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ANALYSING THE LEVELS AND TRENDS OF POPULATION STATISTICS OF OMAN

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Abstract*: Social statistics deals with the interplay of demographic processes like population growth, demographic transition, births, deaths, and migration. Very few countries in Arabian Peninsula have a long history of population statistics. This article explores the key population trends of Oman; a country which is relatively neglected in the population literature because of the scarcity of detailed population statistics. The analytical trends in terms of Oman's population growth and size, its demographic transition, age structure, fertility, mortality and migration behavior were carried out in this study. The results of the analysis revealed that Oman's demographic future looks irreversible with the current state for the future possible generations in terms of fertility and mortality, but migration behavior will remain uncertain and will largely dependent on its own economic, religious, social, and political policies.*

Keywords*: Arabian peninsula, demographic transition, migration, social statistics.*

1. Introduction

The official name of Oman is the 'Sultanate of Oman'. Oman is an Arab country in the southwest Asia on the southeast coast of the Arabian Peninsula. The Arabian Peninsula consists on seven counties, namely: Bahrain, Kuwait, Qatar, The United Arab Emirates (UAE), Yemen, Saudi Arabia and Oman. The Sultanate of Oman is divided into four governorates and five regions, thus making a total of nine administrative divisions. Islam is the dominant religion of Oman.

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In the literature, the speculation about any peculiar demographic situation in the Arab region is quite enormous. However, many authors, under different formulations argued that, population growth in the Arab and Muslim world was very rapid in the second half of the twentieth century, due to early nuptiality, high marital fertility and low mortality [1-6]. So, demography is the relevant discipline that deals with the interplay of demographic processes like population growth, demographic transition, births, deaths, and migration. Population in any country or region always grows or decline through the interplay of these demographic processes.

Very few countries in Arabian Peninsula have a long history of population records. One of the leading statements, in the literature on the population based study in most of the countries of Arabian region is a complaint regarding the scarcity and inaccuracy of demographic data. A total of 29 censuses and 15 surveys in the seven countries of Peninsula have been conducted since 1960s up to the extent of our literature search (Table.1). However, Oman has conducted only two censuses and participated in only two surveys. Birks (1976) argued that population of Oman would remain unknown for two decades and researchers would face the problem of inaccurate population estimates [7].

Table 1. Censuses and official surveys in Arabian Peninsula during 1950-2000.

Country	WFS, DHS	GCHS, GFHS	Censuses
Yemen	1979, 91-92, 1997		1994, 2004
Oman		1988, 95	1993, 2003
Qatar		1987, 96	1970, 86, 97
Saudi Arabia		1987, 96	1962, 74, 92, 2004
Bahrain		1989, 95	1965, 71, 81, 91, 2001
UAE		1987, 95	1968, 75, 80, 85, 90, 95
Kuwait		1987, 1996	1961, 65, 70, 75, 80, 85, 1995
Total	03	12	29

WFS = World fertility survey (1975-82), DHS = Demographic and Health survey (Since 1985)
GCHS = Gulf Child Health Survey (1987-89), GFHS = Gulf family Health survey (1995-98)

Therefore, keeping these views in mind, this article has two aims. The first is to tell the brief story of Oman's demography since 1950s and if told earlier, then retold with the most reliable data. The second objective is to establish an overview that pinpoints the key population trends of Oman in the second half of the twentieth century for the possible future course of action.

2. Data and Variables

The main data source used in this article was Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (2009), World Population Prospects: The 2008 Revision, New York: United Nations (UN). The second half of the twentieth century (1950s-2000s) is considered in this article to understand the level and trends of population statistics. The UN database provides the estimates of different demographic variables under four variants namely: the low, medium, high, and constant-fertility. The following variables under medium variant were used in this essay: five year age and sex-wise population, annual population by sex, population growth rate, crude birth rate (CBR), crude death rate (CDR), net reproduction rate (NRR), total fertility rate (TFR), life expectancy at birth, males life expectancy at birth, female life expectancy at birth, net migration rate (NMR), net migration and total annual population.

3. Results and discussion

3.1 Population size and growth

After 1950 Oman's population grew, and continue to increase up to the 2000s (Figure 1). More specifically, the population rose from a 0.456 million in 1950 by 6 times to 2.402 million in 2000. The male population outnumbers the female population particularly after 1985 (Figure 1). The upturn in population growth took place in second decade of the second half of the twentieth century, when the death rate began to fall, while the birth rate sustained at high level (Figure 2). The effect of the upturn can be seen by comparing the five decades of the population growth. From 1950 to 1970 the population increased by 64% and from 1970 to 1985 by 104% (time when migration rate become apparent). Thus immigration had a substantial effect on population size of Oman in the third to fourth decade of the study period. The growth rate in Oman increased slightly from the 1950s (2.02% per year) until around 1960-65 (2.55%), it then began to increase rapidly 3.02% in 1965-70 to 5.04% in 1980-85 (Figure 2). After 1980s the growth rate began to fall from 5.04% to 3.28% in 1990-95 and 2.02% in 2000s. This was interesting to note that growth rate of Oman in 1950s was the same as in 2000s (2.02%). By comparing the most recent growth rate (2.08%) of Oman in 2005-09 with that a growth rate (5.04%) in 1980-84. The growth rate had decreased by 58% in 30 years.

