Econometric Analysis of Gender and Labour Market Outcomes in Urban Cameroon

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Contents

List of tables

List of figure

Abstract

In every country, gender disparities are observed in various aspects of daily life, the most visible ones being those related to labour market outcomes. This paper highlights the importance of the labour market related gender disparities in Cameroon with special focus on the relative contribution of identified determinants on unemployment duration, employment status and remuneration. Based on the 2010 Employment and the Informal Sector Survey by the National Institute of Statistics, both parametric and non-parametric analyses of unemployment durations have been used. They include probit model estimates for the choice of non-wage earner status, estimates of Mincer-type equations and various extensions of the Blinder-Oaxaca decomposition. The results obtained can be summarized in three main points as follows.

Firstly, women have longer periods of unemployment and are less likely to leave unemployment for a job than men. Results indicate that these gender disparities in exit probabilities from unemployment are due to differences in human capital endowments and to socioeconomic factors, which have a tendency of increasing women's reservation wage. Also, unobserved heterogeneity with greater positive duration dependence for women is confirmed. Secondly, there are gender differences in probability transitions to either wage or non-wage employment with women being more likely to be self-employed. Of these gender differences, human capital endowment and job search methods account for 20.64% and 38.20%, respectively. The remaining part is due to unobserved factors. Thirdly, gender differences in labour market earnings are around 6% and 17% among wage and non-wage earners, respectively. Observable factors in wage equations account for only for 6% and 30% in the respective groups.

These results suggest the formulation of several policies to reduce the observed differences. Some of these policies relate to the conception and implementation of vocational training targeting women and, to some extent, the setting up of programmes for relocating unemployed individuals to where employment opportunities are greater. Others relate to reducing the use of informal job search channels by increasing the effectiveness of formal employment agencies.

Key words: *Capital flight, Drivers of capital flight, Burundi*

Acknowledgements

1. Introduction

Context and problem statement

Any society can enjoy social cohesion as long as it is considered by the vast majority of its members to be just and egalitarian. Generally, it will be regarded as egalitarian if every member has an equal opportunity to attaining any given position on the social ladder. Despite the unrelenting fight for equal opportunities for both men and women, the most deeply rooted disparity in the social context is that between men and women (UNDP, 1995). Yet, the goal of equal opportunity has not been achieved by any society. According to the United Nations Development Programme (UNDP), in 2008, the deficits arising from gender inequality measured by the Gender Inequality Index (GII)[1] were estimated at 56% for the whole world, 49.8% for Europe and Central Asia, 73.9% for South Asia, and 73.5% for Sub-Saharan Africa (UNDP, 2010). Moreover, there exist throughout the world wide gender disparities in relation to education and employment. In 2011, the UNDP report revealed that the proportion of women aged above 24 years who have attended secondary or higher education represents 16.8% in least developed countries and 50.8% in the world as a whole, while the same proportions for men are 27.4% and 61.7% respectively. Similarly, employment opportunities and wages differ between men and women in both the developed countries and the developing countries. The International Labour Organization (ILO) has revealed that in 2009, women's and men's activity rates were approximately 26% and 77.1% respectively in Arab countries, 64.3% and 80.3% in South-East Asia and the Pacific, 51.7% and 79.9% in Latin America and the Caribbean, and 62.9% and 81.2% in Sub-Saharan Africa (ILO, 2011).

Since they were the most visible, policies aimed at tackling labour market related gender disparities were given priority by governments and international organizations. The ILO, for example, set for itself the major goal of guaranteeing equal employment opportunities and equal treatment at work to both men and women[2]. Like other ILO member countries, Cameroon devoted a legal framework to the fight against labour market discrimination comprising both national laws and all the commitments made at the international level against discrimination. Despite these efforts, gender disparities are still manifest in Cameroon's labour market.

For example, the Cameroon population was estimated to be 20 million in 2010, with almost 55% living in urban regions and a working age population (15-64 years) of around 54%   (NIS, 2010). Although thepercentage of individuals of both genders considered as economically active increased from 60.4% in 2001 to 75.5% in 2007, men's and women's differences in activity rates only decreased from 20.5 to 10.6percentage points (see Table 1).

Table 1: Statistics of the Cameroon urban labour market between 2001 and 2010

	Women				Men				Women & Men			
	2001	2005	2007	2010	2001	2005	2007	2010	2001	2005	2007	2010
Rate of activity	50.1	55.1	70.2	NA	70.6	67.2	80.8	NA	60.4	61.2	75.5	NA
Labour market participation (%)												
Employed	40.53	51.44	59.70	53.53	58.98	69.84	74.82	71.50	49.71	60.64	67.17	62.40
Unemployed	25.75	12.44	10.06	10.12	18.03	8.28	5.28	5.57	21.91	10.36	7.70	7.87
Total Participation	66.28	63.89	69.76	63.65	77.01	78.12	80.10	77.07	71.62	71.00	74.87	70.27
Total Non-participation	33.72	36.11	30.24	36.35	22.99	21.88	19.90	22.93	28.38	29.00	25.13	29.73
Total	100	100	100	100	100	100	100	100	100	100	100	100
Underemployment (%)												
Underemployment	28.3	18.2	67.0	79.2	13.1	12.1	44.3	65.1	19.3	14.1	54.9	71.9

Source: NIS (2001 ; 2005 ; 2007 ; 2010). NA= Not Available

As far as labour market participation (employed and unemployed) is concerned, available data shows that men's labour market participation rate increased from 77.01 to 77.07% between 2001 and 2010. On the other hand, women's participation rate increased from 66.28% in 2001 to 69.76% in 2007 and then fell to 63.65% in 2010. As a consequence, one can notice that the gender gap increased by threepercentage points between 2001 and 2010.

These unemployment[3] figures can be complemented by those related to underemployment. For example, the rate of underemployment among women increased from 28.3% in 2001 to 67% in 2007 and then to 79.2% in 2010. Within the same period, men's underemployment increased from 13% in 2001 to 44% in 2007 and to 65% in 2010.

While on average, women are less present on the labour market compared with their male counterparts, when present, they are found in less well paying and less secure jobs, with limited prospects of career advancement and less opportunities of holding managerial positions. Ewoudou and Vencatachellum (2006) reported men's average monthly income as approximately CFAF 69,331 (US$123.27) while women's income averaged CFAF 37,734 (US$67.09). Within the different labour market sectors, these wage differentials approximate US$23.11 in the informal sector, US$44.45 in the formal private sector and US$62.23 in the public sector. Further, these differences remain even when the level of education is taken into account. For example, differences between men and women are around US$35.56 for those with a primary education, US$26.67 and US$51.56 for those with a general and technical secondary school education respectively, and US$6.22 for those that hold a university degree.

These disparities in both employment opportunities and work-related income call for an investigation into their specific political, institutional and sociocultural factors that cause them. Consequently, the main research questions of this study are as follows:
•   What are the factors that explain gender differentials in unemployment duration, in access to self-employment, and in the remuneration of individuals?
•   What is the relative contribution of these factors in explaining the identified disparities?

Providing information on these aspects is important since employment is the main source of income in urban areas while unemployment and low remuneration result in poverty. According to the Cameroon 2007 Household Survey, the incidence of poverty is more pronounced among individuals involved in precarious jobs such as agricultural and non-agricultural activities of the informal sector, where the incidence of poverty is approximately 56.9% and 22.2% respectively. On the other hand, poverty rates are around 8.2% and 7.2% for those working in the public and private sectors, respectively. Therefore, identifying the factors is likely to increase women's chances of participating in the labour market and their wage level could serve as a starting point for devising relevant and effective policies towards poverty reduction among urban households.

Study objectives

Although there exists substantial literature on gendered wage-disparities in Cameroon (Nguetse et al, 2010; Kuepie et al, 2013; Ningaye and Talla, 2014; Baye et al, 2016), this study is still a critical contribution as it begins to fill the gap in literature focused on developing countries by investigating factors that explain gender differentials in other labour market outcomes such as unemployment duration, access to wage versus self-employment. Since unemployment is an urban phenomenon in Cameroon, the study is focused on urban areas.

The specific objectives of the study are:
- To identify the determinants of the duration of unemployment in urban Cameroon.
- To evaluate the contribution of gender disparities factors to access to self-employment in urban Cameroon.
- To identify the factors that explain gender wage differentials in different areas;
- To identify policy measures that are likely to reduce gender disparities in the Cameroon labour market.

2. Literature review

The objective of this section is to review the literature on the factors that explain gender disparities on labour market outcomes such as unemployment and earnings.

Unemployment differentials

As a starting point, it is worth mentioning that unemployment is a great challenge for developing countries as it results in economic, social as well as individual costs. At the macro-level, these costs relate to the non-contribution of unemployed persons to production and, as a consequence, taxes. At the individual level, unemployment induces a number of negative effects such as human capital depreciation and exposure to poverty. Thus, interrogation of this topic, especially of unemployment duration, is helpful in identifying policy measures that are likely to reduce this phenomenon in Cameroon.

Economic theory offers a few explanations of gender gaps that are relative to unemployment. From the supply side, the increased participation of women in the labour market coupled with the inability of the economy to absorb all the entrants into the labour force, the low level of involvement of women in the labour force, and their low job search intensity are some of the factors that could be responsible for gender gaps in unemployment. In line with this view, an overview of the literature on the US labour market from 1950 to 1980 revealed that women's unemployment rate was higher than that of men. According to Niemi (1974), the key explanation could be found in women's frequent change between inactivity and employment and vice versa. In their analysis of gender unemployment gap since the Second World War, Lingle and Jones (1978) concluded that this was mainly driven by women's strong preference for non-market activities. Further, a number of studies have revealed that these gender disparities tend to disappear in adulthood as a consequence of increased labour force attachment among women (DeBoer and Seeborg, 1989) and the excessive re-employment difficulties faced by men (Howe, 1990).

As far as demand-side explanations are concerned, discrimination is always presented as the main cause of women's greater vulnerability to unemployment. This may be due to discrimination by employers against women because of their presumed relative low level labour force attachment, low qualification and low level of productivity when compared with men. Azmat et al (2006) argued in the case of the OECD countries that the observation of women's unemployment rates, being substantially higher than that of men, could neither be explained by gender gaps in earnings nor by differences in the

type of jobs held by both genders. Instead, their analyses attributed this existence to the socially held attitude that men deserve employment more than women. According to them, a considerable proportion of the gender gap could be explained by discrimination against women, especially in the Mediterranean countries, where thepercentage is relatively high. Their finding conforms to the one obtained by Ham et al (1999), using data from the Czech and Slovak republics, whose differences in the output of observable characteristics accounts for much of the differences in the probability of men and women leaving unemployment. Further, that most of the differences between the two countries in the rates of those getting out of unemployment are explained by the diverse attitudes and practices of employers and institutions towards women and men.

A number of empirical analyses of unemployment determinants exist in developing countries including those by Lachaud (1994) in West Africa, Assaad et al (2000) in Egypt, Kingdon and Knight (2000) or Mlatsheni and Rospabe (2002) in South Africa, Echebiri (2005) in Nigeria, Kabbani and Kothari (2005) for the Middle-East and Northern Africa. While some of these studies have acknowledged the existence of a gender gap in unemployment, none of them has so far examined why women are disproportionately more vulnerable to unemployment than men. As an exception, Wamuthenya (2010) study in the Kenyan context revealed that unemployment probability in Kenya was highly determined by human capital factors and those related to individuals' social environment, and that observable factors such as education accounted for almost 80% of the gender differences in unemployment probabilities.

While most of these research works give an idea of the prevalence of disparities between men and women on issues related to unemployment in developing countries, they do not provide sufficient information in Cameroon's case.

Gender-based earning differentials

In economic theory, various explanations are offered to justify remuneration differences between groups or individuals. Assuming perfect competition, the theory of compensating differentials teaches that differences in the difficulty of the tasks and skills of providers of labour should result in heterogeneity of wages. While differences in the difficulty of the tasks are explained by the hedonic wage theory formalized by Rosen (1974), wage differences based on skills are explained by the human capital theory of Becker (1964). If it were possible to identify in literature what - based on this conceptual framework - explains the differences in remuneration between men and women by differences in human capital, it would be recognised that taking these differences in characteristics into consideration leaves a substantial part of the wage gap between men and women unexplained.

