Kamu-Özel Sektör Ücret Farklılıkları: Nijerya Örneği[1]

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Özet

Bazı ülkelerde kamu ve özel sektörün işgücü piyasaları farklı çalışabilir. Bazı sektörlerde kamu kesiminin istihdamın önemli bir kısmını oluşturması nedeniyle, genel işgücü piyasasındaki ücret ayarları ve diğer istihdam uygulamaları kamu sektöründeki işgücü piyasalarının etkinliğinden etkilenebilir. Bu nedenle, bir çok araştırmacı bu konuyu yakından takip etmekte ve gelişmiş ve gelişmekte olan ülkelerde kamu-özel sektör ücret farklarını incelemektedir. Bu çalışmada Nijerya'da kamu ve özel sektör için Mincer'in önerdiği ücret denklemleri tahmin edilmektedir. Bu çalışmanın verileri, 2012-2013 Nijerya Genel Hane Halkı Araştırması anketinden (Nigeria General Household (GHS) Survey-Panel Wave 2, Post Planting Household Questionnare) elde edilmiştir. Sonuçlar Tansel (2005) ve güncel literatür ile uyumludur. Eğitim ve deneyim katsayıları tahminleri, kamu ve özel sektör için pozitif yönde istatistiksel olarak anlamlıdır. Hem kamu hem de özel sektörlerde eğitimin getiri oranı, deneyimin getiri oranından daha yüksektir. Buna ek olarak, tahmin edilen katsayılar, özel sektörde çalışan kişilerin, kamuda çalışan bireylere kıyasla, deneyim ve eğitimdeki getiri oranının daha düşük olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Kamu-özel sektör ücretleri, kamu sektörü, özel sektör, Nijerya

JEL Sınıflandırması: J32, J45

Public-Private Sector Wage Differentials: The Case of Nigeria

Abstract

The public and private sector labor markets may operate differently in some countries. Due to the fact that the public sector in some cases makes up a significant share of wage employment, wage settings and other employment practices in the overall labor market may be influenced by the efficiency of the public sector labor markets. For this reason, many scholars paid close attention to this topic and examined the public – private sector wage differentials in developed and developing countries. This study estimates Mincerian wage equations in public and private sector in Nigeria. The data of this study come from the 2012-2013 Nigeria General Household (GHS) Survey-Panel Wave 2, Post Planting Household Questionnare. The results are consistent with Tansel (2005) as well as the current literature. Education and experience coefficient estimates are positively statistically significant for public and private sectors. In both public and private sectors, the rate of return to education is higher than the rate of return to experience. In addition, estimated coefficients suggest that individuals working in private sector have a lower rate of return to experience and education compared to individuals working in public sector.

Keywords: Public-private sector wages, public sector, private sector, Nigeria

JEL Classification: J32, J45

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1. Introduction

The public and private sector labor markets may operate differently in some countries. Due to the fact that the public sector in some cases makes up a significant share of wage employment, wage settings and other employment practices in the overall labor market may be influenced by the efficiency of the public sector labor markets. For this reason, many scholars paid close attention to this topic and examined the public – private sector wage differentials in developed and developing countries. According to a previous study that uses the 1993–1994 and 1999–2000 rounds India's Employment and Unemployment survey to investigate wage differentials between the public and private sectors, the differences in wages between public and private sectors are positive and high in India (Glinskaya & Lokshin, 2007). Kannellopoulos (1997) shows that there exist significant differences between the public and private earnings structures in Greece. For higher educational levels educational returns for males are higher in the public sector than in the private sector, while the opposite holds true for lower educational levels (Kanellopoulos, 1997) . Tansel (2005) examined the factors which explain employment choice and wage differentials in the public and private sectors in Turkey for men and women. By using individual level data from the 1994 Household Expenditure Survey, she explains the employment selection in public administration, State Owned Entities (SOEs) and covered private sectors and the wage differentials in the public and private sectors by gender in Turkey. The results of her study show that the wages for men who work in public administration are higher than those of the private sector when controlling for observed characteristics and sample selection and SOE wages are higher than private sector wages. Her results are that education and experience have a positive and significant impact on wages, the latter at a diminishing rate (Tansel, 2005). By following Tansel's (2005) methodology, we conduct another study that estimates wage equations in the public and private sectors in Nigeria. Individual level data are used to estimate the wage equations. The results are consistent with Tansel (2005) as well as other current literature. In both public and private sectors, the rate of return to education is higher than the rate of return to experience. The results for experience squared are mixed. In the regressions, the coefficients of experience squared are negative. However, it is not statistically significant for the public sector. The rest of the paper is organised as follows: In section 2, the data are described and summary statistics are presented. In section 3, the model specification is discussed. Estimation results are given in section 4. Conclusions and suggestions for future research appear in section 5.

