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Relationship between Objective and Subjective Horizontal Inequalities:

Evidence from Five African Countries

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Relationship between Objective and Subjective Horizontal

Inequalities: Evidence from Five African Countries¹

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Abstract

In recent years an increasing amount of both qualitative and quantitative research has shown that the presence of severe inequalities between ‘culturally’ defined groups, such as ethnic or religious groups –or what Stewart (2002) has termed ‘horizontal inequalities’- makes countries more susceptible to a range of political disturbances, including violent conflict and civil war. Most quantitative studies that have found evidence in support of the relationship between the presence of horizontal inequalities and the emergence of violent conflicts have used an ‘objective’ measure of socio-economic horizontal inequality in their statistical models, such as a household asset index or a schooling inequality index rather than a measure of perceived inequalities. While the quantitative studies on horizontal inequalities and violent conflict have contributed enormously towards establishing the relationship between these two concepts, the operationalization of horizontal inequalities in objective terms is to some extent problematic because people act on the basis of their perceptions of the world they live in, and these perceptions may differ substantially from the ‘objective’ reality. The question to what extent objective and subjective horizontal inequalities are consistent in practice is an important empirical question, which this paper explores in five African countries: Ghana, Zimbabwe, Uganda, Nigeria and Kenya.

Preliminary Draft

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1. Introduction

In recent years an increasing amount of both qualitative and quantitative research has shown that the presence of severe inequalities between ‘culturally’ defined groups such as ethnic or religious groups—or what Stewart (2002) has termed ‘horizontal inequalities’—makes countries more susceptible to a range of political disturbances, including violent conflict and civil war (see, for example, Stewart, 2008; Cederman et al 2010; Mancini, 2008; Langer, 2005; Østby, 2008). It appears that the risk of violent conflict especially increases if political and socio-economic horizontal inequalities are ‘consistent’ or run in the same direction: i.e. a situation where an ethnic group is both

¹ Earlier versions of this paper were presented at a ‘Brownbag seminar’ at the Centre for the Study of Civil War (CSCW) at PRIO, Norway on Monday, 31 October 2011 and at a workshop on “Inequalities, Grievances and Civil War” organized by ETH Zurich on 11-12 November 2011.

politically excluded and relatively disadvantaged in socio-economic terms (Langer, 2008; Østby, 2008).²

Most quantitative studies that have found evidence in support of the relationship between the presence of horizontal inequalities and the emergence of violent conflicts have used an ‘objective’ measure of socio-economic horizontal inequality in their statistical models, such as a household asset index or a schooling inequality index for example, Mancini, 2008; Østby, 2008), rather than a measure of *perceived* inequalities.³ With respect to the assessment of political horizontal inequalities, the situation is somewhat different. Due to the lack of cross-sectional data on the evolution ‘objective’ political horizontal inequalities, most quantitative studies testing the relationship between horizontal inequalities and conflict have included ‘semi-objective’ ‘partly subjective’ measures of political horizontal inequality. For instance, several studies have used the ‘semi-objective’ Minorities At Risk (MAR) dataset for assessing a country’s level of political horizontal inequality (see, for example, Østby, 2008). The dataset tracks the political, economic, and cultural status and position of 282 ethno-ethno-political minorities around the world—minorities that are at risk of discrimination and with at least 100,000 members—by collecting and analysing a wide range of open-source information, which is coded by MAR researchers into a limited number of categories.⁴

While the quantitative studies on horizontal inequalities and violent conflict have contributed enormously towards establishing the relationship between these two concepts, the operationalisation of horizontal inequalities in objective terms is to some extent problematic, because people act on the basis of their *perceptions* of the world in which they live, and these perceptions may differ substantially from the ‘objective’ reality. With respect to the relationship between horizontal inequalities and group mobilisation, Frances Stewart rightly notes that: ‘People take action because of perceived injustices rather than because of measured statistical inequalities of which they might not be aware’ (Stewart, 2010:14). Moreover, most quantitative studies on horizontal inequalities and conflict *de facto* assume that there is consistency between ‘objective’ and subjective horizontal inequalities.

The question to what extent ‘objective’ and subjective horizontal inequalities are consistent in practice is clearly a very important empirical question, which has been largely ignored in the literature on horizontal inequalities. The current paper aims to contribute to filling this void, by analysing the relationship between ‘objective’ and

² Langer (2005) provides a theoretical foundation for this empirical finding by emphasising that the simultaneous presence of severe political horizontal inequalities and socio-economic horizontal inequalities forms an extremely explosive socio-political situation, because in these situations the excluded political elites not only have strong incentives to mobilise their supporters for violent conflict along ethnic lines, but also are likely to gain support among their ethnic constituencies quite easily.

³ Please note that the word objective was put in inverted commas to indicate that any indicator can only be an approximation of the ‘objective’ reality. Furthermore, the selection of entities, variables, or indicators used to quantify ‘objective’ horizontal inequalities at a particular point in time is clearly to some extent an arbitrary choice by the researchers involved.

⁴ For more information on the Minorities at Risk project, please visit:

<http://www.cidcm.umd.edu/mar/data.aspx>

subjective horizontal inequalities in five African countries, which are all confronted with sharp socio-economic inequalities between their major ethnic groups and/or regions. The countries being analysed in this paper are Ghana, Kenya, Nigeria, Uganda, and Zimbabwe.

In order to explore the relationship between ‘objective’ and subjective horizontal inequalities, we have conducted perception surveys in each of our five case study countries.⁵ The surveys were not nationally representative, but we did ensure that there were a sufficiently large number of respondents from all the major ethnic and religious groups included in our survey samples. The results are therefore only statistically representative for the selected survey locations, but we can draw wider inferences on the assumption that the surveyed areas are qualitatively representative of a larger part of society. Table 1 below provides an overview of the survey locations and the number of interviews conducted in each of our case study countries.

In addition to our own surveys (i.e. the JICA survey), we also use the Afrobarometer Round 4 surveys, which cover similar topics and issues, although these surveys do not have the same degree of detail and extensiveness when it comes to issues of inequality and identity. However, a major advantage of the Afrobarometer surveys is that they are nationally representative. By using these two sets of surveys in a complementary way, we will greatly enhance the robustness of our findings.

Table 1 Overview of survey locations and number of interviews

Country	Survey sites and number of interviews	Total
Ghana	Accra (406)	406
Nigeria	Lagos (412)	412
Kenya	Nairobi (300), Nakuru (303), and Mombasa (304)	907
Uganda	Kampala (200), Gulu (100), Mbale (100), and Mbarara (100)	500
Zimbabwe	Harare (294) and Bulawayo (108)	402

The paper proceeds as follows. In the next section, we will reflect on the reasons why there can be a mismatch between ‘objective’ and subjective horizontal inequalities in particular situations or countries. In Section 3 we will examine the prevailing *objective* horizontal inequalities in our five case study countries. In Section 4 we will analyse the extent to which individual ‘risk’ factors associated with lower standards of living (such as educational attainment) can help to explain the observed ethnic inequalities. In Section 5, in turn, we will analyse the extent to which these individual ‘risk’ factors are themselves unequally distributed across different ethnic groups. In Section 6 we will then analyse people’s *perceptions* of the prevailing horizontal inequalities, and analyse the extent to which there are discrepancies between the ‘objective’ and subjective situations. In the last section we will draw some conclusions.

⁵ These perception surveys were conducted as part of the JICA-RI project ‘Prevention of conflict in Africa’.

2. Why ‘objective’ and subjective inequalities may differ

In this section we will examine the main reasons why people’s perceptions of the prevailing horizontal inequalities in a country may differ sharply from more ‘objective’ measurements or assessments of these inequalities. An issue that complicates matters in this respect is that there may be sharp differences in the perceived inequalities *across* ethnic groups. Thus, for instance, while in societies with sharp ‘objective’ horizontal inequalities (possibly resulting from past and/or ongoing discriminatory practices by the state), it is not unlikely that the deprived groups will ‘correctly’ perceive that they are in a relatively disadvantaged position compared to other groups, but their perceptions may nonetheless reflect a considerably worse or better picture than the one that emerges from the analysis of ‘objective’ data. Relatively advantaged groups in horizontally unequal societies may also ‘correctly’ perceive their relatively privileged position, although they may have very different views about the *level* of inequality compared to disadvantaged groups and also of the causes of the prevailing inequalities. Moreover, even in cases where the ‘objective’ horizontal inequalities are not very severe, there may still be substantial differences in the *perceived* levels of horizontal inequality across different ethnic groups.

There are a number of reasons why there can be a mismatch between the ‘objective’ and subjective horizontal inequalities in a particular society, which we outline below.

