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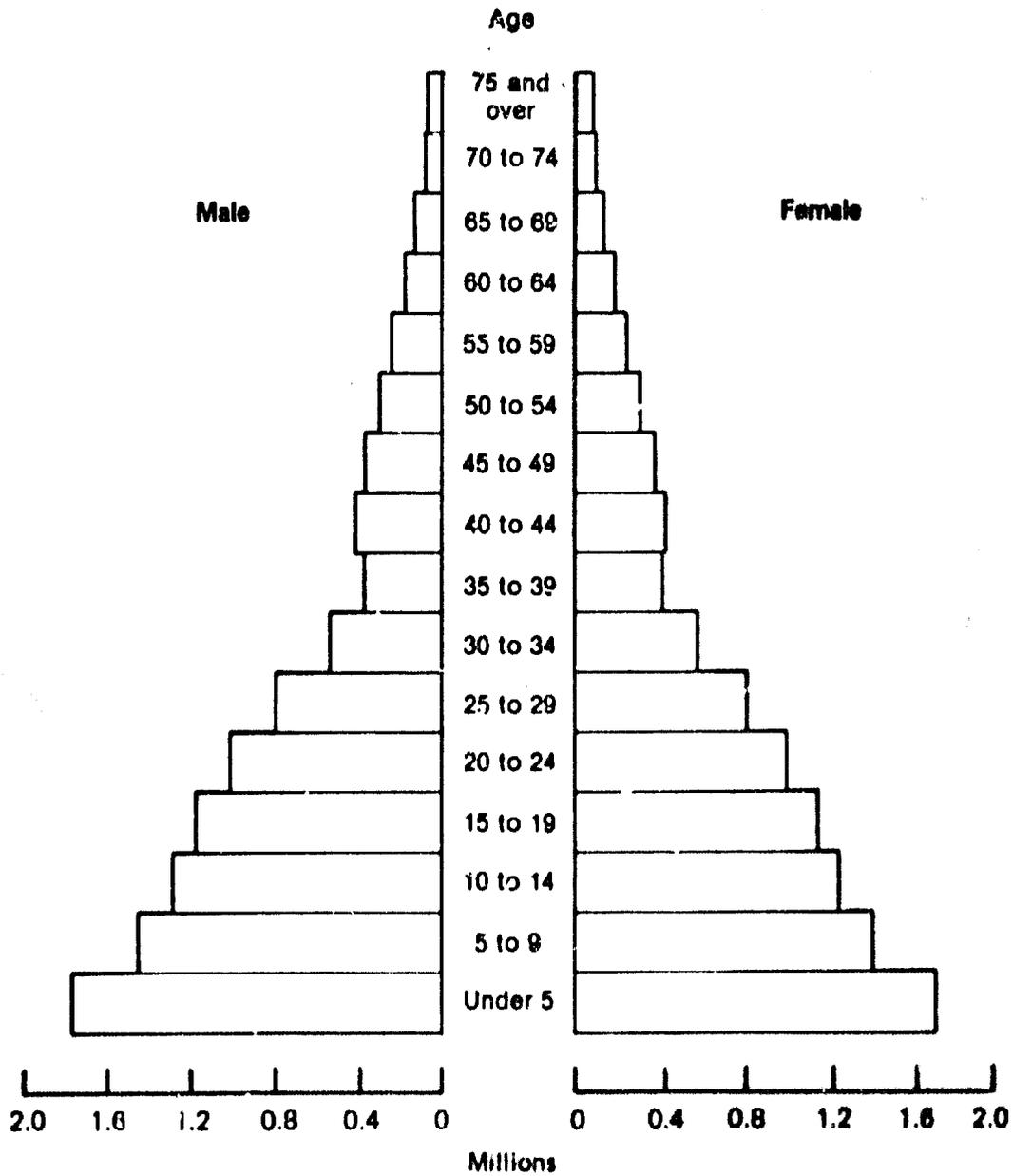
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MOROCCO

U.S. Department of Commerce
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ISP-DP-23
Issued July 1980

Figure 1. Projected Population, by Age and Sex July 1, 1979



Source: Table 2.

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MOROCCO

by Peter D. Johnson



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County Demographic Profiles is a series of reports which brings together a variety of demographic data for selected countries of the world, and usually includes data for both a recent census year and the current period. This report was prepared in the Data Evaluation Branch, Bureau of the Census, under the supervision of Eduardo E. Arriaga, Special Assistant for International Demographic Methods.

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The map was prepared in Geography Division. It was designed by Betty L. Adamek, and constructed by Fred W. Fricker.

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Users of this report are invited to send their comments to the Chief, International Demographic Data Center, Bureau of the Census, Washington, D.C. 20233.

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Symbols used in tables

—	Represents zero.
NA	Data not available.
X	Not applicable.
Z	Less than 500 or less than 0.05 percent.

Morocco

HIGHLIGHTS

Morocco, with a projected 1979 population of over 20 million, is one of the ten largest countries in Africa. Like most countries in Africa, it is growing at a rapid rate (approximately 2.9 percent per year) due to high levels of fertility. However, as is the case in many African countries, demographic data for Morocco are limited both in quantity and quality. Consequently, all estimates and projections have a large margin of error. It should also be noted that the latest available demographic data for Morocco are from 1972-73 and new data will not be available until the results of the Moroccan Fertility Survey are released.

Morocco regained its independence in 1956 when the French Protectorate ended. In 1957 the northern zone (a Spanish Protectorate) and the international city of Tangier were added. In 1959, the province of Tarfaya became part of Morocco and in 1970, the region of Ifni was also added. Although Morocco and Mauritania entered the area of Spanish Sahara in 1976, the final disposition of this area has not yet been determined.

Morocco is composed of highly varied topography, with coastal plains, plateaus, the Rif mountains, the Atlas mountains, and the Sahara Desert. Morocco's population is also diverse, with Arabic and French speakers in the coastal plain and Berber speakers in the inland highlands.

Morocco continues to have a high level of fertility. However, between 1960 and 1971 there appears to have been a rather dramatic decline in the crude birth rate. Over half of this decline can be attributed to the postponement of marriage. It is estimated that in 1960, 50 percent of the women were married by age 17, while in 1971 this age had risen to 19. Another portion of this decline can be accounted for by differences in the age distribution at the two dates—specifically the small cohorts born around the time of the 1945-46 famine and epidemic were in their prime child-bearing ages by the late 1960's and early 1970's. A third component of the change in the crude birth rate can be attributed to the impact of family planning. The results of the 1972-73 Dual Record Experimental Study indicate a lower level of marital fertility among urban women than rural women, and the urban pattern of fertility shows evidence of a probable impact of family planning. The national family planning program was started in 1966 and by 1979, it was estimated that 8.2 percent of the currently married women ages 15 to 49 years were using contraceptives provided by the program. Also, it was estimated that an addi-

tional 7.1 percent of currently married women ages 15 to 49 years were using contraceptives supplied by the private sector.

Mortality appears to have been declining in Morocco since the famine and epidemic of 1945-46. The famine and epidemic, through both mortality and fertility effects, appear to have caused an indentation in the age distribution (e.g., the 25 to 29 year age group in 1971) which is evident in the census and survey data in spite of the inaccuracy of age reporting. Despite the high level of fertility, the population was not growing very rapidly prior to 1947 because mortality was elevated as a consequence of periodic epidemics and famines.

Because of past high fertility, a large proportion of Morocco's population is young. However, recent declines in the crude birth rate have reduced the population under age 10 years from 35 percent in 1960 to 32 percent in 1971.

