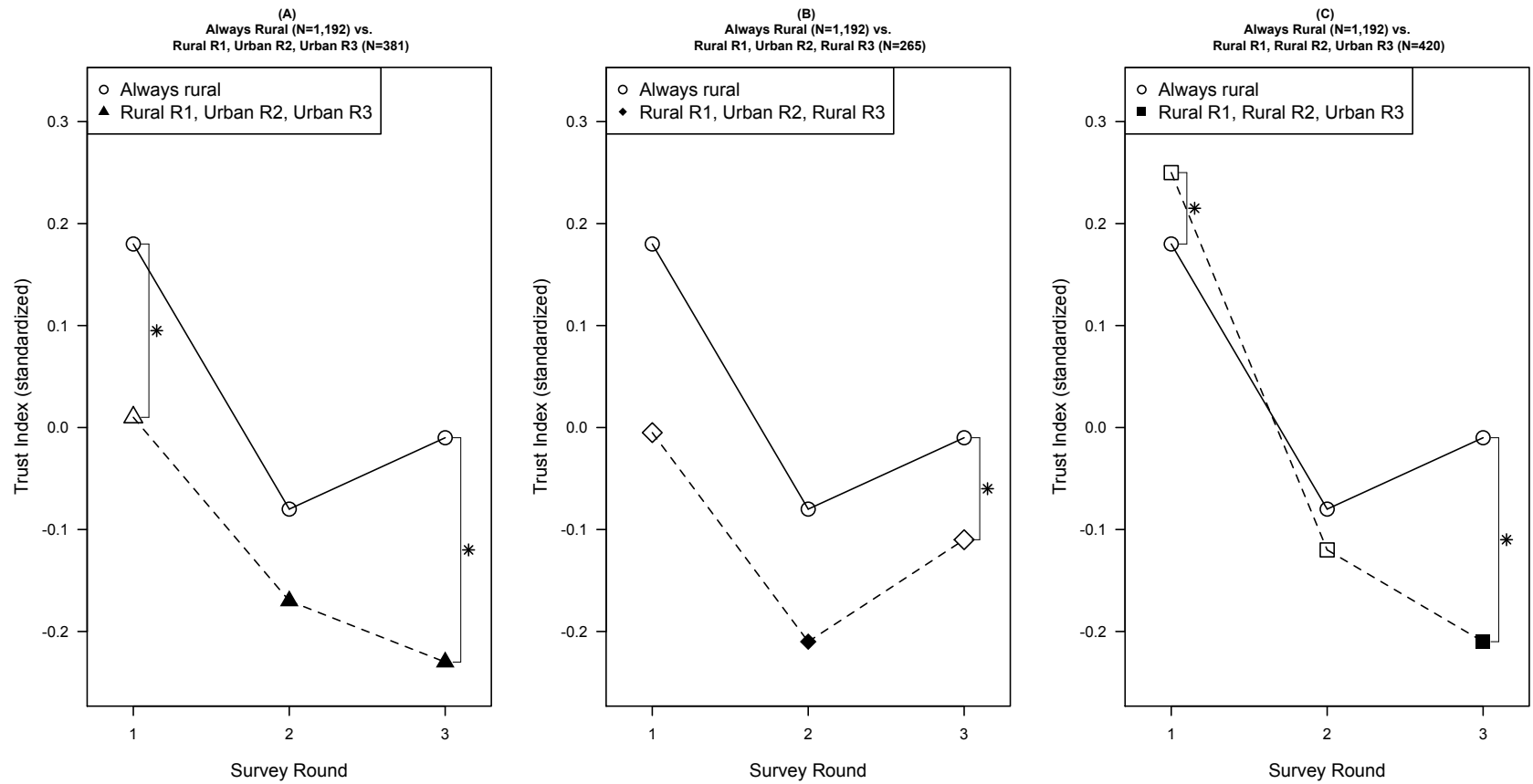
Note: KLPS denotes Kenya Life Panel Survey. GSP denotes Girls Scholarship Program. PSDP denotes Primary School Deworming Program.

Figure 2: The Importance of Ethnic Identity, by Survey Round and Urban/Rural Location (General Urban Coding)



