

Measuring Governance Quality in Africa: How Citizens' Lived Experiences Compare with Aggregate Indicators.

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Abstract

This research report deliberates on the measurement of the quality of governance in African countries through quantitative means. The complexities of governance were previously only assessed qualitatively. However, more recent attempts have been made to use quantitative approaches resulting in the formation of aggregate indicators of governance quality, such as the Worldwide Governance Indicator and Ibrahim Index of African Governance. The aim of this research report is to provide current data on a contemporary analysis of governance in African countries and to add to the field of measures of governance quality focusing on citizens' lived experience. The specific research question addressed the measurement of governance quality in Africa and how citizens' lived experiences compare with aggregate indicators. While aggregate indicators of governance quality include sources that capture pertinent citizens' lived experiences, closer inspection showed that these sources are assigned very small weights in the calculations of the aggregate indicators. The key findings, using bivariate statistics, found that the correlation between the component measures of citizens' experiences and the aggregate indicators were very weak, revealing that public opinion data on aggregate governance indicators had little impact.

Key Words:

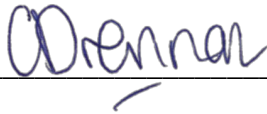
Governance, Aggregate Indicator, Democracy, Corruption, Lived Experience Indicator, Afrobarometer

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Chapter 1: Introduction

Plato pioneered the conceptualisation of good governance many years ago. Today, the phenomenon is often regarded as being synonymous with democratic government. Indeed this study assumes the popular discourse that says democratic governance is ‘of the people, by the people and for the people’ (Singh, Ansari and Singh 2009, 10). However, the phenomenon also extends far beyond that notion and has its own legal authority (Weiss 2000, 796). It impacts on peoples’ lives at many levels including the micro, or individual level and at the macro, or aggregate level. The study of governance previously centred on the qualitative assessment of its quality, but has since widened to include how the experience of governance by the individual can be accurately and meaningfully quantified. Over time this line of questioning has become increasingly popular to the extent where scholars focus considerable effort now on the quantification of the experience.

The multidimensional nature of governance adds much complexity to its investigation. Indeed, the concept of governance has multiple meanings for its many protagonists, all of whom have their own agenda while performing within the study space. In this context, scholars anticipated that the introduction of aggregate numerical indicators, consisting of multiple inputs ranging from individual citizens’ experiences of various impacts of governance all the way through to assessments at the system level by experts, would simplify the investigation of governance. Collating large amounts of governance related data into a single numeric indicator that is tailored for a specific country during a specific time period has indeed contributed to the governance discourse. This research report hopes to contribute further to this relatively unexplored topic within the context of African countries.

More specifically, the aim of this research is to study how the quality of governance in an African context can be measured quantitatively. Additionally an attempt will be made to verify the accuracy of the quantitative indicator by comparing its outcome with the actual lived

experience assessments. The investigation will begin by considering how two current aggregate governance indicators are constructed. Thereafter, these same indicators will be statistically compared with a custom built indicator that is based on citizens' lived experience of governance using Afrobarometer (2019) survey data. The two existing and most well-known sets of aggregate governance indicators, which are the most comprehensive for the African context, are the Ibrahim Index of African Governance (IIAG), produced by the Mo Ibrahim Foundation (2019), and the Worldwide Governance Indicators (WGI), produced by the World Bank (2019). Afrobarometer on the other hand, is a national public opinion/attitude survey on democracy, governance and society (Afrobarometer 2019).

This two pronged approach of investigation will satisfy the central intention, which is to compare the aggregate indicators with citizens' lived experience. While the aggregate indicators of governance quality (WGI and IIAG) include sources that capture citizen experiences of governance, closer inspection showed that these sources are assigned very small weights in the calculation of the aggregate indicator. Therefore, although it is possible that component measures of citizen experiences correlate reasonably well with the aggregate indicators, given their small weightings this is not necessarily the case. Thus this research will measure the correlation between the component measures of citizens' experiences and the aggregate indicators.

The comparison of the WGI and IIAG aggregate indicators with the Afrobarometer based customised indicator will lay bare the most important factors in the measurement of governance. In other words, this part of the study will investigate which component measures are weighted more significantly than others and how the data from citizens' lived experience of governance compare with the amalgamation of the other data in the aggregate indicator. This comparison will be embedded in the analysis of the relationship between public opinion data sources and the other data sources that comprise both the IIAG and WGI aggregate indicators.

Public opinion surveys were used to capture citizens' lived experience. The IAG consists of 35 sources, one of which is a public opinion source, while WGI has five public opinion sources out of its total of 30 sources. The only common public opinion data source that the IAG and WGI share is Afrobarometer. This relationship will be discussed in more detail in Chapter 3 and will be statistically analysed in Chapter 4. Chapter 5 discusses the comparison of the aggregate indicators and an original indicator constructed from Afrobarometer data. The goal here is to see how closely a more thoroughly customised indicator of citizen experience of governance in African countries correlates with existing WGI and IAG indicators.

These questions will be investigated with a focus on African countries. More specifically, the focus will be on African countries that are found in the Afrobarometer Round 6 data set and are found in both the IAG and the WGI data sources. In the expanded research on aggregate governance indicators, the data weighting scheme will be laid bare and by obtaining citizens' experiences of governance this report will be able to assess citizens' experiences of their country's governance. In developing countries these scores are vital for their legitimacy and evidence of their sovereignty, as 'political authorities who enjoy sovereignty' is a key feature of any state (Grieco, Ikenberry and Mastanduno 2015, 472).

Research Question

How do citizens' experiences of governance, at the individual level, align with their country's overall governance indicator score as represented by the aggregate governance indicators? Quantitative tools will be used to answer this question. The country-specific governance diagnosis of selected African countries will use current data from the 2016 - 2018 period to narrow the field of uncertainty in the research question. In answering the question the study will tease out the interplay between macro-level indicators of governance and micro-level citizens' experiences of governance. Investigation of this relationship will be based on the

political delivery of goods and services, in other words, the relationship between who gets what, when and how versus who decides the what, when and how (Hyden and Court 2002, 14). It is hypothesised that the Afrobarometer-based measure of governance better represents citizens' experiences of governance than the aggregate governance indicators. The expected rationale for the hypothesis is seated in the understanding that aggregate indicators place more weight on non-public opinion data sources in compiling the aggregate indicators.

Research Rationale

Ibrahim insists that governance must be at the centre of African countries' development and that people are at the centre of governance (Mo Ibrahim Foundation 2019). Good governance will lay the foundation for real change in ensuring that citizens' quality of life improves and becomes more equal. The rationale for this study will magnify the importance of a state's responsibility to deliver on political, economic and social goods, and services for the betterment of citizens and their right to receive such services. By using current data this study will contribute to a contemporary analysis of governance in African countries. The selection of countries is based on the availability of current data: they are from different regions of Africa and have a wide range in population sizes, development histories and overall governance scores.

The study of governance is a contemporary topic that influences many fields of scholarship as it has significant historical and political interests, and influences the formation of the nation-state. The purpose of the nation-state is to provide political goods and services through governance channels. This research report hopes to add to a targeted understanding of governance within these African countries to fully understand these countries within the context of the global village. It will also raise further research possibilities as it will provide a

foundation of governance outcomes and scores in African countries on a specific governance analysis in a country or region within Africa.

The study of governance is essential in laying the foundation for real change in ensuring that citizens' quality of life is improved and rights are equally protected as it magnifies the state's responsibility in these areas. One could go as far as to say that governance is intrinsic to humans as we desire governance to work in our favour in order to be protected against crime and personal security threats and the right to receive education to improve one's quality of life. It should be noted that this does not present a value judgement on the effect of governance indicators based on citizens' experiences being better than governance indicators. This research report shows that these governance indicators are different but not that one indicator is better than the other in measuring citizens' experience of governance.

The Paradigm Shift in Understanding Governance

After the end of the Cold War there was a rise of the globalisation of the nation-state and the centrality of the individual decreased, giving way to the formation of multi-national corporations (MNC) and inter-governmental organisations (IGO) (Grieco, Ikenberry and Mastanduno 2015). This led to a paradigm shift in the Westphalian state system and international order. However, states still have the responsibility to protect citizens from non-state actors and from its own power (Grieco, Ikenberry and Mastanduno 2015). For example, citizens need to be protected from infringements of democracy such as corruption; media censorship; restricted opportunity to participate in democratic institutions; threats against personal security and protection from abuses by statutory laws such as labour law.

Generally, democratic governments have the responsibility to improve citizens' quality of life and reduce suffering (Grieco, Ikenberry and Mastanduno 2015). This can be translated into citizens' lived experiences of governance. As the bedrock of governance, citizens have the right

to first-hand engagement with and experience of political, economic and social goods and services provided by their government. Governance is at the heart of authentic and sustainable change and that change starts with the people. The comparison of indicators highlights the interconnectedness between citizens and their state through the lens of governance.

Definition of Governance

There is a broad spectrum of definitions of governance in the literature which points to the lack of consensus thinking on the topic. However, scholars have agreed upon a normative element that helps qualify governance that can be termed ‘good’ governance (Muriithi, Jimenez, Jannin, Sajid, Singh and Sharma 2015). Different organisations and actors define governance according to their research agendas. So, their definitions of governance are crucial, as these constitute the dimensions which they use to measure good governance. The IIAG definition informs their selection of four dimensions with 14 sub-categories of governance, while the WGI definition identifies six dimensions measuring good governance.

There are two central themes in the understanding of governance and they are as follows. Firstly, there is the ‘provision of political, economic and social public goods and services that every citizen has the right to expect from their state and that a state has the responsibility to deliver to its citizen’ (Mo Ibrahim Foundation 2019, 1). Secondly, ‘governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies and the respect of citizens and the state for the institutions that govern economic and social interactions among them’ (Worldwide Governance Indicator 2019, 1).

Many scholars would agree that the WGI’s definition is very comprehensive as it encapsulates the ‘traditions and institutions by which authority in a country is exercised’ (Muriithi *et al*

2015, 16). However, this research report advocates for a definition that is a mixture of the IIAG's and WGI's, namely one encompassing the idea that 'human intention and agency that sets the parameters for how policy is made and implemented to reduce transaction costs and protecting human rights, depending on the nature of the rules adopted' (Hyden and Court 2002). Governments' authority must be exercised and restrained through governance measures that protect and ensure the betterment of the lives of a country's citizens. This understanding of governance supports the central measure of this research report that citizens' experience of governance is significant in measuring good governance.

Chapter Outline

The layout of this report includes an examination of the existing research on good governance and how to measure its quality in Chapter 2. This literature review will highlight the current limitations of the research and show how this study contributes to understanding of the field. Chapter 3 will provide a descriptive and critical analysis of the WGI and IIAG aggregate indicators. Beyond their similarities and differences of how they are calculated, the dimensions of lived governance within each aggregate indicator will be laid bare. Thereafter, Chapter 4 discusses the statistical and quantitative analysis of the WGI and IIAG. This includes a discussion of the independent calculation or so called replication of two indicators from both the WGI and IIAG. This chapter also discusses the relationship between sources derived from the lived experience of governance and the other sources that comprise the four indicators that were replicated. The penultimate chapter, Chapter 5, considers the constructed governance indicator using Afrobarometer data. A statistical and descriptive analysis will compare and contrast the results of the relationship between lived governance sources and the other sources from the replicated WGI and IIAG indicators in light of the fully public opinions of the Afrobarometer customised governance indicator. The final chapter, Chapter 6, will draw all the conceptual threads together and present a conclusion.

Chapter 2: Literature Review

Governance is a wide and varied topic involving many fields. It is extremely relevant to developing countries and their attempt to establish their legitimacy, obtain foreign aid and participate on international political, economic and social platforms. In order to prepare to address the research question within the context of existing research and specifically how to measure governance quality, this literature review has been structured using two broad schools of thought. In the broad field of study to improve the understanding of good governance the first school of thought, namely the *pro-citizen school*, has suggested that citizens are at the centre of good governance, while the second school, *the pro-institution school*, has suggested that the state and institutions inspire good governance. These two schools of thought show how scholars understand a country's quality of governance and specifically the topic of good governance.

Both the IIAG and WGI agree that there is little consensus around a single understanding of governance. This has evolved over time to be an all-encompassing concept that involves several actors, however citizens are key to understanding governance as argued by Hyden and Court (2002) and Kaufmann, Kraay and Mastruzzi (2009). Hyden and Court would agree with the IIAG and the WGI, that a broader definition and indicators of governance is needed in order to adequately encompass the concept. Governance is the 'mechanism, process and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their conflicts' (Hyden and Court 2002, 11). A broader indicator can encompass or reflect more of a country's governmental performance according to Rotberg and Gisselquist (2009). The IIAG argue that an indicator must reflect the safety and security of citizens at the personal and national level as well as include basic well-being human rights (Rotberg and Gisselquist 2009, 8).

Pro-citizen Position

The pro-citizen stance on understanding governance is supported by some scholars in developing countries. They argue that the importance of citizens' daily experience of governance in democratic systems is crucial for the improvement of their quality of life (Singh, Ansari and Singh 2009). Their research aligns with the IIAG and WGI indicators and definition of governance, stating that the government grants power through the implementation of policies that foster development and improve citizens' quality of life. Other academics argue that the 'quality of governance ... depends on the attributes of the people involve' (Rindermann, Kodila-Tedika & Christiansen 2015, 98). Furthermore, a country's 'cognitive human capital' (Rindermann, Kodila-Tedika & Christiansen 2015, 98) is achieved by improving citizens' quality of life which contributes to an improved society and government, which in turns improves governance quality.

Weiss argued that governance is more than a government; it has its own legal authority (Weiss 2000, 796). Perceptions of governance need to change from a top-down approach to one where individuals and institutions work together (Weiss 2000, 796). Bøås and McNeil (2004) developed this idea by saying that governance is set up by the government, for the well-being and protection of citizens, making governance part of the public realm (Weiss 2000, 800). This implies, at least in this study, that citizens actively participate in governance, making a citizens' experience central to the study of governance.

A crucial similarity between Singh, Ansari and Singh (2009) and Weiss (2000) is the shift towards better governance as synonymous with developing countries in the Third World. Weiss (2000) argued that this arose when citizens became disgruntled with the integrity and projection of state models of political, economic, and social policies and development (Weiss 2000, 796). Singh, Ansari and Singh (2009) go on to argue that globalisation has seen countries neglect

their public policy. This aspect of governance has been far removed from the Westphalia nation-state paradigm of improving citizens' lives (Singh, Ansari and Singh 2009).

Reformed governance must be orientated towards the public realm as citizens have a desire to be governed well. People have the desire for and right to health care, to participate in their democracy and not to be victims of crime or terrorism (Rotberg and Gisselquist 2009). It is a recognised responsibility of the nation-state to provide such governance. Nation-states were made necessary by this responsibility to provide 'essential political goods to their inhabitants' (Rotberg and Gisselquist 2009, 7). These political goods are evidenced by the IIAG and WGI categories or indicators of governance as seen in *Table 1*. Together these categories provide an overall score of a country's governance across the IIAG and WGI understandings of governance.

Table 1: Comparison of aggregate governance indicators

WGI indicators	IIAG indicators
Voice and Accountability	Safety and Rule of Law
Political Stability and Absence of Violence	Participation and Human Rights
Government Effectiveness	Economic Opportunity
Regulatory Quality	Human Development
Rule of Law	-
Control of Corruption	-

Pro-institution Position

The second school of thought, the pro-institution position, declared that the institution of governance wields power and authority over civil society for its social upliftment (Barthwal 2003, 286). However, this argument was made with the perspective that formal institutions will improve governance. Academics argue that institutions are 'essential to and causal of the betterment of governance' (Grindle 2007, 570), who further advocates for the improvement of development and governance through open trade and decreased poverty levels.

Arndt and Oman (2006) stated that governance indicators were vital for the analysis of a country in order to shape policy and perception of a country and for non-state actors to assess a country's risk and return/reward (Arndt and Oman 2006, 41). Here, what influences governance is not citizens' experiences, rather it is improving perceptions, the influence of the Cold War and policy reform, as the focus is on it being desirable to work on institutions instead on focusing on the betterment of citizens. Przeworski, Alvarez, Cheibub and Limongi (2000) advocated for the focus on institutions, mainly because institutions without money or resources can make no real difference to citizens. Kaufmann, Kraay and Zoido-Lobaton (2000, 41) concurred that African countries need to reform their institutional governance in order to manage resources for the common good and further development.

Singh, Ansari and Singh (2009) and Arndt and Oman (2006) agree that a major similarity between the aggregate indicators is that gross domestic product (GDP) is excluded. The GDP shows no correlation between governance and a state's development and economic health (Mo Ibrahim Foundation 2019). Arndt and Oman (2006) argue that the GDP should not play a role in judging a country's development score. Risk ratings were not able to predict a financial crisis (Arndt and Oman 2006, 38). The GDP is influenced by capital flows and isn't dependent on a country's behaviour (Arndt and Oman 2006, 38). This field-wide consensus on indicators thus justifies the choice of IAG and WGI data over other data sources.

Comparison of the Two Schools of Thought

Clearly the major difference between the two schools of thought is whether the focus of governance should be on citizens or on institutions. The concept of good governance can be categorized as the betterment of citizens' quality of life. This in turn contributes to the improvement of the state and institutions that provide those governance dimensions. The state is set up to protect citizens even from their own institutions. The opposing concept is that good

governance happens through the strengthening of institutions. If institutions have financial backing then they are able to make a real difference to governance and citizens' quality of life, however, the institutions are the starting point. The indicators, as argued by pro-institution scholars, identified a selection bias that does not favour developing countries. However, some may argue that the quality of governance is dependent on a mixture of human capacity and institutional autonomy (Fukuyama 2013).

In unpacking theoretical comparison it is necessary to elaborate on the conceptual foundation; specifically engaging in the debates around the utility of lived experiences versus expert opinions in measuring governance and the utility of weighting in composite indicators. In order to engage in the debate around the utility of citizens' lived experiences of governance and expert opinions in measuring governance, Kaufmann and Kray (2007, 2) claim that good governance is essential for sustainable development in politics, economics and society, prompting a more refined development of policies relevant to governance and governance indicators, with the additional claim that good governance indicators are explicitly flawed as 'imperfect proxy's' that have measurement errors. These measurement errors need to be acknowledged (Kaufmann and Kray 2007, 33). The imperfection lies with the 'diversity of different indicator sources...when monitoring and formulating governance (indicators)' (Kaufmann and Kray 2007, 4).

The benefit in aggregated governance indicators ensures that there is a better measure if a country has enforced its anti-corruption policies (Kaufmann and Kray 2007, 7). It also collects information from public opinion sources such as NGOs and citizens to find out their experience of the country's 'prevalence of governance' (Kaufmann and Kray 2007, 7). This helps to clarify utility and robustness of these indicators within a country. In other words, are these governance dimensions really being carried out on the ground as well as in the books (Kaufmann and Kray 2007, 10)? The authors argue that aggregated indicators often leave a gap as they measure what

is happening in the books but do not measure the implications of governance on the ground (Kaufmann and Kray 2007, 10). It is this gap between the rules and the implementation of governance that will be bridged by public opinion sources.

Expert opinions have many advantages and a few disadvantages that are particularly significant to this literature review. The predominance of expert opinions in aggregated governance indicators is due to their cost effectiveness. It is less expensive to ask a handful of experts who have knowledge on a dimension of governance than it is to set up a survey for many citizens and NGOs to take (Kaufmann and Kray 2007, 16). Furthermore, to make a more specific governance indicator, experts' specific knowledge, rather than the general public's knowledge, can tailor an indicator to a more specific area in governance to make cross-national comparisons easier (Kaufmann and Kray 2007, 16). One disadvantage is that experts have differing views about particular dimensions in governance and ideological orientation could influence individual assessments (Kaufmann and Kray 2007). Furthermore, the organization could choose experts based on their ideological orientation for specific dimensions to boost it. Also, local experts that might be 'pro-government or anti-government' could influence or bias the rating of their country (Kaufmann and Kray 2007, 10).

These authors assert three central claims that this research report supports. Firstly, aggregated governance indicators 'synthesize and summarize' (Kaufmann and Kray 2007, 29) large numbers of different sources and dimensions of governance. They argue that aggregated indicators are beneficial when there are different types and sources of data as this helps to get better results despite the different types and sources (Kaufmann and Kray 2007). However, more tailored indicators are useful as they can be disaggregated into consistent components (Kaufmann and Kray 2007, 30). Secondly, aggregated governance indicators avoid false dichotomies between objective and subjective dimensions as most dimensions rely on the perceptions of their respondents in some way (Kaufmann and Kray 2007, 30). For example,

the IIAG claims to have only objective dimensions of governance but most of its assessments are based on subjective data (Kaufmann and Kray 2007, 30). Thirdly, they contend that the source data of what is being measured and the indicators' methodology should be openly available for everyone. This is to ensure credibility, but also to ensure that these dimensions are actually experienced on the ground and so can be open for public scrutiny (Kaufmann and Kray 2007, 32). These claims are presented to support the development of a new indicator and to fill in any possible gaps and weaknesses in the WGI and IIAG aggregated indicators.

Gisselquist (2014) discussed the usefulness of weighting composite indicators. There has been a rapid increase of governance measures and indicators over the last few years. They have captured multiple sources and dimensions of governance and each indicator is different and can be tailored to measure different aspects of governance better than others (Gisselquist 2014, 513). The overall claim that Gisselquist (2014, 256) puts forward is that the foundation, for the evaluation and creation of governance indicators, should be based on 'social science methodology' to measure the fundamentals of the research question, which are its 'conceptual foundation, reliability, replicability and relevance', rather than governance measurements such as exact calculations and estimations of weighting (Gisselquist 2014, 514). These should be considered but more emphasis should be given to the social science foundation. A good methodological foundation can be applied to any governance index and would be able to address the 10 questions Gisselquist composed when it is created and evaluated.

