ROLE OF INSTITUTIONAL QUALITY IN FOSTERING TRANSFORMATIONAL RECOVERY IN WEST AFRICA

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ABSTRACT

The impact of the COVID-19 pandemic has caused an economic downturn globally, which calls for policies that will ensure a speedy recovery. However, such policies could only work effectively if quality institutions are in place. In this paper, we explored the influence of institutional quality in facilitating transformational recovery in West Africa. Six West African countries, which were randomly selected, were studied from 2010 to 2020. The cointegration regression analysis, based on the fully modified ordinary least squares (FMOLS), was deployed in the study because the analysis supported evidence of the existence of long-run relationships in the models. Evidence from the FMOLS result indicated that incorporating some control variables, such as government effectiveness, rule of law, political stability and absence of violence/terrorism, control of corruption, and regulatory quality, exerted a positive and significant influence on economic growth. This led the study to conclude that for these economies to achieve transformational recovery post-COVID, there is a need to strengthen institutions, which are crucial in the efficient and effective implementation of government policies.

Keywords: Economic growth, Government effectiveness, Corruption, Rule of law, Grease-the-wheels hypothesis.

JEL classification: D73, O43

1. Introduction

The role of institutions in driving economic growth has earlier been investigated by North (1990) with subsequent research being conducted in the

same area. Studies have also earlier revealed that nations with civil liberties (strong institutions) are most likely to experience sustainable economic performance, and that governance performance impacts a country's economic performance (Abubakar, 2020). Within this framework, Stiglitz (2001), in the revised Washington Consensus, aligned with the fact that good governance (quality institutions) is a prerequisite for growth and development. The rationale behind this argument is that the quality of institutions is essential in providing an enabling environment for economic progress.

The rule of law, regulatory quality, government effectiveness, control of corruption, voice and accountability, and political stability and absence of violence/terrorism are all components of institutional quality. Institutional quality captures laws, individual rights, and high-quality government regulation and services, as well as their potency in bolstering economic growth and development. As a result, the quality of institutions is crucial in assuring the global control and execution of political, social, and economic activities, as well as effective monitoring (Utile, Ijirshar, & Sem, 2021). Viable institutions provide social cohesiveness and macroeconomic stability, which in turn boost investment and growth. Available evidence indicates that nations with strong institutions provide a robust legal framework for efficient resource mobilization and distribution, resulting in a less hazardous economic climate. Other studies like Iheonu, Ihedimma and Onwuanaku (2017) have stressed the necessity of excellent institutional quality in guaranteeing long-term growth and development.

In general, institutional quality is anticipated to have an impact on economic growth as evidenced by the fact that high institutional quality nations have had greater success using cutting-edge technologies to increase productivity (Bruinshoofd, 2016). However, in developing nations (West Africa in particular) like Nigeria, Ghana, Côte d'Ivoire, Senegal, Sierra Leone, and The Gambia, where many reforms aimed at economic growth have not produced the desired results, the relationship between institutional quality and economic growth is not yet clear. The COVID-19 pandemic has further impaired the economic circumstances of these nations. For example, the growth rate of Nigeria's gross domestic product declined from 2.21% in 2019 to -1.79% in 2020; in Ghana it declined from 6.51% to 0.41%; in Côte d'Ivoire it declined from 6.23% to 1.96%; in Senegal it declined from 4.40% to 1.50%; in Sierra Leone it declined from 5.25% to -1.97%; and in The

Gambia it declined from 6.15% to -0.22%. This substantial decline in the output growth of these nations calls for policies and actions that will propel the transformational recovery of these economies.

The point of concern now is whether these institutions have been able to drive the needed transparency and accountability in public and private entities. Data on key institutional variables indicate that the aforementioned West African countries are still wallowing in poor quality institutions. This is evidenced in the negative values of the institutional variables across the region. For example, recent statistics indicate that most of these countries have weak institutional quality; range is -2.5 (weak) to +2.5 (strong). Taking government effectiveness in 2020 for instance, Nigeria recorded -1.0295; Ghana -0.1527; Côte d'Ivoire -0.4806; Senegal +0.0109; Sierra Leone -1.0165; and The Gambia -0.6720. Regarding control of corruption, Nigeria recorded an index of -1.0969; Ghana recorded -0.1155; Côte d'Ivoire recorded -0.5266; Senegal recorded +0.0304; Sierra Leone recorded -0.3604; and The Gambia -0.3428. For regulatory quality, Nigeria recorded an index of -0.9627; Ghana +0.0002; Côte d'Ivoire -0.2758; Senegal -0.2078; Sierra Leone -0.8577; and The Gambia -0.6876.

Although quality institutions have been viewed to be a driver of economic growth, the *Grease-the-Wheels Hypothesis* made Leff (1964) and Huntington (1968) to stipulate that corruption is beneficial to economic activities as it helps to circumvent inefficiencies associated with bureaucracy in investment, which extends to economic growth. This line of argument is also seen in studies which have established a positive effect of corruption on economic growth (see Iheonu, Ihedimma & Onwuanaku, 2017; and Effiong & Okijie, 2021). This view has been countered in studies that observed a significant negative connection between corruption and investment that leads to growth (see Effiong, Udofia & Garba, 2023).

To achieve transformational recovery, several policies, including monetary, fiscal, trade, and exchange rate policies, need to be put in place. Meanwhile, the efficient implementation of such policies depends on the quality of institutions prevalent in these countries. In the case of Nigeria, several attempts have been made towards improving the quality of institutions in the country. Such is embedded in the Corrupt Practices Investigation Bureau, the

Code of Conduct Bureau, and the Public Complaints Commission (Utile, Ijirshar & Sem, 2021). Given the widespread corruption and misappropriation of public funds, some bodies were set up to ensure prudence and accountability in resource use in both public and private sectors. These institutions are the renowned Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices Commission (ICPC), the Nigerian Financial Intelligence Unit (NFIU), and the Fiscal Responsibility Commission (FRC), among others.

In spite of these bodies, the institutional quality in Nigeria has become worrisome over the years. Given that strong institutions are pertinent in fostering transparency and effective policy simulations, it becomes a policy issue whether West African countries can effectively address the macroeconomic challenges arising from the COVID-19 pandemic. It is in light of this broad objective that this study examines the influence of institutional quality on economic growth of selected West African countries from 2010 to 2020. The specific objectives are to: investigate the influence of government effectiveness on economic growth in West Africa; examine the influence of rule of law on economic growth in West Africa; investigate the effect of political stability and absence of violence/terrorism on economic growth in West Africa; ascertain the influence of control of corruption on economic growth in West Africa; investigate the influence of regulatory quality on economic growth in West Africa; and examine the effect of voice and accountability on economic growth in West Africa.

This paper is structured into five sections. Following this introduction of the paper, the stylized facts and literature review are presented in section 2, while the methodology of the research is outlined in section 3. In section 4, the empirical findings of the study are made known; while the summary, conclusion and recommendation are presented finally in section 5.

2. Stylized Fact and Literature Review

2.1 Stylized facts

The stylized facts for this study centre on economic growth (measured by growth rate of real GDP) and institutional variables, which are: government effectiveness, rule of law, political stability and absence of

violence/terrorism, control of corruption, regulatory quality, and voice and accountability.

2.1.1 *Gross Domestic Product (GDP) Growth Rate*

The economic performance of the general economy is measured by the growth rate of the gross domestic product (GDP). An increase in the growth rate of the GDP implies that the economy is performing well compared to when it is declining or negative. Table 1 provides the values of the growth rate of GDP for the selected countries between 2010 and 2020.

Table 1: Growth Rate of GDP for the Selected Countries, 2010 to 2020

Country/Year	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	8.01	7.90	6.85	3.39	5.35	5.91
2011	5.31	14.05	-5.37	1.33	6.32	-8.13
2012	4.23	9.29	7.62	4.00	15.18	5.24
2013	6.67	7.31	10.76	2.41	20.72	2.87
2014	6.31	2.86	9.37	6.22	4.56	-1.41
2015	2.65	2.12	7.19	6.37	-20.60	4.06
2016	-1.62	3.37	7.18	6.36	6.06	1.94
2017	0.81	8.13	7.36	7.41	4.19	4.82
2018	1.92	6.20	6.89	6.21	3.46	7.23
2019	2.21	6.51	6.23	4.40	5.25	6.15
2020	-1.79	0.41	1.96	1.50	-1.97	-0.22
Average growth rate (%)	**3.15**	**6.20**	**6.00**	**4.51**	**4.41**	**2.59**

Source: World Development Indicators, 2020.