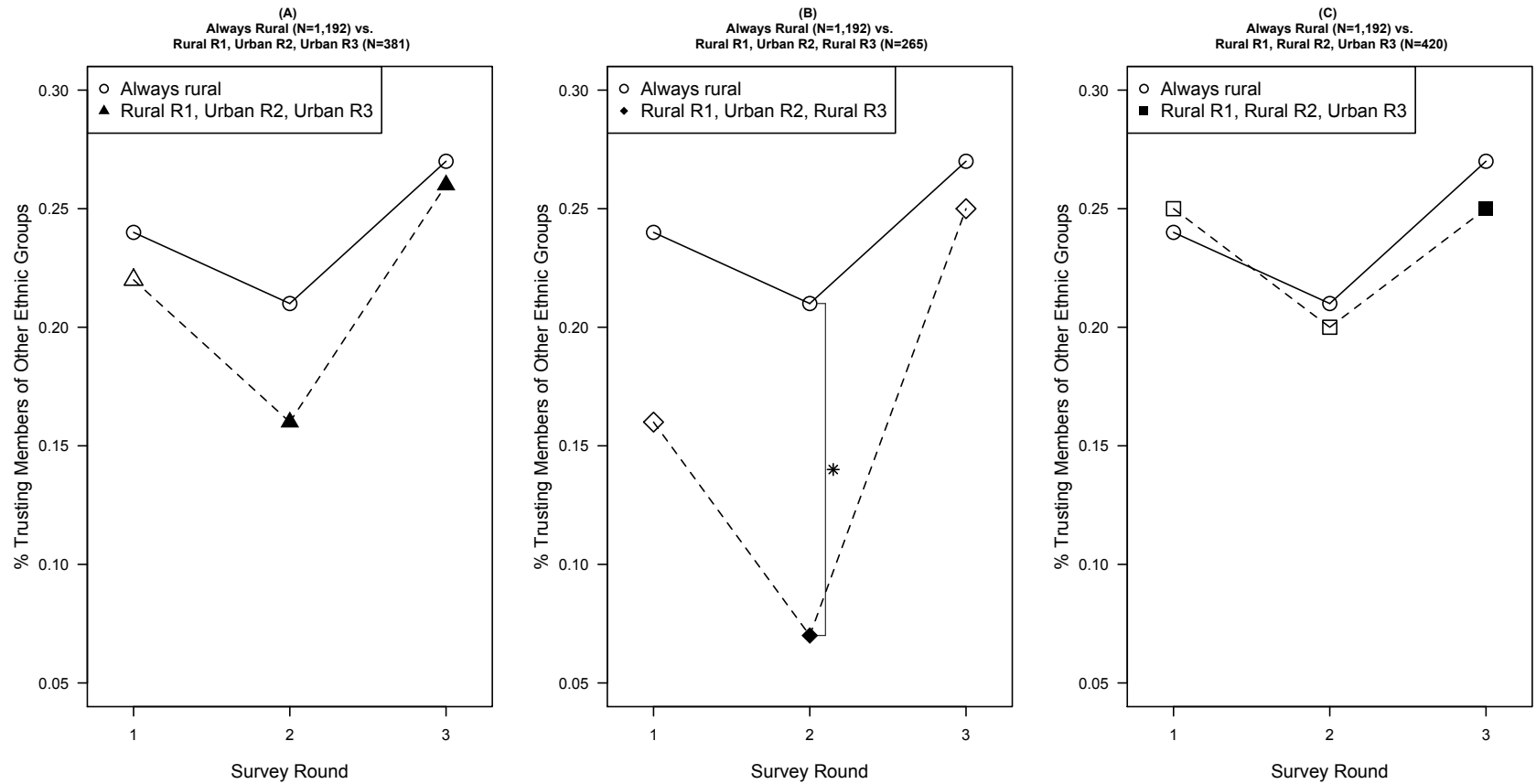
Note: Figure displays weighted means of the standardized importance of ethnic identity variable by survey round for four groups of respondents: 1) always rural (panels A, B, C); 2) rural round 1, urban round 2, urban round 3 (panel A); 3) rural round 1, urban round 2, rural round 3 (panel B); 4) rural round 1, rural round 2, urban round 3 (panel C). Symbols that are filled in (hollow) indicate that individuals in that subsample lived in urban (rural) areas in that survey round. \* indicates that the difference in (weighted) means between the rural and urban sample in a given survey round is statistically significant at  $p < 0.05$ .

Figure 3: Trust Index, by Survey Round and Urban/Rural Location (Nairobi/Mombasa coding)



Note: Figure displays weighted means of the standardized trust index. See notes on Figure 2 for a detailed description.

Figure 4: Trust in Other Ethnic Groups, by Survey Round and Urban/Rural Location (Nairobi/Mombasa coding)



Note: Figure displays percentage of people who trust members of other ethnic groups. See notes on Figure 2 for a detailed description.

## **Supplementary Information**

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**Appendix Table A1: Outcome definitions, annotated for deviations from pre-analysis plan**

	Data Collection Round						Source of Question <sup>3</sup>
	KLPS-1 (PSDP)	KLPS-1 (GSP)	KLPS-2 W1 <sup>1</sup> (PSDP)	KLPS-2 W2 <sup>1</sup> (PSDP)	KLPS-3 <sup>2</sup> (PSDP)	KLPS-3 <sup>2</sup> (GSP)	
<b>Panel A: Political and Civic Participation</b>							
Indicator for voted in previous national election, among those of voting age at time of election <sup>4</sup>	§	§	X <sup>5</sup>	X	X	±	
<i>Political Participation Index</i>				X	X	±	
Indicator for attendance at political rallies				X	X	±	
Indicator for attendance at demonstrations and protests				X	X	±	
Indicator for participation in political discussions with family, friends				X	X	±	
Indicator for involvement with political campaigns				X	X	±	
<i>Civic Participation Index</i> <sup>6</sup>	X		X	X			
Indicator for membership in a women's group <sup>7</sup>	X	±	X	X			
Indicator for membership in a youth group	X	±	X	X			
Indicator for membership in a water group or well committee	X	±	X	X			
Indicator for membership in a bible study group	X	±	X	X			
Indicator for membership in a burial committee	X	±	X	X			
Indicator for membership in a school committee or club	X	±	X	X			
Indicator for membership in a sports team	X	±	X	X			
Indicator for membership in another community group	X	±	X	X			
<b>Panel B: Ethnic and Religious Identity</b>							
Importance of ethnic and tribal origin, using a 3-point scale (where 1=very important, 2=somewhat important, 3=not very important) that is signed in the opposite direction and then normalized	X	X	X	X	X	X	
Indicator for language/ethnicity is most important to identity <sup>8</sup>				X	X	±	
Indicator for change in stated religion <sup>9</sup>	X	X	X	X	X	X	
<i>Religious Identification Index</i>				X	X	±	
Importance of religion, using a 3-point scale (where 1=very important, 2=somewhat important, 3=not very important) that is signed in the opposite direction and then normalized	X	X	X	X	X	X	
Indicator for increased religiosity over previous 12 months				X	X	±	
Indicator for has made donations of money to the church/mosque in the last 30 days				X	X	±	
Indicator for has made donations of time to the church/mosque in the last 30 days				X	X	±	

