

**Nuptiality Status In Sudan As In 2008  
Alook From Within**

**By  
Eisa Ali Bakr**

# Nuptiality Status in Sudan

## Introduction

Nuptiality status is one of the basic population characteristics generally ascertained in population censuses and household surveys. Conceptually it refers to marriage, and cases of widowhood spinsterhood/or celibacy and divorce for either sex. The importance of nuptiality stems from the fact that it influences the process of family formation, fertility, population growth and momentum (through fertility) ,mortality and migration ( though to a lesser extent ) and sociologists have gone thus far that it even affects individual's happiness, self-satisfaction, self-identification and all that . Social planners tend to reckon on nuptiality measures for policy formulation purposes, basically for its impact on education and employment. Arguments about the impact of marriage on mortality are well established in the literature. It is argued that spinsterhood for either sex creates poor health, which is strongly correlated (though not causing) mortality. In the same token, marriage is said to influence fertility and thus increases population growth .The mechanism of this relationship is so complex and can be sought at more advanced research works.

In all the population and housing censuses that were conducted in Sudan, information on nuptiality categories are always sought as basic demographic information, and the 2008 Population and Housing Census was not an exception .This is largely because marriage and divorce rates directly measure changes in population composition characteristics rather than changes in population size as do other demographic measures such as fertility, mortality and migration. But if the changes in population size through births are considered a function of the marriage process, then marriage formation and marriage disruption are more likely to influence population dynamics.

The study of nuptiality according to the *multilingual Demographic Dictionary* “.....deals with the frequency of marriage and with the dissolution of such unions”. The dissolution of such unions entails divorce and widowhood, through which marriage disruption factors work.

Early marriage has widely become a characteristic of the developing country, like Sudan, especially in their early stages of transition. The practice of polygamy, a well known practice in Sudan , is thought to have declined by the spread of education and the rise in the standard of living of the whole populace

(though some may say that a rise in the standard of living is more likely to induce polygamy!). This chapter presents the proportions of the nuptiality status from the data ascertained by the 2008 Population and Housing Census. It also presents singulate mean age at marriages for All Sudan, Northern Sudan, Southern Sudan, classified by mode of living and sex. Age at first marriage is presented in age groups, and proportions of persons in their age at first marriage groups classified by sex, mode of living, geographical area and marital status are presented.

## **Nuptiality Definition**

Nuptiality commonly refers to marital status; nevertheless it has diverse meanings in different cultures. The cultural context of the concept of marriage signifies its occurrence. Stone, Linda (1997) argues that marriage might be connected to several or all of the points below:

- Ceremony
- A formal registration
- Inflexibility in choosing future partners
- A change in social status, obligations and rights
- Having sex becomes socially ( or legally ) sanctioned
- Having children becomes socially ( or legally ) sanctioned
- The couple starts to live together
- A new household is formed
- An individual completes half of his religion (an Islamic tenet).

In the Sudan, being a multi-ethnic, multi-cultural country, a number of points cited above could well apply without head scratch. The Muslims and Christians have their rituals for marriage solemnization the Non-religious population of Sudan has their own rituals as well. Whatever criterion of marriage solemnization is being adopted the end result is a full-fledged marriage incidence that is socially and religiously recognized. Traditionally some sort of a formal or informal ceremony is provided that could be considered marriage, which in turn, changes the social status of the couple in the eyes of the local

community. Stan Becker (2008) defines marriage as legal union of persons of opposite sex. You may define or see it in a different framework, but the common ground of the different definitions remains and that is the community or social recognition of the incidence.

Marriage also has different forms that can be summarized into two categories (a ) Formal , and this form is the one recognized by the community ( b) informal , like consensual marriage which is not socially or legally recognized by the community . By generally, recognition itself depends on the type of culture the community is pursuing.

## **Source and Nature of Data**

The data used in the computation of nuptiality measures is ascertained from the 5<sup>th</sup> Population and Housing Census of the Sudan conducted in 2008 all over the country. The incidence of marital status is being reported through a categorical variable in the census questionnaire having the following categories:

- Never married before
- Married
- Divorced
- Widowed
- Other

These categories are further scrutinized through the relationship of the eligible person with the head of the household. The determination of the status is left to the respondent to fix as usual. Consensual union is not reported as it is uncommon in all of the Sudanese local communities pursuing different cultural persuasions.

The data is published in 5-year age groups for all Sudan as well as the states. Further decomposition of the data is made by classification into male/female dichotomy and urban/rural/nomadic dimensions.

Furthermore, age at first marriage of the couple is given in terms of age intervals of the respondents in which the marriage incidence had taken place, besides cases not reporting. These data are also classified into urban/rural/nomadic dimensions and by state as well as by male/female dichotomy.

Marriage indicators or measures, from the data availability perspective, can be divided into two parts .First , measures that require only current data, which run by the name direct estimates. Second measures that require mid-year population estimates, and in turn run by the name indirect estimates.

### **Current Status Nuptiality Measures**

Nuptiality measures based on the current marital status calculated for this chapter are the following:

- 1- Proportion Never Married
- 2- Proportion Married
- 3- Proportion Widowed
- 4- Proportion Divorced
- 5- Proportion Not Reporting Marital Status
- 6- Singulate age at marriage
- 7- Median age of the population 12-years of age and over classified by marital status. Here the estimate is calculated for All Sudan, Northern Sudan, Southern Sudan, the states. In each geographical location, the estimate is calculated for both sexes (designated as total) and for each sex.
- 8- Bongaart's Index of Marriage
- 9- Coale's Index of Marriage.
- 10- Other nuptiality indices

shows proportions of nuptiality categories based on the 5<sup>th</sup> Population and Housing Census data of 2008.To have a sense of the periodic evolutionary pattern of the proportion ever married for both males and females , the table below shows the periodic pattern of the proportion ever married for each of the two sexes .