From Table 1, the growth rate of GDP for Nigeria averaged 3.15% within the period of analysis, with negative growth rates of -1.62% and -1.79% recorded for 2016 and 2020 respectively. In Côte d'Ivoire, the economy recorded an average GDP growth rate of 6.00% within the study period and only recorded a negative growth rate of -5.37% in 2011. Sierra Leone

recorded negative growth rates of -20.60% and -1.97% in 2015 and 2020 respectively, with an average GDP growth rate of 4.41% over the study period. However, the economy recorded the highest growth rate of the study period (20.72% in 2013) and also the highest negative growth rate of the study period (-20.60% in 2015). The Gambia recorded negative GDP growth rates of -8.13%, -1.41, and -0.22% for 2011, 2014, and 2020 respectively, and recorded the least average GDP growth rate of 2.59% over the study period when compared with the other countries. Ghana and Senegal were the only countries that did not have any periods of negative GDP growth rates within the period of analysis, with averages of 6.20% and 4.50% respectively.

Within the West African sub-region, instances could be drawn from the declining GDP growth rate recorded within the region during the COVID-19 pandemic. Table 1 shows that between 2019 and 2020, all the selected countries experienced declining GDP growth rates, with some (Nigeria, Sierra Leone and The Gambia) recording negative growth rates. The statistics thus indicate the need for actions for immediate recovery post-COVID.

2.2 Stylized facts on institutional variables

The breakdown of institutional variables is best captured by the governance indicators. These indicators range between -2.5 (weak) to +2.5 (strong) in terms of quality. They have been summarized by Khan (2007), cited in Effiong and Okijie (2021), as follows:

i. Voice and Accountability: Measuring political, civil, and human rights.
ii. Political Stability and Absence of Violence/terrorism: Assessing the probability of violent threats to government or changes in government, including terrorism.
iii. Government Effectiveness: Assessing the bureaucracy's competency and the quality of public service delivery.
iv. Regulatory Quality: Calculating the incidence of market-disruptive policies.
v. Rule of Law: Assessing the effectiveness of contract enforcement, law enforcement, and the courts, along with the possibility of crime and violence; and

vi. Corruption Control: Assessing the deployment of public authority for private benefit, including petty and grand corruption, along with state capture.

2.2.1 *Government Effectiveness*

The index of institutional quality based on government effectiveness is captured in Table 2.

Table 2: Index of Institutional Quality (government effectiveness), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-1.165	-0.038	-1.286	-0.580	-1.216	-0.679
2011	-1.096	-0.050	-1.155	-0.496	-1.192	-0.608
2012	-0.997	-0.049	-1.098	-0.466	-1.226	-0.513
2013	-0.992	-0.099	-0.926	-0.419	-1.226	-0.706
2014	-1.187	-0.281	-0.834	-0.404	-1.244	-0.670
2015	-0.959	-0.222	-0.686	-0.427	-1.250	-0.904
2016	-1.088	-0.169	-0.673	-0.454	-1.171	-0.842
2017	-1.011	-0.112	-0.755	-0.318	-1.17	-0.646
2018	-1.018	-0.209	-0.568	-0.266	-1.143	-0.62
2019	-1.089	-0.211	-0.483	-0.058	-1.126	-0.631
2020	-1.029	-0.153	-0.481	0.011	-1.016	-0.672

Source: World Governance Indicators, 2020.

In Table 2, all the countries recorded negative government effectiveness for all the years of the study except for Senegal which had a positive value in 2020. For Nigeria, most of the values were quite low, indicating weak government effectiveness in the country. For instance, it was -1.165 in 2010, -1.187 in 2014, and -1.089 in 2019 before improving slightly to -1.029 in 2020. Overall, government effectiveness in Nigeria averaged -1.057 between 2010 and 2020. For Ghana, the index of government effectiveness was a bit better compared to Nigeria as it averaged -0.145. compared to -1.057 in Nigeria. However, the index of government effectiveness in Ghana was negative

throughout the period under review. Côte d'Ivoire also had a negative index of government effectiveness throughout the period under consideration and recorded an average value of -0.813 throughout the period. In With regard to Senegal, the country recorded negative index of government effectiveness from 2010 to 2019, after which a positive value of +0.011 was recorded in 2020. This indicates a substantial improvement in the index in recent times. Meanwhile the country still recorded a negative average government effectiveness index of -0.352 over the study period. Both Sierra Leone and The Gambia exhibited negative government effectiveness indexes throughout the period under review and maintained an averaged values of -1.180 and -0.681 over the study period. As of 2020, Nigeria had the weakest government effectiveness index followed by Sierra Leone when compared to other countries under consideration.

2.2.2 *Rule of Law*

The institutional quality based on rule of law is presented in Table 3.

Table 3: Index of Institutional Quality (rule of law), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-1.158	-0.028	-1.217	-0.399	-0.934	-0.555
2011	-1.181	-0.005	-1.269	-0.459	-0.854	-0.543
2012	-1.146	0.010	-1.079	-0.287	-0.854	-0.576
2013	-1.114	0.149	-0.905	-0.239	-0.859	-0.643
2014	-1.049	0.052	-0.592	-0.082	-0.922	-0.689
2015	-0.962	0.142	-0.630	-0.142	-0.854	-0.721
2016	-1.017	0.049	-0.645	-0.107	-0.778	-0.775
2017	-0.871	0.123	-0.631	-0.149	-0.781	-0.438
2018	-0.880	0.073	-0.576	-0.207	-0.767	-0.431
2019	-0.898	0.047	-0.567	-0.190	-0.766	-0.371
2020	-0.812	-0.039	-0.599	-0.276	-0.756	-0.366

Source: World Governance Indicators, 2020.

As evidenced in Table 3, it is evident that Nigeria maintained negative index of rule of law throughout the study period with an average value of -1.008 which indicates a weak institutional quality. However, Ghana, though fluctuating, recorded many periods of positive index of rule of law as could be seen from

2012 to 2019, before plunging back to a negative value of -0.039 in 2020. The index averaged +0.052 which indicates a better index compared to Nigeria. For Côte d'Ivoire, Senegal, Sierra Leone, and The Gambia, the index remained negative throughout the study period with an average value of -0.792, -0.231, -0.830, and -0.555 respectively. As of 2020, Nigeria had the weakest rule of law index of -0.812 followed by Sierra Leone with -0.756. However, Ghana has a bit better index with -0.039 followed by Senegal with -0.276 as at 2020.

2.2.3 *Political Stability and Absence of Violence/terrorism*

The index of political stability and absence of violence/terrorism is presented in Table 4, where it can be observed that just like earlier indices, Nigeria also have the weakest in this case. This weak institutional quality can be linked to the high level of violence and terrorist activities in the North-Easter part of Nigeria which is linked to the activities of Boko Haram; the activities of bandits in the Northwestern part of Nigeria; the Biafra agitators and their associated violence; the Niger Delta militants; ethnic and religious clashes; and other crisis that has rocked the country over the years.

Table 4: Index of Institutional Quality (political stability and absence of violence/terrorism), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-2.211	0.026	-1.584	-0.418	-0.237	0.0654
2011	-1.956	0.167	-1.406	-0.281	-0.168	-0.0003
2012	-2.042	0.131	-1.263	-0.108	-0.280	-0.0008
2013	-2.088	0.061	-1.049	-0.061	-0.175	-0.0486
2014	-2.130	-0.107	-1.037	-0.198	-0.104	-0.1514
2015	-1.925	-0.032	-0.833	-0.117	-0.103	0.020
2016	-1.878	-0.131	-0.908	-0.218	-0.16	-0.434
2017	-1.999	0.092	-1.090	-0.051	-0.036	-0.084
2018	-2.102	-0.026	-0.899	-0.101	-0.085	-0.074
2019	-1.92	0.134	-1.026	0.047	-0.053	0.225
2020	-1.859	0.126	-0.976	-0.021	-0.244	0.245

Source: World Governance Indicators, 2020.

As can be observed from Table 4, Nigeria recorded the weakest index for political stability and absence of violence/terrorism as could be seen from -2.211 in 2010, -2.042 in 2012, -2.130 in 2014, and -2.102 in 2018. The average over the years is pegged at -2.010 which is a very weak index when compared with the -2.5 to +2.5 range. Ghana recorded some periods of positive index of political stability and absence of violence/terrorism, with an average of +0.040 during the study period. However, it still recorded negative values for three consecutive years (2014 to 2016) picked up in 2017, then dropped again in 2018 with -0.026. Just like Nigeria, Cote d'Ivoire and Sierra Leone recorded negative index values throughout the period, averaging -1.097 and -0.150 respectively. Senegal had negative index values from 2010 to 2018 but recorded a positive value of +0.047 in 2019 before it plummeted back to -0.021 in 2020. The country had an average of -0.139; while The Gambia recorded an average of -0.022 with a few periods of positive values as in 2010 (+0.065), 2015 (+0.020), 2019 (+0.225), and 2020 (+0.245). Out of the six countries under consideration, Nigeria has the weakest institutional quality with regard to political stability and absence of violence/terrorism. This could be linked to the existing high level of insecurity in some states of the federation

2.2.4 *Control of Corruption*

The index for control of corruption is presented in Table 5 and almost all the countries show negative values for the entire period, except for Ghana in 2010 and Senegal in 2014 to 2016 and 2019-2020. Even Ghana, which had been having the best index for the indices, was also plagued with high rate of corruption, given the negative index throughout the period, except for one year (2010).