Three of the questions, one, three and ten, are particularly relevant to this research report literature review. The first question asks what value this governance indicator adds to the field (Gisselquist 2014, 527). The third question considers the legitimacy of the construction of the indicator as well as the legitimacy it could promote within a country. The neutral observer creating a replicable governance indicator could be considered to be more legitimate because of its impartial creator (Gisselquist 2014, 527). On the other hand, local governance

assessments are more significant for local legitimacy (Gisselquist 2014, 527). Governance indicators can have significant ‘real-world implications’ (Gisselquist 2014, 527) for cross-national relations, investors, trade relations and aid allocations. The tenth question considers weighting schemes and their relevance in data normalization and aggregation (Gisselquist 2014, 526). She argues that weighting is important in considering the working definition of governance in its development stage as weighting choices will influence the indicators’ robustness (Gisselquist 2014, 526).

There are two problematic responses to weighting choices: firstly, source errors are uncorrelated and, secondly, they may not be specific to the relative importance of the governance indicators (Gisselquist 2014, 526). ‘(W)eighting in governance indexes is generally derived with one of two principles in mind, the degree of confidence in each component’s accuracy (i.e. WGI) and the relative importance of each component to governance (i.e. IIAG)’ (Gisselquist 2014, 526). In support of this claim a detailed guide will be given to clarify what this research report means by wording such as ‘small weighting’ and so elaborate on the meaning behind these terms without limiting them to specific numerical values. It is not possible to give pre-defined numerical terms to the weightings, as the terms represent weightings that are described as significantly smaller or larger than any expected weighting in the data.

Measurement of Governance and Limitations of Research

How Governance is Measured

The debates in the field of good governance and its measurement date back to Plato’s work. The Plato debate centres on what kind of political systems are most likely to serve the interests of the people. More recent debates focuses on questions around quantifying indicators of

governance quality. This research report hopes to contribute to the measurement of governance quality.

The literature that is concerned with measuring governance explores the different types of methodologies and types of data that will be captured. There are two methods of creating governance indicators which are either creating individual indicators or compiling an aggregate indicator (Muriithi, Jimenez, Jannin, Sajid, Singh and Sharma 2015). The latter methodology is used by IAG and WGI. When capturing data there are two considerations of governance: the first concerns what is stated in the law, *de jure*, or, what happens in reality, *de facto* (Muriithi *et al* 2015). The second consideration is what type of information is used; objective or subjective and perception based information (Muriithi *et al* 2015). These concepts and questions are foundational when researching governance indicators.

Some of the literature on measuring governance argues that aggregate indicators are relatively new, but their contribution has been significant in compiling plenty of information and attempting to make sense of countries in specific time periods (Muriithi *et al* 2015). However, some would argue that the multidimensionality of governance means the measured data are subject to non-uniformity and there is a greater scope for bias and measurement errors due to the data consisting of more subject information such as expert surveys (Arndt and Oman 2006). Knoll and Zloczysti (2012) argue that the concern for validity of perception based information is not as problematic if the examination of governance is within developing countries (Knoll and Zloczysti 2012). The issue is around heteroscedastic properties and this could be resolved by removing developing countries that perform better (Knoll and Zloczysti 2012). Another short coming of aggregate indicators is the imposed 'framework for measuring governance' (Muriithi *et al* 2015, 22). This set framework isn't specific enough to factor in the differing realities that each country faces. Other scholars support this claim, finding that many governance indicators have been arbitrarily selected (Knoll and Zloczysti 2012).

Limitations of Research

A significant limitation of the existing research is that there is little current work focusing on the legitimacy of governance scores based on whether or not they correlate with citizens' lived experience in African countries. Similarly, there is hardly any research assessing governance as portrayed by an indicator score correlated to experiences of that governance. The existing research does not look at this specific topic through a quantitative lens at the selected developing African countries. Ibrahim points to one reason why this research is necessary in showing that some indicators take into account the GDP of a country but that there is no strong correlation between that and governance. Hence this research report hopes to contribute to this field by shedding light on whether or not there is a correlation between said indicators and experiences of governance. This research report hopes to narrow the range of uncertainty around governance by addressing these limitations in using data to measure and address both the correlation and the outliers.

Research Strategy

In determining the correlation between the component measures and empirical relationship of citizens' experiences and the aggregate indicators scores, the research strategy adopted in this research report is one of quantitative analysis using statistical tools. There will be little inferential statistics, rather a focus on a comparison between the built citizens' lived experience of governance indicator scores and the aggregate indicator scores. It will carry out a descriptive and critical analysis on the IIAG and WGI indicators, focusing on how they are constructed and what are the measures of lived experiences of governance, in comparing the similarities and differences between them. Then, a statistical analysis will disaggregate the IIAG and WGI indicators, separating citizens' experience of governance in public surveys from the other governance measures that makes up the indicators, in the hope of finding a correlation between

lived experiences of governance and the other measures. Subsequently, two indicators from IIAG and WGI will be used to form a unique Afrobarometer based indicator of governance. Finally, an indicator based solely on lived experience Afrobarometer data will be constructed. It will compare and contrast the custom Afrobarometer indicator with the corresponding IIAG and WGI aggregate indicators.

Chapter 3: Analysis of the Aggregate Indicators

The focus of this chapter is on the measures of lived experience of governance in the construction of the IIAG and WGI aggregate indicators. A descriptive and critical analysis will be given showing how these two sets of indicators are calculated, highlighting the components based on lived experiences of governance. Initially, the discussion will look at how the aggregate indicators were constructed. Then, the aggregate indicators incorporation of citizens' experiences of governance data, through public opinion data, will be considered. Next, the different types of data and source material that comprise both aggregate indicators will be highlighted. The similarities and differences between each indicator, such as the methods of scaling and weighting the data, will be laid bare. Penultimately, identifying one component that is based on citizens' experiences, such as public opinion surveys, will be brought to the fore. Lastly, the other components, which are not in both aggregate indicators, will be examined.

The evidence and data required for this chapter will be taken from the IIAG and WGI websites, associated documents such as the World Bank's working documents, and data from the research of authors such as Kaufmann, Kraay and Mastruzzi (2010). This section will also draw from key authors in the field of governance such as Arndt and Oman (2006). These sources will contribute to the critical analysis of these indicators.

Construction of the IIAG and WGI

The construction of aggregate governance indicators involves combining several component measures mathematically. Aggregation typically involves calculating a weighted average of component scores that have already each been placed on a common scale. The aggregate indicators of IIAG and WGI provide an overall measure of governance and are created by combining inputs from several separate elements and data sources. They will be analysed to see how well aligned the two components of citizens' experiences of governance and the other

components are. The following passages will identify and define the variables and data. Both the Mo Ibrahim Foundation and the World Bank are committed to measuring and monitoring governance within countries. The Mo Ibrahim Foundation focuses on countries within the African continent, while the World Bank's includes countries from across the world. Both organisations provide open access to the data that they have collected and overall governance outputs that they have compiled individually. The aggregate governance indicators are separate categories that make up their overall governance score.

The WGI and IAG are constructed with different dimensions/components of governance which are based on their respective understandings of governance. The WGI has six indicators making up their overall governance score. They are:

1. Voice and Accountability (VA)
2. Political Stability and Absence of Violence
3. Government Effectiveness
4. Regulatory Quality
5. Rule of Law
6. Control of Corruption (CC)

Each indicator contains multiple underlying sources that are aggregated together mathematically to give their respective indicator score. There are 30 independent underlying data sources and five of those sources are from public opinion surveys.

The IAG has four categories which make up their overall governance score. Within each category there are further sub-categories and within each sub-category there are a number of indicators that are made up of multiple underlying sources that are aggregated together to give their respective indicator score. They are:

1. Safety and the Rule of Law – made up of four sub-categories, namely:
 - a. Rule of Law
 - b. Transparency and Accountability (TA) – nine indicators
 - c. Personal Safety

- d. National Security
- 2. Participation and Human Rights (PHR) – made up of three sub-categories, namely:
 - a. Participation – five indicators
 - b. Rights – six indicators
 - c. Gender – eight indicators
- 3. Sustainable economic opportunity – made up of four sub-categories, namely:
 - a. Public Management
 - b. Business Environment
 - c. Infrastructure
 - d. Rural Sector
- 4. Human development – made up of three sub-categories, namely:
 - a. Welfare
 - b. Education
 - c. Health

Each indicator is made up of 35 independent underlying data sources one of which is a public opinion data source.

These components, categories or dimensions of governance have ‘individual indicators on which each aggregate indicator is based’ (Worldwide Governance Indicators 2018, 5). Both organisations with their separated aggregate indicators provide their methodology, list of sources and quantitative tools for reconstructing and disaggregating governance scores. The organisation has to collect data from multiple independent sources in order to create an aggregate governance indicator. The IAG indicator is aggregated from 35 independent sources which differ from the WGI indicator which is ‘based on over 30 underlying data sources’ (Worldwide Governance Indicators 2018, 5).

Many individual variables are taken from each underlying data source. The variables are combined into their respective data sources and the data sources are clustered into the various dimensions that make up the aggregate indicators (Kaufmann, Kraay and Mastruzzi 2010). The raw data of the underlying source data is available for both indicators which will be used in the

next chapter. One indicator is an amalgamation of different sources and together all the dimensions of governance give an overall governance score for a country (Worldwide Governance Indicators 2018).

Both the IIAG and WGI aggregate indicators use Afrobarometer public opinions survey data as one of their underlying sources. However, it should be clearly noted that the aggregate indicators are completely separate: they have different categories that make up their governance indicator; they have different data sources; and they weigh the influence of those data sources differently. Therefore, the analysis undertaken is not circular as the data from the IIAG and WGI do not draw from all the same sources and are aggregated from multiple sources in different ways. In the technical notes of the IIAG and WGI aggregate indicators, mention is made of which Afrobarometer questions were used. Few of the same questions were used across both indicators. It was also stated that other sources were used to add to and influence the components that Afrobarometer was used for in the aggregation of the indicator. Furthermore, the notes did not mention that the incorporation of Afrobarometer data in the IIAG and WGI was significant; therefore this analysis does not run the risk of it being a circular. To better understand the construction of aggregate indicators the component measures, type of data and weights for the replicated indicators in the WGI and IIAG are presented in *Table 8*, *Table 9* and *Table 10* in the appendix.

The data selected from the IIAG and WGI have a fairly wide, three year time span, from 2016 to 2018. It is necessary to use a wide time span because the most current data and indicators are released at different times. The most recent data for the IIAG and WGI were collected in 2017 and released in 2018. In the case of the WGI, if current data is not available from a source then the previous year's data will be included (Kaufmann, Kraay and Mastruzzi 2010). The IIAG, however, use a time series in their coding of variables to indicate which cluster responses are taken from various rounds of data collected (Mo Ibrahim Foundation 2018).

The IIAG and WGI attempt to compare their governance scores across countries and times. Their approaches to collecting and analysing data are different and will be described below and in a critical analysis at the end of this chapter. Both organisations use various variables and source data that are freely accessible. The two methodologies are now discussed.

Methodology of the Construction of IIAG Indicators

The criteria for inclusion of data is based on the *de facto* approach, which refers to ‘what happens in reality’ (Muriithi *et al* 2015), in other words this approach measures what the governance related outcomes are. They state that ‘each construction is operationalised as a composite (or aggregate) indicator of its sub-category... (and that the indicators’) true value is its respective sub-category score plus some error’ (Mo Ibrahim Foundation 2018, 10). Once all the variables are agreed upon and collected, outliers are identified and treated in order not to skew the data. If outliers do skew the data it will significantly influence a country’s governance score, therefore the Tukey’s method is used to diagnose the outliers (Mo Ibrahim Foundation 2018). The next process that the IIAG used to create their aggregate indicator is that of normalisation which standardises the raw data that had different scales of measurement (Mo Ibrahim Foundation 2018). The IIAG aggregation method uses a minimum to maximum method to rescale the source data; to create scores that have common units within the same bounds of zero to a hundred, where hundred is the best governance performance score a country could achieve (Mo Ibrahim Foundation 2018). From there the rescaled data are weighted to get the average scores and then clustered to get the four indicators of governance (Mo Ibrahim Foundation 2018).

Methodology of the Construction of WGI Indicators

The WGI method to create their aggregate indicator starts with the collection of exclusively ‘perception-based governance data sources’ (Kaufmann, Kraay and Mastruzzi 2010, 5). The

data collected are *de facto* variables and sources that are subjected and perception based information (Muriithi *et al* 2015). The next step will be to assign the individual variables to the respective six measures of governance. Then, the preliminary rescaling of the data sources is transformed into a scale of zero to one, where higher values have better outcomes (Worldwide Governance Indicator 2018). The WGI uses the unobserved components model (UCM) to observe the data from each individual source to find a linear function of unobserved level of governance (Kaufmann, Kraay and Mastruzzi 2010). In this model there is an error term to capture uncertainty in the true governance score and the observed proxies of governance (Kaufmann, Kraay and Mastruzzi 2010). In other words, UCM transforms and rescales the data in order for it to be comparable across scores. The weighted average of each data source is calculated and the composite measures of governance are placed into units with a mean of zero and the standard deviation of one (Worldwide Governance Indicator 2018). The composite measure lies between -2.5 and +2.5.

These two different methods both produce rescaled data that is averaged and clustered in their respective governance indicators in order to create the IIAG and WGI aggregate indicator of governance. The following section will discuss the details of the measures of governance, specifically citizens' experience of governance and the other measures which create the aggregate indicators.

Citizens' Experiences of Governance Component and Other Components

This research report aims to map governance indicators with citizens' experiences of that governance. The variable relationship is a whole/part or aggregate and component relationship and not a cause-and-effect one. The IIAG and WGI data represent the measured aggregate governance indicators, while the to-be-built indicator from the Afrobarometer data is based on the experience of governance. To fully understand how governance is measured in light of

citizens' lived experience of governance a discussion around the specific measures that make up a governance indicator must be laid bare. The classification of citizens' experiences of governance components are found in public opinion data sources.

IIAG Indicator Components and Type of Data

The majority of the sources are from expert and non-governmental organisation (NGO) assessments, business surveys and government information. One can assume therefore that the weighting of the public opinion data is very small in comparison. The IIAG 2018 report does mention that citizens' perceptions of governance scores related to a particular indicator may be expected to be lower, however, it does not take the matter any further by discussing what impact this experience will have on citizens. Additionally, the sources that actually capture citizens' experiences of governance are in short supply.

The IIAG believes that governance should be 'citizen-centred' (Mo Ibrahim Foundation 2018, 6), although their source data comprise of only two public opinion surveys (refer to *Table 9* and *Table 10* in the appendix). Indeed they only provide a list of the source data names without specifying the type of data: be they expert assessments or public opinion surveys. Out of the list of 35 data sources there was one public opinion or household survey which was Afrobarometer. The Afrobarometer data were relatively well distributed across these indicators: Safety and Rule of Law; Sustainable Economic Opportunity; and Human Development.

WGI Indicator Components and Type of Data

The WGI indicator captures perception based data which are opinions of experts, entrepreneurs and citizens (Kaufmann, Kraay and Mastruzzi 2010). The WGI's understanding of survey measures is that they are imperfect proxies for governance assessments (Kaufmann, Kraay and Mastruzzi 2010). They also recognise that public opinion surveys and expert assessments often

measure different things and even within the respective respondents their understanding of governance might be different (Kaufmann, Kraay and Mastruzzi 2010). The WGI reports the type of data they collect and who provided the data, but it does not specifically discuss citizens' experience of governance.

The types of data included in the WGI, as mentioned above, come from public and private surveys and from expert assessments provided by NGOs, multilateral organisations and public sector bodies (refer to *Table 8* in the appendix). The data that represents citizens' lived experience of governance are the public opinion surveys; in the latest WGI data set these are from Afrobarometer (AFR), Transparency International Global Corruption Barometer (GCB), Gallup World Poll (GWP), Latino-barometer (LBO) and Vanderbilt University Americas Barometer (VAB). Each of these sources focus on public opinion data from different regions of the world: Afrobarometer has public opinion data from citizens in African countries; Vanderbilt University Americas Barometer's data is from the countries of North and South America; Latino-barometer's data is from South American countries; Global Corruption Barometer's data is from a scattering of countries across the world; and Gallup World Poll has the widest array of countries, only missing a few across the world, and therefore has the most significant compilation on citizens' experience of governance.

Weighting of Dimensions Based on the Representivity of Sources

Sources that are representative of many countries, that is those with a wide scope, are afforded greater weights in the WGI aggregate indicators. Although logical on one level, given this study's primary focus of assessing the correlation between citizens' lived experiences with aggregate indicators, this approach is unfortunate since these representative sources consist mainly of components other than the lived experience opinions. Thus the WGI aggregate is mainly influenced by 'other' data that consists of a mixture of expert assessments, NGO

assessments, business surveys and government assessments. Therefore, in order to accurately assess the correlation between citizens' lived experiences and the aggregate indicators it is essential to inspect the aggregation and weighting methodologies.

During such an inspection of the weights and scores of the sources, it was found that all of the public opinion surveys across the WGI had weights that approached zero. On the other hand, the commercial business surveys, like the Economist Intelligence Unit (EIU), were afforded significant weights because they source their data from experts in many countries from across the globe.

Thus, when the WGI calculates the weighted averages they are practically ignoring public opinions. Indeed it is almost impossible for public opinion surveys to significantly influence the WGI outcomes. This does not necessarily imply that the public opinion data is fundamentally different than what they get from the 'other' sources, but it does undermine the impression that the WGI aggregate indicator is an unbiased, fully representative indicator.

The question still remains why the respected WGI aggregate indicator should weigh public opinion so low. The answer is to be found in the use of the UCM statistical process. This methodology attaches larger weights to fully or at least highly representative sources, because it searches for common trends and interpolates across the few 'unobserved components'. However, with the exception of Gallup World Poll and Transparency International Global Corruption Barometer, the public opinion surveys are regional with many apparent 'unobserved components' and therefore they are not afforded the same weighting privileges as the globally representative sources.

Similarities and Differences between Indicators

Finally, this section compares the IIAG and WGI aggregate indicators. This critical analysis will address the selection of indicators, source data, methodology and types of data. This

analysis will yield a hypothesis on the relationship between these aggregate indicators and the built Afrobarometer indicator.

Similarities

Both the IIAG and WGI have subjective and perception based data as well as public opinion data in their aggregate indicators of governance. Both aggregate indicators tend to favour data sources that are from governments, expert assessments and NGOs, with little weight given to citizen's experiences of governance. There is a similarity in the hypothesised discrepancy in aggregate governance indicators that can truly capture citizens' experiences of governance or capture experts' assessments of citizens' experiences of governance. Both organisations do not fully address citizens' experience of governance. However, both organisations recognise that their data and governance scores are building blocks for further research and development.

In the WGI data not all of the underlying sources are relevant to all the countries included, especially in the public opinion data sources that are relevant to only a certain region and not to the whole world. The WGI does not take into account differences among regions, so one source document might not be enough to portray governance experiences for all regions. The IIAG is similar in that not all of the data sources cover the 54 African countries. Afrobarometer, for example, while is included in IIAG, only has data on 36 African countries, but proclaims to speak for the continent.

Another significant similarity of IIAG and WGI is their shared use of Afrobarometer data. The IIAG uses 17 Afrobarometer survey questions and results across three of their indicators, while the WGI uses 13 questions and results across four of their indicators. As mentioned above the used of shared Afrobarometer data will not hinder this research and the analysis does not run the risk of it being circular due to the different weightings of this source. It is worth noting that

there are is some overlap in the sources used by the WGI and IIAG in the replicated indicators beyond Afrobarometer. *Table 2* below has a summary of the shared sources.

Table 2: Overlapping sources in the WGI and IIAG indicators

Source name	Type of data	WGI indicator used	IIAG indicator used
African Development Bank	Expert assessment	CC	PHR, TA
Afrobarometer	Public opinion survey	VA, CC	PHR, TA
Bertelsmann Transformation Index	Expert assessment	VA	PHR, TA
Economist Intelligence Unit	Expert assessment	VA, CC	PHR, TA
Global Integrity Index	Expert assessment	VA, CC	PHR, TA
Reporters without Borders Press Freedom Index	Expert assessment	VA	PHR

Differences

The construction of the IIAG and WGI aggregate indicators is different. The IIAG aggregation method focuses on a minimum to maximum rescaling of the source data and then averages the rescaling data (Kaufmann, Kraay and Mastruzzi 2010). The WGI rescaling is assisted by the UCM method which rescales the data and then constructs a weighted averaged of the individual indicators to each data source (Worldwide Governance Indicator 2018). The WGI has representative sources that affect the way that the UCM is estimated. The IIAG has a minimum threshold of data availability in at least two-thirds of the countries covered, below which they do not use it as a source. The IIAG does not differentiate between representative and non-representative sources. Rather the IIAG weighting is based on the hierarchy of indicators, sub-indicators and sub-sub indicators and does not depend on correlations (Mo Ibrahim Foundation 2019).

The major difference between the IIAG and WGI is the indicators that were selected to measure governance. One could argue that the IIAG has a better overall coverage of governance, as its indicators cover a wide range of citizens' experience of governance. On the other hand, the

WGI has more indicators and each indicator is more detailed in the selected dimension of governance that it focuses on. Although, the IIAG has two fewer indicators, its four sub-categories make up for the apparent loss of complexity, ensuring that the indicators do cover the necessary dimensions of governance.

The WGI indicators can map onto the IIAG indicators. The Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law and Control of Corruption map onto the IIAG's safety and rule of law indicators sub-categories of rule of law, transparency and accountability, personal safety and national security. The WGI's government effectiveness can map into the IIAG's safety and rule of law sub-category of government's transparency and accountability, and participation and human rights sub-category of rights.

