

*Gatera Etienne*

## **The Demographic Transition: Analysis of Nuptiality Component on Change of Fertility in Rwanda**

### **Abstract**

This study is an assessment of the impact of the nuptiality component on the change in the fertility process, which is part of the demographic transition in Rwanda. It focusses on indicators such as age of first marriage, rates of divorce, separation, marriage dissolution, widowhood, polygamy, and number of unmarried people, for their impact on the change in total fertility rate (TFR) in Rwanda. Further, the study examines nuptiality level and behaviour in Rwanda. It is based on the investigation and interpretation of data from various reports of the National Institute Statistics of Rwanda (NISR) and the World Bank (WB), as well as data from experiments conducted by the researcher. The study concluded that, according to most of the reports, these indicators of nuptiality did contribute to the change of TFR during the demographic transition in Rwanda. Further, it recommended that the public statistical institution (NISR) should conduct a study on homosexuality and its impact on TFR in Rwanda.

This study consists of four sections: section 1 – introduction; section 2 – literature review; section 3 – data and methods; section 4 – analytical methods, results and conclusion

**Keywords:** *Nuptiality, Demographic Transition, Total Fertility Rate, Education for All, Rwanda*

Otrzymano: 21.05.2021

Received: 21.05.2021

**Sugerowana cytacja / Suggested citation:** Gatera E., (2021), The Demographic Transition: Analysis of Nuptiality Component on Change of Fertility in Rwanda, *Annales Universitatis Paedagogicae Cracoviensis Studia Geographica*, 16, 99–116, doi: 10.24917/20845456.16.6

### **1. Introduction**

Rwanda, officially the Republic of Rwanda, is a landlocked country in the Great Rift Valley, in East Africa. It is bordered by four countries: Uganda in the north, Tanzania in the east, Burundi in the south, and the Democratic Republic of Congo in the west. It has an estimated population of 12,663,116 (NISR, 2020). After the anti-Tutsi genocide of 1994, Rwanda reported a remarkable decline in the fertility rate. Fertility transition is a worldwide phenomenon. It has been witnessed in Sub-Saharan African countries and in the Republic of Rwanda as well. Generally, it is caused by contraception, economic conditions, mortality (epidemics such as

HIV-Aids) and migration (Barthélémy Kuate Defo, 2014). However, this study aims to assess the contribution of nuptiality to the decline in the TFR over the last two decades in Rwanda. It aims to demonstrate the extent of the ongoing demographic transition caused by nuptiality indicators. Mainly, nuptiality factors such as the increase in the age of the first marriage, statistics related to divorce, marriage dissolution, separation, unmarried persons, widowhood, polygamy and publicly declared same-sex couples (gays and lesbians), are considered in this study, in order to arrive at a meaningful conclusion.

There is a change in the behaviour of Rwandan youth, with regard to the age of first marriage among women. This has been caused by numerous factors such as the system of free Education For All (EFA), which encouraged a greater percentage of females to pursue their studies, and thereby resulted in an increase in the age of first marriage. Other factors such as changing economic conditions and the increase in the employment rate among the youth also contributed to this change. As stated above, this paper is organized as follows: section 1 consists of the introduction, section 2 consists of the literature review, section 3 contains the data and methods, section 4 comprises of the analytical methods, results and conclusion.

## 2. Background and Literature Review

In most early studies, fertility, mortality and migration were considered to be the major factors influencing demographic transition. However, fertility was not assigned a predominant position in these studies. Between 1998 to 2002, researchers focussed on the population decline in Europe. From that time period onwards, the geographical study of fertility was assigned greater significance (Oded Galor, 2012).

The history of fertility transition research is marked by the problem of very little research on the contemporary world. Most of the scholarly work on population geography, in connection with fertility and mortality analysis, is very recent (Paul Boyle, 2004).

The first demographic transition (FDT) started in early 1960. Various anthropologists started to assume that the decline in the growth of human population was due to the low birth and death rates. Later, by 1980, they attributed it to low fertility (culture, technology and behaviour) and to the low mortality rates (Penn Handwerker, 1983). At the end of the 20th century, the term second demographic transition (SDT) was introduced in the Dutch language by Ron Lesthaeghe and Van de Kaa (1986), who refer to the replacement of fertility by cohabitation across entire European countries, due to cultural changes (Ron Lesthaeghe, 2020). The SDT viewpoint of fertility, in the context of a new arrangement of social living other than marriage, revealed a remarkable gap between the time of first marriage and of procreation (Ron Lesthaeghe, 2014). To sum it up, the FDT and SDT oppose the tendencies concerning first marriage found in the Middle Ages (R. Lesthaeghe & K. Neels, 2002).

The practice of cohabitation within the community of youth started towards the middle and the end of the 20th century, and resulted in changes in TFR. During this period of cohabitation, the fact that both partners do not wish to have a child, results in the delay of the first marriage. The resultant demographic transition refers to the

population change caused by a comparatively lower rate of births and deaths, as against the high levels of births and deaths which are usually seen in the population over a given period of time (Arthur Haupt & Thomas T. Kane, 2020). Understanding demographic transition enables better future planning of environmental policies and a better vision for demographic population control (C. David & R. Songeeta, 2015). This holds true, particularly for sub-Saharan countries.

Nuptiality is defined as the age of first marriage, associated with factors such as control within marriage, family structures, social gender relations, polygyny, separation and divorce or dissolution of marriage (T. Dominique, S. Bruno, 2004). Nuptiality refers to marriage as a population phenomenon. It also considers the rate at which it occurs, the characteristics of the persons united in marriage, the dissolution of their union through divorce, separation, widowhood and annulment (Arthur Haupt & Thomas T. Kane, 2020). During the evolution of nuptiality (marriage, separation, divorce and remarriage), the Malthusian marriage model weakened mainly due to the growth of wage-earning labour before 1960 (R. Lesthaeghe & K. Neels, 2002). However, Malthus' nuptiality perspective had started way back in the nineteenth century. The influence of nuptiality on fertility with reference to late marriages, weakened in the western world in 1960, with the industrial revolution in Europe.

