

The impact of female employment on fertility in Dakar (Senegal) and Lomé (Togo)

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1. Introduction

Women's employment is recognized to play an important role in the variation in fertility levels within and between countries (Becker, 1993; Rindfuss and Brewster, 1996; Shockaert, 2005; Standing, 1983). As a result, the relationship between female economic activity and fertility is one of the most studied areas in fertility research. The participation of women in the economic market is presumed to compete with their family obligations since mothers are often the only ones who are responsible for household duties. Accordingly, a negative relationship is generally expected between the female labour force participation and fertility, at the micro level, although there is a controversy about the causal direction of the inverse relationship between the two phenomena (Cramer, 1980; Felmler, 1993; Stolzenberg and Waite; 1977). While a consistent negative relationship between women's paid work and fertility has been found at the micro level in developed countries (Budig, 2003; Lloyd, 1991), no clear pattern has emerged in developing countries (Lloyd, 1991; Piché, Poirier and Neill; Standing, 1978). Findings from research in developing settings have shown a positive association as well as the reverse. In particular in sub-Saharan Africa, it has been suggested that no relationship should exist between labour force status and fertility because of limited paid employment outside the home, extended family networking, cheap domestic labour, as well as traditional social norms regarding gender roles and division of the household duties between men and women. However, it is likely that these mediating factors vary across different settings in sub-Saharan Africa, thereby resulting in the discrepancy in the work-fertility relationship in this region (Oppong, 1988; 1991).

The purpose of this paper is to investigate the influence of female employment on fertility in two different contexts, Dakar in Senegal and Lomé in Togo, in order to assess whether women face a conflict between their professional and reproductive roles in these capital cities and if so, to examine the possibly varying forms of this conflict. Several reasons make the two capital cities particularly attractive sites for examining the employment-fertility relationship in sub-Saharan Africa. First, little is known about this relationship within various settings in developing areas. Second, unlike rural areas where employment opportunities for women are largely restricted to unpaid family work or poorly paid jobs requiring limited skills, Dakar and Lomé are both urban areas which offer opportunities to women to be involved in paid, non agricultural work outside the home (at least for the better-educated). In both Senegal and Togo where economic hardship has considerably reduced men's ability to take on the breadwinner's role, a greater number of women are

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involved or more involved in paid economic activities (Adjamagbo et al., 2006; Locoh, 1996). Female's economic contribution to household incomes has been increasing and sometimes is the sole source of household revenues. Female's increasing participation in economic activities may correspond to an improvement of their social status. However, the fact that women are increasingly called on to supplement household incomes, given men's declining earning power is likely to have implications on their family lives. Third, the two societies exhibit different cultural contexts in terms of gender relations, resulting in different sociological meaning of the women's economic participation outside home. In Dakar, women's work outside the domestic sphere clashes with the tenacious model of a clear separation between husbands' and wives' roles, and with the ideal of wives' being financially dependent on their husbands (Adjamagbo et al., 2006; Nanitelamio, 1995). In contrast, in Lomé, women's economic independence has been part of the marital norms for quite some time although this tends to be more frequent outside the formal framework of marriage. The gender division of family roles would alter women's attitudes and aspirations for both employment and fertility. To better understand the importance of social values and norms in the work-fertility relationship, it is therefore interesting to compare two contrasting cities whose cultural contexts may lead to different aspirations and attitudes toward women's economic participation.

The major differences between the present analysis and similar ones conducted in the past on the same topic in sub-Saharan Africa are twofold. First, this study only focuses on urban areas, contrary to the previous studies. Second, the study adopts a longitudinal approach, based on retrospective socio-economic and demographic data collected in the two capital cities. The use of longitudinal data analysis could permit to overcome some of the methodological issues encountered by previous studies conducted on this topic in sub-Saharan Africa. Analyzing the relationship between female employment and fertility by using such type of data could help to carry out new research initiatives on this topic in sub-Saharan Africa where recent analyses are quite rare.

The remainder of this paper is structured as follows. The second section presents the cultural, demographic and economic contexts of the two societies. The theoretical and prior empirical background on the work-fertility relationship in developing countries is provided in the Section 3. The data and methods used in the analysis are described in Section 4. In Section 5, main findings of the analysis of the influence of female employment on the arrival of the next pregnancy are presented. Concluding remarks are provided in Section 6.

2. Contexts of the study: Dakar vs. Lomé

2.1. Socio-cultural differences

Dakar and Lomé are differentiated by their cultural environment. Dakar is largely dominated by the Muslims while in Lomé, the majority of the population are Christians and Animists. In Senegal, about nine out of ten (94%) of individuals are Muslim whereas in Togo, about half (51%) and one quarter (28%) of individuals are Christian and Animist respectively. Marriage remains the main path to enter into adulthood in both societies.

While in Senegal, marriage is marked by a religious ceremony, in the Togolese society, marriage is a long process marked by a series of specific stages. The increase of age at first marriage is more important in Senegal than in Togo. Demographic and Health Surveys (DHS) reported that overall, the median age at first marriage of women who were 25-49 years old increased from 16.4 years in 1986 to 17.4 years in 1997 (Ndiaye, Sarr et Ayad, 1988; Ndiaye, Gaye et Ayad, 1997). Entry into marriage is more delayed in urban areas. Indeed, between 1986 and 1997, the median age at marriage went from 17.6 to 19.6 years in urban areas but remained stable in rural areas (from 16.0 to 16.3 during the same period). In Togo, the delay of marriage seems to be slower since the median age at marriage slightly increased from 18.4 in 1988 to 18.8 years in 1998. As in Senegal, the postponement of marriage is more pronounced in Togolese urban areas (Agouké, Assogba et Anipah, 1988 ; Anipah *et al.*, 1999).

Even though both societies are overwhelming patrilineal, the gender roles within unions are quite different. In Lomé, mothers are expected to help their husbands in providing for their children's needs. Thus, being married in Lomé is not an obstacle to work. Wives are not only supposed to take care of all domestic tasks; they are also involved in economic activities in order to contribute to the household expenditures. Therese Locoh (1984) said that in the South East of Togo, it is normal, even essential that wives are not dependent on their husbands. Being involved in economic activities is a cause of personal fulfilment as well as an element of female identity since it allows women to contribute to the household incomes (Thiriart, 2000) and to be self-sufficient. In contrast, in Dakar, the ideational model of marriage is the one which guarantees financial and material comfort for women as well as prevent them from working (Antoine and Dial, 2005; Adjamagbo *et al.*, 2006; Nanitelamio, 1995; Adjamagbo, Antoine and Dial, 2004). As a result, in Dakar, women often exit from employment when they get married and seek for jobs when they get divorced (Antoine and Dial, 2005). These aforementioned cultural norms regarding women's roles could have an impact on their participation in economic activities as well as their reproductive behaviour in both cities.