## Proportions of Nuptiality Categories

The proportions of the nuptiality categories are calculated as follows:

- a- The calculation of Proportion single takes the following form

$$\text{Proportion single( Never Married )} = \frac{W_s}{P_s} * 100$$

Where  $W_s$  = Number of single women 15 years of age and over in age group  $s$ , and

$P_s$  = total population 15 years of age and over in age group  $s$ .

The other nuptiality categories take similar arithmetic construction with appropriate changes in the numerator and denominator that correspond to the respective category. The results for 2008 population census are shown in tables below.

**Table ( 7.1 )**

**Percentages of Nuptiality Categories by Age Group for All Sudan , 2008**

Age Groups	Never Married	Married	Widowed	Divorced	Total of Categories	Proportion not Reporting Marital Status
<b>Total</b>	<b>37.1</b>	<b>50.4</b>	<b>3.1</b>	<b>1.5</b>	<b>92.0</b>	<b>8.0</b>
12-14	87.6	2.7	0.1	0.1	90.5	9.5
15-19	77.1	12.8	0.2	0.3	90.4	9.6
20-24	48.9	35.99	0.4	1.0	86.4	13.7
25-29	29.5	59.6	0.8	1.6	91.4	8.6
30-34	17.7	72.3	1.4	1.9	93.4	6.7
35-39	9.8	81.2	2.1	2.1	95.2	4.8
40-44	6.2	83.0	3.6	2.4	95.3	4.7
45-49	4.2	84.7	4.9	2.5	96.3	3.7
50-54	3.6	81.7	7.8	2.7	95.7	4.3
55-59	2.8	79.8	10.1	2.7	95.4	4.6
60-64	3.1	74.9	13.4	2.7	94.1	5.9
65-69	2.5	74.6	15.4	2.8	95.3	4.7
70-74	3.2	67.7	20.3	2.7	93.97	6.0
75 and over	3.4	63.7	23.9	2.7	93.7	6.3

In table ( 7.1 ) , the percentage not reporting marital status varies across age groups and ranges, in general between 4 and less than 14 percentage points. The age group (20-24) reports the highest percentage of those who declined to report age at first marriage. The percentage of those never married (singles) keeps declining across age groups while the percentage of those married keep increasing across age groups as usual. The percentages of those widowed or divorced has no a clear pattern across age groups.

**Table (7.2)**  
**Percentages of Nuptiality Categories by Age Group for Northern Sudan, 2008**

<b>Age Groups</b>	<b>Never Married</b>	<b>Married</b>	<b>Widowed</b>	<b>Divorced</b>	<b>Total of categories</b>	<b>Proportion not reporting marital status</b>
<b>Total</b>	<b>36.4</b>	<b>49.1</b>	<b>3.0</b>	<b>1.5</b>	<b>90.1</b>	<b>9.9</b>
12-14	86.2	1.8	0.1	0.1	88.1	11.9
15-19	75.9	11.6	0.1	0.3	88.0	12.1
20-24	48.4	33.3	0.4	1.0	83.0	17.0
25-29	29.9	57.0	0.7	1.6	89.2	10.9
30-34	18.4	70.1	1.2	2.0	91.7	8.3
35-39	10.2	79.8	1.8	2.2	94.0	6.0
40-44	6.5	81.9	3.3	2.6	94.3	5.7
45-49	4.4	83.7	4.6	2.6	95.4	4.6
50-54	3.5	80.9	7.6	2.9	94.9	5.1
55-59	2.8	79.0	9.6	2.9	94.3	5.7
60-64	3.1	73.6	13.5	2.9	93.0	7.0
65-69	2.4	73.3	15.6	2.9	94.3	5.7
70-74	2.8	66.4	21.1	2.8	93.0	7.0
75 and over	2.9	62.1	24.8	2.9	92.7	7.4

In table ( 7.2) above, the percentage not reporting marital status also varies across age groups but the variation seems to be much wider than in table (7. 1) .Just as in Table (7. 1), the highest percentage of those not reporting age at first marriage is in the age group( 20-24) .

**Table (7.3 )**  
**Percentages of Nuptiality Categories by Age Group for Southern Sudan, 2008**

<b>Age Groups</b>	<b>Never Married</b>	<b>Married</b>	<b>Widowed</b>	<b>Divorced</b>	<b>Total of categories</b>	<b>Proportion not reporting marital status</b>
<b>Total</b>	<b>39.6</b>	<b>56.1</b>	<b>3.2</b>	<b>1.2</b>	<b>100.0</b>	<b>0.0</b>
12-14	93.4	6.3	0.2	0.2	100.0	0.0
15-19	81.6	17.5	0.4	0.5	100.0	0.0
20-24	51.1	47.0	0.8	1.1	100.0	0.0
25-29	27.8	69.5	1.3	1.4	100.0	0.0
30-34	14.9	81.3	2.3	1.6	100.0	0.0
35-39	7.9	86.9	3.5	1.6	100.0	0.0
40-44	5.1	88.1	5.1	1.7	100.0	0.0
45-49	3.5	88.7	6.0	1.8	100.0	0.0
50-54	4.0	85.4	8.9	1.7	100.0	0.0
55-59	2.6	83.6	12.2	1.7	100.0	0.0
60-64	3.7	81.5	13.0	1.8	100.0	0.0
65-69	3.3	80.6	14.0	2.1	100.0	0.0
70-74	6.5	76.1	15.6	1.8	100.0	0.0
75 and over	6.9	73.3	18.2	1.5	100.0	0.0

Table ( 7.3) shows that all eligible women 12-years of age and over who were interviewed successfully reported their age at first marriage!