The evolving concepts of nuptiality and fertility provide evidence of the demographic transition theory in contemporary times, wherein fertility has declined and marriage is postponed (Paul Boyle, 2004). Nuptiality and fertility theories have linked demographic transition to the rise in the age of the first marriage, frequent cohabitation among student communities, growth of the childbearing culture outside of marriage and societal changes, both structural and cultural in nature (Ron Lesthaeghe, 2010). There exists a marked culture of cohabitation in eastern and southern African countries. *Concubinage* has replaced polygyny in Francophone countries of West Africa. The term used here is *deuxième bureau*. Cohabitation has become a practical reality in several parts of Africa. It is referred to as *viens on reste* (or "come we stay" in Kenya) (Ron Lesthaeghe, 2020).

Traditional African nuptiality regimes were generally characterised by very early entry into a union for women and at a much later age for men, by the widest age differences between the sexes in the world (T. Dominique, S. Bruno, 2004).

This manner of cohabitation has been interpreted as a form of marriage. However, it is not formalised by the civil registrar (NISR, 2019). This practice is common in the West African countries, especially in the Rwandan context, and more frequently implemented in rural areas by young adult males. It is not accepted by law, but is still in vogue.

Therefore, divorce in West Africa has been hypothesised as a strategy used by women to gain control over their lives and achieve independence from their husbands (Gorges R, 2003). Burkina Faso has reported divorce rates of 95% among cohabiting couples.

Since 2002, the nuptiality tradition in African cities has seen marked changes due to growing economic difficulties which tend to weaken the traditional cultural structures (Immaculée M., 2012). For instance, according to the official gazette n<sup>o</sup>37

of 12/09/2016, article number 168, the legal age of first marriage has been raised from 18 to 21 years in Rwanda. However, the role of nuptiality in TFR changes seems to have been ignored.

The fact is that cohabitation disputes, divorce, polygamy and homosexuality have contributed to the decline in fertility rates in Rwanda, according to the NISR.

According to this perspective and based on the researcher's empirical observations on divorce encountered in this literature, in Rwanda, most of the causes of TFR change are based on the individual's capacity of interpreting the gender balance, equality policies, education levels, and economic conditions leading to divorce and separation among the married population (87% of married women are employed and 15% are economically inactive) (NISR, 2014). Several instances of women remaining in widowhood are also linked with the decline of fertility.

The change started with the decline of polygyny in Africa, on account of the difficult economic conditions following industrial transformation and urban progression. (Helena Chojnacka, 1995). Further, a few same-sex couples came out publicly, but this act was considered as taboo and opposed rigorously, since the African culture is generally seen as going against gay sex and lesbianism (Marco Morini, 2020).

The existence of homosexuality has evoked denials attributing it to alien sources. What began with denial has ended in a near taboo - a taboo nonetheless based on European, not African morality (Busangokwakhe Dlamini, 2006).

Homosexual behaviour was not introduced by colonization. However, contemporary technology contributes more to it, wherein the younger generation is drawn into readily available gay pornography and lesbianism on the internet, resulting in knockoff. However, as of now, South Africa is the only African country to legalize same-sex marriage and the fifth country in the world to do so (South Africa, Civil Union, Law No. 17, 2006).

Thus, by focussing on the main indicators related to nuptiality in Rwandan society and the perspectives concerning family development, we examine the kinship factors which contribute to the demographic transition observed in Rwanda. On the basis of various indicators related to nuptiality, the TFR has been on the decline since 1994, following the anti-Tutsi genocide. This is seen to be true, especially during the last two decades, wherein the children born per women declined from 6.17 in 1995 to 4.1 in 2019 (NISR, RDH, 2019).

### **3. Conceptual Framework and Hypothesis**

#### **3.1. Conceptual Framework**

As illustrated by this conceptual framework [Figure 1], the major factors affecting nuptiality in Rwanda are dominated by the delay in the age of first marriage, and by certain aspects associated with this delay such as the EFA from the primary to high school and university (public universities) levels, economic conditions, the

employment rates among the youth and culture of cohabitation. Divorce, separation or dissolution of marriage occur after the first marriage, due to various reasons such as poverty and infidelity (World Bank, 2015). The other factors contributing to Rwandan demographic transition include: remarriage, second marriage due to separation of the first couple by divorce or death, divorces of married couples, remaining unmarried for life, and replacement of polygamy by cohabitation.

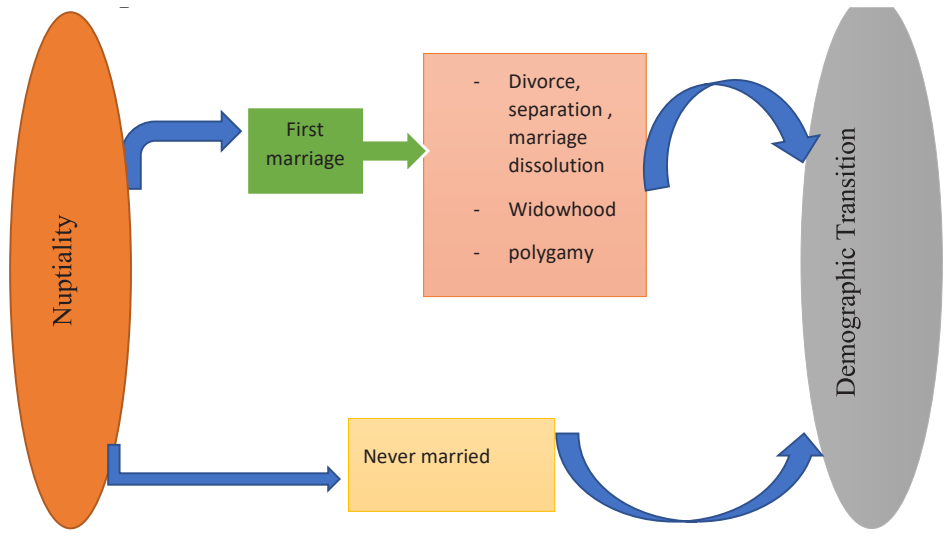


Figure 1: Conceptual Framework

Source: Researcher designed, February, 2021.

