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African Leaders and Economic Growth

An Empirical Study of Economic Growth under Post-Colonial Leaders in Sub-Saharan Africa

Master's thesis in Economics Supervisor: Ragnar Torvik March 2024



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Forord

Denne masteroppgaven markerer slutten på et toårig masterprogram ved instituttet for samfunnsøkonomi på NTNU.

Jeg vil takke min veileder Ragnar Torvik for god veiledning, raske og motiverende tilbakemeldinger.

Jeg ønsker også å takke Ragnar Nymoen for verdifulle samtaler og tilbakemeldinger knyttet til metode.

Abstract

This paper explores the connection between three common types of post-colonial Sub-Saharan African leaders and economic growth. The motivation behind this research is to gain a greater understanding of the potential influence of Africa's designated leaders on the economy. Little research has been done on the possible economic consequences of the African leadership environment, considering both present and historical perspectives, in economic literature. While the topic might sound somewhat trivial, this paper has demonstrated that it is worthy of greater exploration.

This paper combines data from The World Bank, the Emergency Events Database, Nasdaq, the Center for Systemic Peace, and a uniquely crafted dataset on African leaders to conduct an empirical study on the relationship between military leaders, educated leaders, leaders who assumed power after violent conflict, and economic growth. The analysis reveals a negative association between military leaders and economic growth, with a decrease of up to -0.8329 annual percentage points. In contrast, educated leaders show a positive association with economic growth, with an increase of up to 1.1034 annual percentage points. No significant results are however found for leaders who assume power after violent transitions. These results remain consistent when accounting for outliers.

Sammendrag

Denne teksten utforsker forholdet mellom tre vanlige typer postkoloniale ledere i Afrika sør for Sahara og økonomisk vekst. Motivasjonen bak forskningen er å oppnå en dypere forståelse av de potensielle mekanismene og virkningene Afrikas statsledere har på økonomien i deres respektive land. Det er gjort lite forskning på de mulige økonomiske konsekvensene av afrikansk lederskap, i forhold til både nåværende og historiske perspektiver, innen økonomisk litteratur. Denne teksten kan derfor fylle et hull i debatten angående økonomisk vekst i Afrika. Tema kan virke noe trivielt, men denne har teksten har vist at det er et tema som er vært verdt større utforskning.

Data fra Verdensbanken, Emergency Events Database, Nasdaq, Center for Systemic Peace og et unikt utarbeidet datasett om afrikanske ledere har blitt brukt for å gjennomføre en empirisk studie angående forholdet mellom militære ledere, utdannede ledere, ledere som overtok makten etter voldelige konflikter, og økonomisk vekst. Analysen avslører en negativ sammenheng mellom militære ledere og økonomisk vekst, med en nedgang på opptil -0,8329 årlige prosentpoeng. Utdannede ledere viser derimot en positiv sammenheng med økonomisk vekst, med en økning på opptil 1,1034 årlige prosentpoeng. Det er imidlertid ikke funnet noen betydelige resultater for ledere som overtar makten etter voldelige overganger. Disse resultatene forblir konsistente når det tas hensyn til avvik i data.

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1. Introduction

Governance in post-colonial sub-Saharan Africa could be considered unparalleled compared to any other region, and central to discourse concerning Africa. As a wave of countries gained independence from colonial rule throughout the 1960s and 70s, they were tasked with self-governance and nation building without many of the necessary structures in place to navigate the transition (Powers, 2022). In these formative years, serval actors who would shape the trajectory of their respective nations emerged. Individuals, who often played significant roles in national liberation movements and inaugural democratic elections, assumed central positions that would solidify power and authority (Jørgensen & Bjørnskov, 2015). Some of these emerging figures, despite their instrumental roles in achieving independence, were however not impervious to significant shortcomings (Dadja-Tiou, 2018). Subsequently, patterns emerged characterized by entrenched leadership, ineffective governance, instability, and economic stagnation for many countries in the region (Klobucista & Ferragamo, 2023).

The objective of this paper is to explore the extent to which economic growth is influenced by the designated state leader. Specifically, it focuses on three common categories of post-colonial Sub-Saharan leaders: military and ex-military leaders, college educated leaders, and leaders who assumed power after a violent transition. The main research question asked in this paper is: What is the relationship between military leaders, educated leaders, leaders taking power after a violent transition, and economic growth?

This paper uses panel fixed-effects estimation with a core dataset of state leaders in 49 sub-Saharan countries between the years 1980 and 2018 to find evidence suggesting that military leaders are associated with lower economic growth, while educated leaders are associated with higher economic growth. The paper finds no significant evidence to suggest that leaders who assume power after violent transitions have an effect on economic growth. These results are robust when accounting for outliers.

The subsequent section of this paper is structured as follows: Chapter 2: Background and motivation. Chapter 3: Related Literature. Chapter 4: Data. Chapter 5: Methodology. Chapter 6: Results. Chapter 7: Robustness test. Chapter 8: Discussion and additional findings. Chapter 9: Conclusion.

2. Background and motivation

Economic growth on the African continent is a topic that has received much attention in both the field of development economics and social sciences. The potential to create meaningful economic growth, as well as the unique challenges presented in a cultural and geographically diverse continent, has made Africa an intriguing case to study. Stil, despite numerous opportunities to leverage a wealth of natural resources, and the abundant human potential available, Africa's long-term economic growth has been slow. Current day forecast presented by both the World Bank and McKinsey Global Institute paint a discouraging picture for the future (Kwakwa, Diagana, 2023; Kuyoro et al., 2023).

Reasons behind the meagre economic growth are often complex and multifaceted. Some research highlight social, historical, and geographical factors contributing to lower potential growth (Acemoglu et al., 2001; Young, 2013), while others emphasize political and institutional factors (Acemoglu & Robinson, 2010; Collier & Gunning, 1999). This compendium of research does not converge to one universally agreed upon resolution, however it does provide valuable insight and a greater understanding of why Africa stands as the poorest continent in the world in terms of GDP per capita (Robinson, 2013).

One relatively unexplored avenue in the realm of African economics is the proposition that individual African leaders could significantly influence economic outcomes. While existing studies have focused on the connection between economic outcomes, corruption, and development (Hope, 2000), little attention has been directed toward the distinct impact of individual leaders on economic outcomes.

The significance of African leaders in shaping economic outcomes could be argued by two key factors. Firstly, the prolonged tenures of certain African state leaders contribute to an extended period of influence, potentially increasing the impact of their policies and decision-making on economic development. Secondly, the relatively unchecked power and authority held by some long-term leaders that further emphasize their potential influence, as detailed by Klobucista & Ferragamo (2023).

2.1 Post colonial African leaders

The latter part of the 20th century brought about promise and excitement to the African continent. Ghana became the first African country to gain independence from colonial rulers on March 6, 1957, paving the way for a movement that would extend across the entire continent (Mbaku, 1994). In April 1994, South Africans elected Nelson Mandela as their first democratically elected president, marking the end of three and a half centuries of colonialism and apartheid (Apartheid Museum, n.d.). The election in South Africa symbolized the end of the oppressive era of apartheid, as well as the end of European imperialism in Africa.

Early post-colonial political rulers, such as Nelson Mandela and Kwame Nkrumah emerged as notable figures, dedicated to achieving national integration, democracy, unity, and development for their people (Mazadou, 2022). However, the African experience in the years following independence did not necessarily align with these goals and values. While figures like Nelson Mandela, Kwame Nkrumah, Jomo Kenyatta, and Elias Phisoana Ramaema have been celebrated as positive examples of leaders committed to nation-building, their endeavours are juxtaposed with leaders like Idi Amin, Robert Mugabe, and Macias Nguema, whose reigns were marked by authoritarianism and violence. As a result, post-colonial leadership has varied significantly.

Sackey (2021) writes:

"What makes post-independence sub-Saharan Africa so interesting is that they have witnessed all forms of regimes including royal dictatorship, military dictatorship and civilian dictatorship making up the autocratic regimes, as well as democratic regimes that include parliamentary democracy, mixed democracy and presidential democracy. All these have possibilities ...that affect the growth of their respective countries" (Sackey, 2021, p.2).

2.2 Military leaders

Most African nations that gained independence in the 1960s initially adopted multiparty systems. However, military regimes and governments became increasingly prevalent with time (Exploring Africa, n.d.). Military involvement tends to escalate when civilian leaders and weak institutions struggle to sustainably legitimize their governmental authority (Ghoshal, 1986). However, the impact of a military that is heavily involved in politics has been shown to be generally unfavourable, with drawbacks concerning development of democracy (Meyersson, 2016), and by extension, economic development (Bircher, 2012).

The number of state leaders with military connections can be seen in figure 2 (chapter 3). It is worth noting that state leaders with connections to the military, in itself, are not inherently unusual, as this is common in more economically developed countries as well. However, the regularity within the region as a whole motivates some questions that will be explored further in this text.

2.3 Leaders after violent transitions

Another common type of post-colonial leader is the coup leaders. The African continent has seen its fair share of coups since independence, with an increase in coups in recent years, with military figures carrying out takeovers in Gabon, Niger, Burkina Faso, Sudan, Guinea, Chad, and Mali (Duzor & Williamson, 2023). While socio-economic challenges seem to be a recurring theme preceding military and civilian coups, they are much more likely to occur in places where armed forces have previously intervened in politics (Basedau, 2023). Nevertheless, even though economic conditions and dissatisfaction with inadequate leadership seem to be driving forces before rebellion, the subsequent leader may not necessarily bring about improvements.

Meyersson (2016) writes:

"...the fault for the coup and preceding problems fall invariably upon the ousted leader, with the coup constituting an unfortunate, but necessary, means to rid the country of an incompetent, if not dangerous, leader...commentators have pointed out the risks of allowing a military to intervene and dictate post-coup institutions to their advantage... Yet others lament the human rights abuses following coups, and the inherent ineptitude of military leaders in running the economy" (Meyersson, 2016, p. 1-2).

2.4 Educated leaders

The final category among common post-colonial leaders is comprised of educated individuals. Leaders with completed university and college education offer a compelling juxtaposition to military leaders and those who assume power after violent transitions. The underlying assumption is that educated leaders should represent individuals who, in theory, bring capability and expertise to leadership positions based on their educational attainment.

The amalgamation of factors mentioned, along with Meyersson's quote, motivates the questions that this paper aims to address: What economic relationships exist between the characteristics of Africa's designated leaders and economic outcomes? Does an inherent

ineptitude of military leaders in managing the economy, as Meyersson's paper proposes, exist, or do military leaders govern as capably as their educated counterparts? These questions further extend to those who ascend to power through violence, such as junta leaders, revolutionaries, and warlords. These leaders seemingly achieve success in gaining influence and power in their nations during conflicts, but can they manage the transition to civilian rule and govern countries effectively in times of peace?