The figures in Table 5 indicate that Nigeria has the weakest index with respect to control of corruption, indicating that corruption has eaten deep into the fibre of our institutions. The index averaged -1.120 during the study period, with its value being -1.049 in 2010 but getting worse over the years to -1.080 in 2015 and then to -1.097 in 2020. For Ghana, the index was positive (+0.012) in 2010 but worsened to the negative of -0.192 in 2014 and -0.116 in 2020; averaging -0.121 throughout the period. For Côte d'Ivoire, it averaged -0.565 throughout the study period, improving from -1.158 in 2010 to -0.527

in 2020. Senegal recorded positive values in 2019 and 2020 with indexes of +0.039 and +0.030 respectively, and in a previous period, it recorded a positive value for three consecutive years (2014 to 2016). The country had however recorded negative values from 2010 to 2013 and then in 2017 to 2018, and averaged -0.137 during the study period. Sierra Leone and The Gambia both recorded negative values throughout the study period with average values of -0.717 and -0.586 respectively. It is therefore clear that as of 2020, Nigeria had the weakest institutional quality with regard to control of corruption. While the indexes for Ghana and The Gambia were slightly better compared to Côte d'Ivoire and Nigeria, only Senegal recorded some positive values during the period.

Table 5: Index of Institutional Quality (control of corruption), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-1.049	0.012	-1.158	-0.638	-0.775	-0.595
2011	-1.173	-0.026	-1.013	-0.496	-0.843	-0.509
2012	-1.169	-0.127	-0.830	-0.257	-0.951	-0.645
2013	-1.221	-0.097	-0.735	-0.187	-0.906	-0.696
2014	-1.275	-0.192	-0.419	0.056	-0.941	-0.694
2015	-1.080	-0.189	-0.435	0.059	-0.800	-0.770
2016	-1.025	-0.149	-0.530	0.0001	-0.819	-0.812
2017	-1.079	-0.232	-0.527	-0.092	-0.567	-0.627
2018	-1.051	-0.121	-0.504	-0.025	-0.490	-0.457
2019	-1.101	-0.098	-0.540	0.039	-0.432	-0.300
2020	-1.097	-0.116	-0.527	0.030	-0.360	-0.343

Source: World Governance Indicators, 2020.

2.2.5 *Regulatory Quality*

The results for regulatory quality as an index of institutional quality for the six selected countries for the study period are presented in Table 6.

Table 6: Index of Institutional Quality (regulatory quality), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-0.727	0.116	-0.926	-0.278	-0.736	-0.399
2011	-0.681	0.125	-0.870	-0.214	-0.709	-0.285
2012	-0.712	0.128	-0.765	-0.081	-0.703	-0.228
2013	-0.660	0.085	-0.736	-0.048	-0.707	-0.361
2014	-0.816	-0.006	-0.595	-0.220	-0.806	-0.457
2015	-0.851	-0.031	-0.504	-0.158	-0.895	-0.509
2016	-0.919	-0.233	-0.365	-0.143	-0.925	-0.509
2017	-0.884	-0.137	-0.361	-0.147	-0.918	-0.447
2018	-0.804	-0.095	-0.203	-0.110	-0.888	-0.629
2019	-0.861	-0.111	-0.243	-0.112	-0.882	-0.665
2020	-0.963	0.0002	-0.276	-0.208	-0.858	-0.688

Source: World Governance Indicators, 2020.

Going by the results in Table 6, only Ghana recorded any positive figures for regulatory quality index. All the other countries, had negative indexes throughout the period, with an average of -0.807 for Nigeria; -0.014 for Ghana; -0.531 for Côte d'Ivoire; -0.156 for Senegal; -0.821 for Sierra Leone; and -0.471 for The Gambia. As of 2020, Nigeria had the weakest regulatory quality followed by Sierra Leone and The Gambia. Only Ghana recorded a positive index of +0.0002 as at 2020.

2.2.6 *Voice and Accountability*

The six West African countries differ substantially as regards voice and accountability. Table 7 presents the values of the indexes over the period. The voice and accountability index were negative throughout the study period for Nigeria, Côte d'Ivoire, Sierra Leone, and The Gambia. However, Senegal recorded positive values from 2013 to 2020, while Ghana had positive indices throughout the study period, portraying that Ghana has the best institutional quality when it comes to voice and accountability. Ghana had a voice and accountability index of +0.583 as at 2020 compared to Nigeria with -0.585. Senegal also recorded a positive index of +0.245 for the same year. During the study period, the average index for Nigeria was -0.541; Ghana had an

average of +0.518; Cote d'Ivoire an average of -0.559; Senegal +0.134; Sierra Leone -0.216; and The Gambia an average of -0.919.

Table 7: Index of Institutional Quality (voice and accountability), 2010 – 2020

Year/Country	Nigeria	Ghana	Côte d'Ivoire	Senegal	Sierra Leone	The Gambia
2010	-0.777	0.515	-1.048	-0.268	-0.158	-1.075
2011	-0.713	0.485	-1.082	-0.220	-0.204	-1.215
2012	-0.700	0.431	-0.778	-0.004	-0.321	-1.287
2013	-0.693	0.439	-0.751	0.060	-0.343	-1.257
2014	-0.587	0.463	-0.508	0.292	-0.287	-1.268
2015	-0.373	0.490	-0.407	0.284	-0.270	-1.460
2016	-0.319	0.585	-0.308	0.371	-0.197	-1.263
2017	-0.340	0.598	-0.283	0.318	-0.193	-0.622
2018	-0.431	0.550	-0.255	0.213	-0.189	-0.222
2019	-0.435	0.558	-0.245	0.236	-0.119	-0.239
2020	-0.585	0.583	-0.483	0.245	-0.091	-0.201

Source: World Governance Indicators, 2020.

2.3 Literature review

The issues surrounding institutional quality as it influences economic growth have earlier been explored by North (1990), who described institutions as "a set of rules compliance procedures, and moral and ethical behavioural norms designed to constrain the behaviour of individuals in the interests of maximizing the wealth or utility of principals". Institutions are behaviours that provide us with guidelines on how to act in public and guide our social lives by establishing norms and structures (Yildirim, 2015). Apart from providing the guidelines that shape people's lives, North (1990) argued that institutions should encourage and reward acts that increase wealth, such as innovation, the acquisition of capital and education, the protection of property rights, and the avoidance of predatory, wealth-disparaging actions (such as corruption, theft, and rent-seeking). Rodrik (2008) postulated that institutions impact other factors that affect growth, such as investment, investment in

human and physical capital, and technological advancements, which in turn affect the growth of an economy (Abubakar, 2020).

The core focus of the Solow-Swan Neoclassical growth model is on the contribution of labour, capital, and technical advancement to increase aggregate productivity (Solow, 1956; Swan, 1956). This view has been updated by incorporating development of human capital (see Mankiw, Romer & Weil, 1992). However, this is no longer the case since institutional quality has taken centre stage amid other drivers and is one of the forces promoting sustainable economic growth (Abubakar, 2020). Consistent with Alexiou, Tsaliki, and Osman (2014), the 'institutions' quality hypothesis' holds that the institutional setting in which economic actors interact in an economy influences economic growth. In this regard, Rodrik and Subramanian (2003) noted that what is of core importance are the 'rules of the game' in a society (that is, institutional variables), which are described by the existing explicit and implicit social standards and their capacity to generate suitable inducements for required economic behaviour.

Additionally, Acemoglu and Robinson (2012) assert that the presence of robust political institutions is necessary for economic institutions to provide the needed growth. Rodrik (1999) accentuated five diverse classes of market-reinforcing institutions that should be taken into account in every economy, viz: property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance, and institutions for conflict management (see Abayomi & Chidiebere, 2021). The key role of quality institutions is in influencing the impact of trade openness on economic growth (Akpan & Atan, 2016; and Abayomi & Chidiebere, 2021).

Several empirical studies have been explored to examine the influence of institutional quality (sometimes regarded as governance indicators) on economic growth and development. Lahore, Qureshi, and Nadeem (2015) used panel data from 1990 to 2013 for 13 Asian emerging nations to study the effect of institutional quality on economic growth. Results from the panel ARDL revealed that the quality of institutions influences economic growth in a favourable way.

In their study, Nabila, Shazia, and Muhammad (2015) explored how institutional quality affects economic growth in Asia's emerging nations. A panel ARDL for the years 1990–2013 was used in the investigation. The

findings demonstrate that institutional quality influences economic growth favourably and that there is a causal relationship between institutional quality and economic growth. Likewise, Akpo and Hassan (2015) used the ARDL cointegration method to analyse institutional influence as a predictor of foreign direct investment (FDI), with a focus on Nigeria. The study also discovered that institutional characteristics have a long-term influence on FDI inflows and are regarded as a crucial variable in FDI in Nigeria.

