



A Comparative Analysis of the Effects of Fertility on Women's Employment in Urban and Rural Areas of Cameroon

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Abstract

This paper compares the effects of fertility on women's employment in Urban and Rural areas of Cameroon using pulled data from the 1991, 1998, 2004, 2011 and 2018 Demographic Health Survey (DHS) for Cameroon. The Logistic Regression, Fairlie and Multivariate decomposition models were used for analyses. The logistics regression results showed that fertility has a positive and statistically significant effect on women's employment in Cameroon. The fairlie decomposition results showed that fertility, primary education, being in the richer and richest wealth level, husband's being in primary education, being a Muslim and husband being in agricultural-self-employment all significantly reduced the differences in women's employment in urban and rural areas. On the other hand, secondary and tertiary educational level for husband and wife, poorer and middle-income wealth group, being a Catholic, husband's working in the agricultural sector, marriage, age at first cohabitation and being resident in urban areas all significantly increased the differences between women's employment in the urban and rural areas. The Multivariate decomposition results showed that the largest significant contributor to differences in women's employment in urban and rural areas of Cameroon was fertility. Fertility significantly increased the differences in women's employment in urban and rural zones by 19.2%. The promotion of women's employment in the urban areas through the subsidization of day-care, services and the provision of start up capital is recommended.

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1. Introduction

In the late 1990s, the International Survey of Mayors announced unemployment as the world's number one urban problem (Washbrook, 2007). As world urbanization intensifies with a drastic population growth, global unemployment problems move further into cities and towns of the developing as well as developed world (Washbrook, 2007). World War II (WWII) had an important impact on women's employment rate. Millions of women entered the labour market to fill in for their male counterparts who left their civilian jobs to join World War II. Consequently, in 1940, the female participation rate was 27.9 and increased to 35.8 in 1945 (Blau & Kahn, 2006). Another significant increase occurred between 1960 and 1970, when female employment rate rose from 37.7% to 43.3%. Overall, the women's employment rate increased from 34% in 1950 to 60% in 2008 (McConnell, Brue, & David, 2010). The 20th century in particular saw a radical increase in the number of women participating in labour markets across early-industrialized countries (Esteban, Sandra, & Max, 2018). In many developing countries a high proportion of working women were active in the informal and agricultural sector. The shares in this sector had fallen in recent years as more women took up work in the service sectors (and in the manufacturing sector in few countries, such as Bangladesh (ILO, 2018). Wives were widely involved in labour market as a strategy to maintain household living standards. However,

as they were still less educated and more capital-deficient than men, they had to face difficulties to get a new job (Kuepie, Dzossa, & Kelodjoue, 2013).

Generally, maternity, pregnancy, childbirth, and the period after childbirth impose a substantial burden on women's health and time. This in turn, could have a significant impact on women's ability to participate in the labour force. According to Esteban et al. (2018) researchers estimated that in 1920, an American woman could lose on average 2.31 years per pregnancy due to disabilities associated with maternal conditions. By 1960, the figure had declined to 0.17. The researchers also showed that the historical decline in the burden of maternal conditions and the introduction of infant formula contributed to the rise in married women's labour force participation between 1930 and 1960 in the US. Lower fertility that is, fewer children per woman could free up women's time and contribute to an increase in female labour force participation Esteban et al. (2018). It was also recognized that fertility played an important role in the variations in women's employment levels within and between countries and urban and rural areas (Becker, 1993; Rindfuss and Brewster, 1996; Shockaert, 2005; Standing, 1983) cited in Beguy (2009). As a result, the relationship between female economic activity and fertility was one of the most studied areas in fertility research (Beguy, 2009).