	Data Collection Round						Source of Question <sup>3</sup>
	KLPS-1 (PSDP)	KLPS-1 (GSP)	KLPS-2 W1 <sup>1</sup> (PSDP)	KLPS-2 W2 <sup>1</sup> (PSDP)	KLPS-3 <sup>2</sup> (PSDP)	KLPS-3 <sup>2</sup> (GSP)	
<b>Panel C: Political Knowledge, Attitudes, and Information Consumption</b>							
<i>Trust Index</i>	X	X	X	X	X	X	
Indicator for believes most people can be trusted	X	X	X	X	X	X	WVS
Indicator for trusts members of own tribe	X	X	X	X	X	X	
Indicator for trusts members of other tribes	X	X	X	X	X	X	
Indicator for trusts members of own church/mosque	X	X	X	X	X	X	
Indicator for trusts members of other churches/mosques	X	X	X	X	X	X	
<i>Democratic Attitudes Index</i>		X		X	X	X	
Indicator for (strongly) agrees with "We should choose our leaders in this country through regular, open and honest elections."		X		X	X	X	AFB
Indicator for agrees with "Democracy is preferable to all other forms of government."		X	X	X	X	X	AFB, WVS
Indicator for (strongly) disagrees with: "Only one political party should be allowed to stand for election and hold office."		X	X	X	X	X	AFB
<i>Attitudes About the Use of Violence:</i> Indicator for agrees with "It is sometimes necessary to use violence in support of a just cause."		X	X	X	X	X	AFB
<i>Satisfaction Kenya Index</i> <sup>10</sup>		X		X	X	X	
Indicator for satisfaction with how democracy works in Kenya (very/fairly satisfied)		X		X	X	X	WVS
Indicator for agrees that economy is better than 2 years ago	X	X		X	X	X	
Indicator for "(strongly) agrees should question leaders" <sup>11</sup>		X	X	X	X	X	
<i>Political Efficacy Index</i>		X		X	X	X	
Indicator for disagrees with "Politics and government sometimes seem so complicated that you can't really understand what's going on."		X	X	X	X	X	AFB
Indicator for disagrees with "This world is run by a few people in power, and there is not much that someone like me can do about it."		X		X	X	X	
<i>Media Consumption Index</i>	X	X		X	X	X	
Days listened to radio in last week (0-7)	X	X	X	X	X	X	
Days read newspaper in last week (0-7)	X	X	X	X	X	X	
Indicator for has a favorite newspaper	X	X		X	X	X	
<i>Political Knowledge:</i> Fraction of correct answers to political knowledge questions asked in round/wave	W2 only	X	X	X	X	X	
Number of individuals surveyed in round:	5,209	1,862	2,492	2,592	5,256	2,013	

## Notes:

<sup>5</sup>Although the relevant question was asked in these rounds, we do not include these rounds in the outcome measure, as the vast majority of the sample was too young to vote at that time.

<sup>±</sup>Although data was collected for this outcome in this round, we will not use it in estimation involving the panel due to lack of comparable sample over more than a single round.

<sup>1</sup>We list KLPS-2 waves 1 and 2 separately, because the survey was revised between waves, and certain outcomes were only included in one of the two waves.

<sup>2</sup>We list the sub-samples of KLPS-3 (PSDP and GSP) separately, as although the same data was collected for both sub-samples within the round, a particular index using data from other rounds as well may only utilize observations from a single sub-sample of the KLPS-3.

<sup>3</sup>The source of standard questions, pulled from either the Afrobarometer (AFB) or the World Values Survey (WVS).

<sup>4</sup>The urban indicator will be defined based on residence at the time of the election, not the time of the KLPS interview. All national elections, including presidential elections and constitutional referendums, will be included. Mobilization across both types of votes was very similar, and hence voter turnout was similar (although it has been increasing over time). According to data from the Independent Electoral and Boundaries Commission and the International Foundation for Electoral Systems, the turnout rate for the 2005 referendum was 52%, and for the 2010 referendum was 70%, while the turnout rate for the 2002 presidential election was 57%, for the 2007 presidential election was around 70%, and for the 2013 presidential election was 85%. We exclude national voting data collected in KLPS-1 and GSP-A, as the vast majority of respondents were under voting age during these rounds. Individuals who report not having a voter ID at the time of the previous election will be considered as "did not vote". If individuals report voting differently across rounds for the same election, we will use the report closest to the election itself. We may explore this data in separate analysis. Finally, we may consider alternate definitions of prior voting in robustness checks, such as the fraction of

<sup>5</sup>Change from pre-analysis plan: This outcome does not exist for KLPS-2 W1 respondents who were interviewed in 2007, prior to the 2007 national election. A second measure was created, which we use in the paper, that is defined as "intend to vote in the 2007 election" for these people.