## Proportion Ever Married

The population ever married is the sum of those married, divorced and widowed combined. Table (4) below shows the scores by gender and age groups in the previous population censuses compared to the 2008 Population and Housing Census.

**Table ( 7.4 )**  
**Percentages Ever Married for Northern Sudan**

Age Group	Male				Female			
	1973	1983	1993	2008	1973	1983	1993	2008
15-19	4.4	3.2	1.8	2.6	43.1	28.8	20.6	21.7
20-24	29.2	21.0	14.1	14.9	85.0	69.5	55.4	52.7
25-29	65.1	54.6	43.2	40.7	95.4	90.5	80.3	74.6
30-34	85.0	80.9	67.8	62.6	97.2	96.1	89.7	82.9
35-39	92.4	91.7	86.5	77.9	98.2	98.1	96.0	89.3
40-44	95.4	95.7	94.0	84.3	98.2	98.6	97.7	91.3

The declining trend of the proportion ever married from 1973 to 1993 among the males in the age groups (15-19) and (20-24) is noticeable, but there is a slight increase among the males in these age groups in 2008 compared to 1993. But the trend kept declining for the higher age groups. For females the trend kept declining in all the age groups except the age group (15-19) where there is a slight increase from 20.6% to 21.7%.

## Singulate Mean Age at Marriage

- **Singulate Mean Age At Marriage ( SMAM )** .It is an estimate of the mean age at first marriage approximated by indirect method from cross-sectional data on marital status by age , and it means the mean age at marriage of women marrying before the reach the age 50 . SMAM is based on the following assumptions :

- 1- The change in the proportion single from age  $x$  to age  $x+1$  is a measure of the proportion of birth cohort who married at that age if no woman dies between her 15<sup>th</sup> and 55<sup>th</sup> birthday.
- 2- The risk of marriage has remained constant (otherwise we estimate the mean for some average cohort).

Let  $S_i$ ,  $S_j =$  proportions of women single at ages  $i$  and  $j$  respectively, and then

SMAM is measured as follows:

$$SMAM = \frac{\left[ \left( \sum_{i=15}^{49} S_i * 5 \right) + 1500 \right] - \left[ \left( \frac{\sum_{i=45}^{49} S_i + \sum_{j=50}^{54} S_j}{2} \right) \right] * 50}{100 - \left( \frac{\sum_{i=45}^{49} S_i + \sum_{j=50}^{54} S_j}{2} \right)}$$

Or it can be computed differently in the following steps:

**Step 1:**

$$A = 15 + \sum_{a=12-14}^{45-49} S_a$$

Where

$S_a =$  Proportion single in the age group  $a$  .

**Step 2:** Estimation of the proportion remaining single at age 50, denoted by  $B$  .

$$B = \frac{(S_{45-49} + S_{50-54})}{2}$$

If the proportion single in age group 50-54 is not available, then  $B = S_{45-49}$  .

**Step 3 :** Estimation of the proportion ever marrying by age 50, denoted by  $C$  , i.e  $C = 1-B$ .

**Step 4 :** Calculation of the number of person-years lived by the proportion not marrying , denoted by

$D$  , i.e  $D = 50 * B$  .

**Step 5:** Calculation of  $SMAM = \frac{(A - D)}{C}$  .

An equivalent method is

$$15 + \left( \sum_{a=12-14}^{45-49} S_a \right) * 5 - \frac{(S_{45-49} + S_{50-54})}{2} / 1 - \frac{(S_{45-49} + S_{50-54})}{2}$$

SMAM is of course one of the measures widely used to ascertain information on marriage from census data, especially in situations where retrospective data is marred with defective information. It was historically developed for a historical study of marriage patterns in Europe. SMAM is in many respects a similar measure to Total Fertility Rate in that it is age-standardized and is a period measure describing the behavior of a synthetic cohort. The data used are the proportions single (not the proportions married) classified by age. It is worth noting that the mean age at marriage is the same as the mean number of years spent single before marriage.

van de Walla's (1968) golden rule is to never trust retrospectively reported ages at marriage for women who can not specify their ages or year of birth. This rule has its obvious value and the estimation of cohort age at marriage should consequently be discouraged if the information stems from such retrospectively reported figures obtained in a census, or even a survey Abdurrahman (1989). Despite this not wholly rejected proposition, estimates of proportions of age at first marriage are provided here. The SMAM method assumes, as usual, that no first marriage occurs after age 50 or before age 15. But we relaxed this last condition to assume that no marriage occurs before age 12, making use of the data made available in the age group

(12-14).