It thus appears that, on average, women experience longer career interruptions and men and women are not focused on the same jobs or the same types of businesses or industries/ sectors. Several econometric studies conducted in different countries demonstrate the existence of a persistent inter-industry wage differential and significant wage differentials even between employees whose individual characteristics are identical (Krueger and Summers, 1988). Thus, studies on successive wages of people who change sectors have shown that they recover a non-negligible part of the inter-sectorial differential after their

mobility, which means that this differential is partly of sectoral origin (Gibbons and Katz, 1992). According to Groshen (1991), Carrington and Troske (1998) and Bayard et al. (1999), women are concentrated in activities, industries and businesses with low remuneration and gender segregation contributes to a significant proportion of the gender wage gap[4]. This finding led to the consideration of other explanations that could be grouped under the heading "non-competitive theories of wage formation". Some of them highlight the differences in the institutional contexts in which the individuals function. Bertola et al (2002) demonstrated, for 17 OECD countries, that features of the labour market such as minimum wage and trade union laws, by shrinking the distribution of wages, could undermine incentives to employ workers with lower levels of human capital and lead to a lower unemployment rate of such groups. Concerning gender differentials, Blau and Kahn (2003) show that these institutions have an impact on the wage gap between men and women.

Beyond differences in individual characteristics and those related to jobs held by men and women, several research works reveal the existence of a wage gap between men and women not explained by observable factors. Two main additional explanatory factors have been advanced in literature. On the one hand, part of the wage gap between men and women is attributed to unobservable differences in productivity — which differences may particularly be related to the unequal division of housework at home. On the other hand, the wage gap between men and women may in part be related to the existence of discrimination against women in the labour market. According to Heckman (1998), a situation of discrimination occurs when companies do not reserve the same level of wages for employees endowed with perfectly identical productive characteristics and a non-productive characteristic such as gender difference. Several theories of discrimination have been developed following the work of Becker (1957), and among the most convincing is that on statistical discrimination which is based on the imperfect observation of possible future career interruptions. Anticipating that a woman is more likely to interrupt her career than a man, especially because of motherhood, all things being equal, the employer will invest less in the specific human capital of a woman. As a result, she will not be able to occupy a highly paid position (Sofer, 1985; Lazear and Rosen, 1990; Barron et al, 1993). In addition, the existence of a real or perceived discrimination can reduce the incentive for women to invest in their human capital and consequently widen the gender wage gap (Havet and Sofer, 2003).

A comparison of the gender wage gap proportion that can be explained by observable and unobservable characteristics confirms the existence of a debate on the relative importance of each group of factors. Most studies, whether in developed or developing countries, suggest that a higher proportion of the wage gap can be attributed to differences in observable characteristics — mainly to factors related to human capital. For example, using data from the United States, Blau and Kahn (1997) found that 38% of the gender wage gap remains unexplained, whereas Anker and Hein (1986) affirm that differences in human capital cannot explain a significant proportion of the wage gap between men and women. In the same way, Psacharopoulos and Tzannatos (1992) found that on average, the unexplained proportion of the wage gap represents about 88% of the wage differential in favour of men in 15 countries of Latin America. Although studies on the gender wage gap are relatively fewer in Africa, we can mention some like that of Glick and Sahn

(1997) on Guinea Conakry, which shows that differences in characteristics account for 45% of the gender wage gap in self-employment and 25% in the public sector while in the private sector women earn more than men. In Kenya, Agesa and Agesa (1999) found that the relative women's wage as a percentage of men's wages is 65% in urban areas, of which 60% is unexplained. Mariara (2003) showed that 78% of the difference between the logarithms of men and women could be attributed to differences in output.

In Cameroon's context, while Nguetse and Dongmo (2011) found that women earn 6.6% less than men, Nguetse et al (2010) found that this difference is around 17.7% in the public sector and 9.3% in private sector. In order to identify the factors that account for the observed differences, Ndamsa et al (2015) used the Oaxaca and Ransom (1994) decomposition approach and, based on the Cameroon 2007 Household Survey, found that differences in endowment characteristics account for a small part of the average monthly earnings differentials between men and women, whereas wage discrimination underlies a substantial portion of the wage gap between workers in the Cameroonian labour market. Unlike these authors, Baye et al (2016) applied a variant of the Oaxaca and Ransom decomposition based on both the 2005 and 2010 Employment and Informal Sector Survey and reported an estimated 0.433 log-wage differential between men and women employees. Of this gender wage gap, the endowments effect captured up to 63.6% with the remaining percentage attributed to labour market discrimination. Beyond the conflicting results that appear between the above mentioned studies, one would notice that most of the results do not distinguish the labour market sector in which an individual is found. Yet, accounting for these is particularly important since labour market income determination mechanisms differ from one sector to another. For example, depending on the factors behind the reported gaps, different implications and prescriptions could be considered to guide the existing policies on poverty eradication in Cameroon especially those aimed at promoting the participation of women in the labour market and increasing their ability to participate in household expenses.

The main contribution of this study to the existing literature is twofold: First, it is the first study that explores the determinants of unemployment duration in the context of Cameroon. This enables it to present a comprehensive analysis of the relative influence of each covariate according to the gender of the individual and the different exit routes. Second, while there is a wealth of information on the factors that explain earnings differences among the wage-earners, information on "earnings" differences among the self-employed remain an unmet need in the Cameroon context. This study thus sheds some light on factors that explain the choice of self-employment status and identifies the self-employed who are relevant and valuable because of their expected causal relationship with entrepreneurial success.

3. Data-based findings

This study uses cross-sectional data from the Employment and Informal Sector Survey by the Cameroon National Institute of Statistics (NIS) in 2010[5] which was carried out on a total of 34,320 individuals, of whom 18,614 belonged to the age range 15-64 years. Within this age range, the study is restricted to the 58.21% (approximately 10,835 individuals) residing in urban areas. During this survey, information on individual's elapsed duration of the unemployment spell was collected from two retrospective questions; one for those who were unemployed at the time of the survey and another for those whose unemployment spell had ended. This information has been used to measure the duration of unemployment spells.[6] As Table 2 shows, women stay longer than men before getting a job. While women can stay unemployed for almost 19 months, men stay for 13 months – less by seven months – this difference being greater among those in the age range 35-64 years.

Table 2: Mean spells of unemployment in months

	15 to 34 years		35 to 64 years		15 to 64 years	
	Women	**Men**	**Women**	**Men**	**Women**	**Men**
Unemployed individuals	30.71 (39.05)	24.98 (30.62)	65.22 (78.99)	71.06 (76.01)	36.80 (50.20)	35.62 (49.17)
Employed individuals	14.56 (28.67)	8.82 (21.12)	19.16 (46.67)	14.85 (32.99)	16.55 (37.58)	11.27 (26.75)
Mean	09.93 (25.27)	07.03 (19.30)	17.73 (46.19)	16.03 (36.37)	12.37 (35.45)	09.94 (26.40)
Observations	3,732	3,598	1,697	1,176	5,429	5,314

Note : Standard deviations in parenthesis
Source: Author's calculation based on the 2010 Employment and Informal Sector Survey.

While considering employment status, unemployed individuals at the time of the study declared higher unemployment spells than those in employment. This difference can be attributed to the fact that those in employment may have been more efficient in finding a job or that they may have better characteristics. Within this group, men stayed five months less than women before finding their first job. Among the unemployed individuals at the time of the survey, the two age-groups display different pictures. For example, while women register greater mean unemployment spells than men in the first group, higher unemployment spells are registered by men among individuals

in the age range 35-64 years, that is, six years for men and 5.5 years for women. As far as gender related differentials in access to employment are concerned, a look at employment status will reveal that such disparities are not important. Table 3 shows that in 2010, 90% of men and 80% of women residing in urban Cameroun were employed. This high proportion of employed individuals is a result of sustained increases in the informality incidence within the Cameroon labour market over the past 10 years.

The sector of employment can also be distinguished provided the Cameroon labour market is segmented. While segmentation can be defined according to the informality of the activity, (Pradhan and van Soest, 1995), it is worth noting that formal employment itself can be divided between the public and the private sectors. Based on this categorization, Lachaud (1994) identifies three segments in African countries' labour markets namely the public, private and informal sectors. Using the same categorization, Table 3 reveals no clear gender differences. For example, among the 92.77% men and 84.10% women employed the formal sector absorbs 22.92% and 11.69% of men and women respectively.

While one can surmise from the above statistics that women are more exposed to informal jobs, this is only true for individuals in the 35 to 64 years age range and not for younger ones.

Finally, a look at selection in self-employment — especially because there are different objectives and motivations that drive the choice between wage-earning and non-wage earning employment — reveals gender differences in self-employment participation. For examlee, Table 3 indicates that around 60% of women and 40% of men are self-employed. These gender differentials can be explained in three groups of factors.

First, these gender differentials may be due to differences in individual characteristics such as human capital, social relations and financial resources. As far as this group of factors is concerned, a number of authors assert that the level of qualification and the field of study in higher education are important determinants of self-employment in the non-agricultural sector and that highly skilled individuals have higher rates of self-employment than other groups of labour force participants (Lee, 1999). Further, an individual occupational choice is highly endogenous to his field of study and, as a consequence, differences in fields of study are likely to explain part of the observed gender differences in employment status. Second, family responsibilities are likely to exert a different effect on women and men, and an overrepresentation of women among self-employed individuals may thus be explained by compatibility of self-employment status with family life (Edwards and Field-Hendrey, 2002). As an illustration, Wellington (2006) found evidence that the presence of young children increases the likelihood of a mother being self-employed. Consequently, women self-employment can be seen as a substitute for part-time work and labour market inactivity. Third, discrimination practices against women are likely to overcrowd them in self-employment.

Table 3: Access to employment and labour market sectors in urban Cameroon

	15 to 34 years		35 to 64 years		15 to 64 years	
	Women	Men	Women	Men	Women	Men
Employment status						
Unemployed	21.55 (0.009)	9.24 (0.006)	7.10 (0.007)	4.13 (0.005)	15.90 (0.006)	7.23 (0.004)
Employed	78.45 (0.006)	90.76 (0.008)	92.90 (0.005)	95.87 (0.007)	84.10 (0.004)	92.77 (0.006)
Labour market sectors						
Public Sector	4.47 (0.004)	6.84 (0.005)	13.03 (0.009)	21.02 (0.010)	07.82 (0.069)	12.42 (0.005)
Formal Private Sector	4.05 (0.004)	8.68 (0.006)	3.59 (0.005)	13.32 (0.008)	03.87 (0.032)	10.50 (0.005)
Informal Sector	69.93 (0.010)	75.25 (0.009)	76.28 (0.012)	61.53 (0.012)	72.41 (0.007)	69.85 (0.007)
Total employed	78.45 (0.006)	90.76 (0.008)	92.90 (0.005)	95.87 (0.007)	84.10 (0.004)	92.77 (0.006)
Self-employed vs. Wage-worker						
Self-employed	65.39 (0.013)	39.25 (0.011)	65.92 (0.014)	33.66 (0.013)	65.63 (0.009)	36.83 (0.008)
Wage-worker	34.61 (0.004)	60.75 (0.011)	34.08 (0.014)	66.34 (0.013)	34.37 (0.009)	63.17 (0.008)

Note : Standard deviations in parenthesis
Source: Author's calculation based on the 2010 Employment and Informal Sector Survey.

During the Employment and Informal Sector Survey, it was explicitly requested of employed individuals to give an estimation of the income generated from their main activity. Table 4, which summarizes the responses to this question, reveals that men's income derived from their main activity is on average 1.8 times higher than that of women.

Table 4: Income from main activity and expected salary of the unemployed in FCFA

	15 to 34 years		35 to 64 years		15 to 64 years	
	Average	**Standard deviation**	**Average**	**deviation Standard**	**Average**	**Standard deviation**
Income from main activity						
Public	98 272	70 002	160 145	101 869	138 614	96 531
Private Formal	97 693	79 918	148 575	145 777	116 162	110 755
Informal	27 707	36 630	48 113	65 901	36 118	51 754
Women	35 339	47 716	67 707	87 099	49 329	69 476
Public	138 614	96 531	192 673	122 639	170 931	114 963
Private Formal	116 161	110 755	190 334	185 356	147 451	156 803
Informal	36 118	51 754	83 152	115 322	64 180	89 560
Men	64 495	78 881	122057	138 891	87 896	111 044
Expected salary of job seekers						
Women	94 033	126 554	75 396	51 224	90 803	117 202
Men	167 147	659 479	274 567	1 209 635	191 299	814 848

Source: Author's calculations based on data from the second Employment and Informal Sector Survey (NIS, 2010).