Despite the WGI's indicators mapping into the IIAG sub-categories, they are standalone indicators and cannot be mapped perfectly onto each other. The WGI indicators seemingly are more focused on government's role in governance, while the IIAG has more distributed results in citizens' lived experience of governance. A major difference is that the IIAG indicators and sub-categories account for more of a citizens' experience of governance in economic opportunity and their human development. The IIAG has more space and sub-categories that capture citizens' experience of governance; however, they use only two public opinion surveys. The penultimate chapter of this research report will address this question of whether or not the IIAG does capture citizens' experience of governance in their aggregate indicator.

Expected Relationship and Limitations in this Study

The expected relationship between the aggregate indicators and this research report's custom built Afrobarometer indicator is described as follows. When running a reconstructed or re-aggregation of the two aggregate indicators, it should produce their respective overall governance indicator score. The indicators within IIAG and WGI that measure lived experience

of governance might differ. The unexpected relationships will be analysed next in the Afrobarometer index in comparing and contrasting the outcomes with the corresponding IAG and WGI indicators in the Afrobarometer countries. A hypothesised relationship could be that an Afrobarometer indicator reveals a more accurate representation of citizens' actual experiences of governance than the aggregate indicators, as well as a more accurate correlation between the Afrobarometer indicator with the corresponding IAG and WGI indicators.

Another possible outcome after the disaggregation, between the public opinion of citizens' lived experience of governance data and the other data in the IAG and WGI, is a weak or negative correlation between the sources. This will raise the question whether or not the overall indicator does justice to citizens' experiences; are public opinion surveys just included for legitimacy reasons or are the data's weight not significant enough to influence the overall score.

The next chapter will report on a statistical analysis of the IAG and WGI indicators. The four indicators that were replicated include two from the IAG, namely Transparency and Accountability, and Participation and Human Rights, and two from WGI, namely Voice and Accountability, and Control of Corruption. The reason for replicating these four indicators goes beyond understanding how the organisations constructed their specific governance indicators. The primary reason for the choice of indicator is the study's focus on measuring governance quality in African countries. This report is slowly pulling into focus African countries from the WGI which gives one governance source on 200 plus countries in the world, to IAG that gives data on 54 African countries and finally to the custom indicator, using only Afrobarometer data that will provide data on 36 countries in Africa (Afrobarometer 2019). The focus of this governance study is more tailored to African governments and citizens and their central concerns or issues around governance being two-fold, participation in democracy and corruption. African countries and citizens are more likely to prioritise these two components of governance higher than what first world citizens might focus on. One could say that these

two components that need to be addressed first before the others in the African context. These two components of governance are represented in the four indicators chosen from the IIAG and WGI.

Chapter 4: Statistical Analysis of WGI and IIAG Governance Indicators

The previous chapter provided a qualitative discussion and critical analysis of the WGI and IIAG governance indicators. This chapter covers a discussion of the same indicators through a quantitative lens. It includes a description of the methodology used to reproduce or replicate four of the input indicators used within the aggregated WGI and IIAG governance indicators. The resulting statistical analysis of the numeric data and methods will be used to support or refute the hypothesis presented earlier in this research report; that while the WGI and IIAG indicators include sources that capture citizens' experiences of governance, closer inspection shows that these sources are assigned very small weights in the calculation. It is possible that component measures of citizen experiences correlate reasonably closely with the aggregate scores, but given their small weights this is not necessarily the case.

Replication Methodology

This study began by independently calculating four indicators used in the WGI and IIAG aggregated governance indicators from raw source data. As this study aims to investigate how impactful the public perceptions are and how the WGI and IIAG attempt to measure roughly the same inputs, four indicators were replicated, namely: from the WGI, Voice and Accountability, Control of Corruption, and from the IIAG, Transparency and Accountability, which is a sub-indicator for the Safety and Rule of Law indicator, and Participation and Human Rights indicator that consist of three sub-indicators.

The aim of the replication process was to determine how well the indicators can be replicated using the methodological descriptions and data provided. There were two reasons why this replication exercise was important for the study. Firstly, the replication process gives insight into the underlying source data, how the aggregate indicators are constructed and how the statistical calculations using a system of weights influenced the outcomes. This insight

contributed to the stated aim of dismantling the aggregate governance indicators so as to reveal the relationship between public opinion data and other data sources. Secondly, the replication process is important because it allows the findings of this research report to be independently reproduced by others working in the field. This is important as it is a fundamental aspect of the scientific method of knowledge production.

The selection of the four indicators to be replicated was done with care so as to support the research aim. Assessing participation and citizens' experience of democracy, and assessing citizens' experiences of corruption were chosen as it was believed that they would best reveal the relationship between public opinion and aggregate indicators, especially within an African context. It is also worth noting that the four indicators were chosen because of their similarity of focus, indeed it is believed that they are more coherent in their scrutiny of aspects of governance than any other grouping of indicators. One could argue that the IIAG's Sustainable Economic Opportunity and Human Development categories have something in common with the WGI's Government Effectiveness, but these correlations are not as strong as with the four selected indicators. However, it should be noted that the selection of these two elements of governance and the four indicators does not mean that the other components are less important. Indeed a fuller analysis might have examined them all.

The Process of Replicating WGI Indicator Data

The 30 individual source data spreadsheets, for 2017, were downloaded from the WGI website (c2019) and merged into a single spreadsheet that contained all the scores for 216 countries. Thereafter, a three step cleaning process was initiated to re-label and reorder the data. Firstly, all country codes were changed to reflect the standardised International Standards Organisation (ISO) country codes. Secondly, duplicate data entries were appropriately combined; for example MMR, Myanmar and RSF, Burma were suitable condensed to read as MMR,

Myanmar associated with the appropriate score. Thirdly, field headings were structured to show source code, year and indicator code; for example, AFR17va. This field heading structure enabled the data for the six indicators to be organised into six corresponding data frames. Further work was performed on these data frames which preserved the original data set for comparative reasons and simplified processing as one indicator could be processed at a time.

The replication process consisted of six steps, each of which is described below.

Step 1 began by cross-checking the detailed WGI source data against the number of sources reported in the aggregate data set to look for inconsistencies. Thereafter, the number of data entries (source scores or records) in the author's merged WGI data frames for Voice and Accountability, and Control of Corruption were compared with the number of sources from the corresponding World Bank's databank (c2019). The variances thrown up by this comparison were manually corrected in the author's data frames. The specific inconsistencies by running this function indicated that, in Voice and Accountability, there was a discrepancy of one source in 12 countries and, in Control of Corruption, 11 cases had a discrepancy of two sources, five cases had a discrepancy of three sources and one case had a discrepancy of four sources. Another list was generated to check what source scores countries were missing and the missing scores in the merged source were added to the country via its country code and data source code.

Interestingly for Control of Corruption, the generated list showed that in 65 cases there was one missing score. Using the above mentioned process it was found that 90% of those countries were missing a score from the World Bank's Country Policy and Institutional Assessments (CPIA) indicator and 10% from the African Development Bank (ADB) indicator (for African countries only). Although the missing scores were absent on the WGI website and are

represented with an ‘NP’, the WGI actually has the missing data, but are not allowed to release them for reasons of confidentiality.

Step 2 linked the WGI weights to the source scores for Voice and Accountability, and Control of Corruption. Some of the sources are not used in Voice and Accountability and/or Control of Corruption and so these are dropped from the respective data frames. The number of sources and weights were re-checked to make sure they matched – so called vector matching – before proceeding with the methodology. It should be noted that this research report did not replicate the UCM calculations of the weights, but assumed the weights as reported in the WGI source data.

Step 3 generated the sum of weighted scores per country. A function was coded to multiply the individual source scores with their respective weights for each country, for Voice and Accountability, and Control of Corruption scores, respectively. The ‘NA’ entries were removed for this exercise. The calculated weighted scores ranged from 0.04 to 0.72, which gave confidence in the coding, given that sums below zero or greater than one are technically impossible. The function also summed these individual products and, therefore, returned a single vector – the sum of weighted scores – for each country.

Step 4 uses the next function to calculate the sum of the non-missing weights by country for Voice and Accountability, and Control of Corruption. This exercise revealed that at least one country had 96% of the maximum number of source weights, while the countries with the lowest number of non-missing weights had on average 16% of the maximum number.

Step 5 scales the Voice and Accountability, and Control of Corruption scores of all the countries to a value between 0 and 1. The sum of the non-missing weighted scores (see Step 3) were divided by the sum of the non-missing weights for that country (see Step 4) to give the raw score for Voice and Accountability, and Control of Corruption, respectively. The raw

scores ranged from 0 to 0.95, with many of the advanced industrial countries scoring close to one.

Step 6, the last step, converted the raw score for a country into a measure of how the individual raw score varied against the global mean, the so called z-score. Each individual z-score (z_i) was the difference between the raw score for a country (r_i), in Voice and Accountability, and Control of Corruption, (see Step 5) and the quotient of the mean raw score for the whole world (\bar{r}) and the standard deviation of the raw scores of the whole world (σ), as shown in *Equation 1*. This process calculated a score that ranged from -2.5 to +2.5.

$$z_i = r_i - \left(\frac{\bar{r}}{\sigma}\right) \quad \text{Equation 1}$$

The Process of Replicating IIAG Indicator Data

The 2017 IIAG data for the sub-category Transparency and Accountability, and the category Participation and Human Rights based on 35 individual underlying sources in the IIAG countries with their respective unweighted raw scores was downloaded from the IIAG website (Mo Ibrahim Foundation 2019) and were compiled into a single spreadsheet.

The replication of raw scores described below followed the process used for WGI fairly closely, but the differences mainly related to the weighting system and are emphasised in the description. The raw scores were imported into R and were cleaned. The vector names for all the categories, sub-categories and indicators were renamed according to the IIAG naming convention. The weights were calculated according to the IIAG methodology notes (Mo Ibrahim Foundation 2019), which emphasises that the weights are not equal for all the indicators. Rather, they take account of the hierarchical construction of the indicator with sub-categories that are averages of their constituent indicators and sub-indicator scores. Thus the weighting structure for Transparency and Accountability reflects the following structure: level

2 is the sub-category, level 3 consists of the indicators that make up the sub-category, level 4 are the sub-indicators, that is, a score compiling multiple data sources and level 5 are the sub-sub-indicators which are the individual data sources that make up the sub-indicator.

Transparency and Accountability, which is weighted $\frac{1}{4}$, is made up of nine indicators each weighted $\frac{1}{9}$ and 18 sub-indicators weighted $\frac{1}{18}$ each. The category score is an average of the constituent sub-categories, indicators and sub-indicator scores. For Participation and Human Rights the categories were weighted $\frac{1}{3}$ each. The first sub-category had a weight of $\frac{1}{5}$ for each of the five sub-indicators, the second was weighted $\frac{1}{6}$ for each of the six sub-indicators and the third was weighted $\frac{1}{8}$ for each of the eight sub-indicators. *Tables 9 and 10* in the appendix show the weighting scheme and levels or depth of coding of the entire indicator and sub-indicator.

In this methodology each indicator is likely to have a slightly different structure, meaning that the weights for each indicator in Transparency and Accountability, and Participation and Human Rights were based on the number of level 4 sub-indicators and the number of level 5 sub-sub-indicators, if they existed. This weighting process had to take care not to double-count. Thus, for example, should a level 3 indicator have level 4 sub-indicators under it, then it will carry a zero-weight which excludes the level 3 indicator given that the sub-indicators have been counted. Similarly, with level 4 sub-indicators that have level 5 sub-sub-indicators under them. To ensure no such mistakes occurred a check process was added. This involved adding the weights for each Transparency and Accountability and confirming that they totalled $\frac{1}{9}$. Totals greater than $\frac{1}{9}$ indicated double-counting which was investigated and corrected.

Once the data were cleaned and indicator weights compiled for Transparency and Accountability, and Participation and Human Rights, they were imported and disaggregated into two respective data frames. Then source variance process was run (Step 1) to confirm the

number of Transparency and Accountability, and Participation and Human Rights sources in the respective indicator and weights data frame matched the downloaded data. Variances were manually corrected. Thereafter, functions were developed to find the product of the source scores and their respective weights and to sum the individual results for each country (Step 3). The next function calculated the sum of the non-missing weights by country (Step 4). The last function scales the data between zero and one, the raw score, by dividing the sum of weighted score by the sum of the non-missing weights (Step 5) for Transparency and Accountability, and Participation and Human Rights, respectively.

Validation of Replicated Data

It was important to confirm that the replicated data were accurate enough to extract meaningful information. The success and validation of the replicated data will be briefly discussed.

The method used to validate the replicated governance indicators involves calculating the replicated scores for all the countries, then running a scatter plot and a correlation calculation for the replicated scores against the official scores for the respective indicators in the WGI and IAG. The first, that validated the WGI indicators, used the World Bank's databank estimate scores for Voice and Accountability, and Control of Corruption, which were downloaded from the World Bank's databank (c2019). These data included scores for all countries in the respective indicators. The validation method involved statistically analysing the variance between the downloaded World Bank's estimate indicator scores and the replicated standard scores, also known as the z-scores. The scatter plot with the 'official' WGI scores marked on the horizontal (abscissa) axis and the replicated scores on the vertical (ordinate) axis, for both Voice and Accountability, and Control of Corruption separately. The higher the linear correlation between these data sets the more a successful replication process was revealed.

Figure 1a below shows the original correlation plot and Figure 1b shows a cluster of scatter plots for Voice and Accountability data. The original analysis plot shows how close the data points adhere to the 45° regression line (given that the abscissa and ordinate axes have similar scales) with some variance, mainly positive variance, towards the top end of the plot. The scatter plots show how both the WGI and the replicated data contribute to the outliers probably caused by rounding issues (variances in the decimal places) or missing data that was present in the WGI score, but not in the replicated score. The correlation coefficient (r^2) was 0.994 showing a high level of correlation.

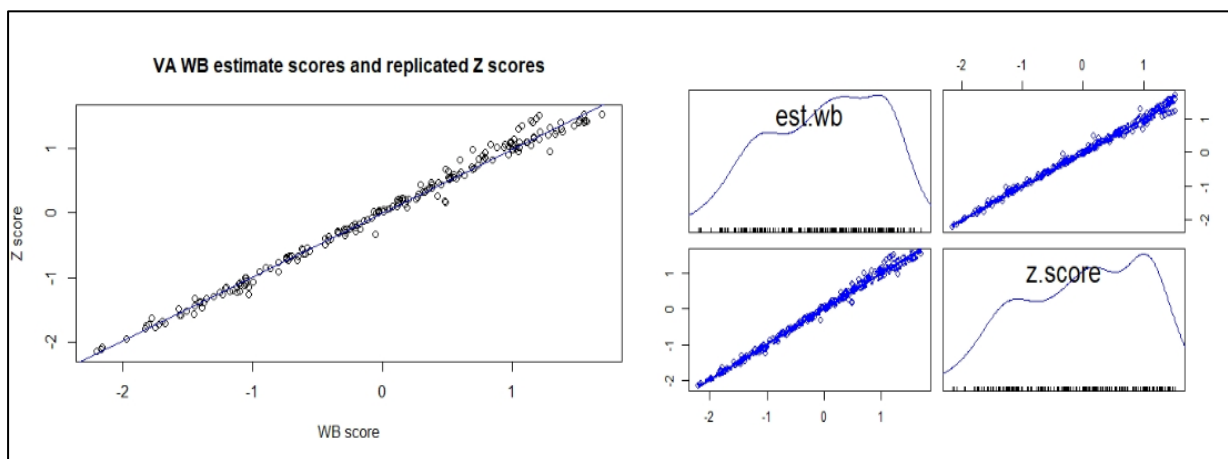


Figure 1a (left): Voice and Accountability/z-score correlation plot; Figure 1b (right): Voice and Accountability/z-score scatter plot matrix

Figures 2a and 2b are similar but represent the Control of Corruption data. The correlation is almost as good with a correlation coefficient of 0.989. The scatter plots (Figure 2b) again show how the variability comes at the higher end of the plot and is contributed to by both data sets.

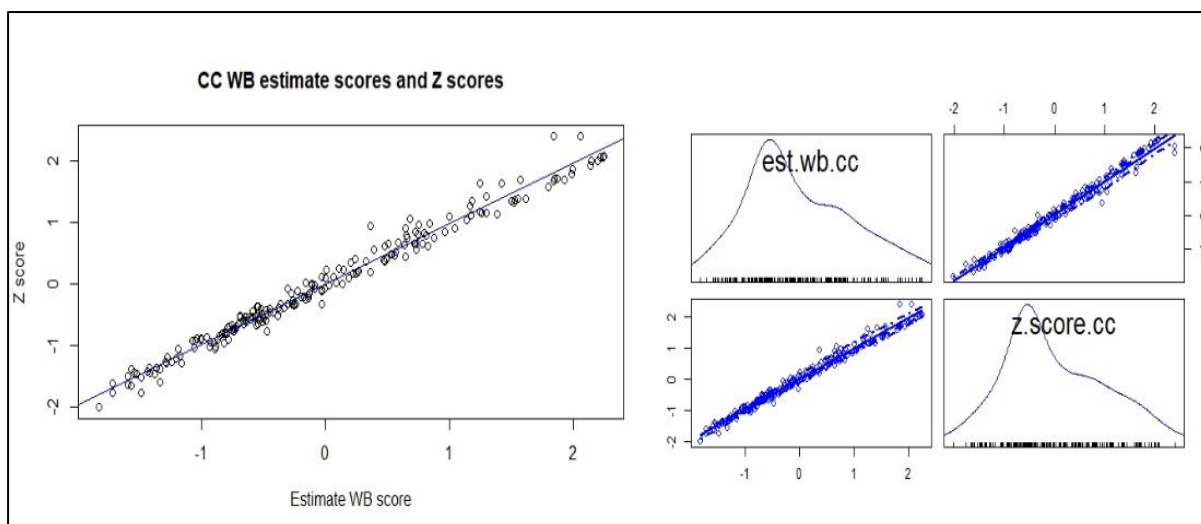


Figure 2a (left): Control of Corruption/z-score correlation plot; Figure 2b (right): Control of Corruption/z-score scatter plot matrix

It can be concluded from these data that the World Bank’s estimated data for Voice and Accountability, and Control of Corruption matches almost perfectly with the replicated z-scores, therefore the replication was successful and the data are reliable for further analysis. The small discrepancies were to be expected due to the rounding errors (rounding the raw data to three decimal spaces) and the fact that some of the WGI data are missing due to confidentiality reasons.

The validation the IIAG indicators, relied on the same approach as for the WGI, by comparing the replicated scores with the official scores. *Figure 3a and 3b* below show the comparison between Transparency and Accountability and the official IIAG Transparency and Accountability score. The scatter plot shows high correlation between the replicated Transparency and Accountability and the official Transparency and Accountability score as the majority of the data points are on the positive trend regression line. The correlation coefficient is 0.999 which supports the scatter plots and the results of the replication shows small differences between the replicated and the official scores could be a rounding error.

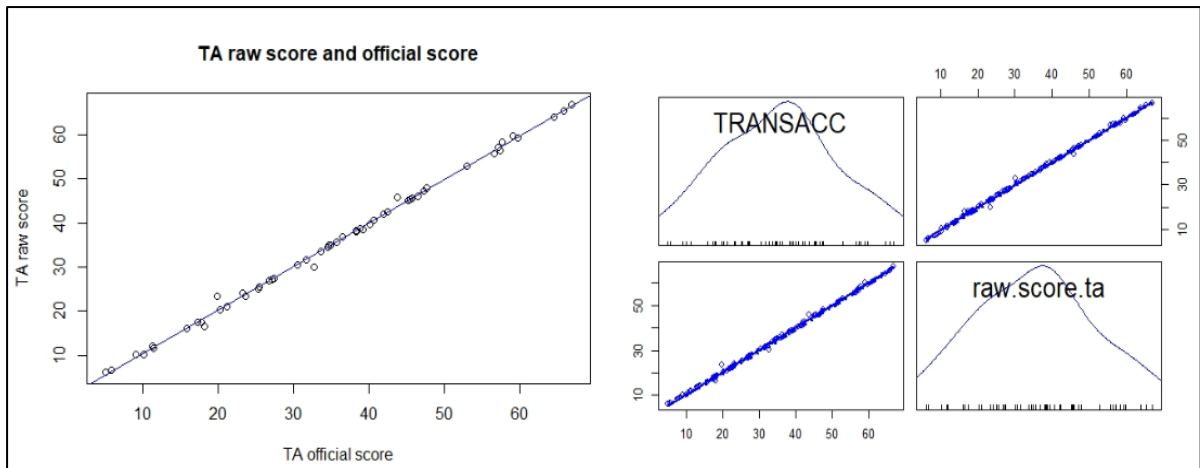


Figure 3a (left): Transparency and Accountability/official correlation plot; Figure 3b (right): Transparency and Accountability/official scatter plot matrix.

Similarly, Figures 4a and 4b below report the success of the replication of the Participation and Human Rights indicator. The comparison between the replicated Participation and Human Rights score and the IIAG official score are highly correlated as seen in the scatter plot. The majority of the data points are on the positive sloping regression line. The correlation coefficient is 0.999 which supports successful replication. The very small differences could be due to rounding errors.