2.5 Sub-Sahara

The decision to concentrate on sub-Saharan countries, excluding the North African countries Algeria, Egypt, Libya, Morocco, and Tunisia, is based on Collier & Gunning (1999), who argue:

"This is conventional for the studies of this area, since the north African countries are part of a different regional economy-the Middle East with its own distinctive set of economic issues." (Collier & Gunning, 1999, p.1-2).

3. Related Literature

The area of study connected to this paper's research question appears to be, to the best of current knowledge, relatively limited. This makes identifying related work somewhat complicated. However, by decomposing the research question into three fields of research, much more of the existing literature becomes applicable. This chapter will give a brief summary of works relating:

- 3.1 Leader effect on economic growth
- 3.2 Educated leaders effect on economic growth
- 3.3 African leader's effect on growth
- 3.4 Coups, violent transitions, and growth

3.1 Leader effect on economic growth

Jones & Olken (2005)

Jones and Olken's "Do Leaders Matter?" is one of the earlier papers to examine the impact state leaders have on economic and political outcomes. The paper investigates how sustained shifts in economic growth could be the result of changes in national leadership. The authors employ a regression discontinuity design to see whether the natural deaths of leaders during their tenure, serving as exogenous leadership transitions, is associated with shifts in country growth rates.

The study finds evidence suggesting that individual leaders matter for growth, particularly in autocratic settings when there are fewer constraints on a leader's power. The study also find that leaders have an impact on policy outcomes, highlighting their effect on monetary policy. The authors conclude, based on the findings, that leaders play a crucial role in shaping the growth trajectories of nations.

3.2 Educated leader's effect on growth

Besley, Montalvo & Reynal-Querol (2011)

Besley, Montalvo & Reynal-Querol's "Do Educated Leaders Matter?" adopts a similar approach to Jones & Olken (2005) to investigate whether a leader's educational attainment is associated with higher economic growth. The paper expands on Jones & Olken's original set

of exogenous leadership transitions, detailing more than 1000 leaders between the years 1875 and 2004, to test the hypothesis.

Besley, Montalvo & Reynal-Querol find evidence to support Jones & Olken's initial findings on leader effect in their own extended dataset, as well as findings supporting their hypothesis suggesting that higher educational attainment is associated with higher economic growth. The findings reveal a decrease in average growth, measured in percentage points, when highly educated leaders exit office and are succeeded by leaders without post-graduate education.

Jain, Kashyap, Lahoti & Sahoo (2022)

Jain, Kashyap, Lahoti & Sahoo's "Do Educated Leaders Affect Economic Development? Evidence from India" investigate the economic effect of electing an educated politician in India. The paper uses the intensity of night-time lights to measure economic development and employs a regression discontinuity design, like the two mentioned papers, to assess quasi-random outcomes of close elections between educated and less-educated politicians.

The authors find that electing a graduate leader, as compared to a non-graduate leader, for the state assembly constituency results in a roughly 3-percentage-point increase in the growth rate of night-time lights compared to selecting a leader without a graduate degree. Their analysis indicates that graduate leaders contribute to the improvement of infrastructure, specifically in the areas of roads, electricity, and power. However, leaders' influence on the overall provision of public goods was not found to be statistically significant.

3.3 African leaders' effect on growth

Sackey (2021)

Frank Gyimah Sackey's paper "Impact of African leaders' characteristics and regime transitions on economic growth in Africa: A dynamic model approach" is the paper that shares the highest degree of similarity with this paper. The paper uses a panel dataset, comprising 44 sub-Sahara African countries from 1970 to 2010, to examines the extent to which leader characteristics and regime transitions impact on economic growth.

Sackey's paper finds that democratic leaders have a positive impact on economic growth through the attraction of higher foreign direct investment. The paper also finds that different leader characteristics, in regard to educational background, age, autocracy, democracy, and military connection, impact economic outcomes differently. Sackey therefore concludes that

Africa's pursuit of increased and sustainable economic growth is contingent on the quality of leaders, as well as its political regimes.

Jørgensen & Bjørnskov (2015)

Jørgensen and Bjørnskov's "Did Africa's First Choices Matter? Growth Legacies of Leaders at Independence" examine the potential effects of the first post-colonial leaders of Sub-Saharan Africa to see if leaders have an effect on economic development.

The paper finds that certain professions, mostly social professions, and communist regimes are associated with particularly bad economic outcomes in the first decade after independence. Additionally, countries with a first leader with African high school education experienced low economic growth that persisted after the leader exited politics, with only a successful coup being able to break the negative influence.

3.4 Coups, violent transitions, and growth

O'Kane (1993)

O'Kane "Coups d'Etat in Africa: A Political Economy Approach" argues that the underlying causes of successful coups are economic rather than political. Specifically, it argues that the underlying causes of coups are specialization in and dependency on primary goods for export, exacerbated by poverty. O'Kane suggests that coups should be viewed as responses to unstable and sometimes "hopeless" economic situations. To test the hypothesis O'Kane employs a likelihood model with three sets of African countries.

O'Kane's paper finds evidence to support the hypothesis that coups are more likely to occur at higher levels of export concentration and lower levels of GDP per capita for three sets of African countries. Her results indicate that the proposed explanation for coups fits the historical nature of previous African coups.

Meyersson (2016)

Meyersson's paper "Political Man on Horseback Coups and Development" examine the developmental effects of coups by comparing the growth consequences of failed and successful coups.

The study reveals that coups occurring in already autocratic nations sometimes yield positive effects on economic growth, while their effects in democracies are distinctly negative.

Notably, when coups remove democratic leaders, they not only fail to improve the economy

or prevent crises, but they also have adverse effects on key aspects such as health, education, and investment.

4. Data

The data in this paper is based on publicly available information gathered from a variety of sources through a thorough and comprehensive data collection process.

The dependent variable, growth, is quantified by percentage change in GDP per capita. GDP data is sourced from The World Bank's databank: World Development Indicators and expressed in constant local currency units. The use of constant local currency units, or constant prices, is preferred for assessing real growth in the quantity of goods and services, providing a more accurate representation (World Bank, Data, n.d.). While the World Bank offers numerous time series for constant GDP values, the series; GDP per capita growth (annual %) was chosen due to it having the fewest missing values. GDP is selected as the growth metric, given its widespread acceptance in evaluating a country's overall production and economic health (Fernando, 2023).

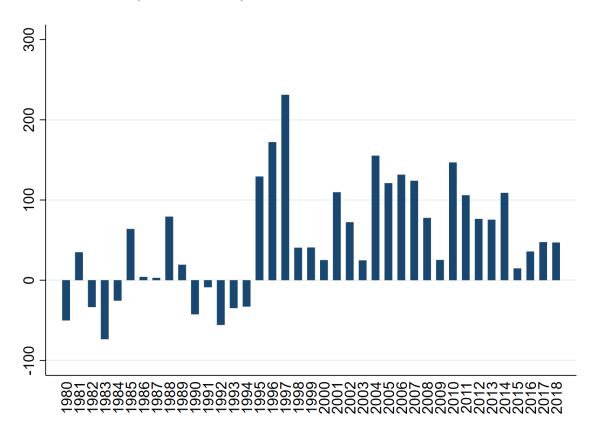


Fig. 1. Yearly Sub-Saharan GDP per capita growth (mean)

A list of state leaders detailing state leadership across 49 Sub-Saharan countries, spanning the years 1980 to 2018 was constructed to explore leader characteristics (see Appendix). To identify and research each leader, this paper relies on The Statesman's Yearbook Companion,

the Leaders, Events, and Cities of the World, supplemented with information from Archigos: A Data Set on Leaders 1875–2015, and Zárate's Political Collections: World Political Leaders. In instances where the aforementioned sources lacked necessary information, alternative sources were used. Each head of state was researched, analysed, and coded by the author, who takes full responsibility for reconciling any differences among the sources.

The Leader list includes every primary Sub-Saharan state leader who spent one year or more in office with available accompanying GDP data. The one-year mark serves as the time interval for differentiation since this paper's subsequent analysis uses annual data. The proportions of leaders, divided into categories, can be seen in Figure 2. Total leader tenures outnumber the categorized leaders, as one leader can fall under one category or more. For instance, a leader with a military background could also have a college education, an educated leader could assume power in a violent transition, and so on. The only sub-Saharan country not included in this paper is Eswatini, as it is an absolute monarchy.

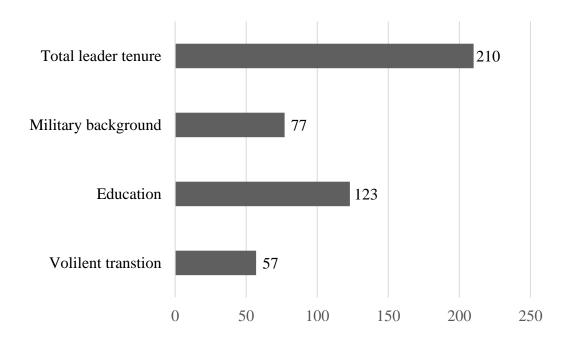


Fig 2. Proportion of leaders with a tenure of one year or more

The title held by the primary state leader has varied over time and political systems, with the primary state leader holding the role as president, prime minister, chairman and the leader of committees. In instances where the position was vacant, the list includes acting heads of state or other interim and temporary leadership positions.

In countries with multiple leaders, the challenge arises in identifying the primary state leader. To address this, this paper follows Besley, Montalvo, and Reynal-Querol (2011) in identifying

the effective ruler based on the characteristics of the political system in place. In parliamentary regimes, the prime minister is regarded as the ruler, while in presidential systems, it is the president. Semi-presidential systems are treated as presidential systems, with the president considered the effective ruler. This paper adopts the categorization for most prominent leaders as this solution generally provides consistency.

The main variables of interest are leaders with military background, college educated leaders, and leaders who took control in a violent transition. The variable military background is coded as a as a binary variable, taking the value 0, if the state leader has no military background, and 1 if they have. The variables college education and violent transition are implemented similarly. College education is coded as 0, if the state leader has no college education, and 1 if they have. The variable violent transition is coded as 0, if the state leader gained control through peaceful means, and 1 if they obtained it in a violent transition. For the sake of reference, in the leader list, MB: Yes/No – denotes whether or not the leader has a military background. CE: Yes/No – Denotes whether or not the leader has a college education. VT: Yes/No – Denotes whether or not the leader took power in or as a result of a violent event.