**Table (7.5)**  
**Singulate Mean Age at First Marriage, by Mode of Living and Sex and Administrative Areas.**

Geographical Location	Total of the Administrative Area			Urban			Rural			Nomad		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>All Sudan</b>	<b>25.6</b>	<b>28.6</b>	<b>23.0</b>	<b>28.0</b>	<b>31.1</b>	<b>24.9</b>	<b>24.7</b>	<b>27.6</b>	<b>22.4</b>	<b>22.4</b>	<b>24.7</b>	<b>19.8</b>
<b>Northern Sudan</b>	<b>25.7</b>	<b>28.4</b>	<b>23.2</b>	<b>28.2</b>	<b>31.1</b>	<b>25.3</b>	<b>24.6</b>	<b>27.1</b>	<b>22.4</b>	<b>22.4</b>	<b>24.7</b>	<b>19.8</b>
<b>Southern Sudan</b>	<b>25.5</b>	<b>29.4</b>	<b>22.1</b>	<b>26.7</b>	<b>31.3</b>	<b>22.2</b>	<b>25.3</b>	<b>29.0</b>	<b>22.1</b>			
Northern	30.9	33.9	28.0	29.8	32.4	27.1	31.2	34.4	23.4	21.7	23.7	19.6
Nahr El Nil	29.9	32.3	27.6	32.5	34.7	30.3	29.0	31.4	26.7	22.4	25.5	19.5
Red Sea	26.7	30.0	23.1	28.2	31.5	24.6	25.9	29.4	21.9	25.1	27.6	22.3
Kassala	24.9	27.6	21.9	28.0	31.4	24.8	23.9	26.5	20.9	22.9	25.4	19.7
ElGedarif	24.5	27.9	21.8	27.3	31.0	24.1	23.3	26.5	20.9	20.2	22.8	17.6
Khartoum	28.5	31.2	25.6	29.1	31.8	26.0	25.9	28.4	23.4			
Al Gezira	27.3	29.9	25.2	29.3	32.2	26.8	26.8	29.3	24.9	20.1	22.3	17.5
White Nile	25.0	27.3	23.2	27.0	29.5	24.9	24.1	26.2	22.4	21.6	23.6	19.8

**Follow Table (7.5)**

Geographical Location	Total of the Administrative Area			Urban			Rural			Nomads		
	Total	Male	Female	Total	Total	Male	Female	Total	Total	Male	Female	Total
Sinnar	26.2	29.3	23.9	30.2	34.0	27.1	25.3	28.2	23.1	19.9	21.4	18.3
Blue Nile	23.1	26.6	20.0	25.2	29.1	21.5	22.3	25.8	19.6	20.4	22.6	18.3
North Kordofan	24.3	26.5	22.7	28.1	31.3	25.4	23.3	24.9	22.3	22.6	24.8	20.4
South Kordofan	23.4	26.1	21.2	25.9	28.9	23.3	22.9	25.6	20.8	21.0	23.2	18.9
North Darfur	23.5	25.9	21.4	26.0	28.3	24.1	23.5	26.0	21.3	21.4	23.6	19.2
Western Darfur	21.8	24.3	19.9	23.8	26.1	22.0	21.5	24.1	19.6	20.7	22.9	19.0
Southern Darfur	22.5	24.7	20.3	24.2	26.9	21.8	21.6	23.7	19.8	22.7	25.1	20.0
Upper Nile	25.8	29.6	22.2	27.2	32.2	22.7	25.1	28.4	22.1			
Jonglei	25.2	28.7	21.8	23.9	29.0	19.9	25.4	28.6	22.1			
Unity	25.1	29.3	21.9	25.2	30.4	20.7	25.0	29.0	22.2			
Warrap	25.3	29.7	22.0	25.4	30.3	20.8	25.2	29.7	22.2			
North Bahr ElGhazal	24.2	29.8	20.5	27.9	33.5	21.3	23.9	29.4	20.5			
Western Bahr ElGhazal	25.5	30.3	21.0	27.4	32.4	22.1	24.0	28.6	20.2			
Lakes	25.7	30.4	21.6	24.8	27.3	22.4	25.8	30.5	21.6			
Western Equatoria	28.4	31.3	25.8	28.4	31.2	26.1	28.4	31.3	25.7			
Central Equatoria	25.4	28.7	22.3	27.8	31.9	23.1	24.4	27.1	21.9			
<b>Eastern Equatoria</b>	24.9	28.1	22.0	26.4	31.0	21.6	24.7	27.8	22.1			

Note that by definition Southern Sudan and Khartoum State each has no nomadic population. The Northern State has shown the highest singulate mean age at marriage followed by Nahr El Nil State and then Khartoum State, while Western Darfur and Southern Darfur States have shown the lowest in terms of total (for both sexes and all modes of living). For the Northern and Nahr El Nil states, the performance can easily be attributed to emigration which prolongs the age at first marriage as male emigrants spend years of their lives in their Diaspora for work coupled with education which itself works to prolong the age at first marriage. This finding is further confirmed by the performance of the males in the Northern State who scored 33.86 years as the highest score among the males nation-wide. The performance of Nahr El Nil State closely mimics that of its neighboring Northern State, but Nahr El Nil State outperforms the Northern State in the performance of rural population 15-years of age and above. Other states show close performances with the exception of the three states of Darfur, North Darfur Western Darfur and Southern Darfur. Blue Nile State follows the pattern of Northern, Western and Southern states of Darfur. The performance of these states can be attributed to the fact that the economic potentials of these states in terms of agriculture and livestock enhanced the wealth of the people and made it easy for a young person to get married and support his or her family. The idea becomes clearer when we see that the amount of dowry is so small that any person can afford especially among the rural and nomadic population, where a few cows suffice for a dowry.

It is to be noted that the difference between male and female scores ranges between 5 to less than 10 years for urban, rural and nomadic modes of living.