<sup>6</sup>Change from pre-analysis plan: Because the first component of this index (membership in women's group) is missing for men in the sample, we define the index without this component.

<sup>7</sup>This outcome is missing for men.

<sup>8</sup>Change from pre-analysis plan: This outcome was not originally pre-specified.

<sup>9</sup>Change from pre-analysis plan: In the PAP, we stated that our primary measure for change in stated religion would be from religion specified in previous round, and that for robustness we would also show results allowing for a change reported in the retrospective data at any point between rounds. Due to difficulties associated with carefully comparing religions between rounds, we have decided to instead only construct the outcome as "respondent self-reported a change in religion at any time between rounds."

<sup>10</sup>Change from pre-analysis plan: This index was originally pre-specified as the "satisfaction with authority in Kenya" index, and included the two measures noted here as well as an "indicator for respect for authority". Upon further reflection, we decided that this third measure did not fit well with the other two. Thus, we removed it from the index and renamed the index to be "Satisfaction with Kenya Index." The third measure was re-defined as an "indicator for '(strongly) agrees should question leaders'", and now appears outside of an index.

<sup>11</sup>Change from pre-analysis plan: See previous footnote for a description of this new outcome.



**Appendix Table A2: Results for full set of pre-specified outcomes**

	Cross-Sectional Regressions			Fixed Effect Regressions			
	Urban <sup>1</sup>	Nairobi/ Mombasa	Num Obs	Urban <sup>1</sup>	Nairobi/ Mombasa	Control grp mean (s.d.) <sup>2</sup>	Num Obs
	(1)	(2)		(3)	(4)		
Indicator for voted in previous national election, among those of voting age at election <sup>3</sup>	-0.012 (0.012)	-0.018 (0.015)	10746	0.016 (0.032)	0.031 (0.043)	0.498 (0.500)	7838
<i>Political Participation Index</i>							
Indicator for attendance at political rallies	-0.043* (0.018)	-0.053** (0.019)	8910	-0.102 (0.098)	-0.106 (0.125)	-0.002 (0.713)	7638
Indicator for attendance at demonstrations and protests	-0.054** (0.011)	-0.069** (0.012)	8910	-0.078 (0.050)	-0.129 (0.071)	0.170 (0.376)	7638
Indicator for attendance at demonstrations and protests	-0.006 (0.006)	-0.002 (0.007)	8910	-0.014 (0.022)	-0.002 (0.030)	0.028 (0.166)	7638
Indicator for participation in political discussions with family and friends	0.053** (0.013)	0.055** (0.016)	8910	0.022 (0.065)	0.072 (0.082)	0.302 (0.459)	7638
Indicator for involvement with political campaigns	-0.040** (0.009)	-0.048** (0.010)	8910	-0.059 (0.047)	-0.081 (0.064)	0.150 (0.357)	7638
<i>Civic Participation Index</i>							
Indicator for membership in a youth group	-0.065** (0.013)	-0.175** (0.018)	10201	-0.080* (0.039)	-0.208** (0.060)	0.006 (0.488)	6226
Indicator for membership in a water group or well committee	-0.018 (0.010)	-0.060** (0.012)	10201	-0.026 (0.029)	-0.062 (0.036)	0.159 (0.366)	6226
Indicator for membership in a bible study group	-0.007* (0.003)	-0.011** (0.002)	10201	-0.012 (0.008)	-0.002 (0.007)	0.013 (0.113)	6226
Indicator for membership in a bible study group	-0.030* (0.014)	-0.123** (0.014)	10201	-0.009 (0.034)	-0.121* (0.049)	0.245 (0.430)	6226
Indicator for membership in a burial committee	-0.022** (0.006)	-0.056** (0.009)	10201	-0.006 (0.014)	-0.043 (0.022)	0.078 (0.268)	6226
Indicator for membership in a school committee or club	-0.044** (0.011)	-0.113** (0.015)	10201	-0.092** (0.031)	-0.174** (0.049)	0.222 (0.415)	6226
Indicator for membership in a sports team	-0.053** (0.012)	-0.111** (0.015)	10201	-0.055 (0.033)	-0.179** (0.053)	0.208 (0.406)	6226
Indicator for membership in another community group	0.004 (0.003)	0.007 (0.006)	10201	0.001 (0.005)	0.003 (0.010)	0.008 (0.087)	6226
Importance of ethnic and tribal origin (normalized)	-0.072** (0.023)	-0.120** (0.035)	18092	-0.093* (0.038)	-0.197** (0.067)	0.014 (0.980)	8933
Indicator for language/ethnicity most important in self-identification	0.014 (0.013)	-0.001 (0.015)	8898	0.047 (0.057)	0.062 (0.103)	0.381 (0.486)	7629
Indicator for change in stated religion	-0.000 (0.008)	-0.011 (0.012)	18417	0.005 (0.009)	0.012 (0.017)	0.173 (0.379)	8966