Although literacy is still low in Morocco, it increased rapidly between 1960 and 1971. Literacy among the population ages 10 years and over increased from 22 to 37 percent for men and from 4 to 13 percent for women.

Morocco has a relatively high degree of urbanization when compared to other African countries. The percentage of the population living in urban areas increased from 29 in 1960 to 35 in 1971 due to significant amounts of rural to urban migration. Much of this urban growth has been concentrated in the cities of Casablanca and Rabat which showed annual growth rates over 4 percent during the period 1960 to 1971.

The proportion of the male labor force in agriculture is still high in Morocco, although it declined from 70 percent in 1960 to 59 percent in 1971. The overall activity rate for males declined between 1960 and 1971, with the largest reductions in the percent active occurring at ages under 25 years and over 55 years. Comparisons of female labor force characteristics in 1960 and 1971 are more difficult. Both censuses collected data on female family helpers in agriculture; however, the 1960 census data included an additional estimate of the number of these workers who went unreported. If these unreported workers are excluded from 1960 census data, the percent economically active between 1960 and 1971 rose for all age groups of women except those ages 60 and over, and the percent of employed females in agriculture fell from 50 percent in 1960 to 43 percent in 1971.

INTRODUCTION

This profile of the population of Morocco contains tables of selected demographic information, including size of popu-

lation, and estimates of fertility and mortality. Specifically, annual estimates of total population are shown beginning in 1950. An adjusted distribution of the population, by age and sex, is given for the census years 1960 and 1971, as well as for 1979. Projections of the number of women of child-bearing age are shown for each year, from 1975 to 1985.

Fertility measures shown in the profile include crude birth rates, age-specific fertility rates, and gross and net reproduction rates. Mortality is shown in terms of crude death rates, life expectancy at birth, infant mortality rates, and other life table functions, by age and sex.

Also presented is summary information on family planning, urban population, marital status, and some data from which past migration can be inferred. Other related items are included such as number and size of households; school enrollment; and labor force by industry, occupation, and status.

SOURCES AND QUALITY OF DATA

Data for the Morocco profile were obtained primarily from the de facto population census of December 31, 1950 (Spanish zone) and the de jure censuses of April 15, 1951 and April-May 1952 (French zone), June 18, 1960, and July 20, 1971 (full count and 10-percent sample). These data are supplemented by the results of the 1961-63 Multiple Objectives Survey and the 1972-73 Dual Record Experimental Study. The data in this profile refer to the boundaries of Morocco as shown on the map on page V.

Examination of the age-sex distributions from these censuses shows that these data are of very poor quality. However, analysis of the single-year age distributions for each sex indicates that there was less age heaping in 1971 than in 1960.

Prior to the 1950's, the only population estimates available are based on *dénombrements* or head counts by broad age groups: juveniles, adults, and old people. The geographical coverage of these counts is suspect as is the accuracy of counts within households. In October 1951, a census was conducted in the northern (Spanish) zone with a reference date of December 31, 1950. The population and its characteristics were estimated by subtracting out the births which occurred from December 31, 1950 to October 1951, adding in the deaths occurring during the period, and adjusting characteristics to what they were 9 months earlier. The data from this census may be inaccurate because of the attempt to obtain the population and its characteristics as of December 31, 1950 using information collected in October 1951. In the southern (French) zone, the first census was conducted on April 15, 1951 for the Moroccan Jewish and foreign populations and in April-May 1952 for the Moroccan Moslem population. All data from the 1952 census, except the total population by sex, are based on an 8-percent sample tabulation of households.

The 1960 census was the first to cover the whole of Morocco at one time. Individual data were obtained for all persons in urban areas and 10-percent of *douars* in rural areas. "A *douar* is a group of dwellings perhaps similar to the concept of a village in other countries, but it may also

comprise several groups of dwellings (several 'villages'), or in fact it may consist of a set of isolated or semi-isolated dwellings" (Fellegi, 1974, p. 6).

The 1971 census collected individual data on all persons. Preliminary tabulations were based on a 10-percent sample of households in urban areas and of *douars* in rural areas. The sample tabulations included persons of all nationalities (of which 99.1 percent were Moroccan Moslems), but excluded the nomadic population estimated at about 108,900 persons (Morocco Direction des Statistiques, 1973a). Also, both the 10-percent sample and the full count tabulations of the 1971 census excluded the population counted separately in the census (people in group quarters such as hospitals and army barracks)—a total of 51,825 persons (Morocco Direction des Statistiques, 1971, p. 94).

By applying analytical techniques to the age-sex data of the 1960 and 1971 censuses, the census distributions were adjusted for possible age misreporting and net coverage error (see census evaluation discussion in the Technical Notes in the appendix, table 2 for the 1971 adjusted census population, and appendix table A-2 for the 1960 adjusted census population).

Morocco has had some form of civil registration for many years, but the coverage is poor and very few of the results derived from the registration system have been published. Consequently, information on fertility and mortality must be obtained from the 1961-63 Multiple Objectives Survey and the 1972-73 Dual Record Experimental Study, or inferred from census data.

The 1961-63 Multiple Objectives Survey conducted by the Service Central des Statistiques collected information on age, sex, fertility, mortality, marital status, labor force, and agricultural production. The first round rural sample consisted of about 330,000 persons, while the second and third rounds (on which the demographic data were based) collected information on a subsample of about 64,000 persons. The urban sample size was about 36,000 persons. The data on births and deaths were collected by retrospective questions supplemented by consistency checks with data obtained in the previous rounds (the first and third rounds were one year apart).

The 1972-73 Dual Record Experimental Study conducted by the Morocco Centre de Recherches et d'Études Démographiques (C.E.R.E.D.) with assistance from the University of North Carolina, International Laboratories for Population Statistics (POPLAB) consisted of two survey rounds (first round conducted August 1972 to January 1973, second round conducted February to June 1973) and registration for the year 1972 and the first 6 months of 1973. The sample population in the second round included 37,000 persons in urban areas and 49,000 persons in rural areas. The sample is somewhat more urban than the country as a whole (43 versus 35 percent, respectively) and therefore, the survey results need to be re-weighted to get national estimates. Furthermore, the sample area covers only two of the seven economic areas of the country and thus may not be representative. The sample does, however, cover different geo-

graphical areas which were shown to vary in demographic characteristics in the 1961-63 Multiple Objectives Survey (Rachidi, 1974, pp. 89).

The Moroccan Fertility Survey, part of the World Fertility Survey program, was taken in 1980, but the results are not yet available.

There is evidence of increasing emigration of Moroccan Moslems since the early 1960's, principally male workers going to European countries for employment. Estimates of this migration are based on data on Moroccans enumerated in other countries and counts of Moroccans entering these countries. In spite of the many sources of data available, the resulting estimates are still uncertain due to lack of comparability of data, undocumented migration, and return migration.

