MODERATING EFFECT OF INSTITUTIONAL QUALITY ON TRADE OPENNESS AND EMPLOYMENT GENERATION AMONG WEST-AFRICAN COUNTRIES

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ABSTRACT
The main objective of this study is to empirically examine the interaction effect of institutional quality on the employment generating potentials of trade openness in the West-African sub-region. Bearing in mind the assumed potency of established trade treaties as policy enhancers, the study therefore focused on the fifteen countries in West Africa that were members of the ECOWAS community as at the year 2019 and then applied the panel ARDL technique to data obtained from these countries. The explanatory variables were trade openness (OPEN), and Exchange rate (EXRD), Multi-Dimensional Regional Trade Index (MDRTI) and level of World Trade Participation (WTP). The study employed three interaction models. The institutional variables used as the interaction variables were government efficiency, political stability and level of corruption. In order to test the sufficiency of the results obtained, a fourth model which has no interaction variable was built as a second-order model. The Akaike Information criteria supported the Panel ARDL (1,1,1,1,1,1) as appropriate for all three models while the Hausman test favoured the pool mean group (PMG) regression for the respective models. In order to sufficiently conclude that institutional variables had significant interaction effects on the explanatory variable, the study also estimated a non-interaction model using the same variables compared the results obtained with the results obtained in the respective interaction models. The results confirmed that political stability and control of corruption had significant interaction effects on trade openness and employment in the West African region. The study therefore recommended improving institutional quality as a viable means of enhancing the effectiveness of trade openness in combating unemployment in Nigeria.

Keywords*: Trade Openness, Institutions, Employment, Multi-Dimensional Trade Index*
JEL Classification*: F16, E02, E24*

1. Introduction

Trade theories such as the Heckscher-Ohlin trade theory provide ample reasons for developing countries to consider cross-border trading as an effective means of accelerating economic growth and industrial development. These theories suggest that cross-border trading expands markets for local products and thereby provides incentives for industrialization and subsequently, employment opportunities for the teaming labour reserves in developing countries. Governments in developing countries including West Africa, therefore consistently include various cross-border trade liberalization plans as one of their key policy strategies for attracting international drivers of growth and development into many facets of their economy. By opening their respective domestic markets, it is expected that local firms in the West African sub-region will be able to take advantage of the pool of over 200 million consumers thereby stimulating firm-level production, expanding existing industries and establishing new industries within the sub-region. Consequently, the near-endemic problem of unemployment would be mitigated through sub-regional labour mobility and the employment opportunities created by the increased industrialization (Schnitzers, 2010; Rodriguez & Rodrik, 2011; Opanike, Aduloju & Adenipekun, 2015). It is therefore quite apt that the governments of various West African countries have overtime, brazenly encouraged collaborative cross-border trading in their trade policies.

West Africa comprises sixteen countries and is home to about 5% of the world's population. The region is marked by political, cultural, linguistic, and religious diversity, which has posed challenges to regional trade. Despite being richly endowed with natural resources—such as oil (Nigeria, Ghana), gold (Ghana, Guinea), and diamonds (Liberia, Sierra Leone)—many countries in the region exhibit classic signs of the resource curse. These include high rate of unemployment, high debt levels, inadequate infrastructure, weak institutions, shortage of skilled labour, and ethnic divisions. The trade patterns also reflect common weaknesses seen in other developing regions. West Africa contributes only about 0.86% to global GDP and accounts for less than 1% of global exports. Only a few countries in the region have developed significant manufacturing sectors, while most rely heavily on agriculture, services, and resource extraction (Porter & Osei-Hwedie, 2015; World Bank, 2016a; Olayemi & Fajimolu, 2023).

In order to combat these challenges as well as promote intra-regional trade, fifteen West African countries formed the Economic Community of West African States (ECOWAS) in 1975. These countries are Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. In 1983, there was a re-affirmation of the trade treaty. Nonetheless, these economic malaises remained unabated. For instance, unemployment remained high. In 2020, the average unemployment rate in the

region was 11.9%, nearly double the global average of 6.6%. Ten member states recorded rates above the global average. Nigeria, the region's largest economy, saw rates climb from 13.4% in 2016 to 33.3% in 2020 (NBS, 2021). Mali's rate stood at 16%, and Cape Verde recorded 27.8% in 2020. For Guinea Bissau, the Labour Force Participation rate in the year 2020 was just 50.35% (World Bank, 2021).

Critics of international integration such as Topalova (2010), Rodriguez and Rodrik (2011), Autor, Dorn and Hansen (2013) and Rodrik (2018) argued that openness to trade actually destroys more jobs than it creates because workers are not mobile. Topalova (2010) argued that aside on-the job experiences, the training acquired through human capital development results in sector-specific specialization thereby reducing labour mobility across sectors. Supporting this argument, Rodrik (2018) maintained that the speed and scale of trade openness often outpace the ability of workers to adapt. Rodrik further stressed that job losses will be more evident in those countries with weak social security programs. On the other hand, some other writers including North (1991), Acemoglu and Robinson (2008) strongly maintain that these arguments are less tenable when the interaction roles of institutions in enhancing the effectiveness of policy variables are considered. They maintain that institutions are structured to promote policy efficiency, conflict resolution, good governance, transparency and accountability.