World oil price is included to reflect the global economic climate. This decision to include oil price as a variable aligns with standard supply and demand theory as fluctuations in the world oil price could capture an increase in global supply or a decrease in global demand that mirror global economic conditions (Obstfeld, Ferretti & Arezki, 2016). This paper does not consider any of the oil-producing Sub-Saharan African countries to be influential enough to affect the world oil market. For the purpose of the analysis, it is reasonably assumed that the oil price is fixed for the region as a whole. Crude oil price data is collected from Nasdaq and expressed in contemporary prices. Figure 3. show crude oil prices from 1950 to 2020.

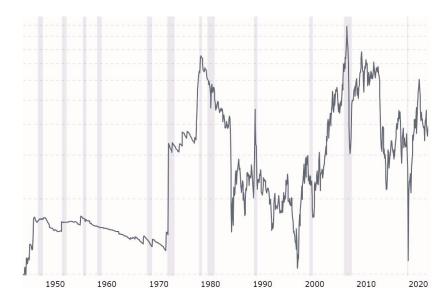


Fig. 3 Crude oil price Source: Macrotrends

Drought episodes are included to account for the direct economic effects of drought, specifically water scarcity and crop failure within agriculture. The inclusion seem appropriate as agriculture is central to the sub-Saharan economy, employing the majority of the population and accounting for 14% of sub-Saharan Africa's GDP as of 2021 (Oxford Business Group, 2021). The drought variable is binary, taking the value 1 if there was a drought in a country in a given year, and 0 if there was not.

Data from the Emergency Events Database, EM-DAT, has been collected to track each major drought episode for individual sub-Saharan countries. Figure 4 displays a drought map, highlighting the regions most vulnerable to drought.

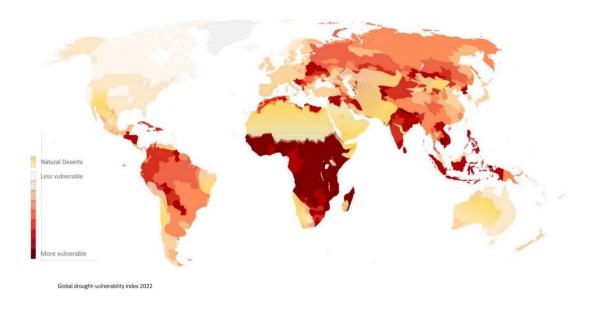


Fig 4. Source: United Nations: DROUGHT IN NUMBERS 2022

A conflict dummy is added to control for fluctuations in GDP caused by conflict. The variable is a binary variable taking the value 1 if there was an instance of major inter- or intrastate violence involving a country in a year, and 0 if there was not.

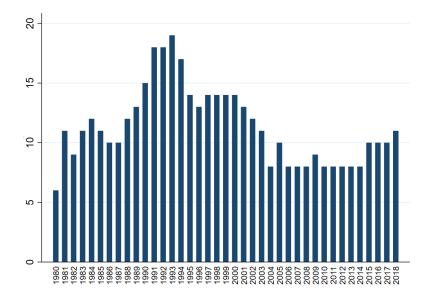


Fig 5. Yearly conflicts

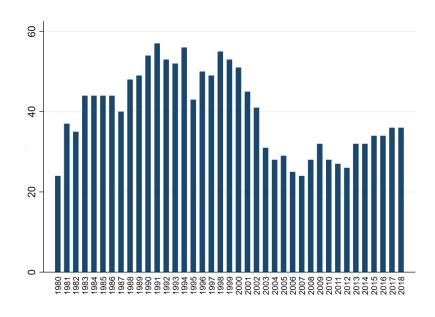


Fig.6 Severity of conflicts (summed)

The inclusion of a conflict variable is reasoned by considering, although not included in the sample, Libya's 2011 revolution. One year following the overthrowal of President Muhammad al Gaddafi, Libya experienced a 47% reduction in GDP, only for it to increase by over 97% the subsequent year (World Bank, n.d.).

Empirical studies have also consistently provided evidence detailing the adverse relationship between conflict and economic performance. The consensus reinforces the idea that conflict significantly and negatively affects GDP, inflation, disruptions to production and trade, as well as having long-term consequences on political instability. (EBRD, 2023; de Groot, Bozzoli, Alamir, & Brück, 2022).

Figure 5 shows the number of conflicts per year for the sample, while Figure 6 displays a severity score on a numeric scale from 0 to 10 combined for the sample. Conflict data is collected from the Center for Systemic Peace's Armed Conflict and Intervention dataset: Major Episodes of Political War.

4.1 The data collecting prosses

In certain cases, it proved difficult to obtain detailed information on individual leaders. This was particularly evident when dealing with records from earlier periods. For that reason, assigning some leaders to a category became challenging. While identifying whether or not a leader had a college education was somewhat straightforward, designations of leaders with a military background posed a particular challenge. This was especially evident when considering those with a history in militant groups, as they might not have been explicitly recognized as military figures despite similarities.

To illustrate this one could consider Siad Barre of Somalia, who served as president between the years 1969-1991. Researching and categorizing Siad Barre was fairly straightforward due to his legacy and notoriety. Barre's background was closely tied to his time in the military, and his 1969 coup was well documented (Payton, 1980). Categorizing someone such as Robert Mugabe, was however not as straightforward. Mugabe did not serve in a traditional military, but he did hold a prominent position in control of the guerilla organisation ZANU, the Zimbabwe African National Liberation Army (Oxford Reference, n.d.). He is therefore listed to have a military background, even though he was not in an organized state military.

Nelson Mandela, on the other hand, is an example of someone who received some military training, who is not considered to have a military background. Mandela received training from the Algerian National Liberation Front (The Nelson Mandela Foundation, n.d.), but this paper does not consider him to have a military background due to the duration and scope of his training. Leaders who served 1 year required or voluntary military service will also not be considered to have a military background.

While the task of categorizing leaders based on military backgrounds may be more fitting a historian than an economist, decisions had to be made. The author of this paper considers those who enlisted in their own or another country's military, as well as those the author deem to have spent a significant amount of time in a paramilitary or similar group, to have a military background.

Similarly, determining what constitutes a violent transition also present a challenge as the timing of conflict leaves it to be assessed. There could be violent conflicts leading up to a transition, before a change in leadership. Here, again, the author's best judgment, in conjunction with reliable sources, has been used to determine when a violent transition

occurred. Leader's with "violent transitions" will encompass leaders who became head of state as the result of coups, revolutions, civil war, assassinations, and liberation wars.

4.2 Data constraints

Far spanning and continuous data from African countries are not as readily available as one would like. Consequently, concessions have been made in incorporating variables, either due to their nonexistence or the presence of too many missing values.

There has also been challenges in identifying variables exogenous to GDP. The consequence has been limitations in finding a robust set of variables for analysis. These limitations will be explored in greater detail in upcoming chapters.

5. Methodology

To test the research question empirically this paper uses the fixed effects model with time and country fixed effects. The estimation is done through the following regression equations:

$$\Delta Growth_{it} = \alpha + \beta_1 m b_{it} + x_{it} \varphi + \alpha_i + \theta_t + \varepsilon_{it}$$

$$\Delta Growth_{it} = \alpha + \beta_1 c e_{it} + x_{it} \varphi + \alpha_i + \theta_t + \varepsilon_{it}$$

$$\Delta Growth_{it} = \alpha + \beta_1 v t_{it} + x_{it} \varphi + \alpha_i + \theta_t + \varepsilon_{it}$$

The terms are as follow. Annual change in GDP per capita growth, $\Delta Growth_{it}$, is the dependent variable for country i at time t. α is the intercept. β_1 is the coefficient for military background, college education and violent transitions, respectively. x_{it} is a matrix of covariates, with θ as a vector of coefficient corresponding to the covariates. a_i represents country fixed effects, while θ_t represents time fixed effects. ε_{it} is the error term.

5.1 Methodological considerations

The rationale behind conducting individual analyses for the variables of military background, college education, and violent transitions, as opposed to one regression including all, stems from the high correlation between the variables. When two independent variables are highly correlated, it could result in issues concerning multicollinearity, making it difficult to estimate the partial effect of each variable. Multicollinearity is further problematic, as it reduces the precision of the estimated coefficients and undermines the statistical significance of the independent variables (Woodridge, 2019, p. 313; Allen, 1997, p. 176). Additionally, there is no need to include them in one regression. While the majority of included leaders fall within these three categories, it's important to note that these do not represent all types of leaders.

Another consideration revolves around determining the endogeneity of the variables on the right-hand side. To obtain reliable results, one must assume that all independent variables are exogenous. Strict endogeneity is challenging with GDP as dependent variable due to how comprehensive it is as a macroeconomic measure, meaning there often exist a possible feedback loop. There are more advanced dynamic modelling techniques that deal with endogeneity, like the Arellano–Bond and the Blundell and Bond estimator. This paper opts against using these estimation techniques because they are generally "estimators designed for situations with small T, large N panels, meaning few time periods and many individuals" (Roodman, 2009). These estimators are therefore not well suited for the panel structure in this

paper, since the estimators become inconsistent as the number of instruments within the method grows with the number of time periods (T) (Merhof, 2009).

An alternative technique that deals with endogeneity in larger time period is the instrumental variable method. The factor preventing the use of this approach is the need for strong instruments, meaning the need for robust instruments for the selected variables. The issues with weak instruments are detailed in Cherif, Hasanov, and Lichen Wang (2018).

This paper considers the independent variables in this analysis to be exogenous to GDP with one caveat. Drought is considered to be exogenous as it is not influenced by the economic conditions of a country, but by natural forces. World oil prices are also considered to be exogenous, as it is determined by global market forces. Conflict is however a complex variable, and its exogeneity could depend on the context, especially internal conflict. While the root cause of conflict could result from a multitude of factors, including political, geographical, and sociocultural elements, it can also stem from economic issues (United Nations, 2023). The analysis will therefore include a base regression without the variable and an extended regression with the variable, to err on the side of caution.

This paper will use the fixed effects model. The choice of the fixed effects model makes intuitive sense as it allows for observations of non-random entities over multiple time periods, those being specific African countries. The fixed effects estimator is unbiased under a strict exogeneity assumption and is well suited for this analysis as it aids in mitigating omitted variable bias caused by unobserved heterogeneity that remains constant over time (Wooldridge, 2019, p.643). A Hausman test was conducted to determine whether the fixed or random effects model was more appropriate. The test found that the fixed effects model to be consistent.