### 3.2. Hypotheses

In the above context, we hypothesise that due to strong cultural and social taboos in Rwandan society, and on account of the constraints due to economic conditions, such as the rapid growth of the service sector in comparison with the agricultural sector, the EFA system has assumed great significance. The EFA system allows the young generation to pursue their studies for free until the undergraduate level. The large number of educated youth results in an increase in the levels of unemployment every year, in both rural and urban locations. These factors would be significantly associated with the rise in the age of first marriage and promotion of the never-married culture. These results, in turn, would have an impact on TFR in Rwanda.

The second hypothesis proposes that the current high rates of divorce are linked to numerous factors, that some divorced couples prefer to remain single for the rest of their lives, and that cases of polygamy have declined. These factors would affect Rwandan demographic transition. This is corroborated by household surveys on marital status and nuptiality carried out by the NIRS in 2014 and by the reports of the DHS during 2019–20, which have been analysed to obtain multivariate results proportional at the national level.

## **4. Materials and Methods**

### **4.1. Data**

The data for this research has been drawn from various reports of the National Institute of Statistics of Rwanda (NISR) such as the Demographic and Health Survey (DHS) 2019–20, the Rwanda Vital Statistics Report 2019, and the Marital Status and Nuptiality (MSN) Report 2014. Further, the research is based on empirical observation and measurement of phenomena, as directly experienced by the researcher. The current sample is based on the national levels of male and female participation within the age group of 12 years to 80+ years. The DHS and MSN have been used to create a sample design, a sampling frame enumerating a list of areas covering the whole country. Second, national-level NISR questionnaires are adapted to reflect the population's marital status and nuptiality (age of first marriage, rates of divorce, separation, remarriage, widowhood). Since the MSN report of 2014 and the DHS are at the national sub-sample level, the weighting factors provided in the data have resulted in a variety of results that are proportional and representative of all responses at the national level.

### **4.2. Dependent Variable**

One dependent variable forms the basis of the analysis: the report of NISR 2014 and the DHS report of 2019 which identify marital status and nuptiality (MSN) as major causes and indicators of demographic transition.

In order to obtain this dependent variable of MSN, we have used the NISR questionnaire, which included questions about the age of first marriage, never-married status, and cohorts of single females or males. Further, the demographic information collected is based on marital status, age, sex and education. Additionally, the NISR and DHS reports have been subjected to analysis. The outcomes of all the above processes have been coded according to time and various other dynamics. This study thus focusses on the specific indicator of MSN and its influence on demographic transition.

### **4.3. Independent Variable**

An independent variable is a variable that is presumed to affect the dependent variable (Kevin J. Flannelly, 2014). Nuptiality, as determined by various elements such as age of first marriage, separation and other related sociocultural variables (defined by NISR), is the focal point of this research. Hence, we have used some key indicators as independent variables, such as age of first marriage, and statistics related to separation, divorce, widowhood and unmarried persons. We have carefully analysed the nuptiality indicators as they are exogenous to the dependent variables.

## **5. Analytical Methods**

Standard demographic transition analyses based and empirical observation based models have been used for data analysis. As indicated, the researcher is interested

in several aspects: the rising age of first marriage, as well as the increasing levels of divorce, separation, widowhood, and unmarried persons in Rwandan society. The observation and measurement of phenomena have been recorded as directly experienced by the researcher (Evgeni Genchev, 2019). The data thus gathered has been tested against the hypotheses and results have been arrived at, based on the researcher's real-life experiences.

## 6. Results

### 6.1. Descriptive Characteristics of Respondents

Tables 1 and 2 show the percentage of the weighted and unweighted numbers of respondents, ranging from 15 to 49 participants in the household interviews questionnaire organised by the NISR at the national level for the 2019-20 RDHS. Over 80% of respondents are Christians, 2 in 5 are Catholic. 40% of women and 49% of men have never been married. With regard to the education levels, 4% of women (9 in number) and 2% (7 in number) of the total number of respondents have never attended school.

Table 1: Respondent percent distribution of women and men age 15-49 and their characteristics background, Rwanda 2014–2015 (NISR, Rwanda DHS 2019–2020).

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
<b>Age</b>						
15-19	22.3	3,258	3,308	26.1	1,526	1,534
20-24	16.5	2,414	2,424	16.4	960	954
25-29	14.2	2,073	2,047	12.1	710	735
30-34	14.5	2,118	2,095	14.3	835	816
35-39	14.2	2,072	2,043	13.6	793	784
40-44	10.2	1,488	1,487	9.8	575	570
45-49	8.3	1,211	1,230	7.7	447	440
<b>Religion</b>						
Catholic	36.7	5,364	5,506	42.0	2,455	2,520
Protestant	47.2	6,905	6,754	40.0	2,340	2,262
Adventist	12.5	1,836	1,842	12.8	748	748
Muslim	1.8	269	287	2.6	153	161
Traditional	0.0	1	1	0.0	0	1
Jehovah witness	0.9	128	114	0.5	30	28
Other	0.2	29	24	0.1	8	6