In sub-Saharan Africa, over 60 per cent of all working women who remained in employment often concentrated in time and labour-intensive activities, which were either unpaid or poorly remunerated. Reversing the employment gender gap was a pressing priority, said ILO 2018 report. In some countries in sub-Saharan Africa, time-related underemployment for women was as high as 40 or 50 per cent of the total employment. Women continued working fewer hours in paid employment and still performed the vast majority of unpaid household and care work (ILO, 2016). The ILO 2016 report showed the enormous challenges women continued to face in finding and keeping decent jobs. On average, women carried out at least two and a half times more unpaid household and care work than men (ILO, 2016). Still in sub-Saharan Africa, female participation rates in labour force had however increased by 3.2 percentage points over the last two decades. This increase could be due to the absence of insufficient alternative income from social protection and persistent poverty, not allowing the option of dropping out of work (ILO, 2016). Limited opportunities to further their education or training also compelled more women to work as well as the persistent male unemployment that often led to an increase in female labour force participation, in order to compensate for lack of income. However, such increases in the female employment were likely to be absorbed among own-account and contributing family workers (ILO, 2016). According to Nana-Fabu (2006) the ills of modernization far outweighed the good of modernization in Cameroon. To her, the end result was that in modern Cameroon women occupied economically precarious positions at the lower echelons of the socio-economic scale. The MDG (2010) report, between 1991 and 2015, supports Nana findings that, the proportion of women in vulnerable employment as a share of total female employment had declined by 13 percentage points. In contrast, vulnerable employment among men fell only by 9 percentage points. The world fact book ranked Cameroon at the 20th position with a fertility rate of 4.66 in 2020. According to UNSD (2020) the fertility rate of Cameroon was 5.4, 5.2 and 5 for 2005, 2010 and 2019 respectively. Figures for female labour force participation for Cameroon stood at 78.1(2005), 70.8(2010) and 71(2019) (UNSD, 2020). The figures show that years with higher fertility rate had lower levels of female employment. This is a possible indication of a direct link between fertility and female employment. Generally, the trend of fertility and female employment in Cameroon show that female employment has been on the rise as fertility fall. To give women a favourable position in the labour market, governments, together with employers and workers as well as their representatives implemented a number of measures to address the challenges that women face in the world of work. Many countries amended their labour codes (mostly to take care of women's fertility) in an attempt to increase women's employment rate and close the gap between women employment in the rural and urban area. The amendments in these labour codes ranged from instituting maternity leave, breast feeding break, no night shifts and anti-discriminating laws (Asa, Karen, & Carina, 1999). However, close to 60 per cent of women workers worldwide (nearly 750 million women) still do not benefit from a statutory right to maternity leave (Cristina, Maria, & Miguel, 2012).

MDG (2010) went a long way to reduce gender gap and promote women's employment especially in industries and urban areas. However, with the special consideration for women in the labour code, growth and employment strategy paper (2015) and the MDG (2010) employers especially those in the urban area may turn to prefer male to female employees (especially those with young children which the laws protects). This is because no law obliges them to recruit equal man and women especially those with young children who have higher chances to be irregular and highly backed by law. This could go a long way to increase the employment gap between women in urban and rural areas in Cameroon. The figure for female employment as a percentage of total employment for Cameroon stood at 45.3% and 54.7 for men (ILO, 2018). ILO (2011) showed that women who lived in rural areas had a higher probability of being employed compared to women living in urban area. With the above speculations of more women being employed in rural area compared to urban areas, it is necessary to carry out a study to investigate if the differences in the fertility of the women in these two areas accounts for the differences in women's employment in urban and rural areas of Cameroon.