- *Impact of ‘objective’ personal situation on perceived group situation.* When asked to assess the prevailing socio-economic horizontal inequalities in a country, people should not let their *personal* socio-economic situation interfere with or blur their perceptions. Indeed, assuming that the prevailing ‘objective’ horizontal inequalities can be perceived correctly by individuals, two people from the same ethnic group with different levels of income and welfare should in principle have the same perceptions about their *group’s* situation and relative position. However, it is not unlikely that people’s *individual* socio-economic background and situation may colour their perceptions of the prevailing *group inequalities*.
- *Manipulation of perceptions by elites or group leaders.* In order to gain political support (or pre-empt losing it), the leaders or elites of a particular group may decide to manipulate their constituents’ perceptions of the prevailing horizontal inequalities. While elites occasionally attempt to mitigate perceptions of inequality (for example, to pre-empt criticism that they have not done enough to improve their group’s socio-economic situation and relative position), it appears to be more common that they try to exacerbate the existing perceptions of inequality among their group members or constituents in order to gain or maintain political support. Leaders of relatively advantaged groups, in turn, may play down the severity of the prevailing inequalities and concomitantly stress that the deprived groups are themselves to blame for their relatively disadvantaged situation.
- *Inaccurate media reporting.* The media can play an important role in bringing objective horizontal inequalities to the attention of the population at large. Yet, inaccurate reporting on the part of the media due to sloppy reporting, a lack of sufficiently qualified and experienced journalists, or for political reasons can

clearly have a major impact on people's perceptions of the existing horizontal inequalities and possibly their perceived causes.

- *Lack of objective data on horizontal inequalities.* Ethnically segregated socio-economic data are usually not readily available. Sometimes—as, for example, in Nigeria—ethno-cultural variables are not included in surveys because of their political sensitivity (Okolo, 1999). While language and region can sometimes be used as proxies for ethnic groups, in a substantial number of countries this might not be possible or might not provide a sufficiently accurate picture of the prevailing horizontal inequalities. The absence of accurate, comprehensive, and independent data on horizontal inequalities in many multiethnic countries increases the risk that people's perceptions might instead be based on personal experiences, opinions, and stories of friends, family and people in positions of 'power' (such as politicians, community leaders, and church leaders), or even on rumours and hearsay.
- *Insufficient access to information.* Another reason why 'objective' and subjective inequalities may differ is because certain groups may lack access to the necessary information and data to form a reasonably accurate picture of the prevailing horizontal inequalities in their country. Thus, for instance, groups in rural and geographically remote areas may have insufficient access to the media or other sources of information, which in turn makes it difficult for them to compare their own situation to that of other groups. Low mobility among the people living in rural and remote areas is another obstacle for assessing the relative position of their own group.
- *'Misleading' comparisons.* Horizontal inequality is a *relational* concept that essentially requires comparing different groups' positions to the position of a selected other group (such as the richest group in a country), to an average measure of performance (such as the national average), or to a group's *relative* demographic size. People's perceptions of the prevailing inequalities are clearly affected by the 'yardstick' they implicitly or explicitly use to assess their group's relative position vis-à-vis other groups. The government, the media, and community and church leaders are important influences on people's choice of yardstick. The issue of which particular socio-economic or political indicator individuals are using to compare their group to other groups (for example, level of income, educational attainment, beneficiaries of public investment, ministers in cabinet, judges, and so on) is as important as the yardstick being used by people to form an opinion about the prevailing inequalities. Given that the observed inequalities may differ substantially across different indicators, this could have a major impact on the overall perceptions of the prevailing horizontal inequalities.
- *Misjudgement of group size.* Another important factor that may also contribute to a mismatch of 'objective' and subjective horizontal inequalities is people's inaccurate views of the relative size of their own group and that of other groups. When people have to assess whether they get a 'fair' share of, for example, parliamentary seats, ministerial positions, government contracts or government jobs, they usually compare—either explicitly or implicitly—their group's share of these positions to their relative demographic size in the country as a whole. If people believe that their group's relative demographic size is considerably

or smaller than it actually is in reality, this can substantially distort their perceptions of the prevailing horizontal inequalities.

- *Cross-dimensional ‘contamination’*. If people are *politically* excluded or marginalised, this may affect or ‘blur’ their perceptions of the prevailing socio-economic inequalities, and vice versa. Moreover, it is even possible that *misperceptions* with respect to the prevailing political/socio-economic conditions induce *misperceptions* with respect to the prevailing socio-economic/political inequalities.

To what extent these factors are at play in our five case studies, in which specific combinations, and to what effect, are issues that go beyond the scope of this paper. However, in cases where we observe a mismatch between ‘objective’ and subjective horizontal inequalities (see Section 5), we will examine the impact of some of these factors in more detail.

3. Assessing ‘objective’ socio-economic horizontal inequalities

In this section we will analyse the prevailing ‘objective’ socio-economic horizontal inequalities in our five case study countries. We will use the nationally representative Afrobarometer surveys to determine different groups’ socio-economic status or standard of living.

In order to determine the prevailing socio-economic inequalities across different ethnic groups, we have composed two ‘welfare’ indices on the basis of data available in the Afrobarometer surveys.⁶ The first index—called ‘Assets’—is an asset wealth index based on whether or not respondents have such things as a television, a mobile phone, or a car. The index is calculated by adding together the weighted binary scores for of these assets. The second index—called ‘BHN’—aims to measure the extent to which respondents were able to secure their basic human needs, including having enough to eat, having access to health care, and having decent shelter. For both indices, scores indicate higher standards of living.⁷ Figure 1 shows the prevailing ethnic inequalities in our five case study countries according to both indices. The figures the linear predictions of the point estimates as well as the 95% confidence intervals were calculated on the basis of the Afrobarometer surveys.

As can be seen in each plot, all countries covered here contain considerable gaps between the main ethnic groups according one or both welfare indices. In Nigeria, for instance, the Hausa/Fulani are poorer than the other two main ethnic groups (the and the Igbo) as well as the combined group of other ethnic minorities; in Ghana, the Ga/Dangbe seem to be significantly wealthier than other groups regardless of how we measure living standards; in Zimbabwe, we find a difference between the Ndebele and other ethnic minorities in terms of household assets; in Kenya, relationships are more complicated due to the greater number of major ethnic groups, but the results still

⁶ Appendix 1 provides a detailed description of the operationalisation of the variables used in our analysis.

⁷ Please note that scores were ‘normalised’ vis-à-vis the capital of the country, except for Nigeria, where Lagos was used as a base.

indicate that there is a significant gap between the Kikuyu and the Somali, with there being rough parity between the remaining ethnic groups; in Uganda, the Acholi and residual ethnic minorities exhibit consistently lower levels of welfare compared to the three main ethnic groups (the Buganda, Banyoro, and Banyankole). Moreover, the picture that emerges from the point estimates is much in line with other data and information that are available on the relative socio-economic situations of these ethnic groups. See, for example, for Ghana: Gyimah-Boadi and Asante (2006), Langer (2008); for Nigeria: Ebenezer O Aka (1995), Mustapha (2006), Langer and Ukiwo for Uganda: Langer & Stewart (2011); for Kenya: Stewart (2010), Muhula (2009); and, Zimbabwe: Chatiga (2004).

It should be noted that the causes and origins of the prevailing socio-economic inequalities between different ethnic groups and/or regions in most developing in particular in Africa, are usually related to such factors as: ecological and differences between different regions in a country; the geographical distribution of natural resources; the differential impact of colonialism, which Figueroa (2006) labels a 'foundational shock' from which the initial inequalities between different ethnic groups and/or regions usually originate; the extent of group discrimination and favouritism towards particular groups by the government; and the differential impact of economic policies on different groups and/or regions. Once horizontal inequalities are in place tend to endure for very long periods of time, as illustrated by black–white differentials in the US or indigenous–Ladino differentials in Latin America, which have been in existence for centuries (Stewart and Langer, 2008).⁸ Moreover, quite often, horizontal inequalities appear to persist not because of conscious decisions by political actors, or because of an unequal distribution of power, or due to explicit discrimination and exclusionary policies towards particular groups (as, for instance, in South Africa under apartheid), but because they are the outcome of more 'intangible' economic forces and mechanisms (Brown and Langer, 2010).

⁸ Stewart and Langer (2008) propose a formal framework for understanding the persistence of group inequalities based on the following factors: unequal rates of accumulation; dependence of returns of one type of capital on the availability of other types of capital; and asymmetries in social capital.

Figure 1 Ethnic inequalities according to the BHN-index and the Assets-index

Source: Authors' calculations based on the Afrobarometer R4 surveys.