No religion	0.7	104	106	1.9	112	107
<b>Marital status</b>						
Never married	40.4	5,914	6,060	49.0	2,867	2,908
Married	32.1	4,703	4,706	30.6	1,786	1,779
Living together	18.4	2,698	2,584	18.4	1,074	1,026
Divorced/separated	6.4	935	906	1.8	105	107
Widowed	2.6	383	378	0.2	14	13
<b>Residence</b>						
Urban	19.9	2,909	3,551	19.1	1,115	1,366
Rural	80.1	11,725	11,083	80.9	4,731	4,467
<b>Province</b>						
Kigali	14.8	2,166	1,921	15.0	879	766
South	20.9	3,065	3,482	21.2	1,239	1,409
West	21.7	3,174	3,312	21.7	1,268	1,334
North	15.2	2,226	2,294	15.1	886	915
East	27.4	4,003	3,625	26.9	1,574	1,409
<b>Education</b>						
No education	9.4	1,377	1,352		420	417
Primary	57.1	8,363	8,326		3,471	3,421
Secondary	29.1	4,252	4,284		1,659	1,666
More than secondary	4.4	642	672		295	329
<b>Wealth quintile</b>						
Lowest	18.7	2,741	2,844		924	967
Second	18.8	2,756	2,707		1,076	1,058
Middle	18.8	2,757	2,709		1,227	1,182
Fourth	20.3	2,966	2,884		1,278	1,261
Highest	23.3	3,414	3,490		1,342	1,365
Total 15-49	100.0	14,634	14,634		5,846	5,833
50-59	na	na	Na		667	680
Total 15-59	na	na	Na		6,513	6,513

Note: Education categories refer to the highest level of education attended, whether or not that level was completed, na = Not applicable.

## 6.2. Fertility Levels 2019–2020

A combination of the various factors comprising nuptiality has resulted in a decline in the TFR, compared to the previous years. The impact of nuptiality has been remarkable, as seen in the daily increase in the percentage of never-married, divorced/separated and widows. Among 13,605 households in 2019, widowed persons consist of 2.6% (weighted as 0), men are weighted as 2%, divorced/ separated have been weighted as 6.4%, women are weighted as 1.8%, never-married women



have been weighted as 40.4% and unmarried men as 49.0% (Table1). The formula for weighted percentage is as follows:

$$\frac{w_1x_1+w_2x_2+\dots+w_nx_n}{w_1+w_2+\dots+w_n} \quad \text{or} \quad \bar{x} = \frac{\sum_{i=1}^n w_i x_i}{\sum_{i=1}^n w_i}$$

The weighted estimate is approximately unbiased for population parameters under study. X stands for the value representing the observation; W represents the weights of the observation (Edward L. Korn & Barry I. Graubard, 1995). The TFR can be interpreted as the number of children per woman. Statistics demonstrate that the number of children per woman was 6.1 in 1995 and declined to 4.2 in 2014–2015. It has remained relatively constant during 2019–2020 with a higher percentage of 4.3 in rural areas and 3.4 percent in the urban milieu (NISR, RHS, 2019-20).

### 6.3. Indicators of Nuptiality

The indicators of nuptiality as defined by NISR are as follows:

Never married: an individual who has never been in a union; Divorced: an individual who has been separated from his or her spouse through a court decision, according to legislation; Separated: an individual who has separated temporarily from his/her spouse and is awaiting the court decision; and Widowed: a man or a woman who has lost his or her spouse by death, not yet remarried (NISR, RPHC4, 2014).

Table 2 demonstrates an interpretation of the nuptiality indicators (never married, separated, widowed and divorced), which have impacted the demographic transition in Rwanda.

Table2: Resident population marital status from 12 age and above for both sex, Rwanda 2014

Marital status	Male		Female		Both Sexes	
	Count	%	Count	%	Count	%
Never married	1,655,738	50.4	1,499,552	41.1	3,155,290	45.5
Currently married	1,557,155	47.4	1,640,799	44.9	3,197,954	46.1
Separated	6,912	0.2	28,618	0.8	35,530	0.5
Widowed	40,986	1.2	399,083	10.9	440,069	6.3
Divorced	23,280	0.7	82,104	2.2	105,384	1.5

Not stated	866		0.0	2,585		0.1	3,451		0.0
Total	3,284,937		100.0	3,652,741		100.0	6,937,678		100.0

Source; NISR, RPHC4, 2014)

### 6.3.1. Age of First Marriage

The age of first marriage is an important indicator of nuptiality, calculated from the national survey of single people in the given population. At the national level, the age of first marriage for women is 25.0 years and 27.4 years for men. The comparative study gives us the real disparities between rural and urban areas and shows the gap between the sexes. A large gap has been noted with regard to women who live in urban areas (Figure 2), with their age of first marriage being 4.2 years compared to 1.8 years for rural women (NISR, RPHC4, 2014). The delayed marriage of men living in urban areas and the early marriage of women who live in a rural milieu, are caused by economic conditions such as the dowry costs, marriage expenses, and housing charges (Figure 2). A second important cause for this delay is education. The level of education level is an important factor in family development and individual decision-making behaviour, concerning the first marriage and commitment to have children (Ntaganira, 2010).

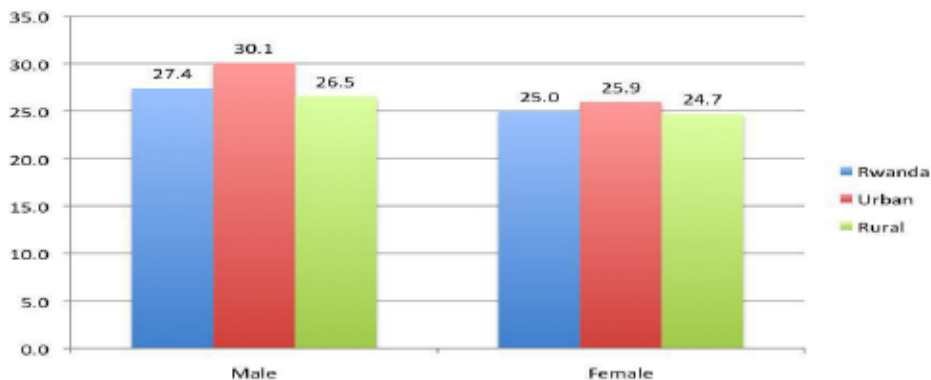


Figure 2: Age at first marriage by sex and area of residence, Rwanda 2014

Source: NISR, RPHC4, 2014

Further, the policy of equal education and EFA promotes greater education for everyone, and this has resulted in the increase in the age of the first marriage for both sexes.