Akpan and Atan (2016) evaluated the link between trade openness, institutions, and economic development across 23 countries in sub-Saharan Africa (SSA) from 1996 to 2011. They used pooled ordinary least squares and the dynamic GMM as estimation approaches. The findings show that trade openness has a considerable negative impact on economic growth in SSA. However, if the relationship between trade openness and institutions is taken into account, the study reveals that openness has a beneficial effect on GDP.

Yildirim and Gokalp (2016) looked at how institutions in Turkey affect economic performance using panel data analysis from 2000 to 2011. The results demonstrate that institutional variables, including legal system integrity, trade barrier rules, restrictions on foreign investment, and the proportion of the private sector in the banking system, all have a beneficial impact on macroeconomic performance. Macroeconomic performances are negatively impacted by judicial independence, government spending, transfers, and subsidies, civil liberties, the black-market exchange rate, collective bargaining, and political stability.

Jilenga and Helian (2017) conducted research on a sample of 36 countries between 2001 and 2015 using the fixed effect and GMM models in an effort to understand the role of institutional quality in the relationship between FDI and economic development. While foreign direct investment had a negative impact on economic growth and development, the study indicated that institutional quality had a beneficial impact on economic growth.

Iheonu, Ihedimma, and Onwuanaku (2017) investigated how West African institutional quality affected economic performance. A panel data set from 1996 to 2015 was used in the investigation. The findings show that government efficiency, regulatory quality, and the rule of law all have beneficial and substantial effects on West Africa's economy. Kebede and

Takyi (2017) used yearly panel data from 27 nations from 1996 to 2014 to study the causation between institutional quality and economic growth in sub-Saharan Africa, applying the Pedroni panel co-integration, Wald panel causality, and System GMM approaches. They identified a link of co-integration between institutional quality and economic growth. The study's findings also reveal a one-way causation, flowing from economic growth to institutional quality but not the other way around. In addition, the study discovered that institutional quality, trade openness, financial development, and debt all have a favourable impact on economic growth.

Izilein and Mohammed (2017) investigated the relationship between Nigeria's democratic institutions and foreign direct investment. The GMM was used in the study to examine data from 1981 to 2015. The findings demonstrate that while FDI has a favourable link with economic growth, democratic institutions have a negative influence. Buterin, Skare, and Buterin (2017) used the Arellano-Bond dynamic panel analysis to assess the influence of institutional reforms on economic development in transition economies from 1996 to 2012. The study's findings demonstrated a link between institutional improvements and economic development.

The research by Radzeviča and Bulderberga (2018) looked at the implications for the Baltic States of the importance of institutional quality in economic growth. The study examined 113 nations between 2006 and 2016 using the GMM. Economic growth was positively impacted by factors such as government efficiency, regulatory quality, tax load, currency freedom, financial freedom, trade freedom, robust auditing and reporting standards, strong company governance, and investor protection.

On their part, Carraro and Karfakis (2018) examined institutions, economic freedom, and structural change in 11 sub-Saharan African nations using a panel regression analysis. The results show that economic freedom and institution quality metrics have a favourable and statistically significant impact on structural transition between sectors. Epaphra and Kombe (2018) explored the impact of institutions on Africa’s economic growth for the period 1996-2016. The study employed the GMM, fixed effects, and random effects models. Political stability as an institutional quality was revealed to be the most important element in explaining real GDP per capita growth in Africa.

In another study, Nguyen, Su, and Nguyen (2018) examined the impact of institutional quality on economic development in emerging economies between 2002 and 2015 using the System GMM. The findings suggest that institutional quality has a strong beneficial influence on economic growth. However, institutional quality had a negative impact on foreign direct investment and trade openness, both of which had a negative impact on economic development.

In examining the impact of institutional quality on investment, Peres, Ameer, and Xu (2018) classified nations as developed or developing. According to the findings of the study, institutional quality has a favourable and considerable influence on investment (especially FDI) in developed nations. Further, the study discovered that institutional quality has a positive and significant influence on economic growth in industrialized nations but has no impact in emerging ones. Using data for 44 African countries and their 173 trading partners between 2000 and 2014, Yushi and Borojo (2018) additionally examined the effects of institutional quality, border and transportation efficiency, as well as physical and communication infrastructure, on overall and intra-African trade. The study found that when GDP per capita increases, there seems to be increasing marginal impact of institutional quality, physical infrastructure, and communication infrastructure on trade flow. Also, Sani, Said, Ismail, and Mazlan (2019) assessed the effect of public debt and institutional quality on economic growth in 46 sub-Saharan African countries between 2000 and 2014, using the GMM technique. The empirical finding demonstrated that institutional quality affects economic growth both directly and indirectly.

Bon (2019) used a balanced panel data set of 52 provinces in Vietnam from 2005 to 2014 to study the influence of institutional quality on the public investment-growth link using the estimation method of difference panel GMM. According to the findings of the study, public investment and institutional quality strongly boost economic growth and development. Khan, Kong, Xiang, and Zhang (2019), in their study, used the simple ordinary least squares approach to evaluate the long-run influence of institutional quality on the financial sector in 15 developing and growth-leading nations from 1984 to 2017. Their findings suggest that institutional quality has a beneficial

influence on financial development and that financial development leads to greater economic growth in these nations.

Sabir, Rafique, and Abbas (2019) used panel data for low-, lower-middle-, upper-, and high-income nations from 1996 to 2016 to assess the effect of institutional quality on FDI inflows using the system GMM technique in the analysis. The study found that institutional quality significantly affects FDI across all groups of countries. Using data from 35 European nations between 1996 and 2014, Glawe and Wagner (2019) investigated the impact of institutional quality and human capital on economic development. The system GMM estimation results indicate that institutional quality is a significant contributor to the increase in per capita income in Europe. Arshad (2019) used data from 104 countries to assess the impact of institutional quality on economic development and used the GMM estimate method. The study found a correlation between stronger economic growth and both FDI inflows and institutional quality.

Using panel ARDL with a dynamic fixed effect estimator, Hassan, Meyer, and Kot (2019) looked at the impact of institutional quality in the oil wealth-economic growth nexus for 35 oil-exporting developing nations from 1984 to 2016. According to the study, oil wealth has a mixed impact on economic growth, with institutional quality enhancing the good effects in the short term while attenuating the negative effects over time. Additionally, Duodu, Baidoo and Lau (2020) used the ARDL model to examine the influence of institutions on the impact of trade openness on economic growth in Ghana (1984–2018). They discovered that, both in the short and long terms, trade openness and institutional quality had a considerable beneficial impact on economic growth in Ghana. However, trade openness combined with high-quality institutions had a negligible impact on economic growth over the long and short terms.

Jurčić, Franc, and Barišić (2020) used data from Croatia spanning the years 1996 to 2017 to assess the effect of institutional quality on foreign direct investment inflow using the OLS approach. According to the study, Croatia's FDI inflow was not significantly influenced by the institutional quality factors (political stability, regulatory quality, the rule of law, government effectiveness, and control of corruption). Other researchers that studied the connection are Chaib & Siham (2014), Fakher (2014), Ameer, Sohag, Xu, and Halwan (2020), and Minh (2019). They discovered that institutional quality has a favourable impact on foreign direct investment.

Abubakar (2020) examined the impact of institutional quality on economic growth from 1979 to 2018 using time series data for Nigeria. The analysis, which employed the Johansen cointegration and OLS approaches, revealed that while effective governance index has a positive but negligible impact on economic growth, institutional quality (contract-intensive money) has a positive and significant impact on economic growth.

Using panel data spanning the years 1996 to 2019, Abayomi and Chidiebere (2021) examined the impact of institutional quality on economic growth in Ghana and Nigeria. The ARDL model was used in the investigation. According to the study, Ghana had highly efficient corruption control which helped her economy thrive whereas Nigeria was the opposite with her economy adversely affected. Additionally, it was shown that whereas regulatory quality slowed growth in Ghana, it accelerated it in Nigeria. The study also discovered that both nations' governments were incompetent, which slowed economic progress.

Using yearly time series data spanning the years 2001 to 2019, Utile, Ijirshar and Sem (2021) investigated the impact of institutional quality on the growth of the Nigerian economy in the twenty-first century. The Pesaran, Shin, and Smith (PSS) bounds test was used, and it verified that there is a long-term link between the study's variables. The study found that institutional quality significantly inhibits economic growth using the ARDL model. In the case of any disequilibrium, the economic growth was capable of slowly reverting to the long-run equilibrium path, as indicated by the error correction term's negative statistical significance.

Effiong and Okijie (2021) investigated the impact of governance variables on economic growth in West Africa. The study included 10 West African nations and spanned the years 2002 to 2019. The random effect model' and the ARDL approach were used in the investigation. The random effect model revealed that the rule of law has a negative and significant impact on the West African sub-region's growth potential. Meanwhile, voice and accountability have had a huge and beneficial impact on West Africa's economic progress. According to the ARDL model, regulatory quality had a negative and large impact on the sub-region's economic growth, but the rule of law had a negative but small impact.