4. Methodology of analysis

T his section provides details on econometric tools used in order to identify factors that explain the gender-related labour market disparities. It is organized around three sub-sections; the first deals with the analysis of unemployment duration, the second one concentrates on the choice between salaried and self-employment while the last sub-section is related to labour market earnings.

Analysis of unemployment spells

I n general, unemployment duration is examined within the framework of survival and hazard functions. For example, let a random variable T be the duration of an individual's unemployment time. The idea here is to determine the probability that they come out of this situation in a brief time interval noted Δt. Thus, the hazard function is given by Equation 1 as follows:

$$\lambda(t) = \lim_{\Delta t \to 0} \frac{\Pr ob(t \leq T \leq t + \Delta t / T \geq t)}{\Delta t} = \lim_{\Delta t \to 0} \frac{F(t + \Delta t) - F(t)}{\Delta t\, S(t)} = \frac{f(t)}{S(t)} \quad (1)$$

Based on this formulation, the survival function $S(t)$, which captures the probability that an individual's unemployment time is greater or equal to t, can be derived. Better still, it measures the probability that an individual remains unemployed for a period at least equal to t, expressed as $S(t) = 1 - F(t) = \Pr ob(T \geq t)$[7].

In order to identify the factors that affect the probability of leaving unemployment for employment, one can use the hazard rate which can be interpreted as the reduced form of a standard job-search model (Steiner, 2001). This standard job-search model, elaborated by Mc Call (1970), stems from the idea that individuals seeking employment will search for information on available opportunities. Using a sequential stopping approach, they will adopt an optimal strategy which will involve comparing their reservation wage to wage offers. Consequently, they will stop the search and accept a wage offer only if it is above their reservation wage, otherwise they will reject the offer and continue the search.

Assume that t follows a Weibull distribution, the corresponding density function is given by $f(t) = \lambda p(\lambda t)^{p-1}$ where t is a realization of T, λ is the hazard function

and p a scale parameter. According to Greene (2012), λ and p can be estimated by the maximum likelihood method with Equation 2[8] expressing the likelihood function as the sum of the likelihood functions of completed and uncompleted spells.

$$\ln L\left(\beta,\sigma / data\right) = \sum_{i=1}^{n}\left[\delta_i\left(\frac{\ln t_i - X_i^{'}\beta}{\sigma} - \ln\sigma\right) - \exp\left(\frac{\ln t_i - X_i^{'}\beta}{\sigma}\right)\right] \qquad (2)$$

In Equation 2, X represents the vector of explanatory variables $\sigma = \dfrac{1}{p}$, with $\delta_i = 1$ for individuals having completed their unemployment spell and $\delta_i = 0$ for those still in unemployment. Assuming the probability of exit from unemployment is given by the product of the likelihood of receiving a job offer and the acceptance probability, high wage offers compared with the reservation wage will imply high exit rates from unemployment. It is also well known within this context that the likelihood of obtaining a wage offer depends on individual characteristics such as gender, age, education, reservation wage, search intensity, unemployment spell, as well as the labour market conditions such as the local unemployment rate and wage distribution. The reservation wage depends on the labour market conditions, on the difficulties encountered during the job search process, and on the above mentioned individual characteristics. All these arguments underlie the choice of the set of covariates included in X and whose description and descriptive statistics are given in Table A.2 and Table A.3 (see Annexes).

Analysis of access to self-employment

Assume for simplicity that an individual has to choose only between self-employment $\left(SE_i = 1\right)$ and a wage-earning employment $\left(SE_i = 0\right)$ based on the maximum utility attainable in either case, the latter depending on individual, pecuniary and non-pecuniary characteristics of the job. A rational individual will choose self-employment if their expected utility from this employment status is greater than what they can expect from a wage-earning employment. The above choice can be represented as expressed in Equation 3, where SE_i^{*} represents a latent variable.

$$\begin{cases} SE_i^{*} = X'\beta + \varepsilon \\ \begin{cases} SE_i = 1 \; if \; SE_i^{*} > 0 \\ SE_i = 0 \; otherwise \end{cases} \end{cases} \qquad (3)$$

The probability of $SE_i = 1$ can be expressed as in Equation 4 where $F(.)$ represents the cumulative function of the standard normal distribution and X the set of covariates that are likely to contribute to gender differences in self-employment.

$$\Pr ob\left(SE_i = 1\right) = F\left(X'\beta\right) \tag{4}$$

The above equation is estimated both for the whole sample and for each gender sub-sample. To evaluate the contribution of each of these covariates to the gender gap, an extension of the Blinder–Oaxaca decomposition to nonlinear models which allows the difference in an outcome variable between two groups to be decomposed into several components, especially in differences due to endowment in the observables characteristics and differences in the returns to these characteristics, is used. According to Fairlie (1999, 2006) extension to logit and probit models, the decomposition for this nonlinear expression $SE \quad F\left(X^{\square}\right)$ can be written as represented in Equation (5) where N_j represents the number of individuals of gender j and $\overline{SE}_j$ represents the mean probability for an individual of gender j to be self-employed.

$$\Pr ob\left(SE_i = 1\right) = F\left(X'\beta\right) \tag{5}$$[9]

In Equation 5, the first term in brackets represents the part of the racial gap that is due to group differences in the distributions of X, and the second term represents the part due to differences in the group processes determining SE position. In this specification, men coefficient estimates for the self-employment probability $\left(\beta_m\right)$ are used as weights to compute differences due to characteristics and distribution of their characteristics $\left(\overline{X}_m\right)$ are weights for the differences in coefficients. Alternatively, the self-employment probability gap between men and women could be decomposed using as weights for the two decomposition terms the estimated coefficients $\left(\beta_w\right)$ and distributions of the independent variables $\left(\overline{X}_w\right)$ of women. Estimating the decomposition according to this alternative can lead to different parameters' estimates than estimation according to Equation (5). Unfortunately, as shown by Oaxaca and Ransom (1994), the actual non-discriminatory structure should not necessarily lie between the men and women structure of the estimates. Hence, they suggest a third equally valid expression which is to weight the first term of the decomposition using coefficient estimates $\left(\beta^*\right)$ from the pooled model of men and women. This weight allows estimating the self-employment probability of the individuals that would exist in the absence of unmeasurable differences. We follow this approach to calculate the decomposition, but provide results of the other approaches as a proof of sensitivity.

Analysis of gender differentials in labour market earnings

The methodology adopted in this work stems from a two-step strategy. In the first stage, Mincer's (1974) wage equations are estimated both for the whole sample of individuals and separately for both genders as suggested by Equation 6, where Z is a vector of explanatory variables and δ the associated parameters.

$$\ln W_i = \delta ' Z_i + \mu_i \qquad (6)$$

(a) Selection bias

According to Equation 3, labour market earnings are observed depending on the employment status of the individual. Assume $\ln W_{is}$ and $\ln W_{ie}$ represent the labour market earnings of a self-employed and employed worker respectively, then Equation 6 can be rewritten as follows:

$$\ln W_{is} = \delta_s' Z_{is} + \mu_{is} \ if \ SE_i = 1$$
$$\ln W_{ie} = \delta_e' Z_{ie} + \mu_{ie} \ if \ SE_i = 0 \qquad (7)$$

Hence, expected observed labour earnings are given by $E(\ \ | SE = 1) \neq 0$ and $E(\varepsilon_e | SE = 0) \neq 0$. OLS estimation of the parameters in Equation 7 leads to a selectivity bias – a problem due to the fact that an individual's probability of being either self-employed or wage-earner is not determined by a random mechanism, but rather is influenced by a number of factors that are likely to also be related to their labour market earnings. From a statistical standpoint, this means that the errors in Equation 3 are correlated with the errors in Equation 7.

To correct for sample selectivity, Heckman (1976, 1979) provides a two-step method, which involves the calculation of the Inverse Mill's Ratio (IMR) from the unobservable variables of a selection model and its inclusion in the wage equation. Although this method is expected to be robust, the fact that it relies on the univariate normality of the marginal distribution indicates that it is no longer efficient in the presence of joint normality. Another related method, which also uses a two-step procedure to correct for sample selectivity, is the propensity score matching. Using a counterfactual framework, this method ensures that, to the extent possible, the researcher is making an "apples to apples" comparison of wageworkers with similarly situated non-wage workers (Rosenbaum and Rubin, 1983). When using this approach, it is important to establish an adequate control group. Ideally, individuals must be matched according to their pre-treatment characteristics, but in the absence of such information the researcher has to choose among the various treatment options. A drawback with the matching approach

is that it only accounts for selectivity that can be attributed to observed individual characteristics but not for unobserved differences between the groups being compared and, as a consequence, the estimated effect of covariates on wages might not be causal (Muehler et al, 2007).

To obtain consistent estimates of the parameters, this study uses the endogenous switching regressions method proposed by Lee (1978), a variant of the classical Heckman selection model, which has been widely used in the microeconomics field for a long time especially in labour economics. This method is described as follows: assume that ε, μ_s and μ_e follow a trivariate normal distribution with mean vector zero and covariance matrix Ω defined as

$$\Omega \begin{bmatrix} \sigma_\varepsilon^2 & \sigma_{\varepsilon s} & \sigma_{\varepsilon e} \\ \sigma_{\varepsilon s} & \sigma_{\mu s}^2 & . \\ \sigma_{\varepsilon e} & . & \sigma_{\mu e}^2 \end{bmatrix} \tag{8}$$

where $\sigma_\varepsilon^2 = \mathrm{var}(\varepsilon)$ is the variance of the error term in the selection equation and is assumed equal to unity, $\sigma_{\mu S}^2 = \mathrm{var}(\mu_s)$ and $\sigma_{\mu e}^2 = \mathrm{var}(\mu_e)$ are variances of the error terms in the earning equations and covariances between those error terms are given by $\sigma_{\varepsilon e} = \mathrm{cov}(\varepsilon, \mu_e)$ and $\sigma_{\varepsilon s} = \mathrm{cov}(\varepsilon, \mu_s)$. Based on these hypotheses, conditional expectations of the labour market earnings of self-employed and wage-employed workers are given by Equation 9 as follows:

$$E\left(\ln W_{is} \mid SE = 1\right) = \delta_s' Z_i + \sigma_{\mu s}\rho_s \frac{\phi(X'\beta)}{\Phi(X'\beta)}$$

$$E\left(\ln W_{ie} \mid SE = 0\right) = \delta_e' Z_i - \sigma_{\mu e}\rho_e \frac{\phi(X'\beta)}{1-\Phi(X'\beta)} \tag{9}$$

In Equation (9), ρ_s and ρ_e respectively represent correlation coefficients between ε, μ_s and μ_e, ϕ is the normal density function $\lambda_s = \dfrac{\phi(X'\beta)}{\Phi(X'\beta)}$ and $\lambda_e = \dfrac{\phi(X'\beta)}{1-\Phi(X'\beta)}$ are the Inverse Mills Ratios (IMRs) for self-employed and wage-employed workers respectively. By definition, the estimated coefficients of the Inverse Mills Ratios are $\beta_{SE} = \theta_s = \sigma_{\mu s}\rho_s$ and $\beta_{WE} = \theta_e = -\sigma_{\mu e}\rho_e$ respectively for self-employed and wage-employed workers.

An efficient method to estimate endogenous switching regression models is by full

information maximum likelihood (FIML) method[10], which simultaneously estimates the selection equation and the earning equations to yield consistent standard errors (Lokshin and Sajaia, 2004)[11].

