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Analysis of Gender Variance in Wages Returns of Employees of Rivers State Government

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Abstract:

Education is an avenue for acquiring skills and improving contribution to social, economics, commercial, technological lives and general well beings. Huge capital has been committed into educational development. Schooling involves moneys in variety of ways. Parent, Governments and society contribute great deal financially to promote education across gender. The reward for such investment is measured in terms of wages and changes in wages. The private returns to investment in education of male and female employees in the workforce are the crux of this study. 4500 female and 5500 male employees were used in the study. The result reveals that there exist significant gender difference in the Present Value (PV) and Net Present Value (NPV) of Returns to investment in Education of employees of Rivers State Government of Nigeria, key reasons being that women are more at the lower cadre of employment, majority of the female employees work with lower educational qualifications and also enter into the service at older ages than male.

Keywords: Analysis, wages, returns, gender, variance, investment, education

1. Introduction

The end result of education is to improve skills. The quantitative value of what is acquired in terms of revenue from various skills accumulated from learning is the returns to investment in education. This is the quantitatively measured as income earned after education or training. Invariably is what tells whether the training or education acquired has value. The worth of training, schooling or any form of change in behaviour achieved is the commensurate positive difference in revenue accrued. In the trades, the physical effects of education in the industries are measured by changes in productivity. For example a carpenter who has acquired additional skill would be able to produce higher quality and stronger furniture at lesser cost and lesser time than before the training, which in return would attract higher price that would be acceptable to the consumers. The difference in earnings before and after the training is the quantitative value of the returns to investment in the education. This is how education in all ramifications is expected to yield. A proportionate qualitative and quantitative improvement in monetary worth of the acquired skills is envisaged, eminence and realistic. Gurria (2009) pinpointed that education is the solution to all challenges, as higher education gives birth to positive changes in productivity, capacity and earnings. Montenegro and Patrinos (2013) envisaged higher returns to schooling at the lower age bracket for all genders. This supported by Psacharopoulos (2018) who stated that returns to schooling is higher at the primary level and decline with the increase in the level of education and per capita income. Consequentially, higher returns schooling at all levels is advocated. Bushey (2014) suggested job creation as a means of encouraging higher return to schooling.

Despite the nature of returns to investment in education around the world, there is a noticeable gender difference in school enrolment and returns to school in Pakistan (Qureshi, 2012). In China there exists discrepancy in gender and returns to investment for ages 35 and below (Qian and Smith, 2008). General gender differential in favour of men is noticed in the labour market and employment settings, which eventually affects returns to investment in education of men and women. There is an overall conscientious that returns to investment in education of men are higher than that of women, which is attributed to diverse workplace discrimination and lapses that affects women (Herk, Kraagkamp and Welberg, 2016; Quenzel and Hurnel, 2013; Aslam, 2018).

There is discrimination in employment and gender differential in wages due to marketization putting women on disadvantage (Liu, Meng and Zhenny, 2000). There is also the existence of underrepresentation of women in the pension sectors as well a consequence wages gap. They stated about 11% - 19% of women are less likely to have pension than men, translating to lower returns to investment education. Though few women have higher pension, the summation of the final return to investment is low (Even and Macpherson, 1990). The reasons for low representation of women in pension are varied. Wiesshk (2018) stated that the prevalence of regular change of employment of female folk and inability to occupy executive or permanent positions affects their financial returns.

Women earns lower than men creating gender gap in return to investment in education. There is also gender difference in investment between men and women resulting in differential in wealth gap in favour of men (Ruel and

Hauser, 2014). Distinction in occupational skills is another barrier to employment of women to certain jobs, creating job discrimination and eventual wages gap (Vasquez, Ferrer and Schirle, 2016). Men are asserted to have higher skills and higher education than women which contribute to the existence of disparity in wages (Pastore, Sattars and Tiongson, 2013). Another contributory factor to gender gap in returns to investment in education is disposition, aptitude and attitude to work of women. Notwithstanding the acquisition of higher education, gender gap in return to investment in education still exists, women need doctorate degrees to earn as much as men with first degrees (Flores, 2016). This phenomenon affects the return to investment in education, leading to the prevalence of the gap.