Efayena and Olele (2023) explored the influence of environmental quality and corruption on the growth of the Nigerian economy. The non-linear ARDL was employed to analyse data which span through the period of 1996 to 2021. The key findings were that environmental degradation exerted a deleterious effect on economic growth; and a positive change in corruption positively affected growth, which a negative change stifled economic growth.

Recent research by Effiong, Udofia, and Garba (2023) investigated the relationship between governance and economic misery in 16 West African nations from 2005 to 2020. The Granger causality test fixed and random effect models, and pooled ordinary least squares were all utilized in the study. According to the Granger causality test, there is a unidirectional causal relationship between economic misery and regulatory quality, political stability, government effectiveness, and the absence of violence and terrorism. Only voice and accountability aided significantly in reducing economic misery for the pooled OLS. None of the governance variables significantly affected economic suffering in the fixed effect model, but in the random effect model, voice and accountability combined with regulatory quality greatly decreased economic suffering.

Given the empirical literature reviewed, it is evident that the majority of the studies reported a positive influence of institutional quality in fostering the economic growth of a nation. While most of the studies utilized the generalized method of moments, fixed effects and random effect models, as well as cointegration analysis and autoregressive distributed lag models, no study has employed the cointegration analysis under the fully modified ordinary least squares approach. This study deviates from the existing studies to utilize the fully modified ordinary least squares approach on data from 2010 to 2020, and considers six West African countries – Nigeria, Ghana, Senegal, Sierra Leone, Côte d'Ivoire, and The Gambia.

3. Methodology

3.1 The model

The methodology of this study will follow a panel regression analysis. The model for the study is derived from the endogenous growth model where economic growth is driven by strong influences within the economy.

Following the AK model and the work of Han, Khan, and Zhuang (2014), the models are specified as follows:

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, GOVE_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (1)$$

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, RLA_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (2)$$

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, PVT_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (3)$$

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, CCP_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (4)$$

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, RQL_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (5)$$

$$GDP_{it} = f(GFCF_{it}, LABF_{it}, VAC_{it}, GEXG_{i,t}, BMS_{it}, INFR_{it}, FDI_{it}) \quad (6)$$

where:

GDP = gross domestic product (constant 2015 US$), a measure of economic growth. This is the dependent variable in the models.
GFCF = gross fixed capital formation (constant 2015 US$), a measure of capital;
LABF = labour force, % change;
GEXG = general government final consumption expenditure (constant 2015 US$);
GOVE = government effectiveness;
RLA = rule of law;
CCP = corruption control;
RQL = regulatory quality;
PVT = political stability and absence of violence/terrorism;
VAC = voice and accountability;
BMS = broad money supply growth;
INFR = inflation rate (consumer price index); and
FDI = foreign direct investment, net inflows (BoP, current US$).
i represents the countries (*i* = 1, 2, …, 6) and
t represents the time (t = 2010, 2011, …, 2020).

Equation (1) to (6) can be transformed into its estimable form and by incorporating the natural log we have:

$$lnGDP_{i,t} = \varphi_0 + \varphi_1 lnGFCF_{i,t} + \varphi_2 lnLABF_{i,t} + \varphi_3 GOVE_{i,t} + \varphi_4 lnGEXG_{i,t} + \varphi_5 BMS_{i,t} + \varphi_6 INFR_{i,t} + \varphi_7 lnFDI_{i,t} + \varepsilon_{i,t} \quad (1')$$

$$lnGDP_{i,t} = \alpha_0 + \alpha_1 lnGFCF_{i,t} + \alpha_2 lnLABF_{i,t} + \alpha_3 RLA_{i,t} + \alpha_4 lnGEXG_{i,t} + \alpha_5 BMS_{i,t} + \alpha_6 INFR_{i,t} + \alpha_7 lnFDI_{i,t} + \varepsilon_{i,t} \quad (2')$$

$$lnGDP_{i,t} = \delta_0 + \delta_1 lnGFCF_{i,t} + \delta_2 lnLABF_{i,t} + \delta_3 PVT_{i,t} + \delta_4 lnGEXG_{i,t} + \delta_5 BMS_{i,t} + \delta_6 INFR_{i,t} + \delta_7 lnFDI_{i,t} + \varepsilon_{i,t} \quad (3')$$

$$lnGDP_{i,t} = \lambda_0 + \lambda_1 lnGFCF_{i,t} + \lambda_2 lnLABF_{i,t} + \lambda_3 CCP_{i,t} + \lambda_4 lnGEXG_{i,t} + \lambda_5 BMS_{i,t} + \lambda_6 INFR_{i,t} + \lambda_7 lnFDI_{i,t} + \varepsilon_{i,t} \quad (4')$$

$$lnGDP_{i,t} = \beta_0 + \beta_1 lnGFCF_{i,t} + \beta_2 lnLABF_{i,t} + \beta_3 RQL_{i,t} + \beta_4 lnGEXG_{i,t} + \beta_5 BMS_{i,t} + \beta_6 INFR_{i,t} + \beta_7 lnFDI_{i,t} + \varepsilon_{i,t} \quad (5')$$

$$lnGDP_{i,t} = \pi_0 + \pi_1 GFCF_{i,t} + \pi LABF_{i,t} + \pi_3 VAC_{i,t} + \pi_4 GEXG_{i,t} + \pi_5 BMS_{i,t} + \pi_6 INFR_{i,t} + \pi_7 FDI_{i,t} + \varepsilon_{i,t} \quad (6')$$

where: *ln* is the natural logarithm, $\varphi's$, $\alpha's$ $\delta's$, $\lambda's$, $\beta's$, $\pi's$ and $\omega's$ are the parameters to be estimated and ε_t is the error term.

3.2 Description of institutional variables

i. *Control of Corruption (CCP):* This index captures the perception on utilization of public power to secure private benefits. The a priori expectation here is that it could be positive or negative ($\lambda_3 > 0\ or < 0$) depending on the institutional quality.

ii. *Government Effectiveness (GOVE):* This captures the perception about the quality of public administration or public service. The index measures discernment of government's trustworthiness through the trust given to its administration. The a priori expectation here is that it could be positive or negative ($\varphi_3 > 0\ or < 0$) depending on the institutional quality.

iii. *Political Stability and Absence of Violence and Terrorism (PVT):* This encapsulates the discernment of possible subversion of the political era via

elections or violence. The a priori expectation here is that it could be positive or negative ($\delta_3 > 0\ or < 0$) depending on the institutional quality.

iv. *Rule of Law (RLA):* This captures the view of the nationals on the rules that govern the society and the extent of compliance with such rules. The index measures the judgement of the efficiency and impartiality of the judiciary and reverence for binding contracts and pacts. The a priori expectation here is that it could be positive or negative ($\alpha_3 > 0\ or < 0$) depending on the institutional quality.

v. *Regulatory Quality (RQL):* This index enables the evaluation of the business environment for foreign investors. It measures some variables which are favourable or unfavourable to a free enterprise economy, including the financial system, anti-liberal interventionist policies like price legislations, external trade, etc. The a priori expectation here is that it could be positive or negative ($\beta_3 > 0\ or < 0$) depending on the institutional quality.

vi. *Voice and Accountability (VAC):* This captures the inclinations of the political process, political rights, civil liberties, and independence of the media. The responsibility is that of citizens who take part in political life via elections, and public decisions. It is "measured by the extent to which a country's citizens are able to participate in selecting their government as well as freedom of expression, association, and the press" (Han, Khan, & Zhuang, 2014 cited in Effiong and Okijie, 2021). For details of for how these indices are being constructed, see Kaufmann, Kraay & Mastruzzi (2010). The a priori expectation here is that it could be positive or negative ($\pi_3 > 0\ or < 0$) depending on the institutional quality.

vii. *Gross fixed capital formation (GFCF):* a measure of capital. This variable is crucial in the growth model since capital is paramount for growth as defined in the Harrod-Domar growth model. It is expected that the coefficient of GFCF will be positive.

viii. *Labour force (LABF):* Based on the traditional growth theory, labour input is crucial in the production process. This implies that labour will have a positive effect on economic growth.

ix. *General government final consumption expenditure (GEXG):* Government expenditure includes the expenditures of the government on the different components. Based on the Keynesian ideology, such expenditure is expected to have a positive effect on economic growth.

x. *Broad money supply growth (BMS):* Broad money supply is the total money stock in the economy consisting of currency in circulation, demand deposit, and fixed deposit. Since money is viewed as the oil that lubricates the wheels of trade and industry, it is expected to have a positive effect on economic growth.

xi. *Inflation rate (INFR):* This denotes the changes in the general price level in the economy. It influences growth through its effect on input prices and the demand for final goods. Inflation could exert a positive effect on growth if it is demand pull or could exert a negative effect on growth if it is cost-push.

xii. *Foreign direct investment, net inflows (FDI):* This is another source of capital inflow which could boost the existing volume of domestic capital stock which is crucial for growth. It is expected to exert a positive effect on growth.