(b) Men-women differentials in labour market earnings

For each, regarding the employment situation, the decomposition of earning differentials between men and women is made using the Oaxaca and Ransom (1994), which in principle allows the distribution of the wage gap into a portion related to differences in access to endowment between the groups $\delta^{*'}\left(\overline{Z^*}_b - \overline{Z^*}_f\right)$ and which is an estimate of the productivity differential; a portion due to men's advantage $\left(\delta_b - \delta^*\right)'\overline{Z^*}_b$, and the last portion which due to women's disadvantage $\left(\delta^* - \delta_f\right)'\overline{Z^*}_f$. The total is Equation (10).

$$\overline{\ln W}_b - \overline{\ln W}_f = \delta^{*'}\left(\overline{Z^*}_b - \overline{Z^*}_f\right) + \left(\delta_b - \delta^*\right)'\overline{Z^*}_b + \left(\delta^* - \delta_f\right)'\overline{Z^*}_f \qquad (10)$$

Following Neuman and Oaxaca (2004), this study recognizes the fact that part of the observed male-female wage gap may be due to gender differences in selection and the latter may represent discrimination. As a consequence, in case selectivity bias is confirmed, a further extension of this decomposition accounting for it will be done as given in Equation 11, where $\overline{\ln W}_j$ represents the average logarithm of wages of each group, the vector of variables (to their average) entering the earning equation, $\overline{Z^*}_j$ and the difference between conditional expectations of the labour market earnings account for self-selection correction[12].

$$\overline{\ln W}_b - \overline{\ln W}_f = \delta^{*'}\left(\overline{Z^*}_b - \overline{Z^*}_f\right) + \left(\delta_b - \delta^*\right)'\overline{Z^*}_b + \left(\delta^* - \delta_f\right)'\overline{Z^*}_f + \left[E\left(\ln W_b \mid SE = 1\right) - E\left(\ln W_f \mid SE = 1\right)\right] \quad (11)$$
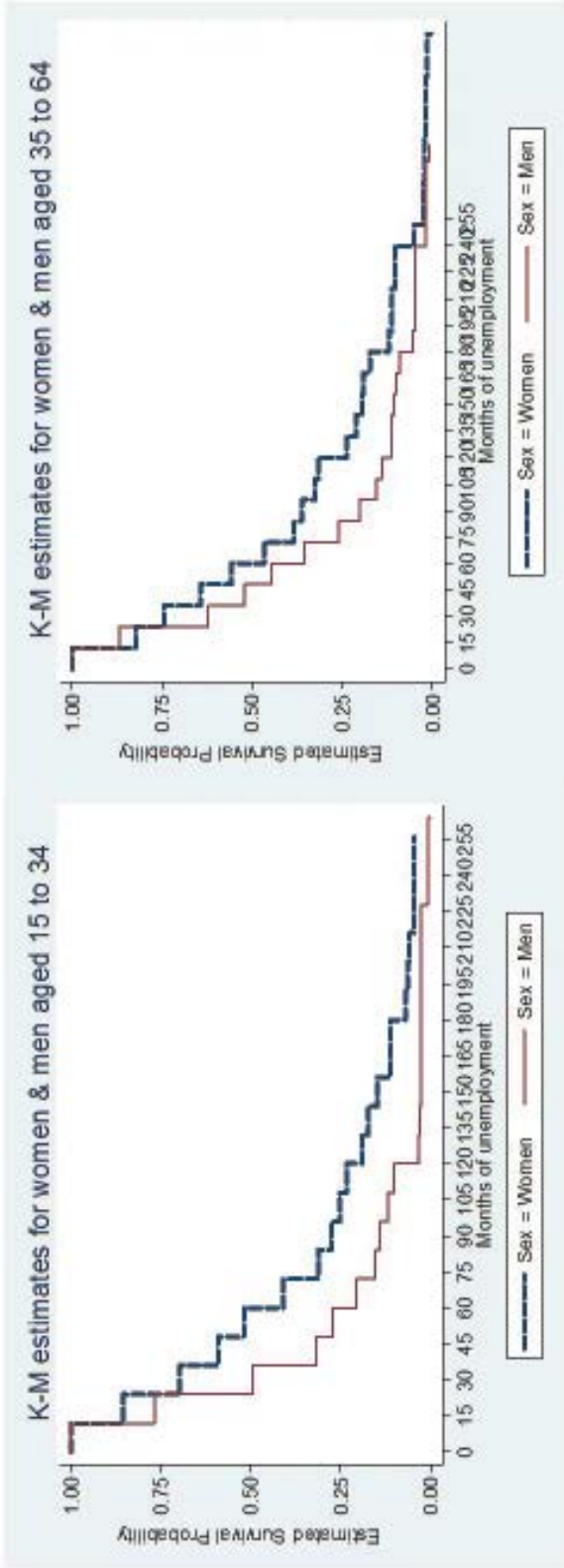
5. Econometric results

This section first discusses the result on unemployment duration then those of access to self-employment and earnings.

Determinants of gender disparities on unemployment spell

In this sub-section, the presentation of non-parametric results precedes the analysis of those based on parametric procedures. For example, Figure 1 presents Kaplan-Meier estimates of survival functions for both men and women. As stated, $S(t)$ gives the probability for an individual to remain unemployed until at the least time t. That figure clearly shows that men's survival curves decrease to 0 with a faster rate, which means that men have greater likelihood of leaving unemployment than women. For example, the probability of remaining unemployed beyond 24 months is approximately 71.77% for women and 56.10% for men. Men's probability declines to 35.70% after four years, while women's probability remains above 53%. These results imply that unemployed men find jobs sooner than unemployed women. The log-rank test confirms that men and women's survival curves are different – a result which is in line with those of Tansel and Taşçı (2010), who also found that women experience higher unemployment durations than men and that their probabilities for ending unemployment are substantially lower than men's.

Before presenting the parametric results, it is worth mentioning that the problem of unobserved heterogeneity is recurrent in the analysis of duration models. It amounts to observations being conditionally different in terms of their hazard in ways that are unaccounted for in the systematic part of the model. For instance, some individuals may be more likely to leave unemployment than others as the result of the observed unemployment spells started at different periods. Not accounting for this unobserved heterogeneity is likely to lead to spurious results. To account for this, a random term (v) summarizing the unobserved heterogeneity is incorporated into the model and the distribution is rewritten accordingly. Although there is no specified device for the choice of the distribution, Jenkins (2004) indicates that the frequently used distributions for this purpose are the Gamma and Inverse Gaussian distributions. Assume that v has a Gamma distribution with mean 1 and variance θ, testing for heterogeneity is simply checking if θ is statistically different from zero.

Figure 1. Kaplan-Meir estimation of survival functions

K-M estimates for women & men aged 15 to 34

K-M estimates for women & men aged 35 to 64

Results presented in Table A4 in the annexes indicate that the estimate of the frailty variance component is $\widehat{\theta} = 3.7$ when the Inverse Gaussian frailty is assumed and $\widehat{\theta} = 1.8$ for the Gamma distribution. In both cases, the p-value of the null hypothesis test equals zero, indicating a significant likelihood ratio test for the presence of unobserved heterogeneity[13].

Since the Inverse Gaussian distribution gave the highest value of θ, this specification was used for the analyses. As Table 5 shows, the Weibull model exhibits positive state dependence $(p > 1)$ meaning that the probability of the unemployment spell terminating increases as the spell lengthens. This result conforms to the job search theory, which predicts that as the duration of unemployment increases one's reservation wage falls, leading to an increasing hazard of re-employment.

According to the results in Table 5, the dummy for gender is a significant implication that the gender of a person is an important determinant of unemployment duration in urban Cameroon. Although this contradicts Seife's (2006) findings in the context of urban Ethiopia, our results confirm the general presumption regarding the different roles at home of males and females that could differently impact, among others, job search intensity and success. In accordance with this, married women are more exposed to longer term unemployment than their unmarried counterparts, meaning that the presence of a spouse is likely to reduce constraints due to unemployment. As stated by Tansel and Taşçı (2010) in the case of Turkey, the fact that the observed effect of marital status is not significant for men may indicate that women have a greater reservation wage than men. Further, since households are most of the time headed by men in countries like Cameroon, the presence of a spouse is likely to increase the opportunity cost of unemployment for the man and labour force attachment thus leading to increased job search efforts.

In addition, our results indicate that being the head of a household goes along with increased responsibilities, which induce greater job search efforts for men, lowered reservation wages, and higher likelihood of exiting unemployment. All the above arguments justify why the coefficient obtained for the gender variable is negative indicating that women's transition rate from unemployment to employment is lower than men's transition rate.

Exit rates from unemployment for new labour market entrants are substantially lower than those of experienced workers. Although these results seem to indicate a preference for experienced workers, it should be mentioned that the coefficient estimate for age suggests that the younger the individual the better the prospects of exiting unemployment. This age effect is more pronounced among women. As workers get older, the employer may consider that their skills have become obsolete, their abilities have diminished, and they have become less productive due to greater exposure to health problems (Serneels, 2001).

When it comes to the education variable, the results confirm predictions of the job search theory according to which better educated people, especially among women, are more likely to leave employment for unemployment. Assuming job offers are extended to those who appear most desirable to an employer, this observation may mean that highly educated individuals have a higher arrival rate of job offers than people with lower education levels. It may also be that, gathering of employment information being a costly undertaking, highly educated individuals are more efficient in getting information

on the functioning of the labour market and thus more successful in searching for jobs. As Zaakirah and Kollamparambil (2015) suggest, in South Africa, the fact that the coefficient estimates are more significant for women than men may indicate that the employment probabilities of women are more sensitive to higher levels of education, and that women might have a greater need for human capital investment since they have greater difficulties in finding a job.

Table 5: Determinants of unemployment duration

Level of education (Refce= No education)			
Primary	-0.059 (-0.28)	0.062 (0.28)	-0.012 (-0.08)
FL Secondary	0.408 (1.93)*	0.097 (0.44)	0.218 (1.39)
SL Secondary or above	1.048 (3.64)***	-0.057 (-0.22)	0.336 (1.72)*
Other characteristics			
Woman	----	----	-0.352 (-3.94)***
Age	-0.162 (-4.21)***	-0.061 (-1.56)	-0.097 (-3.49) ***
Age squared	0.0016 (3.00)***	0.0001 (0.16)	0.0006 (1.65)*
Head of the household	0.478 (3.12)***	0.720 (5.09)***	0.696 (7.42)***
Married	-0.402 (-2.90)***	-0.052 (-0.41)	-0.198 (-2.40)**
New Labour market Entrant	-0.663 (-5.54)***	-0.507 (-4.51)***	-0.558 (-6.83)***
Job search channels (Refce= Official search channels)			
Personal contacts	0.754 (3.43)***	-0.049 (-0.42)	0.394 (2.91)***
Other search channels	0.857 (3.85)***	-0.207 (-1.13)	0.434 (3.11)***
Region of residence (Refce= Douala & Yaoundé)			
Northern regions	-0.500 (-1.33)	-0.278 (-0.82)	-0.339 (-1.36)
Western regions	0.170 (0.61)	-0.076 (-0.31)	0.038 (0.21)
South and eastern regions	-0.254 (-0.71)	-0.026 (-0.08)	-0.165 (-0.70)
Regional unemployment rate in 2005	-1.656 (-0.62)	-1.680 (-0.68)	-1.782 (-0.99)
Constant	**-3.907 (-5.04)*** **	**-5.346 (-6.83)*** **	**-5.069 (-8.95)*** **
	0.774 (29.55)***	0.758 (30.23)***	0.752 (40.93)***
	1.518 (14.42) ***	1.175 (13.65) ***	1.315 (19.65) ***
	2.169	2.135	2.123
	0.460	0.468	0.471
	4.565	3.240	3.726
Observations	1399	1291	2690
Wald chi2(14/15)	151.47	106.85	278.34
Prob > chi2	0.0000	0.000	0.000
Log pseudo-likelihood	-1369	-1370	-2762

Estimates based on the 2010 Employment and Informal Sector Survey (z-values in parenthesis) We assume a Weibull with Inverse Gaussian frailty. Note: ***(**){*} Significance level 1% (5%) {10%}.

Unlike the basic job search model, in which search effort is identical among individuals, this study allows for the existence of differences in job-seeking behaviours especially because different search strategies or channels have different costs and

different levels of efficiency. The information on channels used by individuals to locate their first jobs has been classified into three types. The first type is *personal contacts,* representing the hidden job information market where positions are transmitted through informal contacts with friends, relatives and through direct application to employers. Also included in this category are those who used personal means to get their actual job. The second, named *official channels*, represents the formal job information market where the latter is obtained through public and private employment agencies and through publication in newspapers and other media. The last category, named *other channels*, consists of all the other job search strategies that could not fit in the first two categories. Study results indicate that the use of either *personal contacts* or *other channels* is a much more efficient strategy than using *official channels*. This suggests that, compared with official channels, the other strategies allow individuals to get a greater number of job offers and thus increase their probability of accepting one from among them. These results may be due to the importance of both informal and self-employment in the Cameroon labour market, in the sense that in either case, informal contacts, individual and family initiatives are much more prevalent and of greater value than *official channels*.

On examining estimated coefficients of regional variables, the results clearly indicate that there are no great differences between urban residents of some small cities of the country and those of the two highest metropolises namely Yaoundé and Douala. Still, the local labour market does have an effect on individual prospects of leaving unemployment, with lower prospects for individuals residing in high unemployment rate regions.