4. Explaining the observed ‘objective’ horizontal inequalities

The ethnic inequalities observed in the previous section do not take into account differences in factors that are conventionally used to explain differences in standard of living across individuals. If we assume that the factors conventionally associated with lower levels of *individual* socio-economic welfare are unrelated to ethnicity, we should be able to explain a large proportion of the observed ethnic inequalities by means of these individual ‘risk’ factors. In order to test this, we aim to explain as much variance as possible with the help of several commonly used risk factors and then see if the included ethnic dummies are significantly different from zero or not. The risk factors we include in our regression analysis are: (1) level of educational attainment; (2) people’s employment status; (3) level of infrastructural development of people’s living environment; and (4) people’s experience of physical insecurity due to violence and crime. Also incorporated are individual demographic variables, such as sex, age, region of birth (whether a respondent is indigenous to a particular place of living), and ethnicity as well as a range of context variables, such as the urban/rural distinction, and a series of dummies for each of the administrative distinctions made in a country (province, region, or state).

It is important to note here that not all variables are available in both survey datasets. Thus, while Afrobarometer lacks information on people’s region of birth, a variable is not included in our survey. Also, variables for insecurity and employment are differently measured (see Appendix 1 for more details on these issues). While we can use an OLS regression for our survey, this is not appropriate for the Afrobarometer surveys because of the different levels on which the infrastructural development is measured. For the Afrobarometer surveys, we therefore employ a mixed-effect regression analysis instead, which allows the intercept to vary according to the primary sampling unit on which the infrastructure development variable is rated.⁹ Despite these subtle nuances, we assume that the results from both estimation methods are largely comparable. The results are reported in Table 2.

First, it is interesting to note that lower levels of educational attainment have, as expected, a largely negative impact on individuals’ standard of living regardless of country, the proxy, dataset, and estimation method. The same appears to be true for the effects of perceived insecurity: people who tend to be threatened or victimised are more likely to be relatively poor compared those who live in more secure situations. Interestingly, the expected positive impact on people’s standard of living of ‘being employed’ is only confirmed in the Afrobarometer surveys, but not in our surveys. A possible explanation for this finding could be that in our surveys there may be a relative overrepresentation of students due to the fact that most interviews were conducted in the largest city in the country (usually the capital, except in Nigeria). Moreover, students are generally relatively well off despite being unemployed. Finally, infrastructure development also has the expected positive influence upon individuals’ standards of living, except in the case of Ghana. Thus, the more developed an area is in terms of infrastructure, the richer the residents who live in that area tend to be.

⁹ We used OLS for the model that examined determinants of ‘Assets’ in Zimbabwe because the mixed-level model failed to converge.

Having largely confirmed the expected effects of the most important individual ‘risk’ factors, we can now examine the remaining effect of ethnic affiliation by analysing the ethnic group dummies. In Nigeria, the Hausa/Fulani are set as reference category. Interestingly, while the ethnic dummies have no significance in our surveys, in the Afrobarometer surveys, they do. In particular, the Igbo dummy is consistently larger than zero, which suggests that the Igbo are inherently richer than the Hausa/Fulani. In Ghana, where the Akan are used as the baseline group, we find that the Mole/Dagbani dummy is significantly negative, while the Ga/Dangbe dummy is significantly positive. The Ewe show inconsistent results in terms of BHNs. In Zimbabwe, the margin that the Ndebele had against the Shona (that is, the baseline group) in the preceding bivariate analysis now completely disappears, while the negative effect of belonging to a residual ethnic minority persists. In Kenya, the observed ethnic inequalities between the Kikuyu (the baseline group) and the Somali cease to exist, while lower status of the Luhya newly emerges. Finally, in Uganda, we find no remaining ethnic differences in our surveys, while the residual ethnic minorities’ disadvantage relative to the Banyankole (the baseline group) remains in the Afrobarometer survey.

Moreover, it appears that a large proportion of the observed inequalities in living standards across different ethnic groups can be ‘explained’ by basic individual characteristics, such as educational attainment levels and ‘being employed’, as well as number of context factors, such as the level of infrastructural development in an area. Yet, a proportion of the observed ethnic inequalities can only be ‘explained’ by ethnic dummies, which could be an indication of missed variables or real ethnic idiosyncrasies. However, just because a significant proportion of the variance with respect to people’s living standards can be accounted for by a range of individual ‘risk’ factors does not mean that these risks are themselves unrelated to ethnicity (as we assumed in this section). Indeed, there are good reasons to assume that this is actually not the case, which is the issue we will turn to in the next section.

Table 2: Determinants of living standards

	Nigeria						Ghana						Zimbabwe						Kenya						Uganda								
	JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		JEA		Afghanistan		
	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value	OLS	p-value			
Female	0.006	0.913	-0.121	0.000	0.577	0.146	0.023	0.890	-0.093	0.280	-0.182	0.000	0.332	0.384	0.113	0.695	-0.072	0.382	-0.138	0.001	-0.035	0.918	-0.131	0.429	-0.049	0.256	-0.084	0.008	-0.153	0.606	0.078	0.699	
Age	0.054	0.026	0.026	0.002	0.396	0.164	0.086	0.039	0.086	0.039	0.281	0.083	0.042	0.338	0.165	0.380	0.043	0.032	0.297	0.022	0.380	0.165	0.380	0.043	0.032	0.297	0.022	0.380	0.165	0.380			
Indigene	0.003	0.249	0.002	0.002	-0.013	0.432	0.001	0.866	0.004	0.170	-0.002	0.131	0.016	0.237	-0.007	0.441	0.009	0.003	-0.018	0.284	-0.006	0.339	0.009	0.000	0.002	0.126	-0.021	0.112	0.002	0.847	0.002	0.593	
	0.002		0.001		0.017		0.008		0.003		0.001		0.014		0.009		0.004		0.001		0.015		0.006		0.002		0.001		0.013		0.008		
	0.007	0.906			0.678	0.104			0.012	0.958			-1.436	0.174			0.070	0.419			0.672	0.002			0.023	0.645		-0.413	0.224				
	0.057)				0.416)				0.238)		0.053)			0.355)		0.080)		0.049)		0.339)		0.077)		0.107)		0.107)		0.107)		0.107)		0.107)	
Lower Education	-0.201	0.022	-0.310	0.000	-0.752	0.243	-0.128	0.558	-0.368	0.000	-0.435	0.000	-0.705	0.002	-0.802	0.018	-0.457	0.009	-0.392	0.000	-0.665	0.201	-0.594	0.003	-0.421	0.000	-0.376	0.000	-2.809	0.000	-0.667	0.004	
	0.088)		0.035)		0.643)		0.218)		0.094)		0.046)		0.417)		0.338)		0.127)		0.053)		0.203)		0.263)		0.053)		0.036)		0.365)		0.229)		
Insecurity	-0.167	0.003	0.001	0.820	-2.188	0.000	-0.540	0.000	0.012	0.901	0.026	0.006	-1.288	0.002	-0.395	0.000	-0.103	0.203	0.001	0.919	-1.869	0.000	-0.241	0.000	-0.004	0.931	0.005	0.488	-0.276	0.000			
	0.056)		0.006)		0.407)		0.940)		0.093)		0.009)		0.411)		0.670)		0.081)		0.010)		0.331)		0.039)		0.050)		0.008)		0.347)		0.049)		
Job (any)	-0.090	0.161			-0.567	0.220			-0.147	0.249			-0.673	0.233			-0.102	0.280			-0.298	0.442			-0.025	0.586		0.261	0.420				
	0.064)				0.462)				0.127)				0.563)				0.094)		0.387)				0.324)		0.047)		0.090)		0.324)		0.111	0.679	
part-time job																																	
	0.034)				0.212)				0.053)				0.390)		0.071)						0.273)		0.028)		0.028)		0.042)		0.269)		0.187)		
full-time job					0.237	0.000			0.088	0.682			0.231	0.000			0.606	0.006			0.378	0.000			0.208	0.402		0.338	0.000		1.061	0.000	
	0.034)				0.214)				0.044)				0.065)		0.329)		0.044)		0.044)		0.249)		0.283)		0.036)		0.283)		0.036)		0.235)		
Rural	-0.145	0.004			0.008	0.982			-0.243	0.982			-0.423	0.374			-0.451	0.000			0.951	0.000	-0.082	0.369		0.438		0.484		0.226			
	0.051)				0.334)				0.065)				0.476)				0.121)		0.000		0.418)		0.023)		0.092)		0.082		0.626)		0.379)		
Small Urban	-0.122	0.046			-0.038	0.924			-0.402																								
	0.061)				0.402)				0.169)				0.169)		0.040)		0.108	0.007			-0.171	0.218		0.139)		0.109	0.000		0.321	0.005		0.174	0.005
Infrastructure	0.079	0.002			0.491	0.004			0.031	0.170			0.023)		0.248	0.141					0.108	0.007		0.139)		0.109	0.000		0.321	0.005		0.174	0.005
	0.130	0.104			0.142	0.102			0.073	0.900			0.079)		0.087)		0.550)		0.087)		0.579)		0.550)		0.079)		0.087)		0.579)		0.550)		
Yomba	0.079)				0.087)				0.087)				0.087)		0.087)		0.550)		0.087)		0.579)		0.550)		0.079)		0.087)		0.579)		0.550)		
lbo	0.048	0.592			0.174	0.052			-0.178	0.784			1.210	0.034			0.089)		0.089)		0.650)		0.571)		-0.027	0.777		0.095	0.135				
	0.090)				0.089)				0.089)				0.650)		0.571)		0.095	0.135			-0.027	0.777		0.096)		0.063)		0.761)		0.490)			
other Nigerians	-0.027	0.777			-0.500	0.477			-0.027	0.777			-0.500	0.477			-0.027	0.777			-0.500	0.477			-0.027	0.777			-0.500	0.477			
	0.096)				0.063)				0.761)				0.490)		0.400)		-0.040	0.768			-0.101	0.208		1.083	0.072	-1.213	0.042						
Eve																																	
	0.136)				0.034)				0.034)				0.034)		0.212)		0.136)		0.034)		0.212)		0.136)		0.034)		0.034)		0.212)		0.136)		
Gadunghe	-0.058	0.808			0.074	0.357			-0.058	0.808			0.074	0.357			-0.058	0.808			0.074	0.357			-0.058	0.808			0.074	0.357			
	0.240)				0.081)				0.081)				0.081)		0.062)		0.240)		0.081)		0.062)		0.240)		0.081)		0.062)		0.240)		0.081)		
WokDaghami	-0.100	0.571			-0.302	0.003			-0.302	0.003			0.682	0.383			-0.100	0.571			-0.302	0.003			0.682	0.383			0.682	0.383			
	0.176)				0.103)				0.176)				0.103)		0.781)		0.176)		0.103)		0.781)		0.103)		0.176)		0.103)		0.781)		0.103)		
other Ghanaians	0.078	0.538			-0.039	0.608			0.078	0.538			-0.039	0.608			0.078	0.538			-0.039	0.608			0.078	0.538			-0.039	0.608			
	0.126)				0.076)				0.126)				0.076)		0.558)		0.126)		0.076)		0.558)		0.126)		0.076)		0.558)		0.126)		0.076)		
Ndebeke																																	
other Zimbabweans																																	
	0.233	0.109			-0.043	0.630			0.233	0.109			-0.043	0.630			-0.043	0.630			-0.043	0.630			-0.043	0.630			-0.043	0.630			
	0.145)				0.089)				0.145)				0.089)		0.596)		0.145)		0.089)		0.596)		0.145)		0.089)		0.596)		0.145)		0.089)		
	-0.046	0.595			-0.145	0.097			-0.046	0.595			-0.145	0.097			-0.046	0.595			-0.145	0.097			-0.046	0.595			-0.145	0.097			
	0.087)				0.082)				0.087)				0.082)		0.356)		0.087)		0.082)		0.356)		0.087)		0.082)		0.356)		0.087)		0.082)		
Kkuyu																																	
Luo																																	
Luhya																																	
Somali																																	
Kambo																																	
Kalenjin																																	
Kisii																																	
Other Kenyans																																	
	0.069)				0.097)				0.069)				0.097)		0.502)		0.069)		0.097)		0.502)		0.617)		0.069)		0.097)		0.502)		0.617)		
	0.181																																