Acemoglu (2025) emphasized that economic institutions are not only growth-enhancing, but they also determine the distribution of resources and economic gains gotten from trade in a country. Given the emerging consensus on the importance of institutions, it is rational to infer that institutional differences may account for the observed variations in the outcomes of trade openness with respect to its impact on unemployment and consequently economic growth in West African countries. The question then is which of these institutional variables have significant impact and to what extent do they impact the outcomes of trade openness? Based on this, it becomes expedient that the extent to which these institutional factors impact on the ability of trade openness to influence employment rates needs to be empirically investigated.

This study therefore examined how institutions affect the ability of trade openness to significantly impact unemployment in the West African Sub-region, using interaction models. To achieve this objective, the paper has been organized into six sections with introduction as section one. Section two is the literature review. Section three is the methodology of the study. Sections four present the research findings. Section five discusses the findings and policy implications of the findings. Section six forms the concluding and policy recommendations of the paper.

2. Literature Review

2.1 Conceptual Review

Trade Openness

Trade openness, broadly defined as the extent to which an economy permits the free flow of goods, services, and capital across its borders, has long been central to discussions on economic development. According to Rodrik (2018), trade openness encompasses deliberate, policy-driven efforts to enhance trade relations with other countries in pursuit of specific macroeconomic objectives. By adopting trade openness policies, economies integrate into global markets, enabling firms to access advanced technologies and foreign markets; thereby boosting productivity, stimulating labour demand, and creating employment opportunities (Lo, 2023 & Autor et al., 2016). In essence, trade openness is a complex, multidimensional, double-edged concept whose impact varies across countries, institutional dynamics, and policy choices. In some contexts, the structural transformational effect of trade openness integrates an economy into global value chains, and this can lead to higher wages and formalization of jobs, while in others, it may exacerbate informal employment or job insecurity (Rodrik, 2018).

As North (1991) emphasized, the quality of institutions significantly conditions the outcomes of trade openness. Without strong institutions, trade openness can deepen socio-economic inequalities or even lead to deindustrialization (Agyei & Idan, 2022; Chhabra, Sengupta, & Maitra, 2023). This has shifted scholarly attention toward the interaction between openness and institutional frameworks, especially in developing regions where economic resilience remains fragile.

Employment

The term “employment” applies to the participation of individuals in activities that generate income, either through wage work, self-employment, or other productive engagements (Blanchard & Johnson, 2013; ILO, 2022). Being employed is critical for poverty reduction, social inclusion, and improved living standards. For this reason, achieving sustainable full employment remains a globally prioritized macroeconomic goal. The International Labour Organization (ILO) also emphasizes that employment should be "decent," and guarantee fair income, security, and respect for labour rights. Nonetheless, in many developing economies, the informal sector plays a dominant role in providing employment and the employment generally provided by the informal sector are often characterized by low wages, job insecurity, and poor working conditions (Chen, 2012; Fields, 2019). The search for higher wages and better working conditions often results in high labour mobility and high rate of intra-regional employment (Simonen, McCann, Karhinen & Svento, 2024).

Leal and Veraldi (2023) conceptualized intra-regional employment as the creation and mobility of jobs among neighbouring countries sharing economic, social, or political ties. According to ILO (2022), intra-regional employment opportunities are enhanced by leveraging regional resources, addressing labour market disparities, and promoting skills development that aligns with regional needs. Fostering intra-regional employment requires coordinated policy efforts, investment in human capital, and removal of cross-border barriers. However, barriers such as restrictive migration policies, skills mismatches, poor transport infrastructure, and political instability often hinder the full realization of intra-regional employment potential. Moreover, structural unemployment persists in many regions due to limited industrial diversification and over-reliance on informal sectors (Adepoju, 2009; UNECA, 2020). Though intra-regional employment holds significant promise for enhancing regional economic resilience and shared prosperity, however, realizing its benefits depends on institutional frameworks that promote labour mobility, economic cooperation, and workforce development (UNECA, 2020).

Institutions

One of the earliest concepts of the term institution can be traced to Veblen (1919) who defined institutions as the settled habits of thought common to the generality of man. In Commons (1931), institutions are described as socially accepted behavioural patterns rooted in art and religion. However, Commons (1931) criticized the term "institution" for its ambiguity, arguing that it lacks a clear boundary between human agency and structural forms. This vagueness, he suggested, allows for uncoordinated interpretations. Dao (2011) and Farkas (2019) noted that this ambiguity persists in modern literature, as writers such as Peters (2000) conceptualize institutions as formal governance structures while other writers including North (1991) and Ostrom (2005) conceptualize institutions as informal norms and traditions. Morgan (2009) offers a synthesis by suggesting that norms and attitudes only gain institutional relevance when acted upon and embedded within some recognized contexts. To Figuera and Silva-Rego (2020), institutions are key moderating factors between different economic agents. Institutions are widely recognized for their interactive influence on policy outcomes. Institutions exist to provide legitimacy to transactions and to determine what type of structures would be appropriate for an economy. Lack of good institutions, therefore, poses a challenge to the welfare of any economy.

Measuring institutional quality remains complex due to its abstract nature. Ben-Ali and Krammer (2016) identified eight proxies such as governance indices, corruption perception, civil liberties, and doing business indicators. However, they caution that these measures often lack precision and were originally developed for

other purposes. Notwithstanding, these measures have been particularly useful in empirical research.