The evolution and increase of the age of the first marriage have seen a remarkable change from the first census in 1978 to the year 2012. It increased by 2.5 years for men, from 24.9 in 1978 to 27.9 in 2012, and by almost 4 years for women, from 21.2 in 1978 to 25.0 years in 2012. The impact of the education factor responsible for the rise in the age of first marriage has confirmed our hypothesis. The age of first

marriage for a man without education is 25.7 years; with primary level education, it is 26.3 years; with secondary level education it rises to 30.4 years; and with university-level education it rises to 32.5 years. An almost similar situation prevails with regard to women. The age of first marriage for women without education is 23.2 years and with university education, it rises to 28.0 years (NISR, RPHC4, 2014).

### 6.3.2. Never Married

Based on a different perspective, the factor of being unmarried is among the indicators of nuptiality, which has an impact on the TFR. This is demonstrated by the table below which shows how the number of unmarried people has increased from 1978 to 2012, and how this is directly connected to the levels of education.

There exists a significant percentage of unmarried people among educated people in the USA (P. Kim, W. Wendy, R. Molly, 2014). However, in the Rwandan context, unmarried men of age 50 and above, without education, comprise 4.8% of the sample; while the number with university level education is 0.9% for men. It is 6.7% for women with no education, and 0.9% for women with university level education (NISR, RPHC4, 2014).

The proportion of people who have never been married till the age of 50 has increased for both sexes, since the first census of 1978. Earlier, the percentage was low: only 1.3% for men and 0.4% for women. It has now increased up to 4.5% for men and 4.2% for women. The higher percentage of unmarried men (50.4%) compared to unmarried women (41.1%), as per the survey of the resident population from the age of 12 and above, has been caused by the rise in the age of marriage [Table 2]. There are also other factors behind the same, such as religion (Catholicism).

### 6.3.3. Divorced/Separated

Divorces/separations have occurred since and before the census of 1978, on account of various reasons prompting spouses to separate according to law. The rise in divorce and separation rates has led to a decline in marriage rates. The increase in cohabitation rates has resulted in demographic transitions (Batoool Zaidi, S. Philip, 2017). It has seen a notable increase from the age of 20 and above, on account of various causes.

### 6.3.4. Education

Educated women have lower divorce rates than highly educated women (B. Diederik, H. Juho, 2014). Normally education is not the direct cause of divorce/separation; however, it has been observed at a higher percentage among less-educated people rather than educated. Among men without education, the divorce rate is 2.3%; among those with primary education, it is 1.7%; for those with secondary level education, it stands at 2%; and for those with university-level education, it is 1.3%. By contrast, the divorce rates for women are as follows: 5.1% (uneducated), 5.3% (primary education), 4.8% (secondary education) and 2.7% (university-level education) (NISR, RPHC4, 2014).

### 6.3.5. Religious Affiliation

As in the case of education, religious beliefs are not a direct cause for separation/divorce. The rates of separation/divorce are not as high among the Christian communities as among the traditional Muslim communities. For Christians, separation / divorce is forbidden, while it is tolerated more among the other denominations. The Christian community is dominated by Catholics, followed by Protestants and Adventists. The percentage of Muslims is only 2% in Rwanda. Christianity permits only one marriage and considers relationships outside marriage as sinful. By contrast, divorce and separation are more frequent among the Muslim community, with 1.4% rates among men and 3.8% rates among women. Among traditional Muslim communities wherein polygamy is permitted, separations and divorces occur more often. The rate here is 2.0% for men and 3.2% for women (NISR, RPHC4, 2014).

### 6.3.6. Economic Condition

The participation of the family in the labour market is more likely to influence decisions about divorce rather than unemployment within the family (Scott J. South, 1985). Accordingly, the divorce and separation rates in Rwanda exist chiefly among the employed families, to an extent of almost 80% (NISR, RPHC4, 2014). This is more likely due to the difficulties in decision making, the mutual accusations concerning the waste of family resources, and the lack of an understanding that family responsibilities need to be shared equally.

### 6.3.7. Misunderstanding of Gender Balance Policy

We criticize the views in the report and survey, which mention that the misunderstanding of the gender balance policy is the cause of separation and divorce. We do not agree with their remarks that women with lower levels of education level have wrongly interpreted this policy, thereby leading to failure in fulfilling each other's responsibilities, domestic violence and separation.

They directly incriminate the husband. The authorities apply the laws and the results are the high numbers of divorce cases in courts today. You have to think about that. Women consider themselves equal to men, and men feel uncomfortable, they live in constant hostility, it is a problem. Culture is weakening though it would be helpful (Uwihangana Consolee 2014).

### 6.3.8. Widowhood

The high proportion of widowhood has been observed from the first Rwandan census of 1978. It has been caused by insecurity and war, and further aggravated by the 1994 anti-Tutsi genocide, which aimed to eliminate all males. The high mortality rates among males have resulted in different ages of marriage for males and females. Further, the male life expectancy is low in Rwanda.

Table 3: Evolution between 1978 to 2012 of sex and marital status aged 12 and above (never married, married, separated/divorced and widowed), Rwanda 2014.