In sum, at the one end, the growth rate is slowing down, but on the other end the absolute population growth of Oman is growing. The multiplier coefficient[1] of Oman since 1980 over a period of thirty years (2010) is 2.4. This figure is not only the consequence of Oman's fertility history, but also up to the extent of international migration and it looks Oman's population growth will continue over the coming decade(s).

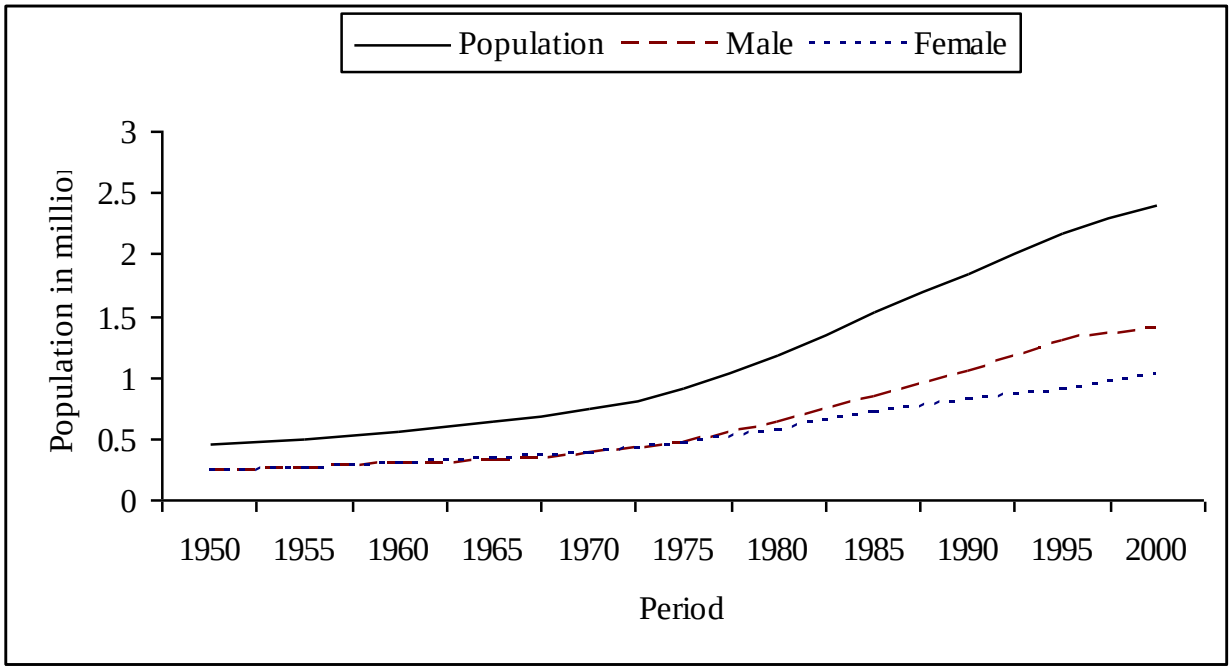

Figure 1. Total and sex-wise population of Oman from 1950 to 2000.