One thing to be mindful of with the fixed effects model is little within-variation. This is especially important for this analysis, given that the variables of interest pertain to state leaders. The fixed effects model, with the within-estimator at country and year level, is meaningful when there is variation in the category of state leaders, meaning in countries that have had changes in leadership or changes in the type of leader. An example of a country that will not be factored much into the analysis due to not having any within-variation is Eritrea. Eritrea has only had one leader since gaining independence in 1991. Since there is no variation in the category of leadership for Eritrea, the country effectively has little bearing on the regression estimates. Similarly, Cameroon has only had two leaders in the time period this

study covers, both being educated leaders. This again means that the regression estimates will be largely unaffected by Cameroon since they have only had one category of leader.

There is no perfect way to address this concern, as leader history is a matter of fact. There is the possibility to look at the random effects model alongside the fixed effects model to examine the cross-sectional information in the data with the between-estimator. This would allow for comparison between the coefficients from the two models. However, this approach will not be pursued, as the results from the Hausman test indicate that the fixed effects model is appropriate. The random effects model would not offer significant meaning for this paper beyond comparison with the fixed effects model.

GDP data is in change in annual growth percentage and is stationary. The Augmented Dickey-Fuller test has been performed to reject the presence of unit root. This is however not the case for the variable oil price. The variable oil price has therefore been differenced to be stationary at I (1) (Verbeek, 2017, p.302).

Robust standard errors will be presented, clustered on the country unit to account for heteroskedasticity and autocorrelation.

The underlying processes in the methodology will not be detailed in this paper. For further information behind the approach, this paper refers to Wooldridge (2019) and Verbeek (2017).

6. Results

Table 1 presents summary statistics for the main variables. The most notable results in the table are the mean annual GDP growth per capita and the proportion of leaders with military background, college education, and violent transitions. The mean annual GDP growth percentage change for the sample during the 1980 to 2018 period is 1.1463, a figure that may be considered relatively low in many regards (UNCTAD, 2019).

Table 1: summary statistics

Variable	Mean (by	Observations	Standard deviation	Countries
	observation)			
Annual per capita	1.1463	1.732	6.8738	49
GDP growth				
Military background	0.4858	1,764	0.4999	49
College education	0.5550	1,764	0.4971	49
Violent transition	0.3639	1,764	0.4813	49
Conflict	0.2473	1,791	0.4316	47
Drought	0.2244	1,911	0.4174	49
Oil price*	42.7852	1,911	29.8962	49

Oil price is before differencing*

The proportions of leadership observations are as follows: in 48.5 percent of the observed years, the leader has a military background; in 55.5 percent of the observed years, the leader has a college education; and in 36.3 percent of the observed years, the leader assumed power as a result of a violent transition.

6.1 Results: Military background

The results of military leader effects are presented in Table 2. Regression (1) presents the estimated country and year fixed effects when only considering military background. Regression (2) presents the estimated country and year fixed effects with a drought dummy and world oil price. Regression (3) includes all the variables along with the estimated country and year fixed effects.

Table 2: Country-Year panel regression (1-3)

Variables	GDP	GDP	GDP
	(1)	(2)	(3)
Military background	-0.7192*	-0.7189 *	-0.8329*
	(0.3889)	(0.3879)	(0.4061)
Conflict			-1.1365*
			(0.5984)
Drought		0.0193	0.1855
		(0.3129)	(0.3130)
World oil price		0.1708	0.1632
		(0.1102)	(0.1138)
Constant	-0.9063	-1.8031	-1.4450
	(1.2373)	(1.7829)	(1.8269)
Observations	1699	1699	1643
R-squared (Within)	0.0542	0.0542	0.0568
R-squared (Overall)	0.0482	0.0482	0.0523

Robust Standard errors in parentheses

The effect of military background is consistently negative in all fixed effects results. The variable is negatively related with per capita GDP growth in the base regression, with a

coefficient of -0.7192 in (1) and -0.7189 in (2), respectively. In the extended regression, the negative relationship increases to a coefficient of -0.8329. All coefficients are statistically significant at p < 0.1.

This is quite meaningful for a country's economy, as it suggests that leaders with military background are associated with an annual reduction of up to -0.8329 percentage point in GDP per capita. This negative relationship becomes even more meaningful when considering that the mean per capita GDP growth for the sample is 1.1463. In other words, the observed negative relationship between leaders with a military background and GDP implies that, on average, these leaders represent a reduction of a substantial proportion of the overall per capita GDP. This means that military leaders, for one reason or another, be it common characteristics or circumstances, preside over worse-performing economic periods.

The variable for conflict in (3) shows a negative effect of violent conflict, indicated by a coefficient of -1.1365. The coefficient is significant at p < 0.1. This result aligns with expectations of negative effects of both internal and external violent conflict.

Neither the drought nor the world oil price variables are statistically significant. In statistical terms, this implies that there is not enough evidence to support a hypothesis that the variables have an effect on per capita GDP growth up to the 0.1 level. This level of significance represents the probability of the null hypothesis being true compared to the acceptable level of uncertainty regarding the true answer (Tenny, Abdelgawad, 2023). It means that the observed data does not provide enough evidence to support a significant effect or relationship, and any observed differences or associations could be due to random chance.

6.2 Result: Educated leaders

The results of educated leaders will be structured similarly to military leaders and presented in Table 3. Regression (4) presents the estimated country and year fixed effects when only considering educated leaders. Regression (5) presents the estimated country and year fixed effects with a drought dummy and world oil price. Regression (6) includes all the variables along with the estimated country and year fixed effects.

Tabell 3: Country-Year panel regression (4-6)

Variables	GDP	GDP	GDP
	(4)	(5)	(6)
Educated leader	0.9652 **	0.9651**	1.1034 **
	(0.4252)	(0.4252)	(0.4314)
Conflict			-1.2039**
			(0.5528)
Drought		0.0055	0.0023
		(0.3051)	(0.3042)
World oil price		0.1564	0.1470
		(0.110)	(0.1139)
Constant	-1.7027	-2.5202	-2.2602
	(1.2626)	(1.7901)	(1.8344)
Observations	1699	1699	1643
R-squared (Within)	0.0556	0.0556	0.0585
R-squared (Overall)	0.0560	0.0560	0.0625

Robust Standard errors in parentheses

The effect of educated leaders is, in contrast to military background, consistently positive in all fixed effects results. The variable is positively associated with per capita GDP growth in

the base regression, with 0. 9652 in (4) and 0.9651 in (6). In the extended regression, the positive relationship increases with a coefficient of 1.1034. All coefficients are significant at p<0.05 in (4) and (5).

Again, the results are particularly meaningful when viewing the effect in relation to the sample GDP and the negative effect of military background. The results underscore a consistently favourable association with educated leaders on per capita GDP growth, implying that educated leaders are linked with better economic conditions, compared to military leaders.

The conflict dummy is again the only other statistically significant variable, being -1.2039, consistent with the findings in (6) for military background, and significant at p<0.05.

6.3 Results: Violent transitions

The results of leaders with violent transitions are presented in Table 4. Regression (7) presents the estimated country and year fixed effects when only considering leaders with violent transitions. Regression (8) presents the estimated country and year fixed effects with a drought dummy and world oil price. Regression (9) includes all the variables along with the estimated country and year fixed effects.

Tabell 4: Country-Year panel regression (7-9)

GDP	GDP	GDP
(7)	(8)	(9)
0.9254	0.9272	0.9270
-0.8334	-0.83/3	-0.8370
(0.5070)	(0.5084)	(0.5253)
		-0.9777
		(0.5838)
	0.0522	0.0539
	(0.3160)	(0.3164)
	0.1600	0.1530
	(0.1129)	(0.1166)
-0.8599	-1.7051	-1.4460
(1.2783)	(1.8433)	(1.8821)
1699	1699	1643
0.0545	0.0545	0.0566
0.0451	0.0450	0.0495
	-0.8354 (0.5070) -0.8599 (1.2783) 1699 0.0545	(7) (8) -0.8354 -0.8373 (0.5070) (0.5084) 0.0522 (0.3160) 0.1600 (0.1129) -0.8599 -1.7051 (1.2783) (1.8433) 1699 1699 0.0545 0.0545

Robust Standard errors in parentheses

The result in the fixed effects model show no statistically significant coefficients. It is worth mentioning that violent transitions have the lowest negative coefficients of all leaders, however the p-values are above 0.1.

7. Robustness test

Much of what usually would have been done in a robustness test has already been accounted for in the main analysis, that being the inclusion and exclusion of control variables, clustered standard errors, and endogeneity concerns.

A common approach to further test for robustness involves the inclusion of additional control variables. The challenge here lies in obtaining available and reliable exogenous variables, which limits the possibility of this approach. Another commonly used method to assess robustness is employing a different model. A dynamic model would be appropriate, as economic outcomes often result from dynamics that extend over time. However, this approach also presents challenges, as outlined in the methodological considerations chapter.

There is the option of looking at a shorter time period. However, there are already concerns about the possibility of little within variation, so limiting the sample size does not seem like it would strengthen the validity or legitimacy of the result.

A feasible approach to test for robustness would be to see if the results remain the same when removing outliers. Most countries centre around the same mean GDP growth, so there would not be necessary to trim down the sample too much.

It is preferable to keep as much of the original sample as possible, removing only those that have annual growth values deviate significantly from the rest. The removal single observation from the panel might be problematic, as they are real so long there is no measuring error. It is possible to remove the countries with a mean that deviate significantly from the rest, as these also represent some of the biggest deviations in single year observations. The criteria for removal will be based on an upper and lower limit of mean GDP growth set at 5 percent. While the 5 percent criterion may appear somewhat arbitrary, it holds some validity in economic literature (International Monetary Fund, 2023).

Table 5: Per capita GDP growth before removal of outliers

Variable	Observations	Mean	Standard	Min	Max
		(by country)	Deviation	(by country)	(by country)
Per capita	1.911	1.0574	2.2735	-8.0783	9.7695
GDP growth					

Table 6: Per capita GDP growth after removal of outliers

Variable	Observations	Mean	Standard	Min	Max
		(by country)	Deviation	(by country)	(by country)
Per capita	1.833	1.0664	1.4129	-1.7135	4.8478
GDP growth					

Additionally, this criterion results in the exclusion of only two countries: Equatorial Guinea and South Sudan. The exclusion of Equatorial Guinea is of particular note as their GDP grew by 140 percent in 1997 due to the "discovery of large offshore oil reserves in 1996" (CIA, n.d). Again, the robustness check might not strengthen the validity of the results, but it could check how sensitive the model is to outliers (Bramati & Croux, 2007). Figure 7 shows the distribution of single year growth observations.