Some of the factors that affect return to investment in education of women in Nigeria include, access to education, finance, health service, high profile jobs and other social infrastructures (Nweke, 2014). Gender differential in returns to investment in Nigeria is real due to issues having to do with marriage, child bearing and rearing (Nwaka, Guventisaniler and Tuna, 2016) with consequence low returns to higher education (Okuwa, 2004). With the introduction of various forms of women empowerments, enlightenments and stride to ensure parity and equity, it is necessary analysis quantitatively the value of gender related issues in returns to investment in education.

1.1. Statement of the Problem

There have been complexities in arrival at the actual values of economics and social variables due perceived gender deviances. It is often assumed or claimed that male are better than female or vice versa. In education and the consequential wages subjects, private and net private values are reported to be in favour of men. Considering that the government has put allot of facilities in place to ensure gender parity, such as ministry of women affairs, special skill training centres for females, special science and technical colleges for women, as well as scholarships and advantageous employment quota for the female gender, it become necessary to determine if this facilities actually translate to material achievement in bridging the gap between women and men life earnings and returns to investment in education. In this study the analysis of wages returns is carried out with employees of Rivers State of Nigeria Government, to determine if there exists any possible quantitative gender variance.

1.2. Hypothesis

There is no significant gender difference in wages returns of employees of Rivers State of Nigeria Government.

1.3. Research Methodology

The research is an ex post facto study which makes use of employment records ten thousand employees (10000) of the Rivers State Government of Nigeria, comprising of four thousand five hundred women (4500) and five thousand five hundred men (5500), selected from the six core ministries of the government. The employees were from the ministry of education, health, works, commerce and industries, justice, and Finance. The distribution of participants on the bases of gender and ministries attached, offices or places of employment is as in table 1 below.

S/N	Ministry	Number of Employees		
		Male	Female	Total
1.	Education	3000	2500	5500
2.	Health	800	700	1500
3.	Works	700	500	1200
4.	Justice	600	500	1100
5.	Finance	400	300	700
	Total	5,500	4500	10000

Table 1: Distribution of Participants

The employment records of all the participants were collected from their files and used to calculate their present value (PV) and net present value (NPV) of returns to investment in education using transformation of $PV =$

$$\sum_{t=S+1}^T (W_{st} - W_{ot})(1+r)^{-t} - \sum_{t=1}^S W_{ot}(1+r)^{-t} \text{ and}$$

$$NPV = \sum_{t=S+1}^T (W_{st} - W_{ot})(1+r)^{-t} - \sum_{t=1}^S (W_{ot} + C)(1+r)^{-t}$$

given by Mincer(1974), transformed to $PV = (W_{st} - W_{ot}) \int_{t=S+1}^T e^{-\ln(1+r)t} dt - W_{ot} \int_{t=1}^S e^{-\ln(1+r)t} dt$, and

$$NPV = (W_{st} - W_{ot}) \int_{t=S+1}^T e^{-\ln(1+r)t} dt - (W_{ot} + C) \int_{t=1}^S e^{-\ln(1+r)t} dt \text{ (Etukudo and Nwokocha, 2009).}$$

Where W_{ot} represents wages before schooling W_{st} , wages after schooling, C , total cost of schooling, r , rate of returns or discounting rate, S , duration of schooling and T , years of working.

The mean and standard deviation of the PV and NPV was calculated for both genders and were utilized to analysed the gender variance in PV and NPV using t-ratio at 0.05 level of significance.

2. Result of Data Analysis

The distribution of PV and NPV of employees on gender bases is given in table 2 below.

S/N	Ministry	PV		NPV	
		Male	Female	Male	Female
1.	Education	1726896	1634732	1582707	1563821
2.	Health	1833567	1504567	1632181	1394564
3.	Works	1925678	1834593	1689234	1634568
4.	Finance	1734569	1478725	1576321	1245512
5.	Commerce and Industry	1634578	1545789	1462359	1383662
6.	Justice	1934864	1789345	1723451	1592677
	Total	10,790062	9787751	9666223	8814717

Table 2: Distribution of PV and NPV of the Employees of Rivers State Government of Nigeria

S/N	Returns	Number	Mean	Standard Deviation	Degree of Freedom	t-ratio	Critical Value	Decision	
1.	PV	Male	5500	1798343.67	109617.94	9998	62.41	1.96	Reject
		Female	4500	1631341.83	137290.88				
2.	NPV	Male	5500	1611072.17	84909.94	9998	67.63	1.96	Reject
		Female	4500	1469119.5	140100.01				

Table 3: t-ratio for PV and NPV

From table 3 there is a significant difference in the PV and NPV of males and females employees of the Rivers State of Nigeria Government. With the calculated value of $t = 62.41$ and $t = 67.63$ for PV and NPV respectively, as against the critical value of 1.96, it is clear that the PV and NPV of male and female employees in the six ministries are significantly difference; hence the null hypothesis is rejected.

