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FACTORS AFFECTING WOMEN FERTILITY DECLINE IN SUDAN AS PERCEIVED BY SUDANESE DEMOGRAPHERS

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ABSTRACT

This study aimed to identify the factors affecting fertility decline in Sudan from the viewpoints of Sudanese demographers. It depended on primary data collected from Sudanese demographers. The study adopted descriptive statistics. The study revealed a relative fertility decline in Sudan. The important factors affecting Sudanese women fertility are delaying the age of marriage, increasing migration rates, increasing the average of age at the first marriage, increasing the level of women education, and employing women. The lowest contributing factors affecting fertility decline are high rates of divorce, female's nutrition, and abortion. In addition, the study found that there is no significant difference between respondent's means according to gender and academic position. The study recommends that more attention is needed to be provided to women education along with increasing their participation in work, which contributes to the reduction of fertility.

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INTRODUCTION

There has been a change in the Sudanese Community behavior during the last three decades. This can be presented in different factors such as delaying of marriage, increasing divorce rates, an increasing number of workers women in the private or Public sector, increasing education of women, increasing the age at first marriage, decreasing need for more children especially in urban areas. All these factors together and other indirect factors play an important role in women fertility decline in Sudan. Sudan is considered as one of the countries with high fertility rate; however, this fact has changed in recent years since fertility rates have been declining especially in urban areas. There was a rise in fertility rates from 1956 to the end of the 1970s, but after that, a relative decline began to appear. This is reflected by the total fertility rates found in the last censuses. The total fertility rate in 2008 was about 4.5. The current study will attempt to identify the causes for the decline in the fertility rates among Sudanese women from the perspective of Sudanese demographers.

The Problem of the Study: In 1989, fertility levels in developing countries varied markedly, but almost all regions had experienced some fertility decline.

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In East Asia, fertility fell by more than 50% from 6.2 in 1965, to 2.7 in 1989. In Latin America, a decline in fertility probably began in the mid-1960s and resulted in a 40% decline from 6.3 to 4.4 births per woman (Cohen, 1998). This decline was followed by a relative decline in Sudan in recent years. The evidence stem from the official records about Sudan support this fact. Sudan fertility survey (1979) showed that the total fertility rate was 6.9, while in the last census 2008 it was 4.7. Additionally, the estimated total fertility of Sudan in 2016 was about 4.5 (World Bank data, 2016). These rates illustrate the decline in fertility in Sudan. The government or academics do not explain the factors responsible for this decline, so this study attempts to identify the factors affecting fertility decline in Sudan.

Study Questions

The study attempts to answer the following questions:

- What are the causes of fertility decline in Sudan?
- Are there any differences in the viewpoints of demographers referring to variation in gender and academic /position?

The Objectives of the study

- To identify the factors causing fertility decline in Sudan from the viewpoints of Sudanese demographers.

- To discover disparity in the viewpoint of Sudanese demographers according to gender and academic position.

The importance of the Study

The importance of the research stems from the importance of the subject itself. Recently, there is a relative fertility decline in Sudan, especially in the urban areas. The factors, which responsible from this declining need to be discovered through academic research. Also, identifying these factors perhaps will provide based data and information to decision makers. Thus, it is important to address the factors behind fertility decline.

Literature Review

Fertility is the actual reproduction resulting from sexual intercourse between males and females. This concept differs from another concept, namely the ability to reproduce, which means the individual's biological ability to reproduce. Factors affecting high fertility and low fertility and the effects of their changes are becoming the major concerns in the world. Most developing societies are popular for high levels of fertility, while developed countries are concerned about the consequences of low fertility low levels. Davis and Blake (1956) classified the factors affecting fertility into two groups, background variables, and intermediate or proximate variables. The former includes cultural, psychological, economic, social, health, and environmental factors, while the latter refers to those factors having a direct effect on fertility. The background factors operate through the proximate determinants to influence fertility.

