IMPACT OF GENDER WAGE DIFFERENTIALS ON POVERTY AND INEQUALITIES IN CAMEROON: A DISTRIBUTIONAL APPROACH

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Abstract

This study analyzes the distributional impact that could have gender wage differentials on poverty and income inequalities in Cameroon. It specifically focuses on public sector workers and those in the formal private sector. The method used to capture income gaps between men and women is a revised version of the Oaxaca Blinder standard model. The impact of gender wage differentials on the standard of living is apprehended from the model developed by Carlos Gradin et al (2006). The study uses data of the Survey on Employment and the Informal Sector conducted in 2005.

The results indicate that in absence of discrimination in the formal labour market, women have would have the same hourly income with men; and in the formal private sector they would find themselves even with a higher salary. This thanks to the returns to education which are very high for them compared to men, therefore allowing women to offset the gap in work experience. The impact of gender wage gap on poverty shows that the eradication of discrimination in the formal sector would help to improve the living conditions of people living in households where at least one woman exercises in the formal sector. At the national level, it would also reduce the incidence of poverty, but the impact on income inequalities is not very clear.

The study recommends a greater awareness of political and social actors on the impact of gender wage gap on the well-being of people who are victims; the operationnalisation of the Convention on the Elimination of All Forms of Discrimination against women and the implementation of the gender approach for recruitments in Cameroon civil service.

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Key words: Labour market, Gender wage gap; Poverty; Income inequalities; Cameroon

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1. INTRODUCTION

Cameroon is a country of Sub-Saharan Africa that has experienced between during the decade 1985-1994 an unprecedented crisis due to the fall of export revenues following the fall of oil prices and principal cash products (cocoa, coffee). The tension of cash will force the government to implement various measures to improve the economy. Thus, with the support of the Bretton Woods institutions, the country implemented several structural adjustment programs that directly and indirectly affected the poverty and employment situation of Cameroon. Indeed, the liquidation and restructuring of numerous private and public companies, the freezing of recruitments in the public service, the retrenchment of some civil servants and the steep decline of private investment led to an explosion of under-employment and an acceleration of the informalisation of the economy. In 1996, more than 50% of Cameroonians were living below the poverty line and the rate of informalisation was 85.9% (INS, 1996).

Since 1994, the Cameroonian economy resumed growth and in 2000, new programs with less constraints of which the Initiative for Heavily Indebted Poor Countries (HIPC), were negotiated with donors. However, despite this progress and reforms, the conditions of living and of activity of Cameroonians remain alarming. In fact, the third Cameroonian Households Survey (ECAM 3) has revealed that the poverty headcount has been steady at 40% between 2001 and 2007; it has also showed the strong significance of the socio-economic group on the probability of a household to be poor (INS, 2008). The same survey also revealed great wage differentials between men and women in the labour market; Women are mostly engage in unprotected jobs and earn on average two times less than men (INS, 2008). These facts corroborate the results of the Employment and the Informal Sector Survey (EESI) realised in 2005 which has clearly established the existence of gender inequalities in the labour market of the Cameroonian economy (INS, 2005).

The current face of the labour market in Cameroon is quite alarming as the poverty status of the country. Thus, the Government through the sixth strategic axis of its Poverty Reduction Strategy Paper (PRSP, 2003), has undertaken to develop and implement a national employment policy integrated to the poverty reduction strategy. This policy aims to promote income-generating activities, self-employment of the poor, the development of SMEs/SMIs and the support of initiatives of the poor in the growth sectors. This policy needs for its implementation, to have reliable information and specific studies to better elucidate the functioning of the labour market and its links with poverty, since these two phenomena which are enough correlated in developing countries are rarely analyzed together (Carlos Gradin *et al*, 2006).

Moreover, in the context of globalization and trade liberalization, the issue of imperfect markets is arousing an increasing interest. In particular, it is important to give special attention to the costs incurred by inefficient use of labour, as it happens, gender discrimination. This is because the

functioning of the labour market has a large impact on economic growth and income distribution (Cambarnous, 1994). In addition, the "classical" theoretical analysis, based on the work of Becker (1975) and Arrow (1973), clearly showed the implications of discrimination on profits, wages and efficiency in the allocation of work. Authors like Hoddinott *et al* (1994) have highlighted the impact of women's income on the household's well-being. These authors with the data of Ivory Coast (Standard living Survey of 1986-1987) have shown that an increase in the share of income of women in the total household income increases the share of expenditure on food and reduce the share allocated to alcohol and tobacco. In addition, an increase in the income of women leads to a declining share in the household budget, of expenditure on meals taken out of the household and of children and adults clothing expenses.

Carlos Gradin *et al* (2006) working on European Union countries with data from European Community Household Panel Survey (ECHP 2001) showed that gender discrimination increases poverty and income inequalities. According to these authors, an eradication of discrimination against women working in the private sector would result in a decrease in the number of people living under the poverty line; this drop may reach 10% (as in Germany). The authors also lead to the result that more an employed woman contributes to the household income more the effect of discrimination on the poverty risk of individuals living in this household is high.

Among the major studies related to poverty or the labour market, there is that of the World Bank (1995) which focuses on social basic needs (health, education and housing). Njinkeu *et al*. (1998) were interested in the dynamics of the labour market. Gbetnkom D. (1999) assessed the impact of trade liberalization on poverty. The papers of Fambon *et al*. (2000 and 2004) are respectively related to the impact of economic reforms on poverty and the dynamics of poverty in Cameroon. Foko *et al*. (2007) have focused on multidimensional poverty while Nembot *et al*. (2007) highlighted the impact of equivalence scales on the spatial distribution of poverty in Cameroon. Yet, to our knowledge, no specific study has analyzed the potential impact that gender wage differentials could have on the welfare of households.

This paper analyzes the distributional impact that could have gender wage differentials on poverty and income inequalities in Cameroon. In other words, it is to assess whether measures aiming at establishing gender equality in the labour market especially in the formal sector can also contribute to significantly improve the welfare of beneficiary households. This study will further enlighten decision makers and donors about the potential social gains of gender equality promotion. More specifically, we are going to: quantify the degree of gender wage differentials on the formal sector (public and private formal); assess poverty and inequalities as prescribed by the labour market and, finally, we will assess the impact on the poverty level and on inequalities, that would generate a decrease of the income gap between men and women among households with at least one female worker of the formal sector.

This study is based on two key assumptions. The first assumes that the income gap between men and women is totally explained by a number of observable variables. This amounts to involve, certainly wrong, the impact of unobservable factors (such as absenteeism, skill, effort, etc.) on income differences in forms of discrimination. Panel data can, in some cases, help to overcome this weakness. However, such data does not exist in Cameroon. The second assumption is to assume that the discrimination-free equilibrium wage coefficients are unbiased. This is unlikely since these coefficients are a weighted average of the men and women wage regression coefficients. This problem is yet inherent in the models of type Oaxaca-Blinder.

The rest of the document is structured into four sections. Section 2 deals with the methodology. Section 3 presents the data and some characteristics of the formal sector by gender. Section 4 describes the results. Conclusions and socio-economic policy recommendations are drawn in section 5.

2- METHODOLOGY

2.1 Gender wage differentials

Oaxaca (1973) in his pioneer study on income gap decomposition defines the existence of wage differentials based on gender as a situation where the average income of men is higher than that they would have had if males and women were paid according to the same criteria. Thus, gender wage differentials exist when the income gap between male and female workers with similar skills and certainly the same expected productivity. The economic literature distinguishes two major components in income gap. The first component is discrimination in the labour market, which expresses the fact that men and women with equal productive characteristics receive different incomes (Ehrenberg and Smith, 1991). The second component is the gap due to the difference in productive characteristics such as the education of level, work experience, training and sometimes employment characteristics. To measure the income gap we must first estimate the earnings equations of men and women.