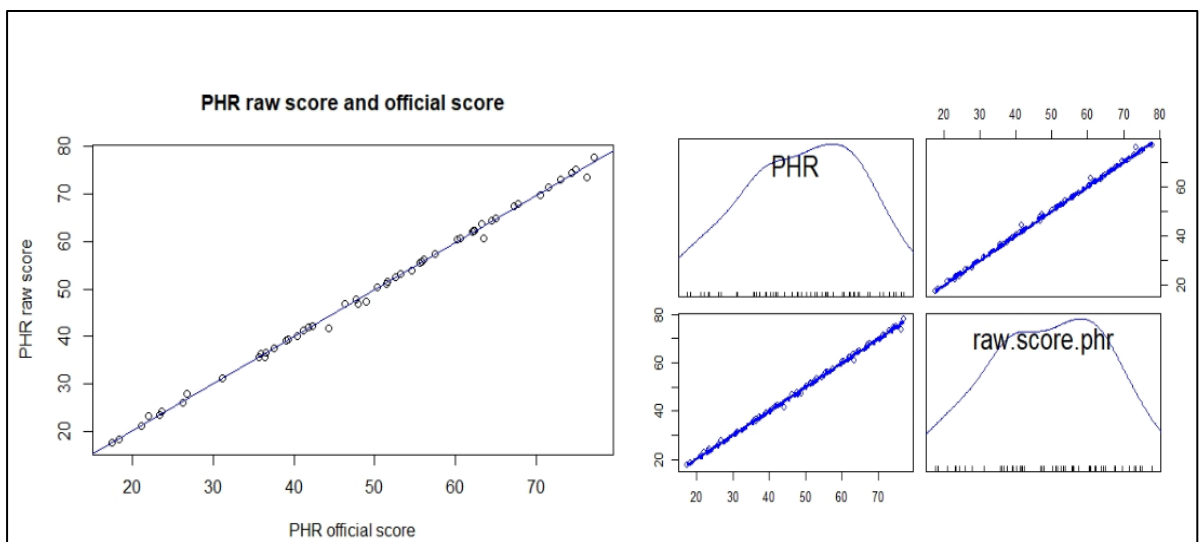


Figure 4a (left): Participation and Human Rights/official correlation plot; Figure 4b (right): Participation and Human Rights /official scatter plot matrix

The variation between the IIAG official indicator scores and the replicated raw scores for Transparency and Accountability, and Participation and Human Rights were very small. It can therefore be concluded that these replications were successful with a fairly high level of confidence. The confidence could have been increased by investigating why a few countries were not on the regression line, however, for the purposes of this research report it was assumed that the replication was successful using just three cases.

In summary, the replication of each of the four selected indicators was tested using one method. This method is a fairly reliable test of the data for all the countries within the aggregated indicators. The replication of the WGI estimated governance scores for all countries in Voice and Accountability, and Control of Corruption were plotted against the respective raw scores and found to have high levels of correlation. The validation of the replication of Transparency and Accountability, and Participation and Human Rights, using the same method, found that the replicated was successful with only minor variances. The final conclusion was that the replication of data for the four indicators was validated with confidence and that they can be regarded as reliable; that is the replicated data accurately simulates the published data. The minor differences between the replicated raw scores and the official scores for the WGI indicators was due to rounding errors and missing confidential scores and in the IIAG it was due to rounding errors. Having now confirmed the quality of the replication of the indicator data, it is necessary to proceed to use these data to investigate the relationship between lived governance experience and other, so called, expert data sources.

Comparison of Data Sources

The other sources of governance data are dominated by sources from experts such as NGOs, government self-assessments and business surveys. These sources provide data on a global scale and hold more weight in the aggregated governance indicators than the public opinion

surveys of lived governance. It is hypothesised that there is a weaker correlation between public opinion data and the overall indicator score dominated by the ‘expert’ data. To test this hypothesis the relationship between the replicated governance indicator scores (raw scores) for the four sub-indicators and lived governance source data were examined.

The WGI is an aggregate of 30 underlying independent data sources, five (17%) of which are public opinion sources. These five sources are Afrobarometer, Gallup World Poll, Latino-barometer, Vanderbilt University’s America Barometer and Transparency International Global Corruption Barometer. On the other hand, the IIAG has 35 independent data sources and only one (6%) of those is a public opinion source, namely Afrobarometer. The raw scores have public opinion data inside them even when they are extracted out of the respective public opinion data sources in the comparison below. The raw score cannot be completely separated from public opinion data; however, these data are weighted so slightly that it does not significantly influence the analysis.

It might be expected that when a government is asked to self-assess the standard of its governance that its response could be better than the assessment provided by the citizens. NGOs might respond in a more balanced manner, but generally the assessment of the quality of governance by experts is likely to be exaggerated as their analysis is constructed from a distance and they do not experience it personally. Public opinion data, on the other hand, is based on real experiences some of which may be negative and others positive.

A note of caution should be observed when investigating these relationships. The WGI and IIAG data sources, be they the supposedly objective inputs of experts or the more subjective inputs from personal experiences, are all perceptions. Therefore, one cannot argue that one perception is more true or accurate than another. So although one of these is the focus of this study, it is not necessarily the whole truth.

The statistical method used to examine the relationships again involves plotting the various public opinion data sources as the independent variable on the x-axis and the replicated raw-score dependent variable on the y-axis. The interpretation of these plots was based on the strength of the correlation coefficient, which ranged from 0.1, indicating that there is essentially no correlation, to 0.7, which indicates some correlation. However, perfect correlation has a coefficient value of 1.0. Since there were no such correlations found the results support the hypothesis that there is little impact from public opinion scores on the aggregated indicator scores. Examination of correlation plots can also yield further meaning if for example there is a region in the plot where the data lie on one or other side of the correlation line. Where significant these variations were briefly described and interpreted in the text below.

WGI Voice and Accountability Results and Implications

This section will investigate the WGI's Voice and Accountability indicator. This indicator has four public opinion data sources which will be compared with 200 countries' replicated raw scores for Voice and Accountability.

Afrobarometer (AFR) public opinion data

The first comparison in the Voice and Accountability indicator is with Afrobarometer data, which applies only to a subset of 30 African countries. The regression scatter plot, shown in

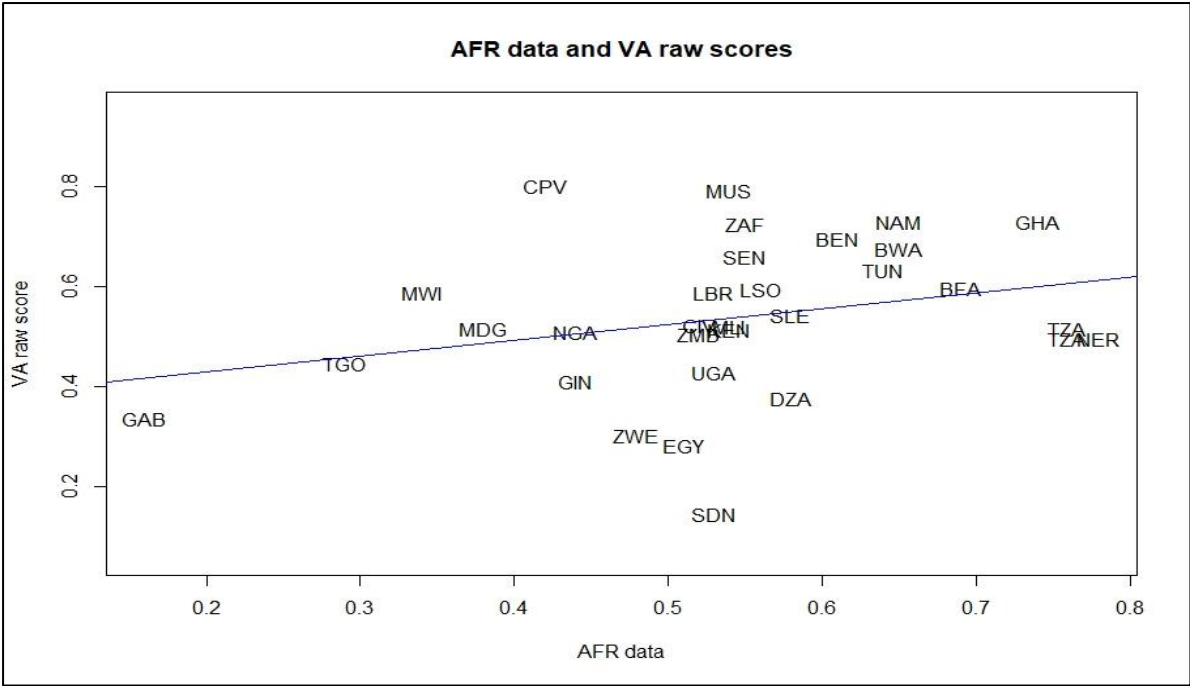


Figure 5 below indicates that the regression line is closer to being horizontal than the expected 45° line for perfect correlation. The correlation coefficient was found to be 0.287 indicating that there is only weak correlation between the Afrobarometer data and the replicated Voice and Accountability raw scores.

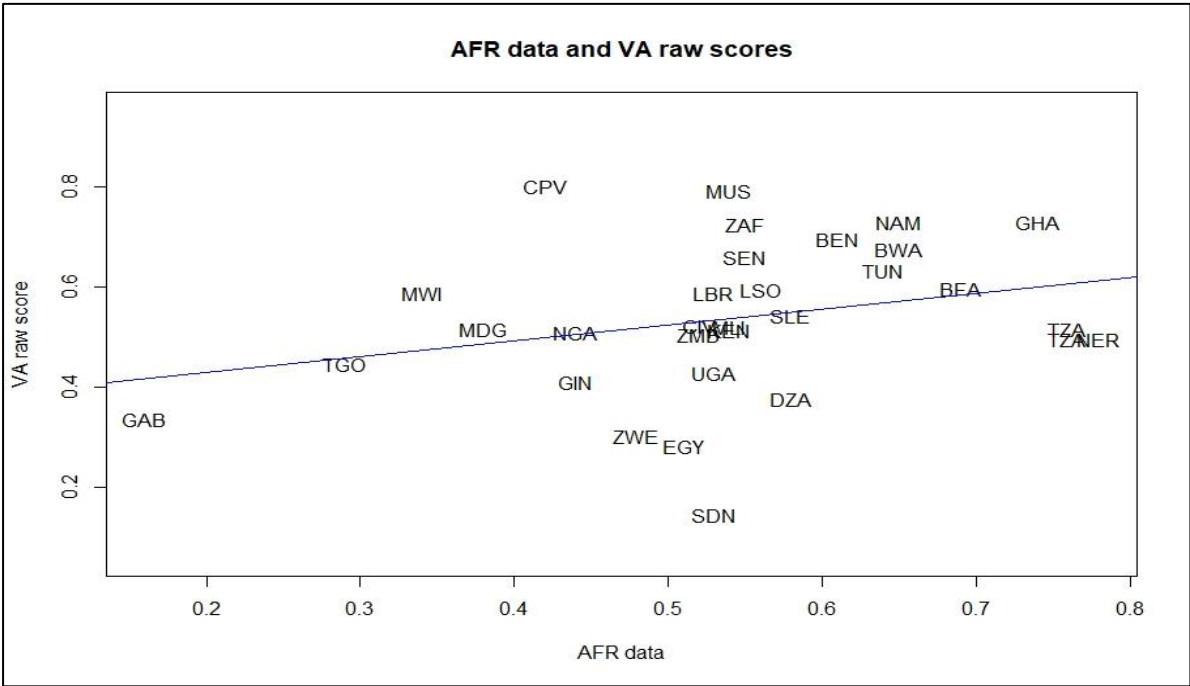


Figure 5: Voice and Accountability and Afrobarometer regression scatter plot

The spread of data points shows that the greatest variance comes in the midrange of both data sets. For example, the aggregated indicators for Sudan, Egypt and Zimbabwe are more influenced by public opinion than for countries like South Africa, Cape Verde and Mauritius where their indicators are more influenced by expert opinion. In general though, the plot indicates that the variation of Afrobarometer data is not reflected in the variation of the aggregated Voice and Accountability score.

GWP, LBO & VAB public opinion data

As the Gallup World Poll (GWP), Latino-barometer (LBO) & Vanderbilt University’s Americas Barometer (VAB) public opinion data do not share the Afrobarometer’s emphasis on Africa, a central focus of this study, these correlations are conveniently summarised in *Table 3* and the text that follows, rather than displaying each plot individually.

Table 3: Summary of the weak correlations between Voice and Accountability and respective public opinion sources

Name of source	Correlation coefficient (r²)	Description of regression line and data points	No. of observations
Gallup World Poll (GWP)	0.282	Near horizontal ¹ and even spread	133
Latino-barometer (LBO)	0.124	Near horizontal ¹ and even spread	18
Vanderbilt University’s Americas Barometer (VAB)	0.256	Near horizontal ¹ and even spread	29

Unlike Afrobarometer, Gallup World Poll has more of a global reach as it includes many countries from many regions around the world and can be regarded as an international or representative source. There are 206 expert assessment sources in Voice and Accountability and 133 public opinion observations from Gallup World Poll for Voice and Accountability.

¹ Regression line nearing a horizontal line

The regression plot shows weak correlation with a correlation coefficient of 0.282 and the regression line is nearing the horizontal rather than the expected 45° line. There is no concentration of data points above the regression line and left of the middle point which means that these countries' Voice and Accountability scores are more influence by experts saying that their Voice and Accountability part of their governance is not up to their expectations. This confirms that the indicator data have been more influenced by experts then by citizens.

The second regression plot summarised in *Table 3* above compares data from Latino-barometer, which is a regional public opinion data source of 18 Latin American countries, a far more limited source. Again the regression line is closer to the horizontal and the correlation coefficient is only 0.124 which collectively indicate that the Latino-barometer public opinion scores hardly impact on the Voice and Accountability aggregated scores.

The third regression plot in *Table 3* is for Vanderbilt University's Americas Barometer data. This public opinion data set has contributions from the Americas, including Canada, United States, and the countries of Central America and the continent of South America. There are 29 observations and again have a weak correlation (coefficient = 0.256) and a near to horizontal regression line. The experts' Voice and Accountability indicator score is more influential than the citizens Voice and Accountability indicator score.

WGI Control of Corruption Results and Implications

This section compares the WGI's Control of Corruption indicator. This indicator has five public opinion data sources which will be compared with 211 countries' replicated raw scores for Control of Corruption.

Afrobarometer (AFR) public opinion data

As before, the first public opinion data source that will be considered is the Afrobarometer data. The plot in *Figure 6* below shows the data points for all 30 countries fairly closely clustered around the regression line. Although there is again only relatively weak correlation between Afrobarometer data and the replicated Control of Corruption raw scores (the correlation coefficient is 0.548) this correlation is by far the strongest encountered thus far. As with the IIAG comparison Sudan and Zimbabwe lie well below the regression line showing that public opinion data is strongly influential. Unlike before, the opposite is strikingly different for Botswana and Namibia, countries with relatively small populations. The data points are also more clustered to the high Afrobarometer and Control of Corruption scores indicating that citizens rate Control of Corruption in their countries according to Afrobarometer data as belonging to good governance. The WGI data downplay the Control of Corruption Afrobarometer score, in other words the Voice and Accountability data exaggerates the negative impact of corruption.

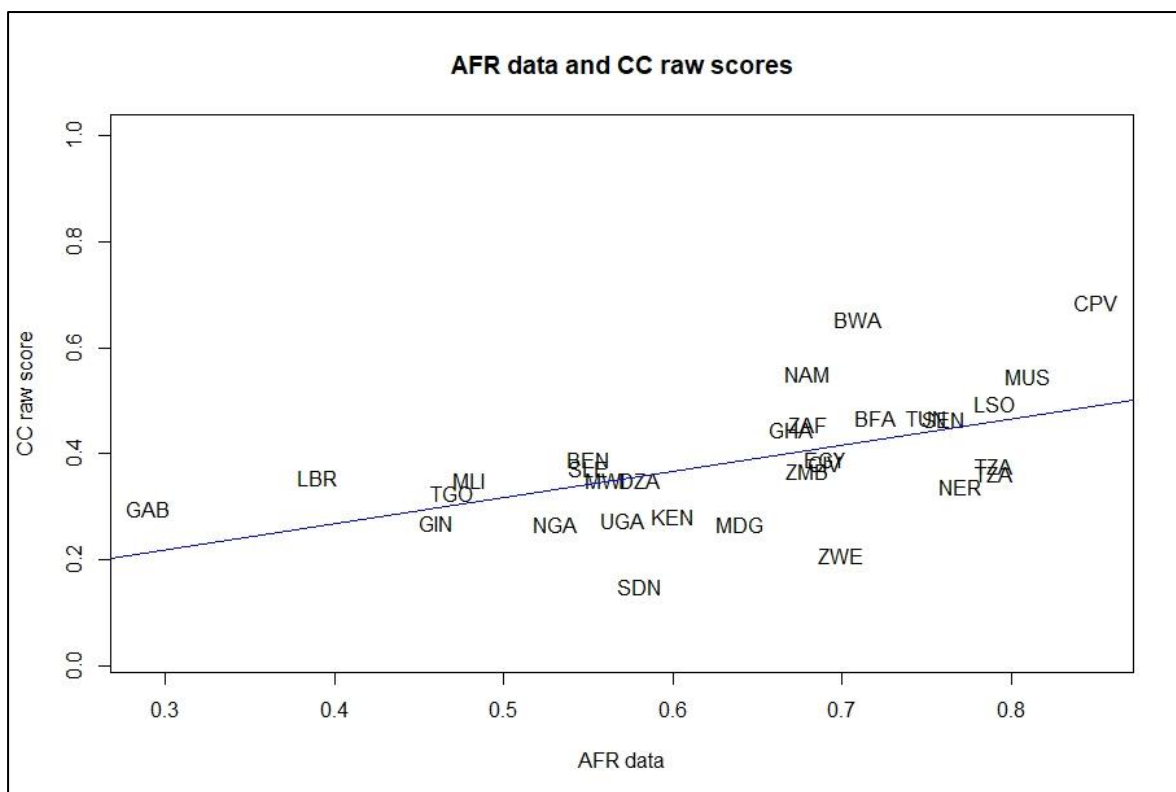


Figure 6: Control of Corruption and Afrobarometer regression scatter plot

The WGI indicator called Control of Corruption was treated similarly to the other WGI indicator. The Afrobarometer data, being the central public opinion comparator for this study, are plotted in Figure 6 above. However, the other public opinion sources are simply summarised in Table 4 below.

Table 4: Summary of the weak correlations between Control of Corruption and respective public opinion sources

Name of source	Correlation coefficient (r ₂)	Line description	No. of observations
Gallup World Poll	0.544	Near 45° (degree) ² and even spread	137
Latino-barometer	0.705	Near 45° and even spread	17
Vanderbilt University's Americas Barometer	0.723	Near 45° and even spread	22
Transparency International Global Corruption Barometer	0.652	Near 45° and even spread	102

² Regression line nearing a 45° angle

Gallup World Poll (GWP) public opinion data

The Gallup World Poll data for Control of Corruption has 137 observations, more countries than the other public opinion data sources as it collects data from many regions and so has a larger sample of WGI countries. *Table 4* shows that for Gallup World Poll versus Control of Corruption raw score data there is low correlation (coefficient of 0.544) as a majority of the plotted points congregate on the left of the graph both above and below the regression line, but with a pronounced tail moving to the top right of the graph, where the tailing points are largely above the regression line.

This complex picture cannot simply be explained as before (when most of the points were either above or below the regression line). Thus three illustrative cases are extracted from the data set and their investigation will help to explain the multitude of factors, such as the type of country, political system and its apparent level of corruption, at play in this comparison. In order to select the three cases *Figure 7* shows the country abbreviations making identification simpler. The first case study is found at the top right corner of *Figure 7*, marked with an orange oval, where there is a group of countries above the regression line. The countries in questions are Scandinavian countries, which are first world, highly developed, post-industrial with well-established and high-level functioning democracies. Additionally, they are fairly small countries with relatively small economies but with high per capita GDPs. They have well developed welfare systems, largely homogenous populations with massive buy-in from their citizens. In this context, the positioning of the plotted points indicates that the experts assess the lack of corruption at the highest in the world (at least highest in the countries sampled), and although the citizens also rank corruption well under control their perception is not as favourable as that of the experts.

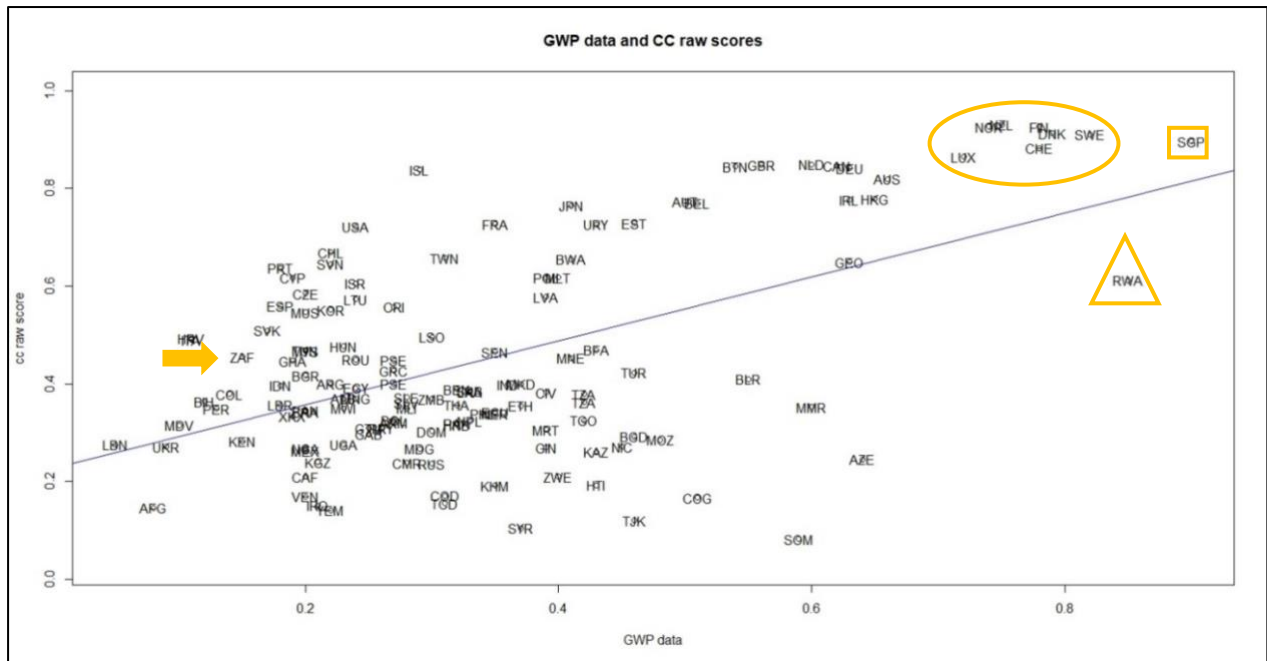


Figure 7: Plot of Gallup World Poll and Control of Corruption raw score data showing country abbreviations

The second case is Rwanda which is the African country located furthest to the right of the Gallup World Poll data range and well below the regression line (Figure 7, marked with an orange triangle). This country is a presidential republic where the president has close to absolute control as the head of the state of the government that has full executive power and is recovering from the 1994 genocide. With this executive power, President Kagame has put restrictions on certain freedoms including the media, however, the shift towards economic improvement, rather than the lack of freedoms to truly express levels of corruption, could encourage the citizens to be more supportive of his presidency. It too is a small country with a relatively small economy. Rwanda is plotted below the regression line showing how expert opinion dominates, but relatively high on the Gallup World Poll data score indicating the Rwandans believe they enjoy good governance (little corruption). However, expert opinion places Rwanda close to midpoint on the Control of Corruption raw-score range saying that Rwanda's corruption is relatively high.

