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ORIGINAL SCIENTIFIC PAPER

Does Female Participation in Teaching Affects Enrolment of Female Students in Secondary Schools in Nigeria?

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A B S T R A C T

This study examined the notion that the female participation in teaching would affect the enrollment of female student in secondary in Nigeria. To do this, the feminism theory was explored to supoort the gender equality agenda going on around the globe. The literature also pinpointed that promoting the engagement of women in teaching profession would assist the economy. Owning to this, the study made used of panel data from 2007 to 2011 and data were analysed using the static panel data regression. The result shows that female participation in teaching has positively affected the enrollment of female students in secondary schools in Nigeria at 5% level of significance. In addition, the enrollment of female students at this level of education was not motivated by the presence of male participation in teaching. Thus, policy makers were advised to make appropriate plan to accommodate more women in the teaching profession in order to increase female students enrollment in secondary schools and consequently reduce the gender inequality.

KEY WORDs: *enrolment of female students, female participation in teaching and gender equality*

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Introduction

The promotion of gender equality on how women could be empowered through education have received much attention in the liteature especially after the CEDAW Beijing Declaration in 1995 (McCracken, Unterhalter, Márquez & Chełstowska, 2015). That is, women education was noted as a necessity to guarantee women's employment for instance, in education sector which could better served as economic surety for them in the future (Kelleher et al 2011). Not only that, it is possible to increase their supportive role both at home and in the society by avoiding a discrimination in learning environment for men and women (National Bureau of Statistics, 2014). Also, one means of lowering discrimination against women is to increase their enrolment for education and make them to participate in employment like the teaching profession. Again, both the need to enroll more women for schooling and participated in the teaching profession have received more clamor (Kelleher et al 2011). This is because development central around women yield an exceptional gains in the society. More so, Schultz (2001) asserted that government need to invest more on girls' education as evidence around the world have proven that the social returns to female schooling were more higher that the returns to males.

In Nigeria, the clamoring of gender equality has received much supports as the share of women in teaching and the female students' enrollment at the secondary school level in 2006 and 2010 have increased from 37.07% to 56.13% and 37.07% to 56.13% respectively based on the National Bureau of Statistics (2012). More so that the year-on-year rate of change in girls' enrolment in secondary school rose from 8.0 percent in 2011 to 11.5 percent in 2012 and 17.0 percent in 2013 (National Bureau of Statistics, 2014). In addition, the participation of women in teaching and enrollment of girls' education has been variably improved in Nigeria (Nwagwu, 1994). But, the female enrollment in the final examination between 2007 and 2011 in West African Examination Council shows that the female enrollment dropped from 45.38% to 45.16% based on the National Bureau of Statistics (2012). Thus, one may intented to ask whether the enrolment of female in secondary schools might have increased over the years based on increased of women participation in teaching at secondary level in Nigeria? Perharps, if one is not gendered sensitive could it be that the possibility of male participation has assisted in inreasing the female enrollment in secondary schools? However, available studies like Handa (2002) showed how women in teaching profession has affected enrollment

at primary school in Mozambique; George and Thinguri (2013) demonstrated that female teachers would affect the perfomance of female student in Kenya. Suryadarma, Suryahadi and Sumarto (2006) focused on what causes low enrollment of girls in secondary schools in Indonesia as Igberadja (2014) studied what causes low enrollment in Delta state, Nigeria. Besides, the objective of this study is to see how women participation in teaching has affected the enrolment of female students in the literature particularly in Nigeria as it has remained uncaptured empirically based on available studies. Moreover, the importance of the study would help the policy makers in Nigeria to confront the challenges that may arise in terms of low student-teacher ratio as the students' enrollment is increasing in spite of the increased in female teachers at secondary level of education. Hence, this would also help in actualizing the objective of universal basic education and promotion of gender parity in the country.