2.2. Female labour force participation in Dakar and Lomé

In both capital cities, women have lower labour force participation rates than men but the gap is more significant in Dakar than in Lomé. The results of the 'Surveys 1-2-3'² carried out in seven African capital cities confirm this situation faced by women in the urban market in Dakar and Lomé (Brilleau, Roubaud and Torelli, 2004). Overall, a gap of only 2% is observed between males' and females' economic activity rates in Lomé while the difference is about 21% in Dakar. Moreover, findings confirm that female employment is more widespread in Lomé than in Dakar, even though female employment is far from being negligible in Dakar. For example, employment rate among women aged 10-29 years is 58% in 2001 in Lomé, compared to 32% in 2002 in Dakar. Similarly, 90% of women aged 30-49 are working in Lomé compared to 60% of their counterparts in Dakar (Brilleau, Roubaud and Torelli, 2004). However, in both cities, women are mainly

² Surveys on employment in the informal sector in seven capital cities in Western Africa Economic and Monetary Union (WAEMU): Abidjan (Côte-d'Ivoire), Bamako (Mali), Cotonou (Benin), Dakar (Senegal), Lomé (Togo), Niamey (Niger) and Ouagadougou (Burkina-Faso).

occupied in insecure and low paid jobs within the informal sector. Brilleau and colleagues (2004) reported that 86% of women in Dakar in 2002 and 91% in Lomé in 2001 are involved in informal economic activities. Thus, women are underrepresented in the formal sector of the economy that mainly comprises the public sector. Only a quarter and a third of jobs are occupied by female workers in the formal sector, respectively in Dakar in 2002 and in Lomé in 2001.

2.3. Fertility differences in Dakar and Lomé

In both countries, fertility has started to decrease but Togo experienced an earlier decline of fertility which has now reached levels that are lower than in Senegal (Ndiaye, Sarr et Ayad, 1988; Ndiaye, Diouf et Ayad, 1994; Ndiaye, Gaye et Ayad, 1997; Ndiaye and Ayad, 2006; Agouké, Assogba et Anipah, 1988; Anipah *et al.*, 1999). In Togo, the decrease in fertility rates reported by DHS, between 1988 and 1998, was from 4.9 children per woman to 3.3 in urban areas. The decline was very small in rural areas, from 6.9 to 6.5 (Agouké, Assogba et Anipah, 1988; Anipah *et al.* 1999). In 1998, the total fertility rate (TFR) was about 2.9 children per woman in Lomé, about four children less than in rural areas. In urban Senegal, the TFR dropped from 5.5 children per woman in 1986 to 4.3 in 1997 while it decreased slightly in rural areas (from 7.1 to 6.7 during the same period) (Ndiaye, Sarr et Ayad, 1988; Ndiaye, Gaye et Ayad, 1997). In Dakar, the TFR was about 3.7 children per woman in 2004 (Ndiaye and Ayad, 2006).

This fertility decline can hardly be explained by changes in contraceptive use since the use of modern birth control methods is still limited in Senegal and Togo. In both countries, the prevalence of modern contraception is higher in urban areas (including the two capital cities) where the supply of family planning services is more prevalent. The results of the DHS show that in Dakar, the prevalence of modern contraception among women in union has decreased slightly, dropping from 21% in 1997 to 19% in 2004. In Lomé, this indicator was 7% in 1988 and 11% in 1998.

3. Theoretical and empirical considerations

3.1. Theoretical background

In socio-demographic literature, the work-fertility relationship is mainly explained by the maternal role incompatibility hypothesis. Unlike the economic approach, the socio-demographic approach does not focus attention on female wages, which represent the opportunity cost of childbearing, as a determinant of fertility. This approach focuses on the ability of women to combine childbirth and work, which is determined by the complex of social and economic institutions in a given society. It is generally argued that female employment is inversely related to fertility, due to the presumed conflict between women's work and their reproductive roles (Becker, 1993; Rindfuss and Brewster, 1996; Standing, 1983). The competition between the mother's and worker's roles is supposed to stem from the separation of home and workplace, the nature of employment and social norms regarding the roles of men and women (Mason and Palan, 1981; Rindfuss and

Brewster, 1996). In particular, this competition is exacerbated during the period of childbearing (Collier et al., 1994). The inverse relationship between fertility and employment emerges when economic and social life is structured such that it is difficult to combine both childbearing and employment (United Nations, 1987). Marianne Kempeneers (1987) argued that women's discontinuous professional career is one of the main consequences of the constant and perpetual conflict between work and childbearing faced by women over their life course. However, this conflict could be attenuated under certain circumstances. First, there are some jobs whose characteristics easily allow the simultaneous fulfilment of the worker and mother roles, thereby reducing the incompatibility between the two roles. For example, women occupied in agriculture, working at home or in a family farm are largely able to conciliate their work and mothering roles. These women are more likely to have large families. For women working outside their home, particularly those occupied in the modern sector, it is more difficult to simultaneously fulfil parenting and worker roles. These types of jobs are therefore conducive to small family size, due to greater incompatibility between the work and mothering roles. In particular, it is theoretically assumed that the fertility of paid employees is lower than that of nonwage working women and others. In fact, factories, office complexes or similar locations where paid employees largely work are generally governed by the bureaucratic norms of impersonality, strict adherence to rules, punctuality and the strict separation of work from familial roles (Kollehon, 1984).

A second factor that could attenuate the conflict between work and childbearing is great availability and low cost of domestic help or parental surrogates (grandparents, cousins, older children, etc.), which allow women to fulfil both roles, thereby resulting in higher fertility. The traditional social norms regarding gender roles and the division of the household duties between men and women are another condition that could mitigate the relationship between female employment and fertility. In many societies, social beliefs assign women to bearing and rearing children while men have to take care of their household by working and providing with revenues. When prevailing, these social norms can alter women's aspirations and attitudes towards work outside home. Negative attitudes towards women's work outside the home could reduce women's employment or predispose them to occupy jobs that are more compatible with their maternal responsibilities. Some of them favour (the traditional) their mother's and wife's role, resulting in large family size while others favour their professional life (the modern) and are therefore more likely to have lower fertility levels. These conditions that are generally prevailing in developing countries lead some authors to the assumption that no or a weak relationship should exist between labour force status and fertility in these settings. But this could be true mainly in rural settings in developing countries where these conditions are more likely to prevail. Contrary to the rural areas, urban areas offer opportunities to women to be involved in paid, non agricultural work outside the home and to have attitudes and aspirations more favourable to paid work. In the following section, we provide with a brief description of the previous studies on the work-fertility relationship in developing countries.

3.2. Prior empirical evidence in developing countries

Empirical evidence on the link between women's employment and fertility is quite scarce and generally ancient in developing countries, especially in sub-Saharan Africa. Most of the studies are based on the World Fertility Survey (WFS) carried out around the world in the 1970's.