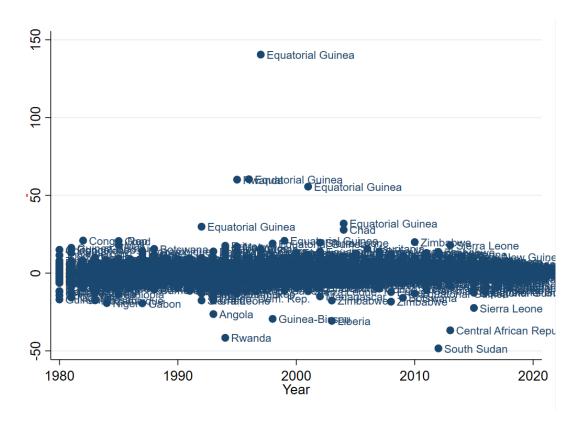


Fig.7 Distribution of growth observations

7.1 Robustness test: Military background

The robustness test for military leader is presented in Table 7. Regression (10) presents the base regression with estimated country and year fixed effects including a drought dummy and world oil price. Regression (11) include the variable conflict along with the estimated country and year fixed effects.

Tabell 7: Country-Year panel regression (10-11)

Variables	GDP	GDP
	(10)	(11)
Military background	-0.6780*	-0.7696*
	(0.3958)	(0.4112)
Conflict		-0.9543*
		(0.5373)
Drought	-0.1330	-0.1349
	(0.2714)	(0.2721)
World oil price	0.2037*	0.1952*
	(0.1045)	(0.1087)
Constant	-2.1063	-1.7727
	(1.7715)	(1.8098)
Observations	1654	1598
R-squared (Within)	0.0697	0.0737
R-squared (Overall)	0.0672	0.0693

Robust Standard errors in parentheses

The results after removing outliers show no changes in significant relationships between military background and per capita GDP growth. This suggests that the outcomes are robust and not sensitive to the presence of outliers. The coefficients in the outlier regression are

slightly lower, measuring -0.6780 in (10) and -0.7696 in (11), compared to the initial results at -0.7189 in (2) and -0.8329 in (3), respectively.

The variable for conflict also show a lower coefficient after the removal of outliers in (11) compared to the initial results. The coefficient for conflict remains negative and statistically significant.

The control variables, however, have changed from the initial findings. Oil price now shows a significant coefficient, meaning that oil price grows with GDP per capita. Additionally, the drought variable, while not significant, now has a negative sign, as one would expect. While there is not much to elaborate on, given their primary role in controlling for exogenous factors, it is noteworthy and worth mentioning.

7.2 Robustness test: Educated leaders

The robustness test for educated leaders is presented in Table 8. Regression (12) presents the base regression with estimated country and year fixed effects including a drought dummy and world oil price. Regression (13) include the variable conflict along with the estimated country and year fixed effects.

Tabell 8: Country-Year panel regression (12-13)

7 1	\mathcal{E}	,
Variables	GDP	GDP
	(12)	(13)
Educated leader	0.9139**	1.0279**
	(0.4277)	(0.4340)
Conflict		-1.0181*
		(0.5278)
Drought	-0.1466	-0.1507
	(0.2625)	(0.2622)
World oil price	0.1898*	0.1799
	(0.1042)	(0.1084)
Constant	-2.7667	-2.5082
	(1.7794)	(1.8217)
Observations	1654	1598
R-squared (Within)	0.0717	0.0762
R-squared (Overall)	0.0688	0.0728

Robust Standard errors in parentheses

The results after the removal of outliers show that all the previously observed relationships remain consistent, bar oil price, reaffirming a positive relationship between educated leaders and GDP.

7.3 Robustness test: Violent transitions

The robustness test for leaders with violent transitions is presented in Table 8. Regression (14) presents the base regression with estimated country and year fixed effects including a drought dummy and world oil price. Regression (15) include the variable conflict along with the estimated country and year fixed effects.

Tabell 9: Country-Year panel regression (14-15)

Variables	GDP	GDP
	(14)	(15)
Violent transitions	-0.6761	-0.6924
	(0.4651)	(0.4824)
Conflict		-0.8115
		(0.5277)
Drought	-0.1054	-0.1050
	(0.2724)	(0.2735)
World oil price	0.1957*	0.1876*
	(0.1067)	(0.1110)
Constant	-2.0792	-1.8179
	(1.8257)	(1.8616)
Observations	1654	1598
R-squared (Within)	0.0694	0.0729
R-squared (Overall)	0.0657	0.0689

Robust Standard errors in parentheses

The result in the robustness test shows no changes in statistical significance compared to the initial findings for any coefficients except for world oil price, which is now not significant.

8. Discussion and additional findings

The findings in this paper are undoubtedly interesting as they reveal contrasting relationships between leaders with a military background and educated leaders in relation to GDP. This is noteworthy, especially in a context where minimal attention has been given in economic literature. There are papers that point to similar findings to this paper in the previously mentioned Bircher (2012) and Meyersson (2016), however the conditions of the studies are different.

Bircher (2012) finds that the effect of democracy on economic development varies at different levels of military involvement, meaning that parallels can be drawn between this paper and Bicher (2012) if leaders with military background are considered an extension of military involvement.

Additionally, Meyersson (2016) finds that the effects of coups, an aspect included in the term "violent transitions" in this paper, occurring in already autocratic nations sometimes yield positive effects on economic growth, while their effects in democracies are distinctly negative. This may explain why the results remain inconclusive in this paper, as it does not differentiate between democratic and authoritarian settings.

Still, while the findings are interesting, they don't explain why military leaders are associated with negative GDP growth, and educated leaders are associated with positive GDP growth. A state leader is just one individual, and the performance of leaders, whether military, educated, through violent transition, or other means, can be influenced by a multitude of internal and external factors. Educated leaders may bring diverse skills, knowledge, and expertise to governance, potentially contributing to economic development, but these factors are not definitive and could vary based on the individual. On the other hand, the performance of military and coup leaders could vary widely, and their effectiveness may depend on factors such as their ability to manage the transition to civilian rule, their policies, their intentions with political power, and the level of public support.

Therefore, it is important to note that economic outcomes depend on an array of factors that go beyond the designated leader, and even GDP as a measure, since GDP does not consider important socio-economic factors such as fairness of distribution and other metrics of well-being and sustainability (Stiglitz, 2020).

Nevertheless, the unique dataset presented in this paper provides a valuable opportunity to delve deeper into the analysis of leaders, allowing for an examination of potential mechanisms and their effects. Additional regressions were performed to explore other potential relationships between leaders and key economic factors, such as inflation, trade, and unemployment. However, none of the analyses yielded particularly interesting findings, with one notable exception, that being democracy.

When regressing leaders and democracy using the Polity dataset as a measure, the results indicate relationships between leader categories and democracy that bear resemblance to the relationships with GDP.

The polity dataset is a commonly used metric for assessing democracy in research across both economic and social science papers (Jones & Olken, 2005; Besley, Montalvo & Reynal-Querol, 2011; Bircher, 2012). Polity measure institutionalized autocracy and democracy on point scales ranging from -10 to 0, and 0 to 10 for autocracy and democracy, respectively. The operational index scores are derived from "competitiveness of political participation, the regulation of participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive" (Marshall, 2018).

Table 10: Country-Year panel regression (16-18)

Variables	Polity	Polity	Polity
	(16)	(17)	(18)
Military background	-4.0901***		
	(0.9198)		
Educated Leaders		3.6999***	
		(0.9044)	
Violent transitions			-3.9470***
			(1.2051)
Constant	-2.1313**	-5.5504***	-2.2624**
	(0.9590)	(0.8040)	(1.010)

R-squared (Within)	0.5460	0.5343	0.5252
R-squared (Overall)	0.4628	0.3486	0.4205

Robust Standard errors in parentheses

The results in table 10 are the outcome of a simple fixed-effects regression, accounting for the effect of one regressor at a time. The findings indicate that military leaders exhibit the most negative relationship with democracy, closely followed by leaders of violent transitions, while educated leaders once again show a positive relationship. All coefficients are significant at p <0.01. This insight might contribute to understanding the possible mechanisms observed in the main findings.

This paper will formulate possible theories for the mechanisms of the observed findings in this text based on two central papers: Besley & Reynal-Querol (2011) and Acemoglu, Naidu, Restrepo & Robinson (2019). Firstly, Besley & Reynal-Querol (2011) find that in democracies, educated leaders are more likely, with findings revealing that democracies are around 20 percent more likely to select a highly educated leader. Secondly, Acemoglu, Naidu, Restrepo & Robinson (2019) find evidence that suggests democracy has a positive effect on GDP per capita, with baseline results indicating about a 20 percent increase in GDP per capita in the long run with democratization.

Therefore, this paper proposes two possible theories of why the findings in this paper are what they are:

- Military leaders underperform due to a lack of necessary governing skills and specialized knowledge in effectively leading an economy, as highlighted by their 'ineptitude,' as suggested by Meyersson in the background chapter. In contrast, educated leaders possess the necessary skills and, therefore, have a positive effect on the economy.
- 2. The results reflect leaders under different conditions, with educated leaders being more common in nations with higher levels of democracy and better-functioning economies. Military leaders, on the other hand, are more prevalent in less democratic conditions with worse economic conditions.

While both theories are possible, the author of this paper favour the second theory, as there are plenty of examples of both types of leaders spearheading both relatively well and poorly functioning economies. Ethiopian Prime Minister and Nobel Prize winner Abiy Ahmed serves as an example of a leader with both a military background and a university degree, guiding his country through an impressive economic and democratic period (U.S. Department of State, n.d). However, Robert Mugabe, who incidentally had both a military background and, at one point, held the record as the world's most educated leader with seven university degrees, led Zimbabwe into "total economic collapse" and autocracy (Muronzi, 2019).

Examinations of possible relationships between leaders, democracy, or other social factors will not be further pursued in this paper as the main focus is on the main findings related to the direct relationship with GDP growth. However, considering democracy as a possible mechanism through which military leaders could be related to poorer economic outcomes fills in possible gaps in understanding how the relationship transpires.

8.1 Acknowledging limitations

No study is without limitations, and one must consider that the relationships and associations in this paper are the result estimations based on available data and statistical models. It is therefore necessary to acknowledge the limitations and potential biases that may influence the findings and interpretations presented.

