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**The Socioeconomic Determinants of the Prevalence HIV/AIDS among Women in Cameroon**

Nguenda Anya Saturnin Bertrand<sup>40</sup>

**Abstract**

HIV/AIDS infection is a serious public health problem in Cameroon. It is a main cause of mortality which negatively affects the economic and social development of the country. The last demographic health survey in the country shows that the phenomenon is widespread and affects mostly youths and women. The aim of this study is to analyse the socioeconomic determinants of HIV/AIDS prevalence among women in Cameroon. The methodology is theoretically inspired by the economic rational choice theory of sexual risk behaviour and uses logistic regression for empirical testing. Data is collected from the 2011 Demographic Health Survey of the National Institute of Statistics. The results show that women who have a high probability of being HIV Positive are those who are sexually active, widows or divorced, live in urban areas, uneducated or have primary education, and belong to poor or average income households. These are also women who are physically assaulted, who don't use condoms, are not aware of HIV/AIDS, have many sexual partners, are unemployed, and have male sexual partners who are older than them.

**Key words:** HIV/AIDS, prevalence, women, socioeconomics determinants, economic model of sexual risk behaviour.

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## **1. Introduction**

Health is the basic condition of human live and a significant component of human capabilities. Health inequalities are particularly worse than the other forms of inequalities (Sen, 2002; Tobin, 1970) because it deprives one of their abilities which are essential dimensions of individual well being (Sen, 2002). In fact capability involves being able to carry out a set of functions which translate what an individual can extract from available resource and the opportunities offered given its potential. In other words, capability is the capacity of individuals to convert resources into real well being, which is absent in the analysis in terms of basic and utility goods. One of the major implications of the approach of capabilities lies in the fact that the improvement of well being of individuals considers access to resource but most especially the existence of capacity to take advantage of these resources and finally modify the quality of life. In this context, the contracting of HIV/AIDS by women can be considered as a deprivation of human capabilities since illness reduces the stock of health of the sick women and reduces the time spent on marketable and non marketable activities. In other words HIV/AIDS reduces the capabilities of sick women to convert available resources, for example human capital which includes physical, nutritional, cognitive and biological abilities (Schultz, 1961), that is made available as effective well-being.

In Africa, HIV/AIDS infection through unprotected sex and mother to child transmission is on the rise (Mwabu, 2012). However in Sub-Saharan Africa women are subordinates when it comes to sexual intercourse (Reid, 1999; Cohen and Trussell, 1996), and this reduces their capacity to negotiate protected sex with their partner (Akwaru et al., 2003). Sexual behaviour therefore depends largely on the social, cultural and economic environment in sub-Saharan Africa (Caldwell et al., 1999). Sexual risks can be accepted in some cases whereas in others it is strongly disapproved and considered to be irresponsible and immoral (Akwaru et al., 2003). For example, multiple partners is tolerated for men whereas the unfaithfulness of the women is controlled by norms and social practices (Caldwell et al., 1999). In this context, the female population in Sub-Saharan Africa is more exposed to HIV/aids infections. Women represent 58% of the total number of persons living with HIV in sub-Saharan Africa (UNAIDS, 2014)

In Cameroon, the last demographic and health survey (EDS) organised in 2011 shows that 4.3% of adults between the ages of 15 to 49 years are HIV positive. The rate of HIV prevalence among women between 15 to 49 years is 5.6 % whereas it is 2.9% among men of the same age range. Thus, the prevalence among women is twice that of men of the same age range. Therefore there is the infection ratio between women and men is 1.9; in other words, there are 190 infected women for 100 men which mean that women are more vulnerable than men (EDS-MICS, 2011).