3.3 Data and data sources

Data for this study were obtained for six West African countries, viz. Nigeria, Ghana, Senegal, Sierra Leone, Côte d'Ivoire, and The Gambia. The data for this study cover the period 2010 to 2020 and were obtained from two major sources – World Development Indicators (WDI) and World Governance Indicators (WGI). Data on institutional quality (government effectiveness, rule of law, regulatory quality, political stability and absence of violence/terrorism, control of corruption, and voice and accountability) were obtained from WGI while data on all other variables (GDP at constant 2015 US$, gross fixed capital formation at constant 2015 US$, labour force, general government final consumption expenditure at constant 2015 US$, broad money supply growth, inflation rate, and foreign direct investment) were sourced from WDI.

3.4 Analytical technique

Equation (1′) to Equation (6′) will be estimated based on a cointegration regression analysis under the fully modified ordinary least squares regression analysis. This approach enables us to estimate unbiased long-run estimates of the model given the presence of cointegration. Meanwhile, the utilization of this approach is based on the determination of the order of integration of the variables using the common unit root test developed by Levin, Lin and Chu (2002) and the individual unit root test developed by Im, Pesaran and Shin (2003). Further, the model tests the existence of a long-run relationship (that is, the existence of cointegration) using the Kao residual cointegration test.

4. Empirical Findings

4.1 Descriptive analysis

With a total of sixty-six (66) observations arising from six cross-sections and eleven (11) periods, Table 8 presents the descriptive properties of the key variables – institutional variables and GDP.

Table 8: Descriptive Statistics of the Variables

	lnGDP	RQL	RLA	PVT	GOVE	CCP	VAC
Mean	23.822	-0.467	-0.561	-0.563	-0.705	-0.556	-0.263
Median	24.033	-0.481	-0.615	-0.156	-0.676	-0.528	-0.262
Maximum	26.944	0.128	0.149	0.245	0.011	0.059	0.598
Minimum	20.939	-0.963	-1.269	-2.211	-1.286	-1.275	-1.460
Std. Dev.	1.866	0.335	0.397	0.771	0.396	0.391	0.545
Skewness	0.104	0.124	0.210	-1.010	0.204	-0.075	-0.237
Kurtosis	2.115	1.633	1.954	2.485	1.756	1.836	2.382
Jarque-Bera	2.272	5.308	3.497	11.942	4.715	3.789	1.671
Probability	0.321	0.070	0.174	0.003	0.095	0.150	0.434
Observations	66	66	66	66	66	66	66

Source: Researchers' computation (2023).

From Table 8, it can be observed that the log of GDP averaged 23.822% with a standard deviation of 1.866% and maximum and minimum values of 26.944% and 20.939% respectively. The distribution is positively skewed and platykurtic, and the variable is normally distributed given that the Jarque-Bera (J-B) statistic of 2.272 is insignificant. Regulatory quality averaged -0.467 with a standard deviation of 0.335, and maximum and minimum values of 0.128 and -0.963 respectively. The distribution exhibits a positive skewness with a platykurtic nature and is normally distributed given that the J-B statistic is insignificant. For rule of law, its mean value was -0.561 with a standard deviation of 0.397 while its maximum and minimum values were 0.149 and -1.269 respectively. Given that distribution is positively skewed and platykurtic, the distribution is insignificant as is further validated by the insignificance of the J-B statistic.

Political stability and absence of violence/terrorism averaged -0.563 with a standard deviation of 0.771 and maximum and minimum values of 0.245 and -2.211 respectively. The distribution is negatively skewed and platykurtic, thus making it not normally distributed, given that the J-B statistic is significant at the 5% level. Government effectiveness averaged -0.705 with a standard deviation of 0.396 and maximum and minimum values of 0.011 and -1.286 respectively. The distribution is positively skewed and platykurtic, and given that the J-B is insignificant, the variable is normally distributed. The average value of control of corruption was -0.556 with a standard deviation of 0.391. The minimum and maximum values were -1.275 and 0.059 respectively. The distribution is negatively skewed and platykurtic; and is normally distributed given that the J-B statistic is insignificant. Voice and accountability averaged -0.263 with a standard deviation of 0.545; while its minimum and maximum values were -1.460 and 0.598 respectively. The distribution is negatively skewed and platykurtic and is normally distributed.

4.2 Unit root

In ascertaining the stationarity of the variables, the common unit root test developed by Levin, Lin and Chu (2002) and the individual unit root test developed by Im, Pesaran and Shin (2003) were conducted. The results are presented in Table 9.

From the unit root test result presented in Table 9, it can be observed that some of the variables are stationary at level while others are stationary at first difference. For instance, ln*GDP*, *BMS*, *RQL*, *PVT*, *CCP*, and *VAR* are all stationary at level while ln*GFCF*, ln*LABF*, ln*GEXG*, *INFR*, ln*FDI*, *GOVE*, and *RLA* only became stationary at first differencing under the common unit root test. Under the individual unit root test, only ln*GDP*, *BMS*, *PVT*, and *VAC* were stationary at level while all other variables were stationary at first difference. Since all the variables are not stationary at level, it becomes pertinent to examine the existence of a long-run relationship among the variables in the model.

Table 9: Unit Root Test Results

Variables	Common Unit Root Test (Levin, Lin & Chu)		Order of Integration	Individual Unit Root Test (Im, Pesaran & Shin)		Order of Integration
	Level	First Difference		Level	First Difference	
lnGDP	-6.4309*	-------	I(0)	-1.8872*	--------	I(0)
lnGFCF	-1.6297	-6.3519*	I(1)	0.5891	-3.7354*	I(1)
lnLABF	0.9531	-1.6924*	I(1)	3.1397	-2.1223*	I(1)
lnGEXG	1.0084	-4.92648	I(1)	0.4858	-3.0205*	I(1)
BMS	-3.0720*	--------	I(0)	-1.9873*	-------	I(0)
INFR	-1.6390	-6.7970*	I(1)	-0.7849	-4.3596*	I(1)
lnFDI	0.7750	-6.5451*	I(1)	0.3877	-4.8868*	I(1)
GOVE	-0.9168	-5.0184*	I(1)	0.1873	-2.7589*	I(1)
RQL	-2.3938*	-------	I(0)	-0.8443	-2.6584*	I(1)
RLA	-1.6191	-4.8829*	I(1)	0.1703	-2.9888*	I(1)
PVT	-3.6991*	--------	I(0)	-2.2723*	--------	I(0)
CCP	-3.0931*	---------	I(0)	-1.0473	-1.9693*	I(1)
VAC	-1.8096*	---------	I(0)	2.1663*	----------	I(0)

Note: * denotes significance at 5% level; I(0) and I(1) denote stationarity at levels and first difference respectively.

Source: Researchers' computation (2023).

4.3 Test for cointegration

It can be inferred from the unit root test result that not all the variables were stationary at level. Consequently, the need to ascertain the existence of a long-run relationship in the model became imperative. This was done using the Kao residual cointegration analysis for the various models (Model I to Model VI), and Table 10 presents the result.

It is evident from Table 10 that the t-statistic of the Kao residual cointegration test is significant at 1% for Model I to Model VI. It can therefore be inferred that cointegration exists, and that there is a long-run relationship among the variables in the models. Consequently, the study proceeded to estimate the model using the cointegration regression analysis under the fully modified ordinary least squares (FMOLS) approach.

Table 10: Kao Residual Cointegration Test Result

Model	t-statistic	Probability
Model I	-5.1616	0.0000***
Model II	-4.1265	0.0000***
Model III	-3.6917	0.0001***
Model IV	-4.0260	0.0000***
Model V	-5.4223	0.0000***
Model VI	-3.7264	0.0001***

*Note: ** and *** denote significance at 5% and 1% respectively.*
Source: Researchers computation (2023).

4.4 Fully modified ordinary least squares (FMOLS) regression analysis

The FMOLS approach facilitated the estimation of stable and reliable estimates of the model given the existence of cointegration. The estimation was done based on the specified models to achieve the set objectives.

4.4.1 *Influence of Government Effectiveness on Economic Growth in West Africa*

The regression results of the analysis to achieve the above objective are presented in Table 11, where government effectiveness, as one of the institutional variables, is incorporated in the model.

Table 11: Fully Modified Ordinary Least Squares Result for Model I

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	-0.0191	0.0500	-0.3810	0.7049
lnLABF	1.7428	0.1935	9.0071	0.0000***
GOVE	0.3280	0.0742	4.4214	0.0001***
lnGEXG	-0.0306	0.0440	-0.6965	0.4895
BMS	-0.0022	0.0012	-1.9460	0.0576
INFR	-0.0115	0.0032	-3.5907	0.0008**
lnFDI	0.0250	0.0215	1.1632	0.2506
R-squared	0.9990	Mean dependent var		23.8446
Adjusted R-squared	0.9988	S.D. dependent var		1.8705
S.E. of regression	0.0647	Sum squared resid		0.1970
Long-run variance	0.0028			

*Note: ** and *** denote significance at 5% and 1% respectively.*

Source: Researchers computation (2023).

