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**ANALYSIS OF IMPACT OF WOMEN EDUCATION AND EMPOWERMENT ON
SUSTAINABLE DEVELOPMENT IN SELECTED ECOWAS COUNTRIES**

BOSEDE AKANBI, PhD.

**Department of Economics, College of Management and Social Sciences
Osun State University, Osogbo
Nigeria**

And

TEMITOPE AKINTUNDE, PhD.

**Department of Economics, College of Management and Social Sciences
Osun State University, Osogbo
Nigeria**

Abstract

It has become clear among the policy makers and international agencies that women constitute bulk of their population and are indispensable on the issues of sustainable development. The fact that women constitute half of the entire population makes empowering them to be an active part of all sustainable development initiatives in all countries. However, the extent to which women's education and empowerment have influenced sustainable development in West African economies seems to be unclear, hence the objective of this study is to examine the impact of women's education and empowerment on sustainable development of west African economies. This paper utilized data that were sourced mainly from World Development Indicators and World Bank National data. This paper utilized Pedroni Cointegration and Pooled Ordinary Least Square technique (POOLED OLS) to examine the long run and causal relationship between women education, empowerment and sustainable development in selected ECOWAS economies. The paper concluded that unless women are empowered and gender equality achieved so that women can play their role in economic, social, political, and environmental areas, the country will not achieve sustainable development.

Keywords: *women empowerment, women education, sustainable development*

Introduction

In most countries, expectations about attributes and behaviours appropriated to women or men are shaped by culture, tradition and history. The general pattern is that women have less personal autonomy, fewer resources at their disposal, and limited influence over the decision-making processes that shape their societies and their own lives. In the global economy, women are an emerging force that policy makers cannot afford to ignore (Uwantege and Mbabazi, 2015). Women are more active as economic agents in Africa

than anywhere across the world, performing significant proportion of agricultural activities, having ownership of one-third of firms and constituting about 70% of employees in some countries as well as playing central household economic roles and seeing to the welfare of their families (African Gender Index, 2015). Women own up to 62% of businesses in Cote d'Ivoire even though they are micro-enterprises with low value-added potentials of marginal returns (Lawal, Ayoade and Taiwo, 2016).

Mamah (2011), emphasized that women empowerment remains the focal point of an international conference on women held in Beijing, China in 1995. The number three item in the table of Millennium Development Goals was gender equity and women empowerment. Before the MDGs programme, there have been other global treaties, declarations, and conventions on women such as the one held in Dakar and New York in 1994 and 2000 respectively.

Thus, it clear among the policymakers and international agencies that since women constitute the bulk of their population, they are indispensable in tackling the issues of sustainable development. As a result, world leaders agreed on working toward providing women and girls with equal access to various domains of social life (Stevens, 2010). Diverse interventions have been developed and implemented to strengthen the position of women across the world such as health, educational or financial programs (UN Women, 2016). According to Baba (2012), women's education is an important instrument to attaining sustainable development. It is an avenue for providing formal education to women in the society by equipping them with the skills and abilities needed to contribute meaningfully to the growth and development of themselves and the nation (Eseyin, Okafor and Uchendu, 2014). International Institute of Sustainable Development (IISD) (2013) defined Sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Development is sustainable when the level of qualitative and quantitative output from the various sectors of the economy is able to meet the needs of the present and future generation respectively. (Eseyin, Okafor and Uchendu, 2014) Women's education and empowerment are two key factors that form part of the utmost issues towards the achievement of sustainable development for many nations. Women's empowerment is a process where women are provided with material and non-material assets to enable them to engage in activities that aim at reducing their powerlessness which was created by their membership of a marginalized group. These activities include income-generating activities, educational activities, and political activities (Kabeer, 1999). Across countries of the World, governments and different organizations strive to increase women's empowerment by implementing different interventions such as ensuring equal access to education opportunities to promote sustainable development and human rights (Huis, Hansen, Otten and Lensink, 2017).

Uwantege and Mbabazi (2015) reported that Africa has enormous unexploited potential, especially the potentials of women. Specifically, they pointed out that women comprise one of Africa's hidden growth reserves, providing most of the region's labor, but their productivity is hampered by widespread inequality in education as well as unequal access to land and productive inputs.