5. Ethnic differences in ‘risk’ factors associated with individual socio-economic development

In this section we will analyse whether two of the risk factors associated with lower standards of living—namely, infrastructural development and educational attainment—are distributed equally among different ethnic groups. If the probability of being exposed to these risks does not differ from ethnic group to ethnic group, only then can these factors be considered to be genuinely exogenous factors for explaining inequalities between different ethnic groups. If, however, the probability of facing one of these risk factors varies across ethnic groups, these factors are endogenous.

It should be further noted that the risk factors that were analysed in the previous section are related to each other. For example, someone’s risk of living in a rural area depends on the region in which he/she lives, because the proportions of rural areas differ from region to region. Moreover, the region of residence is itself a risk factor that could affect individuals’ standard of living due to a region’s climatological and ecological characteristics. Likewise, the risk of facing infrastructural underdevelopment depends on, among others, the place of residence (that is, in an urban or rural area) as well as the region of residence. Risk of quitting school after primary education depends on factors such as the extent to which infrastructure is available (such as secondary schools), access to school, degree of urbanisation, and region of residence, as well as on gender and generation. Risk of being threatened or actually victimised by violent crime is largely determined by similar factors. Finally, risk of being unemployed depends on educational attainment, gender, age, and infrastructure. Therefore, in assessing ethnic gaps in risk factors, we need to control for these ‘interdependencies’ accordingly.

Let us start by examining whether the infrastructural development people enjoy systematically differs according to the group to which they belong. Of course, infrastructure is supposed to be ‘public’, meaning everyone, at least among the citizens of a country, should be able to use it without being discriminated against. In some cases such as paved roads, even non-citizens can benefit from infrastructural development. Indeed, one of the defining characteristics of public goods is their non-excludability. However, when different groups are segregated from each other geographically or when groups have very low levels of mobility, inherently ‘public’ infrastructure can become ‘private’ (or a ‘club’ good). If only members of a particular group live in an area where public infrastructure is being constructed, most of the benefits of this public investment will accrue to this group. As a consequence, geographical variance in the availability of infrastructure may lead to an imbalance in the enjoyment of infrastructural benefits. Because in our case study countries there appears to be a significant level of congruence between ethnicity and regions (meaning that the probabilities of living in a particular region greatly differ from ethnic group to ethnic group), it is not unlikely that infrastructural development (and enjoyment of the benefits of this infrastructure) and ethnicity are statistically related.

In order to detect possible group differences in the degree to which people enjoy infrastructural development, we regress our infrastructural development index on ethnic

affiliation, controlling for regions of residence as well as the urban/rural distinction. Figure 2 presents the 95% confidence intervals of the average scores of infrastructure development for each ethnic group. In Nigeria and Zimbabwe, no significant ethnic gap found in terms of infrastructure development, although average scores for the Yoruba and the Ndebele are higher than the respective reference groups. In Ghana, however, the Ga/Dangbe have statistically significant advantages in terms of infrastructure development over the Ewe and other residual ethnic minorities. In Kenya, too, we find significant ethnic gaps: groups with relative advantages are the Luhya, the Kalenjin, the Kisii, while the Luo and the Kamba face higher risks of infrastructure underdevelopment. Finally, in Uganda, we find a significant gap between the Baganda and other residual ethnic minorities on the one hand and the Banyoro on the other. It should be noted that the Banyankole, like the Kikuyu in Kenya, do not necessarily benefit most from infrastructural development, although they do not suffer most either.

Figure 2 Group averages of benefit from infrastructural development

Note: Point estimates and 95% CIs are plotted. Predictions are adjusted to the situation in urban areas in the respective capital cities (in the case of Nigeria, in Lagos).

Source: Authors' calculation based on Afrobarometer data.

Let us now turn to the ethnic gaps that exist in education, especially in terms of the risk that one quits schooling early. Because educational attainment usually varies across generations and gender as well as environmental factors like the availability of infrastructure just examined, we need to control for these variables when estimating ethnic influences on the risk of 'quitting' education before or at completion of primary school. We have to use a mixed-effect logit model, because we have turned the educational attainment variable into a binary variable with 1 being allocated to respondents having attended primary schooling or less and 0 being allocated to respondents who attended post-primary education. In addition, one of the control

variables (namely, infrastructural development) is a PSU-level variable, making a mixed-effect model appropriate. We present the predicted probabilities (based on fixed parts) of lower educational attainment for each ethnic group (that is, quitting school before or at completion of primary schooling) in our case study countries for the case of 35-year old male living in an urban area with an average infrastructure in the capital (Figure 3).

The results show that in Nigeria, the Hausa/Fulani face a significantly higher risk of having lower educational attainment compared to the Igbo and the Yoruba, while the educational difference with the residual ethnic minorities is not statistically significant. In Ghana, the Mole/Dagbani face a higher risk of not having post-primary schooling when compared to the Ewe and the Ga/Dangbe. However, these differences do not have statistical significance. In Zimbabwe, belonging to a residual ethnic minority increases the probability of lower educational attainment compared to the Shona. However, the difference is within the margin of error in terms of predicted probabilities. In Kenya, the Somali stand out for their higher risk of having lower levels of education. Finally, no statistical differences exist between different ethnic groups in Uganda, but the control variables exert significant influence on the probability: being female, getting older, and living in rural areas increase the risk of having lower educational attainment; conversely, living in areas with higher levels of infrastructural development reduces the risk of not having post-primary education. The last point largely applies to the other countries as well.

Based on the results of this section, we can conclude that two of the risk factors associated with lower individual standards of living—namely, lower educational attainment levels and living in places with less infrastructural development—appear to differ systematically across different ethnic groups. In particular, the Hausa/Fulani face a disproportionately higher risk of having lower educational attainment. In the other countries as well, exposure to these two risk factors appears to differ substantially across different ethnic groups; yet, these differences were less severe and usually lacked statistical significance due to the rather large confidence intervals. Having established the presence of ‘objective’ horizontal inequalities in each of our five case study countries, and, in addition, having examined the extent to which individual and group characteristics could help to explain these inequalities, we can now turn to the question whether these inequalities are indeed ‘correctly’ perceived by the people involved.

