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MITIGATING EFFECTS OF GLOBALIZATION AND GOVERNANCE QUALITY ON FINANCE-ENVIRONMENTAL QUALITY ASSOCIATION: EVIDENCE FROM ECOWAS

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Abstract

An industrialized economy is important for economic growth and development. It is, however, doubtful if financial development could be optimized for sustainable environment amidst disruptions in global relations and economic governance. Therefore, the thrust of this study is to determine if globalization and governance quality interacting with financial development could produce mitigating effects on environmental degradation in ECOWAS sub-Region. The study adopted cross-sectional auto-regressive distributed lag (CS-ARDL) technique. Results indicate that when carbon emission (CO2) stands as proxy for environmental quality, financial development (FD) interacting with each of globalization, political stability (PSA) and governance effectiveness (GES) improved significantly environmental quality in the long run. Similarly, adopting ecological footprint to measure environmental quality, the interaction of FD and GLO significantly worsened environmental quality in the long run while FD interacting with each of PSA and GES significantly improved environmental quality in the long term. The study recommends adoption of environmentally-friendly technologies.

Keywords: Globalisation, governance quality, sustainable environment, financial development.

1. INTRODUCTION

The achievement of sustainable environmental quality has grown to be a major objective with numerous obstacles. Consequently, in 2015, the United Nations adopted seventeen Sustainable Development Goals (SDGs), which member countries are expected to accomplish by 2030 while operating under the UN's auspices. As per the 2017 National Development Goals report, there has been a significant increase in carbon dioxide (CO2) emissions over the last three decades, beyond permissible limits (Ridzuan et al., 2020). There have been concerns on how to enhance sustainable environment and recourse was had to financial development and economic growth with mixed results as could be seen in the works of Pradeepta et al. (2020); Yijuan et al. (2020); Hamisu et al. (2019); Usman et al. (2021). Yang, et al. (2020) came to the conclusion that financial development (FD) lowers carbon emissions, which enhances environmental quality. Furthermore, Ahmad et al. (2018) explored China; Jamel and Maktouf (2017) focused on European countries; Gokmenoglu et al. (2015) investigated on Turkey; Al-Mulali et al. (2015) looked at twenty-three selected European countries; Boutabba (2014) studied India; Solarin et al. (2017) studied the United Arab Emirates (UAE); Renaity, et al, 2021; Abbasi & Riaz, 2016; Mohammad, et al, 2015; all identified financial development as causing deterioration in environmental

quality. These empirical investigations can be improved further and thus expand this debate on finance-environmental quality nexus in the context of globalization and governance quality on financial development, especially in ECOWAS sub-region, instead of studying the impact of governance quality or globalization on environmental quality, which was the main focus of many empirical studies. Herein lies the major contribution of this research.

2. LITERATURE REVIEW

The Environmental Kuznet Curve (EKC) Hypothesis proposed by Kuznets, 1955, forms the basis of this investigation. Given the strong correlation between FD and economic growth, the EKC hypothesis is theoretically relevant to our investigation. According to the EKC hypothesis, a growth in income leads to a certain degree of increase in CO2 emissions during the early stages of economic development and, consequently, financial development. However, after income growth passes a certain threshold, the negative relationship between income and pollution is established. EKC Hypothesis was first applied in an empirical study by Grossman and Krueger, (1991) in their quest to explain the nexus between environmental quality and income levels using the model below:

$$\epsilon_{i,t} = \beta_{oi,t} + \beta_1 \Upsilon_{i,t} + \beta_2 \Upsilon_{2i,t} + \mu_{i,t} \quad (1)$$

Where: 'ϵ' stands for emission levels per time 't'. Υ is income per capita and its squared term per time 't'. μ is the error term.

Note: if $\beta_1 > 0$, $\beta_2 < 0$, then we have the original EKC Hypothesis where initial growth in income is accompanied by increased emission while after a certain income threshold, growth in income results in decreased emission.

Note also: if $\beta_1 < 0$, $\beta_2 > 0$, then EKC Hypothesis becomes an inverted 'U' shaped. This implies a negative relationship between income growth and emission at the early stages of growth and a positive relationship after a certain income threshold.