The focus of this work is at least two fold. First the fight against HIV/AIDS is the millennium development objective. The Cameroon government particularly aims at reducing the prevalence of HIV/AIDS by 50%. The policies aimed at fighting against HIV/AIDS have to be based on a good understanding of the factors through which the virus infects the population (Akwaru et al., 2003). Moreover, women and children are the most vulnerable group among HIV infected persons. By identifying the socio-economic factors which expose women to HIV infection, this work equally enables to indirectly identify the risk factors for children since transmission from mother to child is the major means of infection for children in Cameroon. Secondly, Bonggaarts

(1995) shows that sexual behaviour is probably responsible for the important difference in the rate of prevalence of HIV/AIDS among heterosexuals. In this perspective this study enables us to find out the factors which favour sexual behaviour that can easily favour the infection of women. It involves finding out for example how gender inequalities lead to a risky sexual behaviour among women.

The rest of the paper is organised as follows. In section 2 we present a review of literature. In section 3 describe the methodology. In section 4 we comment the results and in section 5 we conclude.

## **2. Literature Review**

After presenting the theoretical basis of the strong vulnerability of women with respect to HIV/AIDS infection, we are going to present some empirical works on the socio-economic determinants of the vulnerability of women infected with HIV/AIDS.

### **2.1 The Theoretical Basis of the Vulnerability of women to HIV/AIDS**

Generally, the theoretical literature on the vulnerability of women to HIV/AIDS includes contributions from economists as well as from demographer and public health researchers. In this part, we briefly review the theoretical tendencies of the vulnerability of women to HIV/AIDS based on two aspects on which economists remain particularly active: individual health behaviours and gender and power inequalities (Kremer and Glennerster, 2012).

Individual health behaviours can be described as any deliberate or non deliberate individual action that directly affects the health of an individual or that of other individuals (Cawley et Ruhm, 2012). Most economic works on the individual health behaviour are based on the capital-health model (Grossman, 1972). The basic teaching of this model is that individuals are born with a certain amount of health-capital which depreciates as they get older, but which can be maintained or improved by health investments. Thus death comes when the stock of capital falls below a minimum level. Health involve aspects of consumption and investment since it is part of the utility function of an individual and determines the available time allocated for the production of marketable and non marketable goods and services (Grossman, 1972). One of the implications of the capital-health model is that health or death depended on the conscious decisions of investment in health capital taken by individuals with perfect knowledge of their consequences on the longevity of their lives (Cawley and Ruhm, 2012). Therefore individuals produce health by contributing marketable and non marketable goods over time available within the framework of a household production model (Becker, 1976). In this context, an individual therefore has total control over his health behaviour. A woman can therefore produce health by using female condoms for example during risky sexual relationships so as to prevent the contracting of HIV/AIDS.

The theory of gender and power developed by Connell (1987) is a social theory based on the presence of inequalities of gender and power between men and women. According to the teachings of this theory, there exist three major social structures which characterise relations of gender between men and women: the sexual division of work, the sexual division of power and the structure that is said to be catharsis (Connell, 1987). The sexual division of work leads to the

attribution of some specific tasks to women and men; women are often confined to unfavourable employment positions in terms of opportunities and remuneration with respect to men. The sexual division of power is translated by the disequilibrium of power that makes the woman to depend on her male partner because men usually have control over financial resources. The catharsis structure on its part, indicates the affectionate or emotional attachment of women rather than men (Connel, 1987; Wingood and Diclemente, 2000). The disequilibrium of power between men and women leads to the economic dependence of women. In most societies, men have a greater control over and access to productive resources Women can be constraint to remain in a risky or abusive relationship due to the economic consequences of their departure. Sexual relations serve as exchange currency and survival strategy ; and these transactional sexual relations are usually carried out with elderly men thus more susceptible of being HIV positive (Gupta, 2000).

## **2.2 Overview of Empirical Studies on the socio-economic determinants of the Vulnerability of Women to HIV/AIDS**

In industrialised countries, the risk of HIV/AIDS infection is higher for women from ethnic minorities and poor communities. Several studies have proved the existence of a positive relation among the poor and HIV/AIDS infection. In the United States, a study carried out on a random sample of 580 women shows that women having a low monetary income are less exigent on the use of condoms with their partners with respect to women with higher income. Thus, poor women deploy less effort to use preventive material against HIV/AIDS, this increases their risk of exposure to the illness (Wingood and Diclemente, 2000). Another study carried out among black American women in the United States shows that unemployed women use condoms three time less than women who have a job (Wingood and Diclemente, 1998). Women without shelter or who live in a fragile shelter have higher rates of several characteristics associated to high risks of HIV infection. These women are exposed to poverty, absence of education, sexual abuse, dependence and depreciation (Bassuk and al., 1997; Koegel and al., 1996). A study carried out among poorly lodged women in the United States finds a significantly high link between fragile lodging and exposure to risky sexual behaviour (Biglan and al.,1995). In sub-Saharan Africa, poverty equally increases the exposure of individuals to HIV/AIDS (Mwabu, 2012).

