The relationship between ethnic diversity, ethnic voting, and public service delivery in contemporary Africa. A quantitative analysis

Sips, Joep

The relationship between ethnic diversity, ethnic voting, and public service delivery in contemporary Africa.

A quantitative analysis

Bachelor Thesis
Name: Joep Sips
Student Number: s2831074
BAP: Democratization processes in contemporary Africa
Instructor: Leila Demarest
Second reader: Frits Meijerink
Leiden University
Word count: 7982

Content

1. Introduction

After decades of slow but steady growth and cautious optimism, recent crises in Africa have caused a reversal of fortunes which has led to worries about the continent's future. Food crises, droughts, a recurrence of violent conflict, the devastating impact of COVID-19, and a retreat of democracy have indicated the continent is experiencing one of the most crucial moments in its recent history. One of the factors which has influenced scholars' assessment of the stability in the region has been ethnicity. The continent, especially sub-Saharan Africa, is one of the most ethnically diverse regions in the world. This ethnic diversity is often regarded as an obstacle to development. In deeply divided societies, ethnicity has been shown to influence nearly every aspect of public organization, from the division of capital to the organization of the political system itself (Horowitz, 1985, p. 8).

Scholars have argued that ethnic diversity has a negative impact on public service delivery (Alesina, Baqir & Easterly, 1999; Ejdemyr, Kramon and Robinson, 2018). Governments are tasked with delivering services like clean water, sewage systems, education, health care, and electricity to its citizens. The degree to which they are successful has important implications for citizens' quality of life, life expectancy, and general welfare. Scholars have theorized that ethnic diversity leads to ethnic favoritism in the distribution of public goods, which has a negative effect on the general population (Easterly & Levine, 1997, p. 1206).

However, ethnic diversity alone might not explain the negative consequences it is often associated with. Posner (2005, p. 3) argues that ethnicity is not an inherent division by which African societies are divided, but that a country's political institutions play a vital role in determining whether ethnic divisions become politically salient. This is supported by Dowd and Driessen (2008, p. 22), who argue that it is not just diversity, but the politicization of this diversity which has negative impacts on democratization and development. These findings call into question the negative consequences associated with ethnic diversity and suggest that this relationship might be influenced by the degree to which ethnicity is politicized.

This calls for an empirical investigation. The literature on the relationship between ethnicity and development is missing a large-N study evaluating the way in which the relationship between ethnic diversity and public service delivery is influenced by different levels of politicized ethnicity. Therefore, the research question of this study is: What is the effect of

ethnic diversity on the delivery of public services in Africa, and is this effect moderated by the degree to which ethnicity is politicized?

In this paper, I attempt to answer this question by using survey data collected in 31 African countries. Using this data, I construct a dataset including values for each of the 441 regions in these countries. To measure the relationship between the variables, I conduct a multilevel linear regression including several control variables. The results show that ethnic diversity is negatively associated to the equal delivery of public services, that this relationship is statistically significant, and that this is not influenced by the degree to which ethnicity is politicized.

The structure of the paper is as follows. Firstly, the next section will present the conceptualization of the main concepts in this paper: ethnicity, politicized ethnicity, and public service delivery, and use the existing literature on the topic to form hypotheses. Secondly, the data and methods are discussed in depth, after which the results of the analysis are presented and discussed. Finally, the conclusion is drawn, which includes a discussion of the limitations of this paper, and recommendations for further research.

2. Ethnic diversity and public service delivery

2.1. Conceptualization

Ethnicity

Scholars have presented many definitions of ethnicity. One of the most influential definitions was offered by Horowitz (1985, pp. 17-18) who describes ethnicity as a sense of collective belonging, which could be based on (a combination of) common descent, language, history, culture, race, or religion. Other definitions include that of Fearon and Laitin (2000), who argue that an ethnic group is "a group larger than a family for which membership is reckoned primarily by descent, is conceptually autonomous, and has a conventionally recognized 'natural history' as a group" (p. 20).

According to Hutchinson and Smith (1996), an ethnic group is "a named human population with myths of common ancestry, shared historical memories, one or more elements of a common culture, a link with a homeland and a sense of solidarity" (p. 6). An alternative definition is presented by Chandra (2006), who defines ethnic groups as "a subset of identity categories in which eligibility for membership is determined by descent-based attributes" (p.

400). The definition used in this paper incorporates these definitions but emphasizes the importance of individuals' self-identification with an ethnic group. To that purpose, it follows the definition presented by Sanda (1976) who defines an ethnic group as "a distinct group of people who define themselves as belonging to a named or labelled social group with whose interest they identify, and which manifests certain aspects of a unique culture, while constituting a part of a wider society" (p. 32).

Ethnic diversity (or ethnic fractionalization) generally refers to how diverse the population of a certain country, region or other geographical unit is in terms of ethnic groups. There are many ways to measure ethnic diversity, one of the most used methods being the ELF method, which calculates the likelihood that two randomly chosen individuals are members of different ethnic groups (Easterly & Levine, 1997, p. 1206).

Politicization of ethnicity

A reason why ethnicity has been such an important factor in Africa's history can be found in the continent's colonial history (Posner, 2005, pp. 26-29). For various reasons, especially due to the colonizers' need to collect taxes, ethnicity became an integral part of many African countries' political climate. The injustices which occurred during colonial rule, such as the stealing of communities' lands, widened ethnic cleavages and led to a solidifying of ethnic identities which still impacts interpersonal relations and group identities today (Posner, 2005, p. 30).

The degree to which ethnicity plays a role in a country's political climate can be described as the degree to which it is politicized. While there are other ways in which ethnicity can be politicized, I focus on the impact it has on citizens' political preferences. In this paper, I define politicization of ethnicity in terms of the relationship between ethnicity and vote choice. This relatively narrow interpretation of politicization of ethnicity has benefits for this study, since it measures how much ethnicity influences the outcome of elections, which determines who has access to government resources.

However, a downside is that this definition does not account for other ways in which ethnicity can be politicized outside of elections. Furthermore, it means that this study has a recent focus, since it only analyzes instances in which citizens voted in elections, which has not been the case for most of Africa's history. Despite the implication that this definition can only be used in

more recent contexts, this does not mean I claim ethnicity has not been salient in the past, since it might have been politicized or influential in other ways.