Literature Review

Gender equality and more women participation in the economy has been fronted through the feminism theory. The feminism theory believes that more attention and rights should be given to women in the society especially on issues affecting their well-being. This was based on the fact that women were not given due recognition in the society and couple with the high prevalent poverty and domestic violence mitigating them which had made a wider inequalities to exist between women and men. The feminism theory further acclaimed that ways to remove the inequality between women and men are to make women to have equal right to education and made their voices to be more heard through participation in public offices which include teaching profession. In this regard, women would be more empowered and overcome their problem of low status they were made to suffer in the society (Alabi & Alabi, 2013 and Mosedale, 2014). Thus, the notion is that when female participation is increase, the enrollment of female students in secondary school would increase and by this, gender inequality would be reduced in society.

Meanwhile, the participation of women in the teaching has received a significant tone in the literature due to their better performance on the job especially on the relation to girls' enrollment in schools. For instance, Handa (2002) reveals that gender composition of trained teachers helps to encourage pupils' enrollment as the study examined how school quality

through trained teachers could be used to improved enrollment of primary pupils in Mozambique. The study found that a positive significant relation exist between them. That is, enrollment may be increased by 1% point when trained teachers is increased in number by 10. But, the work went further to have sex disaggregation of the trained teachers, the result indicated that the share of female trained teachers has significant impacted on the girls' enrollment. That is, 1% increase female trained teachers would increase the enrollment of girls' in primary schools by 0.473%. More so, the latter result shows that parent in Mozambique were not willing to allow their children being taught by male teachers simply that male teachers habitually made them in fetching water and firewood (Handa,2002). Mwangi, George and Thinguri (2013) conducted a study on what determined low girls' enrollment in physics in secondary schools in Kenya on the account that low women involvement in sciences were noted to have affected the requirements for admission. The work concluded that during practical sessions, female students rarely enjoyed the support of their physics teachers. But, acclaimed that physics teachers should be more innovative and effective when delivering their subject matter so as to attract and sustain the interest of many girls. Suryadarma, Suryahadi and Sumarto (2006) focused on poor enrollment in secodary schools but have advanced other causes like building of more schools, consumption expenditure and religious background as factors that may increased or decreased enrollment in secodary schools in Indonesia. Similarly, Igberadja (2014) studied what causes low enrollemnt in techinical schools in Delta state, Nigeria baesd on teachers perception. The study used a primary data to elicit responses from19 principals and 280 teachers with the aid of z-test to analysed the data. More so, the result shows that school factors is among factors responsible for low enrollment in technical schools in Delta state, Nigeria. Besides, one of the issue emphasised in the literature about the enrollment is its inconclusive nature of whether it is purely determined by the supply side of education or it demand side of education.

The Data and Method

Nature and source of data. This study made used of annual data that comprised time series and cross-section from 2007 to 2011. The choice of this period were based on access to data and particulary, it affords the study to see how the female particpation in teaching has affected the enrollment of

female school students in secondary schools across and within the country. Data were sourced from the Annual Abstract of the National Bureau of Statistics, 2012.

Enrolment of female students (EFFS). The enrolment of female students signifies the number of female students enrolled and sat for final seconday examination conducted by the West African Examination Council from May/June, 2007 to May/June, 2011. This variable was employed beacuse it showed those student that enrolled and continued their studentship in respect of one barrier or the other.

Female participation in teaching (FPIT). The female participation in teaching involves the number of women teachers that registered with the Teachers' Registration Council and were involves in teaching of secondary school students in Nigeria. The use of this variable to capture female participation in teaching is based on available data and its previous used in the work of Handa (2002). Besides, Handa (2002) focused on the trained female teachers at the primary schools level in Mozambique and found it significant with female enrollment.

Male participation in teaching (MPIT). To capture male participation in teaching, the number of men teachers that registered with the Teachers' Registration Council and engaged in teaching at secondary school in Nigeria was used. The variable to introduce to serve as the control variable and see if male participation in teaching especially at secondary school would have any influence in promoting girls' enrollment at that level of deducation. This variable had been employed in the study of Handa (2002) and found not significant with female enrollment.