Income Equation

As it is the case for most African economies, Cameroon labour market is segmented[4] and it has four segments: public, private formal, informal non-agricultural and informal agricultural[5]. But given the difficulty of apprehending the mechanisms of remuneration in the informal sector, our study is limited to the workers of the formal sector. However, we will distinguish the public segment of the private segment. Indeed, government enterprises and services provide public goods and are generally subject to

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[4] The labour market segmentation can be defined as a situation where workers with similar productive characteristics, get different salaries. These differences can be observed for example between rural and urban wages, or between those in the formal and the informal sector. They may also exist between employees engaged in various industries. (Marouani, 2002).

[5] (Adams (1991) ; Schultz (2004).

political objectives, while private formal companies have for principle the maximization of their profit. So, each segment certainly has its specificities with regard to the level of wages.

In each segment, we will estimate separately the earnings equation for men and women:

$$Ln(w_i) = \beta X_i + e_i \qquad (1)$$

Where w_i is the hourly income of activity; X_i is the vector of characteristics and β is the vector of coefficients, e_i is the vector of residuals distributed according to a standard normal distribution $N(0, \sigma_e)$.

However, we know that the income of an individual is observed only if he is employed, so the estimate of the vector β by equation (1) is potentially biased.

However, an individual participates in the labour market if:

$$\gamma Z_i + u_i > 0 \qquad (2)$$

Z: set of individual characteristics

u: error term normally distributed. There is a correlation ρ between the vectors u and e. The error terms e and u are distributed following a bivariate normal distribution.

To take into account the selectivity bias we will finally estimate the following equation:

$$Ln(w_i) = \beta X_i + \theta_i \lambda_i + e_i \qquad (3)$$

λ_i is the inverse Mills ratio; it is derived from equation (2) about labour market participation. This variable permits to take into account the possible selectivity bias. Equation (3) will be estimated according to the two stages procedure developed by Heckman (1979).

Measuring income gap

The classical approach of measuring income gap was proposed separately by Oaxaca (1973) and Blinder (1973). It states that in the absence of gender wage differentials, the observable characteristics of individuals have an identical impact on the earnings of men and women. If the average income of men is w_h and that of women is w_f then, the decomposition of the income gap[6] according to the remuneration structure of men is as follows:

$$G = Ln(w_h) - Ln(w_f) = \bar{X}_f(\beta_h - \beta_f) + (\bar{X}_h - \bar{X}_f)\beta_h \qquad (4)$$

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[6] In reality, the income gap G would be perfectly assessed if it was possible that the vector of productive characteristics is defined exhaustively. Indeed, some characteristics such as absenteeism, skills, effort at work, etc. are difficult to measure or unobservable. The effect is not captured and can be mistaken confused to a form of discrimination. This is the main failure of this approach. Panel data may, in some cases, help to solve this problem of omitted or unobservable variables.

Where

$\bar{X}_i$ is the vector of average characteristics of group i and β_i is the vector of coefficients ($i = m \ or \ f$).

Equation (4) can be rewritten in several ways according to what we consider to be the real non-discriminatory wage structure. As Neuman *et al* (2004), we are going to estimate the gap as follows:

$$G = Ln(W_h) - Ln(W_f) = \underbrace{\bar{X}_h(\beta_h - \beta_{nd})}_{A} + \underbrace{\bar{X}_f(\beta_{nd} - \beta_f)}_{B} + \underbrace{(\bar{X}_h - \bar{X}_f)\beta_{nd}}_{C} + \underbrace{(\theta_h \lambda_h - \theta_f \lambda_f)}_{D} \qquad (5)$$

β_{nd} is the vector of coefficients of the non-discriminatory structure.

The decomposition of income gap G as presented in equation (5) has four components. Component A is the men advantage; it is described by some authors as the share of the income gap resulting from the preference for men. Component B is female's disadvantage. The sum of components A and B give the income gap related to gender, is to say resulting from wage differences based on gender. Component C captures the differential arising from differences in average productive characteristics between men and women. Component D expresses wage differentials resulting from the process of selectivity into the labour market. We have introduced this component to reflect the fact that the insertion process of formal sector workers into the labour market is not random ($\lambda_h \neq 0 \ et \ \lambda_f \neq 0$).

Gender wage gap cannot be fully captured with equation (5). For, despite the fact that the selection into the labour has been included, the gap G cannot be measured accurately since the vector of productive characteristics (X) cannot be defined exhaustively. Indeed, factors such as absenteeism, skill, effort at work, etc. are unobservable. Their effects on income disparities between men and women are not taken into account and may therefore be wrongly confused with forms of discrimination. Panel data may, in certain circumstances, help to resolve this problem of omitted or unobserved variables (Polachek et al, 1994).

The crucial problem posed by equation (5) is the choice of the non-discriminatory structure. This amounts to determine the vector β_{nd}. The choice of this vector is arbitrary. However, in general:

$$\beta_{nd} = \Omega \beta_h + (I - \Omega)\beta_f \qquad (6)$$

Where Ω is a weighting matrix.

For $\Omega = I$ we have the choice of Oaxaca (1973). The choice of Reimers is the weighting matrix $\Omega = (0,5)I$. The matrix of Cotton (1988) is $\Omega = P_h I$ where P_h is the proportion of men in the sample. Oaxaca and Ransom (1994), but also Neumark (1988), taking into account the maximization of utility by employers, propose the following weighting matrix $\Omega = (X'X)^{-1}(X'_h X_h)$: where X is the matrix of individual's characteristics of the pooled sample (men and women) and X_h the matrix of the men sample.

Equation (6) is problematic, since the coefficients of the non-discriminatory vector β_{nd} depends on earnings equations. These coefficients are probably biased because it is unlikely that the coefficients of earnings equations are unbiased. This is the main limitation of approaches based on the Model of Oaxaca-Blinder.

We will apply the weighting matrices of Oaxaca, Cotton and Reimers. These matrices have been used by several authors in studies on discrimination[7]. But this is an addition to the study done by Carlos Gradin *et al* (2006) which was limited to Oaxaca matrix.

2.2 Measuring poverty and inequality

Living standard indicator

The study is interested in monetary poverty and its apprehension passes through the calculation of a living standard indicator. Available data (Employment and Informal Sector Survey) did not include information on households' final consumption expenditure. To overcome this problem we consider two scenarios for the construction of the standard of living indicator. First, we divine the indicator as being the sum of earnings (from main and secondary jobs) and out of employment incomes of household members aged 10 and above. Out of employment revenues include the following: 1 - Work pensions, 2 -Other pensions, 3 - Land and real state income, 4 - Income from transferable Securities, 5 - Transfers received from other households, 6 - Scholarships and , 7 - Other Income. In the second scenario, the standard of living indicator is simply the sum of earnings of the household.

The importance of the first indicator is to well capture the real standard of living of households. But, to better appreciate the impact of gender wage differentials on poverty, it would be preferable to use the second indicator. But the choice of income rather than consumption as the standard of living indicator is likely to lead to results that diverged from those obtained in other studies on poverty done in Cameroon. Indeed, the income does not turn directly into welfare and a modest income may be accompanied by a good quality of life as noted by the sociologist Reigen (1987). However, the purpose of this study is not simply to describe the extent of poverty in Cameroon but also to assess the impact of eradication of discrimination on the income and the standard of living of households

To make incomes comparable from one region to other in terms of real purchasing power, the regional deflators of 2001 (Table A1 in appendix) will be used. We thus implicitly assume that the relative prices between the different regions of Cameroon have remained fairly stable between 2001 and 2005. For the choice of consumption units, we will refer to the study of Nembot *et al.* (2007); they have

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[7] For example, Cambarnous François (1997) used the matrices of Cotton and Reimers. On the other hand, Paternostro *et al* (1999) and Pilar González *et al* (2005) have used the weightings of Oaxaca, Cotton and Neumark.

calculated these units on the basis of an empirical scale of equivalence based on the harmonized data of the household surveys of 1996 and 2001 (see table A2 in appendix).