2.2 Theoretical Review

The theoretical foundation of intra-regional employment is deeply rooted in regional integration theories, which underscore the critical role of economic cooperation and the dismantling of barriers within regions to foster development. Classical economic theories such as Customs Union Theory and Economic Integration Theory, pioneered by scholars like Viner (1950) and Bela Balassa (1961), provide a framework for understanding how integration among neighbouring countries enhances employment opportunities. Central to these theories is the free movement of labour, goods, and services, which serves as a catalyst for optimal resource allocation and economic efficiency within a region (Molle, 2006). The mobility of labour across borders allows surplus labour from high-unemployment regions to be absorbed by economies with labour shortages, thereby mitigating unemployment disparities and promoting inclusive growth (Brülhart, 2011).

Viner (1950)'s custom union theory postulates that breaking national trade barriers and removing tariffs so as to form regional trading blocs facilitates trade creation, which in turn stimulates production and employment across member states. On the other hand, the economic integration theory posits that the process of integration requires ceding aspects of national sovereignty. The theory posits that economic integration enhances efficiency through economies of scale, stimulates competition, attracts investment, and fosters overall economic growth. It also recognizes potential challenges such as unequal distribution of benefits, adjustment costs, and policy coordination complexities. Balassa (1961) further categorizes economic integration into progressive stages—ranging from free trade areas to full economic unions—each with implications for labour mobility and job creation.

Additionally, New Regionalism Theory, which emerged in the 1990s, incorporates socio-economic and political dimensions, highlighting how institutional cooperation and policy harmonization among countries can create an enabling environment for employment growth (Farell, Hettne & Langerhive, 2005). From this perspective, intra-regional employment is not merely a by-product of economic agreements, but a deliberate outcome of policies aimed at reducing structural unemployment and fostering human capital development within integrated regions. Thus, theoretical models of regional integration consistently emphasize that facilitating the free movement of factors of production, particularly labour, remains essential for expanding employment opportunities and achieving sustainable regional development.

For example, the Ricardian theory of comparative advantage posits that respective countries benefit by specializing in the production of goods for which they have lower opportunity costs and exchanging their domestic products for those commodities. By expanding production of these goods, surpluses generated can be traded for other needed goods through cross-border trading (Krugman, Obstfeld, & Melitz, 2018). In the same vein, is the Heckscher-Ohlin theory which posits that countries should specialize in producing goods for which they possess relative factor abundance—labour or capital—and trade for others. While specialization results in higher net gains in efficiency, expanding production intrinsically implies creating employment opportunities. However, as noted in Akinyemi, Ebiefie, Adekojo and Ibiyemi (2014), these gains may not be evenly distributed across sectors or citizens. Trade liberalization may result in sectorial winners and losers, with varying employment effects. The uneven distribution of gains from trade is amplified or dampened by institutional settings—such as governance and regulatory quality—can mediate or amplify these effects (Alonso & Garcimartin, 2009; Bouis, Duval & Murtin, 2011).

The relationship between Institutional settings and economic performance was the groundwork for the institutional school of thought in the 1930s. Commons (1931) posited that institutions are essential to social stability and economic development because interactions among economic agents are coordinated and regulated within institutional frameworks. Institutions provide the mechanisms to balance competing interests—such as labour, capital, and government—thereby ensuring social stability and economic development. The New Institutional Economics posits that institutions emerge when their creation is deemed efficient and necessary, thereby improving the environment in which they operate. They suggested that (North, 1991; Williamson, 1985). This suggests that economic actors establish institutions when the anticipated social benefits of their existence exceed the perceived transaction costs associated with their formation (Coase, 1937; Williamson, 1985, North, 1991). Thus, rational economic agents are incentivized to create institutions only when the net benefits are positive.

2.3 Empirical Review

Empirical studies on trade-employment related matters are readily available in existing literature. Le (2024), examined the impact of trade openness on self-employment in 36 OECD countries. The study applied Panel-Generalized Method of Moments (Panel-GMM) on panel datasets spanning from 1975 to 2015. The results indicated that trade openness increased self-employment in OECD countries. For the south-eastern Europe (SEE) countries, Kragulj, Parezanin and Jednak (2018) aimed at investigating the effects of trade liberalization on improving the gains from trade of SEE countries who are under the Central European Free Trade

Agreement (CEFTA). Variables examined include GDP growth, unemployment rate, public debt and budget deficit. Correlation analysis was applied on the bilateral flows between pairs of SEE countries under the CEFTA agreement. The results revealed that trade liberalization in had significant influence on GDP growth, unemployment rate and public debt in the SEE countries. The inter-state dependency as well as the interactive influences among variables were recognized in Ali, Yusop, Kaliappan, Chin and Meo (2022) who incorporated cross-sectional dependence of Organization of Islamic Cooperation (OIC) countries, while investigating the impact of trade openness, human capital public expenditure and institutional performance on unemployment in various income groups. The dynamic common correlated effects (DCCE) was used on a pooled data covering an unspecified period. They found that trade openness reduced unemployment in lower-income OIC countries but increased it in higher-income ones. The objective of Villanthenkodath, Pal and Mahalik (2024), was the relative effectiveness of economic globalization, trade openness, and financial openness on income inequality in low-, middle-, and high-income countries. They sourced panel data over the period from 1991 to 2020 for variables representing economic growth, urbanization, agriculture and industry. By employing the pooled mean group-autoregressive distributed lag (PMG-ARDL) test, they found that trade openness reduces income inequality in high- and middle-income countries but increases it for low-income countries. Their findings reveal that trade openness can be detrimental to employment in low-income nations, especially countries in Sub-Saharan Africa.