2. Data Description

The data of this study come from the 2012-2013 Nigeria General Household (GHS) Survey-Panel Wave 2, Post Planting Household Questionnare. The GHS- Panel is the result of a partnership that the Nigerian National Bureau of Statistics (NBS) and the World Bank. The GHS survey is a cross-sectional survey of 29,315 individuals and 5000 households. After editing the data for missing values and for the ages between 15 and 65, we end up having 3421 individual observations. Table 1 reports summary statistics of the edited data:

Table 1: Summary Statistics for All Sectors

Variable	Mean	Std Dev	Minimum	Maximum	N
Twage	411.5847846	3659.85	0.2666667	136000.00	3421
Educ	8.5624087	5.3592006	0	20.0000000	3421
Exp	27.0517393	14.1937702	0	59.0000000	3421
Expsqr	933.2008185	847.8753162	0	3481.00	3421
Pub_Pri	0.1987723	0.3991346	0	1.0000000	3421
Hours	43.3835136	16.1603879	1.0000000	108.0000000	3421
Age	41.6141479	12.0806582	15.0000000	65.0000000	3421
Gender	0.5092078	0.4999883	0	1.0000000	3421

The mean of education (Educ) and experience (Exp) are roughly 8.5 and 27 years, respectively. We create 2 dummy variables: "Gender" and "Pub_Pri". Gender that equals to 1 stands for men and gender that equals to 0 stands for women. Pub_Pri dummy variable is for differentiating public sector from private sector. If it is 1, then the individual works in public sector. If it is 0, this means that the individual is employed in private sector. If the employer is federal government, state government, local government or state owned enterprise (parastatal), the employee is considered as working in public sector. On the other hand, if the employer is not in public sector, the employee is considered as working in private sector. The total wage (Twage) consists of wage and payment in kind. Note that the original amounts received are weekly or monthly in most cases. The total wage (Twage) variable in my study is converted into an hourly basis. After constructing the hourly wage, it has been converted into logarithmic form. The average total wage for the overall sample is roughly 412 Nigerian Nairas.

Table 2: Summary Statistics for Public Sector

Variable	Mean	Std Dev	Minimum	Maximum	N
Twage	1185.40	8026.75	2.4962831	136000.00	680
Educ	13.5220588	3.8005637	0	20.0000000	680
Exp	24.1617647	10.9485479	1.0000000	55.0000000	680
Expsqr	703.4852941	585.2766900	1.0000000	3025.00	680
Pub_Pri	1.0000000	0	1.0000000	1.0000000	680
Hours	42.1294118	11.2117530	4.0000000	84.0000000	680
Age	43.6838235	9.8641003	19.0000000	65.0000000	680
Gender	0.6441176	0.4791322	0	1.0000000	680

Table 3: Summary Statistics for Private Sector

Variable	Mean	Std Dev	Minimum	Maximum	N
Twage	219.6124287	753.0612643	0.2666667	25000.00	2741
Educ	7.3319956	4.9649091	0	18.0000000	2741
Exp	27.7686976	14.8043611	0	59.0000000	2741
Expsqr	990.1897118	892.2285678	0	3481.00	2741
Pub_Pri	0	0	0	0	2741
Hours	43.6946370	17.1561465	1.0000000	108.0000000	2741
Age	41.1006932	12.5188939	15.0000000	65.0000000	2741
Gender	0.4757388	0.4995022	0	1.0000000	2741

Table 2 and Table 3 show that 2741 individuals work in the private sector whereas 680 individuals work in the public sector. This means that private sector labor markets are larger compared to public ones in Nigeria. In the public sector, average education and experience are 13.522 and 24.162 years, respectively. Means of education and experience for private sector are 7.332 and 27.769. The average years of experience for public sector (24.162) is less than the average of private sector's (27.769) whereas it is the reverse for the education. Total wages are much higher in the public sector than they are in private sector.

3. The Model

We specify the wage equation by the traditional human capital framework (Mincer, 1974). Mincerian wage equations are specified where the log of the hourly wage rate is regressed on a set of education, experience, and other exogenous variables. The estimated equation is:

$$In\ TWage_i = \beta_0 + \beta_1*educ_i + \beta_2*exp_i + \beta_3*expsqr_i + \varepsilon_i \qquad (1)$$

where *TWage* is the hourly total wage (TWage = hourly wage + hourly payment in kind), *educ* is the years of education , *exp* is the years of experience in the current job, *expsqr* is the square of years of experience. β_0, β_1 , β_2 and β_3 are the intercept term, coefficient of education, coefficient of experience and coefficient of experience square, respectively and ε_i is the random disturbance term. We have estimated 3 OLS regressions by using equation (1). A first regression is estimated for the entire sample without differentiating public-private sector. Then, We estimate separate wage equations for public sector and private sector. Estimating these regressions helps to answer whether there are wage differentials between public and private sectors.