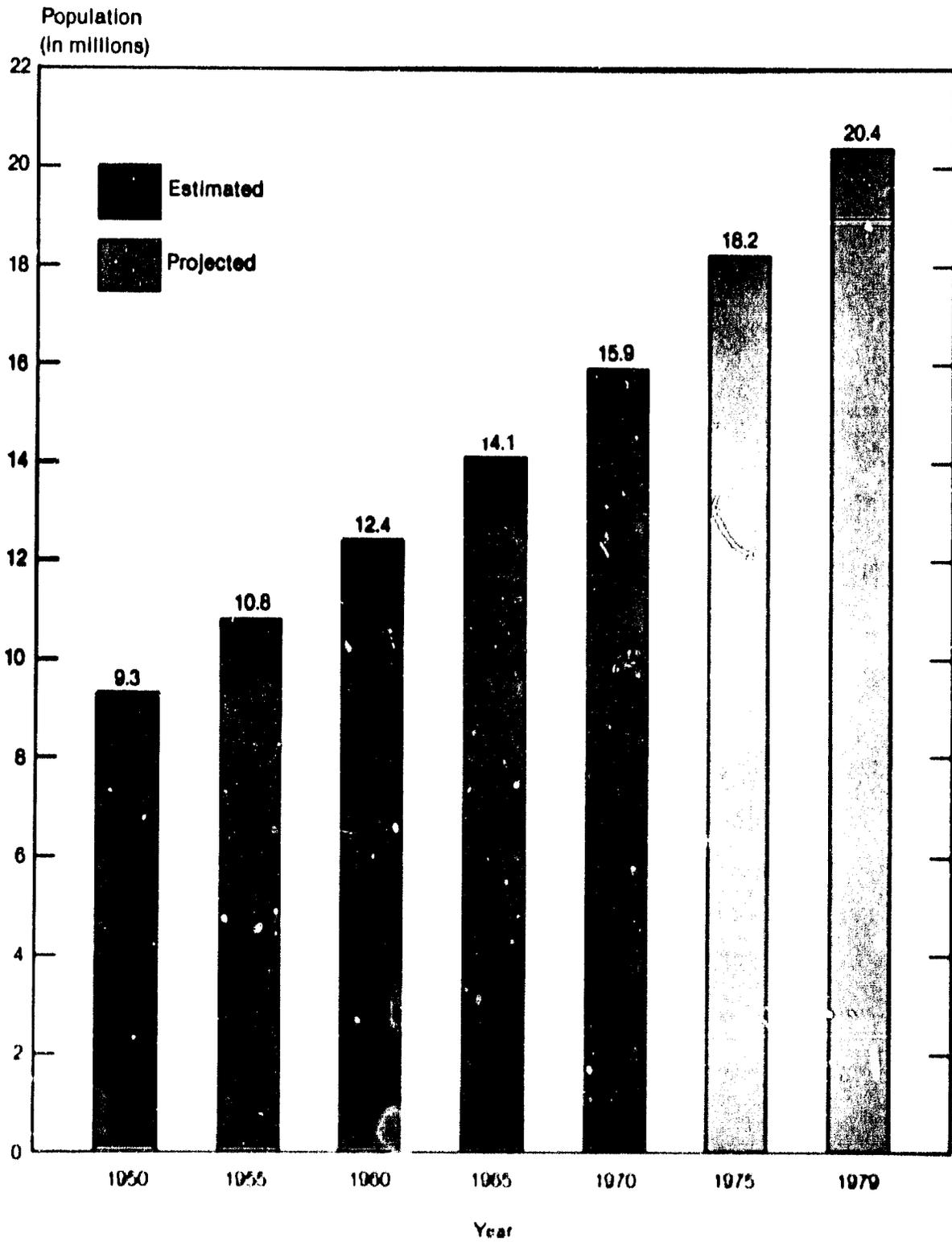
The vital rates reported in this profile refer primarily to the Moroccan Moslem population. This is due to a lack of data on the Moroccan Jewish and foreign populations, and the very high levels of emigration of these two groups since

the 1950's. The Moroccan Jewish and foreign populations constituted 4.8 percent of the total enumerated population in 1960 and only 0.9 percent in 1971.

Population data shown in tables 1, 2, and 6, in sections of the Technical Notes in the appendix, and in appendix table A 2 are based on adjusted 1960 and/or 1971 census populations. Other population figures in the profile are unadjusted numbers as reported in the given sources.

The user should recognize that in many instances, although the estimates are the best that can be prepared on the basis of available information, they are only tentative and new observations may well lead to different conclusions. The user is urged to consider all data in the context of the source notes which describe how the figures were derived. Complete documentation, including worksheets and other notes on all sources considered, is maintained in the International Demographic Data Center. The user who has special interest in the data is invited to correspond with the International Demographic Data Center for further details as well as to offer comments.

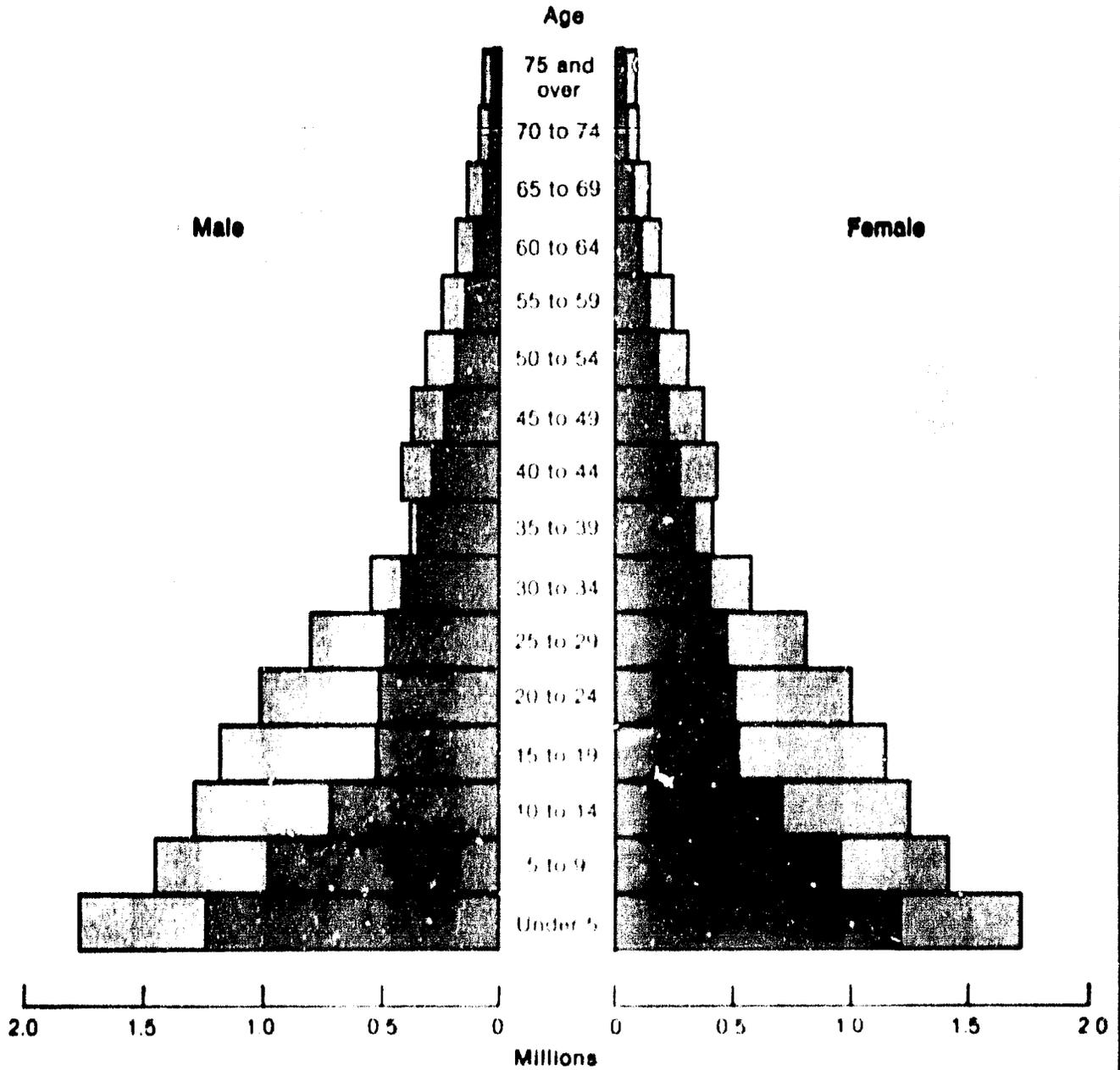
Figure 2.
Estimates and Projections of Midyear Population:
Selected Years, 1950 to 1979