The employment effect of trade openness is fairly established in an appreciable number of sub-Saharan researches, although the results emanating from these researches are mixed. Cooray, Dutta, and Mallick (2017) aimed at examining the role of political institutions such as democracy, political rights and civil liberties in driving the impact of trade openness on labour force participation rate (LFPR). The study sourced panel data spanning over the period 1985 to 2012 of forty-eight Sub-Saharan African countries which included Burkina-Faso, Gabon, Congo, Liberia, Mali, Mauritania and Nigeria. Using the PMG-ARDL as its estimation technique, the results revealed that LFPR is positively influenced by trade openness and that political institutions are critical enhancers of the benefit derived by LFPR from trade openness. The positive effect of trade openness on employment is supported by the 2-step panel GMM result obtained by Adeboje, Folawewo, and Adedokun (2022) who investigated trade integration, economic growth and employment nexus in West Africa using data spanning from 2005 to 2019.

However, the findings of Alauddin and Khan (2021) casted doubts on these positive findings. They employed the Least Squares Dummy Variable Corrected (LSDVC) panel estimation method on panel data of 12 developing countries which included Gambia, Guinea Bissau, Mali, Niger, Senegal, Sierra Leone and Togo.

Using data covering the period 1995 to 2016 the study found a negative relationship between trade openness and employment rate in these developing countries. The findings of Agbahoungba (2019) who assessed the impact of trade liberalization on employment in West Africa using the generalized least squares (GLS) estimation techniques on panel data covering the period of 2000 to 2017 reveal that trade liberalization significantly contributes to job destruction in the West African region. Again, Coulibaly, Traore and Pakoupete (2023) examined the employment potentials within the West African sub-region using eight west-African countries, which includes Benin, Guinea Bissau, Mali and Senegal. Their findings reveal that employment potentials are significant but quite weak and dynamically reducing, strongly indicating its disappearance in the long term.

The result obtained by Abdul-Mumuni, Amakye and Insaidoo (2023) intensified the already existing empirical contradictions in the trade openness and employment nexus when they tested the relationship between trade openness and employment rate in West Africa using data obtained from 34 sub-Saharan African countries which included Nigeria. The study employed the Pedroni and Westerlund panel co-integration test and the nonlinear ARDL estimation method on panel data spanning from 1991 to 2020. Their findings revealed an asymmetric relationship between trade openness and unemployment in sub-Saharan Africa.

Available literature show that empirical interest on country-specific studies of West-African sub-region are not only relatively fewer than the number of studies done in other areas, they produced conflicting results and also lean more on the effect of trade openness on economic growth than its effect on employment. Using simple statistical measures, Adu-Gyamfi, Nketiah, Obuobi and Adiei (2020) found that among West-African Countries, Cote-D'Ivoire has the highest level of trade openness, followed by Ghana, Burkina Faso, Nigeria and Sierra Leone. The Gambia has the least level of trade openness. The study on Nigerian trade openness-employment nexus done by Onifade, Asongu and Bekun (2019) using the Vector Error Correction Method on annual data spanning between 1992 and 2017 confirmed that trade openness has a positive but significant impact on unemployment in Nigeria. For Mali, Adjouro (2020) found that the sensitivity of trade liberalization to unemployment dynamics depends on institutional qualities. For Ghana, Duodu and Lau (2020) revealed that though trade openness and the quality of institution respectively have significant positive impact on economic growth, however, the interaction of trade openness and institutional quality was an insignificant growth enhancing variable.

From the articles reviewed, which to the best of the researchers' knowledge aptly represent the scope and findings of the quantum of researches carried out in these regions, it is evident that research on the nexus of trade openness, institutional quality and employment is still inadequate and lacks concession. More research

interest needs to be focused on this area, given the fact that despite the varying degrees of their institutional qualities, countries are increasingly being absorbed into the global community and the economic effect of such amalgamation on its citizens need to be clearly understood for policy reasons. This study therefore contributes to filling this research gap by studying the interactive effect of institutional quality on trade openness and employment.

3. Methodology and Data

3.1 Model Specification

The study draws from the work of Akinyemi, *et al* (2014) who analysed trade liberalization and employment generation in Nigeria. They used employment (EM) as dependent variable while the independent variables are foreign direct investment (FDI), Openness ($OPEN$), tariff (Tar) and wages (Wa). The operational model used was expressed as:

$$EM = b_0 + b_1 FDI + b_2 OPEN + b_3 Tar + b_4 Wa + U_t \quad (1)$$

Where U_t is the error term. However, this study is a panel study of the link between trade openness, institution quality and employment in the West African sub-region. Driven by the fact that 15 of the 16 countries in the region had hitherto been bonded in a trade integration treaty under the auspices of ECOWAS which, by reasonable expectations, should significantly influence trade patterns within the region, the study therefore followed Park and Claveria (2018) and Adeboje *et al* (2022) by constructing a Multidimensional Regional Trade Index ($MDRTI$) which is a variant of the Multidimensional Regional Integration Index ($MDRII$) by using trade related variables. The $MDRTI$ variable is used in place of Tariff in this study. The study also recognized the significant role exchange rate plays in cross-border trade and therefore substituted dollar exchange rate ($EXRD$) for FDI. Furthermore, due to unavailability of data, contribution to world trade (WTP) was used instead of wages. Thus, by including the institution quality ($INST$) as a multiplicative interaction variable, the functional form of the model used in this study is given as:

$$EM = f(OPEN, EXRD, MDRTI, WTP, INST * OPEN) \quad (2)$$

While the operational econometric model given in its panel form is expressed as

$$EM_{it} = \beta_0 + \beta_1 OPEN_{it} + \beta_2 EXRD_{it} + \beta_3 MDRTI_{it} + \beta_4 WTP_{it} + \beta_5 INST_{it} * OPEN_{it} + U_t \quad (3)$$

The *a priori* sign expectations are: $\beta_0 > 0$, $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$, and $0 < \beta_5 < \beta_1$.