Firstly, the use of a fixed effects model to analyse an economy. The fixed effects model is commonly used in econometric models with panel data to account for individual unobserved heterogeneity and omitted variable bias (Wooldridge, 2019, p.643). The model was therefore employed in this paper. One could however argue that a dynamic model, like the ones outlined in the methodological concerns chapter would better capture economic dynamics, than the fixed effects model. That is to say, there are more sophisticated statistical models beyond the scope of this paper. These models would be better suited to the analysis.

A regression discontinuity design, similar to the approach used in Jones & Olken (2005), Besley, Montalvo & Reynal-Querol (2011), and Jain, Kashyap, Lahoti & Sahoo (2022), would also be a viable approach. However, it would require an extensive data foundation and substantial computational effort and resources, which, once again, go beyond the scope of this paper.

Secondly, the limitation in finding sufficient righthand side variables. This concern has also been mentioned, but it warrants an acknowledgment that the lack of important explanatory variables means there is the possibility of drawing the wrong conclusion. As previously mentioned, the strict exogeneity assumption in the fixed effects model, coupled limited data African data and GDP as the response variable made it difficult to obtain predicting variables. A more comprehensive set of predictor variables could have bolstered the analysis, making for a more robust and nuanced study.

Lastly, GDP inconsistencies and possible measurement errors. This paper used annual percentage change in GDP data form The World Bank as the operational variable for growth. The World bank is a reputable international organization, with data spanning decades, which made the use of their data a good choice for this analysis. However, it is should be acknowledged that GDP data may vary across sources, and there is a chance of possible measurement errors between sources and within data series from one source (Ram & Ural, 2014). To highlight this, this paper uses the World Development Indicator series "GDP per capita growth (annual %)". This series was chosen for two reasons. Firstly, it had the fewest

missing values, compared to the raw GDP data. Secondly, it was one of a couple GDP measures that measured GDP in a constant currency, as this paper aims to capture real price changes.

This led to the selection annual per capita growth being chosen over the option to take the natural logarithm of GDP per capita. The numeric values in the dollar and constant currency per capita GDP series had significant intervals of missing values for some influential countries including The Republic of Congo, Ivory coast, Nigeria, Equatorial Guinea and Sierria Leone. Penn World Table was considered as an alternative, however, it posed certain technical challenges and lacked data for some entire countries. Stil, one could argue that, given the regularity with which log per capita GDP is used in economics papers, it would have been a preferable option if the data was available.

8.2 Further research

Future research could go in many directions, as this paper touches upon issues in economics, leadership, democracy, and history. In terms of economics, future studies might employ different models and assumptions to investigate potential long-term and dynamic effects of African leadership, exploring lagged effects and incorporating additional key economic variables not covered in this paper. Additionally, while the author of this paper is less familiar with approaches used in social studies, history, and humanities, this topic appears to be suitable for research in those fields as well.

9. Conclusion

This paper has explored the connection between three common types of post-colonial Sub-Saharan African leaders and economic growth, revealing interesting results regarding their relationship to GDP growth percentage. The motivation behind this research has been to gain a deeper understanding of the potential connections and impacts of Africa's designated leaders, who often serve for extended periods, on the economy. Little research has been done on the possible economic consequences of the African leadership environment, considering both present and historical perspectives, in economic literature. While the topic might sound somewhat trivial, this paper has shown that it has been worth greater exploration.

This paper combines data from The World Bank, the Emergency Events Database, Nasdaq, the Center for Systemic Peace and a uniquely crafted dataset on African leaders to conduct an economic study on the relationship between military leaders, educated leaders, leaders who assumed power after violent conflict, and economic growth. The analysis reveals a negative association between military leaders and economic growth, with a decrease of up to -0.8329 annual percentage points. In contrast, educated leaders show a positive association with economic growth, with an increase of up to 1.1034 annual percentage points. No significant results are however found for leaders who assume power after violent transitions. These results remain consistent when accounting for outliers.

This paper raises further questions regarding the observed relationships and explores democracy as a potential mechanism for these effects. The analysis extends to examine the relationship between leader types and democracy, utilizing the Polity dataset as a measure. The results of this extended analysis reveal that the effects of leader types on democracy mirror the coefficient signs found in the main findings. Military leaders exhibit the most negative relationship with democracy, followed closely by leaders who assume power after violent conflict, while educated leaders show a positive association with democracy. The author of this paper therefor theorise that the results reflect leaders under different conditions, with educated leaders being more common in nations with higher levels of democracy and better-functioning economies, and military leaders, being more prevalent in less democratic conditions with worse economic conditions.

Further research in this field has the potential to span across various academic disciplines. Economic studies could employ different assumptions and models to investigate effects that go beyond the scope of this paper. Additionally, research in the social sciences, African studies, history, and humanities could further contribute valuable insights.

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Appendix:

Leader list:

Angola: 1975- Presidential system

José Eduardo dos Santos (1979-2017) - MB: Yes, VT: No (Elected), CE: Yes (Petroleum engineer)

João Lourenço (2017-2022) – MB: Yes, VT: No (Elected), CE: Yes (Historical Sciences)

Benin/ Dahomey: 1960- Presidential system

Mathieu Kérékou (1972-1991) - MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Nicéphore Soglo (1991-1996) – MB: No, VT: No (Elected), CE: Yes (Law and economics)

Mathieu Kérékou (1996-2006) – MB: Yes, VT: No (Elected), CE: No (Military education)

Thomas Boni Yayi (2006-2016) – MB: No, VT: No (Elected), CE: Yes (Economics)

Patrice Talon (2016-2022) – MB: No, VT: No (Elected), CE: Yes (Bachelor degree)

Botswana: 1966- Presidential system

Quett Masire (1980-1998) - MB: No, VT: No (Appointed following death), CE: Yes (Higher education)

Festus Mogae (1998-2008) – MB: No, VT: No (Elected), CE: Yes (Economics)

Ian Khama (2008-2018) - MB: Yes, VT: No (Interim then elected), CE: No (Military education)

Mokgweetsi Masisi (2018-2022) – MB: No, VT: No (Elected), CE: Yes (History and English)

Burkina Faso: 1960- Semi-presidential republic

Saye Zerbo (1980-1982) - MB: Yes, VT: Yes (Coup d'état), CE: No

Thomas Sankara (1983-1987) - MB: Yes, VT: Yes (Coup d'état), CE: No

Blaise Compaoré (1987-2014) - MB: Yes, VT: Yes (Coup d'état), CE: No

Roch Marc Christian Kaboré (2014-2022) - MB: No, VT: No (Elected), CE: Yes (Business administration)

Ibrahim Traoré (2022-2022) – (Not included)

Burundi: 1962- Presidential system (King before 1966)

Jean-Baptiste Bagaza (1976-1987) - MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Pierre Buyoya (1987-1993) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Sylvestre Ntibantunganya (1994-1996) – MB: No, VB: No (Interim president due to death), CE: Yes (History and geography)

Pierre Buyoya (1996-1998) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Domitien Ndayizeye (1998-2003) - MB: No, VT: No, CE: Yes (Industrial engineering)

Pierre Nkurunziza (2005-2020) – MB: No, VT: No (Elected), CE: Yes (Physical education)

Évariste Ndayishimiye (2020-2022) – (Not included)

Cameroon: 1960- Presidential system

Ahmadou Ahidjo (1960-1982) – MB: No, VT: No (Elected), CE: Yes (Civil service)

Paul Biya (1982-2022) - MB: No, VT: No (Appointed), CE: Yes (Public law)

Cape Verde: 1975- Semi-presidential republic

Aristides Maria Pereira (1975-1991) – MB: No, VT: No, CE: Yes (trained radio and telegraph technician)

António Mascarenhas Monteiro (1991-2001) - MB: No, VT: No (Elected), CE: Yes (Law)

Pedro Verona Rodrigues Pires (2001-2011) - MB: Yes, VT: No (Elected), CE: No (Unable to finish)

Jorge Carlos de Almeida Fonseca (2011-2021) – MB: No, VT: No (Elected), CE: Yes (Law)

José Maria Pereira Neves (2021-2022) – (Not included)

Central African Republic: 1960- Semi-presidential republic

David Dacko (1979-1981) - MB: No, VT: No, CE: Yes (Teaching)

André Kolingba (1981-1993) – MB: Yes, VT: Yes (Coup d'état), CE: No

Ange-Félix Patassé (1993-2003) – MB: No, VT: No (Elected), CE: Yes (Zootechnics)

François Bozizé (2003-2013) – MB: Yes, VT: Yes (Coup d'état), CE: No

Catherine Samba-Panza (2014-2016) - MB: No, VT: No (Elected), CE: Yes (Law)

Faustin-Archange Touadéra (2016-2022) – MB: No, VT: No (Elected), CE: Yes (Mathematics)

Chad: 1960- Presidential system

Goukouni Oueddei (1979-1982) – MB: No, VT: Yes (Militant commander), CE: No

Hissène Habré (1982-1990) – MB: Yes, VT: Yes (Militant leader), CE: Yes (Political science)

Idriss Déby (1990-2021) - MB: Yes, VT: Yes (Militant leader), CE: No (Military education)

Mahamat Déby (2021-2022) – (Not included)

Comoros: 1975- Presidential system

Ahmed Abdallah (1978-1989) - MB: No, VT: Yes (Coup d'état), CE: No (No record of education)

Said Mohamed Djohar (1989-1996) - MB: No, VT: No, CE: No (No record of education)

Mohamed Taki Abdoulkarim (1996-1998) – MB: No, VT: No, CE: Yes (Engineering)

Azali Assoumani (1999-2006) - MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Ahmed Abdallah Mohamed Sambi (2006-2011) - MB: No, VT: No (Elected), CE: Yes (Theology)

Ikililou Dhoinine (2011-2016) - MB: No, VT: No (Elected), CE: Yes (Pharmacist)

Azali Assoumani (2016-2022) - MB: Yes, VT: No (Elected), CE: No (Military education)

Congo-Republic: 1960- Semi-presidential republic

Denis Sassou Nguesso (1979-1992) - MB: Yes, VT: No (Elected), CE: No

Pascal Lissouba (1992-1997) - MB: No, VT: No (Elected), CE: Yes (Biology)

Denis Sassou Nguesso (1997-2022) - MB: Yes, VT: Yes (Civil war), CE: No

Congo-DR/ Republic of Zaire: 1960- Semi-presidential republic

Mobutu Sese Seko (1965-1997) – MB: Yes, VT: Yes (Coup d'état), CE: No

Laurent-Désiré Kabila (1997-2001) – MB: No, VT: Yes (War), CE: Yes (Political philosophy)

Joseph Kabila (2001-2019) – MB: Yes, VT: Yes (Assumed presidency after Kabila assassination), CE: Yes* (International Relations)

Félix Tshisekedi (2019-2022) – (Not included)

Djibouti:1977- Presidential system

Hassan Gouled Aptidon (1977-1999) - MB: No, VT: No (Elected), CE: No (No record of education)

Ismaïl Omar Guelleh (1999-2022) – MB: No, VT: No (Family successor), CE: No

Equatorial Guinea: 1968- Presidential system

Teodoro Obiang Nguema Mbasogo (1979-2022) – MB: Yes, VT: Yes (Coup d'état), CE: Yes (Labor administration)

Eritrea: 1993- presidential system

Isaias Afwerki (1991-2022) - MB: Yes, VT: Yes (Revolutionary war), CE: No (left university)

Eswatini/ Swaziland: 1968- Absolute monarchy. (Dropped from analysis)

Sobhuza II (xxxx-1986) – (Not included)

Mswati III (1986-2022) - (Not included)

Ethiopia: 1974- Parliamentary republic (President is listed 1974-1995. Prime minister after federal republic 1995.)