Source: Table 1

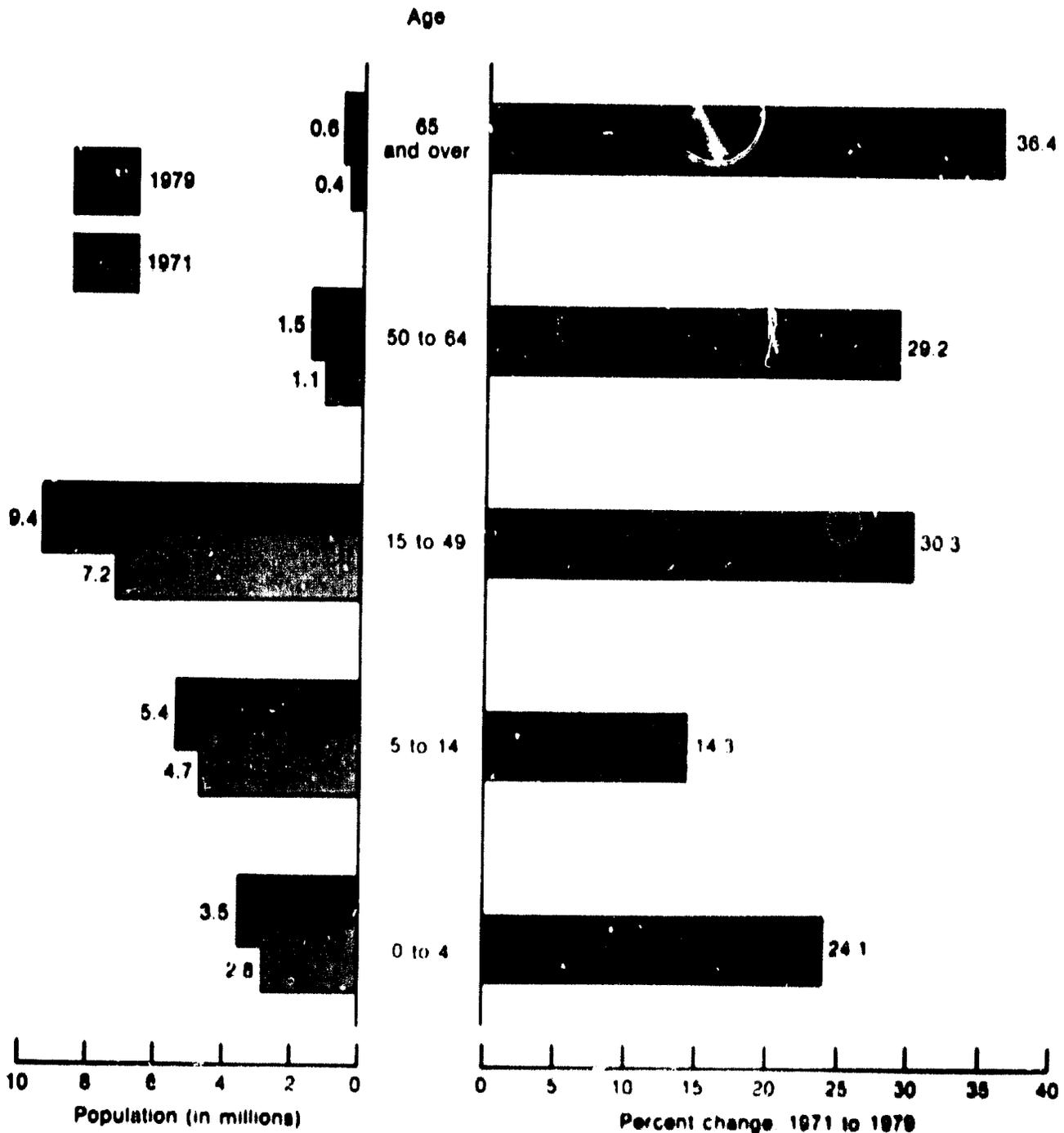
Figure 3.

**Adjusted Population, by Age and Sex:
1960 and 1979**



Source: Table 2 and appendix table A-2.

Figure 4.
Population and Percent Change, by Broad Age Group:
1971 to 1979

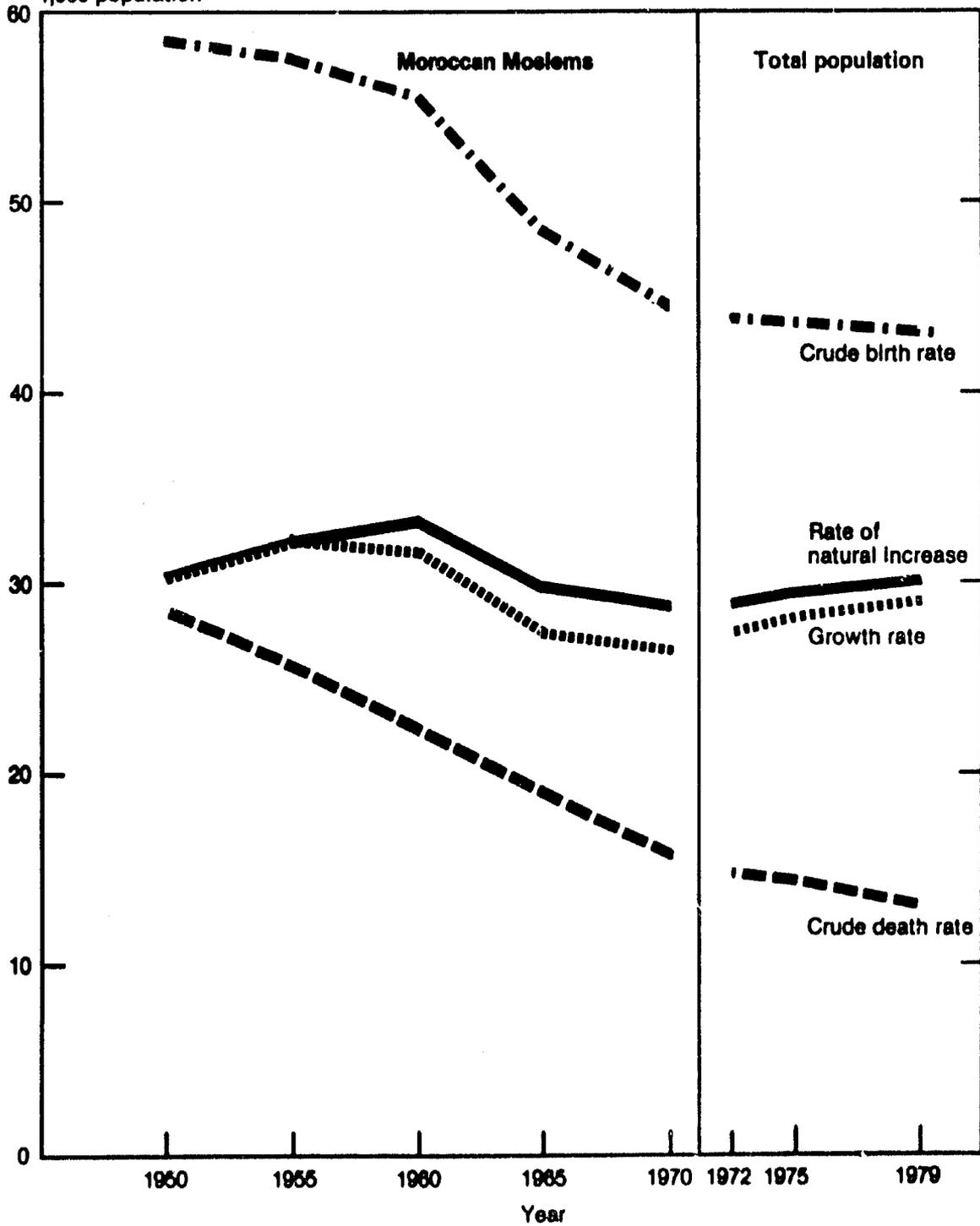


Source Table E.