Poverty line and poverty indices

Any study of monetary poverty necessitates beforehand the definition of a poverty threshold (*z*) for classifying individuals as poor and non poor. In studies based on a monetary indicator, views are divided between the choice of an absolute poverty line and a relative poverty line. We will use the international threshold of one dollar per consumption unit per day; about 15000 Cfaf per month. A household *i* will be classified as poor if its income per adult equivalent is below the poverty line and a person will be said poor if he lives in a poor household.

To assess the extent of poverty as prescribed by the labour market, the FGT indices (Foster, Greer and Thorbecke, 1984) will be used. The general formula is as follows:

$$P_\alpha = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z} \right)^\alpha \qquad (7)$$

Where *n* is the size of the population in terms of total number of individuals

      q is the number of poor individuals, z: poverty line, y_i: income per adult equivalent of the household

    α is a parameter measuring aversion to inequality between the poor, the higher α is, the more weight it gives to the situation of the poorest of the poor population.

For α = 0, we have P0, the rate or incidence of poverty;

For α = 1, we have P1, depth or gap of poverty;

For α = 2, we have P2, the severity of poverty.

Measuring inequalities

To measure income inequality we will refer to the Gini index whose general formula is as follows:

$$I_\rho = 1 - \frac{\xi(\rho)}{\overline{y}}, \text{ with } \xi(\rho) = \sum_{i=1}^{n} \left[\frac{(v_i)^\rho - (v_{i+1})^\rho}{(v_1)^\rho} \right] y_i \text{ and } v_i = \sum_{k=i}^{n} w_k \qquad (8)$$

$\overline{y}$ is the average income in the population, y_i and w_i are respectively the income and the weight of individual *i*. The parameter ρ indicates the level of aversion to inequality in the society. In formula (8), individuals are ranked in ascending order of income. Two extreme situations arise. If the distribution is equal, then each individual receive the mean income $\overline{y}$, it signifies that p% of the population has p% share of income. In this scenario, the Gini index takes the value 0. If instead, an individual takes all the

income and the rest have nothing (extreme inequality), then the Gini index takes the value 1. Thus, more this index is small (near zero), more income distribution is equal.

2.3 Measuring the impact of gender wage differentials on poverty and inequalities

We will appreciate the impact of gender wage differentials on poverty and income inequalities using the method proposed by Carlos Gradin *et al* (2006) which falls under the continuity of the study conducted by Jenkins (1994).

Let $Y = (y_1, y_2, ..., y_H)$ be the distribution of the initial income of households and $Y^c = (y_1^c, y_2^c, ..., y_H^c)$ be the counterfactual distribution, where H is the total number of concerned households.

We have:

$$Y^C = Y + Y^* \qquad (9)$$

Where $Y^* = (y_1^c - y_1, y_2^c - y_2, ..., y_H^c - y_H)$; it is the vector of discrimination.

To measure the impact of discrimination on poverty, we will calculate the variations of poverty depending on whether we use the initial distribution Y or the counterfactual non-discriminatory distribution Y^c while maintaining the same poverty line which is one dollar per day per adult equivalent.

The impact is then given by:

$$\Delta P_\alpha(Y, Y^c, z) = P_\alpha(Y^c, z) - P_\alpha(Y, z) \quad \text{et} \quad \Delta_r P_\alpha = \frac{\Delta P_\alpha(Y, Y^c, z)}{P_\alpha(Y, z)} * 100 \qquad (10)$$

ΔP_α measures the absolute impact of gender income differentials on poverty; the relative impact is given by $\Delta_r P_\alpha$.

Similarly, we will compare the Gini indices derived from the two distributions to see which one is more egalitarian.

$$\Delta I(Y, Y^c, z) = I(Y^c, z) - I(Y, z) \quad \text{et} \quad \Delta_r I = \frac{\Delta I(Y, Y^c, z)}{I(Y, z)} * 100 \qquad (11)$$

The discrimination vector Y^* can be seen as a discriminatory tax. Thus, its impact will be neutral if it is distributed in proportion to initial income, i.e. $\Delta I = 0$. This discriminatory tax will be said regressive if $\Delta I > 0$ and if progressive if $\Delta I < 0$.

In the counterfactual distribution Y^c, the hourly activity income of a female worker i of the formal sector is replaced by her counterfactual non-discriminatory income w_i^{nd}

$$\begin{cases} w_i^{nd} = w_i + g_i \\ \text{où } g_i = Max\left(exp\left(\beta_{nd} X_i + \theta_f \lambda_i + \frac{\sigma_e^2}{2} \right) - exp\left(\beta_f X_i + \theta_f \lambda_i + \frac{\sigma_e^2}{2} \right); 0 \right) \end{cases} \quad (12)$$

If woman i in not facing discrimination, thus g_i is equal to zero and in this case, $w_i^{nd} = w_i$.

3. DATA

3.1 The survey

The data at our disposal are those of the Employment and the Informal Sector Survey (EESI) carried out in 2005 by the National Institute of Statistics. The operation which was nationwide is the first exercise of its king in Cameroon. It comprises two phases. The first phase is an employment survey that collected data on socio-demographic characteristics of individuals and on employment. The second phase is a survey of the "enterprise" type carried out on non-agricultural informal units identified during the first phase. The survey EESI is a variant of the 1-2-3 system of surveys for which phase 3 on poverty was not carried out.

Within the framework of this study, it is phase 1 that is used. This phase relies on the poll base provided by the cartography of the third General Population and Housing Census. It make it possible to select at random a sample of 8 540 households, stratified according to the ten regions and area of residence. The cities of Yaoundé and Douala were regarded as survey regions.

The survey clearly identified the four segments of the labour market and makes it possible to calculate a battery of indicators as: (i) the activity ratio (ii) the unemployment rate, (iii) the underemployment rate, (iv) the proportion of wage earners (v) the average income of activity, (vi) the average weekly duration of activity, etc..

The sample of this study consists of individuals aged 15 and above who are working in the formal sector. People still going to school have been excluded from our sample not to bias the education variables. We have therefore a total of 2364 individuals who people are as presented in table A3 in the appendix. Nevertheless, for estimating equations sectoral participation in the labour market, we also refer to people who are seeking for a job.

The income variable we use is the hourly income of the main activity. This income is the ratio between the monthly income of the individual and the number of hours devoted to work during this period. For an individual who has a job, but who for some reasons (strike, sickness, holidays, etc..), has not

normally worked within the reference month, what is consider it is his usual number of working hours per monthly. The job income includes the salary, bonuses, profit sharing, end of year bonuses and benefits in kind.

3.2 Some characteristics of Cameroon formal sector, by gender

The formal sector is very narrow. It concentrates only 10.7% of workers aged 15 and above, with 5.4% for the public sector and 5.3% for the private sector. The workforce is in majority constitute of men; in fact, whatever the segment, women represent less than 30% of the workforce. Women are on average younger than men (37.8 years against 40.2 years in the public and 34.7 years against 36.2 years in the private).

Despite their low representation in formal jobs, women who are in this sector are more educated than men; the difference is more pronounced in the private sector where the average number of years of study of a woman is 11 years against 9.7 years for a man. However, the productive advantages of women concerning education do not seem to confer to them a favourable situation in the employment status and in earnings; perhaps because they are less experienced especially in the private sector where the difference of experience is 1.4 years. In the public sector 51% of women are in the senior staff against 57.5% men. It follows that the average income of a woman is 107°547 Cfaf against 131°820 Cfaf for a man, yet they both put roughly the same time at work. In the private sector, the differences between males and females workers are less important. With regard to the socio-professional status it is in favour of women, but the hourly income of a man is superior to that of a woman (524 FCFA against 518 FCFA).

In summary, statistics of table 1 shows that women working in Cameroon formal sector could be affected by certain types of malfunctioning of labour market oriented based on gender; the phenomenon would be more intense in the public sector than in the formal private.