In Africa, fertility is projected to decline to 3.9 children per woman by 2030 and 3.1 children by 2050 (world fertility patterns, 2015). From the other side, fertility in Korea and Taiwan felled quickly, in comparisons to China, in part because they had rapid rates of urbanization (Johnson, 1994). In Sudan, the old decades showed the increase in fertility, however, recent years witnessed a proportional decline among Sudanese women fertility. According to Saghyroun (1985), women who report no work experiences have the highest fertility; while employed women have the lowest fertility. In addition, he maintains that, as the status of women shifts to perceptions based on education and gainful employment, fertility will decline. In purpose of investigating, the effect of socio-economic factors in fertility decline. Galal El-Din (1973) focused on rural areas and obtained that the main determinant of fertility is the socio-economic benefits the parents gain from their children especially males. In the same context, Fahmi (2001) focused on the social and economic characteristics and their impact on fertility variability in Khartoum. The study revealed that there has been a decline in the fertility rate of the industrialized societies due to the substantial shift in skilled manpower requirements and the high level of education. Omer (2003) aimed to spot the role of economic and social variables in the characteristics of the population in Gezira State. He concluded that more effort exerted by women in work reduces women's desire to have children. In addition, there is an inverse relationship between fertility and age at marriage, where the low average age at marriage leads to higher fertility rates. Adam (2007) conducted a study aimed to identify the main proximate and socioeconomic determinants of fertility in Northern Sudan. The study showed that reasons of fertility decline were breastfeeding as the main determinants. The

proportion of married women and contraceptive follows it for the period (1979-1989). For the second period (1989-1999), the proportion of married women was the main determinant. Moreover, women education and age at marriage had great contribution in changing fertility levels. Lyager (2010) attempted to identify the causes of fertility decline in Uganda and Thailand. He found that the very high costs of contraceptive use are crucial in sustaining the high fertility level in Uganda. For Thailand, there was an effective government family planning program initiated in receptive settings seemed to have been vital for country's fertility decline. Caldwell (1980) claims that high fertility levels prevail in societies where families depend on their own production. Here, each child adds to the productive force and wealth flows from children to parents. When mass education is introduced, the wealth flow is reversed because children become net receivers of resources. The reduced benefits of having children will cause fertility decline. Fertility rates are declining in almost all countries. Over the last decade, total fertility fell by more than one birth per woman in 30 developing countries, including twelve nations of the Middle East and North Africa, and seven in Sub-Saharan Africa (Khayat, 1994).

Several factors cause fertility decline. These include education level of women, which is considered as an essential factor to explain fertility movements. Higher educational attainment associated with more prenatal care. In addition, age at marriage played an important role in fertility decline. Age at marriage has increased over the last few decades. Education is an effective factor in reducing fertility. As the years of education decline, fertility levels decline. The World Bank has launched the education of women as "the single most influential investment in the developing world" (ICP, 2009). Moreover, Bonggart (1978) in his argument noted that education is believed to be the main factor in determining fertility levels in less developed countries. The high level of education of women increases the proportion of contraceptive use and delay their marriage (Ahmed, 2010). Women working can play a part in fertility change, during the last few decades; there has been an increase in female's participation in the labor force. Manovich (1996) believes that females also have material aspirations. Therefore, as they began to project that, they would need to enter the labor force; they started obtaining higher levels of education. This resulted in marriage being deferred until later in life and, thus, fertility rates decrease. Ermisch (1983), who pointed out; as more females choose to work, the average age at the first birth increases and the intervals between births decrease, supports this argument. Worldwide, fertility rates have been declining and contraceptive use has been increasing in the last few decades. Nevertheless, many women who want to stop having children or to delay their next birth do not use contraception. For example, less than half of the demand for family planning is being met in sub-Saharan Africa (UNICEF, 2000). Abortion in Sudan is not accepted by the families except in special causes that suggest abortion by a doctor to safe mother life.

MATERIALS AND METHODS

The descriptive analytical approach was used in data analysis. The study used the Statistical Package for Social Science (SPSS) for the analysis of the research data to reach the results that would answer the research questions and achieve its objectives.

The study instrument: The study depended on primary data, which was collected via a questionnaire as a data collection instrument from the sample of the study. At the beginning of the questionnaire, we focused on general data about the participants and the three sections covering various factors affecting fertility decline, which are demographic factors, economic factors, and sociocultural factors. The questionnaire followed Likert scale in the three options, which were (agree, agree to some extent, disagree). The assessment criteria of factors affecting fertility decline depend on the mean of respondent and its ranking of the averages.