Table(7.5) provides a summary of the percentages of age at first marriage classified by age at first marriage classes, sex and mode of living, marital status and for the whole country. The low percentages at the lower age group is natural as well as the concentration of the higher percentages in the age groups (20-29) and (30+). It is worth noting that women decline to report their age at first marriage as usual. The percentage of women not reporting their age at first marriage is much higher than males (compare the last two columns on the right of table(7.6) below)

**Table (7.6)**  
**Percentage of Age at First Marriage by Age Group and, Marital Status and Region**

Marital Status	Age at First Marriage											
	12-14		15-19		20-24		25-29		30+		Not Stated	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Total</b>	<b>2.9</b>	<b>12.4</b>	<b>14.9</b>	<b>46.7</b>	<b>30.1</b>	<b>23.5</b>	<b>24.4</b>	<b>8.5</b>	<b>27.7</b>	<b>8.5</b>	<b>0.0</b>	<b>0.45</b>
Married	2.8	12.4	14.8	0.0	30.3	94.2	23.2	8.4	27.6	7.5	0.0	0.5
Widowed	4.4	11.0	18.8	36.2	28.0	26.0	17.7	8.8	31.1	17.9	0.0	0.1
Divorced	5.0	13.6	18.9	40.0	25.2	23.2	18.9	9.8	32.0	13.3	0.1	0.2
All Sudan Urban	2.2	12.1	10.5	42.5	24.8	23.2	25.9	10.7	36.5	11.1	0.1	0.5
All Sudan Rural	2.2	11.7	10.3	43.2	24.8	23.6	26.2	11.1	36.5	10.0	6.0	0.5
All Sudan Nomad	5.0	14.9	16.2	38.0	23.9	2.5	17.9	7.1	36.9	19.9	0.1	0.2

The tables below show the performance of marital cohorts as regards age at first marriage. These tables reveal a sort of lower triangular matrices dictated by the very nature of marriage risk governed by marital cohort and current age of the respondent (age at first marriage group) . Some similarities and differences are easily seen between sexes and between cohorts within the same sex.

**Table ( 7.7)**  
**Proportions of Age At First Marriage of Population 12 Years of Age and over Ever Married Male. All SUDAN, 2008.**

<b>Cohort</b> <b>Marital</b>	<b>Age At First Marriage</b>				
	<b>12-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30+</b>
12-14	0.990				
15-19	0.182	0.809			
20-24	0.051	0.423	0.521		
25-29	0.035	0.219	0.466	0.277	
30+	0.026	0.156	0.330	0.320	0.167

Note that in Table (7.7) That male cohorts (15-19),(20-24) and (25-29) had contracted their first marriage risks at an age group that corresponds to Their current age group . Of course, nobody gets first married at an age older than his current age. Although the common belief that male prefer to marry female more younger than their current age by at least 5 years, this is not strongly supported by the census data .In all the cohorts (12-14) through ( 25-29) , the peak of the proportion of age at first marriage occurs at the age group that corresponds to the age group of the bride . The exception may be the last cohort (30+) where the peak occurs at earlier ages.

It is to be noted henceforth that errors of age misreporting, data editing and non-response errors are there and not judiciously dealt with.

Note rows do not add up to 100% due to small errors in the data. The same applies to age at first marriage tables below.



**Table (7. 8)**  
**Proportion of Age at First Marriage of Population 12 Years of Age and over**  
**Ever Married Female, All Sudan, 2008**

Marital Cohort	Age At First Marriage				
	12-14	15-19	20-24	25-29	30+
12-14	0.890				
15-19	0.241	0.741			
20-24	0.148	0.623	0.223		
25-29	0.125	0.503	0.263	0.104	
30+	0.112	0.457	0.245	0.113	0.069

The age at first marriage of women ever married in Table ( 7.8 ) has a somewhat different connotation from Table ( 7.7 ) . In the cohorts ( 12-14) and ( 15-19 ) , age at first marriage peak occurs at age groups corresponding to these cohorts .But for the cohort ( 20-24) the peak occurs at an earlier age , specifically at the age of first marriage cohort (15-19) . There is a strong relationship between this finding and the level of female median age at marriage as will be shown later.

**Table (7. 9)**  
**Proportion of Age at First Marriage of Population 12Years of Age and over**  
**Married Male. All Sudan,2008**

Marital Cohort	Age At First Marriage				
	12-14	15-19	20-24	25-29	30+
12-14	0.992				
15-19	0.178	0.742			
20-24	0.050	0.624	0.524		
25-29	0.034	0.504	0.470	0.276	
30+	0.025	0.458	0.332	0.323	0.165

The picture in Table (7.9) does seem to resemble that of the previous tables. The first two cohorts follow pattern but the others alternate, in that the age at first marriage peak occurs at an age lower than the current age of the bride. The age at first marriage is largely influenced by social and cultural norms. In the rural and nomadic areas, whenever a person reaches puberty, the social and cultural recognition of this stage is by getting him or her married. That is , first marriage in these areas is a social and cultural behavior rather than economic.

**Table (7.10)**  
**Proportion of Age at First Marriage of Population 12 Years of Age and over**  
**Married Female. All Sudan, 2008**

Marital Cohort	Age At First Marriage				
	12-14	15-19	20-24	25-29	30+
12-14	0.884				
15-19	0.239	0.742			
20-24	0.147	0.624	0.222		
25-29	0.124	0.504	0.264	0.102	
30+	0.111	0.458	0.246	0.114	0.068

**Notice:** also here in Table (7.10) that the proportion of female of all cohorts whose age at first marriage lies in the current age group (12-14) is larger than the corresponding proportion of male in the same age group. It is only here that one can boldly say that females get married earlier than males. If these rates are changed into probabilities, it may further be confirmed that the probability of a female getting married is higher than the probability of a male. This is good news for females of course.