The main way in which ethnicity influences vote choice in African elections is through ethnic voting, which occurs when "members of a cultural group show a disproportionate affinity at the polls for a particular political party" (Bratton, Bhavnani & Chen, 2012, p. 29). The level of ethnic voting reflects the degree to which parties are ethnically based. Chandra (2004) defines an ethnically based party as a party which "portrays itself as the champion of a particular ethnic group or category to the exclusion of others and makes such a strategy central to its strategy to mobilize voters" (p. 3). Dowd and Driessen (2008) argue that a party system is ethnically dominated if "all or most of the major political parties are ethnically based" (p. 4). They state that ethnically based parties mainly differ in who they represent, and rarely in their ideological values.

In the academic literature, considerable efforts have been made by scholars to understand the causes of ethnic voting. Attempting to explain the emergence of ethnic parties, Horowitz (1985, pp. 293-294) argues that where ethnic loyalties are strong, parties tend to organize along ethnic lines. He also states that even in societies which are not deeply divided, members of various ethnic groups rarely distribute themselves randomly among competing parties.

In a comparison of Benin and Senegal, Koter (2013, p. 213) attempts to explain why the two countries have very different levels of ethnic voting. She explains that this is due to the different ways in which voters are mobilized in the two countries. In Benin, voters are directly mobilized based on their ethnicity, which results in identity-based voting blocs. In Senegal, however, politicians often use electoral intermediaries, such as local leaders, who mobilize voters across ethnic lines, resulting in diverse electorates and low levels of ethnic bloc-voting.

Another influential contribution to this field was made by Bates (1974, p. 470), who attempts to find the causes of ethnic voting and shows that the high degree of politicization of ethnicity comes from two main sources. The first is when ethnic groups choose to select a leader with the same ethnicity, with the belief that they can represent their interests better than non-co-ethnics. This is supported by Posner (2005, p. 3), who describes the rationale behind ethnic voting as sub-national groups seeking to elevate leaders from their background into positions of power to obtain collective representation. Horowitz (1985, p. 7) notes that this is due to many

voters' expectation that a co-ethnic candidate will treat them more favorably than non-co-ethnics.

The second source of politicization mentioned by Bates (1974, pp. 471-477) is leaders themselves, who can use ethnicity as a tool to get support and power. He argues that politicians use ethnic appeals because they are an effective tool in ensuring political support from a large, diverse group of people. He shows that in some instances, politicians have tried to politicize ethnicity to attract votes. An example he gives is from Uganda, where politicians called upon the Iteso people to unite behind their leader, even though over 50% of the members of that group did not recognize that there was a leader at all.

The two-sided approach to ethnic voting is supported by Eifert, Miguel and Posner (2010, p. 495). They state that these two factors both play a part in creating the strong relationship between ethnic identification and the electoral cycle. Ichino and Nathan (2013, p. 345) agree with this idea and state that ethnic voting has become an instrumental action in which both voters and politicians use ethnicity in their pursuit of access to state resources.

Public service delivery

Public service delivery is a broad concept that generally refers to the government provision of public services. Besley and Ghatak (2007, pp. 127-137) state that public services are a key determinant of quality of life that is not measured in a country's GDP per capita, and that organizing public service delivery is deemed to be a core function of government. They mention examples of public services, which include education, healthcare, banking services, garbage removal, and power supplies. The authors argue that the general goal of public service delivery is to achieve a well-educated and healthy population, but also stress its importance in reducing poverty. Additionally, they note that it can be more complex to deliver some public goods than others. For instance, providing education can be more difficult than providing banking services, garbage removal or power supplies.

In this paper, public service delivery refers to the degree to which facilities such as schools, hospitals, emergency services, electricity, water, sewage systems, and public transportation are readily available to citizens. This paper is focused on two ways in which ethnic diversity affects public service delivery at the regional level. The first is the effect it has on the average amount of public services people in a region have access to, which is referred to as the average level of

public service delivery. The second aspect is the disparity of access to public services. This refers to how access to public services is divided in a region. If some inhabitants in a certain region have much higher access to public services than others in the same region, that is reflected in a high amount of disparity in public service delivery. The next sections will review the literature on the link between ethnic diversity and public service delivery, and present arguments for why this relationship cannot be measured without looking at the degree to which ethnicity is politicized.

2.2. The (negative) effect of ethnic diversity

Most scholars interested in investigating the consequences of ethnicity focus on ethnic diversity and assume that it is translated to the political arena. Some influential papers have linked ethnic diversity to lower levels of democracy (Yehoue, 2007), economic development (Easterly & Levine, 1997), and public service delivery (Alesina et al., 1999), and argued it increases the likelihood of violent conflict (Vanhanen, 1999).

An example of this is the influential paper published by Easterly and Levine (1997, p. 1206), who find a negative relationship between ethnic diversity and economic growth. They argue that ethnic diversity can increase polarization, prevent agreements about the division of public goods and create incentives for rent-seeking behavior for the groups in power to the detriment of the rest of society. They state that this negatively impacts a country's development and hinders financial growth.

A second example of the negative implications associated with ethnic diversity is presented by Ejdemyr, Kramon and Robinson (2018, p. 1133), who studied the impact of local ethnic diversity on the delivery of public goods, specifically boreholes. Their goal was to find out why local ethnic diversity is often associated with poor provision of public goods. They concluded that political leaders are less likely to provide public goods in diverse areas, since public goods are inherently non-excludable, which makes it difficult to target those goods to their co-ethnic supporters. This suggests that one would find worse public services in ethnically diverse regions.

Another article linking ethnic diversity with worse delivery of public goods is provided by Miguel and Gugerty (2005, p. 2327). They investigated the relationship between local ethnic diversity and the quality of education and water wells in rural western Kenya. Their findings

showed that higher local ethnic diversity was associated with lower school funding, lower quality of education, and worse maintenance of community water wells.

The negative relationship between local ethnic diversity and delivery of public services is also found outside of Africa. Alesina, Baqir and Easterly (1999, p. 1243) show that in urban areas in the United States, the shares of spending on public goods like education, roads, sewers, and trash pickup are negatively related to the area's ethnic fragmentation. They show that this relationship remains strong when controlling for some socioeconomic and demographic factors.

2.3. Why ethnic diversity is not enough

Nearly all scholars agree that ethnic diversity leads to inter-ethnic competition for government resources and exclusion of ethnic groups which do not have political power. What they lack, is the nuance that ethnic diversity alone might not be enough to explain this phenomenon. In this section, I argue that what really matters for the distribution of government resources is the translation of this diversity into the political arena, in other words, the degree to which ethnicity is politicized.