The United Nations have conducted two studies based on the World Fertility Survey carried out around the world in the 1970's. The first (United Nations, 1985a) which aims to verify role incompatibility estimates the effect of the place of work on fertility in 30 developing countries. In most countries, women who have never worked since their first marriage have higher fertility whereas for women working outside home or at home, fertility differences are not consistent. Moreover, the observed differences in fertility between these two categories of women are weak when considering the control factors. The second United Nations (1985b) study estimates the effect of the type of professional activity on the marital fertility in 38 developing countries. Findings showed that after controlling for other socio-economic variables, only women occupied in modern and mixed professional activities tend to have fewer children than those working in transitional and traditional occupations. But although employment is significantly related to fertility in most of countries, the differences are quite weak (United Nations, 1985b). More generally, this study concluded that the relationship between female employment and fertility is stronger in countries with high level of development.

Findings from another United Nations' study (1987) showed that women occupied in modern transitional and mixed occupations had on average fewer children than did working women. But the differentials between transitional and mixed categories on the one hand and nonworking women on the other are smaller. However, this significant effect was observed in most developing countries in Asia and Latin America but not in many African countries. Moreover, women working in agriculture and nonworking women had similar fertility levels.

Using the same data for their comparative analysis of socioeconomic determinants of marital fertility, Rodriguez and Cleland (1981) indicated that nonfamily women's employment has a slightly stronger depressing effect on recent fertility. But it is likely that women with recent births are less likely to be involved in economic activity at the moment of the survey. In general, the negative impact is stronger among wage earners than among self-employed women.

Analyzing WFS data for the Philippines, Engracia and Herrin (1984) indicated that the effect of work on fertility depends upon the time framework. In the short run, women currently working end up with higher fertility while in the long run, having ever worked appears to be associated with lower fertility. But this study has not considered the intensity of work nor the type of employment occupied by women.

In their study of the work-fertility relationship using WFS data for Malaysia, Mason and Palan (1981) demonstrated the importance of the household's opportunity structures in interpreting the maternal role incompatibility hypothesis. The concept of household's

opportunity structures refer to the types of social relations through which households accumulate status or resources, and by which they redistribute them intergenerationally. These social relations are expected to influence household's decisions about the division of the labour within families, childcare standards and fertility levels. Their findings indicated that the work-fertility relationship varied across ethnic groups which faced different opportunity structures. In fact, some groups exhibited positive relationship between work and fertility in situation where working and caring for children are expected to be strongly incompatible.

Analysing the work-fertility relationship by using data from 1974 Liberian Census, Kollehlon (1984) reported that nonwage working women and other women have generally similar levels of fertility, while the fertility of wage working women is slightly lower than that of nonwage working and other women. But the findings suggested that role incompatibility may be more pronounced in an urban area than in a rural area, thereby leading to a lower fertility among wage working women in the former setting, relative to nonwage working and other women.

Most of these aforementioned studies fail to focus on the urban areas with regard to the effect of female employment on fertility, especially in sub-Saharan Africa. Yet, the conditions under which women are called on to combine both worker's and mother's roles are more appropriate to the study of this relationship in this region. For the sub-Saharan countries, it is likely that these country-level studies reported on situation of rural women involved in agricultural activities since in the 70's, women were mostly involved in agricultural activities. From a methodological point of view, the analyses are based on cross-sectional data which do not permit exploration of causal influence of female employment on fertility levels on a dynamic basis. Fertility levels which are the result of past reproductive behaviours are linked to the professional activity at the moment of the survey, resulting in a biased and poor causal relationship.

4. Data and methods

4.1. Data

The analysis used data from two event-history surveys that collected male and female retrospective biographies (2,536 in Lomé in 2000 and 1,290 in Dakar in 2001) of three birth cohorts (aged 45-59, 35-44 and 25-34³) of individuals on their residential, family (union, childbearing), schooling and professional trajectories. The sample consists of 1,312 women in Lomé and 473 in Dakar⁴.

³ Women aged 45-59 were born between 1942 and 1956 in Dakar and between 1940 and 1954 in Lomé; they are called the oldest cohort in the remainder of this paper. The intermediate cohort includes those aged 35-44 who were born between 1957 and 1966 in Dakar and between 1955 and 1964 in Lomé. The youngest cohort regroups women aged 25-34, that is those born between 1967 and 1976 in Dakar and between 1965 and 1974 in Lomé.

⁴ In Dakar, the survey, carried out by researchers at the French Institute of Research for Development (IRD - Equipe Jeremi) and the University of Dakar (Institut Fondamental d'Afrique Noire-IFAN) was part of a study called "*Crisis, transition to adulthood and family changing within the middle and poor classes in Dakar*" and was funded by CODESRIA (Council for the Development of Social Science Research in Africa). For Lomé, the data come from a

For Lomé and its suburbs, the biographies were collected within 2,700 selected households, according to stratification by sex and age, so that an equal number of individuals could be interviewed in each birth cohort. The problems of inadequate numbers could then be minimized when comparing cohorts. Biographies for all people of both sexes aged between 45 and 59 are recorded. For those aged 35-44, only one out of two male biographies and all female event histories are collected. Lastly, for the people aged 25-34, one out of four male event histories and one out of two female event histories are collected. For Dakar and its suburbs, a stratification by age, sex and neighbourhood were used but individuals with complex matrimonial biographies (experiencing at least one divorce and/or a remarriage) were overrepresented in the sample. An equal number of individuals were selected in each stratum.

Although each survey pursued its own research interests, a common methodology was used for different stages of survey, including design, sampling and questionnaires allowing for direct comparison between the two cities (Antoine, Ouédraogo and Piché, 1998; Antoine and Bocquier, 1999; Antoine and Fall, 2002, URD-DGSCN, 2002).

The retrospective data used for this analysis present some limitations although they have the advantage of permitting the study of sequences of events in the life course of each individual. First, memory biases can be important, resulting from the fact that older respondents could face difficulties in recalling all the events that occurred in their life course. However, these memory lapses are minimized in these biographical surveys by the use of an 'age-event' form in order to help the respondents remember the precise chronology of the events experienced during their lifetime (Antoine, Ouédraogo and Piché, 1998). In fact, it is more important to respect this chronology than to capture the exact dating of events when collecting such biographical data. Moreover, only respondents who survived or didn't emigrate (from Dakar or Lomé) at the moment of survey were interviewed in each capital city. This constraint could induce some selection biases, related to mortality and migration. In particular, the sample of women interviewed in each capital city could be biased because the risks of maternal mortality, infant mortality, as well as of miscarriage, abortion and other negative pregnancy outcomes are higher when pregnancies are closer. Lastly, the observations are truncated at the moment of survey for the younger generations who are still at the beginning of their adult life and have not experienced most of the main biographical events studied. Their observed behaviour is taken to be an estimation of what it would be in the future, considering the present conditions. These inherent data limitations should be kept in mind when interpreting the final results.

4.2. Methodology of analysis

The study consists of analyzing pregnancy spacing rather than cumulative number of pregnancies at the time of survey in Dakar and Lomé. In both cities, data on reproductive life concerned only live births so the analysis only takes into account pregnancies

retrospective survey –Survey on Migrations and Urban Integration in Lomé - directed by researchers at the Demographic Research Unit of University of Lomé. This survey was part of the « *Survey on family structures, migrations and urbanization in Togo* », funded by the African Development Bank.

resulting in live births. Data about pregnancies that ended in spontaneous or induced abortion are not available. The fact that I use data on pregnancies instead of data on births allows to avoid technical complications due to possible antenatal or postpartum maternity leave.