The World Governance Index developed by Kaufmann, Kraay and Zoido-Lobatón (1999) reports six dimensions of institutional qualities. These are Control of Corruption, Voice and accountability, rule of law, Government efficiency, Political stability and absence of violence terrorism, and Regulatory quality. This study randomly selected three of the six variables – political stability ($POLST$), government efficiency ($GOVT$) and control of corruption ($CCOR$) – in its empirical work because the focus of this research is to test institutional quality as a variable and not its disaggregated components. In order to test both the short-run and the long-run relationships between trade openness and employment, the study employed the Panel-Auto Regressive Distributed Lag (P-ARDL) estimation technique. Furthermore, including all institutional variables in one model may lead to the problem of multicollinearity. The study therefore specified three separate models by disintegrating equation 3 into three multiplicative interaction Panel-Auto-Regressive Distributed Lag (P-ARDL) equations stated as:

Model 1: Political Stability*Trade Openness Interaction Model

$$\begin{aligned}\Delta EM_{it} = {} & \sum_{k=1}^{d-1} \mathrm{b}_{1ik}\Delta EM_{i,d-k} + \sum_{k=0}^{e-1} \mathrm{b}_{2ik}\Delta OPEN_{i,e-k} + \sum_{k=0}^{f-1} \mathrm{b}_{3ik}\Delta EXRD_{i,f-k} + \\ & \sum_{k=0}^{g-1} \mathrm{b}_{4ik}\Delta MDRTI_{i,g-k} + \sum_{k=0}^{h-1} \mathrm{b}_{5ik}\Delta WTP_{i,h-k} + \sum_{k=0}^{j-1} \mathrm{b}_{6ik}\Delta POLST * \\ & OPEN_{i,j-k} + \varphi\big(\beta_1 EM_{i,t-1} + \beta_2 OPEN_{it} + \beta_3 EXRD_{it} + \beta_4 MDRTI_{it} + \\ & \beta_5 WTP_{it} + \beta_6 POLST * OPEN_{it}\big) + \theta_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

Model 2: Government Efficiency*Trade Openness Interaction Model

$$\begin{aligned}\Delta EM_{it} = {} & \sum_{k=1}^{l-1} \alpha_{1ik}\Delta EM_{i,l-k} + \sum_{k=0}^{m-1} \alpha_{2ik}\Delta OPEN_{i,m-k} + \\ & \sum_{k=0}^{n-1} \alpha_{3ik}\Delta EXRD_{i,n-k} + \sum_{k=0}^{p-1} \alpha_{4ik}\Delta MDRTI_{i,p-k} + \\ & \sum_{k=0}^{q-1} \alpha_{5ik}\Delta WTP_{i,q-k} + \sum_{k=0}^{r-1} \alpha_{6ik}\Delta GOVT * OPEN_{i,r-k} + \\ & \phi\big(\beta_1 EM_{i,t-1} + \beta_2 OPEN_{it} + \beta_2 OPEN_{it} + \beta_3 EXRD_{it} + \beta_4 MDRTI_{it} + \\ & \beta_5 WTP_{it} + \beta_6 POLST * OPEN_{it}\big) + \mathrm{б}_{it} + \varepsilon_{it} \end{aligned} \quad (5)$$

Model 3: Control of Corruption*Trade Openness Interaction Model

$$\begin{aligned}\Delta EM_{it} = {} & \sum_{k=1}^{s-1} \lambda_{1ik}\Delta EM_{i,s-k} + \sum_{k=0}^{t-1} \lambda_{2ik}\Delta OPEN_{i,t-k} + \sum_{k=0}^{u-1} \lambda_{3ik}\Delta EXRD_{i,u-k} + \\ & \sum_{k=0}^{v-1} \lambda_{4ik}\Delta MDRTI_{i,v-k} + \sum_{k=0}^{w-1} \lambda_{5ik}\Delta WTP_{i,w-k} + \sum_{k=0}^{x-1} \lambda_{6ik}\Delta CCOR * \\ & OPEN + \varpi\big(\beta_1 EM_{i,t-1} + \beta_2 OPEN_{it} + \beta_2 OPEN_{it} + \beta_3 EXRD_{it} + \\ & \beta_4 MDRTI_{it} + \beta_5 WTP_{it} + \beta_6 POLST * OPEN_{it}\big) + \Ϙ_{it} + \varepsilon_{it} \end{aligned} \quad (6)$$

Where $\theta, \mathrm{б}$ and Ϙ are the unit-specific fixed effects of the respective models, the ε_{it} in each model represents their error terms, φ, ϕ and ϖ are the error-correction co-efficient which represent the group-specific speed of adjustment to long-run equilibrium for the respective models and whose values are expected to be less than

zero. $\alpha_{1\ldots6}$, $b_{1\ldots6}$ and $\lambda_{1\ldots6}$ are the respective short-run coefficients for the explanatory variables which include lags of the dependent variable (ΔEM) and whose optimal lag lengths vary according to the lag order *d, e, f,... l, m, n. . s, t, u…x* in the respective models. The order of integration of the variables are allowed to be I(0) or I(1). The *a priori* sign expectations for all corresponding variables are not expected to be materially different from those stated for the universal model.