Some empowerment initiatives exist in West African economies, most of these initiatives have not been effective. For instance, Stevens (2010) emphasized that women do not participate in the labor force to the same extent as men. For instance, about 60 percent of eligible women work in the richer nations and 40 percent in the poorer, but this work whether formal or informal is undervalued in all countries. And very few women reach the top ranks of business and management. Garba (1999) maintained that empowering women entails providing them with employment, improving their capacity to be involved in income-generating activities, access to land and other credit facilities will have a serious positive impact on their participation in the sustainable developmental process. People who own and control assets such as land and housing have more economic security and are more likely to take an economic risk that leads to growth and receive important economic returns including incomes (Onyishi, 2011).

Existing studies have examined the impacts of women's education as well as the impacts of women empowerment on sustainable development, however, one thing is to be educated, another issue to be empowered so that one can have a voice in society. In addition, very few studies have examined the combined effect of women's education and empowerment on sustainable development, especially in ECOWAS countries. Thus, the objective of this paper to empirically analyzed the combined effect of women empowerment and education on the sustainable development of some selected countries among the Economic Community of West African States. The study is divided into 5 sections. The next section examines empirical and theoretical issues. Section 3 and 4 present methodology and analyze of the results, while, section 5 concludes the study.

Empirical Literature Review

Many studies have been conducted on the impact of education, empowerment and what leads to successful empowerment. For instance, Alam, Ellahi, Bukhari and Jamil (2010) examined women education and economic performance in Pakistan using a time series analysis design. The researchers used a sample size of annual time series data set over the period of 1980 to 2009. Data were analyzed using Ordinary Least Square (OLS) estimation techniques. They found that economic growth is hampered as a result of women's less participation in education.

Ekong (2008) adopted descriptive survey to examine the contributions of women to national development in Akwalbom State, Nigeria. The findings of his study showed that women dominate in teaching and nursing professions in the state and form more than 40% of workers in other professions. The study further showed that women could contribute more to National Development outside education and health sectors if deliberate efforts are made to encourage them.

Ofoegbu (2009) analysed the impact of Open Distance Learning (ODL) on the female access to basic education in Edo State, a descriptive survey design was used. The analysis of data revealed that ODL has significant influence on female enrollment and attendance. The findings of the study show that ODL gives girls chance to catch up academically with their male counterparts who, unlike them, have every opportunity to attend school. In a study conducted by Rahman and Naoroze (2007) on women empowerment through participation in aquaculture in Bangladesh, it was observed that of the five selected measures of empowerment; access to

assets and resources alone was responsible for 59.8% of the variation in overall empowerment. The analysis revealed that only four independent variables were significant predictors of women's empowerment. These were participation in aquaculture, education, extension media contact and training. Participation in aquaculture accounted for 14.9%; education accounted for 9%; extension media contact accounted for 4%; while training accounted for 2.5% of variations in empowerment. A significant relationship was found between women's education and their empowerment and this implies that education enhances women's empowerment both in the family and the society.

Johnson, Worell, and Chandler (2005) assessed of psychological health and empowerment in women using the Personal Progress Scale Revised (PPS-R). They observed that empowerment encourages resilience in women, providing them with the necessary resources to cope successfully with stress or trauma and exhibiting fewer symptoms of psychological distress. In this study, a 28 item total score was created for the PPS-R that reflects the overall empowerment which include (a) perception of power and competence, (b) self- nurturance and resource access, (c) interpersonal assertiveness (d) awareness of cultural discrimination, (e) expression of anger and confrontation, (f) autonomy and (g) personal strength and social activism. It was also found that higher levels of empowerment predict lower overall distress.