This distinction follows the argument presented by Posner (2005, pp. 89-90). He argues that most studies of ethnic politics in Africa assume that ethnicity motivates political actions, but that they do not account for why this is the case. In his influential book, he explains that it is the expectation of ethnic favoritism which explains people's political behavior. He defines ethnic favoritism as the widespread expectation that politicians will prioritize their own ethnic group in the distribution of resources. If this expectation is present, people are more likely to vote along ethnic lines, and resources are less likely to be distributed evenly across the population.

In another paper, Posner (2004, p. 853) argues that if scholars want to explain the effect ethnic diversity has on macroeconomic outcomes, measures such as the ELF index are not sufficient. His argument is that these other measures calculate their scores based on all ethnic groups that are present in a country, and do not consider whether certain groups compete politically or not. He argues that this leads to a mismatch between the measure and the objective, which is to investigate the relationship between ethnic diversity and economic outcomes. To resolve this, he presents another way of measuring ethnic diversity, the Politically Relevant Ethnic Groups (PREG) index. He argues that the PREG index is better suited to explain the effect ethnic

diversity has on macroeconomic policies, since it reflects the number of groups which are involved in political competition. This emphasis on political relevance of ethnic groups has become more represented in the literature on ethnicity, for instance in the formation of the Ethnic Power Relations dataset (Vogt et al., 2015, p. 1329). This defines ethnic groups as politically relevant if a political organization has claimed to represent its interests at the national level or if its members are subjected to state-led political discrimination.

Other scholars have also argued that ethnic diversity alone does not necessarily lead to worse development and democracy. Dowd and Driessen (2008) state that their study supports the claim that "what has impeded development and democracy in sub-Saharan Africa is not ethnoheterogeneity itself but the political expression of ethnic divisions" (p. 22). In other words, what matters is not just ethnic diversity, but the translation of this diversity into political competition. Furthermore, they warn that politicization of ethnicity leads to worse delivery of public services because it causes people to be appointed to government posts because of their ethnicity, rather than based on their merit and skills (2008, p. 27). They argue that in an ethnically dominated party system, people are less satisfied with the government's delivery of public services and have less trust in democracy, which leads to a higher chance of political instability.

Tarimo's (2010, pp. 298-304) analysis of the political situation in Kenya following the 2007 election shows that ethnic conflict only arose when ethnic diversity was translated into political competition. He emphasizes that the people in this ethnically diverse country lived together peacefully for many years, but that this situation worsened because of recent ethno-political competition for power. He argues that when ethnic identities are moved from the private to the public sphere, voters no longer aim to achieve the best economic performance, healthcare, and education, but mainly want to enable their members to control the state.

This argument is supported by Oladeji (2019), who states that ethnicity "cannot be studied in isolation from other phenomena", and that it "becomes an issue only when relations between ethnic groups are competitive rather than cooperative" (p. 54). He goes on to show that the politicization of ethnicity, rooted in colonial history, has obstructed the process of national integration in Nigeria, and that it has had a destructive and divisive impact on the country's politics.

Not all authors present a negative view of the consequences of politicized ethnicity. Debrah (2016, p. 383) argues that ethnic voting is a way in which citizens aim to achieve more development in their community. He studied the highly ethnic elections in Ghana and showed that voting for co-ethnics was done because voters hoped it would bring them more public goods like portable water, schools, and hospitals. He concludes that ethnic voting is positive, since it is a way in which constituents have agency to demand better services from their government.

2.4. Hypotheses

The overview of the literature on this topic in Africa presents some expectations. Firstly, similarly to the relationship found at the urban, local, and national level, ethnic diversity is likely negatively related to the average level of public service delivery in a region. This stems from the observation that the allocation of public goods tends to follow ethnic lines, and politicians are more likely to deliver public services to ethnically homogenous regions (Alesina et al., 1999; Ejdemyr et al., 2018; Miguel & Gugerty, 2005).

This leads to the first hypothesis:
H1: Higher levels of ethnic diversity in a region lead to lower levels of public service delivery

Besides ethnic diversity leading to lower average levels of access to public services, this negative relationship is also expected to be expressed through a more unequal division of this access across the region. In diverse regions, co-ethnics of the party in power likely have higher access to services than non-co-ethnics because of the presence of ethnic favoritism. This would lead to high levels of disparity in access to public services in that region. In homogenous regions, there is likely less variation in the levels of public service delivery, since it should be consistently high in regions mostly populated by co-ethnics, and low in regions primarily populated by non-co-ethnics.

This leads to the second hypothesis:
H2: Higher levels of ethnic diversity in a region lead to more unequal access to public services

Finally, the argument presented by Posner (2005), Dowd and Driessen (2008) and other scholars suggests that the relationship between ethnic diversity and public service delivery is only significant if ethnicity is politicized. If voters do not consider ethnicity in the formation of

their political preference, ethnic diversity should not translate to the political domain, and ethnic divisions are not expected to become politically salient. Ethnic divisions not becoming salient indicates that ethnic diversity should have no significant impact on the degree to which public services are delivered.

This leads to the final hypothesis:
H3: The relationship between ethnic diversity and public service delivery is moderated by the degree to which ethnicity is politicized.

3. Data and methods

3.1. Research design

This thesis will use a large-N quantitative method to investigate the relationship between the two variables. In this way, the relationship can be measured across many different African countries, which provides a wider scope than a qualitative comparative study. Furthermore, it allows for the inclusion of control variables which can clarify which parts of the variation in scores for the dependent variable can be explained by other factors than diversity and the level of politicization of ethnicity. The large-N method is achieved through the aggregation of data, which is used to run a statistical regression which investigates the connection between the variables. The next sections will provide the motivation behind the selection of Africa as the case for this study, the method of data collection, the operationalization of variables and the specific method of statistical analysis.

3.2. Case selection

The choice to study Africa was made for two reasons. Firstly, the topic of ethnicity is more salient in Africa than nearly anywhere else in the world. The continent is wildly diverse, with countries where one ethnicity constitutes most of the population, and ones which consist of countless ethnicities divided throughout the territory. This large variation in the ethnicity variable makes it possible to measure the impact it has on many outcomes, including public service delivery, and makes it a very interesting region to study. Secondly, the availability of data played a role. Data collected in the Afrobarometer project presented the opportunity for an investigation into ethnic diversity, ethnic voting, and public service delivery at the regional level and made this research design possible.