The third case investigated is Singapore (*Figure 7*, marked with an orange rectangle). It is uniquely positioned in the top right hand corner of the plot and very close to the regression line. Singapore is a representative democracy. However, similarly to Rwanda, the President is the head of the state and has executive power and there is a form of limitation on certain freedoms and the media. The Gallup World Poll data sources and the expert assessments and other sources in Control of Corruption both agree about Singapore's corruption level or lack thereof, agree there is good governance when it comes to corruption. The institutions and experts think the level of corruption is good and the citizens through the Gallup World Poll data also think that the level of corruption is good.

To add further context, these three cases are contrasted with South Africa (ZAF) which is located in the lower left side of the graph and above the regression line (*Figure 7*, marked with an orange arrow). Thus the experts' perception of South Africa's level of corruption is greater than the perceptions of South Africans; in other words the Control of Corruption source scores by the WGI are exaggerating the country's level of corruption. However, both rank South African corruption as more prevalent than the cases selected.

The World Bank's scores for the Control of Corruption in *Figure 7* is close to 0.4 while South Africa's score in the Gallup World Poll is lower than 0.2. Systematically the statistical results for the different indices were compared to check if they are consistent or inconsistent. Inconsistencies previously mentioned were due to the nature of working with public opinion data. Different surveys are apt to produce different and distinct results. This is due to all survey data containing measurement errors, therefore citizens' scores for Control of Corruption for South Africa are considerably higher in the Afrobarometer survey with a score close to 0.7 as seen in *Figure 6* than the world as seen in the Gallup World Poll with a score which is less than 0.2 in *Figure 7*.

Latino-barometer (LBO) public opinion data

Latino-barometer is a public opinion source for Latin American countries only and there are 17 observations in Control of Corruption. *Table 4* above shows that most of the data points are located relatively close to the regression line. The regression line is tending closer to a 45° angle signifying that Latino-barometer scores are supported by and similar to the aggregated Control of Corruption scores. This is supported by the correlation test (0.705).

Vanderbilt University's Americas Barometer (VAB) public opinion data

Vanderbilt University's Americas Barometer includes countries within the Americas with 22 observations. *Table 4* above notes that the scores are evenly spread above and below the regression line with a clustering towards the lower left corner. The regression line is verging closer to a 45° angle thus the correlation between the Vanderbilt University's Americas Barometer scores and aggregated Control of Corruption scores are higher. It could be supported that as the VAB scores change so do the aggregated Control of Corruption scores. *Table 4* notes that there is a fairly strong correlation (0.723). However, this correlation coefficient does not give a 90% confidence that the aggregated Control of Corruption scores fully support this public opinion data, rather than the two data sets are closer to being similar as the regression line tends to the 45 degree angle and the correlation test finds a fairly strong correlation.

Transparency International Global Corruption Barometer (GCB) public opinion data

Transparency International Global Corruption Barometer is a global corruption barometer which uses public opinion on a sample of 102 WGI countries from multiple regions. *Table 4* above and *Figure 8* below show that most of the countries are evenly spread around the regression line and yet closer to the regression line. Two outliers, Liberia and Ukraine, are above the regression line in *Figure 8*, marked with an orange oval. Due to Liberia and Ukraine's scores being above the regression line that the perceptions of experts are greater than the

perceptions of people. This is supported by these countries' robust laws around not speaking out against the government and corruption. In general, although the citizens rate corruption as largely under control (ranked fairly high on the Transparency International Global Corruption Barometer range), the experts have a far less favourable perception of the state of affairs. The countries that are plotted below the regression line are perceived to have corruption that is more prevalent than those making up the rest of the Control of Corruption data. The opinions of people, except for Great Britain and Sweden, are that corruption is an issue. The countries below the regression line indicates that the rest of the Control of Corruption data is underestimating the level of corruption in these countries. In other words, the public opinion weighs the corruption much higher than the rest of the Control of Corruption data.

The scatter plot and the correlation test of 0.652 support the relatively lower correlation between the Transparency International Global Corruption Barometer data and the rest of the Control of Corruption source data. The correlation is not strong and this is evident in the variation between the scatter plot matrixes. However, the regression line is nearing a 45° angle. This shows that changes in the Transparency International Global Corruption Barometer scores have a slightly more significant impact on the Control of Corruption aggregated scores.

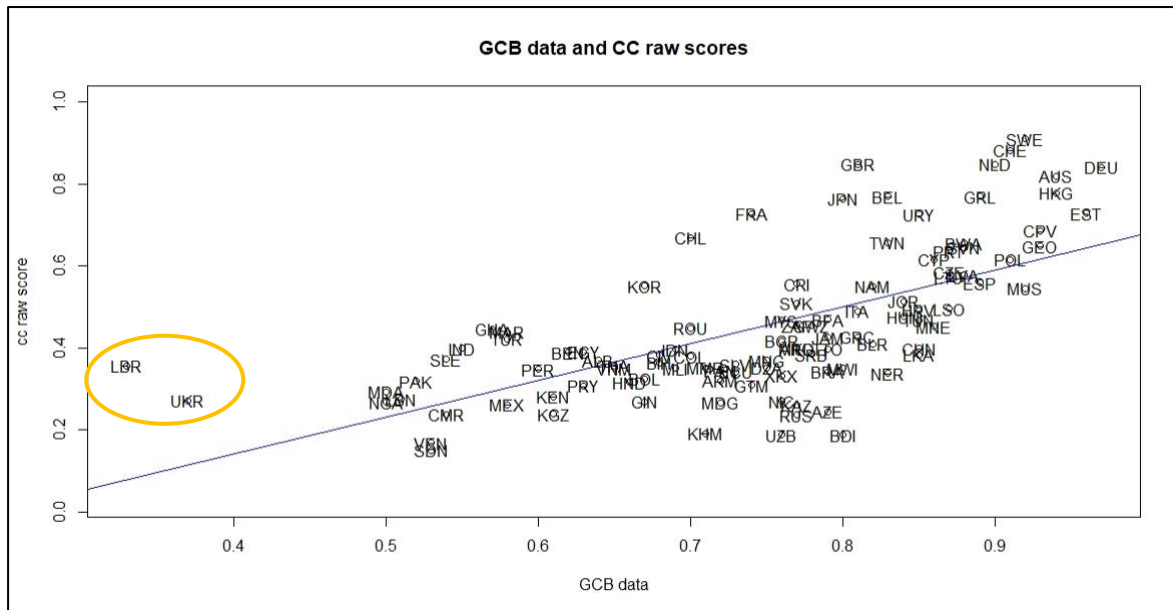


Figure 8: Plot of Transparency International Global Corruption Barometer and Control of Corruption raw score data showing country abbreviations

IIAG Transparency and Accountability Results and Implications

These comparisons show the spread of data for Transparency and Accountability in the 54 African countries used by IIAG. The IIAG only has one public opinion data source which is Afrobarometer data – found in the sub-category of Transparency and Accountability, Personal Safety, Business Environment, Infrastructure, Welfare, Education and Health.

Afrobarometer (AFR) public opinion data

There is a majority public opinion data source included in the IIAG aggregated data and it is from Afrobarometer. The Afrobarometer data is a sub-sub-indicator within the indicator of Transparency and Accountability and sub-indicator of anti-corruption mechanism. The Transparency and Accountability raw score that this public data is compared with does not have any other public opinion data. The fact that this Afrobarometer data is only included as a sub-sub-indicator could be the reason for the unusual positioning of the regression line in Figure 9. The correlation test shows the insignificant correlation between the Afrobarometer data and the Transparency and Accountability raw score or 0.301.

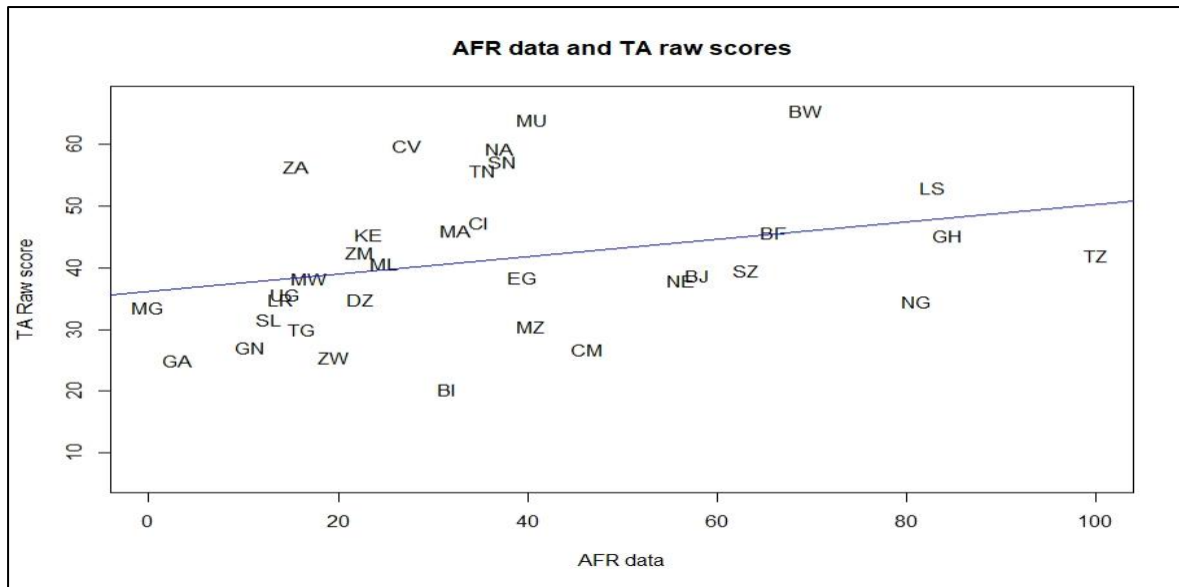


Figure 9: Transparency and Accountability and Afrobarometer correlation scatter plot

The plot shows a scatter of scores above and below the regression line. There isn't a natural pattern in this data. The regression line is closer to a horizontal line the more Afrobarometer indicates the variation of public opinion is not being reflected in the variation of the Transparency and Accountability aggregate score. The lack of correlation in the correlation coefficient is supported by the scatter plot in *Figure 9*.

IIAG Participation and Human Rights Results and Implications

Unfortunately, no comparison can be made for this indicator as there is no public opinion data available. The reason why the replication was undertaken given that comparison is not possible is to ensure that the author understood the IIAG method behind their indicator. Another reason for choosing to include this indicator is because it is relevant to African countries' governance. Thus it will be used to map Afrobarometer questions onto it for the Afrobarometer governance indicator. In building the Afrobarometer indicator it will show the need for public opinion data to be included in this indicator. Another rationale is that it is surprising that the IIAG would construct an indicator of Participation and Human Rights that includes no measures based on

citizen experiences. The next chapter will create a custom indicator that incorporates citizen experiences justifies the replication of participation and human rights.

Results and Implications for the IIAG and WGI

The aim of the replication was to determine how well the indicators could be replicated using the methodological descriptions and data provided. An interesting and unexpected outcome of the replication process was the realisation that some of the raw source data is not publicly available due to reasons of confidentiality. The replication was successful, but not perfect and a natural consequence of this is that the replicated data did not match the published data perfectly. Furthermore, the imperfect replication was responsible for slight variations in the data cleaning process while importing to the third decimal place for the source data and fifth decimal point for the source weights.

Overall Summary of IIAG and WGI Outcomes

The regression coefficients for WGI Voice and Accountability comparisons varied between 0.1 and 0.3, while for WGI Control of Corruption they varied between 0.5 and 0.7 (see *Table 5* below for a summary of findings). Thus, across the board there was little correlation between the comparison of the opinions of experts and citizens. However, the higher correlation levels were in the perceptions of corruption, maybe because its impact was more easily felt than the matter of accountability.

The summary of descriptions of the scatter plots (*Table 5*) show that the majority of the comparisons had a regression line nearing a horizontal line (60% of the comparisons) and the another comparisons, all within Control of Corruption, had a regression line nearing a 45° angle (40% of the comparisons). It is these comparisons with the regression line nearing a horizontal line that there is little correlation and changes in public opinion scores and so have little impact on the aggregated scores. Furthermore 40% of the correlation comparisons are between 0.5 and

0.7 thus the public opinion has little correlation on the aggregate measure. This could be due to the small weighted assignments of the aggregated indicators. This supports the hypothesis that public opinion data does not correlate with the overall WGI and IAG indicator data.

Table 5: Summary of relationship comparisons

Data source	WGI Voice and Accountability		WGI Control of Corruption		IAG Transparency and Accountability	
	Description of regression line	r ²	Description of regression line	r ²	Description of regression line	r ²
AFR	Near horizontal ³	0.287	Near horizontal	0.548	Near horizontal ³	0.301
GWP	Near horizontal ³	0.282	Near 45° ⁴	0.544	-	-
LBO	Near horizontal ³	0.124	Near 45° ⁴	0.705	-	-
VAB	Near horizontal ³	0.256	Near 45° ⁴	0.723	-	-
GCB	-	-	Near 45° ⁴	0.653	-	-

Any plot that has a regression line nearing the horizontal indicates that changes in public opinion scores hardly influence the aggregated indicator raw scores. Thus, the results largely confirm the hypothesis, that is, the public opinion data doesn't correlate with the WGI and IAG data generally. Most of the comparisons across the aggregated indicators show that the closer the regression line is to the horizontal the more it indicates the variation of public opinion is not reflected in the variation of the aggregated scores. In terms of the assessment of corruption it reflects higher levels of correlation in the correlation tests and as the regression line tends closer to the 45° angle. In the last three cases in Control of Corruption one sees that public opinion data slightly influences the aggregated indicator scores. This is more evident in the international public opinion sources such as the Gallup World Poll and Transparency International Global Corruption Barometer which have more countries and data points. These

³ Regression line nearing a horizontal line

⁴ Regression line nearing a 45° angle

sources have fairly stronger correlations to the aggregated indicators because of the system of representative sources.

In clarifying and acknowledging the limitation of the method and analysis used, the potential limitation in the Control of Corruption correlation could be caused by the rounding issues which influences the overall comparison for this indicator. Another observation is that Control of Corruption raw scores are more sensitive to public opinion data. A reason for this could be that experiences of corruption is more evident and so hold a stronger opinion across all types of sources from citizens to experts. However, it is not possible to categorically state from these data which opinion is closer to the truth concerning the actual governance level. Rather it is about opinion and perception. People's perceptions differ from the supposedly objective data sources that the WGI uses such as expert assessments, NGOs, etc.

Summarising the results from the view point of the five public opinion sources gives another perspective. From *Table 5 Afrobarometer*, across the three indicators, had an even spread of low correlation coefficients and the regression lines were all nearing the horizontal. Thus, the changes in the Afrobarometer sources on the x-axis barely reflect any changes on the aggregated indicator y-axis.

For Gallup World Poll for Voice and Accountability the correlation was much smaller than for the correlation with Control of Corruption. The Voice and Accountability regression line was near horizontal while the Control of Corruption line was nearing the 45° angle which was supported by the coefficient scores, although the correlations were not significant enough to reflect change in the Gallup World Poll sources and the aggregated indicator. There were various factors at play requiring a case study approach to the analysis of the comparison. The Scandinavian countries scored higher on the representative sources' opinion. The other sources estimate of those countries' corruption is higher than the people's perception of corruption in

their countries. For Rwanda, expert opinion indicated good governance although the people say that there is more corruption than is indicated in the representative scores. For Singapore, the perceptions of experts and citizens are aligned with levels of corruption.

For Latino-barometer (Latin America) and Vanderbilt University's Americas Barometer (the Americas) the data differed quite substantially between Voice and Accountability, and Control of Corruption. For Voice and Accountability the correlation coefficients and near horizontal regression lines pointed to the lack of correlation between the public opinion sources and aggregated indicators. The changes in the public opinion sources on the x-axis barely reflected any changes on the aggregated indicator y-axis. However, for Control of Corruption the correlation coefficient nearing the 45° regression line supported the fairly stronger correlations. The Control of Corruption scores were more sensitive to these public opinion score changes.

The Transparency International Global Corruption Barometer data is representative of a wider range of countries and in general when dealing with more countries the perceptions of people of corruption is far greater than that of the experts. The correlation coefficient was fairly strong and the regression line tended slightly more to the 45° angle. Thus, the Transparency International Global Corruption Barometer data reflects similarly to the aggregated data. For Transparency International Global Corruption Barometer the majority of the perception of people lowers the governance measure for corruption while in the Gallup World Poll the interpretation of the data has to be nuanced by clustering countries into regions.

Implications Derived from the Analysis of the Weighting Systems

The central aim of this study is to determine the correlation between the component measures of citizen experiences and the aggregate indicators. While the aggregated indicators of governance quality for the WGI and IAG include sources that capture citizen experiences of governance, closer inspection shows that these sources are assigned very small weights in the

calculation. While it is possible that component measures of citizen experiences correlate reasonably closely with the aggregated scores, as seen in the Control of Corruption comparisons, given their small weights this is not necessarily the case.

Through the initial inspection and later measurement of the IIAG and WGI weights, all of the public opinion sources were weighted close to zero. The UCM statistical process that the WGI uses finds common trends within representative sources and assigns weighting privileges to those sources. Most public opinions' sources across the WGI are non-representative sources as they are region specific and so are less globally representative, except for Gallup World Poll and Transparency International Global Corruption Barometer. Therefore, most of the public opinion sources do not fall into representative source categories and so are weighted significantly lower. For the IIAG weights are determined by the hierarchy of indicators and sub-indicators. These results show that the public opinion sources are weighted close to zero because they are very weakly correlated with the representative sources. The correlation results above show that the public opinion raw scores with the overall estimate raw indicator scores are positively correlated but in the graphs it is evident that there is a weak relationship between the two.

Examination of the Reason for Replication

In concluding this chapter on the quantitative analysis of data it is necessary to reflect again on the process of replicating raw score data, which is at the heart of the analysis. The replication, firstly, gave insight into how the IIAG and WGI aggregated governance indicators were constructed and, secondly, it allowed the author to narrow the focus of the study on governance quality in African countries. The areas where Africa citizens' public perceptions are highly relevant are in participation in democracy and corruption which is captured by these indicators: Voice and Accountability, Participation and Human Rights, Control of Corruption and

Transparency and Accountability. In using Control of Corruption which measures corruption, the indicator in the IIAG that is most similar to Transparency and Accountability which measures transparency and accountability. Using the sub-category of Transparency and Accountability as it is because it has Afrobarometer data and corresponds to Control of Corruption directly, instead of using the whole category of Safety and the Role of Law which includes other indicators that do not directly relate to corruption like the sub-category of National Security. Similarly, the indicators of Voice and Accountability, and Participation and Human Rights focus on participation in democracy.

The selection of the four indicators laid a good foundation for the next chapter on building a custom Afrobarometer governance indicator that is tailor-made for measuring governance quality in Africa and finding how citizens' lived experiences compare with the aggregated indicators. There are many more questions in Afrobarometer Round 6 that will be used to supplement the four replicated indicators. The questions that the IIAG and WGI used in their respective indicators will be used as well as other Afrobarometer questions to create a governance assessment, focusing on participation in democracy and corruption, as an indicator of greater substance.

Chapter 5: Construction of Custom Indicator and its Comparison with Aggregate Indicators

The previous chapter was able to replicate the existing aggregate indicators and showed that their components based on citizen experiences are not closely correlated with the overall scores. The results showed weak correlations which confirmed the research report's hypothesis and the central aim, namely that the aggregate indicators do not satisfactorily reflect public opinions and, to some extent, citizens' lived experience of governance. This chapter will discuss the customised citizens' lived experiences of governance indicator which only uses Afrobarometer Round 6 data. The aim of this chapter is to discuss how closely a more in-depth, original, indicator of citizen experiences of governance in African countries correlate with existing WGI and IIAG aggregate indicators. It will detail a more thorough process that incorporates citizen experiences in a custom indicator.