[1] Ratio of the population in 2010 to the population in 1980

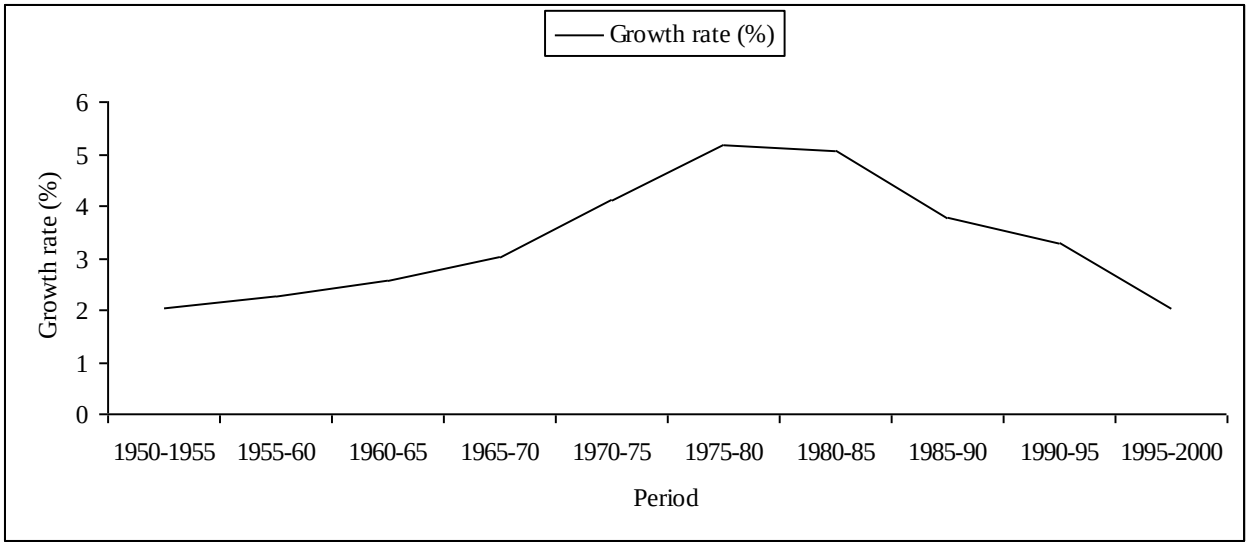

Figure 2. Population growth rate from 1950 to 2000 in Oman.

3.2 Demographic transition

For any population, the historical shift of birth and death rates from high to low level is referred as demographic transition. Theoretically, there are four stages of transition namely: pre-modern (stage 1), industrializing (stage 2), mature industrial (stage 3) and post-industrial. Pre-modern stage is characterize by having high birth and death rates which results in a very slow population growth, whereas second stage of transition sees a rise in population caused by a decline in the death rate while the birth rate remains high. Mature industrial stage is characterized by decline in birth rate. Post-industrial stage occurs where birth and death rates are both low. Oman began its industrial demographic transition in the mid of 1970-80s (Figure 3). Mortality was initially high (crude death rate was close to 28 deaths per 1,000 population), fell smoothly, while the birth rate also very high (52 births per 1,000 population or close to 7 children per women) remained stable until the late 1980s. The birth rate started to fall after 1980s. The mortality started to fall more quickly after 1980s. To sum up, today, the Sultanate of Oman is in a situation of ongoing demographic transition with a birth rate of 23 per 1,000 and a death rate of only three per thousand, has an annual growth of 2%. The future final stages of demographic transition taken by the Sultanate of Oman are dependent on its economic, educational, cultural and social policies.