3.3. Data collection

The data used to create the dataset for this study is the Afrobarometer Merged Round 8 dataset, accessed through the Afrobarometer website (www.afrobarometer.org). The Afrobarometer is a pan-African research network that conducts surveys measuring public attitudes on democracy, governance, the economy, and society in Africa since 1999. The surveys are conducted in face-to-face interviews by researchers across the continent in nationally representative samples. Afrobarometer data is widely used by scholars, special attention is paid to ensure concepts are accurately translated into local languages and the collected data is subjected to many quality controls (Bratton, Mattes & Gyimah-Boadi, 2004, p. 54). The most recent round 8 survey dataset includes 48.000 survey responses filled in by citizens from 34 African countries. This subset primarily includes sub-Saharan Africa, excluding north-African countries such as Algeria, Egypt, and Libya. Some other notable exclusions are Rwanda, the DRC, Chad, Somalia, and South Sudan, among others.

Other information, like a country's GDP per capita and level of democracy, is not included in the Afrobarometer and must be collected from other sources. For GDP per capita, data from the World Bank is used (www.data.worldbank.org). The V-Dem dataset provided the data for the countries' level of electoral democracy (www.v-dem.net/data). A description of these variables is given in the section on the operationalization of the control variables.

3.4. Operationalization of variables

Ethnic diversity

The first independent variable in this analysis is a dichotomous variable which measures whether a region is ethnically diverse. This is done by looking at the answers to question 81 of the Afrobarometer. This question asks the respondent "What is your ethnic community, cultural group, or tribe?". The interviewer is instructed not to read any options out loud and writes down the respondent's answer. This provides an insight into which ethnicity a respondent identifies with. This data was used to create a crosstable showing the distributions of ethnicities per region. This makes it possible to determine whether one ethnic group constitutes over 50% of the population in the region. If it does, this variable takes the value of 0, which reflects low ethnic diversity. Inversely, if there is not one ethnicity with over half the population in a region, the variable takes the value of 1.

Politicization of ethnicity

The second independent variable, politicization of ethnicity, is measured by combining Afrobarometer data of the respondent's ethnicity with the political party the respondent feels most affinity towards. The respondent's ethnicity, as measured in question 81, is taken together with their answer to question 99, which asks which party's candidate they would vote for if presidential elections were held tomorrow[1]. Again, the options are not read out loud, so no imperfect list is provided, and answers depend completely on the respondent. The answer options of "would not vote", "don't know", and "refused" are included in the analysis, since they offer insight into whether certain ethnic groups are less likely to vote and potentially feel unrepresented by the available candidates.

The degree to which the respondent's ethnicity can predict vote choice is measured in the Cramer's V of these answers. Dowd and Driessen (2008, p. 16) explain why this is a good method to measure the ethnic voting. The authors show that for each unit of analysis, which is countries in their study, Cramer's V gives an index of association between the two variables on a scale of 0 to 1. They conclude that the index score can be interpreted as a correlation coefficient and that it presents the percentage of vote choice which can be predicted by one's ethnic identity. In this study, this value is calculated for each region, and a higher score means the region has a higher level of politicization of ethnicity. All scores are included in a new variable called Cramer's V of Ethnicity and Vote Choice, or CVEVC.

One area in which this study takes a different approach than Dowd and Driessen (2008) is the way in which the respondent's ethnic identity is determined. Whereas they choose to measure a respondent's ethnicity based on what language they speak at home, this study makes use of the ethnic group which a respondent self-identifies with. This is done because using language as a measure of ethnicity is potentially flawed, since many ethnic groups might speak the same language but identify with different ethnic groups, or they might speak other languages and identify with the same group.

Public service delivery

The dependent variable, public service delivery, can be measured using the answers to different questions in the Afrobarometer. These two questions are called 'EA-FAC' and 'EA-SVC' and

[1] Dowd & Driessen (2008) use Q91b, which asks respondents which party they feel close to. However, over half of the responses are 'not applicable' since many say they do not feel close to a party. For question 99, only 13.3% of responses are 'not applicable', which reflects the number of respondents saying they will not vote.

concern the facilities that are present at the location in which the interview was conducted. The first asks “Are the following facilities present in the primary sampling unit / enumeration area or in easy walking distance?”, and the facilities in question are a post office, school, police station, health clinic, market stalls, banking services, and public transport. Schools and health clinics can be both private and public. A primary sampling unit/enumeration area covers 8 or 4 respondents, depending on the country in which the survey was conducted. For each facility, the interviewer codes a 0 if it is not present, and a 1 if it is.

The second question asks whether certain services are present in the area and whether they are accessible to most houses. These services are an electricity grid, a piped water system, a sewage system, mobile phone service, and a borehole or tube well. This question is also answered by the interviewer, which takes away survey risks by for instance providing incentives for respondents to answer these questions dishonestly by understating the facilities present in their surroundings to obtain more facilities in the future.

Combining the answers to these questions into an index variable provides a good overview of the available public services in the area in which the interview was conducted. The cases receive 1 point for each facility/service that is present, culminating in an 11-point scale. The higher the score on this variable, the more facilities are present and the better public service is being delivered in the respondent’s area. When individual answers are averaged to the regional level, this can thus be used to measure the degree to which public services are present in a specific region.

In the formation of my public service delivery variable, called Public Service Delivery Score (or PSD_Score), I include the scores of all facilities except market stalls. This is excluded because the Afrobarometer provides little explanation of what they consider to be market stalls. It is unclear whether they refer to permanent markets or if they also include weekly markets that are built up and taken away. If the latter is included, the markets might not be present on the day the interview is conducted, and the interviewer might say there are no market stalls provided in the area. For this reason, market stalls are excluded from this variable.

Using the PSD_Score variable, I calculate the disparity in the availability of public services by creating a second variable. This variable measures the degree to which the public service delivery is equal across the region and is created by taking the standard deviation of the region’s

public service delivery score, and coding this as a new variable called Public Service Delivery Standard Deviation (or PSD_SD). If a region scores high in this variable, it means that there are large disparities in the degree to which different citizens in the same region have access to public services. This means that public services are not distributed evenly across the region, and that some areas are prioritized over others.

Control variables

This analysis will include some control variables that could be important in determining the level of public service delivery. These controls include one variable at the regional level, and two at the country level. The regional control variable is coded using Afrobarometer question 'PSU/EA', which shows whether the interview was taken in an urban or rural place. This is a binary variable, where 1 means the region is urban or semi-urban, and 2 means it is rural. For this analysis, this variable was recoded into a dummy in which 0 is rural and 1 includes cases coded as semi-urban and urban by the interviewer. This might be important since rural places generally have less access to public goods (Mangai, 2016, p. 104), and have higher levels of ethnic identification than urban areas (Demarest & Haer, 2022, p. 694).