In South Africa, for example, studies show that poverty reinforces the ignorance of women on the risk of HIV infection and favours a weak access of individuals to monetary resources facilitating their engagement in unprotected sexual relationships (Green and al., 2009). Multiple partners is a risky behaviour that exposes women to HIV/AIDS (Parker and al., 2009). In Zimbabwe, Pettifor and al. (2004) find that for several young women the choice of the date of their first sexual intercourse is not a decision that depends on their authority. Moreover, this disequilibrium of power renders these women unable to refuse unprotected sexual intercourse or impose the use of condom. In Zambia, Sandoy and al (2006) find that single pregnant women tend to be more exposed to HIV/AIDS infection than pregnant women who are married. In addition, divorced women and widows have higher risk of infection than married women. However, Chapoto and Jayne (2005) find that when the woman is married or the head of the household, it significantly reduces exposure to the risk of infection in Zambia. The absence of the education of women reduces the understanding of preventive materials and restricts access to

programs of prevention, which reduces their aptitude to engage in unprotected sexual intercourse (De Bruyn, 1992).

On the contrary, Fylkesnes and al (1997) find that in rural and urban areas of Zambia, zero prevalence increases with the level of education. In Ivory Coast, individuals that are more educated are more exposed to HIV/AIDS due to multiple partners (Cogneau and Grimm, 2006). In Tanzania a study carried out in rural areas shows that the education of women on the prevention and treatment of sexually transmitted diseases has lead to a fall of about 42% of the incidence of HIV for women from 15 to 24 years of age (Grookurth and al., 1995). Studies make us to believe that violence limits the aptitude of women to negotiate the use of preservatives. Thus, for example a study carried in South Africa lead to the conclusion that women who had constrained sexual intercourse were six times more risky than other irregular users of preservatives and that moreover; women who use preservatives irregularly were 1.6 times more likely to be infected by HIV than those who used preservatives regularly (SANAC, 2010). Another study still in South Africa put into evident the fact that, women who are prior victims of physical services had a probability of 1.6 times of making their present partner to use preservatives than other women (SSA, 2007).

### **3. Methodology**

The methodology of this work is based on the theoretical framework, the specification of the econometric model, the choice of variables of the study and the source of data.