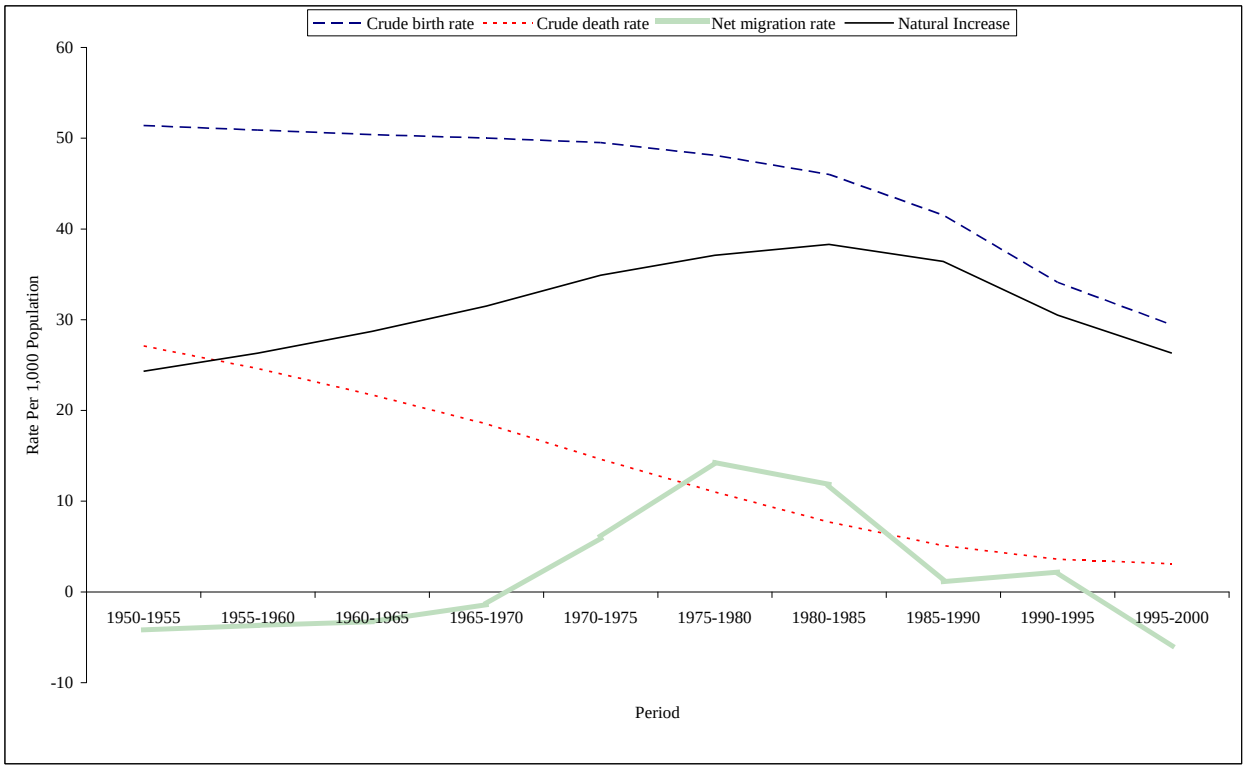

Figure 3. Demographic transition from 1950 to 2000 in Oman.

3.3 Age-sex structure

The shape of any population is determined by its composition. The age and sex composition is the main demographic determinant of any population's man power supply. This composition can be well depicted by a population pyramid. Sundbärg (1900) cited in Maslanka (2007) and United Nations (1973; p. 264) observed certain empirical relationships between age composition and rate of population growth: having a high proportion of children and a high rate of growth was named as progressive; stationary, with moderate proportion of children having aged persons with slow growth; lastly, having a high proportion of aged persons and declining children was known as regressive [8-10].

However, take a closer look at the changes in the age pyramid of Oman in 1950 and 2000 (Figure 4 and 5). In 1950, at age 0-4, the base was broadened, which indicate that infant mortality was declining. Each bar in the pyramid is larger than the one before it; alternatively, each age cohort was larger than the one before it. More explicitly, this standard shape of pyramid showed a sustained high fertility pattern of Oman in 1950s. Consequently, in 1950s neither the population of Oman was engaged in the fertility transition nor experienced any large-scaled migration. To sum up, simply it can be concluded that, in 1950s Oman's population structure was typically young and having a rapid growth. Using the Sundbärg approach, in 1950, the population of Sultanate of Oman had progressive type of age structure. After 50 years, in 2000, Omani population was before the edge between progressive and stationary age structure. Graphically, migration, wars, baby booms alters the shape of pyramid. Tabutin and Schoumaker (2005) reported that migration exerts a strong influence in the oil-producing countries of the Arabian Peninsula [5]. By 2000, the situation was also diversified in Oman; the migration effect was visible from age 20 through 34 years in the male population of Oman (Figure 5).

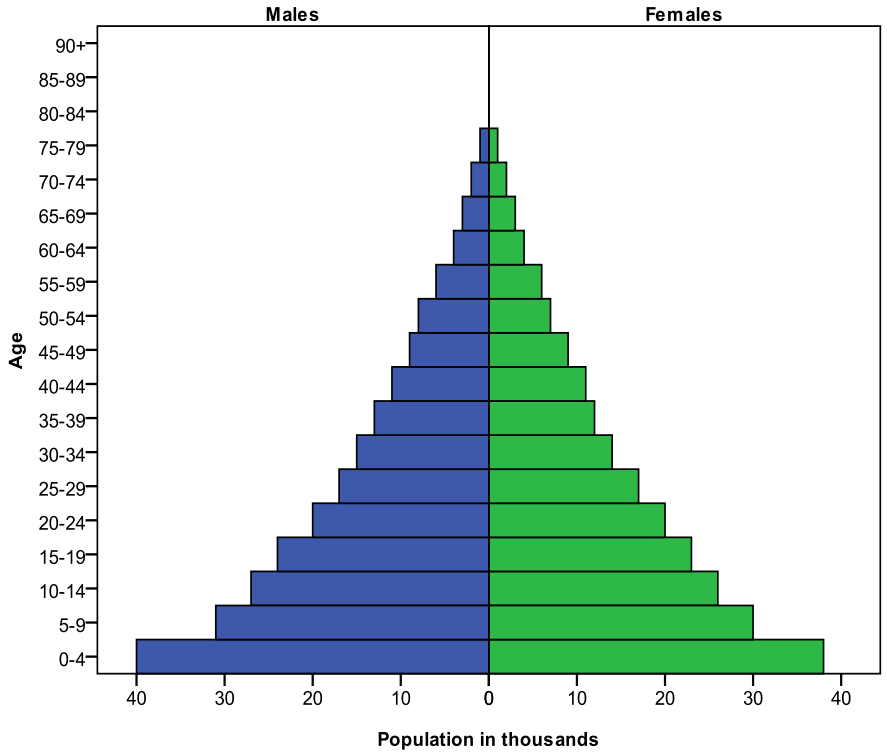

Figure 4. Age pyramid of Oman in 1950.