The process of family formation is a succession of steps reached by women and includes marriage (this step may not be reached in certain societies), first pregnancy, the second pregnancy and so forth until the last pregnancy. Therefore, it is important to base the fertility analysis on an approach that allows us to take into account all the pregnancies of women surveyed in both capital cities. It could then be possible to draw a parallel at each time between the professional life and the reproductive life of women and thus to determine the global net impact (after controlling for other factors) of female employment on fertility. In practice, the occurrence of a pregnancy was considered a repeatable event. In total, 1,060 women in Lomé and 397 in Dakar who had at least one pregnancy are considered for the analyses. For the oldest cohort aged 45-59, women are considered under exposure to risk of pregnancy until 45 years of age. Only pregnancies that occurred during residence in the capital city are included in analysis. The observations are truncated at the moment of survey for the younger generations since they are still at the beginning of their reproductive life. Survival methods (Kaplan-Meier estimator) take into consideration this kind of right truncation in the estimation of indicators (Bocquier, 1996; Trussel, Hankinson and Tilton, 1992; Blossfeld, Hamerle and Mayer, 1989).

For the multivariate analysis, I run Cox proportional hazards regression models which do not need specification of the form of the distribution of the baseline hazard rate (Cox, 1984; Blossfeld, Hamerle and Mayer, 1989; Courgeau and Lelièvre, 1989; Allison, 1991; Trussel, Hankinson and Tilton, 1992; Bocquier, 1996). Because of this advantage – no assumptions about the shape of the hazard over time – the Cox model is also called semi parametric model. One of its originalities is that it allows the use of time-varying covariates.

It is easy to interpret the coefficients when they are exponentiated. When the coefficient is greater than one, it means a higher risk of next pregnancy in the corresponding covariate (compared to the reference covariate). Conversely, the risk of next pregnancy is lower when the coefficient is less than one. For instance, if being in paid employment rather than self-employed diminishes the risk of becoming pregnant, the corresponding coefficient will be less than one (for example 0.33) and one can say that all things being equal, being salaried diminishes by 67% the risk of becoming pregnant (or divides this risk by 3.03, the multiplicative inverse of 0.33).

The Cox model asserts that the hazard rate is:

$$h(t) = h_0(t)exp(z\beta),$$

where the regression coefficients are to be estimated from the data. $h_0(t)$ is the baseline hazard function (the hazard when $z=0$), left unestimated because of no assumptions about its shape. Z is the individual covariates vector and β is a vector of the regression parameters that indicate the effects of these

covariates. The covariates are included in the log-linear form $exp(z\beta)$ which is the relative hazard and thus $z\beta$ is the log-relative hazard (Cleves, Gould and Gutierrez, 2004).

4.3. Explanatory variables and hypotheses

Apart from female employment, the differences between pregnancies intervals may be explained by other sociocultural as well as demographic factors that I use as control factors in the regression models. These factors are regrouped into three categories. The economic factors include time-varying variables such as female professional activity, educational level and the duration of work experience. Age at first pregnancy, the rank of preceding pregnancy, the sex of preceding child as well as marital status constitute the factors related to women's family life. Only age at first pregnancy is a time-constant variable within this group of variables. Permanent sociocultural characteristics include birth cohort, ethnicity, religion, place of socialisation and social background. In order to define the woman's social background, I use the parents' socioeconomic status as assessed by the mother's and father's profession⁵.

4.3.1. Female employment and human capital

Female employment is the main factor within the group of socioeconomic factors since it is the variable used to assess the net effect (after controlling for other factors) on the risk of pregnancy over time. This dynamic variable measures the evolution of the professional life of women and comprises five categories: skilled paid employee, unskilled paid employee, self-employed, student or apprentice, unemployed and inactive. First, I assume that women who are occupied either in salaried employments or self-employed activities are more likely than non-working women to delay the next pregnancy over time. Second, women occupied in salaried activities are expected to have lower propensity of becoming pregnant than those who are self-employed. Contrary to self-employment, paid jobs may demand high work commitments in terms of hours and loyalty. As a result, such employment may conflict with childbearing and childrearing, therefore inducing a lower risk of pregnancy over time. Furthermore, women with longer duration of work experience would be more likely to delay the next pregnancy because of some work commitment to the detriment of familial life. Duration of work experience is measured in years and is used as a continuous variable in the analysis. Finally, it is well known that education has an important effect (direct or indirect) on fertility (Joshi, 2002). Fertility aspirations vary by educational level. Indirectly, education affects the fertility levels in that it influences age at marriage, knowledge and use of contraception, participation to economic activities, as well as the perception of the opportunity costs of having children

⁵ Certain factors remain unobserved (not recorded by surveys or unknown) in this analysis; this is called the unobserved heterogeneity. I did not use the exact characteristics of the occupation, including incomes, part-time or full-time job, etc., as well as partner's economic activity, presence of home help in the couple, family-provided childcare, postpartum behaviour or contraceptive use, which are likely to affect the reproductive life of women in both Dakar and Lomé. I did not opt for running models considering unobserved heterogeneity by modelling it with a specific parametric distribution because some more information on this heterogeneity would be needed. However, this unobserved heterogeneity is minimized due to the use of many explanatory variables in the models. Moreover, the effects of unobserved factors may be indirectly captured by the variables used in the models.

(Joshi, 2002). Accordingly, it could be expected that longer schooling lengthens the interval between pregnancies and diminishes the risk of next pregnancy in Dakar and Lomé. Education is measured at four levels: none (without education), primary, secondary and at least high school.

4.3.2. Family variables

Age at first pregnancy is an important factor in the study of birth spacing (Westoff, 2002; Gyimah, 2003). Early entry into motherhood can mean some propensity to privilege one's familial life. I assumed that early first pregnancy leads women to shorten interval between pregnancies. Three age groups are used in the analysis: less than 20 years, 20-24 and 25 or more. Three categories are used for the marital status: single or separated, monogamous and polygamous. I could determine whether fertility behaviour vary according to union's type in both societies where marriage remains still socially important. Thus, I aim to examine whether being married increases the risk of pregnancy and whether living in a polygamous union lowers the risk of pregnancy, in comparison to living in a monogamous union. Several reasons could explain a lower risk of pregnancy for women living in polygamous union. Women living in polygamous union may be less exposed to the risk of pregnancy because they have to share their husbands with other spouses and may be affected by a lower risk of fathering. In addition, the ideal of high fertility in African societies may mean that women living in polygamous union are those who are less fertile. It is not uncommon to for men to marry another woman when they do not have child with their preceding spouse. Finally, wives could be less fertile because polygamy makes de facto traditional practices of birth spacing easier for women.