Table 1 : Characteristics of the workers of the formal sector, by gender

Variables		Public		Private formal	
		Males	Females	Males	Females
Percentage of persons working in the sectors		70.4	29.6	81.1	18.9
Average Age		40.2	37.8	36.2	34.7
Average number years of study		11.7	12.3	9.7	11.0
Level of education	No level/Primary	15.2	2.5	28.8	16.9
	Secondary	50.8	68.1	52.2	60.7
	Higher	34.1	29.3	18.9	22.3
	Together	*100.0*	*100.0*	*100.0*	*100.0*
Semi-professional status	High rank officer/ Self-employed	57.5	51.0	25.3	33.1
	Skilled Employee/ Labourer	31.9	40.9	48.1	46.9
	Labourer	10.6	8.1	26.7	20.0
	Together	100.0	100.0	100.0	100.0
Time devoted to the job per week (hours)		39.4	38.7	51.2	46.3
Average monthly income (Cfaf)		131820	107547	103809	97935
Average hourly income (Cfaf)		877	736	524	518
Average years of work experience		8.9	8.3	6.4	5.0

Source *: EESI (2005), Phase1. Our calculations; weighted data*

4. RESULTS

4.1 Income Equations

The results about income equations are presented in table 2. The implementation of the test of chow justifies the segmentation of formal sector into two segments (public and private). Moreover, this test also reveals that whatever the segment, the structure of remuneration of men is different from that of women at the threshold 1%. In all equations, the variables are generally significant and explain at least 44% of the dispersion of the hourly income. In addition, men and woman exercising in the public sector do not constitute random samples of the active population; since in the two earnings equations of this sector, the inverse Mills ratio is significant at 10% threshold. The negative sign of this variable express the fact that unobservable factors encouraging the participation of an individual into the labour market are negatively affecting his/she income once he/she has succeeded entering into the public service. In other hand, these factors have no effect if the individual rather go into the private sector (Mills not significant).

Mincer key variables (education and experience) are significant in all equations. We calculated the returns to education from the Mincer "extended" equation[8] because it allows the returns to education vary with the volume of investment made in education (Angrist and Lavy, 1997). The results (see Figure A1 and Figure A2 in the appendix) show that education is more profitable in the formal private sector than the public sector. The average marginal returns to education are around 10.2% for men of the public sector and 12.6% for women against 12% and 15.5% respectively for the formal private sector. Indeed, private companies operating in a competitive environment are guided by a caution of efficiency and the maximization of profit; and grant this fact, certainly paid more attention to the background of people they recruit.

In relation to gender, we note that in the public sector like in the private sector, education is more profitable for women than for men from GCE Advanced Level certificate (thirteen years of study successfully achieved). In the public sector, the benefits of possession of this diploma are around 11% for women and 13% for men and they are respectively 17% and 19% in the private sector.

Whatever the segment, the marginal returns to education increase significantly with level of education and they are very high in the private sector reaching 31% among women with a diploma at least equivalent to GCE-AL plus 5. So the completion of a level education always contributes to increase the hourly income of the worker. The returns to education in Cameroon formal sector are thus convex. This result is contrary to the classical theory of human capital, which states that there is a level at which the returns to education are constant or even decreasing. This convexity has also been observed in seven cities of WAEMU[9] by Keupie *et al* (2008) with 1-2-3 surveys data.

The influence of experience on the hourly income has two phases. The first phase is that in which an additional year of work still contributes to increase the hourly income of the worker. In the public sector, this phase corresponds to a period of about 24 years for women and 21 years for men. In the private sector, it is only 16 years for women against 26 years for men. Then comes the second phase, where the marginal returns to professional experience become zero or decreasing.

Other variables such as age and place of residence also significantly influence the income of workers in the formal sector. Variables related to migration and marital status are less relevant in explaining the income of workers.

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[8] Equation (3) can also be written as follows : $Ln(w_i) = c + r_1 S + r_2 S^2 + aE + bE^2 + \theta_i \lambda_i + e_i$

Then, $\dfrac{\partial Ln(w_i)}{\partial S} = r_1 + 2 r_2 S$ is the marginal rate of return to education

[9] The seven WAEMU (West African Economic and Monetary Union) mentioned cities are: Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou.

Table2: Estimation of income equations (Dependent variable: logarithm of the hourly income)

Variables	Modalities	Public		Private formal	
		Males	Female	Males	Female
Years of studies successfully completed		0.081***	-0.008	-0.023*	-0.094*
Years of studies successfully completed squared		0.001	0.005**	0.007***	0.011***
Work experience		0.041***	0.047***	0.051***	0.098***
Work experience squared		-0.001***	-0.001*	-0.001***	-0.003**
Age (ref : Less than 30 years)	30- 44 years	0.174**	0.313**	0.210***	0.490***
	45 years and +	0.405***	0.432***	0.466***	0.440**
Region of residence (ref. : Other regions)	Douala	0.101***	0.048	0.261***	0.465***
	Yaoundé	0.250*	0.240***	0.203***	0.448***
Marital status	In union	0.102***	0.031	0.118**	-0.157
Migration status	Migrant	0.163***	0.156**	0.044	0,015
Constant		4.894***	4.720***	4.501***	4.121***
Selectivity test (**Mills**)		-0.198**	-0.070*	0.062	0.249
Statistics of the model					
Adjusted R^2 (en %)		52.4	44.6	56.6	52.1
Observations[+]		795	347	918	200
Chow test of equal coefficients (Pr >chi2 (13))		0.68		0.34	

Source : *EESI (2005), Phase1. Our calculations.*
*: significant at 10 %; **: significant at 5 %; ***: significant at 1 %

[+] it is the number of observations that have permit to have the coefficients. Outliers were excluded using exploratory data analysis techniques, they help to have robust results.

4.2 Income gap decomposition

Results on income gap decomposition are presented in Table 3. We observe that in the public sector, the income gap is 0.163 and the private sector, it is equal to 0.089. These differences indicate that the average hourly income of a man is 17.7% higher than that of a woman in the public and 9.3% in private sector.

In the public sector, whatever the non-discriminatory wage structure considered, the gender wage gap that incorporates male's advantage and the female's disadvantage is very important; it about twice the income gap. With Oaxaca's method it is 0. 313; it is 0. 319 and 0. 317 respectively with the matrices of Reimers and Cotton. According to this last approach, the income gap is largely attributable to disadvantage women in the labour market. This component makes up to 69.1% of the total income inequities. However, in the absence of discrimination in the public sector, women would be better paid. In fact, whatever the weighting matrix used it is noted that the income gap between men and women would be in favour of women by 0.009 to 0.016. So, the hourly income of a woman would have be 2.7% higher than that of a man. This is because the level of education of female workers is higher than that of male workers. In fact, women's education contributes to reduce the income gap by at least 27%

(see Table A5 in the Appendix). In contrary, work experience is favour of male workers. The sign of the selectivity component indicates that the process of entering into the public sector is in favour of women and helps to reduce nearly 44% of gender wages differentials. This may be the result of the gradual incorporation of the gender dimension in recruitments in Cameroon civil service.

In the private sector, we have omitted the selectivity component; since the referring variables are not significant (see income equations). The findings are almost the same as in the public sector. The total gender wage differentials are very high; it varies between 0.079 and 0.111 according to the technique used. The part of the gap of income attributable to a difference in average productive characteristics is negative, in favour women. It varies between -0.045 and -0.013. Thus, if the imperfections of the labour market were to be absorbed, for the same working time and similar functions women working in the private sector would be better paid than men thanks to their level of education that they oppose to men experience (see Table A6 in appendix). Moreover, unlike the public sector situation and by referring to Reimers or Cotton weighing matrix, it is not possible to say whether gender income gap is mainly due to the male's advantage or to female's disadvantage in the labour market.