Figure 3 Group averages of probability to have lower educational attainment

Note: Point estimates and 95% CIs are plotted. Predictions are adjusted to the case of a 35-year-old male living in an urban area with average infrastructure in the respective capital cities (in the case of Nigeria, in Lagos).

Source: Authors' calculation based on Afrobarometer data.

6. Objective versus subjective horizontal inequalities

In order to determine how people perceived the prevailing socio-economic horizontal inequalities, we included the question below in our survey.

Think about the condition of your ethnic group. Are their economic conditions worse, the same as, or better than other groups in this country?

The Afrobarometer surveys included the same question. People were asked to respond to this question on the following 5-point ordinal scale: 1, much better; 2, better; 3, same; 4, worse; and 5, much worse. We subsequently consolidated people's answers into a 3-point ordinal scale: 'superior' (much better/better); 'same' (same); and 'inferior' (worse/much worse). Figure 4 depicts the distributions of responses according to our 3-point ordinal scale for each case study country, where the results based on the Afrobarometer surveys are displayed on the left-hand side and those based on our surveys on the right-hand side.

Figure 4 Perceived socio-economic horizontal inequalities

It is interesting to see that the distribution patterns of both surveys are quite similar despite the underlying differences in the scope and timing of both surveys. For example, in both surveys, it emerges that the most frustrated group in Nigeria is the Igbo, the Ewe in Ghana, the Ndebele in Zimbabwe, the Somali in Kenya, and the Acholi in Uganda. There also appears to be consistency between both surveys regarding the most 'satisfied' ethnic groups: the Mole/Dagbani in Ghana, the Shona in Zimbabwe, the Kikuyu and the Kisii in Kenya, and the Banyankole in Uganda.

Comparing the results of Figure 4 with our previous analysis, it appears that there are some notable discrepancies between the perceived and 'objective' horizontal inequalities in our case study countries. Thus, for instance, in Nigeria, while the Hausa/Fulani were 'objectively' the poorest ethnic group, it was among the Igbo respondents that the highest proportion of people felt that they had an inferior level of socio-economic development. In Ghana, it was the Mole/Dagbani group that was objectively most disadvantaged, yet the Ewe respondents were the ones who held this perception most widely. In Zimbabwe, while there was no sharp 'objective' divide between the Shona and the Ndebele, the latter group clearly perceived themselves to be seriously disadvantaged. In Uganda, while the Baganda and the Banyoro were at least objectively at the same level as the Banyankole, they do not seem to perceive things that way. Moreover, some ethnic groups had a better than expected view of their own socio-economic situation compared to other ethnic groups. Thus, for instance, the confidence in their superior status displayed by the Kisii respondents in Kenya was largely ungrounded on the basis of the 'objective' analysis. For some ethnic groups, the perceptions of horizontal inequalities appear to reflect the actual situation relatively well. Thus, for instance, the Somali people in Kenya and the Acholi people in Uganda correctly perceived themselves to be at a disadvantage compared to other ethnic groups. Similarly, the Kikuyu in Kenya and the Banyankole in Uganda correctly perceive themselves to be in a relatively advantaged position.

Returning to the factors that could induce a mismatch between 'objective' and horizontal inequalities discussed in Section 2, we will now examine the extent to which people's individual socio-economic situation influenced or blurred people's perceptions of the prevailing 'objective' horizontal inequalities. In order to do this, we have to look at the effects of individual attributes as well as environmental factors affecting respondents' lives and see if the adjusted distributions of perceived horizontal inequalities converge to the expected distributions based on the objective horizontal inequalities. It is worthwhile recalling here that if perceptions reflect objective group differences, people from the same ethnic group should respond with the same answer regardless of their personal socio-economic status. Thus, two respondents from the same ethnic group—one being rich and the other being poor—should choose 'inferior', their group is relatively disadvantaged compared to other ethnic groups. Similarly, two equally wealthy respondents, with one of them belonging to a relatively rich group and the other belonging to a relatively poor group, should choose different answers regardless of the fact that they are in the same personal socio-economic situation. Complicating matters in this respect is the fact that if there is an objective difference between ethnic groups, it is possible that individual wealth correlates with perceiving one's group to be superior in terms of socio-economic development, as richer

are more likely to belong to the relatively richer group, and vice versa. Yet, once we include ethnic dummy variables in our model, the variables that measure respondents' individual wealth situation should no longer have explanatory power, because the coefficients are adjusted to the case when the respondent's ethnic group is the same.

Infrastructural development can also affect respondents' perceptions of the prevailing socio-economic horizontal inequalities. This is because it may have a direct demonstration effect via its visual impact upon perceptions; but it can also influence perceptions indirectly through the improvement of 'objective' individual living standards, which therefore have to be controlled for by individual wealth indicators as well. Therefore, in estimating the effects of ethnic affiliation on respondent's choice from our three possibilities ('inferior', 'the same', and 'superior'), it is necessary to control for the effects of differences in infrastructural development as well as individual socio-economic characteristics, including education and employment. We also control for group size by means of a dummy variable, which captures whether or not groups are larger than 10% of the total population. The logic for including this variable is that larger groups are in a better position to 'claim' socio-economic benefits and resources from the state than smaller groups, thereby possibly improving their group's position, which might be reflected in their perceptions of the prevailing horizontal inequalities.

Given that there is no mixed effect multinomial logit model, we decided to divide the answering options ('inferior', 'the same', and 'superior') into two sets of binary and used mixed-effect logit instead. When estimating the probability of feeling the dependent variable takes the value 1 if a respondent chooses 'inferior' and 0 if the answer is 'the same', excluding those who choose 'superior' from the analysis. When estimating the probability of perceiving group 'superiority', respondents who choose 'inferior' are excluded from the analysis. Respondents who chose 'superior' are the value 1, while respondents who answered 'the same' were assigned 0. The results this analysis are shown in Table 3, where each case study country has four models. first column from the left lists the effects of the above variables on the probability that respondents perceived their own group to be inferior to other groups. Conversely, the third column lists the effects on the probability that respondents perceived their own group to be superior to other groups.