Determinants of gender disparities in access to wage versus self-employment

Since the 1970s, a number of empirical studies have been devoted to determining the factors that explain why some people become self-employed and others do not. This literature study shows that both individual characteristics and the immediate social environment help to explain the self-employment decision. Among the individual characteristics, education may be positively or negatively associated with self-employment. Results in Table 6[14] reveal that, both for men and women, higher levels of education and vocational training act as dissuasive factors in the choice of self-employment (Lucas, 1978). In the Cameroon context, this result evidences the high tendency of graduates from the higher education system to first seek wage-earning employment, especially in the public sector, and to only think about self-employment as the unemployment spell becomes longer. And, since public sector employment is secured both in terms of stability and remuneration, this behaviour can be thought of as an expression of risk aversion.

The study finds a strong relationship between age and self-employment with the probability of being self-employed decreasing nearly by 4% as individuals get older. This age pattern is contrary to the common result found in the literature study (Zissimopoulos and Karoly, 2007) and may be due to the fact that, unlike the old generation that was able to secure salaried-jobs when the economic environment was favourable, very few jobs have been created in the formal sector (public and private) in recent years thus leaving the young generation with no other choice than to opt for self-employment. Although the use of personal contacts and official channels increases the likelihood of exiting

unemployment, these two channels do not lead to the same type of jobs. Actually, the use of official channels increases the likelihood of getting salaried work while personal contacts are more efficient in leading to self-employment.

It is also clearly visible from Table 6 that women, especially the married ones, are more likely to be self-employed than men. These findings, which are consistent with the results of Wellington (2006) and Leoni and Falk (2008), indicate that women's household responsibilities tend to increase their preferences for self-employment positions that in many respects are more compatible with family duties. For example, being married entails greater responsibility of providing the necessities of the household as well as striking a balance between leisure and work so as to have quality time with the family. Since women are often the main caretakers of young children, self-employment in different respects offers higher flexibility regarding working hours and thus allows greater possibilities to combine work and responsibility for the household.

Table 6. Determinants of self-employment

Variables	Marginal effects		
	Women	Men	Women & Men
Level of education (Refce= No education)			
Primary	0.015 (0.51)	-0.0002 (-0.01)	0.011 (0.39)
Secondary	-0.064 (-2.13)**	0.001 (0.04)	-0.034 (-1.19)
University	-0.313 (-4.65)***	-0.093 (-1.95)*	-0.184 (-4.73)***
Other individual characteristics			
Vocational training	-0.042 (-2.75)***	-0.056 (-2.56)**	-0.063 (-4.12)***
Woman	---	---	0.172 (10.87)***
Age	-0.034 (-8.56)***	-0.052 (-10.24)***	-0.049(-13.40)***
Age squared	0.0004 (8.12)***	0.0006 (10.10)***	0.0006(13.04)***
Head of the household	-0.034 (-1.60)	-0.053 (-1.71)*	-0.072 (-3.86)***
Married	0.056 (3.16)***	-0.002 (-0.08)	0.031 (1.79)*
Under ten children in the household	0.005 (1.01)	0.018 (2.56)**	0.012 (2.32)**
New Labour market Entrant	0.022 (1.40)	0.097 (4.21)***	0.066 (4.14)***
Job search channels (rfce= Official channels)			
Personal contacts	0.216 (6.96)***	0.370 (7.80)***	0.352 (10.65)***
Other search channels	0.669 (22.18)***	0.831 (46.63)***	0.778 (51.57)***
Region of residence (rfce= Douala & Yaoundé)			
Northern regions	-0.304 (-3.90)***	-0.317 (-6.70)***	-0.355 (-8.01)***
Western regions	-0.117 (-2.60)***	-0.091 (-1.94)	-0.116 (-3.19)***
South and eastern regions	-0.103 (-1.66)*	-0.232 (-4.65)***	-0.215 (-4.59)***
Regional unemployment rate in 2005	-1.952 (-6.39)***	-2.939 (-7.03)***	-2.866 (-9.60)***
Parents employment			
Self-employed father	0.095 (5.19)***	0.091 (3.83)**	0.112 (6.49)***
Self-employed mother	0.031 (1.67)*	0.051 (2.25)***	0.051 (3.01)***
Observations	3102	3982	7084
Prob > chi2	0.000	0.000	0.000
Predicted (Self-employment=1)	0.866	0.495	0.676

Estimates based on the 2010 Employment and Informal Sector Survey (z-values in parenthesis)
Note: ***(**){*} Significance level 1% (5%) {10%}.

The negative coefficient for married men might indicate that being married is associated with a higher risk aversion and, therefore, a higher propensity of the main breadwinner to choose wage employment over self-employment.

Results on the influence of the immediate environment indicate that individuals are more likely to be self-employed when their parents are themselves self-employed. The observed correlation may merely reflect occupational following in the sense that individuals enter the same occupation in self-employment as their parents. As suggested by Colombier and Masclet (2007), the case could also be that exposure to a self-employed parent induces entrepreneurial inheritance, that is, the acquisition of career-specific skills, values, and all abilities required in a specific job in self-employment.

Having discovered both differences and similarities in the effects of the covariates on men's and women's self-employment probabilities and since gender is a significant determinant of employment status, the mechanisms driving such outcomes are accordingly explored. Since the decomposition estimates are likely to depend on the randomly chosen subsample of men, we used 1,000 random subsamples of men. As a consequence, the decomposition of the gaps in men and women probabilities of being self-employed presented in Table 7 are obtained as the mean values of estimates from all of these subsamples. The upper panel of the table shows the self-employment rates for men and women, the differences in probabilities, and the part that could be explained by differences in attributes between men and women.

The findings show that the average estimated probabilities of self-employment are 73.4% for women and 48.7% for men. Therefore, the total predicted gender gap in self-employment is 24.6 percentage points and, in all the specifications, more than 50% of this difference could be explained by men-women differences in endowments. More specifically, the pooled model reveals that 56.5% (that is around 17percentage points) of this gap is due to differences in observed characteristics and 43.4%due to differences in coefficients to these characteristics between the genders. This finding suggests that the gender gaps would have decreased from 0.2461 to 0.1069 if the distribution of women's characteristics was similar to men's.

In order to identify which characteristics are mostly responsible for the relatively high propensity of women to be self-employment, Table 7 provides the detailed decomposition of the contribution of each variable with its explanatory power. From the lower panel of the table, focus on variables with a significant contribution clearly shows that differences in general education account for 2.13% to 8.97% of the gender gap in access to wage-employment while differences on endowment in vocational training account for around 3%. As a consequence, using the pooled regression, these results suggest that if the distribution of women across education levels and fields of study was similar to men's distribution, the gender gap in wage-employment rates would have been reduced by 7.89%.

Despite the increased participation of young girls in the higher education system, male students still represent the highest proportion of those who complete their studies. As a consequence, policies aimed at implementing training programmes that target women are likely to reduce women's gaps in higher education qualifications.

Table 7: Non-linear decomposition of the male-female gap in self-employment probabilities

	Weighting group					
	Women		Men		Pooled	
SE (Women)	0.7340		0.7340		0.7340	
SE (Men)	0.4879		0.4879		0.4879	
Difference	0.2461		0.2461		0.2461	
Total explained	**0.1298**		**0.1517**		**0.1392**	
	52.74%		**61.64%**		**56.56%**	
Contributions from differences in	Effect (t-student)	%	Effect (t-student)	%	Effect (t-student)	%
EDUCATION	**8.97**		**2.13**		**4.36**	
Primary	0.0004 (0.25)	0.30	-2.38e-6 (-0.00)	0.00	0.0001 (0.25)	0.13
Secondary	0.0005 (0.70)	0.41	0.00003 (0.05)	0.03	-0.0005 (-0.95)	-0.43
University	0.0107 (4.16)***	8.25	0.0027 (1.83)*	2.10	0.0060 (4.31)***	4.66
Vocational training	0.0047 (2.35)**	3.69	0.0041 (2.27)**	3.15	0.0045 (3.57)***	3.53
AGE	**27.55**		**25.34**		**25.34**	
Age	0.1288 (14.04)***	99.37	0.0985 (17.96)***	75.99	0.1252 (19.51)***	96.75
Age squared	-0.0931 (-13.58)***	-71.82	-0.0656 (-18.79)***	-50.65	-0.0911 (-19.27)***	-70.48
Head of the household	0.0162 (1.93)*	12.50	0.0103 (1.37)	7.95	0.0209 (3.93)***	16.14
Married	-0.0074 (-3.26)***	-5.76	0.0006 (0.35)	0.50	-0.0030 (-1.89)*	-2.33
Under ten children in the household	0.0017 (1.40)	1.36	0.0026 (2.50)***	2.04	0.0017 (2.36)**	1.33
New Labour market Entrant	0.0036 (1.79)*	2.83	0.0081 (4.05)	6.31	0.0070 (3.93)***	5.38
JOB SEARCH CHANNELS	**47.88**		**65.63**		**49.07**	
Personal contacts	0.0091 (6.21)***	7.08	-0.0013 (-1.69)*	-1.04	0.0059 (7.62)***	4.64
Other channels	0.0529 (15.31)***	40.80	0.0864 (29.99)***	66.66	0.0576 (22.83)***	44.43

Table 7 Continued

Contributions from differences in	Effect (t-student)	%	Effect (t-student)	%	Effect (t-student)	%
REGION OF RESIDENCE		**9.37**		**6.12**		**9.27**
Northern regions	0.01442 (4.53)***	11.12	0.0093 (6.88)***	7.18	0.0132 (7.50)***	10.23
Western regions	-0.0026 (-2.89)***	-2.05	-0.0017 (-1.44)	-1.34	-0.0016 (-2.86)***	-1.30
South and eastern regions	0.0003 (1.17)*	0.30	0.00035 (2.16)**	0.28	0.0004 (3.11)***	0.34
Regional unemployment rate in 2005	-0.0084 (-3.50)	-6.53	-0.0028 (-4.64)***	-2.21	-0.0057 (-5.16)***	-4.46
Parent employment status		**-1.87**		**-0.14**		**-1.13**
Self-employed father	-0.0037 (-5.09)***	-2.91	-0.0012 (-3.89)***	-0.99	-0.0028 (-6.23)***	-2.20
Self-employed mother	0.0013 (1.83)*	1.04	0.0011 (2.16)**	0.85	0.0013 (3.06)***	1.06
Observations	**6222**		**3430**		**2792**	

Notes: This table reports the results of the decomposition of male-female differences in self-employment probabilities into the Explained Effect due to characteristics and Unexplained Effects.

Although descriptive statistics revealed that the majority of Cameroonians resorted to personal contact to get a job, it also came out that women were relatively more likely to use this strategy. As job-seeking strategies account for approximately 50% of the observed gender disparities, any policy aimed at increasing women's use of formal channels is likely to reduce the gender gaps in employment status. With respect to the effects of the labour market situation and other factors, it is worth noting that their contribution to gender differences is marginal.

In conclusion, it is evident that job search strategies, social environment and, to some extent, human capital endowments explain the gender gaps in self-employment rates. It is striking that the observed factors account for more than 50% of the gender gap in the self-employment rates. Although it could be concluded that the remaining part is due to labour market discrimination against women, the relatively high proportion of this unexplained part calls for further investigation on other factors such as the field of study, which could have been included as covariates in the regressions. However, the limited number of observations hindered the study from testing whether segregation in the schooling system is reproduced in the labour market as hypothesized by Borghans and Groots (1999).

Determinants of gender differentials in labour market earnings

Results of the endogenous switching model are presented in Table 8. Using the Mincer's type specification, the earning equations include the usual set of control variables that is, those capturing years of schooling, job tenure and its squared value, working hours, and a number of dummy variables describing the gender, adequacy of training to employment, labour market experience, establishment-sector affiliation, and size and existence of labour market union in the sector. To identify the model, at least one variable needs to be excluded from the wage equations, which is otherwise included in the employment equations. In this model, various exclusion restrictions are used. For example, it is assumed that an individual's status as the head of the household and, consequently, the main breadwinner, is likely to impose constraints that force them to join the labour market in order to find the necessary resources to support the family. In this respect, married men are more likely to go seek jobs for the welfare of the entire family. Unlike men, married women are most likely to be the "second" breadwinner in the household and this may increase their preference for jobs that allow them to combine both labour market and household duties. The reason for using the variable number of children below 10 as an instrument of measure is that women with children are more likely to drop out of the labour force, either temporarily or permanently, than women without children. For men, the opposite effect is likely to be observed. In the wage equations, parental characteristics such as their employment status, the proportion of unemployed individuals in 2005 in the region of residence, and dummy variables indicating the actual region of residence are excluded.