From the regression result presented in Table 11, the regression model can be extracted as follows:

$$lnGDP_{i,t} = -0.0191lnGFCF_{i,t} + 1.7428lnLABF_{i,t} + 0.3280GOVE_{i,t} - 0.0306lnGEXG_{i,t} - 0.0022BMS_{i,t} - 0.0115INFR_{i,t} + 0.0250lnFDI_{i,t} \quad (8)$$

It can be inferred from the regression result in Equation (8) that government effectiveness exerts a positive and significant effect on economic growth at the 1% level of significance. Thus, an improvement in government effectiveness will help to spur economic growth, thereby ensuring

transformational economic recovery within the West African region. From the coefficient, a unit percent increase in government effectiveness will lead to a 0.3280% increase in economic growth within the region.

Gross fixed capital formation had a negative but insignificant effect on economic growth, while labour force was observed to exert a positive and significant effect. Thus, labour plays a crucial role in fostering economic growth. From the coefficient, a unit percent in labour force will lead to a 1.7428% increase in economic growth on the average. For general government final consumption expenditure, the effect on economic growth was observed to be negative but insignificant. This is a pointer to the fact that fiscal policy stance could not bring forth the desired policy outcome, which can be attributed to weak institutions that carry out such policies within the ambit of the government. In the same vein, broad money supply growth was observed to exert a negative but insignificant effect on economic growth, indicating that poor implementation of monetary policy could not generate the desired outcomes within the region.

The rate of inflation, measured by the consumer price index, was observed to exert a negative and significant effect on economic growth in the region. Thus, a 1% increase in inflation will lead to a 0.0115% decrease in economic growth. Thus, inflation is detrimental to growth within the West African region. The R-squared, which very high, is an indication that the estimated model is a good fit as the explanatory variables explain 99.90% of the total variation in economic growth.

4.4.2 *Influence of Rule of Law on Economic Growth in West Africa*

The regression results of the analysis to assess the influence of the rule of law on economic growth in West Africa are presented in Table 12, where rule of law (RLA) is incorporated as one of the explanatory variables.

Table 12: Fully Modified Ordinary Least Squares Result for Model II

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	-0.0367	0.0421	-0.8723	0.3875
lnLABF	1.5896	0.1588	10.0098	0.0000***
RLA	0.3093	0.0623	4.9640	0.0000***
lnGEXG	-0.0099	0.0346	-0.2858	0.7763
INFR	-0.0121	0.0026	-4.6759	0.0000***
BMS	-0.0020	0.0009	-2.1734	0.0348**
lnFDI	0.0534	0.0184	2.8945	0.0057**
R-squared	0.9989	Mean dependent var		23.8446
Adjusted R-squared	0.9986	S.D. dependent var		1.8705
S.E. of regression	0.0701	Sum squared resid		0.2310
Long-run variance	0.0019			

Note: ** and *** denotes significance at 5% and 1% respectively.

Source: Researchers computation (2023).

From the regression result presented in Table 12, the regression model can be extracted as follows:

$$lnGDP_{i,t} = -0.0367lnGFCF_{i,t} + 1.5896lnLABF_{i,t} + 0.3093RLA_{i,t} - 0.0099lnGEXG_{i,t} - 0.0020BMS_{i,t} - 0.0121INFR_{i,t} + 0.0534lnFDI_{i,t} \quad (9)$$

The regression result presented in Equation (9) shows that rule of law exerts a positive and significant effect on economic growth in West Africa. It follows that an increased adherence to the rule of law will boost the performance of the economy as a whole. This is because a society that adheres to the rule of law will act in a way that will inspire trust in corporate activities. From the coefficient, a 1% increase in rule of law will lead to a 0.3093% increase in economic growth. Thus, improved rule of law as an institutional quality will stir transformational recovery in West African countries.

Gross fixed capital formation was observed to exert a negative but insignificant effect on economic growth while labour force exerted a positive

and significant effect. Thus, a 1% increase in the labour force will lead to a 1.5896% increase in economic growth in the West African countries. This portrays the importance of human capital in driving growth in an economy. Government final consumption expenditure exerted a negative but insignificant effect on economic growth, again portraying that fiscal policy in a country with weak institutions would not be able to bring about the desired effect on growth. Inflation exerted a negative and significant effect on economic growth in West Africa during the study period. Consequently, a persistent increase in the general price level will affect aggregate demand negatively which will in turn affect productivity and growth. From the model, a 1% increase in inflation will lead to a 0.0121% decrease in economic growth on the average.

Broad money supply growth was observed to exert a negative and significant effect on economic growth in West Africa. This is an indication that excessive growth in money supply could spur inflation (according to the Monetarist view) which is detrimental to growth. The result further indicates that a 1% increase in broad money supply will lead to 0.0020% decrease in economic growth. Further, foreign direct investment was observed to have a positive and significant effect on economic growth within the study period. A 1% increase in foreign direct investment inflows would lead to a 0.0534% increase in economic growth. It is worth noting that foreign direct investment best flows into countries with strong institutional quality, and such inflows aid in bridging the domestic savings-investment gap thereby stimulating growth. As a measure of the goodness of fit, it was observed that the explanatory variables explain 99.89% of the total variation in economic growth in West Africa during the study period.

4.4.3 *Effect of Political Stability and Absence of Violence/Terrorism on Economic Growth in West Africa*

The regression results of the analysis to assess the effect of political stability and absence of violence/terrorism on economic growth in West Africa are presented in Table 13, with political stability and absence of violence/terrorism (PVT) incorporated as one of the explanatory variables.

Table 13: Fully Modified Ordinary Least Squares Result for Model III

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	0.0274	0.0495	0.5529	0.5830
lnLABF	1.6635	0.1999	8.3221	0.0000***
PVT	0.2376	0.0728	3.2622	0.0021**
lnGEXG	0.0166	0.0424	0.3924	0.6965
INFR	-0.0113	0.0033	-3.4137	0.0013**
BMS	-0.0023	0.0012	-1.9431	0.0580
lnFDI	0.0255	0.0221	1.1511	0.2555
R-squared	0.9988	Mean dependent var		23.8446
Adjusted R-squared	0.9984	S.D. dependent var		1.8705
S.E. of regression	0.0740	Sum squared resid		0.2572
Long-run variance	0.0030			

*Note: ** and *** denote significance at 5% and 1% respectively.*
Source: Researchers computation (2023).

From the regression results presented in Table 13, we can extract our regression model which is portrayed as follows:

$$lnGDP_{i,t} = 0.0274lnGFCF_{i,t} + 1.6635lnLABF_{i,t} + 0.2376PVT_{i,t} + 0.0166lnGEXG_{i,t} - 0.0023BMS_{i,t} - 0.0113INFR_{i,t} + 0.0255lnFDI_{i,t} \quad (10)$$

From Equation (10) which is derived from Table 13, it can be observed that PVT exerts a positive and significant influence on economic growth in West Africa over the study period. It is a matter of fact that an economy will grow where the economic environment is free from violence/terrorism, and there is no abrupt change of government. From the coefficient of PVT, we can infer that a unit percent increase in PVT will lead to a 0.2376% increase in economic growth on the average. This points to the fact that institutional quality matters for any transformational recovery of a nation or a region as the case may be.

The regression result also indicates that while gross fixed capital formation exerted a positive but insignificant effect on economic growth, labour force put forth a positive and significant effect. Thus, a 1% increase in the labour force would lead to a 1.6635% increase in economic growth on the

average. In addition, general government consumption expenditure exerted a positive but insignificant effect on economic growth. This is an indication of the impotency of fiscal policy action in driving economic growth in West Africa. The case is also similar for monetary policy as broad money supply growth exerted a negative but insignificant influence on economic growth during the study period.

The rate of inflation was also observed to exert a negative and significant effect on economic growth during the study period. This is an indication that inflation is detrimental to growth within the West African region. It follows that a 1% increase in inflation will result in a 0.0113% decrease in economic growth on the average. Foreign direct investment was also observed to yield a positive but insignificant effect on economic growth during the study period. The R-squared indicates a good fit and that the explanatory variables account for 99.88% of the total variation in economic growth in West Africa during the study period.

4.4.4 *Influence of Control of Corruption on Economic Growth in West Africa*

The regression results for the influence of corruption on economic growth are presented in Table 14, where control of corruption (CCP) is incorporated as one of the explanatory variables.