Figure 5.

**Estimated and Projected Vital Rates:
1950 to 1979**

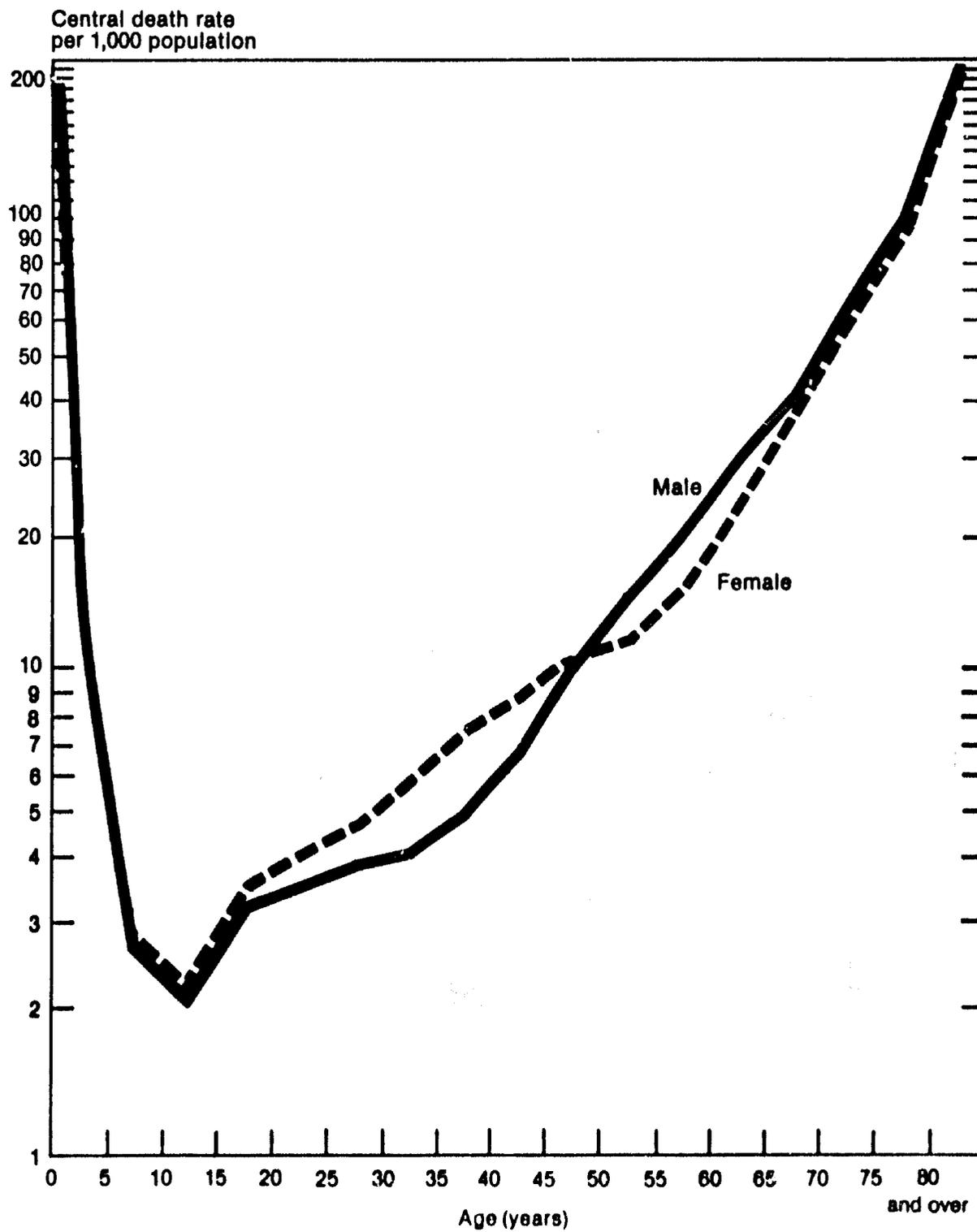
Rate per
1,000 population



Note: Rates for 1975 and 1979 are projected based on the middle projection series.
Source: Table 3 and unpublished estimates made at the U.S. Bureau of the Census.

Figure 6.

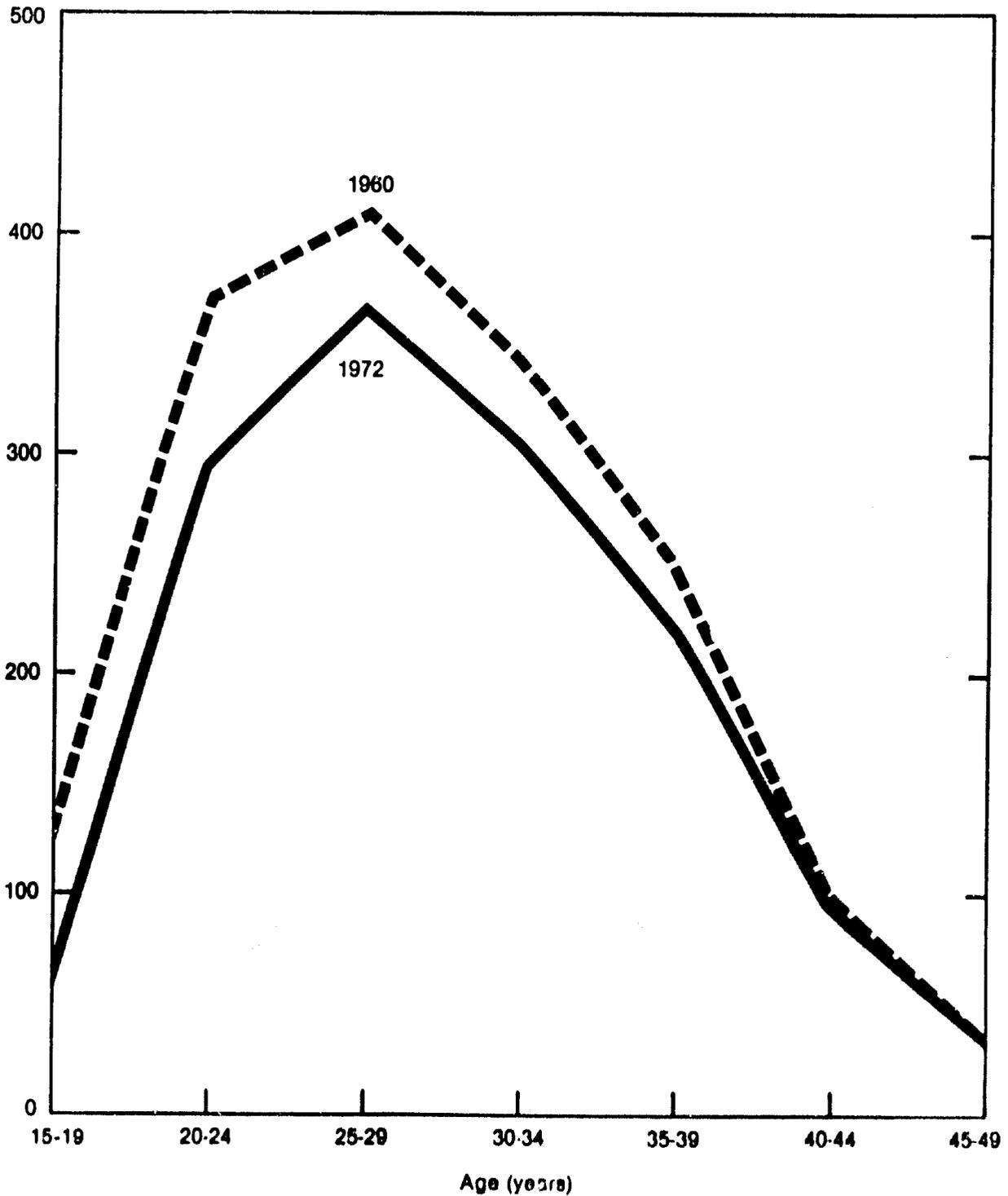
**Estimated Age-Sex-Specific Central Death Rates:
1972**