**Table ( 11 )**  
**Proportions of Age at First Marriage of Population 12 Years of Age and over**  
**Widowed Male. All Sudan,2008**

Marital cohort	Age At First Marriage				
	12-14	15-19	20-24	25-29	30+
12-14	0.979				
15-19	0.260	0.722			
20-24	0.083	0.445	0.452		
25-29	0.073	0.326	0.276	0.309	
30+	0.056	0.257	0.263	0.184	0.237

Table (7.11) above behaves not much different from former tables as regards proportionate age at first marriage with respect to widowed male cohorts in the age group( 30+) and age at first marriage cohort( 0+ ).Basically, as long as no widowhood risk occurs without being preceded by a marriage risk the two patterns, *ceteris paribus*, follow suit .The large proportion of widowhood for cohort (30+) at the age at first marriage group (30+) may be attributed to mortality forces more than to having first married at that age.

**Table ( 7.12 )**  
**Proportions of Age at First Marriage of Population 12 Years of Age and over**  
**Widowed Female. All Sudan,2008**

<b>Marital Cohort</b>	<b>Age At First Marriage</b>				
	<b>12-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30+</b>
12-14	0.910				
15-19	0.352	0.633			
20-24	0.150	0.482	0.354		
25-29	0.104	0.247	0.237	0.372	
30+	0.067	0.147	0.199	0.201	0.377

Table (7.12) is more or less similar to Table (7.11) in terms of behavior except that the risk of widowhood for cohort (30+) in the age at first marriage group (30+) is larger than that of male. The same cause of mortality may be invoked here too.

**Table ( 7.13 )**  
**Proportions of Age at First Marriage of Population 12 Years of Age and over**  
**Divorced Male. All Sudan,2008**

<b>Marital Cohort</b>	<b>Age At First Marriage</b>				
	<b>12-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30+</b>
12-14	0.945				
15-19	0.225	0.724			
20-24	0.112	0.437	0.416		
25-29	0.075	0.264	0.336	0.309	
30+	0.039	0.210	0.274	0.223	0.251

Table( 7.13 ) and Table( 7.14) differ in two respects .First , although the two tables have their peaks of proportions for cohorts ( 15-19) and ( 20-24) at age at first marriage group( 15-19), they differ with regards to the older cohorts. Second, the proportion for male cohort (30+) in the age at first marriage group ( 30+) is more than twice that of female. This means male get fed up with the new experience of

first marriage more frequently than female. The common practice of polygny is likely to contribute to the risk of divorce, especially in cases of consensual or common law marriage, though not very much common in Sudan. The result shows that first marriage at old age is more likely to end in divorce!

**Table (7. 14 )**  
**Proportions of Age at First Marriage of Population 12 Years of Age and over**  
**Divorced Female. All Sudan,2008**

Marital Cohort	Age At First Marriage				
	12-14	15-19	20-24	25-29	30+
12-14	0.998				
15-19	0.306	0.687			
20-24	0.176	0.598	0.220		
25-29	0.1391	0.470	0.247	0.136	
30+	0.123	0.414	0.233	0.122	0.106

Although the use of arithmetic mean in demographic analysis is well established , its use as a measure of central tendency is marred by its sensitivity to extreme values , a characteristic that is almost everywhere in demographic data. Because of this demerit of the mean the median is preferred. But the main reason for the preference of the median over the mean may be the fact that some demographic distributions contain open-ended intervals that make it impossible to calculate the mean.

Note that not all demographic measures are computable from census data; rather, a sizable number of them are only computable from vital statistics due to dearth of the required data especially in the statistically poor countries. The absence of a complete system of civil registry of vital events and the sporadic frequency of surveys makes the resort to national population censuses an unavoidable option .The Nature of census taking itself as emphasizing aggregates reduces the chance of having detailed investigation of many population events. The investigation of the nuptiality process is not an exception in this respect. The ascertained data from the population census serves the purposes to a large extent.

## Median Age at First Marriage

- **Median Age at Marriage( MAM)** : Median at marriage is the age that divides the population into two equal part, 50% of the population are above this age and 50% of them are below it .It can be calculated by the following formula :

$$\text{MAM} = L_{j+} \left( \frac{\left( \frac{N}{2} - \sum_i f_i \right)}{f_j} \right) * 5$$

Where  $L_j$  = Lower limit of the median class

$N$  = Total frequencies

$f_i$  = frequencies above the frequency of the median class

$f_j$  = frequency of the median class.

The median age at first marriage is defined as the age at which 50% of the population exposed to the risk of marriage lie above it and 50% of the same population lie below it .It is used in demographic analysis to get rid of the pitfalls that mean sometimes generates. It is less sensitive to extreme values as the mean is.

Table(3) below presents the median age at first marriage for All Sudan , Northern Sudan and Southern Sudan classified by sex and marital status .The high performance of males over females is a natural phenomenon .The table shows that females get married at younger ages than males with minor variations as regards marital status for .each sex . Putting it differently the age that divides the population into two equal parts is a younger age for females compared to males. Population of Northern Sudan has a higher median age at first marriage than the Population of Southern Sudan .The performance can largely be attributed to emigration, urbanization and spread of education in Northern Sudan.