#### **3.1 Theoretical Framework**

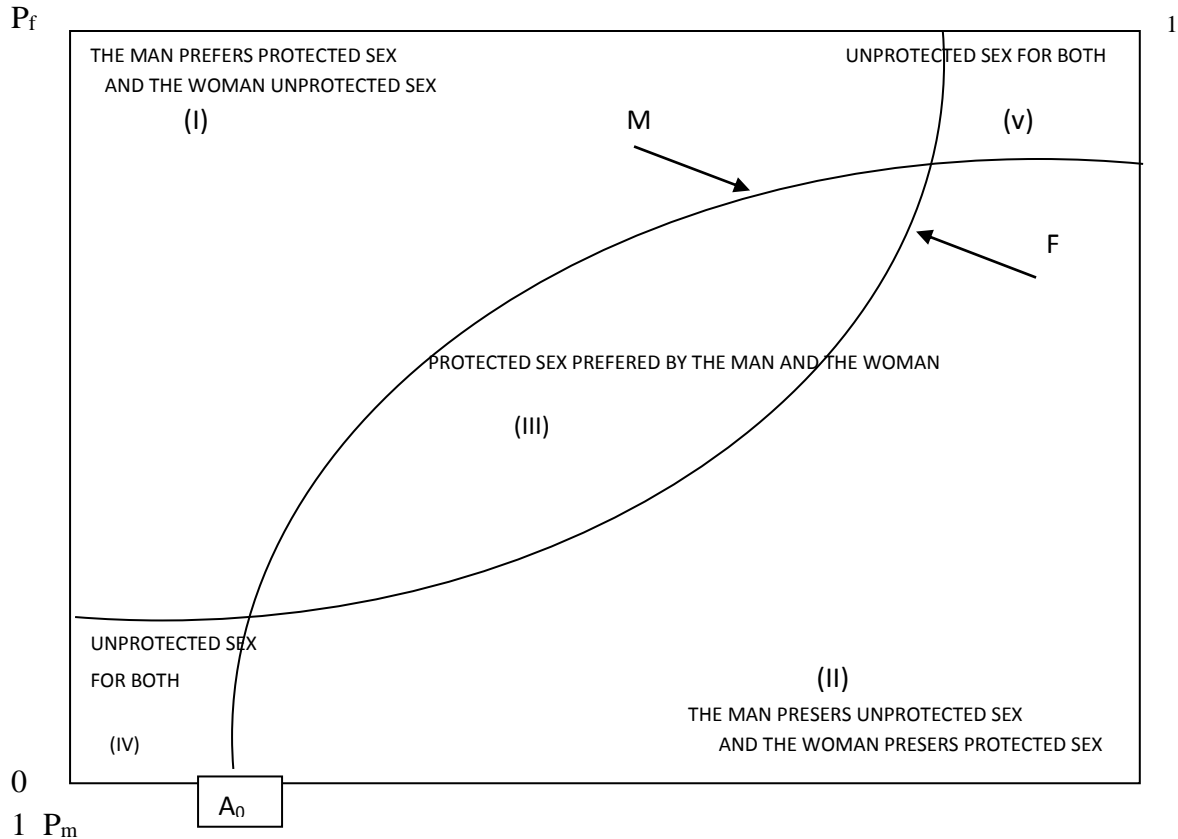
The theoretical framework adapted in this paper is based on the model of the rational choice of risky sexual behaviour borrowed from Philipson and Posner (1993). Their model supposes that individuals make a rational choice between protected and unprotected sexual intercourse. The expected utility (EU) of unprotected sexual intercourse for women (f) and for men (m) is equal to the benefit (B) minus the expected costs (C) of unprotected sexual intercourse. The utility functions of the unprotected sexual intercourse are respectively for women and for men, as follows:

$$EU_f = B - C(P_{tm}(1 - P_f)P_m) \quad (1)$$

$$EU_m = B - C(P_{tf}(1 - P_m)P_f) \quad (2)$$

EU : expected utility of unprotected sexual intercourse; B : the benefit of unprotected sexual intercourse ; C : the cost of being infected by HIV/AIDS ;  $P_{ti}$  : probability of transmission, i = f or m ;  $P_i$  : probability that f or m is already infected, i = f or m. According to the authors of the model, a mutual benefit and a risky sexual exchange occur if and only if the two partners that is the woman and the man get a positive expected utility that is  $EU_f > 0, EU_m > 0$ . However it can also occur that the exchange of risky sexual intercourse happens when the expected utility is negative, that is when there is violence or rape. The benefit of unprotected sexual intercourse is equal to the disutility from the use of condoms by supposing that protected sexual intercourse is carried out with condom. The benefit is supposed to be that same for the two partners but they can have different utilities. In fact, the man and the woman and the man do not necessarily have the same disutility for the use of condom during sexual intercourse. It is the cost of being infected by HIV/AIDS. This cost includes financial cost such as expenses on health, the loss of

income due to the fall in the time allocated to marketable activities; and non financial cost such as the disutility from illness, inability, socio exclusion in the case of developing countries and premature death. If the man and the woman are supposed to be altruistic this means that if one of them is infected he or she does not bear all the costs. Altruism can either reduce or increase the cost of unprotected sexual intercourse. An altruistic person will carry out protected sexual intercourse so as not to contaminate his egoistic partner on one hand and on the other hand a altruistic person consents to carry out unprotected sexual intercourse with their partner if they will increase their utility. The economic choice of the risky sexual behaviour is presented in figure1