The second panel of Table 8 presents the estimation results for the selection equation and reports the correlation coefficients between labour market participation equation and wage equation (ρ_e, ρ_s). The estimated dependence parameter between the residual of the switching equation (ε) and the self-employed earning equation (μ_s) and between the residual of the switching regression (ε) and the wage-employed earning equation (μ_e) is not significantly different from zero. This implies that there is no significant

dependence between these two disturbance terms in both the regimes which indicates an absence of the selectivity bias. A comparison with the results obtained using the Heckman selection method (see Table A6 in the annexes) reveals that although the effects of covariates are similar the sign and significance of the selection term are different. For instance, Table A6 reveals that selection in both regimes is significant, confirming the result by Song-Ntamack (2012) who studied the effect of human capital on earnings of non-wageworkers.

As far as the effects of covariates are concerned, the results show that men are rewarded higher by the labour market than women and that the differences are around 36%[15] among non-wage earners and 15% for wage earners.

According to the human capital theory (Becker, 1964; Mincer, 1974), an individual's remuneration increases with the level of schooling measured by the number of successfully completed years of schooling. In the context of Cameroon, this is true for both self-employed and wage earners. A one-year increase in schooling induces a 3.7% and almost a 7% increase in the log earnings of self-employed and wage-employed workers respectively. Either among wage or the non-wage earners, women's rates of return to schooling and experience are higher than those of men, a result that is similar to the one obtained by Baye et al (2016) using an OLS approach on a pooled sample of wage and non-wage earners. As expected, earnings have a quadratic relationship with job experience in that earnings initially increase with experience and start to decline thereafter. Returns on job-qualification matching are likely to widen the pay gap between men and women among the wage earners. With regard to the characteristics of the job, the results show that there is a wage penalty for those working in the informal sector and wage-earning women have better perspectives of increasing their earnings by working more hours than wage-earning men. Individuals working in the industrial, commercial and service sectors are better paid than those in the primary sector and the extra wage received by women is greater than that by men.

It can be concluded from the above discussion that many factors contribute to reducing gender disparities in remuneration while many others tend to increase them. To try to determine how these factors combine to justify earnings' disparities between men and women, the Oaxaca and Ransom decomposition was applied. Building on the fact that selection terms were not statistically significant, decomposition will not account for those variables. Estimation results shown in Table 9 reveal that gender related differences in labour market earnings are less pronounced among the wage earners compared with the self-employed individuals. For example, the decomposition output reports that the mean of log wages of women represents approximately 83% and 94% of men's mean of log wages among the self-employed and the wage-employed workers respectively.

Among the self-employed individuals, only 30% of the average male-female wage differential is explained by differences in the endowment of characteristics; the bulk of the wage differential being due to the contribution of the unexplained component. Splitting the unexplained component into one part related to male advantage and another part related to female disadvantage, reveals that both factors have a slightly equal contribution to the unexplained component.

Table 8A: Selectivity bias adjusted estimates of labour market earning equations

VARIABLES	Women		Men		Men and Women	
	SE	WE	SE	WE	SE	WE
Women	---	---	---	---	-0.449 (-10.40)***	-0.163 (-4.00)**
Years of schooling	0.044 (4.08)***	0.098 (9.89)***	0.032 (3.48)***	0.062 (11.10)***	0.037 (5.38)***	0.067 (13.90)***
Job experience	0.037 (5.86)***	0.061 (4.29)**	0.019 (2.42)***	0.058 (6.80)***	0.028 (5.71)***	0.058 (7.91)***
Job experience squared	-0.005 (-4.51)***	-0.001 (-2.64)***	-0.0005 (-2.98)***	-0.001 (-5.21)***	-0.0005 (-5.12)***	-0.001 (-5.81)***
Adequacy of training to employment	0.079(0.91)	0.102 (1.60)	0.274 (3.76)***	0.246 (6.02)***	0.200 (3.63)***	0.221 (6.32)***
New Labour market Entrant	-0.147(-2.64)***	-0.159 (-2.72)***	-0.153 (-2.46)**	-0.210 (-5.14)***	-0.156 (-3.74)***	-0.199 (-5.78)***
Working hours per week	0.003 (4.33)***	0.007 (4.53)***	0.002 (4.45)***	0.001 (3.18)***	0.002 (6.08)***	0.001 (4.12)***
Informal employment	-0.562 (-0.41)	-0.361 (-2.09)**	-1.943 (-1.91)*	-0.357 (-2.69)***	-1.613 (-1.98)**	-0.369 (-3.41)***
Regular employment	0.110 (1.14)	0.557 (3.83)***	0.452 (5.11)***	0.353(5.21)***	0.274 (4.25)***	0.357 (5.88)***
Industry	1.281 (5.47)***	0.543 (1.43)	1.480 (7.61)***	0.202 (1.46)	1.419 (9.63)***	0.192 (1.51)
Trade	1.495 (6.62)***	0.685 (1.79)*	1.565 (8.19)***	0.116 (0.82)	1.607 (11.20)***	0.150 (1.16)
Service	1.587 (6.94)***	0.558 (1.48)	1.445 (7.45)***	0.071 (0.52)	1.573 (10.77)***	0.081 (0.16)
2 to 5 employees	0.033 (0.49)	0.719 (2.67)***	0.153 (1.93)*	0.056 (0.37)	0.095 (1.83)*	0.109 (0.84)
More than 6 employees	0.378 (1.92)*	1.101 (4.05)***	0.478 (2.85)**	0.237 (1.40)	0.436 (3.46)***	0.325 (2.30)**
Trade Union in the sector	0.002 (0.07)	0.006 (1.42)**	-0.044 (-1.47)	0.002 (0.67)	-0.033 (-1.37)	0.002 (0.89)
Constant	1.775 (1.27)	0.329 (0.56)	3.714 (3.57)***	2.732 (9.05)***	3.344 (4.01)***	-0.309 (-19.84)***
$\ln \sigma_{\mu j}\left(t-student\right)$	0.117 (6.84)***	-0.471 (-14.32)***	0.111 (6.16)***	-0.279 (-15.70)***	0.119 (9.63)***	-0.309 (-19.84)***
$antab \rho\left(t-student\right)$	-0.024 (-0.18)	-0.244 (-1.65)*	-0.011 (-1.14)	0.098 (0.79)	-0.001 (-0.03)	0.087 (0.92)
Observations	**2180**		**3113**		**5293**	
Significance of the model	$Wald\ \chi^2\left(14\right) = 468.64***$		$Wald\ \chi^2\left(14\right) = 433.14***$		$Wald\ \chi^2\left(15\right) = 1080.32***$	

Table 8B: Estimates of the selection equation

Variables	Women	Men	Men and Women
	Coef. (t-student)	Coef. (t-student)	Coef. (t-student)
Primary	-0.015 (-0.04)	0.189 (1.01)	0.089 (0.57)
Secondary	-0.034 (-0.10)	0.213 (1.43)	0.159 (1.23)
University	0.245 (0.52)	0.654 (2.72)	0.657 (3.20)***
Vocational training	-0.199 (-1.05)	0.149 (1.44)	0.118 (1.36)
Women	---	---	0.694 (7.88)***
Age	-0.050 (-1.24)	-0.091 (-3.80)**	-0.070 (-3.67)***
Age squared	0.001 (2.11)**	0.001 (3.68)***	0.0008 (3.80)***
Head of the household	0.157 (0.81)	0.241 (1.87)*	0.083 (0.90)
Married	0.594 (3.32)***	0.045 (0.39)	0.234 (2.83)**
Under ten children in the household	0.044 (0.85)	0.048 (1.59)	0.026 (1.04)
New Labour market Entrant	0.153 (0.91)	-0.115 (-1.21)	-0.074 (-0.93)**
Personal contacts	-0.381 (-0.97)	-0.005 (-0.02)	-0.135 (-0.68)***
Other search channels	1.668 (4.16)***	1.990 (7.50)***	1.922 (9.42)***
Northern regions	-0.803 (-1.72)*	-0.886 (-3.58)***	-0.860 (-4.07)***
Western regions	-1.283 (-3.36)***	-0.488 (-2.39)**	-0.591 (-3.41)***
South and eastern regions	-0.548 (-1.15)	-0.607 (-2.45)**	-0.547 (-2.58)***
Regional unemployment rate in 2005	-9.774 (-2.65)**	-6.816 (-3.84)***	-7.219 (-4.80)***
Self-employed father	0.186 (1.16)	-0.034 (-0.35)	0.026 (0.33)
Self-employed mother	-0.031 (-0.18)	-0.093 (-1.01)	-0.085 (-1.08)
Constant	10.700 (5.95)***	5.352 (5.89)***	6.755 (8.94)***
$\sigma_{\mu s}\left(Std.\ dev\right)$	1.124 (0.019)	1.118 (0.02)	1.127 (0.014)
$\sigma_{\mu e}\left(Std.\ dev\right)$	0.623 (0.020)	0.755 (0.013)	0.733 (0.011)
$\rho_{S}\left(Std.\ dev\right)$	-0.024 (0.137)	-0.011 (0.086)	-0.001 (0.067)
$\rho_{e}\left(Std.\ dev\right)$	-0.239 (0.139)	0.098 (.123)	0.087 (0.094)
Wald Test for the independence of all three equations	$\chi^2(1)=485.63***$	$\chi^2(1)=818.06***$	$\chi^2(1)=1327.72***$
Observations	**1939**	**2874**	**4813**

Estimates based on the 2010 Employment and Informal Sector Survey.
Note: ***(**){*} Significance level 1% (5%) {10%}.

Table 9: Oaxaca-Ransom decomposition of gender earnings gap

	SELF-EMPLOYMENT	WAGE-EMPLOYMENT
Men predicted log earnings	3.727	4.117
Women predicted log earnings	3.088	3.895
Predicted difference	0.639 (100%)	0.222 (100%)
Endowment	0.193 (30.2%)	0.014 (6.2%)
Male advantage	0.241 (37.7%)	0.031 (14.1%)
Female disadvantage	0.205 (32.1%)	0.177 (79.7%)

Source: Author's calculation

As far as wageworkers are concerned, there is an average wage differential of 0.222 log points, 79.7% of which are explained by the female disadvantage component, 14.1% being due to the male advantage component, and the endowment component being the least relevant (6.2%). As a consequence, adjusting women and men characteristics would increase women's wages, but would leave an important unexplained gap. This figure conforms to Ndamsa et al (2015) results based on the Cameroon 2007 Household Survey and according to which, differences in endowment characteristics account for a small part of the average monthly earnings differentials between men and women whereas wage discrimination underlies a substantial portion of the wage gap between workers in Cameroon's labour market.

Detailed results of the pooled model are presented in Table 10 with a positive value for any of these components indicating that it is an element that originates a positive wage differential for men. Considering human capital effects, it appears that education has a widening effect on gender differences in labour market earnings of self-employed individuals and accounts for 21% of these differences, while among the wage earners education has a closing effect.

Gender earnings differential tend to increase with experience, and this effect is more pronounced among the wage-earning workers. As far as the job characteristics are concerned, Table 10 also reveals that part of the observed gender differences in labour market earnings are due to differences in hours of work. This may be due to differences in labour force attachment or to the fact that women may be more involved in part-time activities than men. It can be easily perceived from this table that the largest part of the unexplained component is due to the constant term. This may just reflect the lack of variables in the study dataset which are likely to capture the institutional parts of the Cameroon urban labour market that could reveal the remaining dimensions of the gender wage differential.