Methodology. The analysis in this study was done by using STATA 12.0 in estimating the static panel data based on the available data as pointed out earlier. At initial stage, the Pooled OLS model was tested and the result shows that variable of interest (FPIT) was significant at 5% and more so, the Pool OLS model was significant at 1%. But, because there may be individual and time variant in the different states in the country if such exist otherwise spurious regression may occurred, the study proceeded to estimate the Random Effect model. In estimating the Random Effect model, it was noted that the model was also, significant at 1%. Notwithstanding, the study used Breush-Pagan LM test to decide the choice between Pool OLS and Random Effect models which was in favour of Random Effect. That is, the individual and time variant in the different states in the country exist which connotes that unobserved specific effects exist. Then, a need arise to

see whether or not the presence of unobserved specific effects is distributed independently on the independent variables. In this wise, Fixed Effect model was tested and the model was weakly signifiant at 10% which means the presence of unobserved specific effects is not distributed independently on the independent variables. Having done this, following Mohm Isa (2014), a Hausman test was conducted which shows that there is consistency of effect across the states in the country that is, the result favoured Fixed Effect model. The Random Effect and Fixed Effect model for the study are hereby specified as follows in equation 1 and 2 respectively.

$$y_{it} = (\beta_0 +) + \beta_1 X_{kit} + \beta_2 X_{kit} + \cdots + \beta_k X_{kit} + \alpha_i + \mu_{it} \quad . \qquad .(1)$$

$$where\ k = 1, \ldots, J. \quad and\ \varepsilon_{it} = \alpha_i + \mu_{it}$$

$$y_{it} = (\beta_0 + \alpha_i) + \beta_1 X_{kit} + \beta_2 X_{kit} + \cdots + \beta_k X_{kit} + \mu_{it} \qquad .. \qquad (2)$$

$$where\ k = 1, \ldots, J.$$

In addition, diagnostic tests were carried out to show that the result of the Fixed Effect model was more robust. The test of variance inflation factor shows there is no multicollinearity among the independent variables. More so, the diagnostic reveals that there is no serial correlation but heteroskedasticity exist (see Table 1). In view of this, a robust test of heteroskedasticity was done which enabled the model to be significant at 10% and both female participation in teaching and female participation in teaching were significant at 5% and 10% respectively. Then, Panel Corrected Standard Error was employed and the result was interpreted.

Empirical specification of the model. In carring out the empirical test for the study, the reduced form equation as specified by Handa (2002) was used and it thus specify as below in equation 1. In addition, all the variables were logged in linear form following Wu and Wu (2012). More so, parameters were specified in terms of β_1 *and* β_2 to explain the proportion of independent variables that would cause changes in the dependent variable. α is the constant parameter and ε is the time invariant part of the disturbance term as i *and* t are the individual and time invariant in the disturbance term.

$$lnEFFS_{it} = \alpha + \beta_1 lnFPIT_{it} + \beta_2 lnMPIT_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Results and Conclusion

The notion that when women were allowed to participate in teaching in secondary schools, female students enrollment at this level of education tends to increased for the actualisation of gender equality in the society was tested. The result of the empirical test shows that Female Participation in Teaching is positive related to the Enrollment of Female Students in secondary schools is significant at 5% in the Panel Corrected Standard Error (see Table 1 below). This result is robusted having corrected for the problem of heteroskedasticity found in the result of the fixed effect model. That is, an increase of 1% in Female Participation in Teaching would cause increase of 0.346% in the Enrollment of Female Students in secondary schools. Similar result was noted in Handa (2002) on the studied of primary school enrollment in Mozambique. More so, the result proffessed the effort of the Federal Government of Nigeria in addressing the problem of low teachers in secondary school in 2006. This effort in making teachers to be more available has promoted gender equity due to increased in girls' enrollment, retention and community participation (Nigeria MDG Report, 2013). Meanwhile, the result for the Male Participation in Teaching is positive and not significant with the Enrollment of Female Students in secondary schools. Although a 1% increase in Male Participation in Teaching would cause an increase of 0.155% in the Enrollment of Female Students in secondary schools. Likewise, the result of the Male Participation in Teaching is related to Handa (2002).