**Figure1: Economic choice of risky sexual behaviours**

Source: Philipson and Posner (1993)

The framework as a whole translates all the possible combinations of probabilities of HIV/AIDS infection for the man and the woman. Curve M represents the combinations of probability for which the man is indifferent between protected and unprotected sexual intercourse. Curve F is the equivalence of curve M for the woman. The expected cost of the engagement in risky sexual intercourse depends on costs ( $C$ ) to be infected by HIV/AIDS and the probability of being infected. Equations (1) and (2) correspond to this probability expressed as a function of three other probabilities: (i)  $P_m$  which is the probability that the man should already be infected, (iii)  $P_{tm}$  and  $P_{tf}$  are the probabilities of transmission which are such that if the man id infected then sexual intercourse with him infects the woman and vice versa.

On the left at the corner of the framework, where  $P_f = 0$ , the woman consents to have unprotected sexual intercourse with the man on condition that  $B/CP_{tm}P_m$ , the cost-benefit ratio is at least 1 that signifies that the benefits exceed or are equal to costs. The cost-benefit ratio is greater than 1 if  $P_m$  is weak. At point  $A_0$ ,  $P_m$  is positive but weak enough to give a cost-benefit ratio equal to 1 even though  $P_f = 0$ . But if  $P_m$  becomes higher the woman could refuse to engage in risky sexual intercourse with the man. The woman consents to engage in more and more risky unprotected sexual intercourse with the man when the probability that she is already infected increases. The gain from protected sexual intercourse is small for the woman as illustrated by the portion of the curve for the woman F. The model shows that sexual risk is a mutual beneficial exchange of services; it is prosperous only in regions where men and women all gain a net positive expected utility. The regions with high preference for risky sexual intercourse are illustrated by the two surfaces (IV) and (V) of figure 1.

### 3.2 The Specifications of the Econometric Model

The econometric model of risky sexual behaviour of Philipson et Posner (1993), suggest that the individual decision to exchange a risky sexual service thus being exposed to HIV/AIDS depends on the social and economic environment in which individuals find themselves. The econometric analysis involves the analysis of the effects of the social and economic environment on the HIV status of women in Cameroon. Let's consider the variable the HIV status of the woman (SSF) defined as follows: 1 if the woman is tested HIV positive; 0 if the woman is tested to be HIV negative. If the variable status of the woman (SSF) depends on a set of explanatory variables X, the conditional experience of the variable SSF is written as follows:

$$E(SSF_i|X_i) = P(SSF_i = 1|X_i) = F(X_i) \quad (3)$$

To estimate equation (3),  $F(.)$  could be specified as a linear function  $\beta X_i$ , thus giving a linear probability model. This linear probability model can be estimated by using the weighted least square to take into account the problem of heteroscedascity due to the abnormal error term. However, the probability of obtaining predicted probabilities out of the interval (0,1) creates a logic problem that the non linear specificity of  $F(.)$  permits to avoid (Jones, 1998). As such, we therefore adopt a logit non linear model of specification to analyse the effect of the socio-economic context on the HIV status of women in Cameroon. Let's therefore suppose that:

$$SSF_i = 1 \text{ if } SSF_i^* > 0; 0 \text{ if not}$$

$$\text{With } SSF_i^* = \beta X_i + \varepsilon_i \quad (4)$$

$SSF_i^*$  represents the latent variable to be interpreted ;  $X_i$  : the variables of the socioeconomic environment of the woman ;  $\beta$ : the coefficients to be estimated;  $\varepsilon_i$ : the error term. In our model the error term follows a logistic distribution. This choice is explained by the stationary character of the propagation of the HIV/AIDS epidemic.