Table 10: Detailed results of the Oaxaca-Ransom decomposition using the pooled model

Variables	Self-Employed			Wage-Earners		
	Explained	Unexplained		Explained	Unexplained	
	Endowment	Male Adv.	Female Disadv.	Endowment	Male Adv.	Female Disadv.
Human capital and labour market experience						
Years of schooling	0.040 (20.92%)	-0.126 (-52.40%)	0.043 (20.95%)	-0.054 (-390.74%)	-0.035 (-112.49%)	-0.334 (-188.21%)
Job experience	0.010 (4.96%)	-0.087 (-35.99%)	-0.040 (-19.39%)	0.041 (296.61%)	-0.017 (-52.79%)	-0.009 (-5.24%)
Job experience squared	0.002 (0.82%)	0.005 (2.24%)	-0.002 (-1.22%)	-0.022 (-163.31%)	0.001 (4.26%)	-0.016 (-8.78%)
Adequacy of training to employment	0.051 (26.40%)	-0.015 (-6.35%)	0.037 (18.09%)	0.016 (114.93%)	0.014 (43.91%)	0.077 (43.33%)
New Labour market Entrant	0.016 (8.34%)	0.019 (7.97%)	-0.032 (-15.78%)	0.024 (172.89%)	0.0003 (1.11%)	-0.025 (-14.14%)

Table 10 Continued

Variables	Self-Employed			Wage-Earners		
	Explained	Unexplained		Explained	Unexplained	
	Endowment	Male Adv.	Female Disadv.	Endowment	Male Adv.	Female Disadv.
Characteristics of the job						
Working hours per week	0.029 (14.95%)	-0.035 (-14.33%)	-0.006 (-3.01%)	0.018 (128.21%)	-0.024 (-76.56%)	-0.243 (-137.23%)
Informal employment	0.021 (10.80%)	-0.273 (-113.48%)	-1.162 (-567.04%)	-0.011 (-76.83%)	0.019 (60.35%)	0.006 (3.60%)
Regular employment	-0.007 (-3.60%)	0.202 (83.96%)	0.097 (47.45%)	-0.016 (-116.31%)	0.014 (43.44%)	-0.213 (-120.10%)
Characteristics of sector (Primary sector= refce)						
Industry	-0.046 (-23.98%)	0.019 (7.99%)	0.026 (12.51%)	0.032 (230.36%)	0.0002 (0.65%)	-0.026 (-14.52%)
Trade	-0.080 (-41.25%)	-0.014 (-5.97%)	0.042 (20.60%)	0.003 (20.64%)	-0.003 (-8.78%)	-0.043 (-24.06%)
Service	0.166 (86.00%)	-0.061 (-25.46%)	0.011 (5.58%)	-0.015 (-111.53%)	0.0004 (1.19%)	-0.333 (-187.58%)
Trade Union in the sector	-0.021 (-10.95%)	-0.063 (-26.00%)	-0.190 (-92.85%)	0.002 (14.85%)	0.008 (24.49%)	-0.045 (-25.49%)
Size of enterprise (1 employee= refce)						
2 to 5 employees	-0.003 (-1.42%)	0.022 (9.22%)	0.032 (15.58%)	0.015 (106.34%)	-0.008 (-24.27%)	-0.084 (-47.35%)
More than 6 employees	0.015 (8.00%)	0.002 (0.88%)	0.012 (5.93%)	-0.017 (-126.10%)	-0.039 (-124.26%)	-0.374 (-210.97%)
Constant	0.000	0.645 (267.71%)	1.338 (652.58%)	0.000	0.100 (319.76%)	1.838 (1036.75%)
TOTAL	0.193 (100%)	0.241 (100%)	0.205 (100%)	0.014 (100%)	0.031 (100%)	0.177 (100%)

Source: Computed by Author.
Note: Values in brackets represent thepercentage contributions to each component of the Oaxaca-Ransom decomposition.

6. Conclusion and policy implications

This study has analysed gender related differentials in labour market outcomes in urban Cameroon using microdata obtained from the most recent wave of the Employment and Informal Sector Survey (*Enquête Emploi et le Secteur Informel*, 2010). More specifically, the study aimed at evaluating the relative contribution of different factors to gender disparities in unemployment duration, access to self-employment, and labour market earnings. Overall, the empirical analysis shows that differences in human capital endowment, family constraints and labour market factors explain the observed gender related differences in labour market outcomes. For example, the results of this analysis show that the bulk of the significant wage differential in urban Cameroon is due to differences in returns to endowment.

These results suggest a set of policies that are likely to reduce disparities discovered in the participation of both sexes in the labour market. Regarding disparities in unemployment durations, the results suggest the establishment of a set of active policies on the labour market, focused on certain groups with a low probability of transitioning from unemployment to employment. Purposely, these would include programmes targeting women in general and more specifically married women. Undereducated individuals could be encouraged to invest in professional training to increase their employability. Those living in areas where unemployment rates are highest could be encouraged to migrate to areas with better employment opportunities. In this respect, the setting up of a relocation programme in the rural areas of Cameroon, where the agricultural sector still offers great job creation or self-employment possibilities, might be considered. First, this requires the development of those regions and their benefaction with basic infrastructures (transport and electricity), which would reduce the propensity to migrate from these areas to others.

By focusing on the transition from unemployment to employment, the study results show that a non-negligible part of gender disparities in employment status and remuneration is due to observable differences in human capital endowments and adequacy of training to employment. The reduction of the said gender disparities presupposes the establishment of a series of professional training programmes targeted at women. Since it is shown that the impact of such training programmes on employment and wages depends on the level of formal education previously acquired by the learners, their implementation should be accompanied by an improvement of the quality and adequacy of training curricula in force in the formal education system and the requirements of the labour market. This necessitates increased interaction between training institutions and the professional world. Beyond this revision of the design logic of training programmes, the relative inefficiency of the intermediation of formal institutions in the labour market should encourage policymakers to consider measures that are likely to improve pattern-matching with the labour market.

Notes

1.   The GII measured the deficit in progress arising from gender disparities on three dimensions: health, empowerment, and the rate of activities on the labour market. It varies between 0 (perfect equality) and 1 (total inequality). According to the UNDP (2010), this index explicitly recognizes the complementary nature of the different dimensions of inequality and shows that, for instance, education-related inequality often goes hand in hand with inequality related to access to employment opportunities which, in turn, relates to maternal mortality.

2.   This concern was expressed in the ILO's Constitution of 1919 and in the Philadelphia Declaration of 1944. It led to the adoption, by the International Labour Conference, of Convention 100 related to equal remuneration for men and women in June 1951 and Convention 111 related to employment discrimination in June 1958. Both conventions were complemented by the 90th recommendation stressing the principle of "equal pay for equal work" and the 111th recommendation banning workplace discrimination.

3.   Unlike the ILO sense, the broader definition of unemployment by the National Institute of Statistics adds to the ILO's definition all the discouraged workers who were not actively searching for employment during the reference period, but who still remain available for a job as soon as they are offered one. As far as underemployment is concerned, the National Institute of Statistics considers as underemployed all the individuals working involuntarily less than 35 hours per week.

4.   For instance, using the ISCO-88 occupational codes, Eurostat (2008) revealed that the top six occupations for European women in 2005 were: Shop salesperson and demonstrators; Domestic and related helpers, cleaners and launderers; personal care and related workers; other office clerks; administrative associate professionals; housekeeping and restaurant services workers. As far as men are concerned, the top six occupations where: Motor vehicle drivers ; building frame and related trade workers; managers of small enterprises; Building finishers and related trades workers; physical and engineering science technicians; machinery mechanics and fitters.

5.   Read EISS (2010) hereafter.

6.   These questions are "For how long have you been seeking a job?" for the unemployed at the time of the study and "For how long did you stay unemployed before getting this job?" for those in employment. This retrospective questioning approach, usually referred to as "stock sampling" (Lancaster, 1990), may be criticized on grounds that individuals' recall errors are likely to create an overrepresentation of long unemployment spells. Nonetheless, this approach is still the only valid way that can be used in cases where

there is no alternative method of measuring unemployment spell as it is in the case of the
Cameroon labour market.

7.   This builds up from the fact that $\lambda(t) = \dfrac{-d\ln S(t)}{dt}$ and $f(t) = S(t)\lambda(t)$.

8.   Censoring is a pervasive and unavoidable problem in the analysis of unemployment duration
      data since samples of spells of unemployment drawn from surveys will probably include
      some individuals that are still unemployed at the time of the survey and, as a consequence,
      information on their unemployment duration is obviously censored and this has to be taken
      into consideration in the estimation (Greene, 2012, p.863).

9   According to Fairlie (2006), Eq. (4.5) gives the decomposition for a logit model with a
      constant term but that the equality does not hold exactly for the probit model in which F
      is defined as the cumulative distribution function from the standard normal distribution,
      but it is empirically demonstrated that this equality holds very closely.

10.   Another advantage of this approach is the fact that it gives the possibility to easily compute
      IMRs of both employment regimes using the "mspredict" function. To make sure that
      estimated correlated coefficients are bounded between –1 and 1, the maximum likelihood
      directly estimates , and . Application of this method is done using the "MOVESTAY"
      STATA command.

11.   It is worth mentioning that the consistency of this method's estimators relies on joint
      normality. The violation of this distributional assumption in maximum likelihood estimation
      may lead to inconsistency of the estimators. In order to relax this assumption, an important
      literature uses the copula method which is not well-known among applied researchers of
      labor economics and other applied microeconomics. For a general introduction to copula,
      see Nelsen (2006).

12.   Please note, in the Oaxaca and Ransom (1994) approach, the non-discriminatory wage
      structure is derived from the pooled sample using the expression , where is a weighting
      matrix and is an identity matrix.

13.   According to Gutierrez (2002), the above results may also indicate a homogeneous
      population for which the Weibull hazard function, which is monotone, is unsuitable. To
      check if it is the case, the model was estimated using the log-normal hazard function that
      is non-monotone and the insignificance of the frailty variance was confirmed.

14.   Coefficient estimates from this model are presented in Annex A5.

15.   Note: $\left(e^{-0,441} - 1\right) \times 100 = -35,65$

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Annexes

Table A1: Descriptive statistics of some variables

Variable	Women					Men				
	N	Average	Standard deviation	Min	Max	N	Average	Standard deviation	Min	Max
Individual's age in years	5485	30,22	11,89	15	64	5350	30,83	11,59	15	64
Single	5485	53,83%	0,4985	0	1	5350	58,56%	0,4926	0	1
Size of the household	5485	5,73	3,18	1	28	5350	5,18	3,36	1	28
Migrant	5485	57,85%	0,49	0	1	5350	60,17%	0,49	0	1
Level of studies										
No schooling	5485	9,79%	0,30	0	1	5350	5,40%	0,23	0	1
Primary education	5485	24,05%	0,43	0	1	5350	21,12%	0,41	0	1
Secondary education	5485	54,22%	0,50	0	1	5350	55,57%	0,50	0	1
Higher education	5485	11,94%	0,32	0	1	5350	17,91%	0,38	0	1
Highest certificate										
No certificate	4948	27,43%	0,45	0	1	5061	22,76%	0,42	0	1
FSLC	4948	31,57%	0,46	0	1	5061	25,92%	0,44	0	1
GCE Ordinary level	4948	19,54%	0,40	0	1	5061	21,50%	0,41	0	1
"PROBATOIRE" (Lower-sixth level)	4948	5,36%	0,23	0	1	5061	6,13%	0,24	0	1
GCE Advanced level	4948	9,16%	0,29	0	1	5061	11,24%	0,32	0	1
HND/Certificate of General University Studies)	4948	2,65%	0,16	0	1	5061	3,48%	0,18	0	1
BACHELOR'S DEGREE	4948	2,55%	0,16	0	1	5061	5,02%	0,22	0	1
MASTER/Ph.D.	4948	1,76%	0,13	0	1	5061	3,95%	0,19	0	1
Years of education	4953	9,11	3,37	0	21	5070	9,88	3,69	0	21

Table A1 Continued

Variable	Women					Men				
	N	Average	Standard deviation	Min	Max	N	Average	Standard deviation	Min	Max
Job search channel										
Official channels	5485	05,91	0,003	0	1	5350	08,80	0,004	0	1
Personal contacts	5485	94,09	0,003	0	1	5350	91,20	0,004	0	1
Proportion of individuals in region of residence										
Year 2005	5485	60,17%	0,04	52,53%	65,97%	5350	60,17%	0,04	52,53%	65,97%
Year 2007	5485	5,53%	0,03	1,30%	8,93%	5350	5,56%	0,03	1,30%	8,93%
Existence of a trade union in the enterprise, administration or organisation where the individual carries out his main activity										
Trade union	2933	5,15%	0,22	0	1	3810	14,33%	0,35	0	1

Source: Author's calculations based on data from the second Employment and Informal Sector Survey (NIS, 2010).