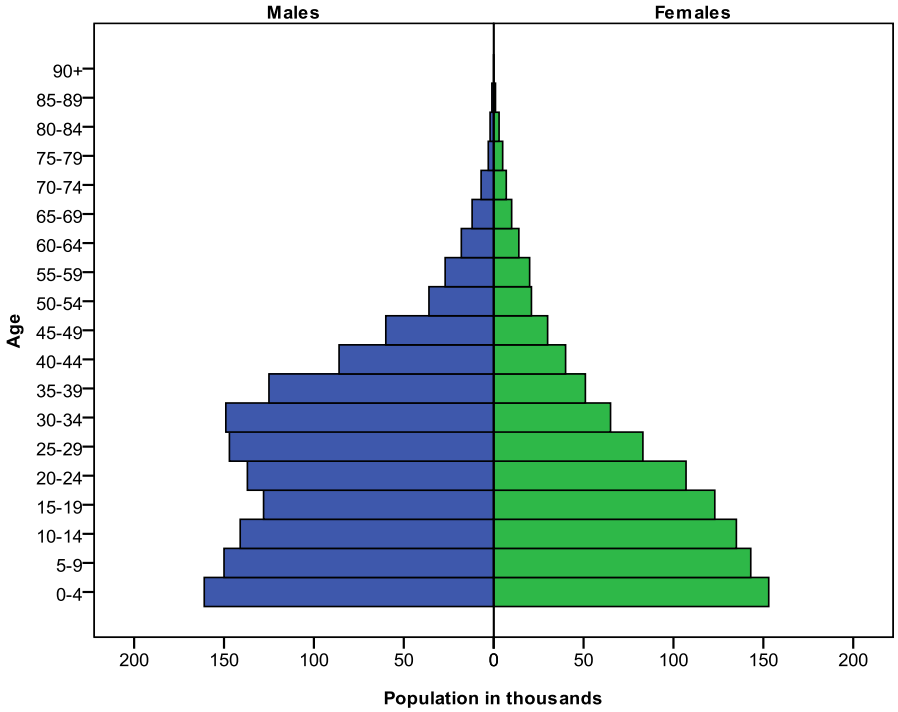

Figure 5. Age pyramid of Oman in year 2000.

3.4 Fertility

Fertility behavior is demographically changing over time [11-12]. The assessment of fertility behavior is based on certain measures. These standard fertility measures are mostly estimated from censuses or surveys data. One such measure is total fertility rate (TFR) that is considered to be refined and reliable measure of fertility in a population and is interpretable as the number of children that a woman would have during her lifetime if she were exposed to the age-specific fertility rates prevailing in a population in a given period [13]. Although TFR measure the fertility of an imaginary group of women, still is a valuable measure for gauging fertility trends. TFR is also attractive because it allows exploring the concept of replacement level fertility. The second measure which will be focused in this study due to data constraint is net reproduction rate (NRR).

Over the period under study, Oman has experienced a gentle decline of fertility in the mid of fourth decade (1980-90), (Figure 6). A sustained high fertility (7 or 8 children per women) of Oman with no birth control remained stagnant over thirty years since 1950s (Figure 6), but the fertility history of Oman diverged to fall after 1985. To sum up, on the comparison of TFRs from the 1950s to the 2000s, the decline in fertility was late but quite substantially approached the replacement-level (2.02) just in the start of new millennia (2005-09). A NRR of 2.04 showed that the two generations were available to replace the Omani mothers in 1950 (Figure 6). The situation remained almost consistent over the 50 years with a slight change during 1980-90.