3.2 Variable Description

Employment

The study used the labour force participation rate as its proxy for employment rate (EM) in order to adequately capture all actively engaged persons. This is because typical of developing countries, West African countries have a significant number of its working force are self-employed and engaged in the informal sector.

Trade Openness

The classical indicator of trade openness ($OPEN$) is given as:

$$\frac{IM + EX}{GDP} \tag{7}$$

Where IM is the value of imports, EX is the value of Exports and GDP is the Gross Domestic Product. This measure, however, has been criticized because it combines trade which is measured in gross terms with GDP which is measured in value-added terms. Secondly, it does not account for country size (ATPC, 2020). The study therefore used the symmetric relative openness indicator that compares the degree of openness of a country with that of the regional mean. This is measured as:

$$\frac{\frac{EX}{GDP} - \frac{2IM - (EX + IM)}{GDP^r - GDP}}{\frac{EX}{GDP} + \frac{2IM - ((EX + IM)}{GDP^r - GDP}} \tag{8}$$

where GDP^r is the regional mean. This measure has the advantage of making cross-country comparism easier. Where a country's mean is equal that of the regional mean value, the symmetric measure will be equal to zero (ATPC, 2020).

Institutional Quality Variables

The study employs three of the six institutional quality metrics features in the World Governance Index developed by Kaufmann *et al.* (1999) and published in the World bank database. The institutional Quality variables employed are Political Stability, Government effectiveness and Control of Corruption. The World Governance Index

(WGI)'s ratings lie between +2.50 to -2.50, where +2.50 represents excellent institutional condition while -2.50 is the worst value.

Multidimensional Regional Trade Index (MDRTI) Variable

The study leaned heavily on Africa Regional Integration Index (ARII) published in the year 2016; Park and Clavera (2018) and Adeboje *et al* (2022) in constructing the Multi-Dimensional Regional Trade Index ($MDRTI$) variable used in this study. The ARII (2016) segmented a total of thirty-three indicators into eight basic dimensions of regional integration. The dimensions are trade and investment; money and finance; regional value chains; infrastructure and connectivity; movement of people; Environmental integration; political; institutional and social integration. The ARII (2016) identified tariff liberalization and intra-regional trade as two sub-dimensions that are related to trade integration and provided formulae for calculating their indexes thus:

i. Level of Custom index = $1 - \left(\frac{country\ result - MinResult}{MaxResult - MinResult}\right)$

ii. Share of intra-regional exports index = $\left(\frac{country\ result - MinResult}{MaxResult - MinResult}\right)$

iii. Share of intra-regional imports index = $\left(\frac{country\ result - MinResult}{MaxResult - MinResult}\right)$

iv. $MDTRI = \left(\frac{custom\ index + import\ index + export\ index}{3}\right)$

The $MDRTI$ variable is the simple average of the first three indexes. MinResult and MaxResult are the respective values recorded for the country with the smallest recorded value and for the country with the highest recorded value, respectively.

Other Variables

Other variables used are the US dollar to the respective countries exchange rate ($EXRD$) and the contribution to world trade (WTP), measured as the proportion of trade to the total value of world trade for the respective countries.

3.3 Data Information and Preliminary Test Results

Relevant information regarding the data generated for the empirical study is presented in Table 1 and Table 2.

Table1: Data Information showing Descriptive Statistics and Unit Root Results

Variable	Source of data	Period covered	Number of observations	Mean (median)	Standard deviation	Skewness	Level of stationarity
Employment rate (EM)	International Labour Organization (ILO)	2012–2022	176	60.973 (59.810)	8.995	-0.22	I(0)
Trade Openness (OPEN)	World Bank Database	2012–2022	176	54.641 (53.891)	23.152	0.485	I(0)
**Control of Corruption (CCOR)	World Governance Index (WGI) published in the World Bank Database	2012–2022	176	-0.577 (-0.675)	0.529	1.042	I(0)
**Political Stability (POLST)	World Governance Index (WGI)	2012–2022	176	-0.624 (-0.520)	0.746	-0.320	I(0)
**Government Effectiveness (GOVT)	World Governance Index (WGI)	2012–2022	176	-0.635 (-0.670)	0.352	0.282	I(0)
Multi-Dimensional Regional Trade Index (MDRTI)	World Trade Organization (WTO)	2012–2022	176	0.063 (0.010)	0.137	3.370	1(0)
Exchange rate (EXTD)	Global Economic Monitor (GEM) data published in the World Bank database	2012–2022	176	1288.358 (510.514)	2605.28	2.771	1(0)
Contribution to World trade (WTP)	World Trade Organization (WTO)	2012–2022	176	17.539 (18.400)	10.563	0.353	I(1)

Source: Authors' compilation
** are the institutional variables

As shown in Table 1, the central tendencies of the distribution of the data for employment rate (EM), trade openness ($OPEN$) and government effectiveness ($GOVT$) are quite good, given the fact that the respective mean values and their corresponding median values are not materially different from each other (i.e. $mean \approx median$). Using the rule of the thumb criteria, the values of their standard deviations are less than half of the respective mean values, indicating that the data distributions are fairly dispersed around their respective mean values. Also, the data distribution of the three variables are fairly symmetric based on the respective skewness values which are less than 0.5. The datasets of the three variables, therefore, fairly align with Gaussian criteria for normal, symmetric distribution while the distributions observed in other datasets are at variance with the criteria.