### 3.3 Variables of the Study

The variables used in the Works on the socio-economic determinants of the HIV/AIDS among women have gender inequalities, cultural and social norms. Studies use cultural and social variables such as the practice of sexual relations with an older partner (Parker and al., 2007), cultural norms (Galambos and Peterson. 1985), religion due to its prohibition of the use of



condoms (Jemmott and al., 1992), the level of the woman's knowledge on the prevention of AIDS (Carey et al., 1997), physical violence, sexual or emotional that renders the woman unable to refuse sexual intercourse without preservatives (Harris et al., 2006). The education of the woman (Harrison, 2009). At the economic level, the variables usually concern poverty (Bloom et al., 2001), the economic dependence of the woman (Hallman, 2004), the residential environment (Snelling et al., 2007), access to accommodation (Harrison, 2009). Poverty is a key factor in the transmission of HIV/AIDS among women (Bloom et al., 2001). Some studies show that HIV positive women are often found in poor households (Shaikh and Borat, 2005). Moreover, economic dependence obliges the woman to exchange sex for money or accommodation (Harrison, 2009). In this work, the choice of variables used is motivated by empirical literature. As such we have retained as variable : the area of residence the level of education of the woman, religion, ethnic origin, age of the woman, the wealth index, the matrimonial status, exposure to violence, the use of condom by the partner, the number of sexual partners, access to a paid job, the average age of the sexual partner.

### **3.4 Source of the data**

The data used in this work are from the demographic and health survey organised in Cameroon in 2011 by the National Institute of Statistics. The protocol of HIV test is based on the anonymous-link protocol developed by the Demographic and Health Surveys (DHS) programme. According to this protocol no name or any other individual or demographic characteristic that can lead to the identification of an individual is linked to blood sample. Given that HIV tests are strictly anonymous it was not possible to inform the respondents of the results of their test. 7 739 women and 7 526 men were eligible for this test (DHS-MICS, 2011).

## **4. Results and Discussions**

Tables 1 present the means and standard deviations of the explanatory variables whereas table 2 gives the results of the logistic regression of the socio-economic determinants of the infection of women by HIV.

**Table 1: Means and Standard Deviations of Variables**

Variables	Means	Standard Deviation
<b>Present matrimonial Status</b>		
Married	0,4945	0,49999
Single	0,2900	0,45380
Widow	0,0321	0,17629
Divorced	0,0137	0,11617
Concubin	0,1696	0,37531
<b>Age of the woman</b>		
15-19	0,23	0,423
20-24	0,2021	0,40160
25-29	0,1725	0,37783
30-34	0,1237	0,32924
35-39	0,1094	0,31218
40-44	0,0826	0,27527
45-49	0,0769	0,26652
<b>Area of residence</b>		
Urban	0,5038	0,50000
Rural	0,4962	0,50000
<b>Level of education</b>		
non	0,1813	0,38524
primary	0,3552	0,47860
secondary	0,4166	0,49301
Higher	0,0469	0,21150
<b>Wealth index of household</b>		
Very poor	0,1486	0,35569
Poor	0,1979	0,39844
Average	0,2232	0,41640
Rich	0,2232	0,41640
Very rich	0,2236	0,41670
<b>Religion</b>		
Catholic	0,3729	0,48359
Protestant	0,3521	0,47763
Muslim	0,1948	0,39606
Animists	0,0202	0,14054
Others	0,0559	0,15878
<b>Violence</b>		
Woman not beaten for refusal of unprotected sex	0,5590	0,34807
Woman beaten for refusal of unprotected sex	0,4400	0,00000
<b>Use of condom</b>		
yes	0,1754	0,38034
no	0,8246	0,38034
<b>Number of sex partners</b>		
Only one	0,68867	0,53170
Several	0,3311	0,93170
<b>Knowledge on HIV/AIDS</b>		
yes	0,6330	0,17867
no	0,3670	0,17867
<b>profession of the woman</b>		
Paid job	0,380	0,739
Unpaid job	0,669	0,484
<b>Ethnic</b>		
Arabe-Choa	0,0944	0,29245
Biumanda	0,1054	0,30713
Adamaoua	0,1067	0,30871
Bantoide	0,0138	0,11666
Grassfield	0,1466	0,35369
Bamileke	0,2126	0,40919
Cotier	0,0437	0,20437
Beti	0,2108	0,40790
Kko	0,0398	0,19557
Others	0,0261	0,15944
<b>Age of sex partner</b>		
young	0,0038	0,30190
same age as the woman	0,1066	0,41002
10 years younger than the woman	0,0526	0,13852
At least 10 years older than the woman	0,4437	0,29012
elderly	0,4108	0,31640
Does not know	0,0098	0,24010