**Table (7.15)**  
**Median Age at First Marriage**

<b>Location</b>	<b>Male</b>	<b>Female</b>
All Sudan ( Ever Married )	25.8	19.0
Married Male	26.1	
Married Female		19.0
Widowed Male	26.3	
Widowed Female		20.7
Divorced Male	26.9	
Divorced Female		19.8
Northern Sudan( Ever Married)	26.1	19.2
Married Male	26.1	
Married Female		19.0
Widowed Male	26.3	
Widowed Female		20.7
Divorced Male	26.9	
Divorced Female		19.8
Southern Sudan( Ever Married )	23.1	18.5
Married Male	23.2	
Married Female		18.5
Widowed male	22.1	
Widowed Female		19.95
Divorced Male	20.6	
Divorced Female		18.4

Table (7. 15) shows that median age at marriage of males is always higher than that of females. The finding is not bound by geography or marital status. It may have a technical relationship with age at first marriage. The point needs in-depth investigation.

**Table (7.16)**  
**Median Age at First Marriage, States**

State	Median Age At First Marriage	
	Male	Female
Northern	26.2	21.2
Nahr El Nil	27.9	22.7
Red Sea	26.7	19.9
Kassala	26.2	19.8
Al Gedarif	24.8	19.8
Khartoum	28.1	19.9
Al Gezira	27.2	20.0
White Nile	26.3	19.1
Sinnar	25.6	18.6
Blue Nile	24.5	18.1
Northern Kordofan	24.8	19.0
Southern Kordofan	25.0	18.8
Northern Darfur	24.9	19.6
Western Darfur	24.5	18.6
Southern Darfur	24.2	18.5
Upper Nile	23.1	18.5
Jonglei	23.3	18.6
Unity	22.1	17.9
Warrap	24.2	18.9
Northern Bahr El	24.8	18.5
Western Bahr El	22.9	18.0
Lakes	23.7	18.5
Western Equatoria	22.1	18.4
Central Equatoria	22.4	18.7
Eastern Equatoria	22.8	18.7

The median age at marriage follows the usual behavior of the parameter as regards the larger level for males with respect to females. The difference ranges between 4 in Southern Sudan states to 7 years in Northern Sudan states.



**Table (7.17 )  
Standardized Proportions of Nuptiality Categories.1993 Population as Standard  
Northern Sudan. Males and Females**

Age Group	Male			
	Never Married	Married	Widowed	Divorced
15-19	0.8238	0.0004	0.0000	0.0000
20-24	0.5439	0.0195	0.0000	0.0000
25-29	0.2500	0.1655	0.0000	0.0001
30-34	0.0834	0.4015	0.0000	0.0002
35-39	0.0183	0.6382	0.0000	0.0002
40-44	0.0047	0.7471	0.0001	0.0002
45-49	0.0015	0.8012	0.0001	0.0003
Age Group	Female			
	Never Married	Married	Widowed	Divorced
15-19	0.538	0.041	0.0001	0.0000
20-24	0.155	0.263	0.0000	0.0001
25-29	0.036	0.539	0.000	0.0000
30-34	0.012	0.649	0.000	0.0002
35-39	0.003	0.725	0.002	0.001
40-44	0.001	0.682	0.005	0.002
45-49	0.001	0.641	0.012	0.002

Comparison of the standardized and unstandardized proportions of nuptiality categories reveals the effect of standardization. The 2008 population would have lesser proportions of nuptiality proportions if it were subjected to 1993 standards. Female proportions dropped sharply compared to males.

### **John Bongaart's and Ansley J. Coale's Indices of Marriage and Marital Fertility**

These changes in proportion ever married have their impact on other demographic measures such as fertility and mean length of fertile union. The longer the mean length of fertile union becomes, ceteris paribus, the higher becomes the fertility rate and women parity. The overall decline in the proportion

ever married in 2008 compared to 1993 is likely to reduce fertility , through the decline in the mean length of fertile union .Bongaart's Index of marriage can be used to measure the extent of this interdependence between marriage and fertility. This index takes the following form:

$$C_m = \frac{\sum M(a) * g(a)}{\sum g(a)} = \frac{TFR}{TM}$$

Where  $C_m$  = Weighted average of the age-specific proportions of female currently married,  $M(a)$ .The weights are the age-specific marital fertility rates ,  $g(a)$  . The index works out to be 0.6124 for All Sudan in 2008.

On the other hand Coale's index of proportion married is defined as the ratio of the number of children that married women would bear if subjected to the standard schedule to the number of children all women would bear if subjected to the standard schedule. This is in nothing than the ratio of weighted sum of the married women to the weighted sum of all women; where the weights are the age-specific fertility rates of the Hutterites. The index symbolically takes the following form:

$$I_m = \frac{\sum F_x m_x}{\sum F_x w_x}$$

Where  $F_x$  = the age-specific fertility rate for the age group  $(x, x+5)$  in the standard population.

$m_x$  = The number of married women in the age group  $(x, x+5)$

$w_x$  = The number of all women in the age group  $(x, x+5)$  .

Similarly the Coale's index of marital fertility, is symbolically written as 
$$I_m = \frac{\sum g_x m_x}{\sum F_x w_x}$$
,

where  $g_x =$  Age-specific marital fertility rate for the age group  $(x, x + 5)$ .

The table below provides estimates of sum of these indices.