**Appendix Table A2: Results for full set of pre-specified outcomes**

	Cross-Sectional Regressions			Fixed Effect Regressions			
	Urban <sup>1</sup>	Nairobi/ Mombasa	Num Obs	Urban <sup>1</sup>	Nairobi/ Mombasa	Control grp mean (s.d.) <sup>2</sup>	Num Obs
	(1)	(2)		(3)	(4)		
<i>Religious identification index</i>	-0.079**	-0.116**	8491	-0.067	-0.031	0.059	7452
	(0.018)	(0.021)		(0.119)	(0.117)	(0.576)	
Importance of religion (normalized)	-0.021	-0.037	8491	-0.079	-0.122	0.063	7452
	(0.029)	(0.034)		(0.164)	(0.157)	(0.849)	
Indicator for increased religiosity over previous 12 months	0.054**	0.018	8491	0.063	0.050	0.320	7452
	(0.013)	(0.017)		(0.082)	(0.085)	(0.466)	
Indicator for has made donations of money to the church/mosque in the last 30 days	-0.071**	-0.083**	8491	-0.059	0.019	0.855	7452
	(0.013)	(0.012)		(0.060)	(0.069)	(0.352)	
Indicator for has made donations of time to the church/mosque in the last 30 days	-0.108**	-0.117**	8491	-0.082	-0.079	0.410	7452
	(0.015)	(0.016)		(0.071)	(0.095)	(0.492)	
<i>Trust Index</i>	-0.020	-0.056**	18361	-0.019	-0.075*	0.014	8956
	(0.016)	(0.018)		(0.022)	(0.034)	(0.709)	
Indicator for believes most people can be trusted	-0.000	-0.002	18361	-0.009	-0.003	0.105	8956
	(0.007)	(0.009)		(0.009)	(0.016)	(0.306)	
Indicator for trusts members of own tribe	-0.004	-0.022	18361	-0.006	-0.026	0.583	8956
	(0.012)	(0.013)		(0.018)	(0.026)	(0.493)	
Indicator for trusts members of other tribes	-0.007	-0.025*	18361	-0.004	-0.044*	0.246	8956
	(0.010)	(0.012)		(0.013)	(0.021)	(0.430)	
Indicator for trusts members of own church/mosque	-0.018*	-0.039**	18361	-0.012	-0.066*	0.690	8956
	(0.009)	(0.014)		(0.016)	(0.026)	(0.463)	
Indicator for trusts members of other churches/moques	-0.017	-0.042**	18361	-0.007	-0.032	0.358	8956
	(0.010)	(0.014)		(0.019)	(0.023)	(0.480)	
<i>Democratic Attitudes Index</i>	0.020	0.011	10714	-0.009	-0.026	0.002	8051
	(0.017)	(0.022)		(0.054)	(0.070)	(0.598)	
Indicator for agrees "We should choose our leaders ... through regular, open and honest elections"	-0.006	-0.016*	10714	0.001	-0.004	0.960	8051
	(0.005)	(0.007)		(0.017)	(0.024)	(0.197)	
Indicator for agrees "Democracy is preferable to all other forms of government"	0.038**	0.051**	10714	-0.017	-0.016	0.620	8051
	(0.013)	(0.015)		(0.038)	(0.060)	(0.486)	
Indicator for disagrees "Only one political party should be allowed to stand election & hold office"	0.006	0.005	10714	0.002	-0.011	0.617	8051
	(0.014)	(0.017)		(0.043)	(0.055)	(0.486)	
Indicator for agrees "It is sometimes necessary to use violence in support of a just cause"	-0.025**	-0.030*	13221	-0.027	-0.058	0.239	8506
	(0.009)	(0.012)		(0.021)	(0.030)	(0.426)	
<i>Satisfaction with Kenya Index</i>	-0.026	-0.036	10641	0.001	0.019	-0.126	8026
	(0.023)	(0.028)		(0.053)	(0.070)	(0.682)	
Indicator for satisfaction with how democracy works in Kenya	-0.018	-0.033	10641	0.009	-0.008	0.640	8026
	(0.016)	(0.018)		(0.038)	(0.056)	(0.480)	
Indicator for agrees that economy is better than two years ago	-0.007	-0.002	10641	-0.008	0.026	0.216	8026
	(0.013)	(0.018)		(0.032)	(0.041)	(0.411)	
Indicator for (strongly) agrees should question leaders	0.046**	0.062**	13221	0.010	0.049	0.585	8506
	(0.010)	(0.014)		(0.027)	(0.035)	(0.493)	

**Appendix Table A2: Results for full set of pre-specified outcomes**

	Cross-Sectional Regressions			Fixed Effect Regressions			Num Obs
	Urban <sup>1</sup>	Nairobi/ Mombasa	Num Obs	Urban <sup>1</sup>	Nairobi/ Mombasa	Control grp mean (s.d.) <sup>2</sup>	
	(1)	(2)	(3)	(4)	(5)	(6)	
<i>Political Efficacy Index</i>	0.024 (0.020)	-0.004 (0.020)	10754	0.035 (0.068)	0.002 (0.090)	-0.023 (0.688)	8059
Indicator for disagrees "Politics & government sometimes seem so complicated..."	0.010 (0.011)	0.001 (0.014)	10754	-0.005 (0.040)	-0.007 (0.047)	0.204 (0.403)	8059
Indicator for disagrees "This world is run by a few people in power..."	0.010 (0.014)	-0.005 (0.015)	10754	0.038 (0.044)	0.009 (0.050)	0.312 (0.463)	8059
<i>Media Consumption Index</i>	0.187** (0.018)	0.336** (0.030)	15887	0.159** (0.026)	0.298** (0.041)	-0.019 (0.662)	8820
Days listened to radio in last week	0.327** (0.075)	0.771** (0.107)	15887	0.410** (0.125)	0.773** (0.163)	3.885 (2.969)	8820
Days read newspaper in last week	0.520** (0.047)	0.884** (0.086)	15887	0.446** (0.067)	0.805** (0.108)	0.503 (1.271)	8820
Indicator has a favorite newspaper	0.027** (0.008)	0.038** (0.012)	15887	0.001 (0.013)	0.012 (0.024)	0.692 (0.462)	8820
Political Knowledge	0.063** (0.005)	0.083** (0.007)	15800	0.033** (0.009)	0.052** (0.012)	0.595 (0.275)	8717