Mengistu Haile Mariam (1977-1991) - MB: Yes, VT: Yes (Revolutionary), CE: No

Meles Zenawi (1991-2012) – MB: Yes, VT: Yes (Civil War), CE: No (Left university)

Hailemariam Desalegn (2012-2018) – MB: No, VT: No (Appointed after death), CE: Yes (Engineering)

Abiy Ahmed (2018-2022) - MB: Yes, VT: No (Elected), CE: Yes (Business administration)

Gabon: 1960- Presidential system

Omar Bongo (1967-2009) - MB: Yes, VT: No (Appointed after death), CE: No

Ali Bongo (2009-2022) – MB: No, VT: No (Elected), CE: Yes (Law)

Gambia: 1965- Presidential system

Dawda Jawara (1970-1994) – MB: No, VT: No, CE: Yes (Veterinary surgeon)

Yahya Jammeh (1994-2017) – MB: Yes, VT: Yes (Coup d'état), CE: No

Adama Barrow (2017-2022) - MB: No, VT: No (Elected), CE: No

Ghana: 1957- Presidential system

Hilla Limann (1978-1981) - MB: No, VT: No (Elected), CE: Yes (Political science and Law)

Jerry Rawlings (1981-2001) – MB: Yes, VT: Yes (Coup d'état), CE: No

John Kufuor (2001-2009) - MB: No, VT: No (Elected), CE: Yes (Law)

John Atta Mills (2009-2012) – MB: No, VT: No (Elected), CE: Yes (Law)

John Mahama (2012-2017) – MB: No, VT: No (Elected), CE: Yes (Communication)

Nana Akufo-Addo (2017-2022) – MB: No, VT: No (Elected), Ce: Yes (Economics)

Guinea: 1958- Presidential system

Ahmed Sékou Touré (1958-1984) – (Not included)

Lansana Conté (1984-2008) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Sékouba Konaté (2009-2010) – MB: Yes, VB: No (Military junta change of leadership), CE: No (Military education)

Alpha Condé (2010-2021) – MB: No, VT: No (Elected), CE: Yes (Law)

Mamady Doumbouya (2021-2022) - (Not included)

Guinea-Bissau: 1974- Semi-presidential republic

João Bernardo Vieira (1980-1999) - MB: Yes, VT: Yes (Coup d'état), CE: No

Kumba Ialá: (2000-2003) – MB: No, VT: Yes (Coup d'état), CE: Yes (Law)

Henrique Rosa: (2003-2005) - MB: No, VT: Yes (Coup d'état), CE: No (No information)

João Bernardo Vieira: (2005-2009) - MB: Yes, VT: No (Elected), CE: No

Malam Bacai Sanhá (2009-2012) - MB: No, VT: No (Elected), CE: Yes (Political science)

Manuel Serifo Nhamadjo (2012-2014) - MB: No, VT: No (Interim), CE: No information

José Mário Vaz (2014-2020) – MB: No, VT: No (Elected), CE: (Economics)

Umaro Sissoco Embaló (2020-2022) – (Not included)

Ivory Coast: 1960- Presidential system

Félix Houphouët-Boigny (1960-1993) – MB: No, VT: No, CE: Yes (Teacher)

Henri Konan Bédié (1993-1999) - MB: No, VT: No (Appointed after death), CE: Yes (Law)

Laurent Gbagbo (2000-2011) – MB: No, VT: Yes (Civil War), CE Yes (History)

Alassane Ouattara (2011-2022) – MB: No, VT: No (Elected), CE: Yes (Economy)

Kenya: 1963- Presidential system

Daniel arap Moi (1978-2002) – MB: No, VT: No (Appointed after death, won election on walkover), CE: Yes (Teacher)

Mwai Kibaki (2002-2013) - MB: No, VT: No (Elected), CE: Yes (Finance)

Uhuru Kenyatta (2013-2022) – MB: No, VT: No (Elected), CE: Yes (Economics)

William Ruto (2022-2002) – (Not included)

Lesotho: 1966- Monarchy, but the position of King is ceremonial. Parliamentary republic

Leabua Jonathan (1965-1986) – MB: No, VT: No (Elected), CE: No

Justin Lekhanya (1986-1991) - MB: Yes (paramilitary), VT: Yes (Coup d'état), CE: No

Elias Phisoana Ramaema (1991-1993) - MB: Yes, VT: Yes (Coup d'état), CE: No

Ntsu Mokhehle (1993-1998) – MB: No, VT: No (Elected), CE: Yes (Zoology)

Pakalitha Mosisili (1998-2012) – MB: No, VT: No (Elected), CE: Yes (Education)

Tom Thabane (2012-2015) - MB: No, VT: No (Elected), CE: Yes (Political Science and English)

Pakalitha Mosisili (2015-2017) – MB: No, VT: No (Elected or appointed), CE: Yes (Education)

Tom Thabane (2017-2020) - MB: No, VT: No (Elected or appointed), CE: Yes (Political Science and English)

Moeketsi Majoro (2020-2022) – (Not included)

Sam Matekane (2022-2022) – (Not included)

Liberia: 1847- Presidential system

Samuel Doe (1980-1990) – MB: Yes, – (Not included)

Amos Sawyer (1990-1994) – MB: No, – (Not included)

David D. Kpormakpor (1994-1995) – MB: No, – (Not included)

Wilton G. S. Sankawulo(1995-1996) – MB: No, – (Not included)

Charles Taylor (1997-2003) - MB: Yes, VT: Yes (Elected following a civil war), CE: Yes (Economics)

Gyude Bryant (2003-2006) - MB: No, VT: No (Transitional government), CE: Yes (Economics)

Ellen Johnson Sirleaf (2006-2018) – MB: No, VT: No (Elected), CE: Yes (Public Administration)

George Weah (2018-2022) - MB: No, VT: No (Elected), CE: No

Madagascar: 1960- Semi-presidential republic

Didier Ratsiraka (1975-1993) - MB: Yes, VT: No (Appointed and later elected), CE: No (Military education)

Albert Zafy (1993-1996) - MB: No, VT: No (Elected), CE: Yes (Medicine)

Didier Ratsiraka (1997-2002) – MB: Yes, VT: No (Elected), CE: No (Military education)

Marc Ravalomanana (2002-2009) - MB: No, VT: No (Elected), CE: No

Andry Rajoelina (2009-2014) - MB: No, VT: No (Elected), CE: No

Hery Rajaonarimampianina (2014-2018) - MB: No, VT: No (Elected), CE: Yes (Accounting)

Andry Rajoelina (2018-2022) - MB: No, VT: No (Elected), CE: No

Malawi: 1966- Presidential system

Hastings Banda (1966-1994) - MB: No, VT: No, CE: Yes (Medicine)

Bakili Muluzi (1994-2004) - MB: No, VT: No (Elected), CE: Yes

Bingu wa Mutharika (2004-2012) – MB: No, VT: No (Elected), CE: Yes (Economics)

Joyce Banda (2012-2014) – MB: No, VT: No (Elected), CE: Yes (Leadership)

Peter Mutharika (2014-2020) – MB: No, VT: No (Elected), CE: Yes (Law)

Lazarus Chakwera (2020-2022) – (Not included)

Mali: 1960- Presidential system

Moussa Traoré (1968-1991) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Amadou Toumani Touré (1991-1992) - MB: Yes, VT: Yes (Transitional leader), CE: No

Alpha Oumar Konaré (1992-2002) – MB: No, VT: No (Elected), CE: Yes (History)

Amadou Toumani Touré (2002-2012) - MB: Yes, VT: No (Elected), CE: No

Dioncounda Traoré (2012-2013) – MB: No, VT: Yes (Appointed interim after civil war), CE: Yes

Ibrahim Boubacar Keïta (2013-2020) - MB: No, VT: No (Elected), CE: Yes (Political science)

Assimi Goïta (2020-2022) - (Not included)

Mauritania: 1960- Presidential system

Mohamed Khouna Ould Haidalla (1980-1984) – MB: Yes, VT: Yes (Seized power internally), CE: Yes

Maaouya Ould Sid'Ahmed Taya (1984-2005) – MB: Yes, VT: No (Seized power internally), CE: No (Military education)

Ely Ould Mohamed Vall (2005-2007) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Sidi Ould Cheikh Abdallahi (2007-2008) - MB: No, VT: No (Elected), CE: Yes (Education)

Mohamed Ould Abdel Aziz (2008-2019) – MB: Yes, VT: Yes (Coup d'état), CE: No (Military education)

Mohamed Ould Ghazouani (2019-2022) - (Not included)

Mauritius: 1968- Parliamentary system

Seewoosagur Ramgoolam (1961-1982) - MB: No, VT: No, CE: Yes (Medicine)

Anerood Jugnauth (1982-1995) - MB: No, VT: No (Elected), CE: Yes (Law)

Navin Ramgoolam (1995-2000) - MB: No, VT: No (Elected), CE: Yes (Medicine)

Anerood Jugnauth (2000-2003) - MB: No, VT: No (Elected), CE: Yes (Law)

Paul Bérenger (2003-2005) – MB: No, VT: No, CE: Yes (French)

Navin Ramgoolam (2005-2014) - MB: No, VT: No (Elected), CE: Yes (Medicine)

Anerood Jugnauth (2014-2017) – MB: No, VT: No (Elected), CE: Yes (Law)