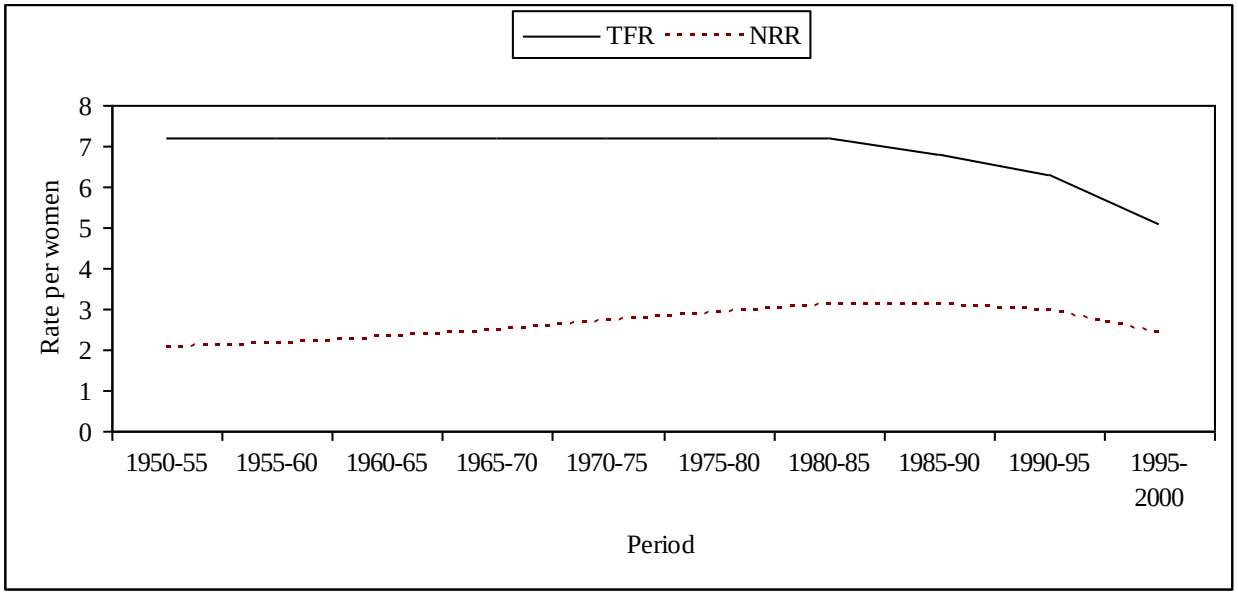

Figure 6. Fertility trends of Oman from 1950s to 2000.

3.5 Mortality

Mortality happens once in life, whereas the fertility is the matter of choice it can happen more than once in life. Mortality is the second cause of population change. The preferred strategy to study the mortality trends is the use of standard mortality indicators in connection with the standard theory of epidemiologic transition given by [14], which mainly focuses on the understanding of health and disease patterns of any population. But keeping the health and disease related data constraint in mind for subject under study, mortality pattern under the

formulation of life expectancy is focused in this article. It is quite universal to say that nearly all human populations live much longer now than in the past due to many biological and social factors. In 1950, the average life expectancy at birth in Oman was 38 years; in 2000, it was about 72.5 years. The average annual gain over 1950 to 2000 was 0.69 years. In short, Oman has made a spectacular improvement in average life expectancy over these fifty years.

In the literature, Struyck (1740) and Deparcieux (1746) cited in Luy (2003) argued that women live longer[2] than men. From 1950s, male and female both life expectancies rose over a period of next 50 years, from 36.9 and 38.3 years to 71.2 and 74.2 years respectively (Figure 7) [15-17]. The male average annual gain was 0.69 years, whereas the female annual gain was 0.72 years. This gender improvement may stems from the reduction of respective infant mortality rates. Table 2 presents the trends of female-male inequalities since 1950s in Oman. Up to the 1990s, life expectancies for females were clearly pronounced over males. By and large, the sex difference in life expectancy since 1950s was increasing. All in all, in terms of these measures women in Oman have benefited more than that of their male counterparts from the 1950s to the 2000s.