Columns (1)-(2) present the results of cross-sectional regressions of the outcome measure (left-hand column) on a measure of urban location at time of survey, age, education level, and indicators for female, participated in the Primary School Deworming Program (PSDP), was assigned to the first or second treatment group in that program, was assigned to treatment in the Girls' Scholarship Program (GSP), participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and a full set of indicators for KLPS survey round and wave. Columns (3)-(4) present the results of fixed effect regressions of the outcome measure on a measure of urban location at the time of survey and age, as well as indicators for participated in the Vocational Training Voucher Program, was assigned to the voucher treatment in that program, and KLPS survey round and wave. Outcome measures are constructed as described in Appendix Table 1, with any normalizations performed among the rural sample (as defined by "urban", our primary measure of urban residence throughout the analysis). All regressions in columns (1)-(4) are weighted to maintain initial population proportions, and standard errors are clustered by the baseline primary school. \*  $p < 0.05$ ; \*\*  $p < 0.01$ . <sup>1</sup>"Urban" is a measure of urban location that is self-defined in the survey by the respondent, and includes cities and large towns in Kenya. <sup>2</sup>The control group mean is calculated among the full sample of individuals who are living in a rural area at the time of survey administration (according to our primary measure of urban location). It is not restricted to the fixed effects regression sample, which is why values presented are not mean 0, standard deviation 1. <sup>3</sup>For the regressions of voted in previous election, urban location is defined at the time of the election, rather than at the time of the survey. For individuals interviewed in KLPS1 in 2007 prior to the 2007 election, the outcome is defined as "indicator for intended to vote in the 2007 presidential election" rather than "Voted in the 2002 referendum".

**Appendix Table A3: Predictors of urbanization, restricted sample**

	Urban				Nairobi/Mombasa			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Indicator for female	0.001 (0.038)	-0.012 (0.038)	-0.011 (0.038)	-0.020 (0.038)	-0.043 (0.035)	-0.056 (0.036)	-0.056 (0.036)	-0.068 (0.036)
Age (lagged)	-0.012 (0.010)	-0.012 (0.010)	-0.012 (0.010)	-0.009 (0.010)	-0.021** (0.006)	-0.019** (0.006)	-0.019** (0.006)	-0.018** (0.006)
Years education attained (lagged)	0.050** (0.009)	0.048** (0.010)	0.045** (0.010)	0.044** (0.010)	0.035** (0.009)	0.034** (0.009)	0.031** (0.009)	0.032** (0.009)
Indicator for married at survey (lagged)	-0.018 (0.041)	-0.021 (0.042)	-0.024 (0.044)	-0.023 (0.044)	-0.045 (0.029)	-0.047 (0.030)	-0.049 (0.031)	-0.045 (0.031)
Num children at survey (lagged)	-0.026 (0.020)	-0.027 (0.020)	-0.026 (0.020)	-0.024 (0.019)	0.017 (0.015)	0.016 (0.015)	0.016 (0.015)	0.016 (0.015)
Indicator for hh farmed in last 12 months (lagged)		0.444** (0.041)	0.446** (0.047)	0.470** (0.054)		0.317** (0.038)	0.325** (0.040)	0.323** (0.044)
Indicator for had a job or business at survey (lagged)		-0.178 (0.134)	-0.186 (0.133)	-0.202 (0.138)		-0.286* (0.119)	-0.301* (0.120)	-0.307* (0.123)
Indicator for worked in agric at survey (lagged)		0.101 (0.142)	0.110 (0.143)	0.127 (0.147)		0.192 (0.124)	0.200 (0.126)	0.202 (0.127)
Indicator for worked in retail at survey (lagged)		0.197 (0.158)	0.203 (0.156)	0.220 (0.162)		0.243 (0.159)	0.253 (0.158)	0.259 (0.160)
Indicator for worked in unskilled at survey (lagged)		0.125 (0.134)	0.128 (0.133)	0.147 (0.138)		0.131 (0.117)	0.136 (0.118)	0.140 (0.119)
Indicator for worked in skilled at survey (lagged)		0.007 (0.142)	0.004 (0.140)	0.033 (0.147)		0.110 (0.123)	0.115 (0.122)	0.124 (0.128)
Indicator for worked in professional at survey (lagged)		0.112 (0.160)	0.119 (0.159)	0.139 (0.167)		0.120 (0.130)	0.132 (0.130)	0.140 (0.134)
Indicator for worked in other at survey (lagged)		0.292 (0.348)	0.291 (0.379)	0.316 (0.402)		0.532 (0.362)	0.545 (0.392)	0.517 (0.383)
Indicator for crop destruction in last 12 months (lagged)			-0.012 (0.033)	-0.012 (0.032)			0.002 (0.027)	0.004 (0.026)
Indicator for hh was displaced in last 12 months (lagged)			0.037 (0.098)	0.028 (0.098)			0.089 (0.109)	0.087 (0.106)
1998 standardized test score			0.032 (0.019)	0.030 (0.019)			0.028 (0.016)	0.028 (0.016)
Importance of ethnic and tribal origin (lagged)				0.000 (0.023)				0.008 (0.018)
Trust index (lagged)				0.010 (0.024)				-0.000 (0.018)
Democratic attitudes index (lagged)				0.008 (0.026)				-0.028 (0.023)
Indicator for voted previous national election (lagged)				-0.047 (0.033)				-0.018 (0.030)
Number of observations	989	989	989	989	989	989	989	989