Table 3. Determinants of perceived socio-economic status

	Nigeria								Ghana								Zimbabwe							
	Economically inferior (vs. same)				Economically superior (vs. same)				Economically inferior (vs. same)				Economically superior (vs. same)				Economically inferior (vs. same)				Economically superior (vs. same)			
	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value	coefficient	p-value
	(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)		(SE)	
Politically inferior																								
			2.176						2.275								1.921							
			(0.162)						(0.260)								(0.226)							
Politically superior																								
							1.767								1.787									
							(0.142)								(0.209)									
Assets	0.132	0.234	0.079	0.514	0.278	0.005	0.229	0.029	-0.182	0.261	-0.149	0.400	-0.129	0.313	-0.145	0.309	0.202	0.135	0.187	0.202				
	(0.111)		(0.120)		(0.100)		(0.105)		(0.162)		(0.177)		(0.128)		(0.143)		(0.135)		(0.147)					
BHNS	-0.048	0.005	-0.041	0.027	0.032	0.035	0.018	0.258	-0.087	0.000	-0.078	0.002	-0.018	0.338	-0.014	0.500	-0.232	0.000	-0.217	0.000				
	(0.017)		(0.018)		(0.015)		(0.016)		(0.023)		(0.025)		(0.019)		(0.021)		(0.040)		(0.043)					
Lower education	0.005	0.973	-0.076	0.664	-0.007	0.966	0.022	0.888	0.174	0.485	0.426	0.112	-0.129	0.507	-0.115	0.588	0.106	0.606	0.015	0.946				
	(0.163)		(0.176)		(0.152)		(0.160)		(0.249)		(0.268)		(0.195)		(0.213)		(0.205)		(0.224)					
Parttime	0.140	0.389	0.222	0.205	-0.263	0.083	-0.290	0.069	0.157	0.569	0.121	0.689	0.199	0.405	0.332	0.202	0.171	0.587	0.198	0.558				
	(0.163)		(0.175)		(0.152)		(0.160)		(0.276)		(0.303)		(0.239)		(0.260)		(0.316)		(0.337)					
Fulltime	0.357	0.028	0.363	0.039	-0.200	0.187	-0.150	0.351	0.064	0.781	0.123	0.628	0.021	0.913	0.007	0.972	-0.312	0.283	-0.168	0.592				
	(0.162)		(0.176)		(0.151)		(0.161)		(0.229)		(0.253)		(0.196)		(0.217)		(0.291)		(0.314)					
Rural	0.140	0.460	0.229	0.229	-0.159	0.335	-0.282	0.090	-0.346	0.353	-0.487	0.215	-0.135	0.599	-0.089	0.747	0.580	0.276	0.622	0.252				
	(0.190)		(0.191)		(0.165)		(0.166)		(0.372)		(0.393)		(0.257)		(0.275)		(0.532)		(0.542)					
Infrastructure	0.016	0.868	0.117	0.240	0.030	0.723	-0.024	0.777	-0.124	0.332	-0.110	0.412	0.151	0.095	0.089	0.359	-0.225	0.207	-0.196	0.283				
	(0.099)		(0.100)		(0.084)		(0.085)		(0.128)		(0.135)		(0.090)		(0.097)		(0.178)		(0.182)					
Groupsize10%+	-0.474	0.220	-0.226	0.570	0.181	0.589	-0.305	0.385	-0.873	0.193	-0.162	0.825	0.889	0.251	0.370	0.639	-1.554	0.000	-1.398	0.000				
	(0.387)		(0.397)		(0.335)		(0.351)		(0.670)		(0.729)		(0.774)		(0.788)		(0.264)		(0.279)					
Yoruba	-0.114	0.653	-0.212	0.407	-0.298	0.148	0.157	0.463																
	(0.254)		(0.256)		(0.206)		(0.214)																	
Igbo	0.509	0.059	0.029	0.918	-0.538	0.027	0.108	0.668																
	(0.269)		(0.277)		(0.242)		(0.252)																	
Other Nigerians	-0.228	0.556	-0.289	0.466	0.082	0.808	0.139	0.691																
	(0.387)		(0.396)		(0.339)		(0.351)																	
Ewe									1.239	0.001	0.519	0.186	0.187	0.555	0.318	0.355								
									(0.363)		(0.393)		(0.317)		(0.344)									
GaDangbe									0.704	0.066	0.082	0.845	-0.158	0.605	-0.034	0.920								
									(0.382)		(0.422)		(0.306)		(0.341)									
Mok Dagbani									-0.711	0.345	-0.372	0.648	1.221	0.134	0.857	0.302								
									(0.754)		(0.814)		(0.815)		(0.831)									
Other Ghanaians									-0.195	0.783	-0.289	0.702	0.460	0.567	0.252	0.758								
									(0.706)		(0.757)		(0.803)		(0.820)									
Ndebele																	1.965	0.000	1.160	0.000				
																	(0.312)		(0.330)					
Other Zimbabweans																	-0.598	0.095	-1.174	0.003				
																	(0.358)		(0.392)					
Intercept	-0.556	0.213	-1.487	0.001	-0.462	0.237	-0.878	0.030	1.006	0.231	-0.298	0.744	-0.818	0.347	-0.978	0.275	-0.215	0.765	-0.870	0.240				
	(0.447)		(0.461)		(0.391)		(0.404)		(0.840)		(0.911)		(0.870)		(0.896)		(0.720)		(0.740)					
sd(cons)	0.893		0.769		0.579		0.475		1.068		0.979		0.401		0.357		0.696		0.559					
	(0.121)		(0.132)		(0.104)		(0.117)		(0.189)		(0.205)		(0.204)		(0.277)		(0.152)		(0.167)					
Number of observation	1305		1286		1336		1319		634		602		626		600		771		730					
Number of psu	235		234		231		231		97		96		97		97		65		65					
Wald ch2	24.200	0.012	198.560	0.000	22.950	0.018	168.810	0.000	39.110	0.000	103.380	0.000	15.250	0.228	82.530	0.000	88.410	0.000	135.010	0.000				
Log likelihood	-841.692		-717.444		-885.569		-788.459		-380.51		-317.885		-422.566		-360.552		-404.066		-345.051					

Table 3. Determinants of perceived socio-economic HIs (Cont.)

Zimbabwe					Kenya					Uganda				
Economically superior (vs. same)					Economically inferior (vs. same)					Economically superior (vs. same)				
coefficient <i>p</i> -value					coefficient <i>p</i> -value					coefficient <i>p</i> -value				
(SE)					(SE)					(SE)				
Politically inferior														
Politically superior														
Assets	-0.100	0.348			-0.235	0.100			0.238	0.186			0.045	0.660
BHNs	-0.058	0.029			-0.028	0.194			0.003	0.921			-0.091	0.000
Lower education	0.105	0.558			0.176	0.309			0.312	0.167			-0.285	0.025
Parttime	0.201	0.402			-0.354	0.071			0.380	0.124			-0.173	0.202
Fulltime	-0.530	0.029			-0.082	0.695			0.054	0.841			-0.199	0.263
Rural	-0.780	0.076			0.605	0.040			0.736	0.057			-0.393	0.115
Infrastructure	-0.220	0.145			0.154	0.089			0.099	0.394			-0.239	0.000
Groupsize10%+	-0.003	0.989			-0.962	0.000			0.929	0.006			0.001	0.997
Ndebele	-0.422	0.162			0.082	0.792			0.337				0.224	
Other Zimbabweans	-0.731	0.040			-0.456	0.217								
Luo														
Luhya														
Somali														
Kamba														
Kalenjin														
Kisii														
Other Kenyans														
Baganda														
Banyoro														
Acholi														
Other Ugandans														
Intercept	0.597	0.315	0.513	0.384	-0.175	0.695	-1.250	0.010	-2.295	0.000	-2.402	0.000	-0.527	0.151
sd (cons)	0.591	0.464			0.129	0.000	0.392	0.435	0.711	0.699	0.282	0.135	0.711	0.699
Number of observation	856	815	824	816	535	527	1894	1831	988	959	271	271	149.220	0.000
Number of psu	65	65	136	136	131	131	299	299	273	271	140.320	0.000	-1060.74	-847.022
Wald ch2	23.350	0.010	95.050	0.000	67.330	0.000	138.490	0.000	36.730	0.001	53.490	0.000	361.100	0.000
Log likelihood	-547.505		-483.927		-519.042		-468.454		-327.853		-310.181		-632.568	

As expected, most variables measuring individual socio-economic status have no significant effect. The exception is the BHN indices. In four of our five case studies, it emerges that the respondents who are better able to satisfy their basic human needs are also less likely to perceive their own group to be inferior to other groups. This suggests that people's individual socio-economic situation to some extent affects their assessment of the prevailing socio-economic horizontal inequalities, which was argued to be a possible factor for the existence of a mismatch between objective and subjective horizontal inequalities in Section 2. Conversely, there is little evidence to support the idea of a 'visual' effect of infrastructural development. Although respondents in areas with more infrastructural development are less likely to think their group is inferior to other groups in Uganda, unexpectedly, the opposite effect is found in Kenya, which may suggest the possibility that infrastructural development generates competition between ethnic groups, possibly inducing a sense of frustration and dissatisfaction rather than satisfaction. It is also interesting to note that in Kenya the group size dummy is significant in both models and has the expected signs: that is, members of larger groups are less likely to feel inferior and more likely to feel superior. In Zimbabwe, the group size dummy is also significant and has the expected negative sign in the first model (namely, the probability of respondents perceiving their group to be socio-economically inferior), while it has no statistical significance in the second model. In the other cases, while the group size dummies usually have the right sign, there are not statistically significant.

Despite controlling for all these possibly distorting effects, we still find discrepancies between what people perceive and what people 'should' perceive given the objective horizontal inequalities established in Section 3. In Nigeria, for instance, the Igbo are less likely to think their group to be superior to other groups and more likely to feel inferiority when compared to the Hausa/Fulani (that is, the baseline group), who have more reason to have such a feeling. In Ghana, the Ga/Dangbe (in addition to the Ewe) are more likely to perceive collective deprivation compared to the Akan (the baseline group). Likewise, the Ndebele are more likely to be frustrated collectively compared to the Shona (the baseline group). In Kenya, a feeling of collective deprivation is shared by all groups compared to the Kikuyu (the baseline group), except for the Kisii. Similarly, groups that are not in a particularly disadvantaged position in Uganda (that is, the Baganda and the Banyoro) share a feeling of frustration with the Acholi, who are objectively poorer.

These results suggest that there might be other factors that could help to explain the observed mismatch between objective and subjective horizontal inequalities. In what follows, we will examine the extent to which cross-dimensional contamination might have contributed to the mismatching of subjective and objective horizontal inequalities in our case studies. As argued in Section 2, people's perceptions of the prevailing socio-economic horizontal inequalities may be 'distorted' by their perceptions of the prevailing political horizontal inequalities. Thus, people who feel their group is *politically* excluded or marginalised may also feel (unjustly) that their group is at an advantage in terms of socio-economic development compared to other groups or the politically dominant group.

Before examining whether the perception of political horizontal inequalities has an impact on people's perception of socio-economic horizontal inequalities, it is necessary

to explore people's perceptions of the political situation first. We can do this with the of the question below, which was included in both the JICA and Afrobarometer surveys.