Table 14: Fully Modified Ordinary Least Squares Result for Model IV

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	0.0178	0.0508	0.3509	0.7272
lnLABF	1.6904	0.2100	8.0507	0.0000***
CCP	0.1477	0.0774	1.9081	0.0625
lnGEXG	-0.0025	0.0475	-0.0524	0.9584
INFR	-0.0127	0.0034	-3.7699	0.0005***
BMS	-0.0027	0.0013	-2.1673	0.0353**
lnFDI	0.0289	0.0230	1.2601	0.2138
R-squared	0.9988	Mean dependent var		23.8446
Adjusted R-squared	0.9985	S.D. dependent var		1.870506
S.E. of regression	0.0728	Sum squared resid		0.248942
Long-run variance	0.0032			

*Note: ** and *** denotes significance at 5% and 1% respectively.*
Source: Researchers computation (2023).

From the regression results presented in Table 14, we can extract our regression model which is portrayed as follows:

$$lnGDP_{i,t} = 0.0178lnGFCF_{i,t} + 1.6904lnLABF_{i,t} + 0.1477CCP_{i,t} - 0.0025lnGEXG_{i,t} - 0.0027BMS_{i,t} - 0.0127INFR_{i,t} + 0.0289lnFDI_{i,t} \quad (11)$$

The regression result above portrays that control of corruption has a positive but insignificant effect on economic growth in West Africa. This is an indication that the fight against corruption has not succeeded as the region is marked with widespread corruption in government which impedes efficient execution of programmes and policies that will drive economic growth. However, the positive effect is in line with the findings of Efayena and Olele (2023). Also, gross fixed capital formation exerts a positive but insignificant effect on economic growth within the region.

Labour force is observed to exert a positive and significant effect on economic growth. Consequently, an increase in the labour force will lead to an increase in economic growth. Thus, the coefficient indicates that a 1% increase in labour force will lead to a 1.6904% increase in economic growth on the average. The effect of general government consumption expenditure is negative but insignificant, while the effect of foreign direct investment is positive but insignificant. However, the effects of inflation and broad money supply are negative and significant in influencing economic growth. From the coefficient, a 1% increase in inflation will lead to a 0.0127% decrease in economic growth, while a 1% increase in broad money supply will lead to a 0.0027% decrease in economic growth. This negative effect of money supply growth on economic growth can be linked to the fact that excessive money supply could lead to inflation which would hamper growth, since there is always a trade-off between achieving economic growth and achieving price stability. The R-squared presents a good fit of the model and signifies that the explanatory variables account for 99.88% of the total variation in economic growth during the study period.

4.4.5 *Influence of Regulatory Quality on Economic Growth in West Africa*

The regression results of the analysis of the above objective are presented in Table 15, where regulatory quality (RQL) is incorporated as one of the explanatory variables.

Table 15: Fully Modified Ordinary Least Squares Result for Model V

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	-0.0145	0.0508	-0.2846	0.7772
lnLABF	2.0746	0.2147	9.6644	0.0000***
RQL	0.2917	0.0723	4.0368	0.0002***
lnGEXG	-0.0274	0.0449	-0.6103	0.5446
BMS	-0.0019	0.0012	-1.6120	0.1136
INFR	-0.0082	0.0035	-2.3778	0.0215**
lnFDI	0.0275	0.0222	1.2367	0.2224
R-squared	0.9991	Mean dependent var		23.8446
Adjusted R-squared	0.9989	S.D. dependent var		1.8705
S.E. of regression	0.0618	Sum squared resid		0.1797
Long-run variance	0.0030			

*Note: ** and *** denotes significance at 5% and 1% respectively.*
Source: Researchers computation (2023).

The estimated model is extracted form Table 15 and is presented as follows:

$$lnGDP_{i,t} = -0.0145lnGFCF_{i,t} + 2.0746lnLABF_{i,t} + 0.2917RQL_{i,t} - 0.0274lnGEXG_{i,t} - 0.0019BMS_{i,t} - 0.0082INFR_{i,t} + 0.0275lnFDI_{i,t} \quad (12)$$

From the regression model presented in equation (12), it is observed that regulatory quality exerts a positive and significant effect on economic growth. Thus, improved regulatory quality will boost the domestic private sector and foreign investors' confidence to invest, which is paramount to growth. It can be adduced that a 1% increase in regulatory quality will lead to a 0.2917% increase in economic growth on the average. While the effect of gross fixed capital formation is negative but insignificant, the effect of labour force is positive and significant showing that an increase in labour force will lead to

an increase in economic growth. Also, general government consumption expenditure and broad money supply growth both exert a negative but insignificant effect on economic growth while the effect of foreign direct investment on economic growth is positive but insignificant. However, the effect of inflation on economic growth is negative and significant portraying that an increase in inflation will lead to a decrease in economic growth.

4.4.6 *Effect of Voice and Accountability on Economic Growth in West Africa*

The regression results for analysis of effect of voice and accountability on economic growth in West Africa are presented in Table 16, where voice and accountability (VAC) is incorporated as one of the explanatory variables.

Table 16: Fully Modified Ordinary Least Squares Result for Model VI

Variable	Coefficient	Std. Error	t-Statistic	Probability
lnGFCF	0.0212	0.0525	0.4041	0.6880
lnLABF	1.6033	0.2285	7.0169	0.0000***
VAC	0.0804	0.0502	1.6027	0.1157
lnGEXG	0.0422	0.0439	0.9617	0.3411
BMS	-0.0028	0.0013	-2.2112	0.0319**
INFR	-0.0126	0.0034	-3.6506	0.0007***
lnFDI	0.0302	0.0232	1.3007	0.1997
R-squared	0.9987	Mean dependent var		23.8446
Adjusted R-squared	0.9984	S.D. dependent var		1.8705
S.E. of regression	0.0750	Sum squared resid		0.2644
Long-run variance	0.0033			

Note: ** and *** denotes significance at 5% and 1% respectively.
Source: Researchers computation (2023).

The estimated model is extracted form Table 16 and is presented as follows:

$$lnGDP_{i,t} = 0.0212lnGFCF_{i,t} + 1.6033lnLABF_{i,t} + 0.0804VAC_{i,t} + 0.0422lnGEXG_{i,t} - 0.0028BMS_{i,t} - 0.0126INFR_{i,t} + 0.0302lnFDI_{i,t} \quad (13)$$

From the regression result, it is clear that voice and accountability exerted a positive but insignificant influence on economic growth during the study period. Also, the effect of gross fixed capital formation, general government consumption expenditure, and foreign direct investment all exerted a positive but insignificant effect on economic growth during the study period. However, the effect of labour force on economic growth is positive and significant, showing that an increase in labour force will lead to an increase in economic growth. Further, broad money supply and inflation both exerted a negative and insignificant influence on economic growth during the study period. This implies that economic growth increases with a decrease in these variables and declines with an increase in these variables.

4.5 Discussion of major findings

The analysis conducted has revealed core critical issues that need to be addressed in order to achieve the transformational recovery of West African economies. These issues centre on institutions and labour utilization. All through the models estimated, we observed that labour force exerted a positive and significant effect on economic growth. Also, our analysis has shown that institutional variables exert positive effect on economic growth. This finding aligns with earlier studies which agree that institutions matter for economic growth (see Jilenga & Helian, 2017; Radzeviča & Bulderberga, 2018; Bon, 2019; Duodu & Baidoo, 2020). This is an indication that the quality of institutions matters for the execution of policies that will ensure the transformational recovery of West African economies.

5. Summary, Conclusion and Recommendation

In this paper, we explored the influence of institutional variables in fostering transformational recovery in West Africa. The study considered six institutional variables which are: government effectiveness; rule of law; political stability and absence of violence/terrorism; control of corruption; regulatory quality; and voice and accountability. Transformational recovery is associated with an upward trend in the growth rate of gross domestic product which is a measure of economic growth. This study considered six (6) West African countries – Nigeria, Ghana, Côte d'Ivoire, Senegal, Sierra Leone, and

The Gambia, and it spanned 2010 to 2020. In executing the study, six specific objectives were stated, each addressing the influence of one institutional variable on economic growth at a time.

In executing the study, we deployed a unit root test analysis to ascertain the stationarity properties of the data utilized in the study. This was done using the common unit root test and the individual unit root test. The estimation was conducted using the constant assumption. From the results, we observed that some variables were stationary at level while others were stationary at first difference. This mixed order of integration, and the fact that the variables were not all stationary at level, prompted us to execute a test for cointegration or long-run relationship using the Kao residual cointegration test for each of our models. Findings from the test revealed that there was a long-run relationship in all the models. Consequently, we proceeded to estimate the model using a cointegrating regression model based on the fully modified ordinary least squares (FMOLS) regression analysis.

The findings of the study reveal that all the institutional variables exerted positive influence on economic growth in West African countries during the study period. This is an indication that improvement in these institutional variables will help to improve the overall productivity of the economy. The study therefore concluded that institutional quality is necessary for growth and transformational recovery of West African economies. Therefore, there is a need to strengthen institutions which are crucial to the efficient and effective implementation of government policies and programmes that will spur economic recovery and sustained growth. The fight against corruption must be intensified, while democratic tenets should be strengthened, to ensure the choice of leaders who will drive stronger institutions that will propel the growth prospect in the West African sub-region.

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