**Notes:** This table displays results of cross-sectional regressions, with the sample restricted to be consistent across columns. Additional controls include indicators for assignment to the PSDP treatment group, for participation in the vocational training voucher program (lagged), and for assignment to the vocational training voucher treatment group (lagged). All regressions are weighted to maintain initial population proportions, and standard errors are clustered by the baseline primary school. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

**Appendix Table A4: Multiple hypothesis test adjustments across main outcomes**

	Fixed Effect Regressions					
	coeff (s.e.)	Urban <sup>1</sup>		Nairobi/ Mombasa		
		p-value	q-value	coeff (s.e.)	p-value	q-value
Indicator for voted in previous national election, among those of voting age at election <sup>3</sup>	0.016 (0.032)	0.625	1.000	0.031 (0.043)	0.467	0.613
<i>Political Participation Index</i>	-0.102 (0.098)	0.301	1.000	-0.106 (0.125)	0.398	0.613
<i>Civic Participation Index</i>	-0.080* (0.039)	0.041	0.141	-0.208** (0.060)	0.001	0.005
Importance of ethnic and tribal origin (normalized)	-0.093* (0.038)	0.016	0.075	-0.197** (0.067)	0.004	0.013
Indicator for language/ethnicity most important in self-identification	0.047 (0.057)	0.417	1.000	0.062 (0.103)	0.549	0.665
Indicator for change in stated religion	0.005 (0.009)	0.597	1.000	0.012 (0.017)	0.475	0.613
<i>Religious identification index</i>	-0.067 (0.119)	0.571	1.000	-0.031 (0.117)	0.792	0.827
<i>Trust Index</i>	-0.019 (0.022)	0.387	1.000	-0.075* (0.034)	0.030	0.071
<i>Democratic Attitudes Index</i>	-0.009 (0.054)	0.874	1.000	-0.026 (0.070)	0.713	0.827
Indicator for agrees "It is sometimes necessary to use violence in support of a just cause"	-0.027 (0.021)	0.185	0.687	-0.058 (0.030)	0.059	0.11
<i>Satisfaction with Kenya Index</i>	0.001 (0.053)	0.992	1.000	0.019 (0.070)	0.790	0.827
Indicator for (strongly) agrees should question leaders	0.010 (0.027)	0.717	1.000	0.049 (0.035)	0.156	0.251
<i>Political Efficacy Index</i>	0.035 (0.068)	0.603	1.000	0.002 (0.090)	0.982	1.000
<i>Media Consumption Index</i>	0.159** (0.026)	0.0004	0.004	0.298** (0.041)	0.0004	0.004
Political Knowledge	0.033** (0.009)	0.0004	0.004	0.052** (0.012)	0.0004	0.004

**Notes:** Coefficients, standard errors, and p-values are from the fixed effect regressions presented in Tables 3 and 4. The q-values are False Discovery Rate (FDR) adjusted q-values that limit the expected proportion of rejections within a set of hypotheses that are Type I errors, calculated across these main outcomes.

## **Analysis of Kenyan Afrobarometer Survey Data**

The tables below present results from analyses of Afrobarometer survey data. We present the results from these cross-sectional analyses in order to compare them to the results from our individual fixed effects regressions.

Data from Round 2 (2002), Round 3 (2005), and Round 5 (2011) are pooled and analyzed (not all questions are available in each round). Each model below includes controls for gender, age, education, and survey round.

Two urban variables are created. One uses the Afrobarometer coding. The other only codes residents of Nairobi and Mombasa district as urban. Of the roughly 6,000 people in the pooled sample, there are about 1,000 that are coded by AB as urban but that do not live in Nairobi or Mombasa. The results are mostly consistent using the two measures but there are some differences.

**Appendix Table A5: Political participation in the Afrobarometer**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Voted	Protest	Rally	Campaign	Interest Politics	Voted	Protest	Rally	Campaign	Interest Politics
Urban (AB code)	-0.05** (0.01)	-0.01 (0.01)	-0.06** (0.02)	-0.01 (0.01)	-0.03 (0.03)					
Urban (Nairobi/Mombasa)						-0.07** (0.02)	0.00 (0.01)	-0.08** (0.03)	-0.01 (0.02)	-0.12** (0.04)
Constant	0.39** (0.02)	0.21** (0.02)	0.42** (0.04)	0.14** (0.03)	1.29** (0.05)	0.49** (0.02)	0.21** (0.02)	0.41** (0.04)	0.14** (0.03)	1.29** (0.05)
Observations	5,718	5,940	2,376	2,373	5,955	5,718	5,940	2,376	2,373	5,955
R-squared	0.10	0.02	0.05	0.03	0.07	0.10	0.02	0.05	0.03	0.08

*Notes:* Standard errors in parentheses. \*\* p<0.01, \* p<0.05. Outcome measures are defined as follows. Voted: voted in previous election. Protest: attended protest in last 12 months. Rally: attended campaign rally. Campaign: worked on political campaign. Interest Politics: overall interest in politics (positive values indicate greater interest).