Governance quality refers to the effectiveness, transparency and accountability of institutions, as well as the ability to formulate and enforce policies. Strong governance quality produces, amongst others, robust environmental regulations and standards, promoting sustainable development practices. As was previously indicated, Ahmed et al. (2020) examined the moderating role of institutional quality as well as the relationship between FD and EQ in South Asia from 1984 to 2018.The study discovered that, in the absence of institutional quality influencing financial growth, financial development in South Asia tends to raise CO2 emissions. This suggests that, rather than enhancing production technology, South Asian governments have used financial development for capitalization. Nonetheless, the detrimental effects of financial development on environmental sustainability are mitigated by institutional quality. These findings are consistent with those of Ya, et al. (2020), who utilized panel data from G20 nations collected between 1999 and 2019 and the STIRPAT model framework to determine that financial development strongly increases carbon dioxide emissions..

Regarding the relationship between environmental quality (EQ) and governance quality, empirical findings are conflicting. Utilizing a nonlinear ARDL (NARDL) approach and collecting data from 1986 to 2020, Dezhen, L., Yuting, B., Pingping, Y., Muhammad, S. M., Alvena, A., and Saif, U. R. (2022) confirmed the existence of an asymmetric effect of institutional quality on environmental sustainability in G7 economies. Abid (2016), Salman et al. (2019), Wang et al. (2018), Sarkodie and Adams (2018), Hameed et al., 2019; and Hameed et al., 2019 revealed that institutional quality can lower CO2 emissions. Using data from 1992 to 2016, Muzzammil, H., and Eyup, D. (2021) used a framework based on EKC Theory and came to the conclusion that ecological footprints are negatively impacted by institutional quality and environmental-related technologies. On the contrary, most environmental indicators, including CO2 emissions, CH4 emissions, and forest area, are positively impacted by institutional quality, according to Muhammad, A., Liu, L., and Najid, A. (2020).

Empirical research on the impact of globalization on environmental quality yielded mixed outcomes. Jahanger et al. (2021), Yang et al. (2020), and Yang, Usman, & Jahanger (2021) are a few of the empirical studies that have concluded that globalization benefits economies by reducing environmental

degradation through eco-friendly technologies and improving environmental performance. Contrary to the studies above, Kirikkaleli et al. (2021) and Alola et al. (2021) discovered that urbanization, one of globalization's characteristics that causes deforestation, global warming and climate change, degrades the quality of the environment. Contradictory findings were also obtained from empirical research on the relationship between institutional excellence and environmental quality. While most studies have found that institutional quality can reduce CO2 emissions, Muhammad, A., Liu, L., and Najid, A. (2020) found that institutional quality positively affects most environmental indicators, including CO2 emissions, CH4 emissions and forest area. Other studies that have reached similar conclusions include Sarkodie and Adams (2018), Hameed et al., 2019; Abid (2016), Salman et al. (2019), Muzzammil, H., and Eyup, D. (2021) and Wang et al. (2018). The present study is interested in the interaction of governance quality and globalization with financial development with a view to determining if they have moderating effect on environmental quality.

3. **Methodology**

3.1. Data

The paper seeks to explore the mitigating role of globalization and governance quality on finance-environmental quality linkage in ECOWAS sub-Region. Panel dataset was generated from 1990 to 2020 for 15 nations of ECOWAS. Data employed was secondary in nature and sourced from the World Bank data indicators, United Nations Development Programme and WGI (www.govindicators.org). The key independent variables include financial development index, economic growth per head (GDPPC), globalization index, governance quality (represented by government effectiveness and political stability). Control variable for the model is urbanization. The dependent variables are carbon dioxide emission (CO_2) and ecological footprint as indicators for environmental quality.

3.2. Model specification

This study adopts quantitative research design amenable to econometrics research tools. It builds and adapts the model stated in equation 1 above with slight modifications by including other variables other than income. The inclusion of other variables are justified following the empirical and theoretical works of Alhassan, et al, (2022); Renaity, et al, (2021); Yijuan, et al (2020) among others, this study presents Carbon emission (CO_2) and ecological foot print as functions of financial development (FD), economic growth per head (GDPC), globalization (GLO), political stability (PSA), government effectiveness (GES) as explanatory variables and urbanization (URB) as a control variablewhich validates our first objective. Hence, our baseline model is specified in their logarithm forms using the two proxies for environmental quality:

$$LCO_{2it} = \alpha_0 + \alpha_1 FD_{it} + \alpha_2 lGDPC_{it} + \alpha_3 lGlo_{it} + \alpha_4 PSA + \alpha_5 GES_{it} + \alpha_6 lURB_{it} + \mu_{it} \quad (2)$$

$$LEF_{2it} = \alpha_0 + \alpha_1 FD_{it} + \alpha_2 lGDPC_{it} + \alpha_3 lGlo_{it} + \alpha_4 PSA + \alpha_5 GES_{it} + \alpha_6 lURB_{it} + \mu_{it} \quad (3)$$

Where: i and t denote countries and years, l represent logarithm values of the variables.
μ_{it} is the white noise assumption and other variables remain as explained in table 1.