Purpose of Building a custom Public Opinion Indicator

The composite indicators, which combine several separate elements and data sources, provide an overall indicator of governance. By disaggregating these composite indicators and analysing the empirical relationship between citizen experiences and aggregate scores, the previous chapters found that there were significantly fewer public opinion data sources than expert assessments and, by extension, that the components on citizens' lived experience of governance were given a lower weight than the other components that create the respective governance indicators. The inclusion of measures of citizen experiences, based on public opinion data, in an aggregate indicator does not guarantee that the aggregate scores will closely reflect the measures of citizen experiences, especially given the small weights for the public opinion sources. Therefore, there is a gap in measuring governance, as the aggregate indicators do not put a significant enough emphasis on public opinion. This realisation gave birth to the idea of building a customised public opinion indicator. It was built to directly respond to the question

of how governance is measured in light of citizens' lived experiences of governance. It was constructed using Afrobarometer Round 6 data, which both the WGI and IIAG use.

Afrobarometer is a national public opinion/attitude survey on democracy, governance and society (Afrobarometer 2019). The survey is completed in 36 African countries and represents 76 percent of the population of Africa (Afrobarometer 2019). It aims to measure the political, economic and social atmosphere in these 36 countries. The face-to-face interviews are conducted with a randomly selected sample of citizens within each country. The questionnaires and response data are freely accessible online. A cautionary note needs to be recorded when dealing with such public opinion survey data: one must factor in the risk that the data could have been influenced by societal pressure, which is an unavoidable limitation of survey data no matter how much care is taken when doing the surveys. The respondents might have felt pressurised to respond according to popular opinion due to external pressure from community leaders or fear that their responses might impact negatively on them. The selected Afrobarometer questions range from basic quality of life questions to specific questions on how corrupt government is perceived to be. To some extent Afrobarometer is not a governance survey as it focuses on citizens' attitudes regarding political and economic dimensions of the way they experience governance. That is not to say that every question in Afrobarometer is a candidate to be entered as an item in a governance indicator, rather it has questions that relate to governance and only those relevant questions will be selected and discussed in this research report.

This customised indicator will provide the data for measuring governance quality in African countries and is central to laying bare the aggregate indicators. The previous chapter looked at the similarities and differences between the IIAG and WGI, while this chapter will build a custom lived experience governance indicator in order to compare the aggregate indicators to this component indicator. The importance of building a citizens' lived experience of

governance indicator speaks to the popular discourse in this field that citizens are at the centre of good governance. The understanding in the field is that good governance improves citizens' quality of life, which in turn improves the political, economic and social dimensions of a country. According to this line of thought, states are set up to protect their citizens, hence, governance structures are set up by the state to protect citizens' quality of life. Citizens have an intrinsic desire to be protected, or to walk through their neighbourhood without being physically attacked, or without the fear of being physically attacked, or for their basic needs, such as access to medical care, to be met.

Custom indicator methodology

Afrobarometer questions and dimensions are proxies of governance, as they encompass elements of governance and of course they focus on African countries only. The building of this indicator therefore was informed by dimensions of governance that pertain to African citizens' issues in their experience of governance. The two dimensions that were selected from the available range were levels of participation in democracy and corruption. These dimensions are used in the WGI's Voice and Accountability, and Control of Corruption, and in the IIAG's Participation and Human Rights, and Transparency and Accountability.

The custom indicator reflected the two dimensions of governance that are prominent in African countries through its two indicators called Democracy Experiences and Corruption Experiences. The custom indicator was built in response to the four replicated indicators discussed in the previous chapter. The aggregate indicators' understanding of participation in democracy and corruption were used as a reference to find Afrobarometer questions that could give citizens' experiences on those components. Therefore, the Afrobarometer questions used in Voice and Accountability were included in the Democracy Experiences indicator while the Afrobarometer questions in Control of Corruption and Transparency and Accountability were

included in the Corruption Experiences indicator. More citizens' opinions were needed and so more questions were abstracted from the Round 6 questionnaires and added to the respective custom indicators.

By including Afrobarometer questions used in the aggregate indicators one is not just replicating the WGI and IIAG indicators. The reasoning behind not excluding the items used in the WGI and IIAG is to create an inclusive custom indicator that represents many aspects of experiences of governance. Excluding the Afrobarometer questions that were used in the aggregate indicators would weaken the custom indicator as these questions add to a fuller understanding of the experiences of governance. However, it should be noted that these included questions do not make up the majority of questions selected. There are a larger number of questions that are drawn from Afrobarometer that are not used in the WGI and IIAG indicators. *Table 6* below shows the questions that were selected for the custom indicator and whether or not they were included in the aggregate indicators.

Process of building custom indicator

The custom indicator's method of construction was influenced by the IIAG's construction, thus contributing to a better understanding of how governance is measured using their methodology and to assess countries' governance quality. The construction process consisted of four steps, each of which is described below.

Step 1 began by sorting through the WGI and IIAG source data to find the specific Afrobarometer questions that were used in the selected aggregate indicator. Then, the Afrobarometer Round 6 questionnaires were examined to find questions that could be included in the custom indicator. 19 questions were selected which included 8 questions used in Voice and Accountability, Control of Corruption, and Transparency and Accountability, respectively. These 19 questions were grouped into their two indicators and then further grouped into

respective sub-indicators: within the Democracy Experiences indicator they were Participation in Elections, General Participation, and Satisfaction with Democracy; within the Corruption Experiences indicator they were Perceptions of Corruption, and Government Handling Corruption. *Table 6* has a summary of the custom indicators and their corresponding Afrobarometer questions. To clarify, the custom indicator included data points from Afrobarometer that have not been included in the aggregated indicators to represent a fuller picture of citizens' experiences of governance to add to the analysis of the comparison of indicators.

Table 6: Summary of selection of Afrobarometer questions for custom indicator

Overall Custom Indicator							
Democracy Experiences indicator				Corruption Experiences indicator			
Question	Description	Inclusion in aggregate indicator?	Custom sub-indicator	Question	Description	Inclusion in aggregate indicator?	Custom sub-indicator
52 B	Trust parliament	Voice and Accountability (WGI)	Satisfaction with Democracy	53 A	Corruption: office of the president	Control of Corruption (WGI)	Perceptions of Corruption
41	Satisfaction with democracy	Voice and Accountability (WGI)	Satisfaction with Democracy	53 G	Corruption: judges and magistrates	Control of Corruption (WGI)	Perceptions of Corruption
22	Freeness and fairness of last national elections	Voice and Accountability (WGI)	Participation in Elections	53 C	Corruption: government officials	Control of Corruption (WGI)	Perceptions of Corruption
15 A	Freedom to say what you think	NA	General Participation	53 B	Corruption: members of parliament	NA	Perceptions of Corruption
15 C	Freedom to choose who to vote for	NA	Participation in Elections	53 D	Corruption: local government councillors	NA	Perceptions of Corruption
48 C	Elections: fair media coverage	NA	Participation in Elections	53 E	Corruption: police	NA	Perceptions of Corruption
40	Extent of country's democracy	NA	Satisfaction with Democracy	54	Level of corruption	NA	Perceptions of Corruption
27 A	Join others to request government action	NA	General Participation	66 K	Handling fighting corruption	NA	Government handling Corruption
21	Voting in the most recent national election	NA	Participation in Elections	71 B	Most effective way to combat corruption	Transparency and Accountability (IIAG)	Government handling Corruption
–	–	–	–	57 A	Bribery: authorities took action	Transparency and Accountability (IIAG)	Government handling Corruption

Step 2 required that the Afrobarometer Round 6 data were imported into R and inspected. No irregularities in the data were found. A function was built to subdivide and create a data frame for the 19 questions across the 36 African countries. Only the positive responses to the 19 questions were subsetted and clustered together to make the Afrobarometer indicator. The method for coding questions according to positive responses was taken from the IIAG methodology. Afrobarometer responses are quantified using a scale that ranges from positive through neutral to negative. According to the IIAG methodology, the selected questions were ‘coded as the sum of all the number of positive responses as a percentage of all the responses’ (Mo Ibrahim Foundation 2018, 2). The function then calculated the mean of the 36 countries’ scores for each of the 19 questions and added this to a data frame. The average of the dimensions of governance was found and this created the lived experience governance score for each country. The data did not need to be normalised as it came from the same source. This made future replication easier.

Step 3 divided the 19 dimensions of governance into the three sub-indicators for Democracy Experiences and the two sub-indicators for Corruption Experiences. Each question, as shown in *Table 6*, was subsetted into its respective sub-indicator and then the indicator average was found for that sub-indicator for each country. The reason for the grouping into sub-sub-indicators was to assist in the weighting process.

Step 4 found the equally weighted mean of Participation in Elections, General Participation, and Satisfaction with Democracy to give the score for Democracy Experiences and the equally weighted mean of Perceptions of Corruption, and Government handling Corruption to give the score for Corruption Experiences. The scores for Democracy Experiences and Corruption Experiences were the mean of their corresponding sub-indicators, therefore the overall score for the custom indicator was calculated by finding the mean between Democracy Experiences and Corruption Experiences. Once these scores were calculated for each African country, they

were added to the data frame. The data were then ready to run through bivariate statistics to find its significance and to analyse the data to better understand citizens' lived experience of governance when compared to aggregate indicators.

Overview of the Custom Indicator Data

The data were inspected in order to check for outliers or irregularities with the custom public opinion indicator that used Afrobarometer data. No irregularities were found. In inspecting the Democracy Experiences indicator against the overall custom indicator it was found that there was a highly positive correlation coefficient of 0.957. For the indicator Corruption Experiences compared against the overall custom indicator there was a correlation of 0.643. It was expected that they would have high correlations as they are sub-sets of the overall custom indicator.

An Analysis to Compare and Contrast the Custom Indicator with Aggregate Indicators

There are four factors that need to be discussed before reporting on the analysis. Firstly, as mentioned before, the Afrobarometer questions and dimensions of governance are proxies of governance. They display elements of governance, but cannot give the whole picture of governance, hence the IIAG indicator model of weights was used as it has a vast variety of dimensions of governance that it is hoped will give a fuller representation of governance.

Secondly, the questions that were selected were divided between how citizens' viewed their government's handling of areas of governance, such as perceptions of the government's addressing of educational needs, and citizens' actual experiences of a dimension of governance, such as how often one has gone without medical care. The questions of perception of governance support the experiences of governance and questions based on experiences of governance. In order to find the balance between perceptions of government action with the experience of that dimension of governance, both types of questions must be included.

Thirdly, the WGI seemingly had fewer governance components than the IIAG. This is not the case as the WGI selected Afrobarometer questions included perceptions of governments' actions towards governance as well as citizens' experiences of that governance. Fourthly, in terms of the methodology, the IIAG coding method of Afrobarometer questions only selected positive responses to be included in their data. A seemingly negative response such as 'no' can be a positive response in the context of Q11b – 'have you been physically attacked'. Therefore, the Afrobarometer indicator was built in response to the IIAG and WGI indicators and so this built indicator took on the structure and some of the coding methods used in the aforementioned indicators.

Custom and Aggregate Indicators Data and Results

This indicator was built to shed light on lived experience of governance. The expected or hypothesised relationship between the custom indicator and the corresponding IIAG and WGI indicators in the African countries is examined here. A hypothesized relationship could be that the custom indicator reveals a more sensitive and therefore realistic representation of citizens' actual experiences of governance than the aggregate indicators. Therefore, the correlation between the custom indicator and the aggregate indicators would be weak. It might also provide a stronger correlation between the Afrobarometer indicator with the corresponding IIAG and WGI indicators.

As described previously, the reason behind comparing the aggregate indicators with the custom indicators was to show how public opinion isn't necessarily revealed in these aggregate indicators. The first set of comparisons was between the custom indicator Democracy Experience and the respective WGI and IIAG indicator data. The second set was between the custom indicator Corruption Experiences and the respective WGI and IIAG indicator data.

Custom Democracy Experiences indicator and aggregate Results and Implications

This section will compare the data related to participation in democracy with the custom indicator and aggregate indicators. The Democracy Experiences indicator will be compared against the aggregate indicators Voice and Accountability from the WGI and Participation and Human Rights from the IAG.

Democracy Experiences and Voice and Accountability comparison

The first comparison is between the custom indicator Democracy Experiences and WGI's Voice and Accountability as they both address participation in democracy. The similarity in data between Democracy Experiences and Voice and Accountability is that Democracy Experiences has the same three Afrobarometer questions as does Voice and Accountability. Voice and Accountability used here includes all of its data sources, ranging from expert opinions to public opinion data. As mentioned earlier, there is a larger majority of non-public opinion sources, thus the expected correlation will be weak. The *Figure 10* scatter plot shows the weak correlation between the purely public opinion indicator and the aggregate indicator. The data points are not close to the regression line indicating a weak correlation.

The weak correlation is supported by the scatter plot which shows the mismatch in the data. This is further supported by the correlation coefficient of 0.479, thus supporting the statement that the data points are not highly correlated. This also indicates a possible reason for this lower correlation which could be the differing number of data sources between Democracy Experience and Voice and Accountability indicators.

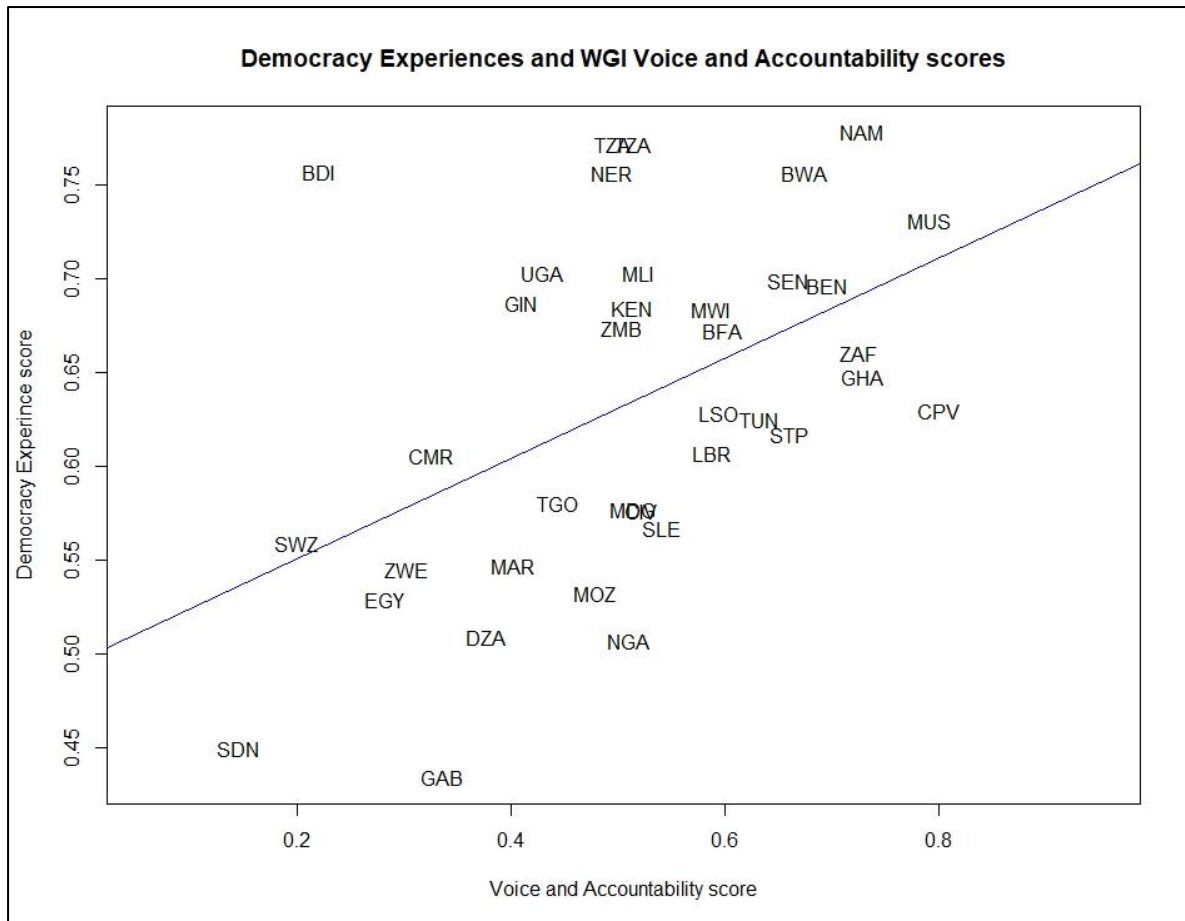


Figure 10: Scatter plot of Democracy Experiences and Voice and Accountability scores

Democracy Experience and Participation and Human Rights comparison

This comparison is between the Democracy Experience indicator and Participation and Human Rights which is an indicator from IIAG that does not include public opinion data. Participation and Human Rights has been included as it is linked with the Custom indicator of Democracy Experience as it addresses participation in democracy. Due to Participation and Human Rights being an aggregate with expert assessments to public opinion, even though it excludes Afrobarometer data, it still has public opinion data in it. The expected relationship should be weak as it does not have Afrobarometer data in it.

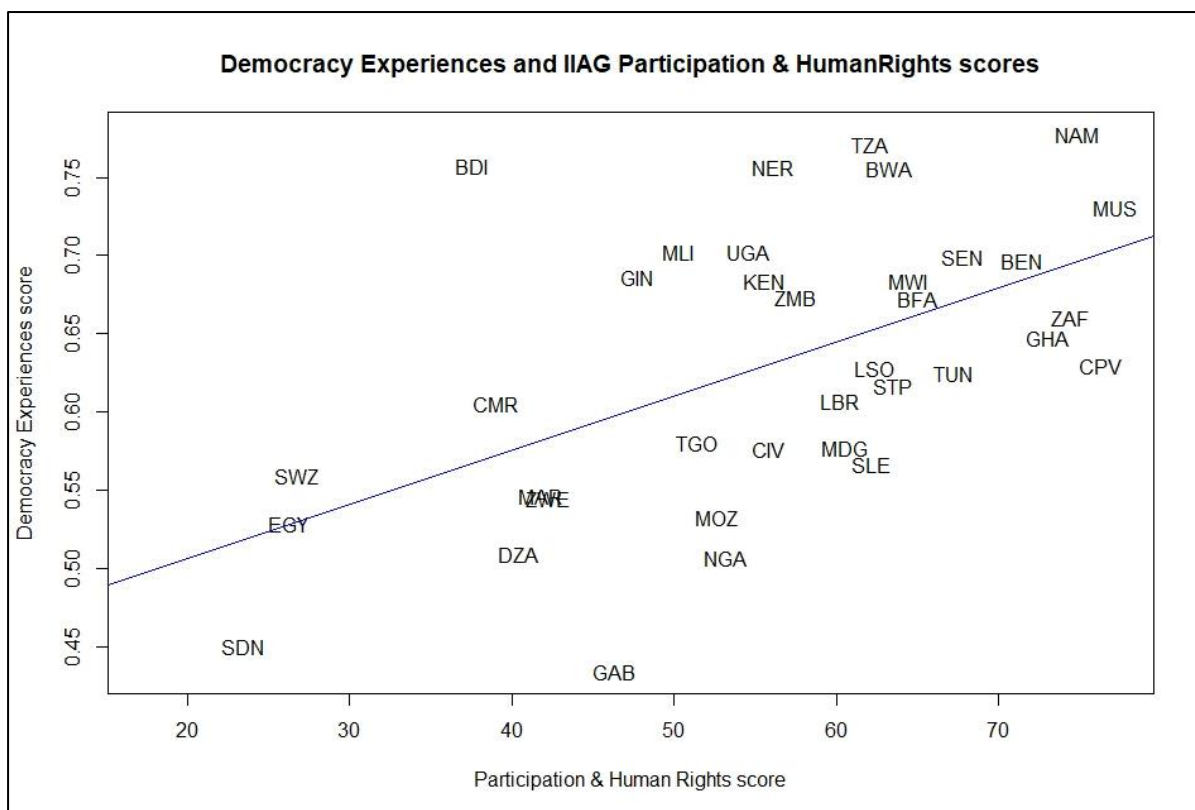


Figure 11: Scatter plot of Democracy Experience and Participation and Human Rights scores

Figure 11 shows a relatively higher correlation than expected. Both the x and y axes' data cover wide ranges, thus the Democracy Experience data does influence the Participation and Human Rights score. The scatter plot shows that the data sets are similar with a better correlation than expected and this is supported by a 0.543 correlation coefficient.

Custom Corruption Experience indicator and aggregate Results and Implications

This section will compare the custom Corruption Experience indicator with WGI's Control of Corruption and IIAG Transparency and Accountability indicators. Both of these aggregate indicators have data from multiple sources beyond public opinion. The custom indicator and aggregate indicators assess corruption within a country.

Corruption Experience and Control of Corruption comparison

This comparison is between the custom indicator Corruption Experience and WGI's Control of Corruption indicator, both associated with corruption levels in a country. Three of Corruption Experience's Afrobarometer questions are the same as Control of Corruption's questions. Control of Corruption is an aggregate indicator that has multiple sources as opposed to Corruption Experience that is comprised of one public opinion source. The *Figure 12* scatter plot reveals the weak correlation between Corruption Experience and Control of Corruption which is supported by weaker correlation coefficients. The changes in Corruption Experience scores barely reflect any changes on Control of Corruption.