Table 2: Correlation Table

	EM	OPEN	MDRTI	EXRD	WTP	POLST	GOVT	CCOR
EM	1.000							
OPEN	0.376	1.000						
MDRTI	0.011	-0.224	1.000					
EXRD	-	0.021	-0.098	1.000				
WTP	0.244	0.140	-0.345	0.025	1.000			
POLST	-	0.390	-0.464	0.035	-	1.000		
GOVT	0.096	0.342	-0.060	-0.307	-	0.384	1.000	
CCOR	0.022	0.477	-0.221	-0.180	-	0.552	0.825	1.000

Source: Authors' computation

The correlation data presented in Table 2 shows that the regressors are not perfect or exact linear representations of each other, based on the generally low correlation coefficients between the pairs; thereby reducing the suspicion of multicollinearity. Table 2 also shows that the correlation between the dependent variable (EM) and its respective explanatory variables is quite low. The highest is the 38% correlation between employment (EM) and trade openness ($OPEN$). This implies that the respective explanatory variables do not have strong linear relationship with EM and also indicates that the explanatory variables may not be good predictors of EM. Interestingly, the correlations between institutional quality variables are significantly high. The correlation between government efficiency and control of corruption is as high as 83% while the correlation between political stability and control of corruption is as high as 55%. It is also worth noting that the institutional variables are fairly correlated with trade openness while political stability has negative correlation with employment (EM) and multi-dimensional trade ($MDRTI$). Again, $MDRTI$ is negatively correlated with exchange rate and

contribution to world trade (WTP). Table 1 also show that the data series for contribution to world trade (WTP) is stationary at first difference {I(1)} while others are stationary at levels {I(0)}. The combination of I(0) and I(1) stationarity supports the Panel-Auto-Regressive Distributed Lag (P-ARDL) estimation technique.

The results of the preliminary examination presented in Table 1 and Table 2 instigated the choice of a P-ARDL model and its associated estimation procedure. The estimation procedures followed include lag-length selection, Hausman test and the P-ARDL long run and short run estimation. The second order procedure employed to sufficiently ascertain whether the interaction impact of institutions on employment is based on the null hypothesis that there is no material difference between the results obtained in the models with institution-interaction variable and the models with no institution-interaction variable. The estimation results are presented in the next section.

4. The Results

Relying on the Akaike Information Criteria (AIC) as its model selection method, the results obtained indicated panel-ARDL (1,1,1,1,1,1) as appropriate for each of the three models. The P-values of the Hausman test performed for the three models were greater than 5%, suggesting that the Pooled Mean Group (PMG) Regression is the preferred estimator for the three respective models. The estimation result is presented in Table 3.

The results of the estimated coefficients and their corresponding P-values (given in parenthesis) for the three Panel-ARDL (1,1,1,1,1,1) models are presented in Table 3. Based on an acceptance benchmark of 5% level of significance, the short run results shown in the three models studied all suggest that $EXRD$, $MDRTI$ and WTP do not have any significant effect on employment in the short run. For trade openness ($OPEN$), the short run result obtained in model 1 indicates that the effect of $OPEN$ on employment (EM) is significant at the 5% level. The results for Model 1 suggest that there is a positive and significant impact of $OPEN$ on EM such that every unit increase in the level of $OPEN$, there is a corresponding increase of approximately 0.407 unit in employment in the short run. However, the significance wanes off when it is interacted with political stability. For model 2 and model 3, $OPEN$ has no significant effect on employment, standing alone or in its multiplicative interaction with government efficiency or with Control of Corruption in the short run.

Table 3: Results of the respective Panel-ARDL (1,1,1,1,1,1) models

Long Run Results

	OPEN	EXRD	MDRTI	WTP	Interaction Variable	Cointegrating equation
Model 1: Political stability*Trade Openness Interaction Model	1.227 (0.000)	2.363 (0.000)	-4.595 (0.000)	0.079 (0.000)	0.019 (0.000)	-0.009 (0.662)
Model 2: Government Efficiency*Trade Openness Interaction Model	0.254 (0.056)	0.272 (0.249)	-4.778 (0.000)	0.079 (0.000)	0.022 (0.000)	-0.010 (0.718)
Model 3: Control of Corruption*Trade Openness Interaction Model	0.928 (0.000)	-1.500 (0.000)	-4.128 (0.000)	0.098 (0.000)	0.040 (0.000)	-0.003 (0.876)

Short Run Results

Model	ΔOPEN	ΔEXRD	ΔMDRTI	ΔWTP	Interaction Variable	Cointegrating equation
Model 1	0.407 (0.041)	0.105 (0.516)	0.198 (0.456)	0.002 (0.302)	-0.004 (0.156)	-0.009 (0.662)
Model 2	0.125 (0.080)	0.188 (0.248)	-0.048 (0.877)	0.002 (0.486)	0.002 (0.700)	-0.010 (0.718)
Model 3	0.079 (0.289)	-0.150 (0.665)	-0.037 (0.838)	0.002 (0.389)	0.006 (0.294)	-0.003 (0.876)