Table 3 : Decomposition of the total income gap

	Oaxaca $\Omega = I$	Reimers $\Omega = (0,5)I$	Cotton $\Omega = P_h I$
Public sector Gap=0,163			
Selectivity	-0.141	-0.141	-0.141
Difference in productive characteristics	-0.009	-0.016	-0.013
Gender wage differentials	0.313	0.319	0.317
Male advantage (%)	0.0	51.1	30.9
Female disadvantage (%)	100.0	48.9	69.1
Private sector gap=0,089			
Difference in productive characteristics	-0. 013	-0.045	-0.025
Gender wage differentials	0.079	0.111	0.091
Male advantage (%)	0.0	64.4	29.8
Female disadvantage (%)	100.0	35.6	70.2

Source : *EESI (2005), Phase1. Our calculations.*

4.3 Monetary poverty and income inequality as prescribed by the labour market

To estimate poverty as prescribed by the labour market, we have considered the first standard of living indicator which is the sum of activity incomes and out of employment incomes. We considered all persons aged 10 years and above to take into consideration the early entry into work activity which is a reality in developing countries. It should be noted that activity incomes accounts for 86.3% of the total revenues. Given that these data are on a monthly basis, we have used the poverty line of 15°000 Cfaf

per month per adult equivalent; this amount is equal to 0.62 the median income. This threshold is different from the one used by the National Institute of Statistics, which uses as living standard indicator the final consumption[10].

The results indicate that 45.1% of Cameroonian households are poor and half of Cameroonians (50.8%) live with less than one dollar per day. Poverty presents large spatial disparities and the people living in rural areas are more affected than those living in cities (31.5% against 60.8%). In the rural area of North Cameroon more than seven persons out of ten are poor. Indeed, agricultural and pastoral activities in which are engaged the large majority of rural people are not profitable because the climate is very rough and also, families are of large sizes.

Table 4 : Dimensions spatiales de la pauvreté monétaire prescrite par le marché du travail

	Incidence of poverty	Depth of poverty	Severity of poverty	Gini index	Income per adult equivalent (thousand of Cfaf)
Zone of residence					
Douala	23.6	9.1	5.2	0.462	40.0
Yaoundé	23.6	10.2	6.1	0.494	42.1
Other towns	41.6	18.4	10.8	0.477	27.1
Rural forest	40.7	19.1	11.7	0.432	23.4
Rural highlands	57.6	30.1	19.7	0.516	19.7
Rural savannah	73.4	35.9	22.4	0.464	14.1
Area of residence					
Urban	31.5	13.4	7.9	0.487	34.9
Rural	60.8	30.2	19.2	0.489	18.0
Cameroon	50.8	24.5	15.3	0.514	23.8

__Source :__ EESI (2005), Phase1. Our calculations.

Regarding the characteristics of the household head, we see that poverty more affects people living in female-headed households than those living in male-headed households (see table A7 in the appendix). This result is contrary to that of the National Statistics Institute (INS, 2008); it is however consistent with that of Nembot *et al* (2007). Indeed, women of the formal sector are paid less than men, and those working in the informal sector are often confined into congested or low productive activities[11].

Table A7 in appendix shows that monetary poverty prescribed by the labour market increases with the household size and decreases with the level of education of the household head as the poverty based on

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[10] The poverty line that has been used by the National Institute of the Statistics of Cameroon in 2007 to measure monetary poverty was 22°454 Cfaf per month and in 2001, it was 19°378 Cfaf per month.

[11] While considering the individuals aged of 15 years and above, the monthly income of a woman exercising in the informal sector is about the half of the one that is earns by a man; 19 400 Cfaf against 36 00 Cfaf in the non agricultural sector and 8 900 Cfaf against 17 300 Cfaf in the agricultural sector. (Our calculations with EESI data).

final consumption (INS, 2002 and 2008) and multidimensional poverty (Foko *et al*, 2007). Regarding the institutional sector of the household head, there seems to be ambivalence between informal sector and poverty. People living in households whose head is employed in the formal sector are least affected by poverty and its incidence is 8.4% if the household head is employed in the public sector and 13.3% if he is in private sector. In contrast, the most affected are those living in households whose head exercises in the informal sector, the poverty rate is 45.2% if he is in the non-agricultural segment and 68.2% if he is engaged in agricultural activities. The incidence of poverty is 51.1% among people living in households whose head is unemployed or inactive.

4.4 Impact of gender income differentials on poverty and inequalities

For this impact analysis, we have successively considered the two standard of living indicators and we have mostly focused on people living in households with at least one woman working in the informal sector. These households represent 4.8% of all households and account for 6% of Cameroon total population.

Impact on poverty

The results presented in table 5 are obtained using as the first standard of living indicator which is the sum of jobs incomes and out of employment incomes. These results show that elimination of gender wage differentials in the formal sector in Cameroon, would advance the welfare people living in households where at least one woman working in this sector. Such a situation will lead to an increase of 6 900 Cfaf (Reimers approach) to 14 600 Cfaf (Oaxaca approach) of the average monthly income of a female worker of the public sector; against respectively 2 500 Cfaf and 5 400 Cfaf for a woman of the formal private sector. The impact of this additional income would be an increase of 2.5% to 5.2% of the average income per adult equivalent of households and therefore a decrease in indicators of poverty in the group of beneficiaries. The incidence of poverty would regress from 0.9 to 1.4 points; the depth of at least 17% and the severity of poverty of about 18%. The impact at national level would consequently be a decrease of about 0.13 points of the proportion of people living on less than a dollar per day.

When considering the sum of activity incomes as the standard of living indicator (see Appendix table A8), we can note that the impact of gender discrimination on poverty would be much more important. Indeed, its eradication would lead to lower FGT indices of at least 40% in the group of people living in households where at least one woman is working in the formal sector. At the national level, there would be a reduction of at least 7 points in the incidence of poverty whatever the non-discriminatory vector used.

Table 5: Impact of gender income gap on poverty (group of beneficiaries): Standard of living indicator is the sum of activity incomes and out of employment incomes

	Oaxaca	Reimers	Cotton
Absolute variation of the income per adult equivalent (in Cfaf)	3 742	1 772	2 634
Relative variation of the income per adult equivalent (in Cfaf)	5.2	2.5	3.7
Absolute variation of poverty incidence ΔP_0	-2.5	-0.9	-1.0
Relative variation of poverty incidence $\Delta_r P_0$	-30.3	-10.4	-12.0
Absolute variation of poverty depth ΔP_1	-1.1	-0.6	-0.9
Relative variation of poverty depth $\Delta_r P_1$	-29.1	-17.1	-24.6
Absolute variation of poverty severity ΔP_2	-0.6	-0.4	-0.6
Relative variation of poverty severity $\Delta_r P_2$	-28.1	-17.9	-24.7

__Source :__ EESI (2005), Phase1. Our calculations.

Impact on income inequalities

To better illustrate the impact of gender income gap on inequalities we have associated to the Gini index the Theil index. The results presented in table 6 with the first standard of living indicator show that the eradication of income gap in the formal sector actually will lead to a decline of income inequalities in the group of individuals living in households with at least one woman exercising in this sector. Indeed, whatever the weighting matrix used, there would be a decrease in inequality indices. For example, with Oaxaca matrix, the Gini index will go down from 0.434 to 0.429; a decrease of 1.2%. With the Theil index the differences between the initial situation and the counterfactual situation are more pronounced and show a reduction of inequalities of at least 1.5%. So, within the group of beneficiaries, the non-discriminatory income they would receive can be seen as a discriminatory progressive tax, which will benefit more to people belonging to low-income households. This fact is confirmed by the results obtained with the second standard of living indicator.