The second control variable, measured at the country level, is the Gross Domestic Product (GDP) per capita, which reflects the overall wealth in a nation. Wealthier nations are more likely to have more highly developed systems of public service delivery, so this must be controlled for. The data comes from the World Bank which provides the GDP per capita for every country included in the analysis for 2021 (ww.data.worldbank.org). To account for and stabilize the large variance in values for this variable, the natural logarithmic value was used in the regression, resulting in the variable 'Logged GDP per capita'.

The final control variable is one measuring a country's level of democracy in 2021. For this variable, the value assigned to V-Dem's Electoral Democracy Index was taken. This measures to what extent the ideal of electoral democracy is achieved. They define the electoral principle of democracy as having free elections, extensive suffrage, freedom of expression, and an independent media (Coppedge et al., 2023, p. 44). This variable gives countries a score between 0 and 1, where a higher score represents a higher level of electoral democracy.

Table 1: Descriptive statistics

Variable Name	N	Minimum	Maximum	Mean	Std. Deviation
Ethnic voting	430	0	1	0,37563	0,190036
Ethnic diversity	440	0	1	0,3932	0,48901
Public service delivery score	440	0,8035	10,8562	6,121689	1,8057878
(Semi-)Urban	440	0	1	0,389488	0,2793123
Logged GDP per capita	441	6,17	9,12	7,5423	0,74534
Level of democracy	441	0,25	0,77	0,4730	0,13469
Disparity in public service delivery	440	0	7,1811	1,97004168	0,839221026
Valid N (listwise)	430				

Table 1 shows the descriptive statistics for each of the variables included in the dataset and gives some interesting insights. For instance, an average of 37.56% of vote choice can be explained by looking at one's ethnic group. This is substantial and shows that ethnic voting is still very common in most countries in this sample. Secondly, 61% of regions do not have one ethnic group which constitutes over half of the population and are thus categorized as ethnically diverse. The public service delivery has an average score of around 6, reflecting that there is much room for improvement in this area. Finally, the average disparity in public service delivery within a region is around 2, which shows that there is quite significant variation in the degree to which citizens have access to public services, even in the same region.

3.5. Dataset

All variables were combined into a single dataset. Each Afrobarometer interview has the variable saying in which region the interview was conducted. By using this variable, it was possible to make a dataset measuring the levels of ethnic voting, ethnic diversity, and public service delivery in each region. In total, this information was collected for 441 regions, which

constitute the cases in this analysis. Sudan, Tunisia, and Eswatini are excluded from the analysis. Sudan and Tunisia are excluded because they have no values for the ethnic voting and ethnic diversity variables, since question 81, which asks a respondent to name their ethnicity, is not asked in these countries. Eswatini does not have a value for the ethnic voting variable since it is an absolute monarchy and does not allow political parties.

3.6. Method of statistical analysis

The statistical analysis used in this study is a multilevel linear regression in SPSS. This method is most suitable for this research because the dataset includes data on two levels: regional and national. As previously mentioned, the dataset consists of data for 441 regions from 31 countries. However, the regions are not evenly divided among the countries. For example, Kenya (47) and Nigeria (37) have more regions and thus cases in this dataset than Malawi (3) and Sierra Leone (4). To control for the influence this has on the results of the regression, a multilevel linear regression is appropriate. The results of the regressions are presented below.

4. Results

4.1. Effect of ethnic diversity on public service delivery

Table 2 shows three models investigating the relationship between ethnic diversity and the average level of public service delivery in a region. Model 1 shows that by itself, ethnic diversity is positively, although not significantly, related to the delivery of public services in a region. The second model shows that this is different when including control variables. The positive relationship found in the first model is likely the cause of the exclusion of control variables, since model two shows that when these controls are included in the analysis, the relationship between ethnic diversity and the dependent variable becomes negative.

The ethnic voting variable is positively related to the level of public service delivery in a statistically significant way. A maximum possible increase in the ethnic voting score is associated with a 0.808 increase in the average level of public service delivery in a region. The other coefficients show that especially (semi-)urban areas have significantly more access to public services, and that the GDP per capita is positively but not significantly related to the dependent variable. Finally, the level of democracy has a negative but statistically insignificant relationship with public service delivery. To test whether the correlation between ethnic voting and ethnic diversity passed the collinearity assumption, a linear regression was conducted for

the second model. The Tolerance and VIF values show that this assumption was passed, as each variable has a Tolerance value of over 0.2 and a VIF of less than 5 (see table 4 in the Appendix). Model 3 contains an interaction variable to observe the degree to which ethnic diversity and ethnic voting interact. Counter to expectations, the coefficients for this variable are not statistically significant, which indicates that ethnic voting does not significantly influence the relationship between ethnic diversity and the average level of public service delivery in a region.

Table 2: Multilevel linear regression of effect of ethnic diversity on level of public service delivery

		Model 1	**Model 2**	**Model 3**
Region level IV	Intercept	5,944***	2,751	2,685
		(0,219)	(1,825)	(1,831)
	Ethnic Diversity	0,283	-0,111	0,155
		(0,163)	(0,145)	(0,356)
	Ethnic Voting (CVEVC)		0,808*	0,953*
			(0,383)	(0,422)
	Ethnic Voting X Ethnic Diversity			-0,673
				(0,822)
	(Semi-)Urban		3,093***	3,085***
			(0,258)	(0,259)
Country level IV	GDP per capita (logged)		0,261	0,264
			(0,244)	(0,245)
	Level of Democracy		-0,233	-0,243
			(1,338)	(1,343)
	Residual variance	2,212	1,617	1,618
	Country variance	1,126	1,072	1,081
	Country level N	31	31	31
	Region level N	440	430	430

Note: Multilevel linear regression coefficients with standard errors in brackets

***p<0,001, **p<0,01, *p<0,05

Table 3: Multilevel linear regression of effect of ethnic diversity on disparity in public service delivery

		Model 1	Model 2	Model 3
	Intercept	1,983***	2,607***	2,624***
		(0,069)	(0,555)	(0,560)
Region	Ethnic Diversity	0,113	0,179*	0,120
level IV		(0,084)	(0,085)	(0,211)
	Ethnic Voting (CVEVC)		-0,304	-0,337
			(0,223)	(0,249)
	Ethnic Voting X Ethnic			0,150
	Diversity			(0,492)
	Public Service Delivery		-0,082**	-0,082**
	Score		(0,027)	(0,027)
	(Semi-)Urban		-0,061	-0,060
			(0,171)	(0,171)
Country	GDP per capita (logged)		-0,003	0,002
level IV			(0,075)	(0,075)
	Level of Democracy		-0,097	-0,096
			(0,400)	(0,402)
	Residual variance	0,636	0,604	0,605
	Country variance	0,059	0,050	0,051
	Country level N	31	31	31
	Region level N	440	430	430