In order to confirm the EKC Hypothesis and investigate objectives one and two, we modify the model to include the squared terms of FD and GDPC as well as interaction terms of FD with GLO, PSA and GES and as such, the new models become:

$$LCO_{2it} = \beta_0 + \beta_1 FD_{it} + \beta_2 FDsq_{it} + \beta_3 lGDPC_{it} + \beta_4 lGDPCsq_{it} + \beta_5 PSA_{it} + \alpha_6 GES_{it} + \alpha_7 lGlo_{it} + \beta_8 lURB_{it} + \beta_9 FD * LGLO_{it} + \beta_{10} FD * PSA_{it} + \beta_{11} FD * GES_{it} + \mu_{it} \quad (4)$$

$$LEF_{2it} = \beta_0 + \beta_1 FD_{it} + \beta_2 FDsq_{it} + \beta_3 lGDPC_{it} + \beta_4 lGDPCsq_{it} + \beta_5 PSA_{it} + \beta_6 GES_{it} + \beta_7 lGlo_{it} + \beta_8 lURB_{it} + \beta_9 FD * LGLO_{it} + \beta_{10} FD * PSA_{it} + \beta_{11} FD * GES_{it} + \mu_{it} \quad (5)$$

Where: FDsq and GDPCsq are the squared terms of FD and GDPC used to test the validation of EKC hypothesis. α_0, and β_0 *are* the intercepts of the models, α_1 - α_6 and β_1– β_{11}= coefficients of the explanatory variables to be estimated, μ_{it}, denote the stochastic terms, and finally, FD*GLO, FD*PSA

and FD*GES are the interaction terms used to establish the role of globalization and governance quality on environmental quality when mixed with financial development.

The empirical models employed in this paper are based on the CS-ARDL model specifications proposed by Chudik and Pesaran (2015). Initially, we adopted the error correction form of the ARDL technique:

$$\Delta\gamma_{it} = \omega_i + \alpha_i(\gamma_{i,t-1} - \theta_i' x_{i,t-1}) + \sum_{j=1}^{p-1} \emptyset_j \Delta\gamma_{i,t-j} + + \sum_{j=0}^{q-1} \delta_{ij} \Delta x_{i,t-j} + \varepsilon_{it} \quad \textbf{(6)}$$

where y_{it} stands for environmental quality (denoted by CO_2 and EF for country i at time t.). x_{it} represent vector of independent variables (as outlined already). Both long-run and short-run estimates can be obtained from (6). θ_i stands for the long-run equilibrium association between x_{it} and y_{it}, while φ_{ij} and δ_{ij} indicate the short-run relationship between the variables. α_i is the speed of adjustment of the economy to long-run equilibrium. The terms in brackets denote the cointegrating linkage between x_{it} and y_{it}.

The traditional panel ARDL technique takes care of slope heterogeneity along with mixed orders of integration of the variables, hence, it can be employed irrespective of whether the explanatory variables are exogenous or not. But Phillips and Sul (2003) asserted that a potential problem will emerge if the cross-section correlation in the errors terms is ignored. So to avoid such problem, the panel CS-ARDL model is adopted, which includes augmenting the explanatory variables set with the cross-sectional aggregates of the right hand side variables, the explained variables and a series of their lag values (Pesaran, 2006; Chudik, et al. 2013; and Eberhardt & Presbitero, 2015). These additional terms assist to take care of the cross-sectional correlation in the error term. The resultant model becomes:

