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Premarital Fertility in Benin: Trends and Disparities

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ABSTRACT

This study focused on the analysis of the phenomenon of premarital fertility in Benin. It adopted a purely descriptive approach based on data from the five Demographic and Health Surveys (DHS) that the country experienced from 1996 to 2018. The incidence rate of premarital fertility has increased over the years, rising from 1% in 1996 to 2.5% in 2017-2018. Disparities are observed according to the characteristics (socio-cultural, socio-demographic and socio-economic) of the women surveyed. Women's age plays a role, with peaks seen in women aged 30-34 in 1996, 25-29 in 2001, and 35-39 in 2011-2012 and 2017-2018. The association between the kinship of the woman with the head of the household and the occurrence of a birth in a situation of celibacy is significant, with a higher frequency among female heads of households and those with close family ties. The level of education of the woman and the standard of living of the household are also associated, with a lower propensity among educated women and those with a high standard of living.

Keywords: Premarital fertility, Trend, Disparities.

1. Introduction

Fertility is a critical factor to consider when examining changes in population and demographic dynamics. In the context of Africa, traditional societies traditionally viewed having numerous offspring as a symbol of high social standing and a source of wealth, leading to a favorable attitude towards procreation. As a result, sub-Saharan Africa has emerged as the most fertile region on the planet, according to a report by the Population Reference Bureau (PRB, 2008). However, even though fertility held significant importance, it was regulated by norms and rules within these societies. It wasn't merely a matter of having a large number of children, but also ensuring their elevated social status and integration into society. Consequently, procreation within the bounds of marriage was the only socially acceptable sphere for having children, as highlighted by Adjamagbo, Antoine, and Delaunay (Adjamagbo, Antoine, & Delaunay, 2004). Births occurring outside of marriage were regarded as major social problems and were treated accordingly, with particularly severe stigmatization when unmarried women were involved.

Nevertheless, in recent decades, sub-Saharan African societies have undergone significant social and economic transformations, resulting in the erosion of social norms, values, and traditional practices surrounding marriage and childbearing (Garenne, Michel; Halifax, Juliette, 2000). These changes encompass various factors such as rapid urbanization, girls pursuing education beyond the traditional age of marriage, the emergence of new preferences among women for modern economic activities, the adoption of practices similar to those in developed countries, a desire to delay marriage, increased agency for women in choosing their partners, the availability of modern contraceptive methods for fertility control, and the practice of abortion. Collectively, these factors have contributed to shifts in attitudes and behaviors concerning marriage and childbearing within sub-Saharan African societies (Soler-Hampejsek, Mensch, & Hewett, 2009; UNICEF, 2005). These various changes have generated important transformations in the areas of marriage, sexuality and procreation. Consequently, we observe an increase in pregnancy rates among unmarried people, as well as an increase in the practice of abortion and an increase in births among this population (Gage-Brandon & Meekers, 1993; Laré & Amadou Sanni, 2017). In 2017, it was found that 40% of women under 25 in Gabon, Namibia and Liberia, as well as 30.4% of women under 25 in Nigeria, had ever given birth (Clarck, Shelley; Koski, Alissa; Smith-Greenaway, Emily, 2017).Thus, the sexuality of unmarried people and their commitment to motherhood are becoming common phenomena and seem to be socially accepted in many developing countries.

However, although social stigma is diminishing, the phenomenon of single motherhood has important consequences for both the young woman and her child. This is a status that is often associated with precarious living conditions (Adjamagbo, Antoine, & Dial, 2004). Many women are forced to abandon their studies or the trades they were learning in order to face the heavy financial responsibilities resulting from their pregnancy. (Garenne, Michel; Halifax, Juliette, 2000). Additionally, single mothers are at a higher risk of maternal and infant death, as they typically receive less attention and assistance from their own parents and in-laws, compared to married mothers. Their children are also more likely to suffer from growth problems and malnutrition (Clarck, Shelley; Hamplová, Dana, 2013; Ntoimo & Odimegwu, 2014). Fear of these obstacles drives many young girls to resort to clandestine abortions, which

can lead to long-term health and reproductive problems. This is all the more worrying because, in some cases, it can endanger their lives when it would have been possible to avoid such risks. (N'Bouké, Calvès, & Lardoux, 2016).