Think about the condition of your ethnic group. Do they have less, the same, or more influence in politics than other groups in this country?

In the same vein as for the perceived socio-economic horizontal inequalities in Figure 4, Figure 5 shows the distribution of responses to this question for both surveys for our five case study countries. The results show that the Hausa/Fulani respondents perceive themselves to be in a relatively advantaged position, while the Igbo feel relatively marginalised politically. In Ghana, it is particularly the Akan who feel relatively advantaged, while a substantial proportion of Ewe respondents feel politically inferior. In Zimbabwe, the Ndebele feel largely excluded from political power. The Kenyan situation is very complex; yet, it appears that the Luo are quite satisfied with their degree of political power, while more than 60% of the Somali people felt they were politically inferior. Lastly, in Uganda, Banyankole respondents appear relatively satisfied with their political situation, while the Baganda and Acholi feel considerably disadvantaged in terms of political power. Without going into detail as to the extent to which people's perceptions of the prevailing political horizontal inequalities are in line with the 'objective' situation, the observed patterns of responses appear to be broadly in line with what one would expect on the basis of a detailed political-historical analysis and contextualisation of the evolution and nature of the prevailing 'objective' political horizontal inequalities in each of our case study countries. See, for example: Langer (2008) for Ghana; Mustapha (2006) for Nigeria; and Stewart (2010) for Kenya.

Figure 5 Perceived political horizontal inequalities

An interesting issue to be examined is the extent to which people's perceptions of the prevailing political and socio-economic horizontal inequalities overlap (that is, go in the same direction). Our analysis in this respect shows that people's responses to both questions are quite highly correlated, as demonstrated for the Nigerian case in Figure 6. This suggests there is a substantial association between feeling politically excluded and socio-economically disadvantaged, or, conversely, feeling politically included or empowered and socio-economically advantaged. There are at least two reasons why it seems likely that the perceived political situation affects people's perceptions with respect to the prevailing socio-economic horizontal inequalities and not the other way around. First, political horizontal inequalities are arguably more visible, and people are more likely to have an 'informed' opinion about their group's political influence and inclusion in the state institutions. Secondly, given that the state is the most important *economic* actor in most African countries (for example, the state is usually the largest employer and investor), controlling the state or having political influence can be very important for different groups' economic situation and progress. Thus, having political influence might influence people's perceptions of the prevailing socio-economic horizontal inequalities because of the associated economic power that comes with it.

Figure 6 Correlations between PPHI and PSEHI in Nigeria

Source: Authors' calculations based on Afrobarometer data.

The second and fourth columns in Table 3 report the estimated coefficients of determinants of perceived socio-economic horizontal inequalities when perceptions of the prevailing political horizontal inequalities are included. Interestingly, we find that feelings of political group inferiority and superiority boost the feelings of economic group inferiority and superiority, respectively, indicating the presence of cross-dimensional contamination. After feelings of group political inferiority are controlled for, the mere fact of affiliation with the Igbo in Nigeria, and with the Ewe, Ga/Dangbe and residual minorities in Ghana, shows no significant effect on the feeling of group economic inferiority. The Ndebele in Zimbabwe still tend to feel group economic deprivation, but the size of the effect is considerably reduced compared to the result when political group deprivation is not controlled for. Likewise, when we control for the feeling of political superiority, all ethnic dummies in Nigeria, Ghana, and Zimbabwe lose statistical significance.

In Kenya and Uganda, we find a considerable reduction of the positive influence of dummies on the feeling of economic inferiority in the models that control for political group deprivation, except for the case of the Luo who somewhat surprisingly show a strengthened tendency to exhibit feelings of group economic deprivation. With regard the probability of feeling group economic superiority, we find that the Kamba and minorities in Kenya, who are less likely to feel group economic superiority compared to the Kikuyu when political feeling is not controlled for, are still less likely to do so, but the size of the negative impacts themselves are considerably reduced. The Kisii, on the other hand, become more likely to feel economic superiority, which means that their economic confidence is suppressed to a degree by their political feelings; this could be explained by the fact that the Kisii are one of the most economically active communities in Kenya. In the same vein, the Baganda and the Banyoro in Uganda, who are not

economically inferior to the ruling Banyankole in 'objective' terms, become more likely feel economic group superiority after political feelings are controlled for.

7. Some conclusions

In this paper we examined the extent to which 'objective' and subjective horizontal inequalities differed in five African countries. So far, this issue has been largely ignored in the literature on horizontal inequalities. It was established that there were significant socio-economic horizontal inequalities in each of our five case study countries. We also examined the extent to which these seemingly ethno-based gaps could be explained by personal characteristics and/or other environmental factors commonly used to explain differences in standards of living between individuals. While these individual risk factors explained a significant portion of the observed inequalities, ethnic affiliations remained important as well. It also emerged that different ethnic groups faced different chances of experiencing these risk factors. In other words, there were significant ethnic differences in the distribution of these risks.

Having established the presence of 'objective' socio-economic horizontal inequalities, we analysed people's perceptions of these inequalities and found a surprisingly large discrepancy between our 'objective' and subjective measures of inequality, especially in Nigeria, Ghana, and Zimbabwe. Further analysis of the mismatch between 'objective' and subjective horizontal inequalities showed, first, that people's *individual* socio-economic situation tended to 'distort' their perceptions of their group's situation and relative position, and, second, that there appeared to be cross-dimensional contamination, whereby people's perceptions of political horizontal inequality significantly affected their perceptions of the prevailing socio-economic horizontal inequalities. Moreover, given the finding that perceptions of socio-economic and political horizontal inequalities tended to be positively correlated, countries where an economically inferior group takes control of political power, as in Nigeria and Zimbabwe, are more likely to have a discrepancy between subjective and 'objective' socio-economic horizontal inequalities than countries where an economically dominant group takes political power, as in Kenya, and to some extent in Uganda and Ghana.

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Appendix 1: Operationalization

Female (both Afrobarometer and JICA): respondent's gender (1 = female, 0 = male)

Age (both Afrobarometer and JICA): respondent's age

Indigene (JICA): whether respondent is from the city in which survey was conducted. (1 = yes, 0 = from somewhere else)

Lower education (both Afrobarometer and JICA): a binary measure coded 1 if respondent's highest level of educational attainment is up to primary school, coded 0 otherwise. 'Don't know' and 'refused to answer' are treated as missing value.

Insecurity (JICA): a binary measure based on the following question:

Over the last 12 months, how often, if ever, has your household gone without: Physical security?

Original responses are measured by 5-point ordinal scale (0 = Never, 1 = Just once or twice, 2 = Several times, 3 = Many times, 4 = Always), which we recoded 0 if answer is 'never', 1 otherwise (excluding NA/DK).

Insecurity (Afrobarometer): sum of standardised (country-wide) scores of responses to the following questions:

Over the past year, how often, if ever, have you or anyone in your family

- A. *Feared crime in your own home?*
- B. *Had something stolen from your house?*
- C. *Been physically attacked?*

Responses are 5-point ordinal scale (0 = Never, 1 = Just once or twice, 2 = Several times, 3 = Many times, 4 = Always), which we treated as if they are interval scale. 'Don't know' and 'refused to answer' are treated as missing value.

Job (JICA): 1 = currently respondent has a job; 0 = currently respondent does not have any job (including students and housewives).

Employment status (Afrobarometer): 3-point ordinal scale (0 = no job, 1 = part-time job, 2 = full-time job) decomposed to dummy variables, **Parttime** and **Fulltime**,

Rural (Afrobarometer): 1 if PSU is rural; 0 otherwise.

Small Urban (Afrobarometer: Nigeria): 1 if PSU is coded as 'small urban'; 0 otherwise.

Infrastructure (Afrobarometer): sum of weighted (with proportion of zero within the capital) scores of responses to the following nine questions:

Are the following services present in the primary sampling unit/enumeration area:

1. *Electricity grid that most houses could access?*
2. *Piped water system that most houses could access?*
3. *Sewage system that most houses could access?*
4. *Cell phone service?*

Are the following facilities present in the primary sampling unit/enumeration area, or within easy walking distance:

5. *Post-office?*
6. *School?*
7. *Police station?*
8. *Health clinic?*
9. *Market stalls (selling groceries and/or clothing)?*
10. *Was the road at the start point in the PSU/EA paved/ tarred/ concrete?*

Groupsize10%+ (Afrobarometer): 1 if the size of ethnic group at national level exceeds 10%; 0 otherwise.

Assets (JICA): sum of weighted (with proportion of zero within the capital) scores of responses to the following seven questions:

Which of these things do you personally own? (1 = yes, 0 = no)

- A. Radio
- B. Bicycle
- C. Television
- D. Mobile phone
- E. Refrigerator
- F. Flush toilet
- G. Car

Assets (Afrobarometer): sum of weighted (with proportion of zero within the capital) scores of responses to the following seven questions:

Which of these things do you personally own? (1 = yes, 0 = no)

- A. Radio
- B. Television
- C. Motor Vehicle, Car or motorcycle

Where is your main source of water for household use located? (1 = Inside the house, 0 = Inside the compound or outside of the compound)

How often do you use:

- A. A mobile phone?
- B. A computer?
- C. The internet?