2. Literature Review

The ILO (2019) defined the employed population as all those of working age who, in a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. OECD (2019) defined the total fertility rate as the expected number of children born to each woman at the end of the childbearing years. A number of studies have investigated the effect of fertility and differences in women's employment. Amongst them is the pioneer work of Mincer (1962) and Cain (1966) which highlighted that, female as well as male employment depended on economic and demographic characteristics such as female earnings, male earnings, non-earnings income, schooling, age and the number of children. Bindary, Baxter, and Hollingsworth (1973) investigated urban-rural differences in the relationship between women's employment and fertility using data from the Egyptian census for 1960. Their findings showed that the child/woman ratio rises with the level of female employment in the rural areas, but falls as the level of employment rises in the urban areas. Jeemol (1989) also discussed the problems which resulted in under-enumeration of female workers in large-scale censuses and sample surveys. He concluded that the recent decades showed a shift in the workforce away from agriculture, a trend towards increasing actualization of the workforce in the rural areas. Richard (2003) using data from Kenya further estimated the rural to urban earnings gap separately for male and female migrants and then explored the influence of the gaps on the migration decision of each gender from rural to urban areas. His findings suggested that despite relatively higher positive returns to urban earnings, the urban to rural earnings gap appeared to have no significant influence on female migration. Beguy (2009) worked on the reversed relationship in Dakar (Senegal) and Lomé (Togo). His paper investigated the impact of female employment on fertility in two urban contexts in sub-Saharan Africa: Dakar (Senegal) and Lomé (Togo). He found out that in both areas, greater involvement of women in the labour force was not the main reason for fertility decline. Birgit and Smidt (2011) also investigated differences in women's employment patterns and family policies in Eastern and western Germany. They found out that, though family policies of the central welfare state remained the same in eastern and western Germany during the last 20 years, the employment patterns of women with preschool children differed systematically in both regions. Kane (2014) also analyzed women's participation in the labour market in Senegal and found out that participation was influenced by area of residence (Urban/Rural), level of education, gender and age. ILO (2016) worked on the labour force situation of women in rural areas for the 52 developing countries comparing the percentages of employed women living in rural areas and the percentage of unemployed women living in rural areas. They found out that women's employment was higher in rural than urban area. According to Pozarny (2016) urban women, on the whole, have greater access to services and infrastructure, and more opportunities to engage in paid employment, and are subject to fewer socio-cultural restrictions than women living in rural areas. In the same year, Alberto, Pasquini, and Angeli (2016) evaluated whether the recent changes in male and female unemployment are differently linked to fertility in different geographic areas of Italy. The results showed that both male and female unemployment rates were negatively associated with fertility in the northern and central regions of Italy. In more recent study, Klasen, Pieters, Santos, Ngoc, and Le (2019) investigated the micro-level determinants of labour force participation of urban married women in eight low and middle-income economies. They found out that the coefficients of women's characteristics differ substantially across countries, and this explained most of the between-country differences in participation rates. To Klasen et al. (2019) overall, the economic, social and institutional constraints that shape women's labour force participation remain largely country-specific. Nonetheless, rising education levels and declining fertility consistently increased participation rates, while rising household incomes contributed negatively in relatively poorer countries. From the above literature, it can be observe that, very few studies have directly study the effect of fertility on the differences in women employment in rural and urban areas. More emphasis has been placed on the general determinants of women's employment and differences in employment in rural and urban areas. None of the above study was done in Cameroon. It is thus necessary to carry out a study of this nature investigating the effect of fertility on the differences in women employment in rural and urban areas of Cameroon.

3. Methodology

This work implores secondary data from the different Demographic Household Surveys (DHS) of Cameroon [DHS (2018), DHS (2011), DHS (2004), DHS (1998) and DHS (1991)]. The logistic regression analysis was used to investigate the effect of fertility and other factors on women's employment while the fairlie and multivariate decomposition techniques were used in explaining the sources of the differences in women's employment in rural and urban areas of Cameroon. These methods were chosen because the commonly used Oaxaca decomposition method (Powers, Hirotoishi, & Myeong-Su, 2011) could not be used here to explains the gap in the means of the outcome variable between two groups (urban/rural) due to the fact that our outcome variable women's employment is binary in nature. The Fairlie's non-linear decomposition was developed as an extension of the Blinder-Oaxaca regression decomposition method for logistic regression (Fairlie, 2006). The multivariate decomposition method is also an extension of the well-known Oaxaca-Blinder approaches to logit, probit and other models that are intrinsically nonlinear in the parameters. The differences in multivariate and fairlie decomposition lie in the fact that fairlie results are

sensitive to the order in which variables are evaluated (Fairlie, 2006). The Fairlie and the Multivariate decomposition all account for difference across groups with binary outcomes which Oaxaca using only continues outcomes cannot capture.