From the above, Female Participation in Teaching in Nigeria has made the female enrollment in secondary schools to increase statitically by 0.346%. This lend credence to the assertion of the gender agenda that more women should be empowered through employment like teaching. That is, employment of women in teaching would assist in reducing the gender parity through the means of girls' educationg in the country. Therefore, policy makers are enjoined to make appropriate plan to accommodate more women in the teaching profession so as to encourage more girls' education in the country in order to reduce the gender inequalities that exist between men and women in Nigeria. However, that does not stop the outright of male employment into the teaching profession at secondary schools in order not create gender inequality. In addition, reduction of male teachers in secondary schools in Nigeria should be cautiously done since more time would be required to have a enough women that can fill those position as gender equality is also being promoted in all other work-sectors.

Table 1: Result of Estimation of Panel Corrected Standard Error

	Pooled OLS	Random Effect	Fixed Effect	Robust Fixed Effect	Estimation of Panel Corrected Standard Error
Constant	3.396594	7.521539	8.877465	8.877465	5.471408
	.6844501	.6086175	.5861448	.5526629	1.559257
	[4.96]***	[12.36]***	[15.15]***	[16.06]***	[3.51]***
ln FPIT	.472649	.059354	-.126398	-0.126398	.3465308
	.0654014	.0665824	.0673426	0.0559613	.1429362
	[7.23]***	[0.89]	[-1.88]*	[-2.26]**	[2.42]**
ln MPIT	.2918427	.1792073	.1909195	0.1909195	.1554704
	.1257614	.1007605	.0950491	0.101086	.1468613
	[2.32]**	[1.78]*	[2.01]**	[1.89]*	[1.06]
Breush-Pagan LM test	chibar2(01) = 210.36				
	Prob > chibar2 = 0.0000				
Hausman test			chi2(2) = 144.30		
			Prob>chi2 = 0.0000		
Observations	185	185	185		
R-squared					0.9589
F-test					0.0202
Multicollinearity (vif)	-	-	2.59		-
Heteroskedasticity	-	-	chi2 (37) = 2658.41		-
($x^2 - stat$)			Prob>chi2 = 0.0000		
Serial Correlation	-	-	F(1, 36) = 0.827		-
($F^2 - stat$)			Prob > F = 0.3691		

T-statistics are in parentheses, *, ** and *** denotes 10%, 5% and 1% respectively.

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Da li učešće žena u nastavi utiče na upis učenica u srednje škole u Nigeriji?

A P S T R A K T

Ova studija ispituje da li učešće žena u nastavi može da utiče na upis učenica u srednje škole u Nigeriji. U tu svrhu je uzeto u obzir ispitivanje feminističke teorije kao podrške postizanja ravnopravnosti polova ,koja se primenjuje širom sveta. Analiza literature je takođe pokazala da bi podsticanje angažovanja žena u nastavničkim profesijama pomoglo privredi. Pored toga, istraživanje je uzelo u obzir podatke o učešću žena u nastavi od 2007. do 2011. godine. Obrađeni su podaci uz pomoć regresione metode. Rezultati istraživanja su pokazali da učešće žena u nastavi se pozitivno odrazilo na upis učenica u srednje škole u Nigeriji za 5%. Shodno tome, predlaže se da nosioci politike zapošljavanja donesu plan koji bi podstakao prijem većeg broja žena u nastavničke profesije kako bi se povećao upis učenica u srednje škole i time smanjila nejednakost polova.

KLJUČNE REĆI: *Upis studenata, sudelovanje žena u nastavi, ravnopravnosti polova*

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