Table A2:   Description of variables used in regression equations

Human capital variables

Years of education = number of successfully completed years of education
Level of education: Four dummy of binary variables indicating the highest level of education achieved (*No Education, Primary, Secondary, University*)
Job experience: number of years of experience in the job
Adequacy of training to employment: dummy variable
Vocational training: dummy of binary variable indicating whether and individual undergone vocational training:

Other socio-demographic variables

Women: dummy variable =1 if the individual is female
Age: Age in years
Head of the household: dummy variable =1 if the individual is the head of the household
Married =1 if the individual is married or is in a consensual union
Under ten children in the household: number of children under 10 years old

Job search methods: Series of binary variables specifying the principal channel through which individuals having a job declared having used to obtain their present job and which is used by job seekers in order to quit unemployment. We therefore have the following categories.
Official channels: dummy =1 for all individuals having declared resorting to public and private placement agencies as well as to announcements in newspapers, over the radio and over the internet.
Personal contacts: dummy =1 for all individuals having declared to resort to personal contact and own means to get a job.
Other search channels: dummy =1 for all individuals having declared using all other means to get a job.

Employment characteristics:
Self-employed (Wage-worker): dummy variable=1 if the individual is either a non-wage or a wage employed
Self-employed father (Self-employed father): dummy=1 if the individuals parent was self-employed.
Regular employment: dummy =1 the employment is not a casual one
Sector of activity: Four dummy variables indicating the sectors within which the individual employment is located (Primary, Industry, Services, and Trade).
Size of the enterprise: Three dummy variables capturing the number of workers in the entries: 01 Employee; 2 to 5 Employee; More than 6 employees
Trade Union in the sector: dummy =1 if there exist a trade union in the branch/sector of activity
New Labour market Entrant: dummy =1 if the individual is at his first experience with the labour market.

Working hours per week: number of hours devoted to the main job per week.

Region of residence: Series of binary variables specifying the region of residence of the individual. These were grouped into four categories: Douala and Yaoundé; Northern regions ; South and eastern regions; Western regions

Regional unemployment rate in 2005: variable specifying the proportion of jobless individuals in the region of residence in 2005

Table A3:   Descriptive statistics on variables used in regressions

Variables	Whole sample	Men	Women
Level of education of the individual			
No schooling	0,076 (0,003)	0,054 (0,003)	0,098 (0,004)
Primary education	0,226 (0,004)	0,211 (0,006)	0,240 (0,006)
Secondary education	0,549 (0,005)	0,556 (0,007)	0,542 (0,007)
Higher education	0,149 (0,003)	0,179 (0,005)	0,119 (0,004)
SECVOCATIONAL	0,907 (0,003)	0,105 (0,005)	0,774 (0,004)
SUPVOCATIONAL	0,825 (0,003)	0,981 (0,005)	0,679 (0,004)
Experience on the job market			
New entrant	0,428 (0,005)	0,353 (0,008)	0,499 (0,008)
Job search channel used			
Personal contacts	0,753 (0,005)	0,741 (0,007)	0,769 (0,007)
Placement agencies and media	0,105 (0,004)	0,115 (0,005)	0,093 (0,005)
Other channels	0,142 (0,004)	0,144 (0,005)	0,138 (0,006)
Other characteristics of the individual			
Age	30,52 (11,74)	30,83 (11,58)	30,22 (11,89)
Age squared	1069 (842)	1084 (828)	1054 (855)
Woman	0,506 (0,005)	---	---
Head of household	0,392 (0,005)	0,582 (0,007)	0,208 (0,005)
Married	0,438 (0,005)	0,414 (0,007)	0,461 (0,007)
HHINCOMES (in thousands)	140,403 (166,961)	148,512 (171,536)	132,796 (162,203)
Characteristics of the individual's region of residence			
South & East	0,048 (0,002)	0,048 (0,003)	0,047 (0,003)
Douala & Littoral	0,338 (0,005)	0,343 (0,006)	0,333 (0,006)
Yaounde & Centre	0,285 (0,004)	0,280 (0,006)	0,289 (0,006)
North	0,162 (0,004)	0,165 (0,005)	0,160 (0,005)
West	0,167 (0,004)	0,164 (0,005)	0,171 (0,005)
Unemployment in 2005	0,60 (0,04	0,60 (0,04)	0,60 (0,04)
ACTIVE	1140 (951)	1151 (954)	1129 (948)
Observations	18255	9014	9097

Table A4:   Determinants of unemployment duration: test of heterogeneity

Variables	Weibull without Heterogeneity	Weibull with Inverse-Gaussian frailty	Weibull with Gamma frailty
Level of education (Refce= No education)			
Primary	0.014 (0.14)	-0.012 (-0.08)	-0.077 (-0.31)
Secondary	0.164 (1.65)*	0.218 (1.39)	0.235 (0.97)
University	0.197 (1.49)	0.336 (1.72)*	0.520 (1.94)*
Other characteristics			
Woman	-0.242 (-3.93)***	-0.352 (-3.94)***	-0.364 (-3.21)***
Age	-0.056 (-3.05)***	-0.097 (-3.49) ***	-0.173 (-4.72) ***
Age squared	0.0003 (1.11)	0.0006 (1.65)*	0.001 (3.43)***
Head of the household	0.462 (7.30)***	0.696 (7.42)***	0.727 (5.81)***
Married	-0.144 (-2.56)**	-0.198 (-2.40)**	-0.143 (-1.34)
New Labour market Entrant	-0.339 (-6.08)***	-0.558 (-6.83)***	-0.834 (-7.30)***
Job search channels (Refce= Official search channels)			
Personal contacts	0.210 (2.32)**	0.394 (2.91)***	0.689 (3.73)***
Other search channels	0.267 (2.84)***	0.434 (3.11)***	0.542 (2.93)***
Region of residence (Refce= Douala & Yaoundé)			
Northern regions	-0.193 (-1.12)	-0.339 (-1.36)	-0.473 (-1.51)
Western regions	0.007 (0.06)	0.038 (0.21)	0.151 (0.65)
South and eastern regions	-0.143 (-0.92)	-0.165 (-0.70)	0.034 (0.11)
Regional unemployment rate in 2005	-1.026 (-0.82)	-1.782 (-0.99)	-2.155 (-0.96)
Constant	-3.909 (-10.07)***	-5.069 (-8.95)***	-5.551 (-7.65)***
$Ln(p)$	0.284 (17.62)***	0.752 (40.93)***	0.966 (17.20)***
$Ln(\theta)$	----	1.315 (19.65) ***	0.608 (4.72) ***
p	1.329	2.123	2.627
$\sigma = \dfrac{1}{p}$	0.752	0.471	0.380
θ	----	3.726	1.837
Observations	2690	2690	2690
Wald chi2(15)	273.15	278.34	200.20
Prob > chi2	0.0000	0.000	0.000
Log pseudo-likelihood	-2877	-2762	-2728

Estimates based on the 2010 Employment and Informal Sector Survey (z-values in parenthesis)
Note: ***(**){*} Significance level 1% (5%) {10%}.

Table A5:   Determinants of self-employment

Variables	Coefficients estimates		
	Women	**Men**	**Women & Men**
Level of education (Refce= No education)			
Primary	0.074 (0.50)	-0.0005 (-0.01)	0.032 (0.39)
Secondary	-0.306 (-2.09)**	0.003 (0.40)	-0.096 (-1.19)
University	-1.025 (-5.70)***	-0.235 (-1.93)*	-0.484 (-4.88)***
Other individual characteristics			
Vocational training	-0.197 (-2.76)***	-0.142 (-2.56)**	-0.176 (-4.08)***
Woman	---	---	0.489 (10.50)***
Age	-0.159 (-8.54)***	-0.131 (-10.24)***	-0.136 (-13.35)***
Age squared	0.002 (7.99)***	0.001 (10.10)***	0.001 (12.96)***
Head of the household	-0.115287 (-1.66)*	-0.134 (-1.70)*	-0.202 (-3.84)***
Married	0.263 (3.14)**	-0.006 (-0.08)	0.087 (1.79)*
Under ten children in the household	0.024 (1.01)	0.047 (2.56)***	0.032 (2.32)**
New Labour market Entrant	0.104 (1.40)	0.244 (4.18)***	0.187 (4.11)***
Job search channels (Rfce= Official channels)			
Personal contacts	1.077 (7.32)***	0.966 (7.15)***	1.010 (10.24)***
Other search channels	3.152 (19.82)***	3.105 (22.09)***	3.127 (30.05)***
Region of residence (Rfce= Douala & Yaoundé)			
Northern regions	-1.009 (-4.71)***	-0.856 (-5.81)***	-0.928 (-7.76)***
Western regions	-0.474 (-2.90)**	-0.229 (-1.92)*	-0.313 (-3.28)***
South and eastern regions	-0.399 (-1.93)*	-0.616 (-4.16)***	-0.557 (-4.70)***
Regional unemployment rate in 2005	-9.074 (-6.42)***	-7.368 (-7.03)***	-7.980 (-9.57)***
Self-employed father	0.409 (5.63)***	0.231 (3.80)**	0.306 (6.60)***
Self-employed mother	0.138 (1.73)*	0.129 (2.24)***	0.140 (3.04)***
Observations	**2.947 (6.90)*****	**1.692 (5.30)*****	**1.889 (7.53)*****
Observations	3102	3982	7084
Prob > chi2	0.000	0.000	0.000
Pseudo R2)	0.509	0.438	0.4842

Estimates based on the 2010 Employment and Informal Sector Survey (z-values in parenthesis)
Note : ***(**){*} Significance level 1% (5%) {10%}.

Table A6: Selectivity adjusted estimates of labour market earning equations

VARIABLES	Women		Men		Men and Women	
	SE	WE	SE	WE	SE	WE
Women	---	---	---	---	-0.425 (-9.45)***	-0.119 (-3.20)**
Years of schooling	0.042 (4.21)***	0.085 (9.04)***	0.030 (3.36)***	0.055 (9.19)***	0.035 (5.36)***	0.060 (11.45)***
Job experience	0.037 (2.96)***	0.055 (4.04)***	0.019 (2.35)**	0.052 (5.83)***	0.028 (2.89)***	0.052 (6.79)***
Job experience squared	-0.0005 (-1.65)*	-0.001 (-2.06)**	-0.0005 (-2.78)***	-0.001 (-3.97)***	-0.0005 (-1.95)**	-0.001 (-4.37)***
Adequacy of training to employment	0.072(0.93)	0.096 (1.58)	0.263 (3.55)***	0.222 (5.81)***	0.190 (3.65)***	0.203 (6.11)***
New Labour market Entrant	-0.141(-2.56)**	-0.133 (-2.17)**	-0.151 (-2.41)**	-0.185 (-4.39)***	-0.149 (-3.59)***	-0.171 (-4.78)***
Working hours per week	0.003 (2.01)**	0.006 (3.89)***	0.002 (3.27)***	0.001 (2.24)**	0.002 (3.91)***	0.001 (2.46)**
Informal employment	-0.589 (-0.72)	-0.300 (-1.76)*	-1.907 (-2.41)**	-0.329 (-2.42)**	-1.597 (-2.78)***	-0.323 (-2.95)***
Regular employment	0.118 (1.10)	0.491 (2.66)***	0.469 (4.84)***	0.336(4.28)***	0.288 (4.07)***	0.336 (4.68)***
Industry	1.302 (8.38)***	0.457 (1.22)	1.475 (7.65)***	0.253 (1.58)	1.429 (11.13)***	0.238 (1.59)
Trade	1.514 (10.01)***	0.580 (1.50)	1.561 (8.41)***	0.164 (1.00)	1.616(12.93)***	0.193 (1.26)
Service	1.605 (10.32)***	0.430 (1.15)	1.439 (7.77)***	0.126 (0.79)	1.582 (12.51)***	0.127 (0.85)
2 to 5 employees	0.025 (0.39)	0.684 (1.02)	0.138 (1.90)*	0.132 (1.01)	0.087 (1.83)*	0.183 (1.28)
More than 6 employees	0.355 (1.38)	0.991 (1.43)	0.448 (2.45)**	0.315 (2.36)**	0.419 (2.84)***	0.396 (2.70)***
Trade Union in the sector	0.0001 (0.01)	0.006 (1.58)	-0.044 (-1.93)*	0.002 (0.85)	-0.033 (-2.12)**	0.003 (1.23)
Lambda	0.093 (0.94)	-0.209 (-2.83)***	0.143 (2.37)**	-0.212 (-4.47)***	0.131 (2.51)**	-0.224 (-5.41)***
Constant	1.785 (2.13)**	0.900 (1.18)	3.636 (4.47)***	2.762 (10.22)***	3.280 (5.53)***	2.626 (10.48)***
Observations	1706	474	1519	1594	3225	2068
F(.,.)	18.05	30.15	18.51	53.60	45.62	69.46
Prob >F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.221	0.519	0.232	0.348	0.265	0.376

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