4. Model

$$WE = \beta_0 + \beta_1FE + \beta_2Xi + \mu \tag{1}$$

Where WE is women’s employment; FE is fertility and Xi control variables

The model can be further specified:

$$WE = \beta_0 + \beta_1FE + \beta_2ED + \beta_3W + \beta_4A + \beta_5REL + \beta_6HE + \beta_7HOC + \beta_8MS + \beta_9RES + \beta_{10}AFC + \mu \tag{2}$$

Table-1. Variables’ description and measurement of the fertility and Women’s employment equation.

Variable	Meaning	Description	Expected sign
WE	women’s employment	Working=1 Not working=0	
Fe	Fertility	Total number of child born over lifetime 0-18	-/+
ED	Education	Levels of education 0 No education 1 Primary 2 Secondary 3 Tertiary	+
W	Wealth	wealth index 1 poorest 2 poorer 3 Middle 4 Richer 5 Richest	+
A	Age	Age in years	-/+
Rel	Religion	Protestant Other Christians Muslims Animists None Catholic	-/+
HE	Husband’s education	Levels of education 0 No education 1 Primary 2 Secondary 3 Tertiary	+/-
HOC	Husband’s occupation	Husband’s occupation= 0 Do not work 1 professional/technical/managerial 2 Clerical 3 Sales 4 agriculture-self employment 5 agriculture employee 6 household and domestic 7 Service 8 skilled manual 9 unskilled manual	+/_
MS	Marital Status	1 Never married 2 Currently in union 3 Formally in a union	-
RES	Residence	1 urban 2 rural	+/-
AFC	Age at first cohabitation	Age in years	-
μ	Error term		

Table 1 presents detailed description of the variables used in Equation 2. Here women’s employment is captured by working or not working while fertility our main variable of interest is captured using total number of children born over a woman’s lifetime.

This gap model is stated thus:

$$Y_i = \beta_{urban} X_i + \sum_{i=urban} \text{if urban and } B_{Rural} X_i + \sum_{i=Rural} \text{if Rural} \quad (3)$$

= E+C+CE where

E – Gap in ‘endowments’ (“explained”).

C – Gap in ‘coefficients’ (“unexplained”).

CE – Interaction of differences in endowments and coefficients.

The E component known as the explained component measures the expected differences in women’s employment due to the differences in urban and rural areas. The decomposition model brings out the C component also known as the unexplained component which accounts for sources of discrimination of women’s employment in Cameroon like fertility.

The gaps mean outcomes is stated as:

$$Y_{Urban} - Y_{Rural} = \beta_{Urban} X_{Urban} - \beta_{Rural} X_{Rural} \quad (4)$$

Where Y= area gap, X=the explained and β =the unexplained source of area differences.

4.1. Presentation and Discussion of Results

This work investigated the effect of fertility on differences in women’s employment in rural and urban areas of Cameroon. Results are presented in two parts. Part one investigates the determinants of women’s employment in Cameroon using the logistics regression model while part two compares women’s employment for rural and urban areas and investigates the source of the differences using fairlie and multivariate decomposition models. The summary statistics for variables used in the model is presented on Appendix 1.

4.2. Determinants of Women’s Employment in Cameroon

Table 2 presents the logit results of the determinants of women’s employment in Cameroon. According to this model, the significant determinants to women’s employment in Cameroon are fertility, education, age, religion, husband’s education, husband’s occupation, marital status, residence and age at first marriage.

The logit result on Table 2 shows a positive effect of fertility (0.9603) on women’s employment in Cameroon. That is the logit estimate for one unit increased in fertility for employed women relative to unemployed women given that, other variables are held constant is 0.9603. If a subject’s fertility were to increase by one, the log-odds for being employed relative to not being employed would be expected to increase by 0.96 units holding other variables constant. This implies that contrary to the expectations that having children might disturb women from actively being involved in the labour market, this finding confirms that of Tsafack and Zamo-Akono (2010) who concluded that fertility has a positive impact on the probability of women’s labour force participation. This can be justified by the fact that having many children have proven to place additional financial burden on the woman in particular and their family as a whole thus forcing the woman to work in order to gain extra income to provide for these children. Again, the woman’s primary education levels (-1.0027), age (-0.1419) husband’s secondary, tertiary education, being an Animist(-1.4917), no religion (-0.6446), husband working as a Professional/technical/managerial and being resident in a urban area all negatively and statistically significantly influence women’s employment. On the other hand, husband’s being in the secondary and tertiary education level, being married and age at first cohabitation all positively and significantly influenced women’s employment in Cameroon.