Table 6 : Impact of gender wage differentials on inequalities: Group of individuals living in households with at least one woman exercising in the formal sector

Index	Weighting matrix		
	Oaxaca	Reimers	Cotton
Standard of living indicator is the sum of activity incomes and out of employment incomes			
Absolute variation of Gini index	-0.005	-0.003	-0.004
Relative variation of Gini index (%)	-1.2	-0.6	-0.9
Absolute variation of Theil index	-0.009	-0.004	-0.007
Relative variation of Theil index (%)	-2.7	-1.5	-1.9
Standard of living indicator is the sum of activity incomes			
Absolute variation of Gini index	-0.023	-0.019	-0.021
Relative variation of Gini index (%)	-5.2	-4.2	-4.7
Absolute variation of Theil index	-0.034	-0.026	-0.030
Relative variation of Theil index (%)	-9.4	-7.2	-8.3

Source : *EESI (2005), Phase1. Our calculations.*

However, as shown in Table 7 below, it is not possible to have a clear idea of the impact of the formal sector discrimination tax on of the entire population of Cameroon. Indeed, considering the sum of activity incomes and out of employment incomes as the standard of living indicator, one finds that the Gini index increase of at least 0.3% and the Theil index of about 1% resulting in an increase in income inequalities. But, if the standard of living indicator does not include job incomes, there is a significant decline in the Gini index (about 3.6%) with the three weighting matrices. However, the change in the Theil index is almost zero for matrices of Cotton and Reimers; meaning a stagnation of income inequalities. In sum, increasing the income of female workers of the formal sector through discrimination tax would lead to positive national effect unless it is accompanied by measures aiming to improve the functioning of the informal sector.

Table 7: Impact of gender income gap on inequalities: national level

Index	Matrice de pondération		
	Oaxaca	Reimers	Cotton
Standard of living indicator is the sum of activity incomes and out of employment incomes			
Absolute variation of Gini index	0.003	0.002	0.002
Relative variation of Gini index (%)	0.5	0.3	0.4
Absolute variation of Theil index	0.006	0.005	0.005
Relative variation of Theil index (%)	1.2	0.9	1.0
Standard of living indicator is the sum of activity incomes			
Absolute variation of Gini index	-0.019	-0.020	-0.020
Relative variation of Gini index (%)	-3.6	-3.8	-3.7
Absolute variation of Theil index	-0.006	-0.002	0.001
Relative variation of Theil index (%)	-1.1	-0.3	0.1

Source : *EESI (2005), Phase1. Our calculations.*

5. CONCLUSIONS AND SOCIO-ECONOMIC POLICY RECOMMANDATIONS

The problems addressed by this study are: gender wage differentials, poverty as prescribed by the labour market and the impact of gender discrimination on the standard of living. The methodology that is used has three main points namely: Mincer's earning equations, the analysis of income gap using the classical approach developed by Oaxaca and Blinder and the analysis of the impact of gender income gap on poverty based on the methodology proposed by Carlos Gradin. The data used are those of the survey on employment and the informal sector conducted in 2005 by the National Institute of Statistics of Cameroon.

Regarding income gap, the earnings functions confirm the segmentation of the formal labour market into two sub-sectors: public sector and private formal sector. We also note, regardless of the segment, that the earning function of women is different from that of men. The results indicate that the returns to education in the formal sector are convex; also, higher education is more profitable among female workers than among male workers The analysis of the decomposition of the income gap shows that in absence of discrimination in the formal labour market, women would be much better paid than men due to their productive characteristics including the level of instruction. This factor contributes significantly to improving women's income, thus reducing the income gap. According to the segment, it appears that gender discrimination is probably more severe in the public sector than in the formal private sector.

Regarding poverty prescribed by the labour market, it affects half of Cameroon (50.8%). People living in rural areas are more affected than those living in urban areas. Referring to the characteristics of the household head, it is clear that people living in households headed by women are poorer than those living in households headed by a man. Monetary poverty prescribed by the labour market declines when the level of education of the head of the household increases. Moreover, there seems to be a strong link between the occupation sector of household's head and poverty; people living in households whose head exercises in rural agriculture are the most affected.

The impact of gender wage gap on poverty shows that the eradication of discrimination in the formal sector would help to improve the living standard of people living in households with at least one woman working in the formal sector. Indeed, there should be an increase in the income of women who are currently facing discrimination, particularly those with the lowest incomes; this will result in lower poverty indices and income inequality in the concerned household. At the national level, it would also reduce the incidence of poverty, but the impact on income inequalities is not very clear.

In terms of socio-economic policy recommendations the study suggests:

i.   The sensitisation of socio-political actors on the impact of gender discrimination on well-being;

ii. The operationnalisation of the Convention on the Elimination of All forms of Discrimination against Women (CEDAW) adopted by Cameroon in 1994. This Convention provides a framework for laws aiming to protect Cameroonian women according to the principle of equality between women and men

iii. Improving the socio-economic status of women; a better representation of women in senior positions in public institutions (Government, National Assembly, direction of public enterprises, etc..) and in private enterprises;

iv. The application of the gender approach in civil service recruitments and in big programs and projects;

v.   The allocation of bonuses to public and private enterprises, where the gender is well practiced.

To efficiently fight against gender discrimination and improve the living conditions of Cameroonians, the Government should also put an emphasis on the informal sector; this effect it should:

vi. Facilitate women's access to productive resources such as micro credit and land;

vii. Organize the informal production units in order to make possible their transition to the status of SMEs/SMIs; this would increase the income of the informal sector operators while reducing gender discrimination;

viii. Watch over small farmers living in rural areas.

The implementation of these measures should help the Government of Cameroon to achieve its objectives of poverty reduction and the promotion of women.

BIBLIOGRAPHICAL REFERENCES

Adams, J. (1991), « The Rural Labour Market in Zimbabwe », Development and Change, 22 (2), pp. 297-320.

Angrist J.D. and Lavy V. (1997) : « The Effect of a Change in Language of Instruction on the Returns to Schooling in Morocco », Journal of Labour Economics, Vol.15, n°1, pp.S48-S76.

Arrow K. (1973), « The theory of discrimination, Discrimination in labour markets », Sous la direction de Orley Ashenfelter et Albert Rees, Princeton, Princeton University Press

Banque Mondiale (1995) : Rapport sur la pauvreté au Cameroun

Becker G.S., (1975), « The economics of discrimination », 2nd ed., Chicago: University of Chicago Press

Blinder, A.S, (1973), « Wage discrimination: reduced form and structural estimates ». *Journal of human resources*, 8, p.436-455

Cambarnous François (1994), « Discrimination et le marche du travail: concept et coût », Centre d'économie de développement, Université Montesqieu-Bordeau IV-France

Cambarnous François (1997), « Discrimination sur le marche du travail urbain : le cas d'Abidjan en Cote d'Ivoire », *Centre d'économie de développement*, Université Montesqieu-Bordeau IV-France

Carlos Gradín et al (2006), « Poverty and Women's Labor Market Activity: the Role of Gender Wage Discrimination in the EU », *ECINEQ Working Papers* 2006-40

Cotton, J., 1988, "On the decomposition of wage differentials", *Review of economics and statistics*, 70, p.236-243.

Del Río, Coral, Carlos Gradín et Olga Cantó (2006), « The measurement of gender wage discrimination: The distributional approach revisited », *ECINEQ Working Papers* 2006-24

Ehrenberg RG, Smith RS (1994) Modern labor economics: theory and public policy. Harper Collins College Publishers, New York, 5th ed.

El Aynaoui Jean-Philippe (1998), « Participation, choix occupationnel et gains sur un marche du travail segmente : une analyse appliquée au cas du Maroc ». *Centre d'économie du développement*, Université Montesqieu-Bordeau IV-France

Fambon. *et al.* (2000) « Réformes Economiques et pauvreté au Cameroun durant les années 1990 ». Rapport provisoire projet collaboratif sur la pauvreté, AERC

Fambon *et al.*(2003) « Réformes Economiques et pauvreté au Cameroun durant les années 80 et 90 ». Rapport provisoire projet collaboratif sur la pauvreté, AERC

Foko Borel *et al* (2006), « Pauvreté et inégalités de conditions de vie au Cameroun : Une approche micro multidimensionnelle », *Cahier de Recherche PMMA* 2007-02. Réseau PEP

Foster, J.E., Greer, J. and Thorbecke, E. (1984), « A class of decomposable poverty measures », *Econometrica*, vol. 52 (3), pp. 761-766

Gbetnkom **,** D.(1999), « Libéralisation commerciale et pauvreté en Afrique Subsaharienne : l'examen du cas du Cameroun ». *Revue Africaine des Sciences Economiques et Gestion*. PP 107-135

Gunewardena Delmi (2006), « Exploring gender wage gaps in Sri Lanka : A quantile regression approach ». Rapport final, *Réseau PEP*

Bulletin Of Economics And Statistics. Halvorsen, Robert et Palmquist, Raymond (1980). 'The Interpretation of Dummy Variables in Semi logarithmic Equations", *American Economic Review,* Vol. 70, No.3.