Thus, the phenomenon constitutes a threat to the achievement of several Sustainable Development Goals, in particular the first four (SDGs 1-4) which aim to establish quality human capital, essential to achieve the demographic dividend sought by all countries of the world. . Premarital fertility is, therefore, a problem of such gravity that it must attract the attention of political decision-makers, various development actors and the research community. Unfortunately, in Benin, as in many other Francophone West African countries, research on this topic is still relatively limited. Although existing works provide insights on qualitative aspects, they offer little information on quantitative indicators.

2. Materials and method of analysis

In this section, we endeavor to present the general methodology of the study, in particular, the source of the data used, the sampling procedure and the method of analysis used. It is important to specify that this study is purely quantitative. It is therefore based on calculations of statistical indicators.

2.1. Source of study data

Demographic and Health Surveys (DHS) are the most appropriate data to study the dynamics of premarital fertility in Benin. These surveys are part of the International Demographic and Health Survey (DHS) Program and were carried out by the National Institute of Statistics and Economic Analysis (INSAE). So far, Benin has carried out five phases of these DHS in 1996, 2001, 2006, 2011-2012 and 2017-2018. This makes it possible to analyze the evolution of premarital fertility, in particular among single people. Data collection took place between June and August 1996 (EDSB 1), August 2 to November 13, 2001 (EDSB 2), August 3 to November 18, 2006 (EDSB 3), December 10, 2011 to March 31, 2012 (EDSB 2011-2012) and from November 6, 2017 to February 18, 2018 (EDSB 2017-2018). Each of these surveys includes three parts: household, woman and man. This study focuses particularly on single women of childbearing age (15-49 years). The choice of this target is explained by several reasons: important socio-economic changes are occurring in the country, which lead to changes in procreation and marriage; birth history is more complex and prone to error among married women who have already had a significant number of children compared to unmarried women. Observation of premarital fertility is therefore simpler and more reliable among single people, since it is based simply on the presence or absence of births. In addition, it is necessary to take into account the ages and years of birth of children in married women, which can lead to omissions and misreporting, as they have generally had more children than single women. In total, respectively 5,491, 6,219, 17,794, 16,599 and 15,928 women aged 15 to 49 were surveyed in 1996, 2001, 2006, 2011-2012 and 2017-2018.

2.2 Sampling

It is important to note that the data used in this study was collected by INSAE. The sampling procedure we describe here is the one used by this institution. The five Demographic and Health Surveys (DHS) were carried out on samples constituted by surveys in stratified clusters at two levels. For the first survey (EDSB-I), 200 clusters were selected (at the first level) from the list of enumeration areas (ZD) established during the RGPH-II of 1992. Then, from the list of households identified in each cluster, 4,777 households were selected. All women aged 15 to 49 were the subject of an individual questionnaire. During the second DHS, 247 clusters and 5,769 households were actually surveyed. For the EDS-III, there were 750 clusters and 17,511 households. For the fourth survey (EDS-V), 750 clusters and 17,422 households were interviewed. In the last DHS, there were 555 clusters and 14,156 households. The sampling procedure guarantees the representativeness of all women of childbearing age. In other words, the results and observations concerning the women surveyed should reflect the situation of all women in this age group in the country. In the study of the fertility of single people, we are interested in single women who began their first pregnancy during the year of the survey, on the one hand, and those who are still single of childbearing age, on the other hand. The total numbers of these women are respectively 935, 1,257, 3,253,

2.3 Analysis Method

The analysis carried out within the framework of this study is purely descriptive. It aims to explore the level of the phenomenon of premarital fertility and its evolution over time, on the one hand, and its variations according to the socio-demographic, socio-cultural and socio-economic characteristics of women, on the other hand. It is therefore carried out using simple frequency tables, graphs and contingency tables. Chi-square tests are carried out in order to assess the existence or otherwise of links between the variable of interest (birth experience or not) and the characteristics mentioned above.

The level of the phenomenon is measured as follows:

If we denote by F, the number of single women surveyed during a given year and by , the number of those who had their first birth during this year, the level (or incidence rate) of premarital fertility is determined by : M

$$I = \frac{M}{F} * 100$$

It is therefore the percentage of single women who became mothers during the year of study. Variations in this rate are explored by year and by each of the women's individual and contextual characteristics.

3. Results

This part is devoted to the presentation of the results of the study. As mentioned above, this analysis is broken down into two main parts: a unified and varied part, which makes it possible to understand the level and trend of the phenomenon over time, on the one hand, and a bi-varied part, which allows us to perceive the variations of this level according to the socio-demographic, socio-cultural and socio-cultural characteristics of women.