**Table ( 7.18 )**  
**Coale and Bongaart's Computed Indices**

Index	Northern Sudan	All Sudan
Bongaart's Index of Marriage	0.6903	0.7131
Coale's Index of marital fertility	0.400116	0.49271

### Changes in the Age Groups of The Married Persons Between 1993 and 2008

It may be interesting to calculate by how much the proportions of married persons have changed from 1993 population census to 2008 population census. Following the Hajnal( 1953) method, the number of times the

proportion has changed can be calculated as follows:  $k = \frac{\log(S2(x))}{\log(S1(x))}$  ;

Where,

$k =$  The numbers of times the said proportion in the age group  $x$  has risen between the base period 1 and current period 2, and  $\log(S2(x))$  is the logarithm of the current proportion of the single women in the age group  $x$ , and similarly for  $\log(S1(x))$  representing the logarithm of the proportion in the base period .The results unfold as follows:

**Table ( 7.19 )**  
**The Number of Times the Proportion in the Respective Age Groups**  
**Risen Between 1993 and 2008 . Female**

<b>Age Group</b>	<b>Proportion of Women Remaining Single in 1993</b>	<b>Proportion of Female Remaining Single in 2008</b>	<b>The Number of Times the Marriage Rates Have Risen Between 1993 and 2008</b>
15-19	0.794	0.677	1.691
20-24	0.446	0.347	1.310
25-29	0.197	0.183	1.045
30-34	0.103	0.117	0.944
35-39	0.040	0.072	0.817
40-44	0.023	0.052	0.784
45-49	0.016	0.038	0.791

**Table ( 7.20 )**  
**The Number of Times the Proportion in the Respective Age Groups Risen Between**  
**1993 and 2008 .Male**

<b>Age Group</b>	<b>Proportion of Men Remaining single in 1993</b>	<b>Proportion of Male Remaining Single in 2008</b>	<b>The Number of Times the Marriage Rates Have Risen Between 1993 and 2008</b>
15-19	0.982	0.839	9.660
20-24	0.859	0.633	3.008
25-29	0.568	0.439	1.455
30-34	0.322	0.259	1.192
35-39	0.135	0.135	1.000
40-44	0.060	0.078	0.907
45-49	0.038	0.050	0.894

John Hajnal’s (1953) formula (21) is easy to calculate but its interpretation is so complex. He terms the formula “Increase in Marriage Frequency “, and refers to the logic behind the formula as the answer to his question “by how much have the marriage rates at each age risen? He suggests, quoting him “The proportions single may be used to supply a partial answer”.

Reading the last column on the right Of the table above from top to bottom, the average increase in marriage rates was greater for the younger than for the older age groups in 2008. There seems to be two reasons for this. The suggested reasons behind this finding are: First, the marriage rates for all ages

were high just before 2008. The older cohorts had contracted some of their marriages at a time when marriage rates were lower. Secondly, it would seem that marriage rates increased most at the younger ages (under 25) resulting in lower proportions for the singles in these age thus increasing the level of the rise.

If fewer people have been left single in one cohort than in an earlier cohort, the latter cohort must have experienced higher marriage rates. In other words, “ if one cohort experiences a certain set of marriage rates such that in the age group from  $x$  to  $x+n$ , the proportion remaining single is  $S_1(x)$

and another cohort experiences marriage rates exactly  $k$  times those of the original cohort. Then, in the second cohort, the proportion remaining single in the same age group will be roughly  $S_2(x)$

where  $S_2(x) = [S(x)_1]^k$ . Application of this formula produced the results shown in table (2) above.

This may be interpreted as follows: In the latter cohort( those aged 20-24, for example, in 2008) the number of women remaining single was that which would have resulted if at each age this cohort had experienced marriage rates 1.310 times as great as those of the earlier cohort. Of course the marriage rates did not rise in the same proportion at each age. The marriage rates of the 2008 cohort did not at each age bear the same ratio to the corresponding rate of the earlier cohort (the 1993 cohort). Moreover, the marriages which members of the later cohort experienced at any particular age were spread over a considerable period. The figure 1.310 is thus some kind of average of the ratios of marriage rates experienced by the 2008 cohort to the rates recorded 15 years earlier ( from 1993 to 2008 ). It is a partial answer, but how partial it really is?!

## Conclusion

The demography of marriage in Sudan is being investigated on the basis of the data made available from the 5<sup>th</sup> Population and Housing Census of 2008. The data have shown that 37.1% of the population 12-years of age and over classified by marital status are not married ( single) , 50.4% of them are currently married, 3.1% widowed and 1.5% of them are divorced .The singulate mean age at marriage for All Sudan ( both sexes ) worked out to be 21.6 years, 24.3 for males and 19.2 for females .Nahr El Nil State and the Northern State have performed higher in terms of singulate mean age at marriage .The performance of the other states is almost the same except Eastern and Central Equatoria states which performed lower compared to other states.

From 1973 through 2008, the proportion ever married has kept its downward trend especially at the higher age groups. There is a slight increase in the age group (15-19) in 2008 compared to 1993.

The median age at first marriage for males on the national level worked out to be 20.82 for males and 18.19 for females. This measure is generally lower than the national level of SMAM, which worked out as 24.3 for males and 19.2 for females, confirming the demographic relation between the two measures.

At the state level, there is a wide difference between the performances of the states as regards the median age at first marriage. As Nahr El Nil and the Northern states together with Khartoum produced higher levels of SMAM, they too performed higher in the median age at first marriage, confirming the emigration argument as a likely cause for these higher performances compared to other states.

The nuptiality data needs more in-depth investigation than just descriptive estimates as provided here. Researchers have chance to investigate this long forgotten area of Demographic analysis in Sudan.

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