Heckman J., (1979), « Sample selection bias as a specification error, *Econometrica* », Vol. 47, N°1, p. 153

Hoddinott J, Haddad L (1994), « Does female income share influence household expenditures? Evidence from Cote d'Ivoire »; Oxford

INS (2008), « Tendances, profil et déterminants de la pauvreté au Cameroun entre 2001-2007 ». Troisième Enquête Camerounaise auprès des ménages. Institut National de la Statistique

INS (2005), « Phase 1 : Enquête Emploi ». Enquête sur l'Emploi et le Secteur Informel. Institut National de la Statistique

INS (2002), « Document de méthodologie : Calcul du seuil de pauvreté et de l'indicateur de niveau de vie ». Deuxième Enquête Camerounaise auprès des ménages. Institut National de la Statistique

Jenkins, Stephen P. (1994), "Earnings discrimination measurement: a distributional approach", *Journal of Econometrics*, Vol. 61, pp. 81-102.

Keupie Mathias, Nordman Christophe et Roubeau François (2008), « Education and Earnings in Urban West Africa», Journal of Comparative Economics, YJCEC 2111

Marouani Ali Mahomed (2002), « Imperfections du marche du travail et modèles d'équilibre général calculables : une revue de littérature ». DIAL – UR CIPRE de l'IRD et Université de Paris-Dauphine

Nembot Luc et *al.* (2006), « Impact des échelles d'équivalence sur la répartition spatiale de la pauvreté au Cameroun : une approche dynamique ». PMMA Working Paper 2007-04, Réseau PEP

Neuman S., Oaxaca R.L (2004), « Wage Differentials in the 1990s in Israel: Endowments, Discrimination, and Selectivity», *IZA discussion paper series 1362*

Neumark D. (1988), « Employer's discriminatory behaviour and the estimation of wage discrimination », *Journal of human resources*, Vol.23, p.279-295

Njinkeu D. Kobou G., et Noumba I**.** (1997), « Structural Adjustment and poverty in Cameroon : a labor Market Analysis, Final Report submitted to ICEG of Development ». PNUD Cameroun (1993, 1996, 1998) Rapport sur le Développement Humain au Cameroun, Yaoundé

Oaxaca R.L. (1973), « Male-female wage differentials labor markets ». *International economic review*, 14 (3), p.693-709

Oaxaca R.L. et Ransom, M.R. (1994), « On discrimination and the decomposition of wage differentials », *Journal of econometrics*, Vol.61 (1), March, p.5-21

Paternostro S.et Sahn D. (1999), «Wages determination and gender discrimination in transition economy The case of Romania», *Policy Research Working Paper 2113*

Pilar González et al (2005), « The Gender Wage Gap in Portugal: Recent Evolution and Decomposition ». CETE − Centro de Estudos de Economia Industrial, do Trabalho e da Empresa Research Center on Industrial, Labour and Managerial Economics.

Polachek, Solomon W. and Moon-Kak Kim. (1994). "Panel Estimates of the Gender Earnings Gap: Individual-Specific Intercept and Individual-Specific Slope Models," Journal of Econometrics 61(1), 23-42.

Reigen S. (1987), "The possibility of politics study in political economy of welfare state", Oxford, Clarendon Press.

République du Cameroun (2003) : Document de stratégie de réduction de la pauvreté (DSRP).

Schultz, T. P. (2004), « Evidence of Returns to Schooling in Africa from Household Surveys: Monitoring and Restructuring the Market for Education », Journal of African Economies, 13, AERC Supplement, pp. 95-148.

APPENDIX

Table A1 : Regional price indexes by area (base = Yaoundé)

Regions	Urban areas	Rural areas	Together
Douala	1.012		1.012
Yaoundé	1.000		1.000
Adamaoua	0.986	0.976	0.982
Centre	0.877	0.916	0.909
Est	0.880	0.924	0.914
Extrême Nord	0.940	0.759	0.787
Littoral	0.913	0.801	0.862
Nord	0.901	0.779	0.826
Nord Ouest	0.838	0.799	0.813
Ouest	0.895	0.815	0.841
Sud	0.934	0.940	0.939
Sud Ouest	0.836	0.871	0.855
CAMEROUN	0.946	0.916	0.933

Source : INS (2002) " Methodology document: Calculation of the poverty line and the standard of living "

Table A 2 : Coefficients of equivalence calculated on the basis of the harmonized ECAMI- ECAMII data

Age groups	Coefficients of equivalence between the first adult and the other members of the household
Head of household	1
Other adults	0.80
Boys aged 15 to less than 20 years	0.74
Girls aged 15 to less than 20 years	0.79
Boys aged 10 to less than 15 years	0.65
Girls aged 10 to less than 15 years	0.65
Boys aged 5 to less 10 years	0.64
Girls aged 5 to less 10 years	0.63
Boys aged 0 to less 5 years	0.53
Girls aged 0 to less 5 years	0.51

Source : Nembot *et al.* « Impact des échelles d'équivalences sur la répartition spatiale de la pauvreté au Cameroun : Une approche dynamique », PMMA Working Paper 2007-04

TableA3: Distribution of the sample of workers of the formal sector

	Public	Private	Together
Male	840	950	1790
Female	364	210	574
Total	1204	1160	2364

Source : EESI (2005), Phase1

Table A4: Equations of the labour market participation

Variables	Public sector		Private sector	
	Males	**Females**	**Males**	**Females**
Douala	-0.687***	-0.643***	0.274***	0.493***
Yaoundé	-0.018	0.016	0.009	0.439***
Age	0.297***	0.360***	0.309***	0.286***
Age squared	-0.003***	-0.004***	-0.004***	-0.003***
Number of years of study	0.126***	0.255***	0.051***	0.155***
Be in union	1.134***	0.170*	1.019***	-0.316***
% of inactive persons in the household	-1.551***	-1.317***	-1.942***	-1.484***
Constant	-6.907***	-10.306***	-5.818***	-7.496***
Statistics of the model				
Pseudo R^2 (%)	56.1	57.0	44.4	38.2
LR $\chi^2(13)$	1766.8	1220.9	1497.0	556.3
Observations	2443	2727	2554	2573

Source : EESI (2005), Phase1. Our calculations.
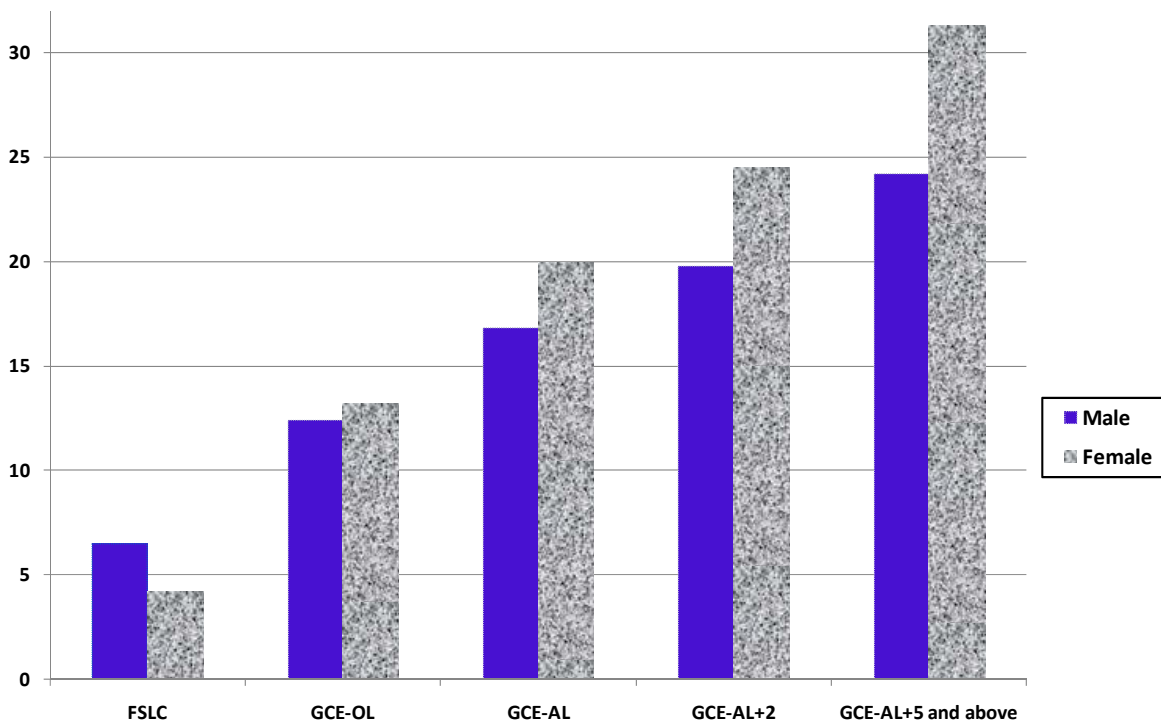**: significant at 10 %; **: significant at 5 %; ***: significant at 1 %.*