3. Discussion

The study was carried out to determine the possibility of the existence of gender variance in wages returns of employees of the Rivers State of Nigeria Government. Ten thousand (10000) workers comprising of 5500 males and 4500 females extracted from six core ministries were used for the study. Their present values and net present values of wages returns were calculated using integral approached (Etukudo and Nwokocha, 2009) a transformation of (Mincer, 1974) formula for computing returns to investment in education. The mean PV and NPV of the different ministries are presented in table 2. There exists an overall mean variance of one hundred and sixty seven thousand, one naira and eighty four kobo (₦167001.84) in the PV and one hundred and forty one thousand, nine hundred and fifty two naira, sixty seven kobo (₦141952.67) in NPV between males and females employees. In addition to the calculated value of t-ratio given in table 3, of $t = 62.41$ for PV and $t = 67.63$ for NPV for degree of freedom of 9998 and critical value of 1.96 it is obvious that the wages returns of males are higher than that of females. The variance can be demonstrated in fig. 1 below.

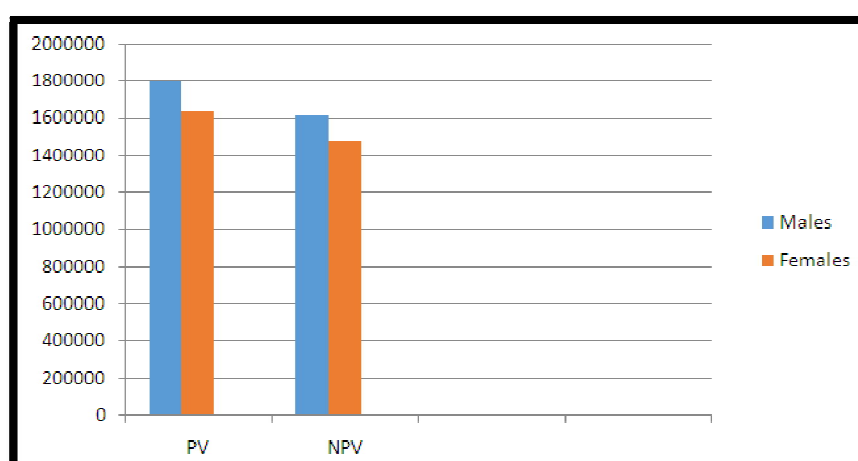


Figure 1: Means PV and NPV of Males and Female Employees

From the figures it is very clear that the PV and NPV of male employees are higher than those of female employees. The finding of the study supports that of Herk, Kraagkamp and Welberg, (2016), Quenzel and Hurnel (2013) and Aslam (2018) that returns to investment in education of males are higher than that of females. The main cause of the gender variance in this study is the age of entry and educational qualification. Many women enter into the labour market in the ministries at advanced age while greater number of those that started early work with low educational qualifications hence attracts low wages, which supports the findings of Pastore, Sattars and Tiogson (2013).

4. Recommendations

From the finding of this study the following recommendations are given:

- Women should be encouraged to take up appointments in the labour market early.
- There is still an existing gap in the acquisition of higher education between men and women which translates to that of returns to investment in education; women should be encouraged to obtain higher education in order to close the gap.
- The existing gap in returns to investment in Education of women can be close if women are mentored to work at the higher cadre of employments which are predominantly male dominated, so as to strike a balance between both gender in work positions, roles, responsibilities and consequently wages and returns to investment in education.
- On the job or in service train should be availed women to be able to higher educations and requisite skills that would enable them grow in their employments.

5. Conclusion

There exists gender variance in returns to investment in education of male and female employees of Rivers State Government of Nigeria, in favour of the males. The causes of the disparity are principally, late entry to the labour market, working with lower educational qualification and preponderance at the lower cadre of employment by female folks. Equity can be restored by encouraging women to take up employment at early working age, acquire higher education and grow to the upper cadres of their various jobs.

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