Study population and sample: The study population was Sudanese Demographers who work in academic institutions or centers concerning population activities. A purposive sample was selected from the study population and its size was (46) respondents.

Table (2) presents the academic position of the sample individuals. The number of those who are lecturers is (18) 40%, followed by the assistant professors (15) (33.3%), (4)11.1% the associate professors, and only one respondent has a professorship.

Answer first question: What are the causes of fertility decline in Sudan?

To answer this question descriptive statistics is calculated for the demographic factors, economic factors, and sociocultural factors. We focused on the means of respondents categories and ranked them descending. Table (3), shows the percentages and averages of respondents of the study sample towards the demographic factors. The most important reasons for fertility decline, as seen by the participants, in Sudan are postponing the age of marriage for girls with a mean of (2.71) and agree with percent of (97.7%), increasing mean age at first marriage

Table 1. Gender of respondents

Type	Frequency	Percentage
Males	21	46.7
Females	24	53.3
Total	45	100

Table 2. Academic position of respondents

Type	frequency	Percentage
BA	6	13.3
Lecturer	18	40.0
Assistant professor	15	33.3
Associate Professor	5	11.1
Professor	1	2.2
Total	45	100

Table 3. Percentage and means of demographic factors

Statement	Agree		Agree to some extent		Disagree		Mean	Rank
	N	%	N	%	N	%		
Postponing the age of marriage for girls	33	73.3	11	24.4	1	2.2	2.71	1
Increasing of mean age at first marriage	29	64.4	14	31.1	2	4.4	2.60	2
Contraceptives use	21	46.7	16	35.6	8	17.8	2.29	3
Length of sponsorship period	16	35.6	16	35.6	13	28.9	2.07	4
Shortening the marriage period	11	24.4	21	46.7	13	28.9	1.96	5
Abortion	11	24.4	17	37.8	17	37.8	1.86	6
High child mortality rates	6	13.3	14	31.1	25	55.6	1.58	7

Table 4. Percentage and means of economics factors

Statement	Agree		Agree to some extent		Disagree		Mean	Rank
	N	%	N	%	N	%		
Women working	25	55.6	14	31.1	6	13.3	2.42	1
High cost of children education	20	44.4	15	33.3	10	22.2	2.23	2
Family Income	15	33.3	25	55.6	5	11.1	2.22	3
Husband job	11	24.4	17	37.8	17	37.8	1.86	4

RESULTS

In this section, the study focuses on the descriptive statistics, mainly frequencies, percentages, averages, and rank of the averages. In addition, independent sample t-tests and analysis of variance were calculated to reveal the difference between averages according to variation in gender and academic position. First the calculation is for general information then the answers of the study questions. Table (1) shows the gender of Sudanese demographic respondents, where the number of males was (21) with percentage of (46.7%), while the number of females was (24) accounting for (53.3%) of the respondents.

with a mean (2.60) and agree with percentage (95.5%), Contraceptives use had a mean (2.29) with (82.1%) agree, Length of sponsorship period gain the mean of (2.07) with (76.2%). The less accepted statements as causes of fertility decline in Sudan as the subjects perceived were: shortening the marriage period, Abortion, and high child mortality rates with a mean less than two. Table (4), illustrates the percentages and averages of respondents about the economic factors. The first accepted factor was women working with a mean of (2.42) and agree percentage (86.7%), followed by the high cost of children education with a mean of (2.23) and agree percentage (77.7%), Family income with a mean of (2.22) and agree

Table 5. Percentage and means of socio-cultural factors

Statement	Agree		Agree to some extent		Disagree		Mean	Rank
	N	%	N	%	N	%		
increased migration rates	33	73.3	9	20	3	6.7	2.67	1
High level of women education	26	57.8	10	22.2	9	20	2.39	2
Changing cultural concepts of females	22	48.9	18	40	5	11.1	2.38	3
Increase urbanization of females	22	48.9	14	31.1	9	20	2.30	4
Changing in marriage pattern	18	40	20	44.4	7	15.6	2.24	5
The instability of the health status of some females	15	33.3	25	55.6	5	11.1	2.22	6
High rates of divorce	19	42.2	16	35.6	10	22.2	2.20	7
Females Nutrition	14	31.1	20	44.4	11	24.4	2.06	8
Regularity of breastfeeding	6	13.3	18	40	21	46.7	1.67	9