Sex and Marital status	Year			
	1978	1991	2002	2012
<b>Male</b>				
Never married	38.3	40.8	45.0	44.2
Married	59.0	56.4	52.1	53.4
Separated/Divorced	1.5	1.4	0.7	1.0
Widowed	1.2	1.4	2.2	1.4
Total	100.0	100.0	100.0	100.0
<b>Female</b>				
Never married	24.0	27.5	34.4	34.3
Married	61.9	58.0	47.6	50.1
Separated/Divorced	3.5	4.5	2.2	3.4
Widowed	10.6	10.0	15.8	12.2
Total	100.0	100.0	100.0	100.0

Source, (NISR, RPHC4, 2014)

### 6.3.9. Polygamy

Polygamy is generally defined as a relationship involving multiple spouses, known worldwide as polygamy (a man having more than one wife) and polyandry (a woman having more than one husband) (L.D. Shepard, 2013). In Rwanda, polygamy is observed more in rural areas (5.4%) rather than urban areas (3.7%). However, polyandry has been prohibited since 1962.

The practice of polygamy has seen a slowdown from 1978 to 2012 and has seen a slight increase in 2012. The observations in this study demonstrate that polygamy rates stand at 9% among Muslims, are 11% among atheists, stand at a high of 19% among traditionalists/animists, and are seen very less among Christians (NISR, RPHC4, 2014). Generally, polygamy is the product of attitudes and cultural beliefs, wherein the possession of more than one woman is seen as a sign of power. In the final analysis, this behaviour affects the TFR, as shown in the decline in the desire and motivation to have several children.

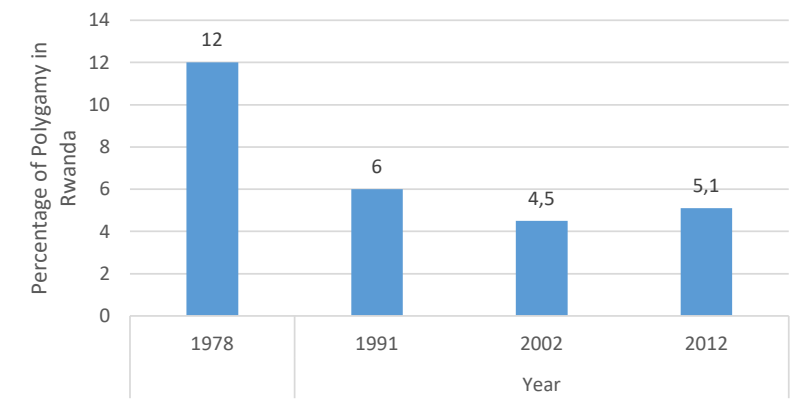


Figure 3: Evolution between 1978 and 2012 in the polygamy sector

Source: (NISR, RPHC4, 2014)

### 6.3.10. Homosexuality

Absence of discussions about homosexuality is very common in Africa as well in Rwanda. However, in 2009, the President of the Republic of Rwanda, Paul Kagame, was asked about this question in London and answered:

On the issue of homosexuals... We have laws already in place that cater for existence and co-existence of different categories and create harmony in society and, I think it looks like we are headed towards leaving it like that, rather than heightening tensions and bringing out unnecessary conflicts and debates that will not help the rebuilding of our country (Polly Haste & Thierry Kevin Gatete, 2015).

The same year in Kigali (Rwanda), this question was asked to the President of the Senate who responded, *If you want peace, leave those matters*" A legal criminal bill on homosexuality in Rwanda was debated in parliament, and finally rejected and abandoned (Polly Haste & Thierry Kevin Gatete, 2015). Homosexuality in Rwanda is not public talk. However, its existence cannot be denied (Banyan Global, USAID, 2019). Hence, we criticise the NISR for not considering this topic and its impact on demographic transition, especially in its capacity as the only official statistical bureau in the country. Being gay or lesbian in Rwanda is a personal matter, and cannot be shared in public, which in turn could result in being cut off completely from society. Therefore, to this day, Rwandan law does not deem homosexuality a crime.

## 7. Discussion and Conclusion

Generally, nuptiality plays a significant role in the demographic transition in Rwanda. The results confirm that the indicators of nuptiality play a key role in changing the TFR in Rwanda, across rural and urban areas.

The multivariate results demonstrate that the age of the first marriage is increasing year after year. The evaluation of never-married people and their attitudes and behaviours serves as an indicator of nuptiality. The percentage of divorced and separated people is also rising rapidly, as shown by the evolution from 1978 to 2020 in the National Household Survey [Table 1]. Widowhood, as one of the indicators of nuptiality, has emerged as a remarkable phenomenon following the anti-Tutsi genocide of 1994, wherein males were targeted. Polygamy is observed more in rural areas (5.4%) rather than in urban areas (3.7%) [Table 4], and has witnessed a slow-down from 1978 to 2002 [Figure 3]. Homosexuality is another factor, which, though neglected in all NISR surveys, cannot be denied.

The results show that the EFA policy is one of the most indispensable indicators of change in fertility behaviour in Rwanda. The implementation of EFA allows all Rwandans to study for free from the primary to the university levels. This has replaced the desire for early marriage with the desire to obtain a higher degree. The most remarkable rise in the age of first marriage is seen among women, as compared to men [Table 1]. Educational indicators are linked more to the economic conditions; which is a big problem for the youth, especially educated and unemployed ones in the current Rwandan job market.