3.1. Incidence and trend of premarital fertility

Remember that the incidence of fertility is measured on the basis of new cases of single mothers during the survey year. For a given year, it is therefore the ratio (in percentage) of the number of women who became mothers during the said year by the number of single women in that year. Figure 1 shows how this incidence rate has evolved from one year of the Demographic and Health Survey (DHS) to another, in particular from 1996 to 2017-2018.
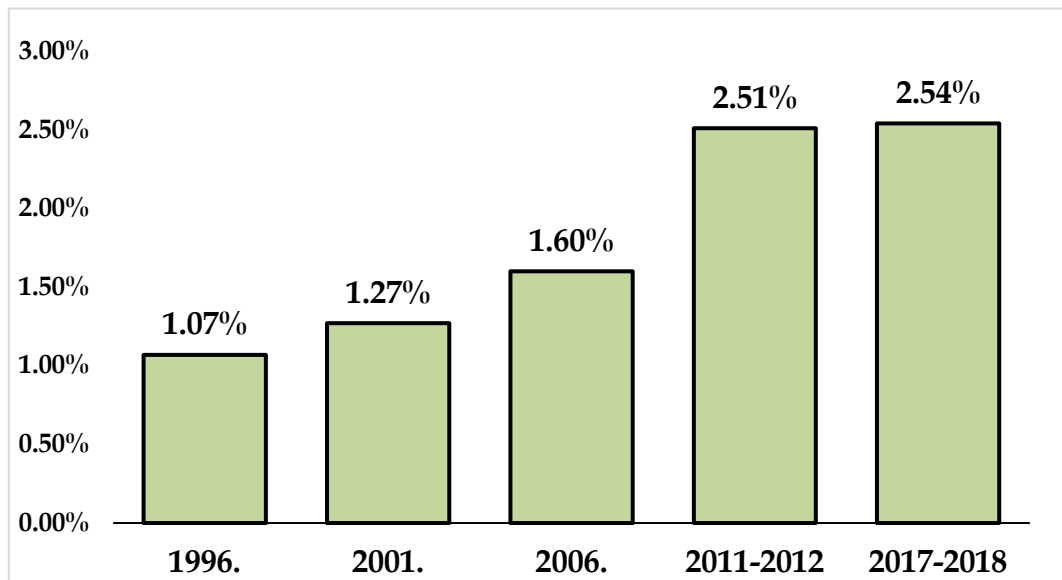

Figure 1: Evolution of the incidence rate of premarital fertility

Source: Our calculations based on EDSB I, II, III, IV and V data

From Figure 1, the premarital fertility incidence rate has continuously increased over time. Indeed, from 1% in 1996, it rose to 2.5% in 2017-2018. It has therefore more than doubled in 21 years. In addition, there is a slight increase of 0.03% from 2011-2012 to 2017-2018 compared to previous periods. However, in addition to the changes observed over time, there are those according to the personal and contextual characteristics of these women.

3.2. Disparities in the incidence of premarital fertility according to sociodemographic, sociocultural and socioeconomic characteristics of women

Tables 1, 2 and 3 below are excerpts from crosses of the variable of interest and the socio-demographic, socio-cultural and socio-economic characteristics of women. Chi-square tests carried out for this purpose provide information on the existence or not of relationships as well as the levels of significance (the p-values of these tests are recorded in these tables).

3.2.1. Sociodemographic characteristics and premarital fertility

Here, we study the variations in the incidence rate of premarital fertility according to age, relationship to the head of household (HC) and knowledge or not of modern contraception. Varying levels of association are observed with respect to these socio-demographic characteristics as shown in Table 2.

Table 1: Incidence rate of premarital fertility according to socio-demographic variables

Variable	School year				
	1996	2001	2006	2011-2012	2017-2018
Age					
15-19	0.84	0.33	1.00	1.84	1.59
20-24	1.71	3.23	2.88	3.66	4.98