Figure A1 : Marginal returns to education in the public sector with respect to the gender and the certificate
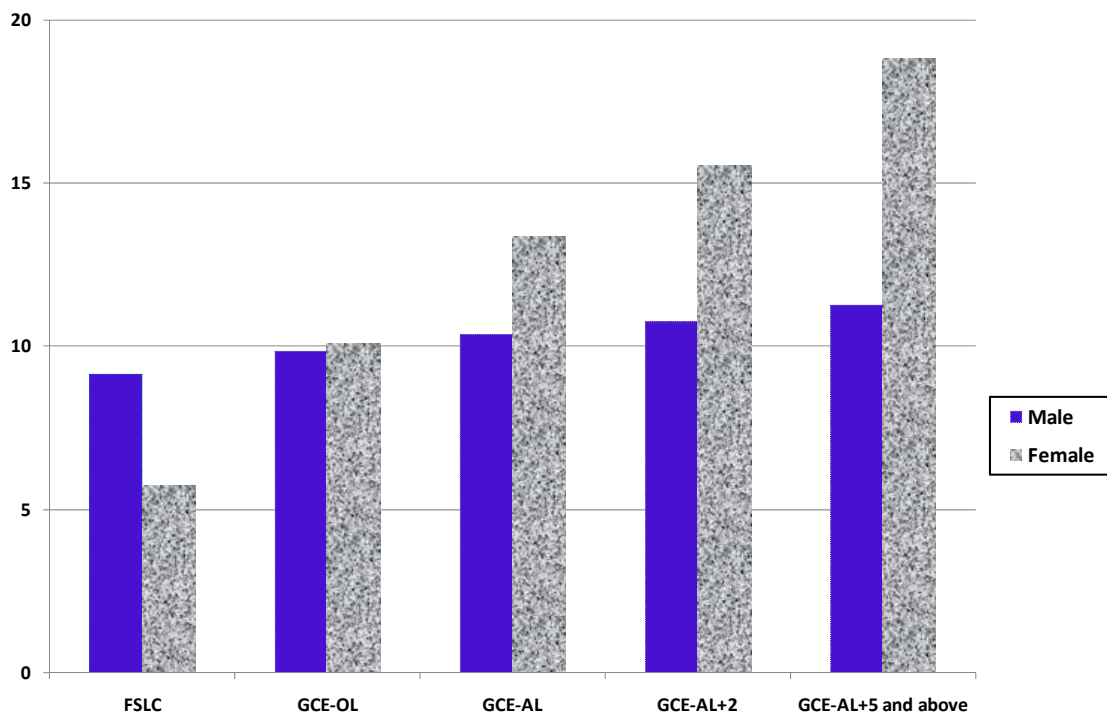
Source : *EESI (2005), Phase1. Our calculations.*

Figure A2 : Marginal returns to education in the private formal sector with respect to the gender and the certificate

Source : *EESI (2005), Phase1. Our calculations.*

Table A5 : Contribution of variables to the components of income gap: case of the public sector

Technique	Variables	Male Advantage	Female disadvantage	Difference in productive characteristics
Oaxaca	Education	0.000	0.229	-0.047
	Experience	0.000	-0.056	0.006
	Constant	0.000	0.174	0.000
Reimers	Education	0.108	0.114	-0.040
	Experience	-0.030	-0.028	0.008
	Constant	0.087	0.087	0.000
Cotton	Education	0.065	0.160	-0.043
	Experience	-0.018	-0.039	0.007
	Constant	0.052	0.122	0.000

Source : *EESI (2005), Phase1. Our calculations*

Table A6 : Contribution of variables to the components of income gap: case of the public sector

Technique	Variables	Male Advantage	Female disadvantage	Difference in productive characteristics
Oaxaca	Education	0.000	0.280	-0.080
	Experience	0.000	-0.150	0.033
	Constant	0.000	0.379	0.000
Reimers	Education	0.124	0.140	-0.064
	Experience	-0.073	-0.075	0.031
	Constant	0.190	0.190	0.000
Cotton	Education	0.047	0.227	-0.074
	Experience	-0.028	-0.122	0.032
	Constant	0.072	0.307	0.000

Source : *EESI (2005), Phase1. Our calculations*

Table A7: Distribution of monetary poverty as prescribed by the labour according to some characteristics of the household's head

characteristics	Incidence of poverty	Depth of poverty	Severity of poverty	Gini index	Income per adult equivalent (thousand of Cfaf)
Sex					
Male	48.6	22.2	13.3	0.502	24.8
Female	59.6	33.5	23.1	0.556	19.8
Level of education					
No level	72.5	36.8	23.8	0.456	13.4
Primary	56.3	27.5	17.1	0.459	18.4
Secondary 1st cycle	37.6	16.2	9.5	0.447	26.5
Secondary 2nd cycle	22.0	7.4	3.7	0.414	37.4
Higher education	7.5	3.8	2.7	0.438	71.9
Institutional Sector					
Public	8.4	2.8	1.3	0.393	51.2
Private formal	13.3	4.1	1.9	0.481	52.1
Informal non agricultural	45.2	19.3	10.7	0.450	23.4
Informal agricultural	68.2	34.1	21.7	0.471	14.9
Inactive	51.1	29.3	21.3	0.485	21.3
Household's size					
1 person	31.1	17.1	12.1	0.555	42.9
2-3 persons	39.9	19.9	13.0	0.526	31.6
4-5 persons	50.1	24.0	14.9	0.507	23.5
More than 5 persons	55.3	26.4	16.3	0.490	20.6
Cameroon	50.8	24.5	15.3	0.514	23.8

Source : EESI (2005), Phase1. Our calculations. Weighted data.

Table A8 Impact of gender income gap on poverty (group of beneficiaries): Standard of living indicator is the sum of activity incomes

	Oaxaca	Reimers	Cotton
Absolute variation of the income per adult equivalent (in Cfaf)	9626	8125	8781
Relative variation of the income per adult equivalent (in Cfaf)	17.2	14.6	15.7
Absolute variation of poverty incidence ΔP_0	-7.0	-5.7	-6.2
Relative variation of poverty incidence $\Delta_r P_0$	-50.9	-41.8	-45.4
Absolute variation of poverty depth ΔP_1	-2.7	-2.4	-2.6
Relative variation of poverty depth $\Delta_r P_1$	-49.8	-44.0	-47.7
Absolute variation of poverty severity ΔP_2	-1.5	-1.4	-1.5
Relative variation of poverty severity $\Delta_r P_2$	-51.3	-44.7	-49.0

Source: EESI (2005), Phase1. Our calculations.