The sex of child from preceding pregnancy is also used as control variable⁶. Due to higher infant mortality for male children, it could be expected that women whose preceding pregnancy resulted in a boy move faster to the next pregnancy than their counterparts whose preceding pregnancy ended in girl (because of short period of postpartum amenorrhoea due to cessation of breastfeeding). But this effect could be balanced by the opposite impact induced by the fact that in certain African societies, the son preference (so that he can be made heir) is so strong that women whose child from preceding pregnancy is a girl are more likely to become pregnant than those whose preceding pregnancy resulted in boy. Lastly, within this group of covariates, another control factor is the rank of preceding pregnancy, used as a continuous variable in the

⁶ The survival status of preceding child, which is an important factor of the length of intervals between pregnancies, was not used because death dates were not recorded in Dakar. It is only known if child is alive at the moment of survey in Dakar. The lack of death dates does not allow assessment of whether the death of child from preceding pregnancy precedes the following one. In case of death of the child from preceding pregnancy, the desire to replace him (which may lead to the diminution of postpartum abstinence as well as less use of contraception) and the reduction of postpartum amenorrhoea duration (due to cessation of breastfeeding) could increase the risk of next pregnancy. In Ghana, Eritrea and Kenya, it has been observed that the birth intervals are always shorter when the preceding child is deceased than when he is alive (Ghilagaber and Gyimah, 2004). Bocquier (1991) noticed this replacement strategy of deceased children when their rank is high among descendants, in Pikine, a suburb of Dakar. As I decided to include the same type of variables in the models in order to ensure comparison between the two capital cities, I could not use only the survival status of child in Lomé. In addition, even in Lomé, few children's deaths have happened before the arrival of the new child. It is, in fact, essential that the death of child from the preceding pregnancy really precedes the following pregnancy so that the impact could be plausible. This is the case of a small number of deaths in Lomé.

analysis. It is obvious that the length of pregnancy intervals is not the same according to the number of pregnancy ever completed. It seems that the interval is short at the beginning of reproductive life and long when a certain family size is reached. It could be expected that the pregnancy interval is as short as the rank of preceding pregnancy is low.

4.3.3. Socio-cultural factors

Birth cohort reveals a lot about structural factors that have marked the life of individuals interviewed. Despite some differences at micro level, women belonging to same birth cohort in each capital go through periods corresponding to similar macroeconomic contexts, which could affect their fertility behaviour. For example, women of recent birth cohorts are more likely to delay their next pregnancy. First, because they entered into adulthood at a period when births control became a recurrent and worrying issue for the public authorities in Senegal and Togo (resulting in the diffusion and use of modern contraception among women in both countries, especially in urban areas). Second, in both societies, young women are living in an era where there is a trend toward egalitarian gender roles; it's not uncommon to hear that women have no longer to be assigned to their only maternal responsibilities. The younger generations also experienced the economic regression in Togo and Senegal during their transition to adulthood, this would have contributed to alter their fertility behaviour, predisposing them to postpone their births. Birth cohort could also be used as a proximate of calendar period since at the same age, the living conditions are different between cohorts that have experienced distinct economic contexts. The categories for the birth cohort are those used for the stratification: 25-34 years (youngest), 35-44 (intermediate) and 45-59 (oldest).

Considering religion and ethnicity permits the verification of whether cultural or religious norms and values could be conducive to particular fertility behaviours (observable or not). For example, postpartum abstinence and breastfeeding behaviours may vary by ethnicity, thus indirectly affecting the interval between pregnancies. The major ethnic groups in Senegal are the *Wolof*, *Alpular*, *Serer*, *Lebou*, *Diola*, and *Manding*. In Togo, *Ewe*, *Mina*, *Ouatchi*, *Kabye*, *Akposso*, *Cotokoli* are the main ethnic groups. There is a residual group of other ethnic groups (*Others*) in each country. In Dakar where Islam is the dominant religion, I examine whether there is a difference between religious brotherhoods. In Senegal, Muslims belong to different brotherhoods, of which the most important are the *Tidiane* and the *Mouride*. In Lomé, I test for differences between Catholics, Protestants, Animists and Muslims. I assume that Catholics are less likely than Protestants to delay their next pregnancy since they are well known to have reservations about birth control methods. It would be the same for Muslims and Animists because of their presumed pro-natalist attitudes. However, the influence of religion would diminish or disappear when considering other factors that could capture a great part of this impact.

Coming from a poor social class may lead women to shorten the interval between pregnancies and thus increase the risk of next pregnancy. When parents are from modest background, children may be less educated and more likely to marry early and enter into motherhood earlier than their counterparts from wealthier social classes. Thus, women with such social background may tend to shorten their pregnancy intervals. But the reverse is quite plausible since these women may be motivated to improve their living

conditions and could decide to have fewer children. In this case, coming from poor social class may lead to a reduction in the number of children⁷. Social background is captured by father's and mother's profession, both divided in five groups: executive, worker, trader, farmer and other profession for the father; housewife, executive, trader, farmer and other profession for the mother.

The place of socialization permits the characterization of individuals according to their exposure to the norms and values of the area they are living in. Being socialized in a given area is defined as having lived there most of the time, that is from the birth to age 15. Three categories are distinguished: socialized in the capital city, in rural area and in other urban area. I assume that women socialized in the capital city and the urban areas are more likely to have lower propensity of pregnancy, resulting from their exposition to urban norms that are presumed to be less favourable to large family size.

Table 1. Descriptive statistics of the covariates used in the Cox models

Variables	Categories		Descriptives statistics			
	Dakar	Lomé	Dakar		Lomé	
			Percentage	Frequency	Percentage	Frequency
<u>Economic activity and human capital</u>						
Current economic activity (tv)	Skilled paid employee		5%	4,030	6%	11,006
	Unskilled paid employee		10%	7,533	4%	6,383
	Self-employed		38%	29,115	73%	124,954
	Unemployed		2%	1,589	1%	1,367
	Student/Apprentice		2%	1,694	5%	8,475
	Non working		42%	31,782	11%	18,354
Duration (years) of work experience (tv)			7.33	554,946	11.69	1,993,089
Educational level (tv)	None		51%	38,429	44%	74,881
	Primary school		31%	23,719	31%	52,268
	Secondary school		7%	5,583	20%	34,712
	High school or more		11%	8,013	5%	8,678
<u>Family variables</u>						
Rank of preceding pregnancy (tv)			3.50	265,028	2.82	480,430
Age at first pregnancy	Less than 20 years		67%	50,762	46%	77,940
	20-24 years		25%	18,765	41%	70,639
	25 years or more		8%	6,217	13%	21,960
Sex of preceding child	Male		50%	37,913	49%	84,422
	Female		50%	37,830	51%	86,117
Marital status (tv)	Monogamous		54%	40,906	64%	109,066
	Polygamous		28%	21,430	20%	33,343
	Single or separated		18%	8,286	16%	28,130
<u>Fixed characteristics</u>						
Birth cohort	Oldest		45%	34,462	43%	73,284
	Intermediate		34%	25,634	40%	68,385
	Youngest		21%	15,648	17%	28,870
Ethnic group	Wolof	Ewe	31%	23,608	39%	66,741
	Lebou	Mina	9%	6,884	23%	38,685

⁷ This issue is more complex than it appears to be; it may be seen from the angle of relationships between social mobility and fertility. For more details on the topic in sub-Saharan Africa, see Kishimba (2003).