Variable	School year				
	1996	2001	2006	2011-2012	2017-2018
25-29	0.00	6.00	3.33	5.24	5.56
30-34	14.29	-	8.33	-	10.53
35-39	-	0.00	0.00	13.04	14.29
40-44	0.00	0.00	0.00	0.00	0.00
45-49	-	0.00	0.00	0.00	0.00
Significance	*ns*	***	***	***	***
Relationship with the CM					
head of household	0.00	5.71	0.00	8.33	5.15
next of kin	1.00	1.51	1.71	2.66	2.58
Sister	0.00	0.00	1.08	1.94	4.70
other relative	0.68	1.12	0.95	0.83	1.80
Unrelated	2.44	0.00	2.65	1.06	1.28
Significance	*ns*	**	*ns*	***	*
Knowledge of modern methods of contraception					
knows	1.03	1.29	1.74	2.90	2.83
Do not know	1.18	1.15	0.70	0.78	0.62
Significance	*ns*	*ns*	*ns*	***	***
Together	1.07	1.27	1.60	2.51	2.54

*ns = not significant; *** significant at 1%, ** significant at 5%; * significant at 10%*

Source: Our calculations based on EDSB I, II, III, IV and V data

A Chi-square test with a p-value of less than 5% highlights the existence of a statistically significant link between the two variables present at the 5% threshold. One proportion therefore stands out significantly from the others. The same is true for a p-value of less than 10%. Proportions are therefore interpreted only for cross-tabulations with significant p-values.

Examination of the relationship between the woman's age at the time of the survey and her status (mother or not) reveals a significant association at the 1% level, regardless of the year of study considered. We also note various variations, depending on age, in the rate of single mothers over time. In 1996, the incidence of the phenomenon was higher among women belonging to the age group of 30-34 years old. Within them, more than 14% were mothers during the year. They were followed by those aged 20-24 years old, who, although having a rate (1.7%) relatively low to that of 30-34 year olds, exceeds the general level. In 2001, the incidence of the phenomenon was greater among women aged 25-29 (6%) followed by those aged 20-24 (3.23%). At the third EDS (2006), the highest rates are recorded in the age groups of 30-34 years (8%) and 25-29 years (3%). In 2011-2012 and 2017-2018, there is also a higher incidence among those aged 35-39. Overall, whatever the year, the incidence rate increases with the age of women from 15 to 34 years. Thus, during this period, the older the woman, the more she tends to procreate in a situation of celibacy. Moreover, before 2011-2012, we note the non-appearance of the phenomenon among women aged 35 and over. the older the woman, the more she tends to procreate in a situation of celibacy. Moreover, before 2011-2012, we note the non-appearance of the phenomenon among women aged 35 and over. the older the woman, the more she tends to procreate in a situation of celibacy. Moreover, before 2011-2012, we note the non-appearance of the phenomenon among women aged 35 and over.

Regarding the relationship of the woman to the head of the household and the occurrence of a single birth, the association is only significant for certain years. It is at the 5% threshold only in 2001 and 2011-2012 and at the 10% threshold in 2017-2018. Just like the woman's age, there are also various variations in the incidence rate over time depending on the parentage. For each of these years when a significant relationship is observed, the single mother phenomenon is more evident among women who are not under the authority of anyone (head of household): it is therefore almost due to CM women. In addition to these female heads of household, the incidence rate is higher among women with very close family ties to the CM in 2001 (1.5%) and 2011-2012 (2.7%) and sisters in CM in 2017-2018 (4.7%). After the CMs, the phenomenon affects more the women who are closest to them in terms of kinship compared to the others. Note that the CM's close relatives are their daughters and granddaughters. Moreover, compared to 2001, the level of the phenomenon increased in 2017-2018 within each subgroup of women except that of heads of household.

At the 5% threshold, the occurrence or not of a birth is associated well with the knowledge or not of modern methods of contraception in 2011-2012 and 2017-2018. The incidence of the single mother phenomenon is greater among women who are familiar with MMCs. While about 3% of those who know about these methods become mothers in 2011-2012, less than 1% (0.8%) of those who do not know about them are concerned. In 2017-2018, a similar

observation is made. There are therefore fewer single births among women who know only traditional methods of contraception or know no method at all compared to those who know about modern methods.

3.2.2. Sociodemographic characteristics and premarital fertility

The analysis of the interactions also concerned the sociocultural characteristics of the women, in particular the region of residence, the place of residence, the ethnic group to which they belong and the religion practiced. Like the socio-demographic characteristics, the p-values of the Chi-square tests reveal variable levels of significance according to these characteristics. Table 3 provides information on these aspects.