$$\Delta\gamma_{it} = \mu_i + \alpha_i(\gamma_{i,t-1} - \theta_i' x_{i,t-1} + \alpha_i^{-1} \eta_i \ddot{y}_t + \alpha_i^{-1} \zeta_i \ddot{x}_t) + \sum_{j=1}^{p-1} \emptyset_j \Delta\gamma_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij} \Delta x_{i,t-j} + \sum_{j=1}^{p-1} v_{ik} \Delta\ddot{y}_{i,t-j} + \sum_{j=0}^{q-1} \zeta_{ik} \Delta\ddot{x}_{t-j} + \varepsilon_{it} \quad \textbf{(7)}$$

where $\ddot{y}_t$ and $\ddot{x}_t$ represent the cross-section averages of y_{it} and x_{it}. However, we differentiated the short and long-run dynamics of the cross-sectional correlation in equation (7). Also, we include only the level parts of cross-sectional averages in the long run equilibrium association in brackets. Moreover the long-run coefficients linking y_{it} and x_{it}; which is θ_i, and the speed of adjustment term, α_i, are the main coefficients of interest. We reported φ_{ij} and δ_{ij} (short-run coefficients) for completeness.

4.0 ANALYSIS

4.1. CS-ARDL for Long run and Short run Analysis

To test for the long run and short term relationships between dependent and explanatory variables, we adopted CS-ARDL technique and the outcome is shown in tables 1 and 2 below. Table 1 contains the result of carbon emission as a measure of environmental pollution while table 2 contains the outcome of Ecological foot print as a measure of environmental quality. Each model has four specifications where specification 1 contains the baseline model without interaction terms, while specifications 2, 3 and 4 are the outcome of the interactions of financial development (FD) with each of globalization (GLO), political stability (PSA) and government effectiveness (GES) respectively.

Thus, using CO_2 to measure environmental quality, we observed that in the long run, for specification 1, FD and its squared term have both negative and positive significant values confirming our inverted 'U' shaped EKC Hypothesis earlier discussed. Similarly, GDPPC and its squared term have positive and negative significant relationship with Co_2, which confirms the original EKC Hypothesis respectively. This result validates EKC hypothesis showing that at the beginning of financial development and economic growth, environmental degradation rises with increase in GDP and FD. However, after a certain threshold, rise in FD and GDP bring about reduction in environmental degradation given rise to the inverted U-shaped EKC curve. This result in specification 1 is not different with the short run result, which also validated the EKC Hypothesis. Still on specification 1, political stability (PSA) and governance effectiveness (GES) have negative and significant relationship with carbon emission both in the long run and short run respectively, although at 10% level of significance. Globalisation (GLO) is not significant in the long run but it has positive and significant relationship

with carbon emission in the short run. Urbanisation has positive but non-significant relationship with carbon emission both in the long and short runs respectively.

In specifications 2, 3 and 4 where financial development interacts with each of globalization (GLO), political stability (PSA) and governance effectiveness (GES), the long run results indicate that there are significant and mitigating effects of these interactions on environmental degradation at 10% level of significance. However, in the short run, although the variables show mitigating effects on environmental degradation, they are not significant.

On the other hand, using ecological footprint (EF) as proxy for environmental quality, the results also show that, over the long and short terms, respectively, FD and GDPC, as well as their squared terms, have a positive and negative impact on EF, thus validating the original EKC Hypothesis. and globalization as this could not suppress environmental degradation but rather worsened it.

Table 1. Cross-Sectional (ARDL) Analysis Long Run and Short Run with Co2 as dependent variable

LEF	Spec 1	Spec 2	Spec 3	Spec 4
Variables	**Long run**			
FD	-0.371***(0.091)	-0.231***(0.065)	-0.819**(0.045)	-0.279**(0.051)
FD^2	0.200*(0.012)	0.420**(0.048)	0.365(0.732)	0.017***(0.099)
LGDPC	0.952***(0.064)	0.175**(0.051)	0.334***(0.074)	0.209**(0.058)
LGDPC^2	-0.898***(0.0752)	-0.011***(0.063)	-0.195**(0.045)	-0.016*(0.014)
LURB	0.312(0.223)	0.208 (0.113)	0.793(0.148)	0.865(0.871)
GLO	0.054*(0.621)			
PSA	-0.043*(0.011)		0.575(0.761)	
GES	-0.154**(0.057)			-0.050(0.871)
FD*GLO		- 0.421*(0.016)		
FD*PSA			-0.297***(0.088)	
FD*GES				-0.435**(0.038)
Short run				
FD	-0.468***(0.067)	0.121**(0.025)	0.147***(0.076)	0.211 ***(0.060)
FD^2	0.645 **(0.047)	0.930**(0.030)	0.930**(0.033)	-0.967***(0.073)
LGDPC	0.029**(0.024)	0.190*(0.010)	0.190*(0.019)	0.034**(0.021)
LGDPC^2	-0.607***(0.087)	0.204***(0.068)	0.204***(0.088)	-0.012*(.011)
LURB	0.426(0.182)	0.352(.433)	0.352(0.433)	0.654(0.32)
LGLO	0.153 ***(0.069)	0.667**(0.048)	0.667**(0.043)	
PSA	-0.075(0.036)			
GES	-0.040(0.067)			-0.311(0.811)