Variables	Categories		Descriptives statistics			
	Dakar	Lomé	Dakar		Lomé	
			Percentage	Frequency	Percentage	Frequency
Religion	Alpular	Ouatchi	22%	16,675	19%	32,107
	Manding	Akposso	2%	1,642	5%	8,839
	Serer	Kabye	16%	11,869	7%	11,457
	Diola	Cotokoli	6%	4,389	4%	6,847
	Other ethnic group	Other ethnic group	14%	10,676	3%	5,863
	Mouride	None	31%	23,304	5%	8,721
	Tidiane	Catholics	51%	38,452	49%	83,418
	Other Muslim	Animist	13%	9,516	24%	40,217
	Christian	Protestant	6%	4,471	12%	20,918
	-	Muslim	-	-	5%	9,254
	-	Other religion	-	-	5%	8,011
Place of socialization	Capital city (Dakar, Lomé)		62%	46,621	39%	67,342
	Rural area		22%	16,508	40%	68,152
	Urban area		17%	12,614	21%	35,045
Father's profession	Executive		30%	22,463	12%	19,964
	Worker		24%	18,503	37%	63,463
	Trader		10%	7,248	2%	3,256
	Farmer		28%	20,830	48%	81,264
	Other profession		9%	6,700	2%	2,592
Mother's profession	Housewife		51%	38,448	13%	22,575
	Executive		1%	964	1%	1,246
	Trader		26%	19,998	52%	87,924
	Farmer		15%	11,133	30%	50,597
	Other profession		7%	5,201	5%	8,197
Total analysis time at risk (women-months)			-	75,744		170,539
Note: tv: time-varying covariates.						

Source: Estimations based on surveys' data: Dakar (2001) and Lomé (2000).

5. Results and discussions

5.1. Descriptive statistics

Table 2 displays the mean number of children ever born of women aged 30, by their economic activity status. In Dakar, it appears that there is a slight difference between the fertility of nonworking women and that of working women. When looking at the fertility of working women, the fertility of self-employed women is higher than that of paid employees, for all the generations. For example, among women of the oldest generation, paid employees had on average 2.2 children at age 30, compared with 4.7 children among those occupied in self-employed activities at the same age. In Lomé, the fertility of working women appeared to be similar to that of non working women, for the oldest and intermediate generations. Surprisingly, in the youngest generation, employed women had on average more children ever born than non working women. Like in the Senegalese capital city, the fertility of paid employees is lower than that of self-employed, among women of all generations in Lomé. At age 30, women of the oldest and the intermediate generations had on average, respectively 1.9 and 1.4 children when they were paid

employees while their counterparts working as self-employed had on average, 2.7 and 2.2 children, respectively.

Table 2. Mean number of children ever born of women at age 30, by economic activity status

Generation	Dakar				
	Working	Of which working as		Not working	Total
		Paid Employee	Self-employed		
Oldest	3.9 (75)	2.2 (25)	4.7 (50)	3.6 (47)	3.8 (122)
Intermediate	2.5 (78)	1.3 (26)	3.0 (52)	2.7 (64)	2.5 (142)
Youngest	1.6 (38)	0.9 (21)	-	1.7 (34)	1.6 (72)
Generation	Lomé				
	Working	Of which working as		Not working	Total
		Paid Employee	Self-employed		
Oldest	2.6 (255)	1.9 (46)	2.7 (209)	2.5 (35)	2.6 (290)
Intermediate	2.1 (333)	1.4 (41)	2.2 (292)	1.8 (52)	2.1 (385)
Youngest	1.8 (160)	-	1.9 (144)	0.9 (35)	1.7 (195)

Note: the figures in brackets are the numbers of women.
 - : the number of women is fewer than 20.

Source: Estimations based on surveys' data: Dakar (2001) and Lomé (2000).

5.2. Results of the multivariate analysis

5.2.1. The effect of female employment on fertility

The results of the estimated Cox regression models for the hazard of becoming pregnant are given in Table 3. In Lomé, female employment as well as work experience and education are associated with risk of becoming pregnant over time. Women who occupy paid jobs, those undergoing training (studying or apprenticing) or that are inactive are less likely to become pregnant than women who are self-employed. Women who are in skilled paid employment and unskilled paid employment are 27% and 31% less likely, respectively to become pregnant than self-employed women. Thus, it does seem that paid jobs (rather than self-employed jobs) reduce a woman's chances of becoming pregnant. This situation could be explained by the fact that the salaried women may be less likely than self-employed women to control their schedule and the former are likely to have more restricting schedule. Women in paid employment are expected to have more restricting schedule than self-employed women. Indeed, while the self-employed women may not work from home, they can at least arbitrate a possible conflict between professional constraints and maternal responsibilities (all else being equal) in their interest. This is hardly the case for salaried women whose schedule flexibility depends on the employer. Furthermore, in a context of persistent gender inequality in the public labour market (largely salaried), women who manage to get paid jobs may be well-advised not to put their employment at risk through frequent work interruptions resulting from many pregnancies. Some employers may prefer recruiting men because they believe that women are less productive since they are likely to take time off for motherhood as well as other maternal obligations.

Undergoing training or being unemployed also seems to lead women to delay their next pregnancy since the hazard of becoming pregnant diminishes by 50% and 57% for these two groups respectively (compared to self-employed). Contrary to prior assumption, being inactive is not conducive to higher propensity of fertility since non-working women in Lomé are 16% less likely than self-employed women to become pregnant. It may be possible that in Lomé where they are well known for their high rate of employment, women are only inactive when they are advanced in years. Hence, these women have low propensity to extend their family by giving additional birth given that they would have already completed their reproductive life. The effect of inactivity may only be a reflection of the ageing of women. However, it appears from statistical tests that non-working women are more likely than unemployed and studying/apprenticing women to become pregnant in Lomé.

In Dakar, it seems that female employment and human capital have a limited effect on the likelihood of pregnancy. First, the risk of becoming pregnant for paid employed women is not significantly different from the risk for self-employed women (the reference group). However, statistical tests show that non-working women are less likely to become pregnant than studying/apprenticing (at 5% level) women over time. It appears that inactivity (rather than self-employing) reduces by 25% the likelihood of becoming pregnant for women in Dakar.