Meena, Jain, and Meena (2008) measured of attitude of rural women towards Self Help Groups (SHGs) in Ludhiana, India. They observed that SHGs is a powerful tool for socio-economic empowerment of the poor in the rural areas. The result of this empirical study indicated a significant change in attitude of the participant in the areas of socio-economic upliftment, education and training, marketing and entrepreneurship, quality technological adoption and participatory research and banking aspects. They also observed that groups could be used as an effective mechanism for information dissemination, social and mutual learning, institutionalized process of capacity building and empowerment; and sustainable and equitable development. In the area of socio-economic upliftment, the participants indicated that SHGs is a powerful tool for socio-economic upliftment as reflected by the increase in the mean value of their responses from 2.83 before the training to 3.50 after the training. Furthermore, the researchers found training and education as essential process of increasing knowledge, changing attitudes, and developing skills through instructions and demonstrations and by other techniques which develop confidence among the participants. Participants in the study reported enhancement of positive thinking, implying that training and education helped them in developing positive attitudes towards empowerment. The mean value of their responses increased from 3.06 before training to 3.73 after training with respect to the statement "education plays a pivotal role in changing the behaviour of individuals. In addition, Garikipati (2008) on the impact of lending money to women on household vulnerability and women's empowerment in India, it was found that loans procured by women are often diverted into enhancing household's assets and incomes. It was concluded that a woman's lack of co-ownership of family's productive assets results in her disempowerment and therefore suggested that if empowering women is a crucial objective, then the patriarchal hold on productive assets must be challenged.

Also, Hoque and Itohara (2009) evaluated the empowerment of women through participation in the micro credit programme in Bangladesh. It was found that 58% of the

women who participated in the micro credit programme also participated in family decision-making process; 97% of the women have direct contribution in household income compared to those who did not participate in the micro credit programme. This increase in participation was attributed to increase in income from the micro credit facilities that resulted to engagement in small entrepreneurship activities. Ekesionye and Okolo (2012) conducted a study on women empowerment and participation in economic activities as tools for self-reliance and development of the Nigerian society. The researchers adopted descriptive survey design to a sample of 402 women randomly selected from 6 out of the 21 local government areas in Anambra State. The findings of study showed that: farming, trading, craft, food processing, hair dressing and poultry were the major economic activities performed by women in sampled area. However, personal savings, family assistance, philanthropist's assistance, loans and credits, cooperative society assistance, group contributions, were the sources of fund available to the women for their economic activities. Education and health promotion, food supply and distribution, were some of the services rendered by the women that bring about societal development. Meanwhile, inability of the government to provide support, corruption on the part of implementers, family burden, cultural restrictions, husband influence, illiteracy were the obstacles women encounter in carrying out their economic activities. Provision of sustainable land tenure system, provision of soft loans and credits, training programmes, funding, establishment of cooperative societies, were some of the strategies proffered to enhance women participation in economic activities.

In summary, These study showed different dimension as it relates to empowerment and education. However, little or no study have examined the combined effect of education and empowerment on sustainable development . Therefore, next section takes up this challenge.

Data and Method

This study utilized secondary sources of data. The data are in form panel and consists of annual data on per capital GDP (gdpc), female unemployment rate (feun), female population rate (fepop), female labour force participation rate (felFP) and female primary enrolment rate (fepe) which were collected from five selected ECOWAS countries, namely Republic of Benin, Cote d' Ivoire, Guinea, Ghana and Nigeria for the period of 1991-2014. The data were gathered from World Development Indicators of World Bank Publications.

This paper adapted model used by Abdullah, Abu Bakar and Hassan () which utilized a pooled cross-section and time series data to analyse the relationships between sustainable development as dependent variable and independent variables such as female unemployment rate, female population rate, female labour force participation rate and female primary enrolment rate.

Thus, we formulated the following equation:

$$GDPC = f(FEUN, FEPOP, FELFP, FEPE, FEAG) \quad (1)$$

Where GDPC = gross domestic product per capital, FEUN = female unemployment, FEPOP female population rate, FELFP= female labour force participation rate and FEPE = female primary enrolment

The empirical model form for this specification was given by:

$$GDPC_{it} = \beta_0 + \beta_1 FEUN_{it} + \beta_2 FEPOP_{it} + \beta_3 FELFP_{it} + \beta_4 FEPE_{it} + \Omega_i + \delta_t + \varepsilon_{it} \quad (2)$$

β_0 is a constant term and β_1 to β_5 were estimated parameters in the model and Ω_i represents country fixed effects and the δt represents year fixed effects. In a nutshell, Ω_i can be thought of as shorthand for a set of dummy (indicator/binary) country variables each multiplied by their respective regression coefficients (that is, a dummy variable for each country multiplied by its regression coefficient; of course, we must exclude one base city to avoid perfect collinearity).