Source :DHSC-MICS, 2011

The results of table 2 reveal several teachings on the socio-economic determinants of the prevalence of HIV among women in Cameroon. The rate of HIV infection is very significant among women who are widows and divorced. This result suggests at least one comment. The high rate of infection among women who are widows and divorced women could partially be explained by the high risk sexual behaviour of husbands. In fact, since the unfaithfulness of the woman is socially unacceptable, the infection of woman most often emanates from the unfaithfulness of men who are socially tolerated. The prevalence of women is significant for all age groups. According to this result, the probability of being HIV positive remains high for almost all women already sexually active. The prevalence of the infection is higher among women living in urban areas than among those living in rural areas. The absence of education and primary education significantly reinforces the probability of being HIV positive.

Women living in average and poor households remain more vulnerable than those from rich households. Women who are Catholics, protestants or animists remain significantly very vulnerable than women of other religions. The fact that the use of preservatives is still not encouraged in these religions explains at least partially this result. For example in the animist religion particularly, the constraint of having a male child guarantor of cultural rituals of the family systematically implies unprotected sex for women.

Women who are beaten for refusing to carry out unprotected sexual intercourse with their partner have a high probability of being HIV positive with respect to others. Physical violence on women reinforces their vulnerability to HIV/AIDS infection. Moreover, women who refuse the use of preservatives during sexual intercourse have a significant probability of contracting HIV. Women who have sexual intercourse with several partners are significantly more vulnerable than those who have only one partner. The absence of knowledge on HIV/AIDS significantly increases the probability of contracting the infection. The absence of a paid job for woman exposes her significantly to HIV infection. These results confirm once again that the economic dependence of the woman reduces their power to negotiate a protected sexual intercourse. An elderly male sex partner significantly increases the probability of infection of women.

Table 2 : Logistic Regression of the socioeconomic determinants of HIV/AIDS infection among women