The human capital has a negative effect on the risk of becoming pregnant over time in Lomé. The higher the human capital, the lower is the risk of becoming pregnant. In particular, there is a strong negative impact of education on the likelihood of pregnancy in Lomé. All else being equal, having completed at least primary school (compared to no schooling) reduces the risk of becoming pregnant over time. Furthermore, each additional year of work experience decreases significantly the risk of pregnancy. In Dakar, a longer work experience as well as higher education reduces the likelihood of pregnancy. However, whereas in Lomé having at least primary education is associated with a greater likelihood of delayed pregnancy, in Dakar it is only those with at least high school education who are significantly more likely to delay pregnancy when compared to women with no education.

Table 3. Hazard ratio of pregnancy for women in Dakar and Lomé (Cox model)

Variables	Categories		Dakar		Lomé	
	Dakar	Lomé	Hazard Ratio	Standard error	Hazard Ratio	Standard error
<u>Economic activity and human capital</u>						
Current economic activity (tv)	Skilled paid employee		1.00	0.19	0.73**	0.10
	Unskilled paid employee		0.87	0.16	0.69**	0.12
	Self-employed		Ref.	-	Ref.	-
	Unemployed		0.87	0.19	0.43**	0.17
	Student/apprentice		1.33	0.36	0.50***	0.08
	Inactive		0.75***	0.08	0.84**	0.07
Duration (years) of work experience (tv)			0.98***	0.01	0.96***	0.00
Educational level (tv)	None		Ref.	-	Ref.	-
	Primary school		0.91	0.11	0.76***	0.05
	Secondary school		0.98	0.16	0.66***	0.05
	High school or more		0.74**	0.13	0.74***	0.10
<u>Family variables</u>						
Rank of preceding pregnancy (tv)			0.86***	0.02	0.85***	0.02
Age at first pregnancy	Less than 20 years		Ref.	-	Ref.	-
	20-24 years		0.88	0.09	0.86***	0.05
	25 years or more		0.63***	0.08	0.80***	0.07
Sex of preceding child	Male		Ref.	-	Ref.	-
	Female		1.11*	0.09	0.96	0.05
Marital status (tv)	Monogamous		Ref.	-	Ref.	-
	Polygamous		0.87*	0.09	0.91*	0.06
	Single or separated		0.19***	0.04	0.19***	0.03
<u>Fixed characteristics</u>						
Birth cohort	Oldest		Ref.	-	Ref.	-
	Intermediate		0.75***	0.08	0.69***	0.04
	Youngest		0.67***	0.09	0.51***	0.04
Ethnic group	Wolof	Ewe	Ref.	-	Ref.	-
	Lebou	Mina	1.35**	0.23	1.09	0.08
	Alpular	Ouatchi	1.09	0.14	1.03	0.08
	Manding	Akposso	1.50***	0.19	1.02	0.12
	Serer	Kabye	1.11	0.15	0.95	0.09
	Diola	Cotokoli	1.04	0.22	0.96	0.20
	Other ethnic group	Other ethnic group	1.20	0.21	0.66*	0.17
Religion	Mouride	None	0.97	0.10	0.96	0.13
	Tidiane	Catholics	Ref.	-	Ref.	-
	Other Muslim	Animist	0.61***	0.11	1.11*	0.08
	Christian	Protestant	0.98	0.16	1.01	0.08
	-	Muslim	-	-	1.33*	0.26
	-	Other religion	-	-	1.14*	0.11
Place of socialization	Capital city (Dakar, Lomé)		Ref.	-	Ref.	-
	Rural area		1.06	0.11	1.03	0.07
	Urban area		1.02	0.12	0.96	0.08
Father's profession	Executive		0.86	0.13	1.05	0.11
	Worker		0.91	0.13	1.12*	0.08

Variables	Categories		Dakar		Lomé	
	Dakar	Lomé	Hazard Ratio	Standard error	Hazard Ratio	Standard error
Mother's profession	Trader		0.94	0.17	0.68*	0.17
	Farmer		Ref.	-	Ref.	-
	Other profession		0.87	0.14	0.91	0.24
	Housewife		Ref.	-	1.15**	-
	Executive		1.97***	0.58	0.68	0.09
	Trader		1.25**	0.13	Ref.	0.32
	Farmer		0.92	0.12	1.25***	0.09
	Other profession		1.01	0.26	1.15	0.18
Number of women at risk (events)			397 (1158)	-	1060 (1975)	-
Total analysis time at risk (women-months)			75743.49	-	170,539	-
-2log-likelihood			14757.55	-	28172.57	-
Wald chi2			299.36***	-	499.19***	-

Note: *** $p \leq 0.01$; ** $p \leq 0.05$; $p \leq 0.10$. tv: time-varying covariates.

Source: Estimations based on surveys' data: Dakar (2001) and Lomé (2000).

5.2.2. The effects of sociodemographic and cultural factors

Age at first pregnancy decreases the hazard of pregnancy in both Dakar and Lomé. But in Dakar, only women whose first pregnancy occurred after 25 years of age are 37% less likely to delay their next pregnancy than women whose first pregnancy occurred before 20 years of age. In Lomé, the negative effect starts from 20 years of age and the effect is particularly significant. These results would mean that women who begin motherhood later are those who desire to diminish their fertility. Thus, they are more likely to lengthen the interval between pregnancies by delaying the next pregnancy. Moreover, women who have reached a certain number of pregnancies are more likely to postpone the next pregnancy. In fact, the higher the rank of preceding pregnancy, the lower is the risk of becoming pregnant. For each additional rank of preceding pregnancy, the hazard of pregnancy decreases by 14% and 15% in Dakar and Lomé respectively. The fact that the likelihood of pregnancy is reduced when the family size is high would probably indicate a desire to stop childbearing. In addition, in Dakar it is noticed that the risk of pregnancy is a little higher (increase by 11%) when the child from the preceding pregnancy is a female than when the child is a male one.

Marriage increases the likelihood of becoming pregnant in both Dakar and Lomé. As shown in Table 3, women who are single or separated are 81% less likely to become pregnant than those in monogamous unions. The difference between the latter group and women living in polygamous union is also significant in each capital city. The results somewhat support the hypothesis of lower risk of pregnancy for women living in polygamous union (compared to monogamous union). In fact, polygamous union reduces the hazard of pregnancy by 13% and 9% in Dakar and Lomé respectively. As stated earlier, women in polygamous unions are less likely to live with their husbands and thus are less exposed to risk of pregnancy due to reduced frequency of sexual intercourse.

In both Dakar and Lomé, compared to older birth cohorts, all else being equal, younger are more likely to delay the next pregnancy. The younger the woman, the lower the risk of becoming pregnant even if the difference between the intermediate and young cohorts is not robust in Dakar. It would be more interesting to consider the interactions effect between birth cohort and calendar period in order to better understand this impact of birth cohort.