Similarly, δt can be thought of as shorthand for a set of dummy year variables each multiplied by their respective regression coefficients (that is, a dummy variable for each year multiplied by its regression coefficient i is a cross-section data for countries referred to, and t is a time series data and ε_{it} is an error term.

Estimation Procedure

In order to investigate the possibility of panel cointegration, it is first necessary to determine the existence of unit roots in the data series. For this study we have chosen the Im, Pesaran and Shin (IPS, hereafter), which is based on the well-known Dickey-Fuller procedure.

Im, Pesaran and Shin denoted IPS proposed a test for the presence of unit roots in panels that combines information from the time series dimension with that from the cross section dimension, such that fewer time observations are required for the test to have power. Since the IPS test has been found to have superior test power by researchers in economics to analyze long-run relationships in panel data, we will also employ this procedure in this study. IPS begins by specifying a separate ADF regression for each cross-section with individual effects and no time trend:

$$\Delta y_{it} = \alpha_i + \rho_i y_{i,t-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{i,t-j} + \varepsilon_{it} \tag{3}$$

where $i = 1, \dots, N$ and $t = 1, \dots, T$

IPS use separate unit root tests for the N cross-section units. Their test is based on the Augmented Dickey-Fuller (ADF) statistics averaged across groups. After estimating the separate ADF regressions, the average of the t -statistics for p_1 from the individual ADF regressions, $t_{iT}(p_i)$:

$$\bar{t}_{NT} = \frac{1}{N} \sum_{i=1}^N t_{iT}(p_i)$$

The t -bar is then standardized and it is shown that the standardized t -bar statistic converges to the standard normal distribution as N and $T \rightarrow \infty$. IPS (1997) showed that t -bar test has better performance when N and T are small. They proposed a cross-sectionally demeaned version of both test to be used in the case where the errors in different regressions contain a common time-specific component.

Panel Cointegration Tests

The next step is to test for the existence of a long-run cointegration among GDPC and the independent variables using panel cointegration tests suggested by Pedroni (1999 and 2004). We will make use of seven panel cointegrations by Pedroni (1999), since he determines the appropriateness of the tests to be applied to estimated residuals from a cointegration regression after normalizing the panel statistics with correction terms.

The procedures proposed by Pedroni make use of estimated residual from the hypothesized long-run regression of the following form:

$$y_{i,t} = \alpha_i + \delta_{i,t} + \beta_{1i}x_{1i,t} + \beta_{2i}x_{2i,t} + \dots + \beta_{Mi}x_{Mi,t} + e_{i,t} \tag{5}$$

for $t = 1, \dots, T; i = 1, \dots, N; m = 1, \dots, M$,

where T is the number of observations over time, N number of cross-sectional units in the panel, and M number of regressors. In this set up, α_i is the member specific intercept or fixed effects parameter which varies across individual cross-sectional units. The same is true of the slope coefficients and member specific time effects, $\delta_{i,t}$.

Pedroni (1999 and 2004) proposed the heterogeneous panel and heterogeneous group mean panel test statistics to test for panel cointegration. He defines two sets of statistics. The first set of three statistics $Z_{\hat{v},N,T}$, $Z_{\hat{\rho},N,T}$ and $Z_{\hat{u},N,T}$ is based on pooling the residuals along the within dimension of the panel. The statistics are as follows

$$Z_{\hat{v},N,T} = T^2 N^{3/2} \sum_{i=1}^N \sum_{t=1}^T \hat{L}_{1i}^2 \hat{e}_{i,t}^2 \tag{6}$$