Note: Points are plotted at midpoint of age intervals.

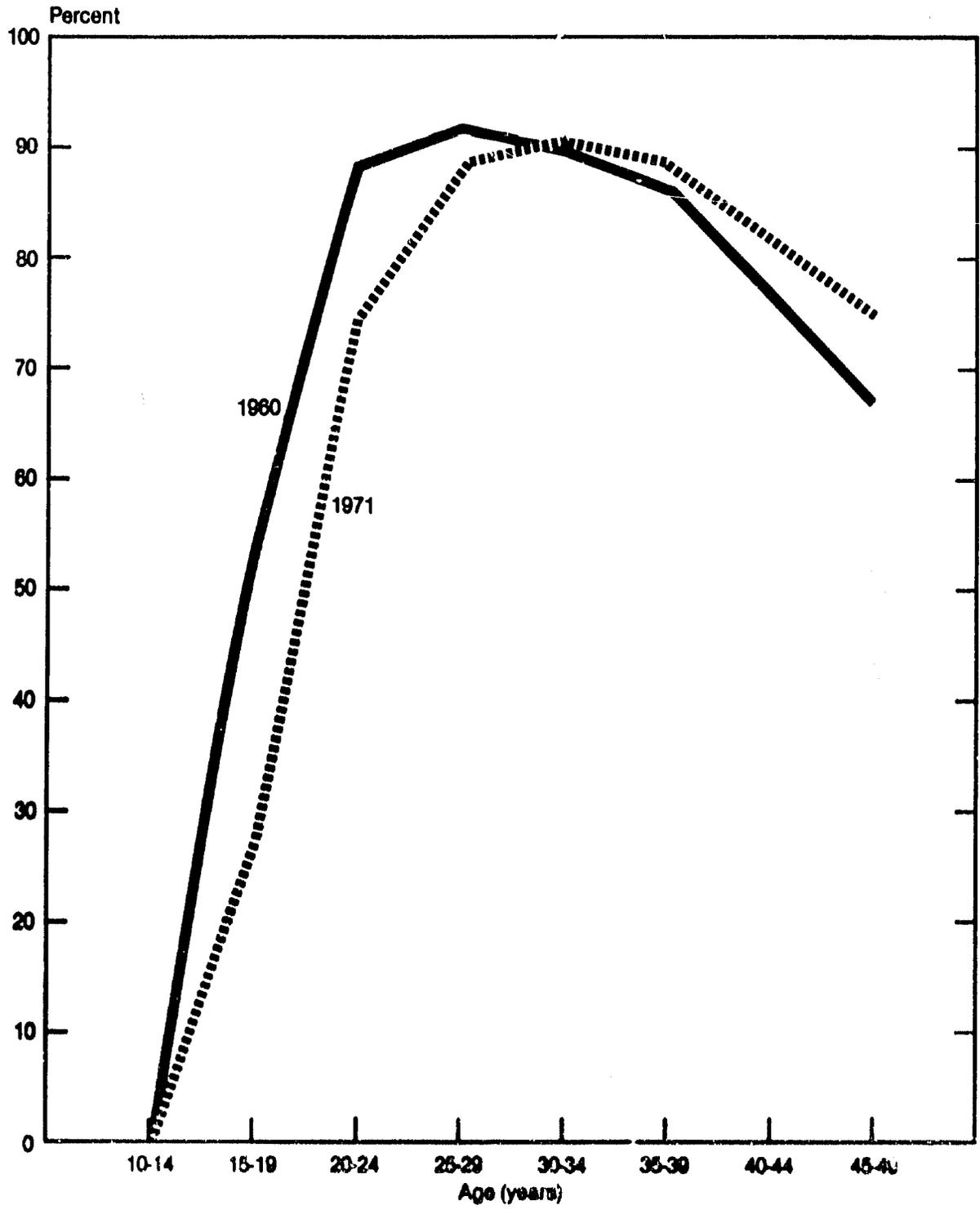
Source: Table 6.

Figure 7.

**Estimated Age-Specific Fertility Rates:
1960 and 1972**Births per
1,000 women

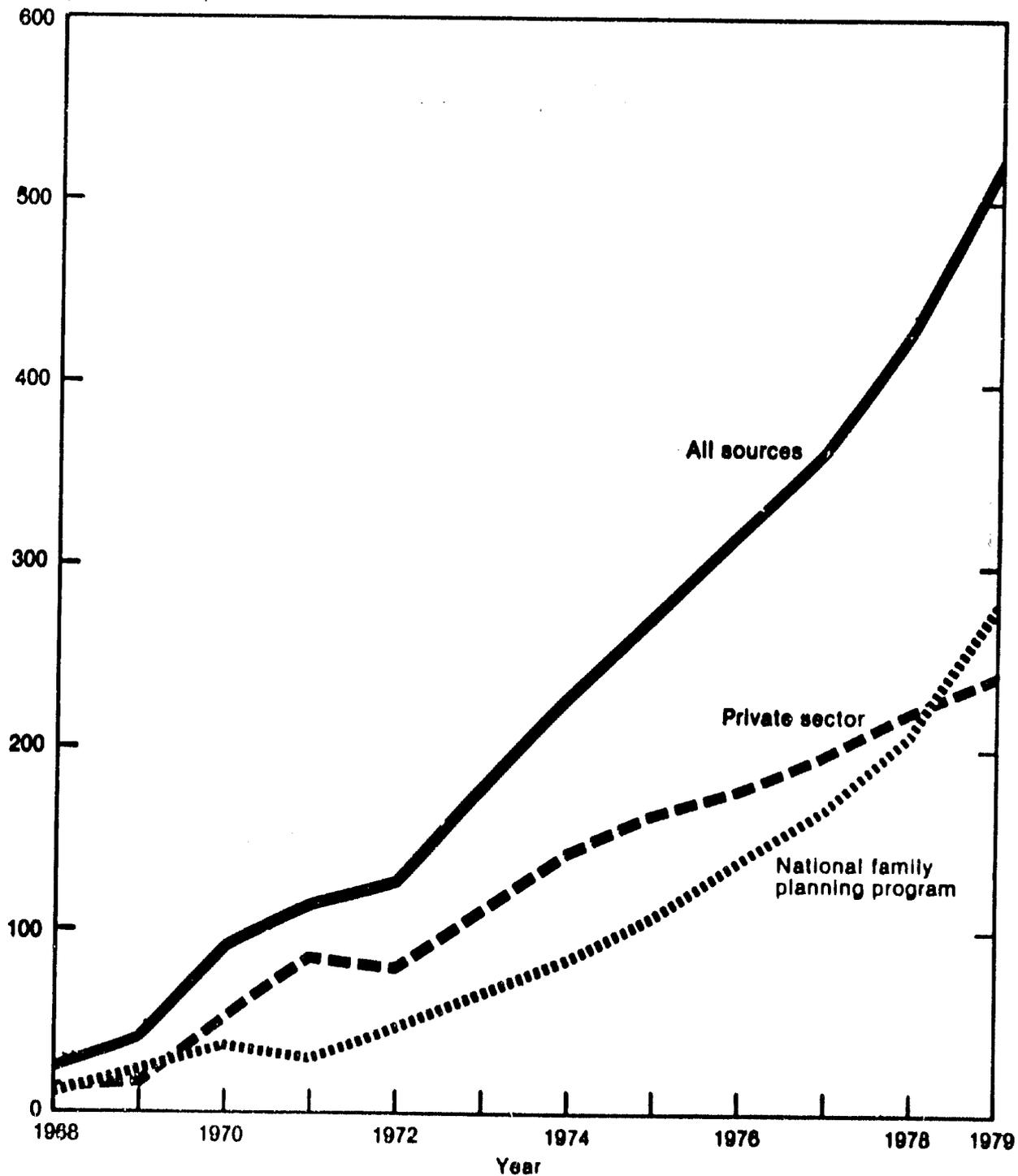
Source: Appendix table A-3.