FD*GLO		-0.157(0.284)		
FD*PSA			-0.157(0.284)	
FD*GES				-0.435(0.387)
ECT	-0.630***(0.069)	-0.734***(.019)	-0.734***(.019)	-0.788***(.060)

Note: *, ** and *** denote statistical significance at 1%, 5% and 10% levels respectively

Source: Researchers computation using STATA 16, 2023

Urbanisation has positive but non-significant relationship with EF both in the long and short runs respectively. In the short run, GLO, PSA and GES have non-significant relationship with EF while in the long run, only GLO and GES have positive and significant relationship with EF at 5% level of significance. In specifications 2, 3 and 4 where financial development interacts with each of globalization (GLO), political stability (PSA) and governance effectiveness (GES), these interactions produced non-significant relationship with EF in the short run. However, in the long run, the interaction of FD with PSA and GES had mitigating effect on EF while it produced an enhancing (positive) effect when GLO is interacted with FD. This entails that the positive effect of GLO on pollution was further endangered by the interaction of FD.

Table 2. Cross-Sectional (ARDL) Analysis Long Run and Short Run with Ecological Footprint as dependent variable.

lnEF	Spec 1	Spec 2	Spec 3	Spec 4
Variables	**Long run**			
FD	0.048**(0.033)	0.317**(0.043)	0.189*(0.019)	0.224*(0.015)
FD²	-0.505*(0.026)	-0.720**(0.032)	-0.294**(0.066)	-0.239**(0.036)
LGDPC	0.278***(0.074)	0.261***(0.062)	0.566(0.717)	0.789**(1.791)
LGDPC²	-0.401***(0.065)	-0.961***(0.065)	-0.094**(0.040)	-0.348***(0.080)
LURB	0.329(0.289)	0.052(0.449)	0.301(0.286)	0.255(0.215)
LGLO	0.935**(0.038)	0.752**(0.049)		
PSA	0.046(0.233)		0.090(0.155)	
GES	0.049(0.621)			0.025(0.324)
FD*GLO		0.376***(0.071)		
FD*PSA			-0.297***(0.069)	
FD*GES				-0.552*(0.014)
Short run				
FD	0.499**(0.045)	-0.135**(0.023)	0.137**(0.031)	-0.007*(0.019)
FD²	-0.574***(0.087)	-0.906***(0.072)	-0.881***(0.076)	-0.905***(0.078)
LGDPC	0.351(0.**047)	0.022**(0.048)	-1.222***(0.078)	-0.061**(0.053)
LGDPC²	-0.369**(0.055)	-0.049***(0.075)	-0.428***(0.068)	-0.512**(0.059)
LURB	0.252(0.193)	0.099(0.170)	0.235(0.160)	0.188(0.132)
LGLO	0.457(0.431)	0.478(0.305)		
PSA	-0.030(0.234)		0.022(0.072)	
GES	0.020(.850)			0.015(0.094)
FD*GLO		0.349(0.168)		
FD*PSA			-0.542(0.856)	
FD*GES				-0.401(0.778)
ECT	-0.854***(0.081)	-0.806***(0.056)	-0.678***(0.068)	-0.710***(0.053)

Note: *, ** and *** denote statistical significance at 1%, 5% and 10% levels respectively