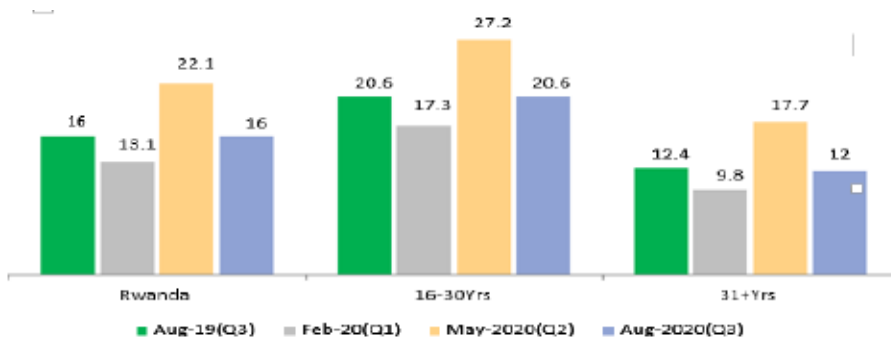


Figure 4: Unemployment rate among in youth and old, Rwanda 2020

Source: NISR, Labor force survey 2020

As shown by the current statistics in Figure 3, the young labour force is facing a high unemployment rate. It stands at 20.6% in August 2021, compared to 27.2% in May 2020. This is largely due to the COVID-19 pandemic. This affects the purchasing power of the individual, resulting in higher age of the first marriage, which in turn results in TFR changes. The results demonstrate that since the first census of 1978, there has been a rise in the percentage of never-married men, compared to women [Table 2]. Further, the increasing inclination of men towards higher age of first marriage is associated with other factors such as economic issues and religious beliefs.

Second, divorce and separation act as indicators of nuptiality, thereby affecting Rwandan TFR. The Rwandan society considers divorce and separation as a threat to families. These aspects are observed more among the Muslim community and

traditional animists [P 12]. Economic conditions seem to affect divorce and separation, as 80% of divorced and separated families are employed.

Widowhood contributes to change of TFR, as shown by Table 3. It has increased due to the 1994 genocide which targeted men and also due to the high life expectancy of women compared to men.

The findings also demonstrate that polygamy in Rwandan society is more prevalent in the rural rather than in the urban milieu. It has been rising since 1978 and up to the last census of 2012. Polygamy is observed more among the Muslim and traditional/ animist communities, compared to Christians who consider it a sin [P 15]. The reason for the increase in polygamy is that, in Rwandan society, the greater the number of wives one has, the greater is the power one wields in the community. The researcher also found that the greater the number of wives, the lesser is the desire to have children, which in turn affects the TFR.

This study has thus demonstrated and made certain recommendations regarding the impact of the indicators of nuptiality on the TFR. The study criticises the NISR for neglecting the factors of cohabitation and homosexuality in Rwanda. We suggest that the NISR being a government institution should study these factors and demonstrate their impact on TFR, especially since these topics are tabooed in public [P 16].

Thus, this paper demonstrates the role of nuptiality in the demographic transition process, moving away from focusing on just the three indicators of birth, death and migration rates. The paper also indicates that the other factors responsible for demographic transition were not ignored voluntarily, but due to ignorance, as observed in various reports. Further, the paper demonstrates the direct role of nuptiality in Rwanda's demographic change, focusing on factors such as divorce, marriage dissolution, never-married individuals and the impact of education. It also investigates the role of education. Further, higher education and more exposure to universities are seen to cause a rise in the age of first marriage and also a rise in the inclination towards having fewer children. In this regard, Rwanda still has a big task ahead, though a declining birth rate of 4.1% per woman has been noted (NISR, DHS 2019-20).

In conclusion, it may be stated that the impact of the indicators of nuptiality on the change in the Rwandan TFR is clearly visible. Further research in this area is essential, given the existing lack of information and gaps in investigation and analysis.

## References

- Abifarin, O. & Chijioko, J.O. (2016). Same-Sex Marriage, Human Rights and Cultural Diversity. *Kapur Surya Foundation*, 20(1), 126–139.
- Boertien D., Härkönen J., Goode W.J. (2014). *Less Education, More Divorce: Explaining the Inverse Relationship between Women's Education and Divorce*. Stockholm: Stockholm University.
- Botev, N. (1990). *Nuptiality in the Course of the Demographic Transition: The Experience of the Balkan Countries*. Great Britain. Taylor & Francis, Ltd. 44 (1), 107–126.
- Boyle, P. (2003). Population Geography: Does Geography Matter in Fertility Research? *Progress in Human Geography*, 27(5), 615–626. DOI:10.1191/0309132503ph452pr.
- Bundervoet, T., Lakner, C. & Geli, P. (2015). *Rwanda Poverty Assessment: Poverty Global Practice Africa Region*. Washington, D.C., USA. World Bank Group.