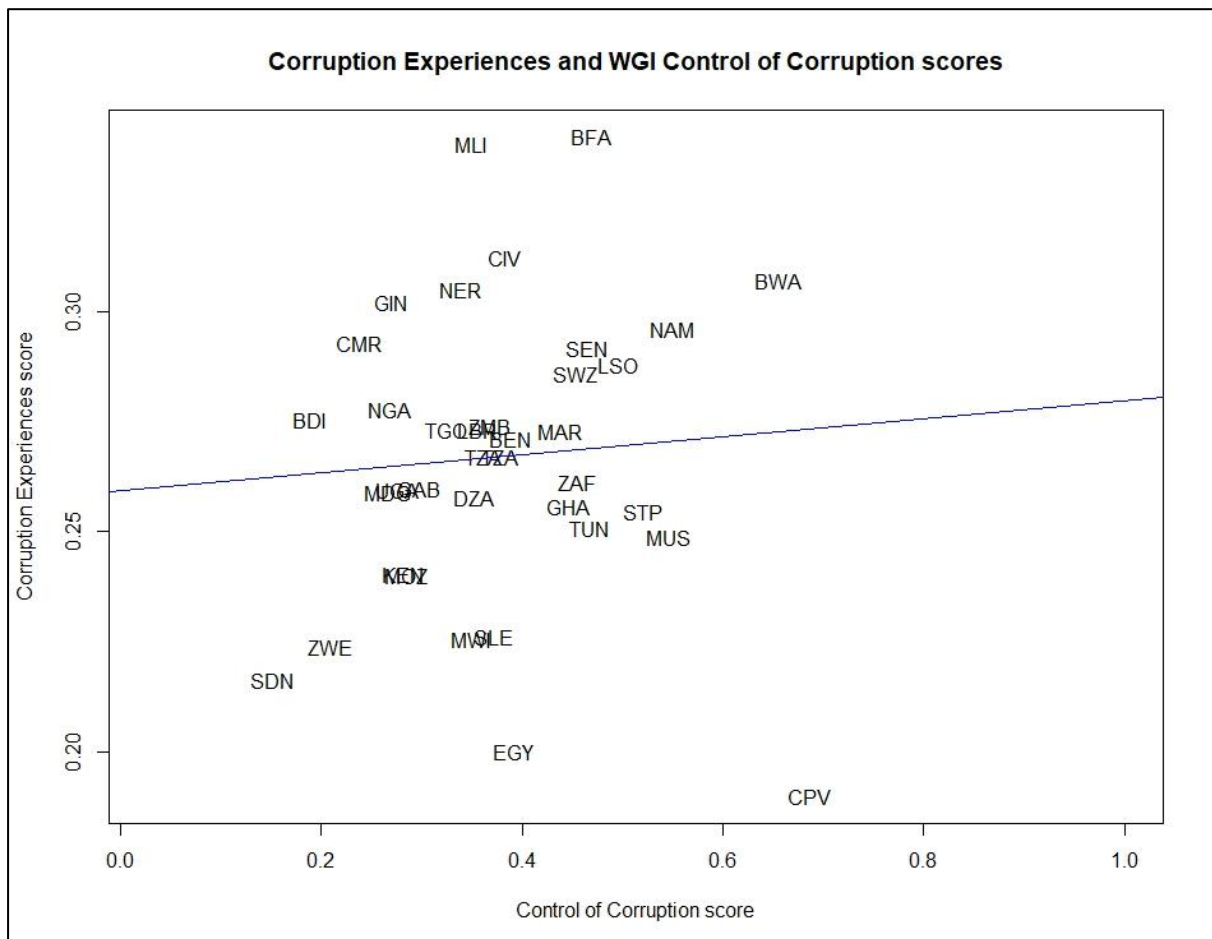


Figure 12: Scatter plot of Corruption Experiences and Control of Corruption scores

The lack of correlation between these two indicators is supported by *Figure 12*. The correlation coefficient is as low as 0.074 which reveals that the correlation is so weak that one can report no correlation. The expected relationship is a more significant relationship as the Control of Corruption Afrobarometer data is within the Custom Corruption Experience indicator. However, it was noted that most of the Corruption Experience comparisons have not shown the same levels of correlation as compared with the Democracy Experience data.

The correlation is weaker than expected with the data points widely spread on either side of the regression line. It shows the difference in the data and this is supported by the weak correlation coefficient. The changes in the Corruption Experience indicator barely reflect any changes on the Control of Corruption indicator. A possible reason for this is the lack of data within Control of Corruption as opposed to Corruption Experiences indicator.

Corruption Experiences and Transparency and Accountability comparison

This comparison is between the custom indicator of Corruption Experiences and the IIAG sub-sub-indicator Transparency and Accountability. Transparency and Accountability is a sub-sub-indicator of the indicator Safety and Rule of Law. Transparency and Accountability and Corruption Experiences are being compared as they address levels of corruption within a country. The Afrobarometer questions used in Transparency and Accountability have been included in the custom indicator. *Figure 13* shows that the relationship between the two indicators is relatively low.

The changes in Corruption Experiences scores hardly influence Transparency and Accountability scores which supports the hypothesis. The weak correlation between the custom indicator and the aggregate indicator is supported by the weak correlation coefficient of 0.161.

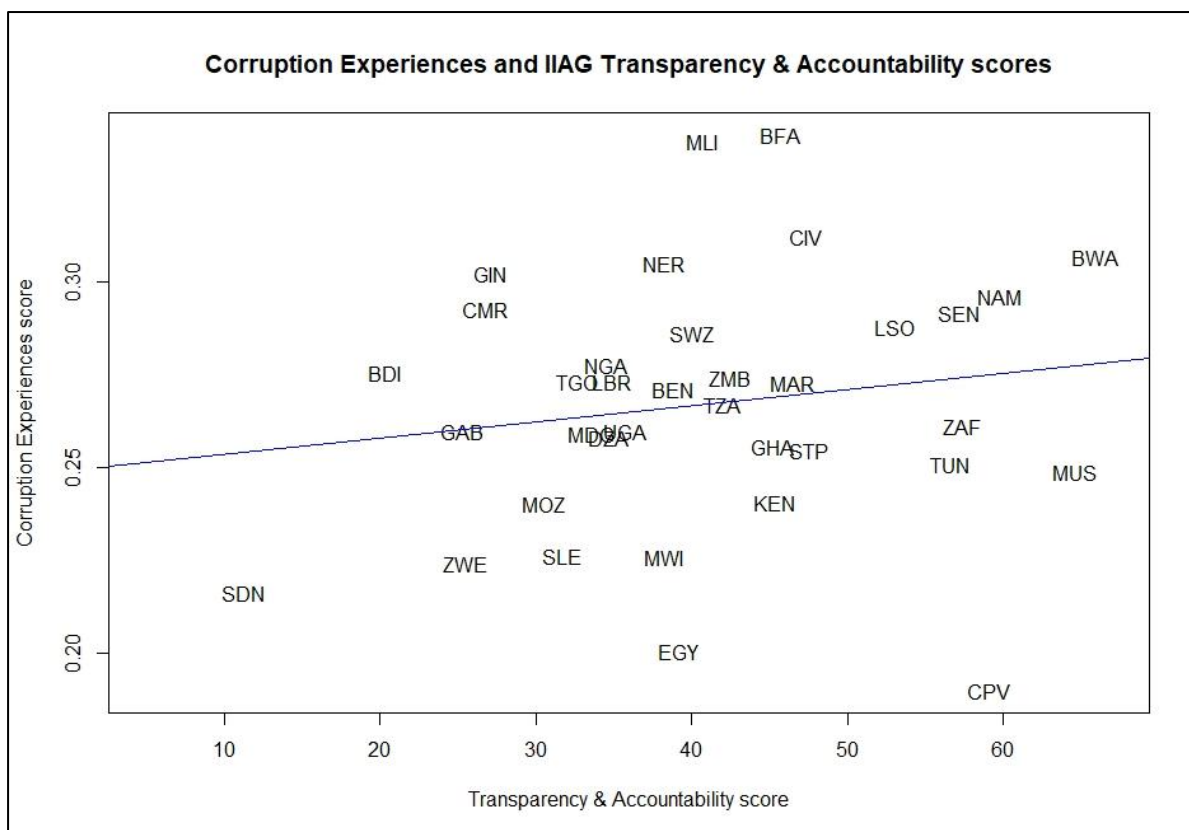


Figure 13: Scatter plot of Corruption Experience and Transparency and Accountability scores

Results and Implications for the custom and Aggregate Indicators

The custom indicator was created using only Afrobarometer data, which is a common public opinion data source used by the WGI and IIAG. In the creation of the indicator two indicators from WGI and IIAG were used as a template to create corresponding sub-indicators that address the same issues of participation in democracy and control of corruption. The first custom indicator is Democracy Experiences which corresponds to WGI Voice and Accountability and IIAG Participation and Human Rights data around participation in democracy. The second custom indicator is Corruption Experiences which corresponds to WGI Control of Corruption and IIAG Transparency and Accountability data around corruption levels.

Overall Summary of the Outcomes

The initial analysis of the custom indicator showed no major problems with its construction. This outcome is that the relationship is significant as Democracy Experiences and Corruption Experiences are sub-sets of the whole custom indicator. The comparisons between the custom indicator and the aggregate indicators was effected to test how public opinion is not necessarily revealed in the aggregate indicators. The weaker correlations were due to the lack of public opinion data in the aggregate indicators. This chapter discussed the building of original indicators of experiences of democracy and corruption. The main finding is that the Democracy Experiences indicator fits the WGI and IIAG sources more closely than the Corruption Experiences indicator. The relationships correlation matrices for Democracy Experience and for Corruption Experience are shown in *Figures 14 and 15*.

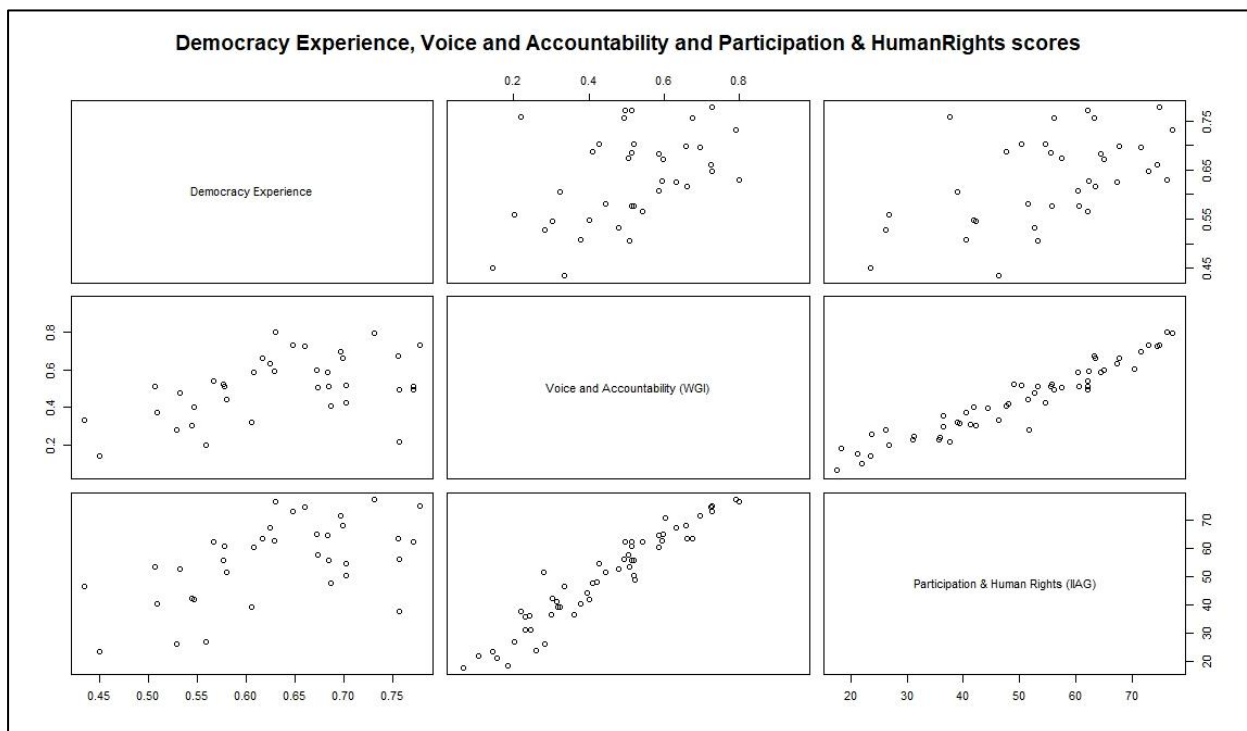


Figure 14: Correlation matrix for Democracy Experience and respective aggregate indicator scores

This correlation matrix supports the finding that the Democracy Experiences indicator was relatively better fitted to the WGI’s Voice and Accountability and the IIAG’s Participation and Human Rights. The changes in the custom indicator score reflect changes in the aggregate scores. A possible reason for the variation of public opinion reflects the variation of the aggregate scores, could be that Voice and Accountability and Participation and Human Rights are more sensitive to the public opinion within their aggregate indicators. This is interesting as the comparisons between Voice and Accountability and Participation and Human Rights and their respective public opinion data shows a weaker correlation, as seen in the previous chapter.

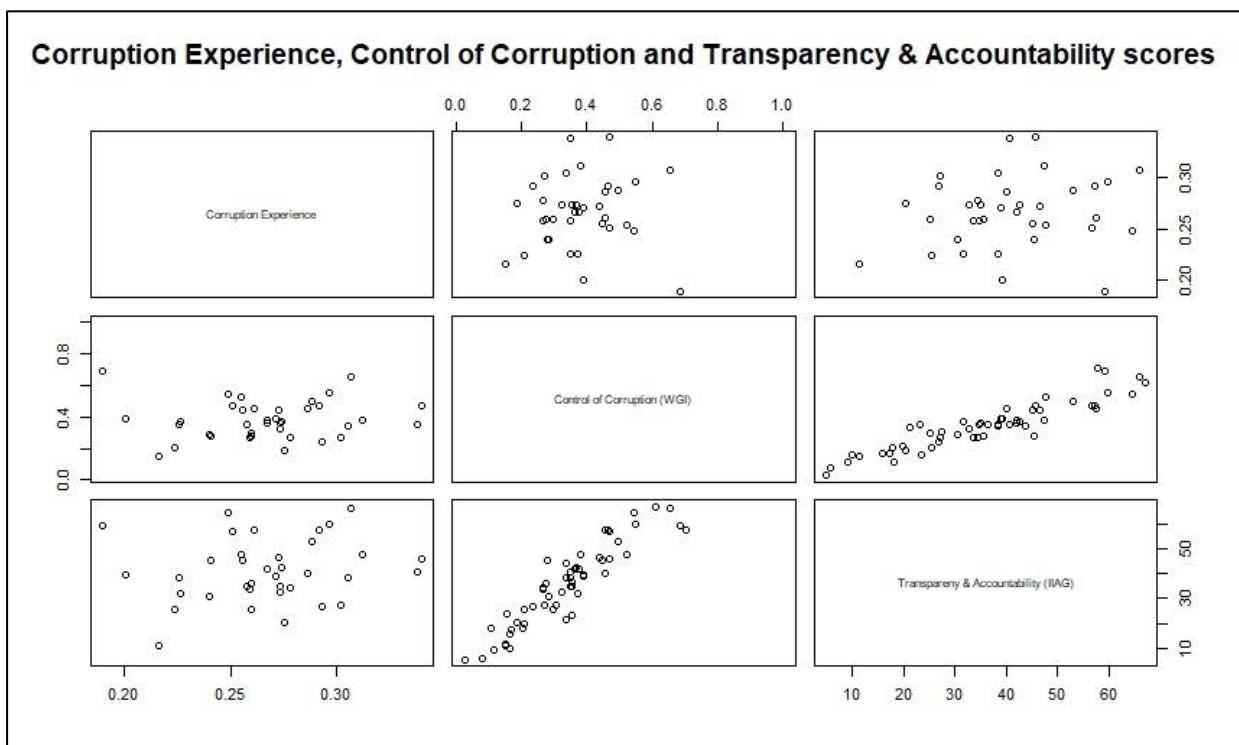


Figure 15: Correlation matrix for Corruption Experience and respective aggregate indicator scores

The Corruption Experiences indicator score is not as closely correlated to the aggregate indicator scores. Figure 15 shows the wider spread of data among the custom indicator, WGI’s Control of Corruption and IIAG’s Transparency and Accountability. The public opinion scores in the custom indicator hardly influence the aggregate scores. There is very little correlation and changes in the Corruption Experiences scores against the Control of Corruption and

Transparency and Accountability score, thus little impact on the aggregate scores, which supports this report’s hypothesis. It is interesting that in the previous chapter the WGI’s Control of Corruption, when compared to the public opinion within the indicator, produced a stronger correlation.

In the cases where there was a weaker correlation it was found that any change in the public opinion scores had little impact on the aggregate scores. Therefore, the weaker the correlation the more the results indicate that the variation of public opinion is not reflected in the variation of the aggregate scores. On the other hand, when the relatively stronger correlations were found, the aggregate scores were seen to be more sensitive to public opinion. This could be due to people holding stronger opinions or to more negative experiences around this governance issue. Another reason could be that there are more sources that show a broader agreement of governance issues within a particular country. *Table 7* provides a summary of the correlation comparisons between the custom indicator and aggregate indicators.

Table 7: Summary of correlation comparisons

Custom & WGI			Custom & IIAG		
Indicator	Description of correlation	r ²	Indicator	Description of correlation	r ²
Voice and Accountability	Fairly good ⁵	0.479	Participation and Human Rights	Fairly good ⁵	0.543
Control of Corruption	Weak ⁶	0.074	Transparency and Accountability	Weak ⁶	0.161

Although a fairly strong correlation between the custom indicator and the aggregate Afrobarometer indicator data were expected, the actual relationship showed fairly weak correlation. However, if the relationship was perfect then the reason for having a purely public opinion indicator would be moot. If the correlation was much weaker between the custom indicator and the aggregate indicator then the research report’s hypothesis favours an aggregate

⁵ Changes in custom indicator influence aggregate indicator scores

⁶ Changes in custom indicator hardly influence aggregate indicator scores

indicator that uses multiple different sources. This speaks to the main argument mentioned in the previous chapter that more than one perspective is the only reliable perspective to gauge governance. Public opinion is not the only source that can make sense of governance.

Even though the Democracy Experiences correlation with the aggregate indicators are higher than the correlation with Corruption Experiences and respective aggregate indicators, the correlation coefficients do not give an absolute confidence of 0.999 that the public opinion data and aggregate data are highly influenced by each other. The correlation coefficient outcomes were all below 0.555 thus revealing and supporting the statement of a weak correlation and impact between public opinion data and aggregate data. The changes in the aggregate indicators barely reflect any changes in custom public opinion scores. Therefore, in the context of citizens' lived experience of governance, a weak correlation between the sources supports the hypothesis that the aggregate indicators do not do justice to citizens' experiences. Furthermore, it could be argued that public opinion data sources are included for legitimacy reasons or that the data's weight is not significant enough to influence the overall score.

The contradictory results in the correlation between the Control of Corruption indices based on Afrobarometer and the corresponding WGI and the IIAG indices are much lower. The results are summarised in *Table 7*. These coefficients differ considerably from those reported in *Table 5* in which the correlations for Voice and Accountability were lower (0.2) than that of Control of Corruption (0.5). There are considerable differences between the results in *Table 5* and *Table 7*. In *Table 5* the coefficients are below 0.3 and above 0.5 while in *Table 7* the results are close to zero and 0.5. These establish that not all correlation coefficients below 1.0 indicate a negligible relationship between the two variables, the custom indicator and aggregated indicator, in *Table 7*.

Lived experience of governance

It is necessary to place some of the most successful results into the context of how citizens' lived experiences of governance and the custom or aggregate indicators measure quality of governance. In order to evaluate this, a case study of four countries within the governance dimension of corruption will be included. To support this case study this section will use sources from other public opinion organisations to support the results, thus helping to support the quantitative results. This analysis will point to the relevance of this study by highlighting citizens' experiences as not synchronised with established measures of governance quality. The primary investigation will be with the comparison between the custom indicator Corruption Experiences and WGI's Control of Corruption. As seen in *Figure 12* above, the selected countries are Botswana, Cape Verde, Malawi and Sudan.

BWA: Botswana

Botswana's data point is on the far right of the graph and above the regression line. According to *Figure 12*, both the Corruption Experiences and Control of Corruption agree that Botswana's level of corruption is low and that the democracy in place is stable. This is supported by a study finding that Botswana ranks low on corruption relative to other countries, scoring 34 out of 180 countries (Transparency International 2019). Citizens' perception of the level in the country places at a score of 61, where 100 is no corruption (Transparency International 2019). Another study found that the percentage of citizens that perceive that governance is controlling corruption is 50%, which shows stability in the country's corruption levels with no massive swing to either side (Pring and Vrushu 2019, 11). Therefore, citizens' lived experience of low levels of corruption in Botswana is supported by the custom indicator and the aggregate indicator.

CPV: Cape Verde

Cape Verde's data point is at the bottom right of the graph below the regression line. This points to experts in Control of Corruption saying that there is high corruption in this country, while Corruption Experiences is saying that the corruption level is low. Corruption Experiences' finding is supported by Cape Verde's country ranking score on corruption being 45 out of 180 countries (Transparency International 2019) and the citizens' perception of corruption being 57 where 100 is no corruption (Transparency International 2019). Both of these scores show that corruption in Cape Verde is low according to citizens' lived experience. Expert assessments have exaggerated their scores to support a source that says 58% of people in the country believe that the government is handling corruption poorly (Pring and Vrushi 2019, 11). However, this score must take into consideration that corruption only influences 8% of the population (Pring and Vrushi 2019, 14). Therefore, citizens' lived experience of low levels of corruption in Cape Verde is supported by the custom indicator, while the aggregate indicator is exaggerating the level of corruption in the country.

MLI: Malawi

Figure 12 shows that Malawi's data point is in the middle of the graph area above the regression line. The initial analysis showed that the Corruption Experiences score for Malawi is much higher than that of Control of Corruption's score. Citizens' perceptions of corruption reveal that corruption is worse than experts disclose for a country with a relatively low corruption level. The Corruption Experiences score is supported by a study that shows that Malawi has a high corruption score of 120 out of 180 countries (Transparency International 2019). It also states that citizens' perceived level of corruption is very high (Transparency International 2019). Furthermore, this is supported by another source which states that 75% of the population believe that the government is not handling corruption well (Pring and Vrushi 2019, 11).