4.3. Differences in Women’s Employment in Rural and Urban Areas

The result of the fairlie decomposition for women’s employment in urban and rural area is presented on Table 3. This result specifies the factors that accounts for differences in women’s employment in rural and urban areas. The results show that changes in composition (variables included in the model) accounts for 10.2% differences in women’s employment between rural and urban areas.

Going by the results on Table 3, the largest significant contributor to differences in women’s employment in urban and rural areas is fertility (.1919) which significantly increased the differences in women’s employment in urban and rural zones by 19.2%. This result implies that, the differences in female employment between rural and urban area is accounted for, by the fact that, rural women have higher fertility compared to urban women. This result is in line with the findings of Bindary et al. (1973) who showed that, the child/woman ratio rises with the level of female employment in the rural areas, but falls as the level of employment rises in the urban areas.

Table-2. logit model on the determinants of women employment in Cameroon.

Variables Dependent variable(women's employment)		Logistic Regression (standard error)
Fertility		0.9602*** (0.1161)
Education	Primary	-1.0021*** (0.3131)
	Secondary	-0.3061 (0.303)
	Tertiary	-0.3909 (0.2942)
	Base group (No education)	
Wealth	Poorer	-0.0571 (0.0841)
	Middle	-0.1451 (0.0994)
	Richer	0.1255 (0.1395)
	Richest	0.2348 (0.1948)
	Base group (poorest)	
Age		-0.1419*** (0.0234)
Religion	Protestant	0.0139 (0.1759)
	Other Christians	-0.0148 (0.1749)
	Muslims	-0.1338 (0.1994)
	Animists	-1.492*** (0.1842)
	None	-0.6446*** (0.2424)
	Base group (Catholic)	
Husband's education	Primary	0.0527 (0.1583)
	Secondary	0.3928*** (0.1362)
	Tertiary	0.2228* (0.130)
Husband's occupation	Professional/technical/managerial	-1.0550*** (0.4023)
	Clerical	-0.2958 (0.3938)
	Sales	-0.483 (0.4167)
	Agriculture-self employment	-0.4188 (0.3685)
	Agriculture employee	0.0224 (0.3618)
	Household and domestic	-0.026 (0.5915)
	Service	-0.4404 (0.3772)
	Skilled manual	-0.2844 (0.3636)
	Unskilled manual	-0.3573 (0.3989)
	Based group (Do not work)	
Marital status		-1.3014***

		(0.1902)
Resident2 (urban)		0-.9608*** (0.1175)
Age at first cohabitation		0.1114*** (0.0178)
Constant		-2.3938*** (0.6464)
Number of observations	6652 Log likelihood = -3529.6202 Pseudo R2 = 0.1325	LR chi2(29) = 1078.51 Prob > chi2 = 0.0000

Note:
Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table-3. Fairlie decomposition results on differences in women’s employment in urban and rural area.

Variables Dependent variable(women’s employment)	Fairlie Decomposition (standard error)
Fertility	0.1919*** (0.0130)
Education	-0.0127*** (0.0043)
Wealth	-0.0181** (0.0090)
Age	0.0088*** (0.0026)
Husband’s education	0.0070* (0.0038)
Religion	-0.00897*** (0.0013)
Husband’s occupation	0.0255*** (0.0054)
Marital status	-0.0055*** (0.0008)
Ages at first cohabitation	-0.0282*** (0.0027)
	-0.0358 *** (0.0052)
Number of obs = 13,361	
Difference	0.1021
Total explained	(0.1239)