4. Estimation Results

The OLS estimates of the wage equations for all sample, public sector and private sector are given in Table 4, Table 5 and Table 6 below:

Table 4: All Sample Without Differentiating Public-Private Sector (Model 1)

Number of Observations	3421

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	997.47314	332.49105	271.55	<.0001
Error	3417	4183.90101	1.22444		
Corrected Total	3420	5181.37415			

Root MSE	1.10654	R-Square	0.1925
Dependent Mean	4.75230	Adj R-Sq	0.1918
Coeff Var	23.28437		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	2.95692	0.08661	34.14	<.0001
Educ	Educ	1	0.11621	0.00429	27.09	<.0001
Exp	Exp	1	0.04291	0.00527	8.14	<.0001
Expsqr	Expsqr	1	-0.00038629	0.00008932	-4.32	<.0001

In Table 4, all coefficients of the wage equation are statistically significant in the entire sample. Linear and quadratic terms in experience have coefficients that are positively and negatively statistically significant at the 5% level, respectively. Education has a positive and significant effect on wages for the model. The coefficients of education and experience for the Model 1 are 0.11621 and 0.04291, respectively. These results suggest that the return to education is higher than the return to experience. In Table 5, all coefficients except the quadratic term of experience of the wage equation are statistically significant in the public sector. Education and experience are statistically significant at the 5% level, and they have positive effects on wages. The coefficients of education and experience for the Model 2 are 0.13166 and 0.04446, respectively. These results suggest that the return to education is higher than the return to experience for the public sector.

Table 5: Public Sector (Model 2)

Number of Observations	680

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	154.88119	51.62706	54.20	<.0001
Error	676	643.90201	0.95252		
Corrected Total	679	798.78320			

Root MSE	0.97597	R-Square	0.1939
Dependent Mean	5.64771	Adj R-Sq	0.1903
Coeff Var	17.28080		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	3.02943	0.21916	13.82	<.0001
Educ	Educ	1	0.13166	0.01217	10.82	<.0001
Exp	Exp	1	0.04446	0.01404	3.17	0.0016
Expsqr	Expsqr	1	-0.00033580	0.00027690	-1.21	0.2257

In Table 6, all coefficients of the wage equation are statistically significant for the private sector. Linear and quadratic terms in experience have positively and negatively statistically significant at 5% level, respectively.

Table 6: Private Sector (Model 3)

Number of Observations	2741

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	321.08376	107.02792	86.64	<.0001
Error	2737	3381.04854	1.23531		
Corrected Total	2740	3702.13229			

Root MSE	1.11145	R-Square	0.0867
Dependent Mean	4.53016	Adj R-Sq	0.0857
Coeff Var	24.53436		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	3.33628	0.10004	33.35	<.0001
Educ	Educ	1	0.08366	0.00531	15.75	<.0001
Exp	Exp	1	0.03001	0.00582	5.16	<.0001
Expsqr	Expsqr	1	-0.00025542	0.00009561	-2.67	0.0076

Education has a positive and significant effect on wages. The coefficients of education and experience for the Model 3 are 0.08366 and 0.03001, respectively. These results suggest that the return to education is higher than the return to experience for the private sector, as well. Moreover, we conduct an F-test to see whether the wage equations differ by sector. F-test statistic (16.848), which is greater than the F-critical value (1.94) at the 5% level, indicates that we can reject the null hypothesis, which states that the coefficients of Model 2 and Model 3 are the same. This F statistic is calculated with this formula:

$$\text{Fstat} = \frac{[(RSSa - (RSSpub + RSSpriv))/(Kpub + Kpriv)]}{[(RSSpub + RSSpriv)/(Npup + Npriv - Kpub - Kpriv)]}$$

RSS are given in the tables for each model. N is the number of observations. K is the number of independent variables including the constant. "a" stands for the entire sample, "pub" stands for public, "priv" stands for private. As a result, dividing the data into public and private sector and then running two separate regressions are better than just estimating a regression for overall sample.

5. Conclusion

This study estimates wage equations in public and private sector in Nigeria. The results are consistent with Tansel (2005) as well as the current literature. Education and experience coefficient estimates are positively statistically significant for public and private sectors. In both public and private sectors, the rate of return to education is higher than the rate of return to experience. In addition, estimated coefficients suggest that individuals working in private sector have a lower rate of return to experience and education compared to individuals working in public sector. The results for experience squared are mixed. In the regressions, the coefficients of experience square are negative. The negative coefficient of experience squared suggests that increasing experience results in increased wages at a diminishing rate in the private sector. However, it is not statistically significant for the public sector due to the high p- value; suggesting that wages grow linearly with experience in that sector. The distribution of workers among public and private sector may not be random. If this is the case, estimates of the wage equation by OLS which ignores sample selection (Heckman, 1979) will be biased. So, we suggest future researchers conduct this study with a selectivity corrected model.

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