$$Z_{\hat{\rho},N,T} = T\sqrt{N} \sum_{i=1}^N \sum_{t=1}^T \hat{L}_{1i}^2 \hat{e}_{i,t}^2 \quad \begin{matrix} 1 \\ \sum_{i=1}^N \sum_{t=1}^T \hat{L}_{1i}^2 (\hat{e}_{i,t-1} \Delta \hat{e}_{i,t} \quad \hat{\lambda}_i) \end{matrix} \tag{7}$$

$$Z_{\hat{u},N,T} = \tilde{\sigma}_{N,T}^2 \sum_{i=1}^N \sum_{t=1}^T \hat{L}_{1i}^2 \hat{e}_{i,t}^2 \quad \begin{matrix} 1/2 \\ \sum_{i=1}^N \sum_{t=1}^T \hat{L}_{1i}^2 \hat{e}_{i,t}^2 (\hat{e}_{i,t-1} \Delta \hat{e}_{i,t} \quad \hat{\lambda}_i) \end{matrix} \tag{8}$$

where $\hat{e}_{i,t-1}$ is the residual vector of the POLS estimation of Equation (5) and where the other terms are properly defined in Pedroni.

The second set of statistics is based on pooling the residuals along the between dimension of the panel. It allows for a heterogeneous autocorrelation parameter across members. The statistics are as follows:

$$\tilde{Z}_{\hat{\rho},N,T} = \sum_{i=1}^N \sum_{t=1}^T \hat{e}_{i,t}^2 \quad \begin{matrix} 1 \\ \sum_{t=1}^T (\hat{e}_{i,t-1} \Delta \hat{e}_{i,t} \quad \hat{\lambda}_i) \end{matrix} \tag{9}$$

$$\tilde{Z}_{\hat{u},N,T} = \sum_{i=1}^N \sum_{t=1}^T \hat{e}_{i,t}^2 \quad \begin{matrix} 1/2 \\ \sum_{t=1}^T (\hat{e}_{i,t-1} \Delta \hat{e}_{i,t} \quad \hat{\lambda}_i) \end{matrix} \tag{10}$$

These statistics compute the group mean of the individual conventional time series statistics. The asymptotic distribution of each of those five statistics can be expressed in the following form:

$$\frac{X_{N,T} - \mu\sqrt{N}}{\sqrt{\nu}} \Rightarrow N(0,1) \tag{11}$$

where $X_{N,T}$ is the corresponding form of the test statistics, while μ and ν are the mean and variance of each test respectively. They were given in table 2 in Pedroni (1999). Under the alternative hypothesis, Panel ν statistics diverges to positive infinity. Therefore, it is a one sided test where large positive values reject the null of no cointegration. The remaining statistics diverge to negative infinity, which means that large negative values reject the null.

In this study, we employed pooled group POOLED LS test from Pedroni (1996, 2000). An important advantage of the pooled group estimators is that the form in which the data is pooled allows for greater flexibility in the presence of heterogeneity of the cointegrating

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vectors. Test statistics constructed from the panel group estimators are designed to test the null hypothesis $H_0 : \beta_i = \beta_0$ for all i against the alternative hypothesis $H_A : \beta_i \neq \beta_0$, so that the values for β_i are not constrained to be the same under the alternative hypothesis. Clearly, this is an important advantage for applications such as the present one, because there is no reason to believe that, if the cointegrating slopes are not equal to one, which they necessarily take on some other arbitrary common value. Another advantage of the panel group estimators is that the point estimates have a more useful interpretation in the event that the true cointegrating vectors are heterogeneous. Specifically, point estimates for the panel group estimator can be interpreted as the mean value for the cointegrating vectors (Pedroni, 2001).

Data Analysis and Results

The results of the IPS panel unit root test was presented in table 1. The results showed that the null hypothesis of a panel unit root in the level of the series cannot be rejected at various lag lengths. Initially, we assume that there is no time trend. Thereafter, we test for stationarity allowing for a constant plus time trend. In the absence of a constant plus time trend, again we found that the null hypothesis of having panel unit root is generally rejected in all series at level form and various lag lengths.