Note:
Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

This difference is accounted for by the fact that, in the rural areas, the large numbers of children the women have force them to work very hard to raise enough money to provide for the needs of these children. In addition, the work in the rural area is mostly in the agriculture sector (self-employed) which having children do not affect the woman from going to the farm for long. For example some women take their children to the farm as young as three weeks. However, in urban areas, the jobs are mostly white collar which makes it difficult to carry children to work. It is difficult for an employer to accept that the employee brings children work. In addition, child care services in villages are easy to find and almost free. Unlike in urban areas, in the rural areas, there is always a relative who is willing to support the women with childcare. More so, due to the relative security in the rural areas, children are left to take care of themselves at home most often. It is very common to see children below 7years left by themselves at home all day. On the contrary, in the urban settings there is much need for close child supervision. This makes the woman to be able to go to work only if she can find someone who will care for the children while she is at work. Again, considering the fact that nannies are also expensive in the cities and the salary ranges of the women are very small especially in the private sectors, when these urban women compare their pay and what they pay their nannies, they end up preferring to stay unemployed and cater for their children themselves.

Other sources of differences in employment in rural and urban area are husband’s occupation (0.0255), age (0.0088) and Husband’s education (0.0070) which significantly increases the differences in women’s employment in rural and urban Cameroon. On the other hand, education (-0.0009) significantly reduces the gap between women’s employment in rural and urban area. From the results presented on [Table 3](#) of this

work, women in rural areas are more likely to be employed compared to those in the urban areas. This is also accounted for by the fact that these women in urban area are more likely to be educated. Religion (-0.0089) also closes the employment gap between women in the rural and urban area. Muslim women are less likely to be employed in the rural than the urban area. Marital status (-0.0055) and age at first cohabitation (-0.0282) also closes the gap of women's employment between rural and urban areas. Lastly, being resident in urban areas (-0.0358) also significantly reduced the difference in women's employment in rural and urban areas.

The multivariate decomposition model results presented on Table 4 was also used to investigate differences in women's employment in urban and rural area. To account for differences in women's employment resulting from differences in the coefficients of the dependent variables, we included Table 4 various measures of socioeconomic background: fertility, education, wealth, age, husband's education, religion, husband's occupation's, marital status, age at first cohabitation and residence. Here, it was found that 105.2% of increase in the gap of women's employment between urban and rural areas can be significantly attributed to differences in characteristics (E) (urban or rural). That is differences in the fact that you live in an urban or rural area. This significant difference in women's employment in urban and rural areas is in line with the findings of ILO (2016) who found that women's employment was higher in rural than urban areas. Though this looks controversial, from a closer look, this is true as in the village, almost all the women are actively employed in at least the agricultural sector. However, in the urban area, almost half of the women are either job seekers, housewives or involved in other activities like prostitution that are not considered employment in Cameroon. Unlike the rural areas, it is uncommon to see unemployed urban women. However, in the rural areas, almost every woman can get a farm and boast of an income especially during harvest periods. If employment was considered to be white collar jobs only, the results might have been the reverse as it could surely find more urban women employed in white collar jobs than rural women.

In particular this result like in the fairlie results on Table 3 shows that fertility (-0.1023), primary education(-0.0250), being richer and richest, husband's being in primary education, religion and husband being in Agriculture-self-employment occupation all significantly reduced the differences in women's employment in urban and rural areas.

Table-4. Multivariate decomposition model differentiating women's employment in urban and rural area.

Variables		Multivariate Decomposition
Dependent variable(women's employment)		(standard error)
Characteristics(E)		-1.1085*** (0.0156)
Coefficient(C)		0.0054 (0.0170)
Total differences(R)		-0.10314*** (0.0075)
Differences in Characteristics(E)		
Fertility		-0.1024*** (0.0169)
Education	Primary	-0.0250*** (0.0038)
	Secondary	0.0331*** (0.0058)
	Tertiary	0.0155*** (0.0027)
	Based group (No education)	
Wealth	Poorer	0.0378* (0.0206)
	Middle	0.0129*** (0.0035)
	Richer	-0.0487 *** (0.0153)
	Richest	-0.0557*** (0.0204)
	Based group (poorest group)	
Age		-.0015** (0.0007)
Religion	Protestant	-0.00034 (0.0003)
	Other Christians	-0.0001 (0.0001)
	Muslims	0.0100***