Source: Researchers computation using STATA 16, 2023

5. DISCUSSION

The results confirmed that financial development will be more effective in combating environmental degradation if it interacts with globalization, political stability and government effectiveness. This is true when carbon 2 oxide is used as proxy for environmental quality. This result goes to confirm the

result of Ahmed, et al (2020) and Jahager, et al, 2021 who found a negative relationship between globalization and carbon emission. This result in the short run differs slightly when ecological footprint (empirically more encompassing than Co2) is used as proxy for environmental quality. This is because the interaction of GLO with financial development deteriorates environmental quality more. This result contradicts Ahmed, et al (2020). So, global trade for ECOWAS sub-Region is harmful to environmental sustainability in the long run. This is not surprising because ECOWAS is more or less import dependent on industrialized and developed countries who see Africa as a dumping ground for their environmentally unfriendly technologies and goods. This is pathetic and worrisome. Globalization has resulted into a rise in resource exploitation of Africa driven by global demand, potentially leading to depletion of natural resources and environmental degradation. It has also led to relocation of environmentally-unfriendly industries to Africa because Africa has weaker environmental regulations, resulting in increased pollution and carbon emissions in terms of packaging materials and electronic waste. In Nigeria's Niger Delta, spillage of oil and gas flaring are two other examples, which continue to happen unabated.

Investigations of the impact of PSA and GES on Co2 indicate that they have negative and significant relationship with Co2. This conforms to economic a priori expectation. Then the variables interacted with FD, they further exerted mitigating effect on Co2. This results are in tandem with the findings of Ya, et al (2020). There is no doubt that financial development in an atmosphere of political instability and poor governance quality will be inefficient in achieving sustainable environment. On the other hand, good governance establishes robust regulations, enhances transparency and accountability, and promotes policy coordination, all of which contribute to improving environmental quality. It encourages citizen's engagement in decision-making processes, including those related to financial development and environmental quality. It enables sustainable management of resources such as land, water, and forests and brings about fair distribution of resources as well as adoption of sustainable practices that balance economic development with environmental preservation. Therefore, governance quality is critical in shaping FD and EQ debate in ECOWAS by ensuring that financial development is aligned with environmental goals, promoting sustainable environment and development. Conversely, when ecological footprint (EF) is used as proxy for environmental quality, both PSA and GES produce divergent effect on EF. PSA is significant while GES is not significant. However, when these variables interacted with FD, they produced negative and significant effect on EF leading to the conclusion that improving governance quality is important for financial development-environmental quality nexus in ECOWAS.

6. CONCLUSION AND IMPLICATIONS

Using carbon emissions as a stand-in for EQ, we find that financial development enhances environmental quality over the long run when it interacts with globalization, political stability, and effective government. By using ecological footprint as a proxy for environmental quality, we also come to the conclusion that, rather than mitigating the beneficial effects of financial development (FD), globalization actually made ecological environmental quality worse over the long run. Therefore, global trade relations have to be watched closely by ECOWAS in order to reap its advantage. Furthermore, financial development interacting each with political stability (PSA) and government effectiveness (GES) improved environmental quality in ECOWAS both in the long and short term respectively.

Thus, we draw conclusion that the ECOWAS sub-Region's relationship between FD and EQ is significantly shaped by governance quality and globalization. Powerful establishments with effective governance structures, regulatory frameworks, and stakeholder engagement mechanisms are essential for ensuring that financial development translates into positive environmental outcomes. Therefore, countries with better institutional quality tend to have higher environmental standards and regulations, which can lead to improved environmental quality. On the other hand, by facilitating technology transfer, market access, foreign investment, and international collaborations, globalization can promote financial development, which helps in achieving environmentally-friendly practices. Therefore, while globalization can provide opportunities for financial development and promote sustainable practices, it is crucial to ensure that mechanisms are in place to mitigate the negative environmental impacts

associated with increased economic integration and global trade. This requires strong environmental regulations, effective governance, and international cooperation to address the challenges and maximize the benefits of globalization for environmental quality.

We recommend that ECOWAS sub-Region should insist on and adopt environmentally-friendly technologies and products in its global trade relations, FDI relations, and in its exploitation of her natural resources. It is also recommended that ECOWAS sub-Region must elect credible leaders with good character, integrity, competence and capacity to drive good governance that will enhance financial development for sustainable environment. Policies to train and retrain civil and public servants and sustainable wages implemented for effective discharge of responsibilities become inevitable as policy options.

7. LIMITATIONS AND FURTHER STUDIES

The researchers could not find complete data for disaggregated components of globalization such as trade and financial globalization. Therefore, a composite globalization index for the 16 ECOWAS countries was used. There is, therefore the need to investigate which of the components of globalization has more interaction effect on environmental quality when interacted with financial development.

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