**Appendix Table A6: Civic participation in the Afrobarometer**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Religious	Union	Association	CDA	Religious	Union	Association	CDA
	Group				Group			
Urban (AB code)	-0.17** (0.03)	-0.25** (0.03)	0.10** (0.03)	-0.15** (0.04)				
Urban (Nairobi/Mombasa)					-0.26** (0.04)	-0.23** (0.04)	0.03 (0.04)	-0.17** (0.05)
Constant	1.49** (0.05)	0.52** (0.06)	0.33** (0.04)	0.65** (0.07)	1.47** (0.05)	0.45** (0.06)	0.37** (0.04)	0.61** (0.07)
Observations	3,629	3,592	3,591	3,606	3,629	3,592	3,591	3,606
R-squared	0.04	0.04	0.08	0.04	0.04	0.03	0.08	0.04

*Notes:* Standard errors in parentheses. \*\* p<0.01, \* p<0.05. Outcome measures are defined as follows. Religious group: member of religious group. Union: member of union or farmer's association. Association: member of business association. CDA: member of community development association.



**Appendix Table A7: Ethnicity and religion in the Afrobarometer**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Identify Ethnic	Ethnic over National ID	Trust Coethnics	Trust Non- Coethnics	Religion Important	Identify Ethnic	Ethnic over National ID	Trust Coethnics	Trust Non- Coethnics	Religion Important
Urban (AB code)	-0.04*	0.00	-0.21**	-0.09	0.00					
	(0.02)	(0.04)	(0.05)	(0.06)	(0.02)					
Urban (Nairobi/Mombasa)						-0.03	-0.02	-0.16*	0.02	0.03
						(0.02)	(0.05)	(0.07)	(0.07)	(0.02)
Constant	0.13**	3.77**	1.76**	1.13**	1.25**	0.12**	3.77**	1.44**	1.04**	1.24**
	(0.02)	(0.08)	(0.10)	(0.10)	(0.04)	(0.02)	(0.08)	(0.08)	(0.09)	(0.04)
Observations	2,245	3,601	1,262	1,243	2,316	2,245	3,601	1,262	1,243	2,316
R-squared	0.00	0.01	0.04	0.01	0.01	0.00	0.01	0.04	0.01	0.01

**Notes:** Standard errors in parentheses. \*\* p<0.01, \* p<0.05. Outcome measures are defined as follows. Identify ethnic: respondent reports tribal identity when asked which identity (religion, occupation, class, etc) is most important to them (Round 2 only). Ethnic over national ID: respondent reports that tribal identity is more important than Kenyan identity. Trust in coethnics: continuous 0-3 measure where higher values indicate more trust. Trust in non-coethnics: continuous 0-3 measure where higher values indicate more trust. Religion important: 0-3 measure where 1=very important, 2=somewhat important, and 3=not important.

**Appendix Table A8: Belief that violence is sometimes justified in politics in Afrobarometer**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	R2	R2	R3	R3	R5	R5
							Post-2007	Post-2007
Urban (AB code)	0.02 (0.01)		0.01 (0.02)		0.05* (0.02)		0.01 (0.01)	
Urban (Nairobi/Mombasa)		0.03* (0.01)		0.01 (0.03)		0.08** (0.03)		0.01 (0.02)
Constant	0.27** (0.02)	0.27** (0.02)	0.27** (0.02)	0.27** (0.02)	0.30** (0.04)	0.31** (0.03)	0.20** (0.02)	0.21** (0.02)
Observations	5,931	5,931	2,337	2,337	1,250	1,250	2,352	2,352
R-squared	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01

*Notes:* Standard errors in parentheses. \*\* p<0.01, \* p<0.05. Dependent variable is defined as agreement with the statement that violence is sometimes justified in politics (dummy variable).

**Appendix Table A9: Efficacy, news consumption, and satisfaction with democracy in the Afrobarometer**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Politics Not Complicated	Politics Not Complicated	Radio	Radio	Newspaper	Newspaper	Satisfied w/ Democracy	Satisfied w/ Democracy
Urban (AB code)	0.01 (0.01)		0.00 (0.03)		0.49** (0.04)		-0.18** (0.03)	
Urban (Nairobi/Mombasa)		-0.01 (0.02)		-0.04 (0.04)		0.51** (0.05)		-0.16** (0.04)
Constant	0.30** (0.02)	0.30** (0.02)	3.16** (0.06)	3.16** (0.06)	2.94** (0.07)	3.07** (0.07)	2.76** (0.05)	2.72** (0.05)
Observations	5,670	5,670	6,008	6,008	5,983	5,983	5,455	5,455
R-squared	0.01	0.01	0.08	0.08	0.26	0.25	0.02	0.01

Notes: Standard errors in parentheses. \*\* p<0.01, \* p<0.05. Outcome measures are defined as follows. Politics not complicated: disagrees with statement that politics is too complicated for them to understand. Radio: radio use in last week. Newspaper: newspaper use in last week. Satisfaction with democracy: 4 point scale, higher values indicate more satisfaction.