		(0.0007)
	Animists	-0.0006 (0.0007)
	None	0.0004 (0.0004)
	Based group (Catholic)	
Husband education	Primary	-0.02205*** (0.0044)
	Secondary	0.0171*** (0.0033)
	Teri	0.0220*** (0.0042)
Husbands occupation	Professional/technical/managerial	0.0059** (0.0025)
	Clerical	0.0015** (0.0007)
	Sales	0.00717** (0.0032)
	Agriculture-self employment	-0.0603*** (0.0149)
	Agriculture employee	0.0001* (0.000)
	household and domestic	0.0044 (0.0004)
	Service	0.0024 (0.0021)
	skilled manual	0.0134** (0.0041)
	Unskilled manual	0.00122*** (0.0006)
	Based group (Do not work)	
Marital status		0.0050 (0.0007)
Resident2		0.1924*** (0.1.985)
Age at first cohabitation		0.0231*** (0.0042)
Constant		-2.3938 (0.6464)
Differences in Coefficient(C)		
Fertility		-0.10619 (0.1837)
Education	Primary	0.0053 (0.0106)
	Secondary	0.0331 (0.0058)
	Tertiary	0.0035 (0.0073)
	Based group (No education)	
Wealth	Poorer	-0.0155 (0.0320)
	Middle	-0.0180 (0.0355)
	Richer	-0.0067 (0.0129)
	Richest	-0.0027 (0.0053)
	Based group (poorest group)	
Age		0.2199 (0.3787)

Religion	Protestant	0.0029 (0.0058)
	Other Christians	0.0003 (0.0010)
	Muslims	0.0019 (0.0038)
	Animists	0.0005 (0.0011)
	None	0.0006 (0.0012)
	Based group (Catholic)	
Husband education	Primary	0.0104 (0.019)
	Secondary	0.0133 (0.0238)
	Tertiary	0.0035 (0.0062)
	No education	
Husbands occupation	Professional/technical/managerial	-0.0007 (0.0015)
	Clerical	-0.0002 (0.0006)
	Sales	-0.0019 (0.0040)
	Agriculture-self employment	-0.0142 (0.0275)
	Agriculture employee	-0.0001 (0.0001)
	Household and domestic	0.0004 (0.0007)
	Service	-0.0016 (0.0030)
	Skilled manual	-0.0030 (0.0062)
	Unskilled manual	-0.0005 (0.0010)
	Based group (Do not work)	
Marital status		-0.0010 (0.0019)
Resident2		0.1924 (0.9848)
Age at first cohabitation		-0.0373 (0.0676)
Constant		-0.0467 (0.0710)

Note:
Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

On the other hand, being in secondary and tertiary educational level, being in the poorer and middle income wealth group, husband having secondary and tertiary education, religion, husband's occupation, being married, age at first cohabitation and being resident in urban areas all significantly increased the difference between women's employment in the urban and rural areas. Lastly, the differences in coefficients(C) by - 5.1966% insignificantly attributed to the reduction in fertility, education, wealth, age, husband's education, religion, husband's occupation, marital status, age at first cohabitation and residence. That is, differences in women's employment as a result of their individual coefficients are insignificant for all variables in the model.

5. Conclusion and Policy Implications

This piece of work investigates the effect of fertility on the differences in women's employment in urban and rural areas of Cameroon using data pulled from the 1991, 1998, 2004, 2011 and 2018 Demographic Health Survey (DHS) for Cameroon. The Logistic Regression, Fairlie and Multivariate decomposition models were used for analyses. The logistics regression results showed that fertility has a positive and statistically

significant effect on employment. The fairlie decomposition results showed that fertility, primary education, being in the richer and richest wealth level, husband's being in primary education, being a Muslim and husband being in agricultural-self-employment all significantly reduced the differences in women's employment in urban and rural areas. On the other hand, secondary and tertiary educational level for husband and wife, poorer and middle-income wealth group, being a Muslim, husbands working in the agricultural sector, marriage, age at first cohabitation and being resident in urban areas all significantly increased the differences between women's employment in the urban and rural areas. The Multivariate decomposition results showed that the largest significant contributor to differences in women's employment in urban and rural areas was fertility which significantly increased the differences in women's employment in urban and rural areas by 19.2%. This result implies that the difference in female employment between rural and urban areas is accounted for by the fact that, rural women have higher fertility compared to urban women. It was therefore concluded that fertility influences differences in women's employment in rural and urban areas of Cameroon.