Therefore, citizens' lived experience of high levels of corruption in Malawi is supported by the custom indicator, while the aggregate indicator underestimates the level of corruption in the country.

SDN: Sudan

Sudan's data point on the graph in *Figure 12* is in the bottom left corner below the regression line, showing that the country has bad corruption overall and a poorly functioning democracy, which both indicators support. This view is confirmed by the country's corruption ranking score being 172 out of 180 countries and the citizens' perception that corruption control is very poor (Transparency International 2019). Sudan has 80% of the population perceiving that the government has not handled corruption well (Pring and Vrushi 2019, 11). Therefore, citizens' lived experience of high levels of corruption in Sudan is supported by the custom indicator and the aggregate indicator.

Figure 13 shows the comparison between the custom indicator Corruption Experiences and the IIAG's sub-sub-indicator Transparency and Accountability, supporting the findings in *Figure 12*. The four countries selected are in roughly the same places in this second graph as they were in *Figure 12*, thus supporting both the findings and country case study.

Chapter 6: Conclusion

This research report has attempted to quantify the assessment of governance through the lens of citizens' experience in Africa. The multidimensional nature of governance has been considered by investigating aggregate governance indicators that take into account a wide range of perceptions and experiences from surveys of businesses, NGOs, experts and governments as well as public opinion surveys. The purpose behind aggregate indicators is to compile large amounts of governance related data into a single numeric indicator tailored to make sense for a specific country's context at a particular time period. In theory, aggregate indicators should take into account citizens' experience of governance as they do for expert assessments of governance in a country. However, what was found was that aggregate indicators weighted public opinion data significantly lower than data from other sources. The reason for this is that public opinion data are not regarded as representative sources, that is, with wide base of inputs and so are weighted inconsequentially in comparison with the overall governance indicator scores. Another reason pertaining specifically to the IIAG could be the lack of public opinion data sources related to African countries governance. Thus there exists a gap in this field; there is no purely public opinion custom indicator based on citizens' lived experience of governance. This study addressed the question: how does the data from citizens' lived experience of governance compare to the data from other sources in the WGI and IIAG aggregate indicators?

Summary of Results

A three stage process was undertaken to address this question. Firstly, two indicators within each of the WGI and IIAG aggregate indicators were replicated to understand more about their components and their construction. Specifically, replication was performed on WGI's Voice and Accountability, and Control of Corruption and on IIAG's Transparency and Accountability, and Participation and Human Rights. Although the replicated data did not

match the published data perfectly, due to the fact that some data and governance scores are not made publically available for confidentiality reasons, nonetheless they were close enough to be regarded as statistically similar.

In the second stage, the replicated data were disaggregated so as to examine the correlation between specific public opinion data and all the non-public opinion data. The results of the correlation tests for Voice and Accountability, Control of Corruption, Transparency and Accountability, and Participation and Human Rights showed weak correlation. This confirmed the hypothesis that aggregate indicator scores do not significantly reflect public opinion due to the weighting process of non-representative sources. The sensitivity of the aggregate indicators depended on the questions that were used. By selecting 10 questions, five of which come from Afrobarometer, there was only moderate correlation, with a coefficient of 0.5. This is a fundamental finding of this research report as it confirms the stated hypothesis.

In the third stage, the replicated aggregate indicators were compared to a uniquely constructed public opinion indicator that could be said to have filled the gap mentioned above. The responses to the questions from Afrobarometer Round 6 data were compiled in a unique way to give insight into governance issues pertinent to citizens' experience in African countries. This influenced the choice of indicators that were replicated: firstly the WGI Voice and Accountability, and IIAG's Participation and Human Rights indicators set the foundation for the custom indicator Democracy Experiences, focusing on participation in democracy. The second custom indicator focused on an essential governance issue faced by citizens' in African countries, namely corruption. The WGI Control of Corruption, and IIAG's Transparency and Accountability provided the foundation for the custom indicator Corruption Experiences. As before, the correlation between these custom public opinion indicators was compared with the replicated aggregate indicators. The resulting correlation coefficients were low indicating weak correlation, thus confirming the hypothesis.

Results in Light of the Hypothesis

To repeat, the working hypothesis is that aggregate indicators, or even their component sub-indicators, do not match well with the assessments expressed by citizens' based on their lived experiences. The data correlations generated in stage two and stage three, that would support this hypothesis, show weak correlation for Voice and Accountability, Control of Corruption, Transparency and Accountability, and Participation and Human Rights against the replicated aggregate indicators, and weak correlations for the two customised Democracy Experiences and Corruption Experiences against respective aggregate indicators.

Before confirming the actual outcomes, it is necessary to reflect for a moment on this last statement. It might be expected that the correlation between the customised indicators and the disaggregated indicators Voice and Accountability, Control of Corruption, Transparency and Accountability, and Participation and Human Rights might be fairly strong as both data sets are public opinion data. Indeed a stronger correlation would give some confidence that the custom indicator is valid. On the other hand, if the comparisons indicated strong correlation showing that the customised indicators matched perfectly (or almost perfectly) with the disaggregated indicators, then there would not be a need for a custom indicator.

In reality, the comparisons made in stages two and three showed weak correlations, thus confirming the hypothesis. In stage three, some of the correlations were slightly stronger, but by no means strong; this confirmed the value of the customised indicators, but still supported the hypothesis. However, it should be noted that the weak correlations could also have been due to the difference in the number of data sources between the Afrobarometer data within aggregate indicators and the custom indicator. This technical insight points to the cautionary note that no one perspective is more reliable than another when gauging the quality of governance. Although public opinion is important and should reflect strongly in the aggregate indicators, it is not the only source that can make sense of governance. It expresses one

dimension of governance assessment and so it should reflect meaningfully in the aggregate governance indicators.

It should be noted that the IIAG weighting system is fairly straight forward as one can simply identify the data sources and levels of weights that compose an indicator. Furthermore, Afrobarometer is the only public opinion source that the IIAG uses. In contrast, the WGI has five public opinion data sources and their weighting scheme is very different. An example of the weighted average source scheme is that Afrobarometer is 1 of 10 sources that make up an indicator, but Afrobarometer does not count for 10% of the total averaged score, rather it counts 1% because of the weighing scheme. Aggregate indicators hope to gain some legitimacy by using public opinion data like Afrobarometer. In fact, the Afrobarometer data is very marginal and not significant when compared to the rest of the indicators and overall governance score.

The three stages of analysis of the aggregate indicators and the custom indicator found relatively weak correlations which confirm the hypothesis that aggregate indicators do not reflect public opinion well. The results of the disaggregation in the WGI and IIAG are weak correlation which raised the question do aggregate indicators do justice to citizens' experiences? In other words, are public opinion surveys just included for legitimacy reasons or is the data's weight not significant enough to influence the overall score? This uncovers a gap in the aggregate indicators as representative sources influence the weighting scheme more significantly. The weighting scheme prioritises representative sources over public opinion sources which are often not representative sources, or in the case of the IIAG, the indicator does not include enough public opinion data.

The WGI gives preference to the scores that are available throughout the world; representative sources. They also give priority through their weighting scheme to the sources that correlate higher with the other sources. The lower the weight assigned to a source the less it will be

represented in the indicator and overall governance scores. Public opinion sources are often regional sources which are weighted much lower than the other sources that give data on many countries across many regions and therefore match with other sources that are beyond regional sources.

Limitations of the Research

One limiting factor of this research lies in the fact that Afrobarometer questions are not specifically designed for assessment of the dimensions of governance in African countries. The ideal questions would be how citizens experience governance or their experience of their current government's attempt to address or manage issues that are linked to the governance indicators. In a nutshell, questions were selected that best fitted with at least one dimensional component of the indicator. Another limiting factor related to the Afrobarometer questions is that each question had to appear in each country's Afrobarometer survey. Some Afrobarometer questions are not consistent or asked in every Afrobarometer country, therefore those questions had to be excluded. A further limitation is the missing data in the WGI governance indicator. The reason for holding back these data is that they are sensitive and can be related to identifiable people or governments. This caused some problems when coding the WGI data.

Future Research

Ideas for future research could include constructing a full governance indicator that looked at dimensions of governance beyond participation in democracy and corruption. This full indicator could use the updated Afrobarometer, WGI and IIAG data. The study could focus on Latino-barometer data with their respective countries. Another study could incorporate more than just Afrobarometer as the public opinion source. Finally, future research could combine this analysis with a more in-depth case study of countries' governance scores with a qualitative

analysis of its context and citizens' lived experience of governance to see if the quantitative data reflects on the qualitative realm.

The implications of the findings for future research are two-fold. A people centred indicator could be created if it were based purely on public opinion or if an aggregate indicator gave more weight to public opinion. This is important because according to Mo Ibrahim (Mo Ibrahim Foundation 2019, 1), in African countries, people are at the centre of governance and governance is at the centre of development. Citizens' experience of governance is central in measuring good governance, therefore a future indicator could directly speak to development in African countries. Thus an indicator should be built to help scholars understand the quality of governments and democracies in Africa. A targeted understanding will contribute to a fuller understanding of countries within their own context at a national, regional and international level. This will also contribute to understanding and perhaps even the forecasting of relationships between countries and organisations at a global level due to their governance and development levels as seen in an indicator.

Final Concluding Remarks

It can be concluded that the aim of this research report, namely to understand how the quality of governance can be measured quantitatively, was achieved. The proposed hypothesis was confirmed based on presented data: aggregate indicators are not sensitive to citizens' lived experiences of governance. The weak correlations were not due to technical errors, on the contrary, they consistently confirmed the lack of sensitivity of aggregate indicators towards public opinion. The reason for this was confirmed to be due to the weighting schemes that prioritise representative sources over public opinion sources, which are not sufficiently broad to be regarded as representative. Therefore, it was not surprising that the customised indicator,

based purely on what citizens are saying about their governments, was dissimilar to the aggregate and disaggregated indicators.

It is important to note that governance indicators, aggregate or not, do give a sense of what is happening in a country. However, work in this field should always avoid attaching too much significance to anyone source over that of another. As declared in the Introduction, governance is a multifaceted social construct, thus although there is value of assessing its quality with a single aggregate numerical indicator, especially for comparative purposes, be they regional or temporal comparisons, over reliance on a single indicator can be dangerous. This could lead to weak analyses that do not reflect the nuances of governance. It is vital in quantitative analysis to use a range of indicators including more specific indicators that address some if not all the facets of the governance as perceived by individuals and experts.

Appendix

Table 8: Construction of two WGI indicators

Voice and Accountability indicator			Control of Corruption indicator		
Component measure name	Component measure code	Type of data	Component measure	Component measure code	Type of data
Afrobarometer	AFR	Public opinion survey	African Development Bank	ADB	Expert assessment
Bertelsmann Transformation Index	BTI	Expert assessment	Afrobarometer	AFR	Public opinion survey
Economist Intelligence Unit	EIU	Expert assessment	Asian Development Bank Country Policy and Institutional Assessments	ASD	Expert assessment
Freedom House	FRH	Expert assessment	Bertelsmann Transformation Index	BTI	Expert assessment
Transparency International Global Corruption Barometer	GCB	Public opinion survey	Economist Intelligence Unit	EIU	Expert assessment
Global Integrity Index	GII	Expert assessment	Freedom House	FRH	Expert assessment
Gallup World Poll	GWP	Public opinion survey	Transparency International Global Corruption Barometer	GCB	Public opinion survey
IFAD Rural Sector Performance Assessment	IFD	Expert assessment	World Economic Forum Global Competitiveness Survey	GCS	Business survey
Institutional Profiles Database	IPD	Expert assessment	Global Integrity Index	GII	Expert assessment
Latinobarometer	LBO	Public opinion survey	Gallup World Poll	GWP	Public opinion survey
International Research and Exchanges Board Media Sustainability Index	MSI	Expert assessment	IFAD Rural Sector Performance Assessment	IFD	Expert assessment
International Budget Project Open Budget Index	OBI	Expert assessment	Institutional Profiles Database	IPD	Expert assessment
Political Risk Services International Country Risk Guide	PRS	Expert assessment	Latinobarometer	LBO	Public opinion survey
Reporters without Borders Press Freedom Index	RSF	Expert assessment	World Bank Country Policy and Institutional Assessments	PIA	Expert assessment
Vanderbilt University's Americas Barometer	VAB	Public opinion survey	Political and Economic Risk Consultancy Corruption in Asia Survey	PRC	Business survey
Varieties of Democracy Project	VDM	Expert assessment	Political Risk Services International Country Risk Guide	PRS	Expert assessment
Institute for Management Development World Competitiveness Yearbook	WCY	Business survey	Vanderbilt University's Americas Barometer	VAB	Public opinion survey
World Justice Project Rule of Law Index	WJP	Expert assessment	Varieties of Democracy Project	VDM	Expert assessment

-	-	-	Institute for Management Development World Competitiveness Yearbook	WCY	Business survey
-	-	-	World Justice Project Rule of Law Index	WJP	Expert assessment
-	-	-	Global Insight Business Risk and Conditions	WMO	Expert assessment

Table 9: Construction of the IIAG indicator Participation and Human Rights

Participation and Human Rights Indicator					
Indicator name	Category	Depth of coding	Component measure	Type of data	Weight
Participation & Human Rights	Sub-category	1			0
Participation	Indicator	2			0
Political Participation	Sub-indicator	3	Economist Intelligence Unit	Expert survey	0
Political Participation	Sub-indicator	4	Freedom House	Expert survey	0.06667
Political Pluralism	Sub-indicator	4	V-Dem Institute	Expert survey	0.06667
Freedom of Political Parties	Indicator	4			0.06667
Civil Society Participation	Sub-indicator	3	Bertelsmann Stiftung	Expert survey	0
Civil Society Political Participation	Sub-indicator	4	V-Dem Institute	Expert survey	0.06667
Civil Society Freedom & Participation	Sub-indicator	4			0.06667
Freedom of NGOs	Sub-sub-indicator	4	Global Integrity	Expert survey	0
Absence of Barriers to NGO Operations	Sub-sub-indicator	5	Global Integrity	Expert survey	0.02223
Absence of Persecution of NGOs	Sub-sub-indicator	5	Global Integrity	Expert survey	0.02223
Absence of Harassment of NGOs	Indicator	5			0.02223
Democratic Elections	Sub-indicator	3	Bertelsmann Stiftung	Expert survey	0
Regular Free & Fair Elections	Sub-indicator	4	Ghana Center for Democratic Development	Expert survey	0.06667
Free & Fair Executive Elections	Sub-indicator	4	V-Dem Institute	Expert survey	0.06667
Free & Fair Elections	Indicator	4			0.06667
Capacity of Election Monitoring Agencies	Sub-indicator	3	V-Dem Institute	Expert survey	0
Capacity of Election Monitoring Agencies	Sub-indicator	4			0.1
Independence & Transparency of Election Monitoring Agencies	Sub-sub-indicator	4	Global Integrity	Expert survey	0
Election Monitoring Agencies Independence	Sub-sub-indicator	5	Global Integrity	Expert survey	0.05
Election Monitoring Agencies Reporting	Indicator	5	Bertelsmann Stiftung	Expert survey	0.05
Effective Power to Govern	Sub-category	3			0.2
Rights	Indicator	2			0
Freedom of Expression	Sub-indicator	3	Bertelsmann Stiftung	Expert survey	0
Freedom of Expression	Sub-indicator	4	Reporters sans frontieres	Expert survey	0.03334
Media Freedom	Sub-indicator	4	V-Dem Institute	Expert survey	0.03334
Media Impartiality	Sub-indicator	4	V-Dem Institute	Expert survey	0.03334

Freedom of Expression	Sub-indicator	4			0.03334
Absence of Censorship	Sub-sub-indicator	4	Global Integrity	Expert survey	0
Absence of Media Censorship	Sub-sub-indicator	5	Global Integrity	Expert survey	0.01667
Absence of Online Censorship	Indicator	5			0.01667
Freedom of Association & Assembly	Sub-indicator	3	Bertelsmann Stiftung	Expert survey	0
Freedom of Association & Assembly	Sub-indicator	4			0.08334
Freedom of Association	Sub-sub-indicator	4	Global Integrity	Expert survey	0
Freedom of Association	Sub-sub-indicator	5	Global Integrity	Expert survey	0.04167
Freedom of Trade Unions	Indicator	5			0.04167
Civil Rights & Liberties	Sub-indicator	3	Bertelsmann Stiftung	Expert survey	0
Civil Rights	Sub-indicator	4			0.08334
Civil Liberties	Indicator	4	United Nations Office of Legal Affairs	Multilateral organisation	0.08334
Ratification & Reporting of International Human Rights Conventions	Indicator	3	Economist Intelligence Unit	Expert survey	0.16667
Un-likelihood of Human Rights Abuses by the Government	Indicator	3			0.16667
Protection against Ethnic & Religious Discrimination	Sub-indicator	3	Global Integrity	Expert survey	0
Protection against Ethnic Discrimination	Sub-indicator	4	Global Integrity	Expert survey	0.08334
Protection against Religious Discrimination	Sub-category	4			0.08334
Gender	Indicator	2			0
Promotion of Gender Equality	Sub-indicator	3	African Development Bank	Expert survey	0
Promotion of Gender Equality	Sub-indicator	4	World Bank	Multilateral organisation	0.0625
Promotion of Gender Equality	Indicator	4			0.0625
Women's Political Representation	Sub-indicator	3	Inter-Parliamentary Union	Expert survey	0
Representation of Women in Parliament	Sub-indicator	4	Inter-Parliamentary Union	Expert survey	0.0625
Representation of Women in Cabinet	Sub-sub-indicator	4	Global Integrity	Expert survey	0
Representation of Women in Cabinet	Sub-sub-indicator	5	World Bank	Multilateral organisation	0.03125
Representation of Women in Ministerial or Equivalent Positions	Indicator	5	United Nations Educational, Scientific and Cultural Organisation	Multilateral organisation	0.03125
Gender Parity in Primary & Lower Secondary School	Indicator	3	World Bank	Multilateral organisation	0.125
Women's Labour Force Participation	Indicator	3	Global Integrity	Expert survey	0.125
Workplace Gender Equality	Indicator	3	Global Integrity	Expert survey	0.125
Representation of Women in the Judiciary	Indicator	3	Organisation for Economic Co-operation and Development	Expert survey	0.125
Laws on Violence against Women	Indicator	3	V-Dem Institute	Expert survey	0.125
Women's Political Empowerment	Indicator	3	V-Dem Institute	Expert survey	0.125

Table 10: Construction of the IAG indicator Transparency and Accountability

Transparency and Accountability Indicator					
Indicator name	Category	Depth of coding	Component measure	Type of data	Weight
Transparency & Accountability	Sub-category	2			0
Access to Public & Legislative Information	Indicator	3			0
Access to Public Information	Sub-indicator	4	Global Integrity	Expert survey	0.05556
Access to Legislative Information	Sub-indicator	4	Global Integrity	Expert survey	0.05556
Access to Records of State-owned Companies	Indicator	3	Global Integrity	Expert survey	0.11111
Accountability of Government & Public Employees	Indicator	3			0
Constraints on Government Power by State Institutions	Sub-indicator	4	V-Dem Institute	Expert survey	0.03704
Accountability of the Executive	Sub-indicator	4			0
Executive Accountability & Transparency	Sub-sub-indicator	5	African Development Bank	Expert survey	0.01852
Executive Accountability & Transparency	Sub-sub-indicator	5	World Bank	Multilateral organisation	0.01852
Accountability of Public Officials	Sub-indicator	4	Economist Intelligence Unit	Expert survey	0.03704
Sanctions for Abuse of Office	Indicator	3	Bertelsmann Stiftung	Expert survey	0.11111
Absence of Corruption in Government Branches	Indicator	3			0
Absence of Executive Corruption	Sub-indicator	4	V-Dem Institute	Expert survey	0.03704
Absence of Legislative Corruption	Sub-indicator	4	V-Dem Institute	Expert survey	0.03704
Absence of Judicial Corruption	Sub-indicator	4	V-Dem Institute	Expert survey	0.03704
Absence of Corruption in the Public Sector	Indicator	3			0
Absence of Corruption in the Public Sector	Sub-indicator	4			0
Absence of Corruption in the Public Sector	Sub-sub-indicator	5	V-Dem Institute	Expert survey	0.02778
Absence of Corruption in the Public Sector	Sub-sub-indicator	5	Economist Intelligence Unit	Expert survey	0.02778
Absence of Diversion of Public Funds	Sub-indicator	4	World Economic Forum	Multilateral organisation	0.05556
Absence of Corruption in the Private Sector	Indicator	3			0
Absence of Corruption in the Private Sector	Sub-indicator	4	World Economic Forum	Multilateral organisation	0.05556

Absence of Corruption in the Private Sector	Sub-indicator	4	World Bank	Multilateral organisation	0.05556
Absence of Favouritism	Indicator	3			0
Absence of Favouritism in Public & Private Sectors	Sub-indicator	4	Economist Intelligence Unit	Expert survey	0.05556
Absence of Favouritism in Government Decision-making	Sub-indicator	4	World Economic Forum	Multilateral organisation	0.05556
Anti-corruption Mechanisms	Indicator	3			0
Anti-corruption Policy	Sub-indicator	4	Bertelsmann Stiftung	Expert survey	0.02778
Anti-corruption Bodies	Sub-indicator	4	Global Integrity	Expert survey	0.02778
Anti-corruption Investigation	Sub-indicator	4	Global Integrity	Expert survey	0.02778
Satisfaction with Fighting Corruption	Sub-indicator	4	Afrobarometer	Public opinion survey	0.02778

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