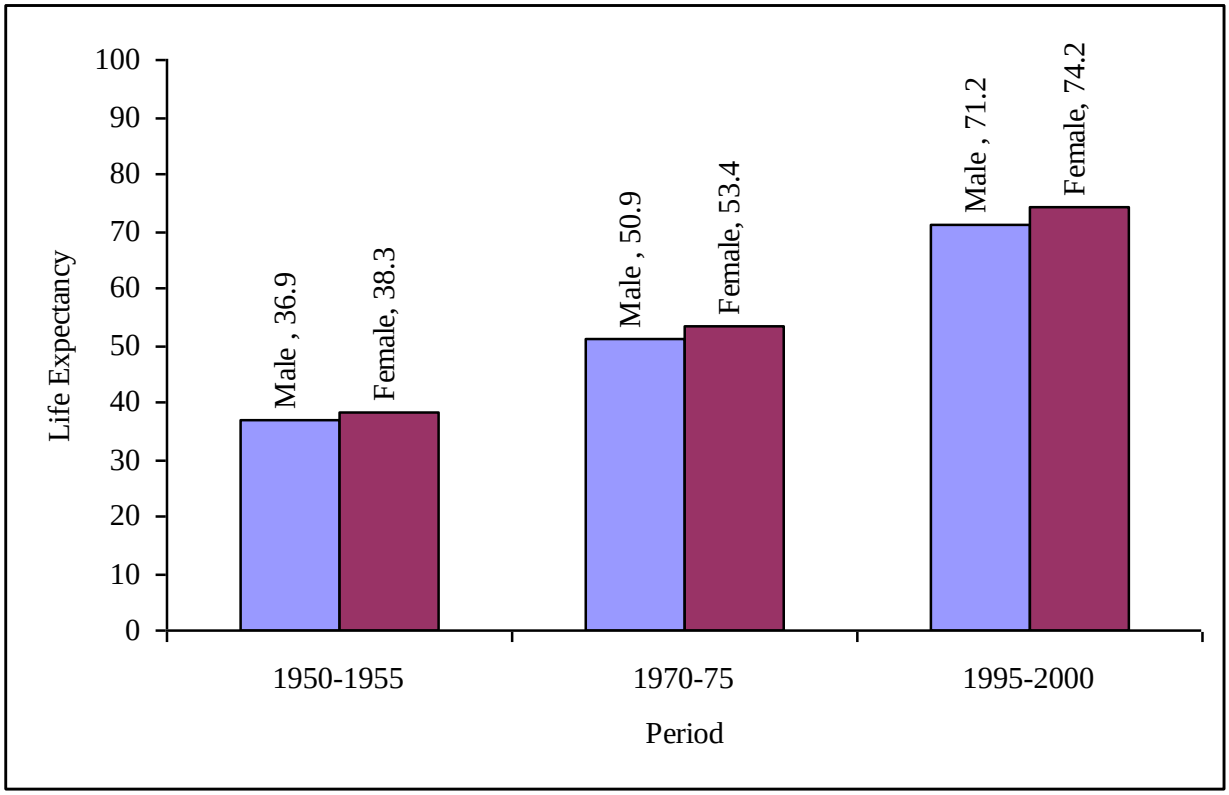

Figure7. Life expectancy selected by sex and period in Oman.

3.6 Migration

After fertility and mortality the next component of population change is migration. Generally speaking, the study of international migration in the late twentieth century is the "age of

[2] The only exception is Ireland, where males had a higher life expectancy at birth than females until the 1920s for details see [18-19].

migration" [20]. Migration is the most unpredictable demographic variable. It can occur in different forms, like from thin stream to great waves in any area. However, Zelinsky [21] developed five phase model of mobility transition parallel to vital transitions namely: 'pre-modern traditional society' (Phase A)[3], 'early transitional society' (Phase B), 'late transitional society' (Phase C), 'advanced society' (Phase D) and 'future super-advanced society' (Phase E). Pre-modern traditional society is characterized by having "very little migration, just before the onset of urbanization (a moderately high to quite high fertility with mortality at nearly the same level as fertility)", whereas the early transitional society sees "a major outflows of emigrants to available and attractive foreign destinations (slight, but significant, rise in fertility, which then remains fairly constant at a high level)". Late transitional society is characterized by "emigration on the decline or may have ceased altogether (a major decline in fertility, initially rather slight and slow, later quite rapid with a continuing decline in mortality)". The advanced society observes "significant net immigration of unskilled and semi-skilled workers from relatively underdeveloped lands (the decline in fertility has terminated and mortality is stabilized at levels nears or slightly below fertility with little year to year variability)" (Zelinsky 1971, pp. 230). Future super advanced society occurs when "some further immigration of relatively unskilled labour from less developed areas is possible (no plausible predictions of fertility with a stable mortality pattern results in extended lifespan)" (Zelinsky 1971, pp. 231). Using Zelinksy approach, in 1950, the Sultanate of Oman seemed to be an early transitional society and remained in this phase up to next fifteen years. Since late 1970s to early 1990s, population of Oman reached rapidly towards the early stage of the fourth component (The advanced society) of modernization process given by Zelinsky (Figure 3, Figure 8). When focusing on Oman particularly after 1990s, Zelinksky's hypothesis in terms of in and out migration seems to be incomplete or not capable to distinguish one-to-one parallel vital and mobility transition: thus by having low fertility and mortality level with an enormous[4] number of emigrants. However, for any population, migration analysis not only copes up with Zelinsky's theory which does not state clearly about the migration 'rates' or 'number of migrants' but also needs the calculations of standard measures. Therefore, the utilization of the two measures, absolute number of migrants in connection with net migration rate, is always been the preferred strategy to deal with migration statistics[5]. From the data source, time-series of migration statistics was available on these two measures since 1950s.

The time series of net migration indicate that the Oman migrant stock decreased by seven thousands persons (both sexes) from 1950s to the early 1970s. But after 1970s the migration behavior was entirely different (Figure 8). During the next 25 years, the migrant stock in Oman was increased by 43 thousands persons. The average annual migrant loss[6] over 1950 to 1970 was 0.35 thousand persons, whereas over the next twenty years, Oman experienced an average annual migrant gain of 1.9 thousands persons. One speculation regarding the high influx of foreign migrant over the second twenty year period made a way to consider the issues of industrial sector and infrastructure development in Oman. These sectors were largely dependent on foreign workers. This sub sequential 20-20 years pattern of migration in Oman coincides with the general statement of 'Mcfalls, p. 13' [23] that "migration is extra-ordinarily high for people in

[3] The terms in parenthesis referred to vital transition.