Table 2: Incidence rate of premarital fertility according to sociocultural variables

Variable	School year				
	1996	2001	2006	2011-2012	2017-2018
Region of residence					
Atacora/Donga	4.24	3.90	5.85	4.58	5.74
Atlantic/Coastal	0.72	1.32	0.91	2.03	1.81
Borgou/Alibori	0.66	2.04	4.01	2.93	3.82
Mono/Couffo	0.00	1.08	0.39	1.30	1.13
Oueme/Plateau	0.66	0.90	0.18	1.77	1.75
Zou/Hills	0.90	0.00	1.49	3.51	2.08
Significance	***	*ns*	***	**	***
Place of residence					
Rural	1.09	1.24	1.93	2.96	2.49
Urban	1.05	1.30	1.35	2.13	2.59
Significance	*ns*	*ns*	*ns*	*ns*	*ns*
Ethnic group					
Adja and related	0.63	1.15	0.61	1.92	1.08
Bariba and related	1.41	2.60	2.65	3.56	4.46
Betamaribe and relatives	2.63	2.94	7.74	4.29	7.42
Dendi and relatives	0.00	3.13	1.89	0.97	3.85
Fon and relatives	0.72	0.86	0.93	2.23	1.98
Fulani and relatives	2.50	0.00	3.77	0.00	2.38
Yoa, Lokpa and relatives	4.26	0.00	6.86	5.94	3.61
Yoruba and relatives	0.95	2.30	1.23	2.69	1.95
Other ethnicity	0.00	0.00	0.00	4.55	1.92
Significance	*ns*	*ns*	***	*ns*	***
Religion					
Atheist	3.08	2.60	1.84	5.43	3.70
traditional	0.93	0.74	1.47	1.82	1.26
Catholic	0.91	1.08	1.68	2.54	2.75
Other Christian	0.00	0.73	0.67	2.33	2.08
Muslim	1.65	2.35	2.91	2.22	3.06
Significance	*ns*	*ns*	*	*ns*	*ns*
Together	1.07	1.27	1.60	2.51	2.54

*ns = not significant; *** significant at 1%, ** significant at 5%; * significant at 10%*

Source: Our calculations based on EDSB I, II, III, IV and V data

Apart from the year 2001, the region of residence is significantly associated with the fact of giving birth or not in a situation of celibacy at the threshold of 5%. From the analysis of this table (2), it appears that the manifestation of the phenomenon is relatively stronger in the Atacora/Donga region, whatever the year of study. The level in this region evolved in saw teeth varying around 5.1%, a value much higher than that of the whole. Apart from this region, the most affected are Zou/Collines (0.9%) in 1996, Borgou/Alibori (4%) in 2006, Zou/Collines (3.5%) in 2011-2012 and Borgou/ Alibori (3.8%) in 2017-2018. There is therefore an alternation between the regions of Borgou/Alibori and those of Zou/Collines for the second position (after Atacora/Donga). Moreover, the phenomenon is less evident in the Ouémé/Plateau and Mono/Couffo regions in 2006, 2011-2012 and 2017-2018. It is important to note that the regions of Atacora/Donga and Borgou/Alibori constitute the northern zone of the country and a good part of Zou/Collines (in particular the department of Collines) constitute the center of the country. Thus, the phenomenon seems to be due to the northern and central regions of the country.

The single woman's ethnic group is associated with the fact of procreating or not at the 5% threshold in 2006, then in 2017-2018. The incidence rates of the phenomenon increased from 2006 to 2017-2018 for each ethnic group, except for the Betamaribe and relatives and the Fulani and Yoa, Lokpa and relatives. In 2006, the highest rates were observed among the Betamaribe (7.7%), the Yoa, Lokpa (6.9%) and the Bariba (2.7%). In 2017-2018, after the Betamaribe (7.4%), come the Bariba (4.5%) and the Dendi (3.9%). All these ethnic groups are in the majority in the northern part of the country, particularly in the departments of Atacora/Donga and Borgou/Alibori. Also, within Bariba and related, there is a year-over-year upward trend from 1996 to 2017-2018.

In addition, regardless of the year of study, the place of residence and the religion practiced by the woman are not associated at the 5% threshold with being a single mother (p-values > 0 ,05).

3.2.3. Socioeconomic characteristics and premarital fertility

Just as for the socio-demographic and socio-cultural characteristics studied above, those of a socio-economic nature, in particular the level of education and the standard of living, are associated with varying degrees of significance with the phenomenon of single mothers. Table 3 below shows the results relating to these characteristics.