Long Run Results (Model without Interaction Variable)

		OPEN	EXRD	MDRTI	WTP	Cointegrating equation
Second order condition model	Long run results	0.921 (0.000)	2.016 (0.693)	-21.855 (0.000)	-0.030 (0.761)	-0.016 (0.028)
	Short run results	0.001 (0.910)	1.252 (0.245)	2.228 (0.113)	0.042 (0.145)	

Source: Authors' computation.
P-values are in Parenthesis

The long run results presented in Table 3 show that the three models respectively indicate that $MDRTI$ and WTP significantly impact EM in the long run. In all the models, $MDRTI$ has a very high negative impact on EM such that for every unit increase in $MDRTI$, EM reduces 4.595 units, 4.778 units and 4.128 units. On the other hand, the models reveal that WTP has positive and significant impact on EMP. A one-unit change in WTP results in a long run change in EM of 0.079-unit, 0.079 unit and 0.098 unit, respectively. In the case of $OPEN$ and $EXRD$, only model 1 and model 3 suggest that the two variables have significant on EM in the long run. Both models indicate that $OPEN$ greatly impacts EM such that for every unit change in $OPEN$, EM changes by 1.227 units and 0.928 unit respectively. Conversely, model 2 contradicts these results by indicating a much milder impact of 0.254-unit change in EM for every unit change in $OPEN$. Model 2 also contends the significance of the result at the 5% level.

Furthermore, the multiplicative interaction variable for the respective models were significant even at the 1% level. The models reveal a positive change in EM of about 0.019-unit, 0.022 unit and 0.040 unit for every unit change in $OPEN$ when $OPEN$ is interacted with political stability, government efficiency and control of corruption, respectively. By comparing the coefficients, with that of the second order condition model, it is apt to say that political stability and control of corruption institutional variables significantly enhance the potency of trade openness to impact employment within the West African sub-region in the long run. In the three models, the co-integrating equations were correctly signed though not significant. Except for $MDRTI$, all other variables conformed to *a priori* expectations. The result of our "second order condition" model (that is, the model with no interaction variable), confirms the primary models by indicating that all short run variables are not significant. It also confirms the negative sign obtained for the $MDRTI$ variable. However, contrary to the primary results in which all long run results were significant, the second order results show that only $OPEN$ and $MDRTI$ are significant in the long run. The co-integrating equation was correctly signed and significant in the second order condition model.

5. Discussion of Findings and Policy Implications

The results of this study revealed important insights into the complex relationship between trade openness, institutional quality, and employment in West Africa and aligns with the findings of Cooray et al (2017), Adeboje et al, (2022) and Onifade et al who found positive and significant relationships between openness and employment. In the short run, trade openness appears to significantly influence employment only when political stability is considered (Model 1), suggesting that political environments may initially facilitate the employment effects of trade policy. However, other short-run variables such as exchange rate, regional trade integration

($MDRTI$), and contribution to world trade (WTP) were largely insignificant across all models, implying limited immediate impact on employment.

In the long run, the models provide clearer evidence. Trade openness, when interacted with institutional quality variables—particularly political stability and control of corruption—has a significantly positive impact on employment. This finding supports the argument that institutional quality amplifies the long-term benefits of trade openness. Moreover, the individual effect of trade openness is strongest in Model 1 and Model 3, highlighting the vital role of institutional frameworks in shaping labour market outcomes. Conversely, the $MDRTI$ variable showed a consistently negative and highly significant long-run relationship with employment across all models. This result suggests that, despite regional trade efforts under ECOWAS, current trade integration mechanisms may be insufficient or even counterproductive for employment creation. This may reflect structural weaknesses such as unequal trade benefits within the region.

From a policy perspective, the findings emphasize the importance of strengthening institutional frameworks to realize the employment gains from trade openness. Trade openness alone is not sufficient to boost employment; its impact is contingent on the quality of institutions. Policymakers must combine trade reforms with institutional strengthening to foster sustainable employment growth in West Africa. Specifically, Governments should invest in building politically stable environments, improve governance efficiency, and curb corruption. These reforms will not only attract trade and investment but also translate them into tangible employment outcomes. Additionally, the negative impact of $MDRTI$ on employment suggests a need to revisit regional trade policies to ensure inclusivity, fairness, and sectoral support for job-intensive industries.

6. Conclusion and Recommendations

6.1 Conclusion

This paper concluded that while trade openness holds potential for employment growth, its success in West Africa depends heavily on the strength of institutional governance. Enhancing political stability, anti-corruption efforts, and effective public service delivery can amplify the positive employment effects of trade openness. A holistic approach that combines trade liberalization with institutional development is therefore essential for achieving inclusive and sustainable employment outcomes in the region.

6.2 Recommendations

Given these insights, it is recommended that West African governments prioritize institutional reforms as part of their broader trade and employment strategies. Furthermore, attention should be given to restructuring regional trade agreements

and integration strategies to make them more employment-inclusive. Additionally, policymakers should ensure that trade policies are aligned with national employment objectives. Country-specific studies are also encouraged to tailor policies to local economic structures and institutional capacities. In conclusion, countries in West-Africa can benefit greatly from cross-border trade especially in the area of employment opportunities by strengthening their institutional qualities.

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