This study thus recommends the promotion and subsidisation of day-care services in urban areas of Cameroon. This will go a long way to give young mothers the much needed help that can enable them go to work. There is also the need to actively promote women's employment in the urban areas through educational and career counselling, provision of start up capital, adult literacy and entrepreneurship classes to these women. Policy makers should follow-up and ensure that companies especially those in the private sector provide women with prescribed 12 weeks paid maternity leave. The strict implementations and follow-up of policies aim at ensuring the promotion of women's employment in Cameroon according to the labour code, Millennium Development Goal and the Growth and Employment Strategy paper is also recommended for policy.

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Appendix-1. Summary statistics.

Variable		Obs	Mean	Standard deviation	Minimum	Maximum
Women employment		48,931	0.5754021	0.4942869	0	1
Fertility		50,131	2.790988	2.855486	0	18
Bmi health		22,310	2581.68	1246.83	1245	9999
Education	Primary	50,131	0.2056412	0.4041734	0	1
	Secondary	50,131	0.346193	0.4757604	0	1
	Tertiary	50,131	0.4058567	0.491062	0	1
	Primary	50,131	0.0423092	0.2012955	0	1
Wealth	Poorer	40,759	0.0621703	0.2414676	0	0
	Middle	40,759	0.2383768	0.4260959	0	1
	Richer	40,759	0.1886209	0.391212	0	1
	Richest	40,759	0.1708089	0.3763465	0	1
		40,759	0.1644054	0.3706476	0	1
	40,759	0.1756177	0.3804992	0	1	
Age		35,604	28.77109	10.58905	15	64
Husband education	Primary	31,245	0.1592255	0.3658921	0	1
	Secondary	31,245	0.2570331	0.4370048	0	1
	Tertiary	31,245	0.2776444	0.4478442	0	1
	Primary	31,245	0.306097	0.4608779	0	1
					0	1
Religion	Protestant	43,419	0.3678344	0.4822215	0	1
	other Christians	43,419	0.3333794	0.4714262	0	1
	Muslim	43,419	0.129851	0.3361433	0	1
	Animist	43,419	0.0877496	0.2829337	0	1
	None	43,419	0.0136346	0.1159698	0	1
		43,419	0.0675511	0.2509768	0	1
				0	1	
Husband occupation	Professional/technical /managerial	33,763	0.1420786	0.3491359	0	1
	Clerical	33,763	0.2570331	0.2174491	0	1
	Sales	33,763	0.0427687	0.2023382	0	1
	Agriculture-self employment	33,763	0.1044635	0.3058654	0	1
	Agriculture employee	33,763	0.3323757	0.4710718	0	1
	household and domestic	33,763	0.0411693	0.1986846	0	1
	Service	33,763	0.0082635	0.0905287	0	1
	skilled manual	33,763	0.0580221	0.2337887	0	1
	Unskilled manual	33,763	0.138791	0.3457334	0	1
	Based group (Poorest)	33,763	0.082309	0.274839	0	1
	Professional/technical /managerial				0	1
Marital status	never married	35,604	0.2983373	0.4575347	0	1
	currently in union	35,604	0.6487192	0.4773772	0	1

	formally in union	35,604	0.0529435	0.2239238	0	1
Age at first cohabitation		33,945	17.07804	5.506687	0	57
Age at first sex		36,588	14.73109	6.141504	0	49
Age at first birth		34,907	21.50878	7.309356	10	49
Contraceptive use		41,539	0.7126797	0.4525177	0	1
Husband education	Primary	31,052	0.2114196	0.4083218	0	1
	Secondary	31,052	0.7187621	0.4496106	0	1
	Tertiary	31,052	0.0698184	0.2548448	0	1
Region 2	Francophone regions	10,342	0.8290466	0.3764864	0	1
	Anglophone region	10,342	0.1709534	0.3764864	0	1
Residence	Urban	50,131	0.5141729	0.4998041	0	1
	Rural	50,131	0.4858271	0.4998041	0	1