- Canning, D., Raja, S., & Yazbeck, A. (Eds.). (2015). *Africa's Demographic Transition: Dividend or Disaster?* Washington, D.C., 20433: World Bank Group.
- Chojnacka., H. (1995). The Role of Nuptiality in the Demographic Transition. The Case of Africa: A Conceptual Essay. *Università degli Studi di Roma "La Sapienza"*, 51(3/4), 117–150.
- Consolee, U. (2014). *Women's Rights and the Well-being of the Rwandan family*. Gothenburg: Gothenburg University.
- Defo, B.K. (2014). Demographic, Epidemiological, and Health Transitions: Are They Relevant to Population Health Patterns in Africa? *Global Health Action*, 7(1), 2243. DOI: 10.3402/gha.v7.22443
- Dlamini, B. (2011). Homosexuality in the African Context. *Agenda*, 20(67), 128–136, DOI: 10.1080/10130950.2006.9674706
- Flannelly, L.T., Flannelly, K.J. & Jankowski, K.R.B. (2014). Independent, Dependent, and Other Variables in Healthcare and Chaplaincy Research. *Journal of Health Care Chaplaincy*, 20(4), DOI:10.1080/08854726.2014.959374
- Galor, O. (2012). The Demographic Transition: Causes and Consequences. *Cliometrica*, 6(1), 1–28. DOI:10.1007/s11698-011-0062-7
- Genchev, E. (2019). Analysis of Logistics Sector in the European Union. *Economic and Social Development: Book of Proceedings*, 836–843. DOI:10.2139/ssrn.3557849
- Handwerker, W.P. (1983). The First Demographic Transition: An Analysis of Subsistence Choices and Reproductive Consequences. *American Anthropologist*, 85(1), 5–27. DOI: 10.1525/aa.1983.85.1.02a00010
- Haste, P. & Gatete, T.K. (2015). *Sexuality, Poverty and Politics in Rwanda*. UK, England: Institute of Development Studies.
- Haupt, A. & Kane, T.T. (1998). *Population Handbook (4<sup>th</sup> International Ed.)*. Population Reference Bureau. Washington D.C., USA.
- Korn E.L. & Graubard B.I. (2012). Examples of Differing Weighted and Unweighted Estimates from a Sample Survey. *The American Statistician*, 49(3), 291–295, DOI: 10.1080/00031305.1995.10476167
- Lesthaeghe R. & Neels, K. (2002). From the First to the Second Demographic: Transition: An Interpretation of the Spatial Continuity of Demographic Innovation in France, Belgium and Switzerland. *European Journal of Population / Revue Européenne de Démographie*, 18, 325–360, DOI:10.1023/A:1021125800070
- Lesthaeghe, R. (2010). The Unfolding Story of the Second Demographic Transition. *Population and Development Review*, 36(2), 211–151. DOI:10.1111/j.1728-4457.2010.00328.x
- Lesthaeghe, R. (2014). The Second Demographic Transition: A Concise Overview of its Development. *Proceedings of the National Academy of Sciences of the United States of America*, 111(51), 18112–18115, DOI:10.1073/pnas.1420441111
- Lesthaeghe, R. (2020). The Second Demographic Transition, 1986–2020: Sub-replacement Fertility and Rising Cohabitation – A Global Update. *Springer*, 76(10), DOI:10.1186/s41118-020-00077-4
- Morini, M. (2017). Same-Sex Marriage and Other Moral Taboos: Cultural Acceptances, Change in American Public Opinion and the Evidence from the Opinion Polls. *European Association of American Studies*, 11(3), 12, DOI: 10.4000/ejas.11824
- Mukashema, I. & Sapsford, R. (2013). Marital Conflicts in Rwanda: Points of View of Rwandan Psycho-socio-medical Professionals. *Procedia – Social and Behavioral Sciences*, 82, 149–168, DOI:10.1016/j.sbspro.2013.06.239

- National Institute of Statistics of Rwanda (NISR). (2012). *Fourth Population and Housing Survey*. NISR. Kigali, Rwanda.
- National Institute of Statistics of Rwanda (NISR). (2014). *Rwanda Thematic Report on Marital Status and Nuptiality*. NISR. Kigali, Rwanda.
- National Institute of Statistics of Rwanda (NISR). (2016). *Rwanda Demographic and Health Survey, 2014–15: Final Report*. National Institute of Statistics of Rwanda; Ministry of Finance and Economic Planning; Ministry of Health; the DHS Programme, ICF International. NISR. Kigali, Rwanda.
- National Institute of Statistics of Rwanda (NISR). (2019). *Rwanda Vital Statistics Report 2019*. NISR. Kigali, Rwanda. Edition 2, 1–93.
- National Institute of Statistics of Rwanda (NISR). (2020). *Labour Force Survey Trends*. NISR. Kigali, Rwanda.
- Ntaganira (2010). Trends in Female Age at First Marriage in Rwanda. Butare, Rwanda. *Rwanda Medical Journal*, 68(4), 52–55.
- Parker, K., Wang, W. & Molly, R. (2014). *Record Share of Americans Have Never Married: As Values, Economics and Gender Patterns Change*. Washington, D.C., USA: Pew Research Center's Social & Demographic Trends Project.
- Reniers, G. (2003). Divorce and Remarriage in Rural Malawi. *Demographic Research, Special Collection 1*, 6, 175–206, DOI:10.4054/DemRes.2003.S1.6
- Republic of Rwanda. (2016). Personal and Family Law, Official Gazette n°37 of 12/09/2016. *National Official Gazette*. Kigali. Rwanda.
- Republic of South Africa. (2006). No. 29441 Government Gazette; Vol.: 497 Civil Union Act [No. 17 of 2006]. *South Africa Government Gazette*. Johannesburg.
- Shepard, L.D. (2012). The Impact of Polygamy on Women's Mental Health: A Systematic Review. *Epidemiology and Psychiatric Sciences*, 22(1), 47–62, DOI: 10.1017/S2045796012000121
- South, S.J. (1985). Economic Conditions and the Divorce Rate: A Time-Series Analysis of the Postwar United States, Minnesota, USA. *National Council on Family Relations*, 47(1), 31–41.
- Tabutin D., Schoumaker B., Translated by Mireille Rabenoro. (2004). *The Demography of Sub-Saharan Africa from the 1950s to the 2000s*. Paris, Institut National d'Etudes Démographiques. 457-519+ 455–555.
- Zaidi, B. & Morgan, S.P. (2017). The Second Demographic Transition Theory: A Review and Appraisal. *Annual Review of Sociology*, 43, 473–492. DOI:10.1146/annurev-soc-060116-053442.

**Biographical note of author:** Etienne Gatera, Ph.D. Candidate at the Pedagogical University of Krakow, Field of socio-economic geography & spatial management. Holds an MA in Economics (International business). Research interests: economic development indicators (labor, health, and education), the Second Demographic Transition (SDT) for the Sub-Saharan Africa (SSA), and geographical spatial autocorrelation fertility in Rwanda. World Health Organization (WHO) Rwanda, Community change youth project award 2012-13. Current position, French IT administrator at the ABB.

**ORCID:** 0000-0002-3713-3179

**e-mail:** etienne.gatera@student.up.krakow.pl