Pravind Jugnauth (2017-2022) - MB: No, VT: No, CE: Yes (Law)

Mozambique: 1975- Presidential system

Samora Machel (1975-1986) – MB: Yes, VT: Yes (Independence war), CE: No

Joaquim Chissano (1986-2005) - MB: No, VT: No (Succeeded after death), CE: Yes (Medicine)

Armando Guebuza (2005-2015) – MB: Yes, VT: No (Elected), CE: No

Filipe Nyusi (2015-2022) – MB: Yes, VT: No (Elected), CE: No (Military education)

Namibia: 1990- Presidential system

Sam Nujoma (1990-2005) - MB: No, VT: Yes (Declared president after independence war), CE: No

Hifikepunye Pohamba (2005-2015) - MB: No, VT: No (Elected), CE: No

Hage Geingob (2015-2022) – MB: No, VT: No (Elected), CE: Yes (International relations)

Niger: 1960- Semi-presidential republic

Seyni Kountché (1974-1987) – MB: Yes, VT: Yes (Coup d'état), CE: No

Ali Saibou (1987-1993) - MB: Yes, VT: No (Elected), CE: No

Mahamane Ousmane (1993-1996) - MB: No, VT: No (Elected), CE: Yes (Economics)

Ibrahim Baré Maïnassara (1996-1999) - MB: Yes, VT: Yes (Coup d'état), CE: No

Mamadou Tandja (1999-2010) - MB: Yes, VT: No (Elected), CE: No

Salou Djibo (2010-2011) – MB: Yes, VT: Yes (Coup d'état), CE: No

Mahamadou Issoufou (2011-2021) - MB: No, VT: No (Elected), CE: Yes (Engineering)

Mohamed Bazoum (2021-2023) – (Not included)

Nigeria: 1960- Presidential system

Shehu Shagari (1979-1983) - MB: No, VT: No (Elected), CE: Yes (Teacher)

Muhammadu Buhari (1983-1985) - MB: Yes, VT: Yes (Coup d'état), CE: No

Ibrahim Babangida (1985-1993) – MB: Yes, VT: Yes (Coup d'état), CE: No

Sani Abacha (1993-1998) – MB: Yes, VT: Yes (Coup d'état), CE: No

Olusegun Obasanjo (1999-2007) - MB: Yes, VT: No (Elected), CE: No

Umaru Musa Yar'Adua (2007-2010) – MB: No, VT: No (Elected), CE: Yes (Chemistry)

Goodluck Jonathan (2010-2015) – MB: No, VT: No (Elected), CE: Yes (Zoology)

Muhammadu Buhari (2015-2022) - MB: Yes, VT: No (Elected), CE: No

Papua New Guinea: 1975- Monarchy, head of state is British monarch. Parliamentary republic.

Julius Chan (1980-1982) - MB: No, VT: No (Elected), CE: No (Dropped out)

Michael Somare (1982-1985) - MB: No, VT: No (Elected), CE: Yes (Teacher)

Paias Wingti (1985-1988) - MB: No, VT: No (Elected), CE: Yes (Economics)

Sir Rabbie Namaliu (1988-1992) - MB: No, VT: No (Elected), CE: Yes (History and English)

Paias Wingti (1992-1994) - MB: No, VT: No (Elected), CE: Yes (Economics)

Julius Chan (1994-1997) - MB: No, VT: No (Elected), CE: No (Dropped out)

Bill Skate (1997-1999) - MB: No, VT: No (Elected), CE: Yes (Accountant)

Sir Mekere Morauta (1999-2002) - MB: No, VT: No (Elected), CE: Yes (Economics)

Michael Somare (2002-2011) - MB: No, VT: No (Elected), CE: Yes (Teacher)

Peter O'Neill (2011-2019) - MB: No, VT: No (Elected), CE: Yes (Commerce)

James Marape (2019-2022) – (Not included)

Rwanda: 1962- Presidential system

Juvénal Habyarimana (1973-1994) – MB: Yes, VT: Yes (Coup d'état), CE: Yes (Mathematics)

Pasteur Bizimungu (1994-2000) – MB: No, VT: Yes (Civil war), CE: Yes (Economics)

Paul Kagame (2000-2022) – MB: Yes, VT: No (Appointed), CE: No (Some uncertainty)

Sao Tome and Principe: 1975 - Semi-presidential republic

Miguel Trovoada (1991-2001) – (Not included)

Fradique de Menezes (2001-2011) - MB: No, VT: No (Elected), CE: Yes (International trade)

Manuel Pinto da Costa (2011-2016) – MB: No, VT: No (Elected), CE: Yes (Economics)

Evaristo Carvalho (2016-2021) – MB: No, VT: No (Elected), CE: No (No information)

Carlos Vila Nova (2021-2022) – (Not included)

Senegal: 1960- Presidential system

Abdou Diouf (1980-2000) - MB: No, VT: No, CE: Yes (Law)

Abdoulaye Wade (2000-2012) - MB: No, VT: No (Elected), CE: No (Law and economics)

Macky Sall (2012-2022) – MB: No, VT: No (Elected), CE: Yes (Engineer)

Seychelles: 1976- Presidential system

France-Albert René (1977-2004) - MB: No, VT: Yes (Civil war), CE: Yes (Law)

James Michel (2004-2016) – MB: No, VT: No (Elected), CE: Yes (Teacher)

Danny Faure (2016-2020) – MB: No, VT: No (Appointed), CE: Yes (Political science)

Wavel Ramkalawan (2020-2022) – (Not included)

Sierra Leone: 1961- Presidential system

Siaka Stevens (1971-1985) - MB: No, VT: No (Elected), CE: No

Joseph Saidu Momoh (1985-1992) - MB: Yes, VT: No (Elected), CE: No

Valentine Strasser (1992-1996) - MB: Yes, VT: Yes (Coup d'état), CE: No

Ahmad Tejan Kabbah (1996-2007) – MB: No, VT: No (Elected), CE: Yes (Economics)

Ernest Bai Koroma (2007-2018) - MB: No, VT: No (Elected), CE: Yes

Julius Maada Bio (2018-2022) – MB: Yes, VT: No (Elected), CE: Yes (International relations)

Somalia: 1960- Parliamentary republic, but presidents are listed for consistency due to periods of vacancy in the prime minister position.

Siad Barre (1969-1991) - MB: Yes, VB: Yes (Revolutionary/ Coup d'état), CE: No

Ali Mahdi Muhammad (1991-2000) - MB: No, VT: No (Appointed), CE: Yes

Abdiqasim Salad (2000-2004) – MB: No, VT: No (Interim, then elected), CE: Yes (Biology)

Abdullahi Yusuf Ahmed (2004-2008) – MB: Yes, VT: No (Appointed), CE: Yes (Law)

Sharif Sheikh Ahmed (2009-2012) - MB: No, VT: No (Elected), CE: Yes (Islamic Sharia and Law)

Hassan Sheikh Mohamud (2012-2017) - MB: No, VT: No (Elected), CE: Yes (Technology)

Mohamed Abdullahi Mohamed (2017-2022) - MB: No, VT: No (Elected), CE: Yes (American Studies)

Hassan Sheikh Mohamud (2022-2022) – (Not included)

South Africa: 1961- Presidential system. British monarch head of state until 1994.

Nelson Mandela (1994-1999) – MB: No, VT: No (Elected), CE: Yes

Thabo Mbeki (1999-2008) – MB: No, VT: No (Elected), CE: Yes (Economics)

Jacob Zuma (2009-2018) - MB: Yes, VT: No (Elected), CE: No

Cyril Ramaphosa (2018-2022) – MB: No, VT: No (Elected), CE: Yes (Law)

South Sudan: 2011- Presidential system

Salva Kiir Mayardit (2005-2022) – MB: Yes, VT: No (Elected)

Sudan: 1956- Transitional Sovereignty Council. Presidents listed.

Gaafar Nimeiry (1969-1985) - MB: Yes, VT: Yes (Coup d'état), CE: No, (Military education)

Abdel Rahman Swar al-Dahab (1985-1986) - MB: Yes, VT: Yes (Coup d'état), CE: No (Military education))

Ahmed al-Mirghani (1986-1989) – MB: No, VT: No (Elected), CE: Yes (Economics)

Omar al-Bashir (1989-2019) - MB: Yes, VT: Yes (Coup d'état), CE: No

Transitional Sovereignty Council (2019-2022) – (Not included)

Tanzania: 1961- Presidential system

Ali Hassan Mwinyi (1985-1995) - MB: No, VT: No, CE: Yes (Teacher)

Benjamin Mkapa (1995-2005) – MB: No, VT: No (Elected), CE: Yes (English)

Jakaya Kikwete (2005-2015) – MB: Yes, VT: No (Elected), CE: Yes (Economics)

John Magufuli (2015-2021) – MB: No, VT: No (Elected), CE: Yes (Chemistry)

Samia Suluhu Hassan (2021-2022) – (Not included)

Togo: 1960- Presidential system

Gnassingbé Eyadéma (1967-2005) - MB: Yes, VT: Yes (Coup d'état), CE: No

Faure Gnassingbé (2005-2022) - MB: No, VB: No (Appointed by his father), CE: Yes (Business)

Uganda: 1962- Presidential system

Milton Obote (1980-1985) - MB: No, VT: No (Elected), CE: No (Expelled)

Yoweri Museveni (1986-2022) - MB: Yes, VT: Yes (Civil War), CE: Yes (Economics and political science)

Zambia: 1964- Presidential system

Kenneth Kaunda (1964-1991) - MB: No, VT: No (Elected), CE: No

Frederick Chiluba (1991-2002) - MB: No, VT: No (Elected), CE: No

Levy Mwanawasa (2002-2008) – MB: No, VT: No (Elected), CE: Yes (Law)

Rupiah Banda (2008-2011) – MB: No, VT: No (Elected), CE: Yes (Education)

Michael Sata (2011-2014) – MB: No, VT: No (Elected), CE: No

Edgar Lungu (2015-2021) – MB: No, VT: No (Elected), CE: Yes (Law)

Hakainde Hichilema (2021-2022) – (Not included)

Zimbabwe/Rhodesia: 1980- Presidential system

Canaan Banana (1980-1987) – MB: No, VT: Yes (Independence war), CE: Yes (Theology)

Robert Mugabe (1987-2017) - MB: Yes, VB: No (Elected), CE: Yes (7 different university degrees)

Emmerson Mnangagwa (2017-2022) – MB: Yes, VT: Yes (Coup d'état), CE: No (Expelled)