It's only in Dakar that ethnicity has an impact on the likelihood of pregnancy; *Lebou* and *Manding* are respectively 27% and 42% more likely than *Wolof* to become pregnant over time. This may be explained by the traditional practices of birth spacing in these ethnic groups in Dakar. Contrary to my hypothesis, having been socialized in another area than the capital city (Lomé or Dakar) has no effect on risk of becoming pregnant. It is also observed that women belonging to other brotherhoods besides *Mouride* or *Tidiane* are more likely to postpone their next pregnancy. Furthermore, it appears that mothers' profession is more strongly than fathers' profession to be associated with daughter's fertility. In fact, it is observed that mother's profession significantly affects the risk of becoming pregnant in both Dakar and Lomé. Thus, in Lomé, being the daughter of a housewife or a farmer (rather than the daughter of a trader) increases the risk of becoming pregnant over time, by 15% and 25% respectively. In Dakar, daughters of executives⁸ or traders are respectively 97% and 25% more likely than housewives' daughters to become pregnant.

5.2.3. The effect of employment on fertility across generations

I have assumed so far that the effect of female employment on fertility does not vary according to birth cohort. This is not necessarily true. In particular, it is probable that economic activity does not have the same impact on the likelihood of becoming pregnant for all birth cohorts. To determine whether this hypothesis is true, I run models in which I include the interaction term between female economic activity and birth cohort by combining these two covariates. This allows for direct comparison of cohorts within socio-professional groups on the one hand and socio-professional groups within cohorts, on the other hand. I summarize in Table 4 the hazard ratios of the effect of female employment on fertility across generations.

In Dakar, being inactive (compared to self-employed) reduces the hazard of becoming pregnant, by 40% among women of the oldest cohort. This sheds some light on the preceding result. For this cohort, childbearing is more a matter of life cycle than of incompatibility between professional and maternal roles. Being involved in economic activities does not prevent women from becoming pregnant but it is uncommon to do so when being non active (thus likely advanced in age). In the intermediate cohort, only unemployment seems to reduce the hazard of pregnancy but this effect is not significant. Moreover, the lower risk of pregnancy for non active women of youngest cohort could be explained by their economic status. Within this cohort, for women who are likely to be

⁸ This result concerning the executives' daughters should be cautiously interpreted since there are a small number of women-months at risk.

more educated, being non active implies a social position that doesn't enable them to bear and rear children.

In Lomé, it emerges from interaction effects that except for the youngest cohort, skilled paid jobs rather than self-employment predispose women to delay the next pregnancy. There is also a negative impact of unskilled paid jobs but it is only significant within the intermediate cohort. Paid jobs appear to be more incompatible with reproductive life within the older cohorts. Women of each cohort are less likely to become pregnant when they are studying or apprenticing. The negative effect of inactivity on the hazard of pregnancy over time seems to be only valid within the oldest cohort. This result corroborates the fact that in such a society where women have been always involved in economic activities, it is likely that women who are non-working are advanced in age and are more likely to have reached the end of their reproductive years.

Table 4. Interaction effects of birth cohort and economic activity on the hazard of pregnancy in Dakar and Lomé

Current economic activity	Comparison of birth cohorts according to economic activity					
	Dakar			Lomé		
	Oldest	Intermediate	Youngest	Oldest	Intermediate	Youngest
Skilled paid employee	0.83	1.44	<i>1.10</i>	0.71**	0.72*	<i>1.34</i>
Unskilled paid employee	0.76	1.27	0.66	0.86	0.55**	<i>0.64</i>
Self-employed (Reference)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Unemployed	<i>1.43</i>	0.77	<i>0.72</i>	<i>0.58</i>	<i>0.21**</i>	<i>0.92</i>
Student/Apprentice	<i>1.53*</i>	<i>1.08</i>	1.06	0.47***	0.66*	0.36**
Inactive	0.60***	1.17	0.59**	0.75***	0.86	1.00

Note: *** $p \leq 0.01$; ** $p \leq 0.05$; $p \leq 0.10$. Hazard ratios in italics are not valid because the number of women-months is too small (< 600).

Source: Estimations based on surveys' data: Dakar (2001) and Lomé (2000).

6. Conclusion

This paper aims at investigating the influence of women's professional life on fertility in two different cultural contexts through the analysis of the impact of female employment on the risk of pregnancy over time. Given the rarity of demographic literature on this topic in sub-Saharan Africa, this paper offers innovative findings on the relationships between female employment and fertility in urban context in Sub-Saharan Africa, even though the data used were not collected for this specific purpose. The comparison between Dakar and Lomé casts light on the role of the cultural environment on the mechanisms in stake when it comes to the study of the work-fertility relationship in sub-Saharan Africa.

Findings show that the effect of female employment on pregnancy intervals over time appears to be more significant in Lomé than in Dakar. In fact, women who are involved in some economic activity lengthen the interval between pregnancies; even if they are living in union. The hypothesis of incompatibility between paid employment and maternal obligations seems to be corroborated in Lomé where the results show that being a paid employee rather than self-employed decreases the risk of becoming pregnant over time. In fact, paid employment is exercised outside home so that women have to balance time spent at work and at home fulfilling maternal domestic tasks. Thus, for women in

Lomé, participation in economic activities may be preferred over staying home and having larger families. However, it is also true that women do not necessarily work from home when self-employed (this would enable them to be in charge of their familial obligations). The difference could be that being self-employed rather than salaried enables to better control one's schedule. In Dakar where female employment is less widespread than in Lomé, it appears that women have to carefully perform their family roles, namely bearing and taking care of children even if they are involved in economic activities.

If this comparative study permits us to examine the differences between Dakar and Lomé regarding the relationship between female employment and fertility, what does it add, in general to the explanation of this relationship among African women? It appears from these findings that it is important to consider the social gender-specific roles in order to appropriately determine the influence of female employment on reproductive life. The relationships between professional and reproductive lives depend on the specific characteristics of each society, in particular gender relations and roles. Women's place in the society as well as the gender-specific division of work and the patriarchal nature of the relations between men and women are related to the reproductive strategy in a given society.

In a sociocultural context like that of Dakar where the ideal of husband's predominance in the couple remains strong and well integrated by women, aspirations and attitudes of women regarding employment and fertility may be altered so that the negative effect of female employment on fertility is spurious or weak. In fact, it seems that the patriarchal system is so tenacious that even if women manage to be involved in economic activities, their social status hardly changes and male domination is far from diminishing. Moreover, women in Dakar willingly consent to this male domination; they do not push for egalitarian status in the couple even if their economic role is increasingly obvious due to the men's incapacity to perform their roles of main breadwinner. These attitudes and aspirations regarding their role affect the relationship between female employment and fertility more than possible difficulties in balancing childbearing and economic activity. In such a context, promoting female employment would not be enough to enable women to reduce their fertility (by making more acute the spatiotemporal incompatibility) as long as the social patriarchal organization, which leads to women's subordination, remains pregnant so that the normative incompatibility is not reduced.

In Lomé where women have been involved in labour market for ages (before men lost their economic or purchasing power), they seem to consider work as a legitimate alternative to their roles as mothers or spouses. Their ancient and appreciated participation to economic activities appears to enable them to control their fertility and improve their social status. Thus, women's autonomy acquired by a strong participation in the economic activity could be at the origin of the decline of fertility in Lomé. Women who are self-sufficient are likely to be more involved in fertility decisions.

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