1 = Every day, A few times a week, A few times a month or, Less than once a month, 0 = Never.

BHNs (both Afrobarometer and JICA): sum of standardised (within the capital) scores of responses to the following five questions:

Over the past year, how often, if ever, have you or anyone in your family gone without:

- A. Enough food to eat?
- B. Enough clean water for home use?
- C. Medicines or medical treatment?
- D. Enough fuel to cook your food?
- E. A cash income?

Responses are 5-point ordinal scale (0 = Never, 1 = Just once or twice, 2 = Several times, 3 = Many times, 4 = Always), which we treated as if they are interval scale.

'Don't know' and 'refused to answer' are treated as missing value.

PSEHI (perceived socio-economic horizontal inequality) (both JICA and Afrobarometer):

Economically inferior: 1 = Much worse/Worse; 0 = Same; otherwise treated as

Economically superior: 1 = Much better/Better; 0 = Same; otherwise treated as

Based on the following questions and answers:

Think about the condition of _____ [R's Ethnic Group]. Are their economic conditions worse, the same as, or better than other groups in this country?

Responses: 1 = Much better, 2 = Better, 3 = Same, 4 = Worse, 5 = Much worse, 7 = Not applicable, 9 = Don't know, 998 = Refused to answer, -1 = Missing data

PPHI (perceived political horizontal inequality) (both JICA and Afrobarometer):

Politically inferior: 1 = Much less/Less; 0 = Same; otherwise treated as missing

Politically superior: 1 = Much more/More; 0 = Same; otherwise treated as missing

Based on the following questions and answers:

Think about the condition of _____ [R's Ethnic Group]. Do they have less, the same, or more influence in politics than other groups in this country?

1 = Much more, 2 = More, 3 = Same, 4 = Less, 5 = Much Less, 7 = Not applicable, 9 = Don't know, 998 = Refused to answer, -1 = Missing data

Appendix 2: Descriptive statistics

JICA Survey

Variable	Country	Obs	Mean	Std. Dev.	Min	Max
Assets	Nigeria	406	0.869	0.534	0.000	2.586
	Ghana	324	1.033	0.767	0.000	2.889
	Zimbabwe	400	1.406	0.802	0.000	3.127
	Kenya	904	0.885	0.663	0.000	2.213
	Uganda	498	1.257	0.905	0.000	3.875
BHNs	Nigeria	402	0.029	3.950	-13.929	4.276
	Ghana	324	0.000	3.395	-13.432	3.386
	Zimbabwe	397	0.107	3.376	-7.947	7.720
	Kenya	892	-1.313	4.611	-19.482	2.980
	Uganda	491	-0.572	4.045	-14.819	3.712
Females	Nigeria	412	0.500	0.501	0	1
	Ghana	324	0.491	0.501	0	1
	Zimbabwe	402	0.498	0.501	0	1
	Kenya	907	0.502	0.500	0	1
	Uganda	500	0.566	0.496	0	1
Age	Nigeria	412	33.049	13.013	18	84
	Ghana	323	38.774	15.688	18	99
	Zimbabwe	402	33.458	12.665	18	84
	Kenya	907	32.871	11.077	18	99
	Uganda	499	30.826	11.639	18	100
Indigene	Nigeria	412	0.427	0.495	0	1
	Ghana	324	0.241	0.428	0	1
	Zimbabwe	402	0.343	0.475	0	1
	Kenya	905	0.259	0.438	0	1
	Uganda	483	0.290	0.454	0	1

Variable	Country	Obs	Mean	Std. Dev.	Min	Max
Lower education	Nigeria	411	0.129	0.336	0	1
	Ghana	324	0.395	0.490	0	1
	Zimbabwe	402	0.142	0.349	0	1
	Kenya	902	0.213	0.410	0	1
	Uganda	499	0.297	0.457	0	1
Insecurity	Nigeria	408	0.593	0.492	0	1
	Ghana	324	0.309	0.463	0	1
	Zimbabwe	397	0.587	0.493	0	1
	Kenya	902	0.220	0.414	0	1
	Uganda	494	0.287	0.453	0	1
Job	Nigeria	410	0.688	0.464	0	1
	Ghana	324	0.858	0.350	0	1
	Zimbabwe	402	0.729	0.445	0	1
	Kenya	906	0.670	0.470	0	1
	Uganda	500	0.652	0.477	0	1
PSEHI	Nigeria	404	2.698	0.862	1	5
	Ghana	313	3.080	1.002	1	5
	Zimbabwe	385	2.917	0.809	1	5
	Kenya	880	2.880	0.849	1	5
	Uganda	484	3.045	1.064	1	5
PPHI	Nigeria	403	2.918	0.939	1	5
	Ghana	303	2.865	1.076	1	5
	Zimbabwe	354	2.672	0.981	1	4
	Kenya	875	3.170	1.388	1	5
	Uganda	484	3.279	1.099	1	5

Afrobarometer

Variable	Country	Obs	Mean	Std. Dev.	Min	Max
Assets	Nigeria	2245	0.812	0.684	0.000	2.909
	Ghana	1177	0.688	0.732	0.000	3.480
	Zimbabwe	1186	0.825	0.888	0.000	3.607
	Kenya	1062	0.640	0.661	0.000	2.770
	Uganda	2381	0.525	0.676	0.000	3.646
BHNs	Nigeria	2266	-0.588	4.390	-13.556	4.635
	Ghana	1174	-1.281	5.020	-18.695	3.258
	Zimbabwe	1181	0.601	2.839	-6.204	7.385
	Kenya	1097	-1.188	3.774	-13.758	4.380
	Uganda	2412	-2.432	4.182	-14.787	3.690
Females	Nigeria	2324	0.499	0.500	0	1
	Ghana	1200	0.500	0.500	0	1
	Zimbabwe	1200	0.500	0.500	0	1
	Kenya	1104	0.502	0.500	0	1
	Uganda	2431	0.499	0.500	0	1
Age	Nigeria	2316	31.303	11.410	18	86
	Ghana	1184	39.017	16.459	18	110
	Zimbabwe	1189	36.563	15.294	18	94
	Kenya	1100	35.215	12.918	18	95
	Uganda	2421	33.709	12.286	18	81
Lower education	Nigeria	2319	0.266	0.442	0	1
	Ghana	1195	0.623	0.485	0	1
	Zimbabwe	1200	0.333	0.472	0	1
	Kenya	1100	0.459	0.499	0	1
	Uganda	2431	0.504	0.500	0	1
Insecurity	Nigeria	2293	-0.009	2.334	-1.80298	12.15934
	Ghana	1194	0.001	2.046	-1.36252	14.01731
	Zimbabwe	1196	0.003	2.126	-1.91515	11.36737
	Kenya	1096	0.000	2.195	-1.81166	12.48099
	Uganda	2421	-0.001	2.236	-1.84514	10.24266

Variable	Country	Obs	Mean	Std. Dev.	Min	Max
Rural	Nigeria	2324	0.507	0.500	0	1
	Ghana	1200	0.547	0.498	0	1
	Zimbabwe	1200	0.633	0.482	0	1
	Kenya	1104	0.775	0.418	0	1
	Uganda	2431	0.799	0.401	0	1
Small urban	Nigeria	2324	0.129	0.335	0	1
	Ghana					
	Zimbabwe					
	Kenya					
	Uganda					
Infrastructure	Nigeria	2051	1.648	0.942	0.000	3.640
	Ghana	1096	2.046	1.328	0.000	3.915
	Zimbabwe	1192	1.985	1.418	0.013	3.816
	Kenya	1104	1.808	1.399	0.000	4.863
	Uganda	2423	1.838	1.570	0.000	6.020
Employment status	Nigeria	2299	0.773	0.841	0	2
	Ghana	1191	0.959	0.894	0	2
	Zimbabwe	1199	0.362	0.700	0	2
	Kenya	1100	0.595	0.786	0	2
	Uganda	2430	0.538	0.729	0	2
PSEHI	Nigeria	2245	3.017	1.005	1	5
	Ghana	1121	3.093	1.114	1	5
	Zimbabwe	1142	2.948	0.901	1	5
	Kenya	1078	3.412	1.053	1	5
	Uganda	2334	3.586	1.059	1	5
PPHI	Nigeria	2239	2.926	1.062	1	5
	Ghana	1087	2.959	1.211	1	5
	Zimbabwe	1097	3.027	1.067	1	5
	Kenya	1073	3.185	1.119	1	5
	Uganda	2290	3.559	1.044	1	5