Note: Multilevel linear regression coefficients with standard errors in brackets

***p<0,001, **p<0,01, *p<0,05

Table 3 shows the results of three multilevel linear regressions. Model 1 is meant to illustrate the relationship between ethnic diversity and disparity in public service delivery without considering control variables. This coefficient is positive, which indicates that higher levels of diversity lead to more unequal delivery of public services. In Model 1, this relationship is not statistically significant. In Model 2, however, this coefficient passes the 95% confidence interval and reaches statistical significance. The relationship remains positive, which is in line with the expectation presented in H2. Interestingly, the ethnic voting variable has a negative

coefficient, suggesting that more ethnic voting leads to more equal public service delivery. This relationship is not statistically significant, however.

The other coefficients in Model 2 show that higher levels of public service delivery lead to significantly lower levels of inequality in the availability of these services. As expected, urbanization, higher levels of GDP per capita, and a high score in the electoral democracy variable are shown to lead to less inequality in access to public services as well, although not at a statistically significant level. Again, a linear regression showed that none of the variables had a problematic score for Tolerance or VIF, meaning they pass the collinearity assumption (see table 5 in the Appendix).

Model 3 again includes an interaction variable measuring the relationship between ethnic diversity, ethnic voting, and the dependent variable. As was the case in table 2, the interaction variable is not statistically significant, which means that the relationship between ethnic diversity and disparity in public service delivery is not influenced by the level of ethnic voting.

4.2. Discussion

H1 presented the expectation that the average levels of public service delivery are lower in ethnically diverse regions. The results shown in table 2 seem to confirm this, as ethnic diversity is negatively associated with the public service delivery variable. However, this relationship is not statistically significant, which nuances this finding and means the hypothesis cannot be fully accepted. Interestingly, the degree to which citizens in a region voted along ethnic lines has a positive and significant relationship to that region's average level of public service delivery. This supports an instrumentalist view of ethnic voting, indicating that it might be a tool which gives citizens more power in demanding adequate delivery of public services.

The second hypothesis predicted that ethnic diversity would be positively related to inequality in access to public services. The results of the analysis confirm this expectation, thus accepting this hypothesis. The coefficient of the ethnic diversity variable shows that this relationship is statistically significant even when controlling for socioeconomic, political, and geographical factors.

The third hypothesis stated that the relationship between ethnic diversity and public service delivery is moderated by the degree to which ethnicity is politicized in that region. Since the

interaction between ethnic diversity and ethnic voting was found to be insignificant in both tables 2 and 3, the results show that ethnic voting does not influence the relationship between ethnic diversity and public service delivery. Therefore, this hypothesis is rejected.

4.3. Robustness Checks

To check the robustness of the results, I conducted two fixed model checks. This consists of running an OLS regression including dummy variables for each of the countries in the analysis. One reference country, Angola, was excluded, as is customary when introducing dummy variables in a regression. Since it is not a multilevel analysis, the independent variables which were measured at the country level, GDP per capita and level of democracy, were excluded. The goal of this test is to observe whether the direction and significance of the main variables changes when these dummies are included.

The results of the first analysis, which measures the effect of ethnic diversity on the average level of public service delivery, can be found in table 6 (see Appendix). This table contains the output of two models, with the second one including an interaction variable to see if ethnic voting influenced the relationship between ethnic diversity and the level of public service delivery. This was not the case, as the relationship was statistically insignificant. The results of model one show that the direction of all main variables is consistent with the findings presented earlier. Furthermore, the significance of the variables is consistent as well, with both ethnic voting and urbanization staying statistically significant.

Table 7 (see Appendix) shows the results of the two linear regressions measuring the relationship between ethnic diversity and disparity in public service delivery. The direction of the coefficients stays the same, the value for ethnic diversity remains positive, while the ethnic voting, (semi-)urban, and public service delivery score variables stay negatively related to disparity in public service delivery. One difference is that in this model, the coefficient for ethnic diversity is no longer statistically significant. This is only a slight change, however, since the p-value changed from 0,035 to 0,057. Again, the interaction variable in the second model is not statistically significant, confirming the results found earlier. These models show that the results stay consistent across different methods of statistical analysis, which means that the robustness check is passed.

5. Conclusion

The goal of this study was to find out how ethnic diversity and the politicization of ethnicity impact the delivery of public services in Africa. This was investigated by creating a dataset which measures these and more variables for each region of 31 African countries. This dataset was then used to run a regression, which showed four main conclusions. Firstly, ethnic diversity has a negative, but statistically insignificant association with the average level of public service delivery. Secondly, diversity is negatively and significantly related to the degree to which access to public services is equally divided in a region. Thirdly, the expectation that this relationship is influenced by the degree to which citizens vote along ethnic lines was rejected. Finally, ethnic voting was shown to have a positive and significant relationship to the average level of public service delivery in a region.

These findings present some interesting insights into the mechanics of ethnic diversity, politicization of ethnicity, and public service delivery in Africa. The results of the analysis confirm the findings in previous academic literature which associate ethnic diversity with unequal access to public services. The finding that ethnic voting does not influence this relationship is, perhaps, the most interesting conclusion in this analysis.

One implication of this finding is that the negative consequences of a politicization of ethnicity, might be due to how ethnicity influences interpersonal relations outside of election time. It suggests that the way in which ethnicity is instrumentalized and politicized might happen independently of the degree to which ethnic groups vote in blocs. Therefore, the findings in this study call for further investigation into the way in which ethnicity is politicized in contemporary Africa, especially outside of election cycles. If the negative association between ethnic diversity and public service delivery does not depend on ethnic bloc-voting, it would be interesting for future research to investigate what it does depend on.

Some limitations of this study are that the dataset only contained data on one year, 2021. If future research contained information on ethnic voting, public service delivery, and ethnic diversity for more years, it could offer an overview of how these phenomena and their interaction developed over time. The lack of time-series data in this analysis means this study does not provide this opportunity, which is a limitation.

A second limitation is that the dataset did not include a variable measuring whether a region was primarily populated by co-ethnics of the president or party in power. This would have provided more insight into the degree to which ethnic favoritism is present in African politics. The exclusion of this measure could be a reason behind the finding that ethnic diversity did not significantly influence the average level of public service delivery. Therefore, a recommendation for future research is to find out whether the inclusion of such a control variable would influence the results found in this study.