Table 1: In, Pesaran and Shin (IPS) Panel Unit Root Test

Variables	Level		First Differenced	
	Constant	Constant + Trend	Constant	Constant + Trend
GDPC	2.9460 (10.584)	-0.2386 (4.9337)	-2.4617** (-2.2952)	-3.445* (-3.3148)
FEUN	-2.0774 (-1.353)	-3.0748 (-2.3698)	-6.0371* (-10.967)	-7.4473* (-13.8643)
FEAG	-0.5591 (-2.4760)	-1.0636 (2.8829)	-3.8067*** (-2.4840)	-4.1184 (-3.1140)
FELFP	0.5892 (4.9710)	-2.1944 (-0.1245)	-2.7123* (-2.8942)	-3.6296* (-3.7409)
FEPE	-0.2670 (2.9501)	-1.2408 (2.2555)	-3.0606* (-2.5240)	-3.1849* (-3.1780)
FEPOP	-2.1213 (-1.5231)	-0.6815 (3.5600)	-2.1424* (-1.5573)	-2.5680** (-1.0741)

(* , ** , ***) indicates rejection of the null hypothesis of no-cointegration at 1%, 5% and 10%,levels of significance

It was observed that most of the variables were non-stationary in with and without time trend specifications at level by applying the IPS test which is also applied for heterogeneous panel to test the series for the presence of a unit root. The results of the panel unit root tests confirmed that the variables were stationary at first difference.

Table 2: Pedroni Panel Cointegration

Test	Constant trend	Constant + Trend
Pane v-statistic	1.6649**	1.9035**

Panel ρ -statistic	0.3889	0.4804
Panel t-statistic(non-parametric)	-1.7846**	-2.4096*
Panel t-statistic (adf) parametric	-1.7969**	-2.4096*
Group ρ -statistic	2.7723	3.3791
Group t-statistic (non-parametric)	2.2260	2.8782
Group t-statistic (adf) (parametric)	2.4504	2.3241

We employed Pedroni's procedure (1999) where the adjusted values can be compared to the $N(0,1)$ distribution. The Pedroni (2004) statistics are one-sided tests with a critical value of -1.64 ($k < -1.64$ implies rejection of the null), except the v -statistic that has a critical value of 1.64 ($k > 1.64$ suggests rejection of the null). *, ** indicates rejection of the null hypothesis of no-co-integration at 1% and 5%, levels of significance.

To test whether the variables were cointegrated, we employed Pedroni's (1999, 2001, and 2004). This is to investigate whether long-run steady state or cointegration exist among the variables. Since the variables were found to be integrated in the same order $I(1)$, we continue with the panel cointegration tests proposed by Pedroni (1999, 2001, and 2004). Cointegrations were carried out for constant and constant plus time trend and the summary of the results of cointegrations analyses are presented in Table 2. In constant level, we found that at least 1 out of 7 statistics reject null by hypothesis of no cointegration at the 5 percent level of significance for the adf -statistic and group ρ -Statistic. We can infer from the results of the cointegration tests in the model with constant level showed that independent variables do hold cointegration in the long run for a group of 5-ECOWAS countries with respect to women's education and empowerment. However, since all the statistics concluded in favour of cointegration, and this, combined with the fact that the according to Pedroni (1999) the panel non-parametric (t -statistic) and parametric (adf -statistic) statistics are more reliable in constant plus time trend, we concluded that there is a long run cointegration among our variables in the selected 5 countries.

Table 3: Pooled Least Square Regression

Country	FEUN	FEPOP	FELFP	FEAG	FEPE
Benin	-0.03599 *** (-1.1962)	0.014340 (1.16765)	0.034518 (0.8375)	0.001537 (0.664892)	0.002349*** (1.7113)
Cote d' Ivoire	0.05192* (3.93030)	0.109715* (15.4061)	-0.006138 (-0.3932)	0.017924* (11.2142)	-0.002761* (-4.7820)
Guinea	0.14910* (11.91947)	0.118386* (5.44007)	0.032012 (0.3619)	0.022824* (4.87088)	0.012978 (1.2726)
Ghana	0.29568* (46.1710)	0.213026* (8.11791)	- 0.137373** (-2.6281)	0.026912* (2.90593)	0.005024 (1.2726)
Nigeria	-0.05229* (-3.27414)	0.058165*** (1.6578)	-0.016242 (-0.4809)	-0.004972 (-1.4256)	-0.001485** (0.6671)
Pooled Group	-0.01515* (-10.7408)	0.20836 (2.0981)	2.99708** (0.8026)	-0.19419 (-1.542)	0.007546 (-1.1962)