Figure 8.
Percent of Women Currently Married, by Age:
1960 and 1971



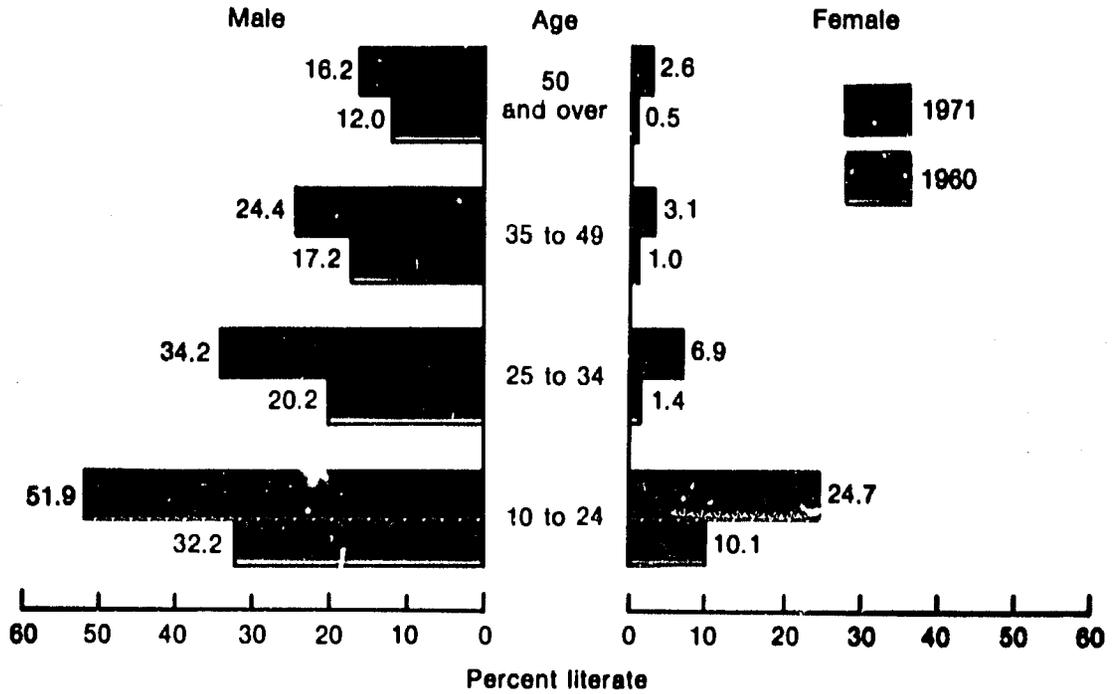
Source: Table 11.

Figure 9.

**Estimated Contraceptive Prevalence,
by Source of Supplies or Services:
1968 to 1979**Contraceptive users
(In thousands)

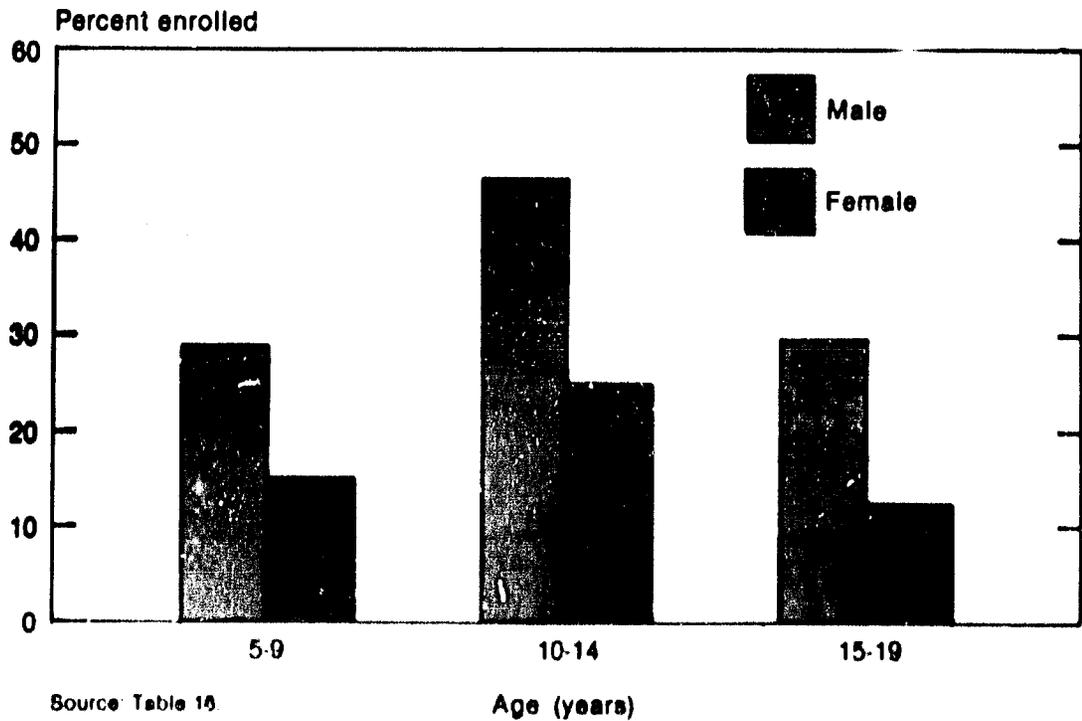
Source: Table 14.

Figure 10.
Percent Literate, by Broad Age Group
and Sex: 1960 and 1971



Source: Table 15.