Another limitation of this study is that not all African countries are included in the analysis, and this case selection might have influenced the results. In some of the excluded countries, the state of public service delivery is generally quite poor, and finding out what causes this might provide insights for how to improve this situation in the future. This limitation of my study provides the recommendation for future researchers to include these countries in their investigations of public service delivery in Africa.

6. Bibliography

Afrobarometer Data. (2022). *Merged round 8 data.* Retrieved from https://www.afrobarometer.org/wp-content/uploads/2023/03/afrobarometer_release-dataset_merge-34ctry_r8_en_2023-03-01.sav

Alesina, A., Baqir, R., & Easterly, W. (1999). Public goods and ethnic divisions. *The Quarterly Journal of Economics*, *114*(4), 1243–1284. doi: 10.1162/003355399556269

Bates, R. H. (1974). Ethnic competition and modernization in contemporary Africa. *Comparative Political Studies*, *6*(4), 457–484. doi: 10.1177/001041407400600403

Besley, T., & Ghatak, M. (2007). Reforming public service delivery. *Journal of African Economies, 16*(1), 127–156. doi: 10.1093/jae/ejm026

Bratton, M., Bhavnani, R., & Chen, T.-H. (2012). Voting intentions in Africa: ethnic, economic or partisan? *Commonwealth & Comparative Politics*, *50*(1), 27–52. doi: 10.1080/14662043.2012.642121

Bratton, M., Mattes, R. B., & Gyimah-Boadi, E. (2004). *Public opinion, democracy, and market reform in Africa*. Cambridge, United Kingdom: Cambridge University Press

Chandra, K. (2004). *Why ethnic parties succeed*. New York: Cambridge University Press.

Chandra, K. (2006). What is ethnic identity and does it matter? *Annual Review of Political Science*, *9*(1), 397– 424. doi: 10.1146/annurev.polisci.9.062404.170715

Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., . . . Ziblatt, D. (2023) *V-Dem Dataset* (13) Varieties of Democracy (V-Dem) Project. doi: 10.23696/vdemds22

Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., . . . Ziblatt, D. (2023) *V-Dem Codebook* (13) Varieties of Democracy (V-Dem) Project.

Debrah, E. (2016). The Ghanaian voter and the 2008 general election. *Politikon, 43*(3), 371–387. doi: 10.1080/02589346.2016.1197616

Demarest, L., & Haer, R. (2022). A perfect match? The dampening effect of interethnic marriage on armed conflict in Africa. *Conflict Management and Peace Science, 39*(6), 686–705. doi: 10.1177/07388942211050875

Dowd, R. A., & Driessen, M. D. (2008). *Ethnically dominated party systems and the quality of democracy: evidence from Sub-Saharan Africa*. Institute for Democracy in South Africa (IDASA).

Easterly, W., & Levine, R. (1997). Africa's growth tragedy: Policies and ethnic divisions. *The Quarterly Journal of Economics*, *112*(4), 1203–1250. doi: 10.1162/003355300555466

Eifert, B., Miguel, E., & Posner, D. N. (2010). Political competition and ethnic identification in Africa. *American Journal of Political Science, 54*(2), 494–510. doi: 10.1111/j.1540-5907.2010.00443.x

Ejdemyr, S., Kramon, E., & Robinson, A. L. (2018). Segregation, ethnic favoritism, and the strategic targeting of local public goods. *Comparative Political Studies, 51*(9), 1111–1143. doi: 10.1177/0010414017730079

Fearon, J. D., & Laitin, D. D. (2000). Violence and the social construction of ethnic identity. *International Organization, 54*(4), 845–877. doi: 10.1162/002081800551398

Gerring, J., Hoffman, M., & Zarecki, D. (2018). The diverse effects of diversity on democracy. *British Journal of Political Science, 48*(2), 283–314. doi: 10.1017/S000712341600003X

Horowitz, D. L. (1985). *Ethnic groups in conflict*. Berkeley, United States: University of California Press.

Hutchinson, J., & Smith, A. D. (1996). *Ethnicity*. Oxford, United Kingdom: Oxford University Press.

Ichino, N., & Nathan, N. L. (2013). Crossing the line: Local ethnic geography and voting in Ghana. *American Political Science Review*, 107(2), 344-361.

Koter, D. (2013). King makers: Local leaders and ethnic politics in Africa. *World Politics, 65*(2), 187-232.

Mangai, M. S. (2016). The dynamics of failing service delivery in Nigeria and Ghana. *Developments in Administration, 1*(1), 85-116 doi: 10.46996/dina.v1i1.5101

Miguel, E., & Gugerty, M. K. (2005). Ethnic diversity, social sanctions, and public goods in Kenya. *Journal of Public Economics, 89*(11), 2325–2368. doi: 10.1016/j.jpubeco.2004.09.004

Oladeji, A. (2019). Ethnic bloc voting and the challenge of national integration: lessons from Nigeria's 2015 general elections. *African Journal of Governance and Development, 8*(1), 53–70.

Posner, D. N. (2004). Measuring ethnic fractionalization in Africa. *American Journal of Political Science, 48*(4), 849–863. doi: 10.1111/j.0092-5853.2004.00105.x

Posner, D. N. (2005). *Institutions and ethnic politics in Africa*. West Nyack: Cambridge University Press. doi: 10.1017/CBO9780511808661

Sanda, A. O. (1976). *Ethnic relations in Nigeria: problems and prospects*. Ibadan: University of Ibadan.

Tarimo, A. (2010). Politicization of ethnic identities: The case of contemporary Africa. *Journal of Asian and African Studies*, *45*(3), 297–308. doi: 10.1177/0021909610364775

Vanhanen, T. (1999). Domestic ethnic conflict and ethnic nepotism: A comparative analysis. *Journal of Peace Research*, *36*(1), 55–73. doi: 10.1177/0022343399036001004

Vogt, M., Bormann, N.-C., Rüegger, S., Cederman, L.-E., Hunziker, P., & Girardin, L. (2015). Integrating data on ethnicity, geography, and conflict: The ethnic power relations data set family. *The Journal of Conflict Resolution*, *59*(7), 1327–1342. doi: 10.1177/0022002715591215

Yehoue, E. B. (2007). *Ethnic diversity, democracy, and corruption*. Washington: International Monetary Fund.