Critical values in parenthesis, while (*, **, ***) represents 1%, 5% and 10% levels of significant respectively

Having found that at least a cointegrating relationship existed between GDP per capital(GDPC), Female unemployment (FEUN), female population as a percentage of total population rate (FEPOP), female labour force participation rate (FELFP), female employment in agriculture (FEAG) and female primary education enrolment rate (FEPE) in 5 ECOWAS countries, we proceed to estimate the long run relationship between those variables using Pooled Least Square (POLS) regression analysis. This was reported in table 3. The analysis of the pooled group showed that there exist a negative relationships between GDP per capita and female unemployment rates, a positive relationships between GDP per capita and female population rate on one hand and between labour participation rates on the other hand. Also, there exist a negative relationship between GDP per capita and female employment in agriculture and primary school enrolment rates as well. It is important to note that only female unemployment and female labour participation rates were significant at one percent and five percent respectively. The results showed a negative and significant relationship between female unemployment and GDP per capita and particularly for pooled group and specifically Benin republic and Nigeria at (1%, 10% and 1% levels respectively. The implication for the pooled group is that a one percent increase in female unemployment, GDP per capita will reduce by 0.01515. Specifically, in Nigeria, a one percent increase in female unemployment will reduce GDP per capita by 0.0522.

A positive relationship was found between female population and GDP per capita, although this relationship was only significant for 4 out of 5 of the selected countries at indicated levels.

In line with a priori expectation, the results indicated significant positive relationship between GDP per capita and female labour force participation rate for pooled group at 5% level of significance. However, this relationship became insignificant when disaggregated into individual countries. In addition, a defiant result occurred for Cote d'Ivoire, a negative relationship was observed.

We also found a significant positive relationship between GDP per capita and female primary enrolment rate in Benin Republic, Cote d'Ivoire and Nigeria at 10%, 1% and 5% levels respectively. While positive insignificant relationship was also observed for the Pooled group, Guinea and Ghana, in Nigeria, negative result was obtained between GDP per capita and female primary enrolment rate.

With respect to female employment in agriculture, a positive and significant relationship was obtained at 1% levels, while positive insignificant result was obtained for Benin Republic and Nigeria. In contrast, the Pooled group results showed negative insignificant relationship between GDP per capita and female employment in Agriculture.

Conclusion

This study examined the impact of female education and empowerment on sustainable development in ECOWAS countries. Given the fact that West African countries are just coming up in terms of building database, proxies were found for some of the variables specified in the model. Sustainable development was captured by gross domestic product per capita(GDPC); female education by female primary enrolment rate (FEPE) and female empowerment by female labour force participation rate (FELFP) and female unemployment rate (FEUN). Since West African economies are predominantly agrarian in nature, female employment in

agriculture (FEAG) was also included as a control variable. To achieve the objective of the study, secondary data were sourced majorly from World Development Indicators (WDI) for GDP per capita, Female unemployment, Female population ratio, female labour force participation rate, Female employment in Agriculture and Female primary enrolment rate.

We observed that low female empowerment (captured by female unemployment and female labour force participation rate) is generally one of the factors that accounted for slow pace of sustainable development of ECOWAS economies. Although, when disaggregated to individual countries, a slight different results was observed. In addition, female education was also seen as one of the factors that have capacity to enhance sustainable development of ECOWAS economies given the fact that female constitute almost half of ECOWAS countries.

Based on the conclusion of this study, it is recommended that policies that will eradicate practices that limit women education and create conducive environments that will increase women share in basic education should be formulated. In addition, higher participation of educated women in the macro-level management at different sphere of live will be an incentive to accelerating sustainable development of West African economies.

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