VARIABLES	COEFFICIENTS	STANDARD DEVIATION	Z	P >  Z	95% COFIDENCE INTERVAL	
<b>Present matrimonial status</b>						
Married	-	-	-	-	-	-
single	0.1088569	0.6342903	1.22	0.827	0.104329	0.382043
wodow	0.466129**	0.1844855	2.53	0.012	0.104544	0.277139
Divorced	0.285013 **	0.7183972	2.28	0.023	0.182204	0.928131
Concubine	0.1584196	0.6310646	1.34	0.802	0.078444	0.195284
<b>Age of the woman</b>						
15-19	-	-	-	-	-	-
20-24	0.335045**	0.3317358	2.22	0.027	0.285235	0.848549
25-29	0.306676**	0.2925664	2.04	0.042	0.138353	0.758746
30-34	0.218759***	0.2856702	3.25	0.001	0.120814	0.898991
35-39	0.322973**	0.2835401	1.97	0.049	0.116235	0.827578
40-44	0.334287*	0.3008741	1.77	0.077	0.072362	0.254501
45-49	0.351984**	0.3585207	2.07	0.038	0.072941	.0954853
<b>Area of residence</b>						
Urban	0.1583145**	0.2110229	1.91	0.050	0.091789	0.863931
Rural	-	-	-	-	-	-
<b>Level of education</b>						
non	0.6609751**	0.5599284	2.51	0.018	0.084533	0.916484
primary	0.405184**	0.5087337	2.37	0.012	0.077444	0.802623
secondary	0.206521	0.4875134	1.36	0.175	0.209421	0.703621
higher	-	-	-	-	-	-
<b>The index of household wealth</b>						
Very poor	0.3122293***	0.378984	5.19	0.000	0.030574	0.820149
Poor	0.2816625***	0.3013741	4.73	0.000	0.084252	0.863079
Average	0.1800922***	0.2796306	4.12	0.000	0.040623	0.859258
Rich	0.0188045	0.115292	1.45	0.146	0.219445	0.343348
Very rich	-	-	-	-	-	-
<b>Religion</b>						
Catholic	0.413629**	0.303809	2.35	0.019	0.118173	0.909085
Protestant	0.322377***	0.328396	4.94	0.000	0.178732	0.866021
Muslem	0.413351	0.333603	1.24	0.215	0.645887	0.908187
Animist	0.246388**	0.521335	2.08	0.037	0.040500	0.672027
Others	-	-	-	-	-	-
<b>Violence</b>						
Woman beaten for refusing unprotected sex	0.4390992**	0.284838	2.24	0.025	0.197371	0.840827
Woman not beaten for refusing unprotected sex	-	-	-	-	-	-
<b>Use condom</b>						
yes	-	-	-	-	-	-
no	0.5267617***	0.1520063	3.47	0.001	0.228834	0.824688
<b>Number of sex partners</b>						
Only one	-	-	-	-	-	-
several	0.2966517**	0.1518175	1.95	0.051	0.090514	0.594208
<b>knowlwdge on HIV/AIDS</b>						
yes	-	-	-	-	-	-
no	0.3345019**	0.1597098	2.09	0.036	0.021476	0.647527
<b>Occupation of the woman</b>						
Paid job	-	-	-	-	-	-
Upaid job	0.4845521***	0.161812	2.99	0.003	0.167406	0.801697
<b>Ethnic group</b>						
Arabe-Choa	0.3766350	0.6181999	1.05	0.879	0.617855	1.035444
Biumanda	0.2937942	0.5932548	1.10	0.923	0.450950	0.920422
Adamaoua	0.3208178	0.5555705	0.94	0.349	0.568080	0.909716
Bantoide	0.4833932	0.6985331	1.19	0.489	0.585706	0.852493
Grassfield	0.2271026	0.558675	0.41	0.684	0.322086	0.867880
Bamileke	0.1263348	0.5430361	1.53	0.816	0.190666	0.937996
Cotier	0.4511614	0.5835632	1.43	0.439	0.692601	1.094924
Beti	0.0428453	0.5424789	1.34	0.937	0.203944	0.786087
Kko	0.0559969	0.6490462	1.09	0.931	0.216114	0.728104
Autres	-	-	-	-	-	-
<b>Age of male sex partner</b>						
young	0.1623662	0.1723749	1.04	0.546	0.175482	0.500214
same age as the woman	0.2164109	0.3534704	0.85	0.440	0.644437	0.880245
10 years younger than the woman	0.1179041	0.388957	0.30	0.762	0.142517	0.080311
At least 10 years older than the woman	0.3111414**	0.5260827	2.11	0.035	0.176378	0.909200
old	0.4052261**	0.7328584	2.19	0.028	0.041602	0.968850
Does not know	-	-	-	-	-	-
Constant	0.0873914	0.8441581	2.39	0.017	0.0118346	0.6453321

**Notes : Dependent Variable** : 1 if the woman is HIV positive ,0 if not ; Number of observations : 5310 ;Prob > chi2 = 0.000 ; Log likelihood = -695.00742 ; Pseudo R2 = 0.1406. Significant at (1% )(5%)(10%).  
Source: Author from DHS data , 2011

## **5. Conclusion**

The objective of this work was to identify the socioeconomic determinants of the prevalence of HIV among women. We can retain that women who have a high probability of being infected by HIV/AIDS are sexually active women, widow or divorced, live in urban areas, are not educated or have primary education, belong to poor pr average households, practise the catholic, protestant or animist religion. They also include women who are victims of physical violence, who do not use condoms and do not have knowledge about HIV/AIDS, have several sex partners, have unpaid jobs and have older male sex partners. The main teaching from these results is that the social and economic environment limits the capacity of women to negotiate protected sexual intercourse that protects them against HIV/AIDS. The reinforcement of economic power of the woman through access to paid jobs and education reduces the transactional dimension of sexual intercourse among women as well as the risk of exposure to HIV/AIDS.

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