[4] Largest net migration (-14 thousands) in the history of Oman over the second half of the twentieth century

[5] For details, see [22].

[6] The ratio of the net migration to the period covered.

their early 30s as individuals leave their parents' home to attend college, find jobs, get married, and build families". The migrant population in absolute (net migration) and relative terms (net migration rate) declined considerably in the last decade of the twentieth century (Figure, 8). In short, The 'Sultanate of Oman' pattern of migration was highly diversified and takes different forms since 1950s.

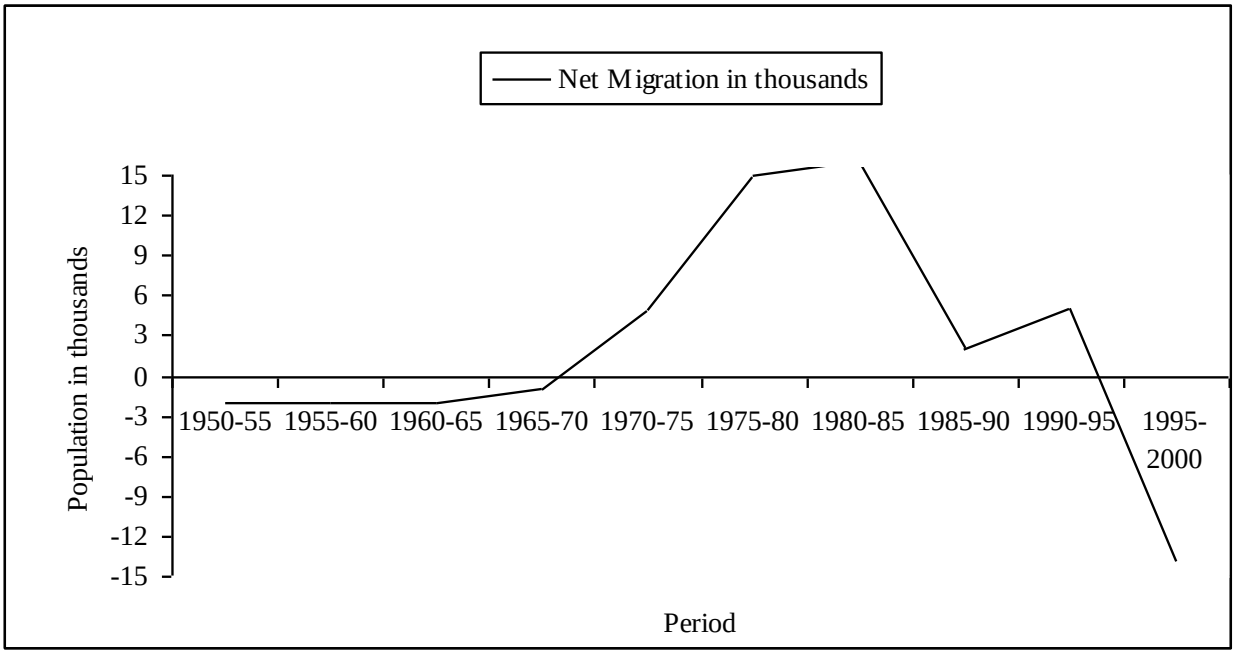

Figure 8. Migrant stock in Oman, 1950 - 2000.

4. Conclusion and future directions

This brief descriptive essay was started with the speculation of such characteristics: "Arab" as rapid growing population, very high marital fertility and low mortality. Indeed, the change of demographic regime in Oman is under way, even not yet complete. Even Islam is the official religion of Oman, yet observing the gentle decline in fertility, it can be concluded that society has started not to form a natural part of Islamist traditional and historical culture but the society has started to be the part of modern era. However, Apart from Islamist culture, the Oman's demographic history during the second half of the twentieth century displays following features: (I) a major visible downtrend in mortality; (II) a gentle decline is fertility; (III) To and fro or semi-cyclical diversified change in migration; (IV) slow population growth. Moreover, with regard to mortality and fertility the trends look irreversible. All in all, it can be said that the Oman's demographic future looks irreversible with the current state for the future possible generations in terms of fertility and mortality, but of course migration behavior will remain uncertain and largely dependent on its own economic, religious, social, and political policies.
Throughout the article a descriptive approach is used but some more investigations are thought to be required in the context of Oman but more generally, for the whole Peninsula. As discussed earlier in section 1, little is known about the demographic history of Oman's population over the

different times so this remained an underdeveloped area of demographic research which needs to be explored. In this article, even an attempt has been made on the best available data, still more insights like nuptiality, proximate determinants of fertility, maternal mortality, education in connection with literate life expectancy subject to the availability of relevant data are strongly required to assess the relative position of Oman, even at least with the other countries of the Arabian Peninsula.

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