Table 6. t. test for the significant difference between means according to gender

Gender	N	Mean	T-value	P-value
Male	21	40.8	1.13	0.27
Female	24	38.9		

Table 7. F. test for the significant difference between means according to academic position of respondents

Source of variation	Sum of squares	df	Mean squares	F-value	P-value
Between means	97.600	4	24.400	0.786	0.541
Within groups	124.978	40	30.024		
Total	1107.143	44			

percentage (88.9%), and husband job with a mean of (1.86) and agree with percentage (62.2%). Table (5) indicate that the socio-cultural factors affected fertility decline in Sudan are: increase migration rates with a mean of (2.67) and agree percentage (93.3%), high level of women education with a mean of (2.39) and agree percentage (80.0%), changing cultural concepts of females with a mean of (2.38) and agree percentage (88.9%), increase urbanization of females with a mean of (2.30) and agree percentage (80.0%), changing in marriage pattern with a mean of (2.24) and agree percentage (84.4%) , the instability of the health status of some females with a mean of (2.22) and agree percentage (88.9%). The less important sociocultural factors in affecting fertility decline are high rates of divorce with a mean of (2.20), agree percentage (77.8%), female's nutrition with a mean of (2.06), agree percentage (75.5%) and regularity of breastfeeding with a mean of (1.67), and agree percentage (53.3%).

Answer the second question: Are there any differences in the viewpoints of demographers referring to variation in gender and academic /position?

In purpose to answer this question, T-test and F-test calculated in resulted in the tables below: The results of t-test are shown in table (6). The results confirm that there is no significant difference between males and females' means, i.e. the viewpoint of males does not vary from female's viewpoint. Table (7) illustrates the results of analysis of variance. The results revealed that there is no significant difference between the means of respondents according to the difference of academic position, i.e. there is homogeneity of respondents' viewpoints.

DISCUSSION

The important demographic cause or factor behind fertility decline in Sudan is delaying the age of marriage for girls. This fact is supported by the increased average of female age at marriage in recent years. This factor could play an important role in fertility decline as revealed by Adam (2007). The second factor is contraceptives use, which is disseminated in Sudan for the last decades, and females used contraception for

spacing between births because of either their working or the increasing the level of education. The most important economic factor is women working, which is contributes in decline of Sudanese women fertility; this is evident through the considerable number of women workers who had job opportunities in both public and private sectors. This finding is compatible with the argument of Manovich (1996) and Saghyroun (1985). Also, the high cost of children education change families desires to have fewer children. In addition, socio-cultural factors represented by an increased migration rate that is explained by the high number of immigrants over the last decades to find good jobs opportunity out of Sudan especially in the Gulf Countries. The factor of education reflected in an increased level of women education and this fact appears to be obvious in Sudan due to the relative progress in women education. This result supported by (47%) for females enrolled in general education according to the Central Bureau of Sudan (2009) it was less in the early seventies, corresponding to (53%) for males education. This development in female's education raised their ambitions towards births spacing and desire for small family size. These results are consistent with the argument of Ermisch (1983). The lowest contributing factors affecting fertility decline are high rates of divorce, female's nutrition, abortion, shortening the marriage period, regularity of breastfeeding, and high child mortality rates. Moreover, Sudan now days faces a very hard economic status and this may let families reduce the number of children.

Conclusion

In conclusion, the study revealed some points. According to the last censuses, there is a relative fertility decline. There are many factors affecting women fertility decline in Sudan. The most important factors affecting Sudanese women fertility include demographic factors, economic factors, and sociocultural factors.

Recommendations

Based on the results, the study poses the following recommendations:

- More care is needed to provide women education along with increasing their participation in work, which contributes to the reduction of fertility.
- The data about fertility is not available for recent years, so a survey about fertility is needed in Sudan to give more results and interpretations of fertility decline in Sudan.

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