Table 3: Incidence rate of premarital fertility according to socioeconomic variables

Variable	Year				
	1996	2001	2006	2011-2012	2017-2018
Educational level					
Illiterate	1.35	1.64	2.40	3.48	3.50
Primary	0.98	1.33	1.38	3.41	3.38
Secondary and above	0.55	0.77	1.23	1.81	1.76
Significance	*ns*	*ns*	*	**	***
Quality of life					
Poor	1.90	1.59	1.71	3.98	3.25
AVERAGE	1.29	1.89	1.87	2.20	2.92
Rich	0.24	0.94	1.49	1.92	2.04
Significance	*	*ns*	*	***	**

*ns = not significant; *** significant at 1%, ** significant at 5%; * significant at 10%*

Source: Our calculations based on EDSB I, II, III, IV and V data

The level of education of the woman is significantly associated with the fact of procreating in a situation of celibacy from 2006 at the 10% threshold and from 2011-2012 at the 5% threshold. Overall, when moving from one level of education to another relatively higher, there is a drop in the incidence rate of the phenomenon. In other words, the more women have a high level of education, the less likely they are to be single mothers. This state of affairs concerns all the years of study. On the other hand, among women with no education, the rate increased over time from 1996 to 2017-2018. Among the others, particularly those at the primary and secondary levels or higher, the increase was observed until 2011-2012; after which, there is a decrease.

The association between the standard of living of the woman's household and her attitude towards fertility in a situation of celibacy reveals significance in 1996 and from 2006 to 2017-2018 at the 10% threshold and from 2011-2012 at the 5% threshold. The phenomenon is more evident among poor women, regardless of the year of study. On the other hand, it affects the wealthiest women less. The more the standard of living improves, the less women are inclined to experience the phenomenon. In addition, among women with average and better (rich) living standards, the incidence rate evolved following an upward trend over time, thus reaching the maximum values in 2017-2018 (2.9% and 2% respectively).). In addition, among poor women, the evolution was rather uneven with a peak of 4% in 2011-2012.

4. Conclusion

This research focused on premarital fertility in Benin. She was particularly interested in the incidence, extent and variation of the phenomenon over time and according to the socio-cultural, socio-demographic and socio-economic characteristics of the women surveyed, based on data from the five Demographic Surveys and Health (DHS) carried out in the country (1996, 2001, 2006, 2011-2012 and 2017-2018). The results indicate that the incidence rate of premarital fertility increased from one survey year to another. From 1% in 1996, it rose to 2.5% in 2017-2018. So it more than doubled. In 1996, a higher incidence of the phenomenon of premarital fertility was observed among women aged 30 to 34. In 2001, the incidence of the phenomenon is greater in women aged 25 to 29 years. In the third survey (2006), the highest rates are recorded among women aged 30 to 34 (8%) and 25 to 29 (3%). In 2011-2012 and 2017-2018, there is also a higher incidence among women aged 35 to 39. The association between the woman's kinship with the head of the household and the occurrence of a single birth is only significant for certain years (2001, 2011-2012 and 2017-2018). The phenomenon of premarital fertility is more frequent among female heads of household and those with close family ties to the head of household. Incidence rates vary by age and parentage. We observe an increase in the phenomenon in 2017-2018 compared to 2001, except for female heads of household. In addition, the incidence of the phenomenon is greater among women who know modern methods of contraception. The manifestation of the single mother phenomenon is stronger in the Atacora/Donga region, with a level fluctuating around 5.1%. The most affected regions outside Atacora/Donga are Zou/Collines, Borgou/Alibori and part of Zou/Collines. The incidence rates of the phenomenon increased from 2006 to 2017-2018 for each ethnic group, except for the Betamaribe and relatives and the Fulani and Yoa, Lokpa and relatives. In 2006, the highest rates were observed among the Betamaribe (7.7%), the Yoa, Lokpa (6.9%) and the Bariba (2.7%). In 2017-2018, after the Betamaribe (7.4%), come the Bariba (4.5%) and the Dendi (3.9%). The place of residence and the religion practiced by the woman are not significantly associated with the phenomenon, whatever the year of study. Moreover, the level of education of the woman is significantly associated with the occurrence of a single birth, with a drop in the incidence rate observed for women with a higher level of education. The standard of living of the woman's household is also associated with this phenomenon, with a higher propensity among poor women and a decrease among better-off women. Among uneducated women and those with a medium and high standard of living, the incidence rate evolved over time, while among poor women, it experienced a more fluctuating evolution.

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