7. Appendix

Table 4: Collinearity Statistics of Table 2 Model 2

	Tolerance	VIF
Ethnic voting	0,980	1,021
Ethnic diversity	0,937	1,067
(Semi-)Urban	0,869	1,151
GDP per capita	0,862	1,160
Level of democracy	0,946	1,058

a. Dependent variable: PSD_Score

Table 5: Collinearity Statistics of Table 3 Model 2

	Tolerance	VIF
Ethnic voting	0,971	1,030
Ethnic diversity	0,937	1,067
Public service delivery score	0,786	1,272
(Semi-)Urban	0,734	1,362
Logged GDP per capita	0,849	1,178
Level of democracy	0,946	1,058

a. Dependent variable: PSD_SD

Table 6: Linear regression of effect of ethnic diversity on level of public service delivery

		Model 1	**Model 2** (Including interaction variable)
Constant		2,321*** (0,353)	2,255*** (0,360)
Ethnic Diversity		-0,117 (0,148)	0,190 (0,360)
Ethnic Voting (CVEVC)		0,780* (0,388)	0,945* (0,427)
Ethnic Voting X Ethnic Diversity			-0,775 (0,829)
(Semi-)Urban		3,149*** (0,262)	3,139*** (0,262)
Country (Ref. = Angola)			
	Benin	2,834*** (0,476)	2,848*** (0,476)
	Botswana	3,138*** (0,409)	3,195*** (0,414)
	Burkina Faso	1,606*** (0,475)	1,639*** (0,476)
	Cabo Verde	2,110** (0,652)	2,030** (0,658)
	Cameroon	5,048*** (0,488)	5,087*** (0,490)
	Côte d'Ivoire	1,827*** (0,406)	1,827*** (0,406)
	Ethiopia	1,555** (0,492)	1,562** (0,493)
	Gabon	0,974 (0,521)	0,974 (0,521)
	Gambia	1,613** (0,544)	1,601** (0,544)
	Ghana	3,167*** (0,441)	3,164*** (0,441)
	Guinea	1,901*** (0,550)	1,903*** (0,550)
	Kenya	3,582*** (0,370)	3,605*** (0,371)
	Lesotho	1,344* (0,519)	1,345* (0,519)
	Liberia	1,513*** (0,455)	1,519*** (0,455)
	Malawi	3,030*** (0,801)	3,008*** (0,802)
	Mali	2,625*** (0,550)	2,613*** (0,550)
	Mauritius	4,067*** (0,511)	4,058*** (0,511)
	Morocco	3,968*** (0,491)	3,985*** (0,492)
	Mozambique	1,618** (0,489)	1,629*** (0,489)
	Namibia	1,093* (0,456)	1,129* (0,457)
	Niger	2,111*** (0,549)	2,116*** (0,549)
	Nigeria	1,880*** (0,371)	1,904*** (0,372)
	Senegal	3,436*** (0,458)	3,438*** (0,458)

	Sierra Leone	0,916 (0,705)	0,903 (0,705)
	South Africa	2,669*** (0,525)	2,668*** (0,525)
	Tanzania	2,377*** (0,390)	2,395*** (0,391)
	Togo	2,472*** (0,606)	2,445*** (0,606)
	Uganda	2,420*** (0,499)	2,423*** (0,499)
	Zambia	1,337** (0,509)	1,343** (0,509)
	Zimbabwe	1,602** (0,508)	1,574** (0,509)
R^2		0,543	0,544
Adjusted R^2		0,505	0,505
N		430	430

Note: unstandardized regression coefficients with standard errors between brackets

***p<0,001, **p<0,01, *p<0,05

Table 7: Linear regression of effect of ethnic diversity on disparity in public service delivery

		Model 1	**Model 2** (Including interaction variable)
Constant		2,778*** (0,228)	2,805*** (0,232)
Ethnic Diversity		0,173 (0,091)	0,039 (0,221)
Ethnic Voting (CVEVC)		-0,248 (0,239)	-0,320 (0,263)
Ethnic Voting X Ethnic Diversity			0,339 (0,509)
(Semi-)Urban		-0,174 (0,188)	-0,173 (0,188)
Public Service Delivery Score		-0,067* (0,031)	-0,066* (0,031)
Country (Ref. = Angola)			
	Benin	0,398 (0,305)	0,389 (0,305)
	Botswana	-0,413 (0,269)	-0,441 (0,272)
	Burkina Faso	-0,555 (0,295)	-0,571 (0,297)
	Cabo Verde	-0,350 (0,405)	-0,317 (0,409)
	Cameroon	-0,502 (0,337)	-0,524 (0,339)
	Côte d'Ivoire	-0,210 (0,255)	-0,211 (0,255)
	Ethiopia	-0,067 (0,306)	-0,071 (0,306)
	Gabon	-0,201 (0,321)	-0,201 (0,321)
	Gambia	-0,333 (0,337)	-0,329 (0,337)
	Ghana	0,178 (0,287)	0,176 (0,288)
	Guinea	-0,576 (0,342)	-0,579 (0,343)
	Kenya	-0,753** (0,252)	-0,766** (0,253)
	Lesotho	-0,209 (0,321)	-0,211 (0,321)
	Liberia	-0,806** (0,283)	-0,810** (0,283)
	Malawi	-0,100 (0,500)	-0,093 (0,501)
	Mali	0,040 (0,347)	0,043 (0,347)
	Mauritius	-0,506 (0,338)	-0,506 (0,338)
	Morocco	-0,422 (0,325)	-0,433 (0,326)
	Mozambique	0,044 (0,304)	0,037 (0,304)
	Namibia	-0,009 (0,282)	-0,026 (0,283)
	Niger	-0,009 (0,343)	-0,013 (0,343)

	Nigeria	-0,503* (0,235)	-0,515* (0,235)
	Senegal	-0,127 (0,300)	-0,131 (0,300)
	Sierra Leone	-0,437 (0,433)	-0,432 (0,434)
	South Africa	0,033 (0,332)	0,031 (0,332)
	Tanzania	-0,497* (0,250)	-0,507* (0,251)
	Togo	-0,033 (0,379)	-0,024 (0,380)
	Uganda	-0,346 (0,315)	-0,349 (0,315)
	Zambia	-0,039 (0,315)	-0,043 (0,315)
	Zimbabwe	0,020 (0,315)	0,030 (0,316)
R^2		0,179	0,180
Adjusted R^2		0,108	0,107
N		430	430

Note: unstandardized regression coefficients with standard errors between brackets

***p<0,001, **p<0,01, *p<0,05