Figure 11.
Percent of Youth Enrolled in School,
by Age and Sex: 1971

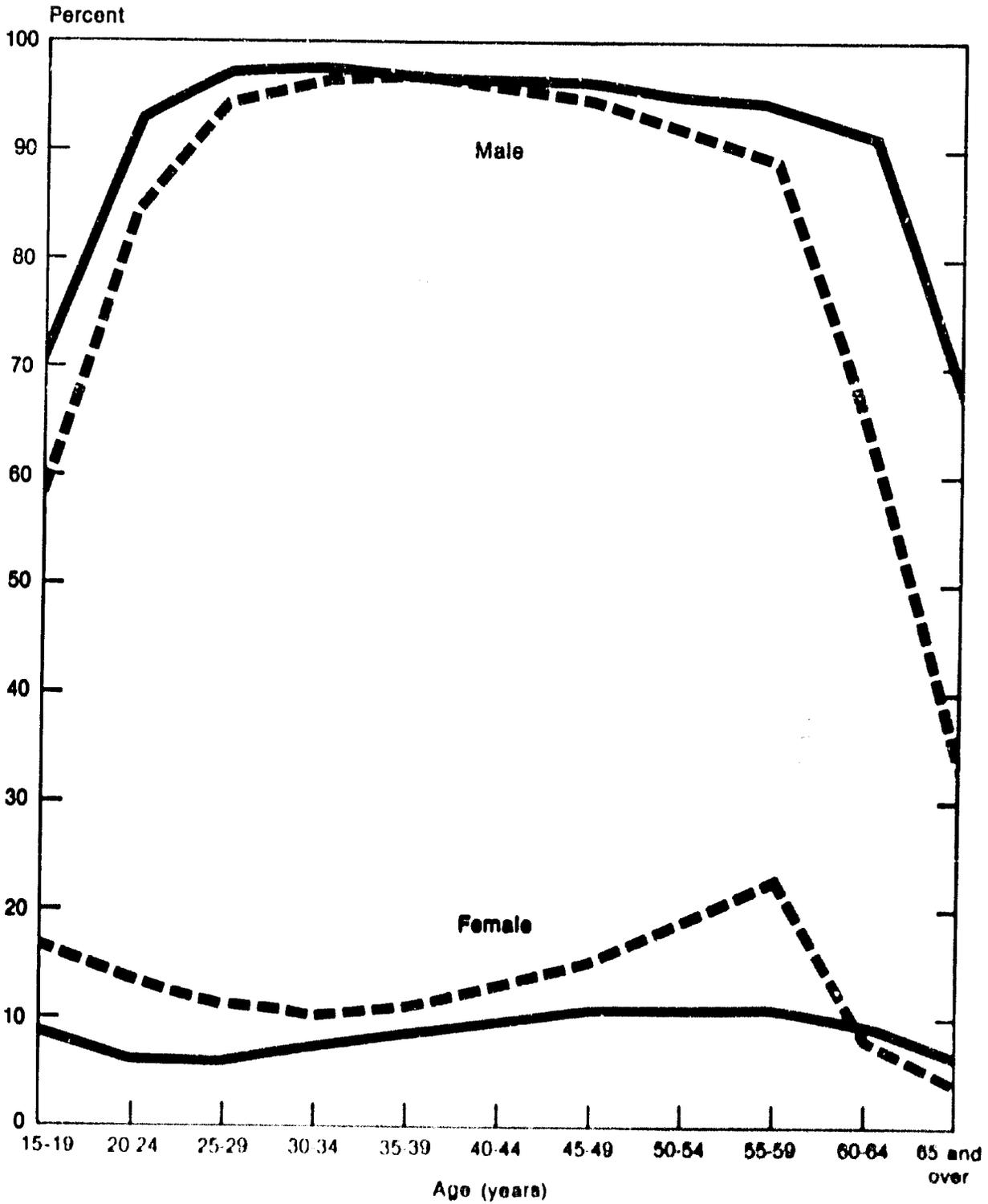


Source: Table 15.

Figure 12.

**Percent Economically Active, by Age and Sex:
1960 and 1971**

— 1960
- - - 1971



NOTE: Data for females in 1960 and 1971 may not be comparable (see note to table 18).

Source: Table 18

Figure 13.

**Distribution of Labor Force, by Sex and Occupation:
1960 and 1971**

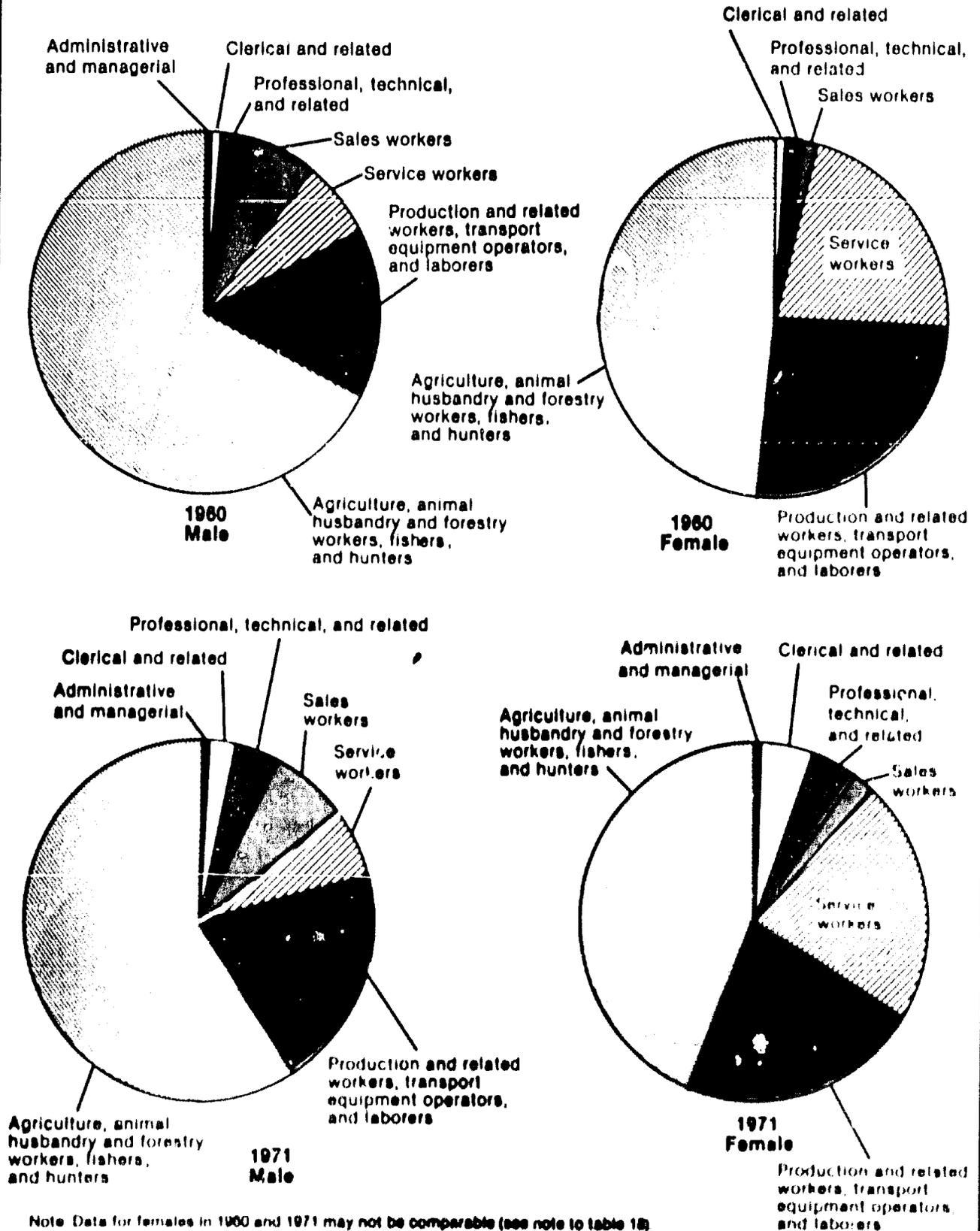
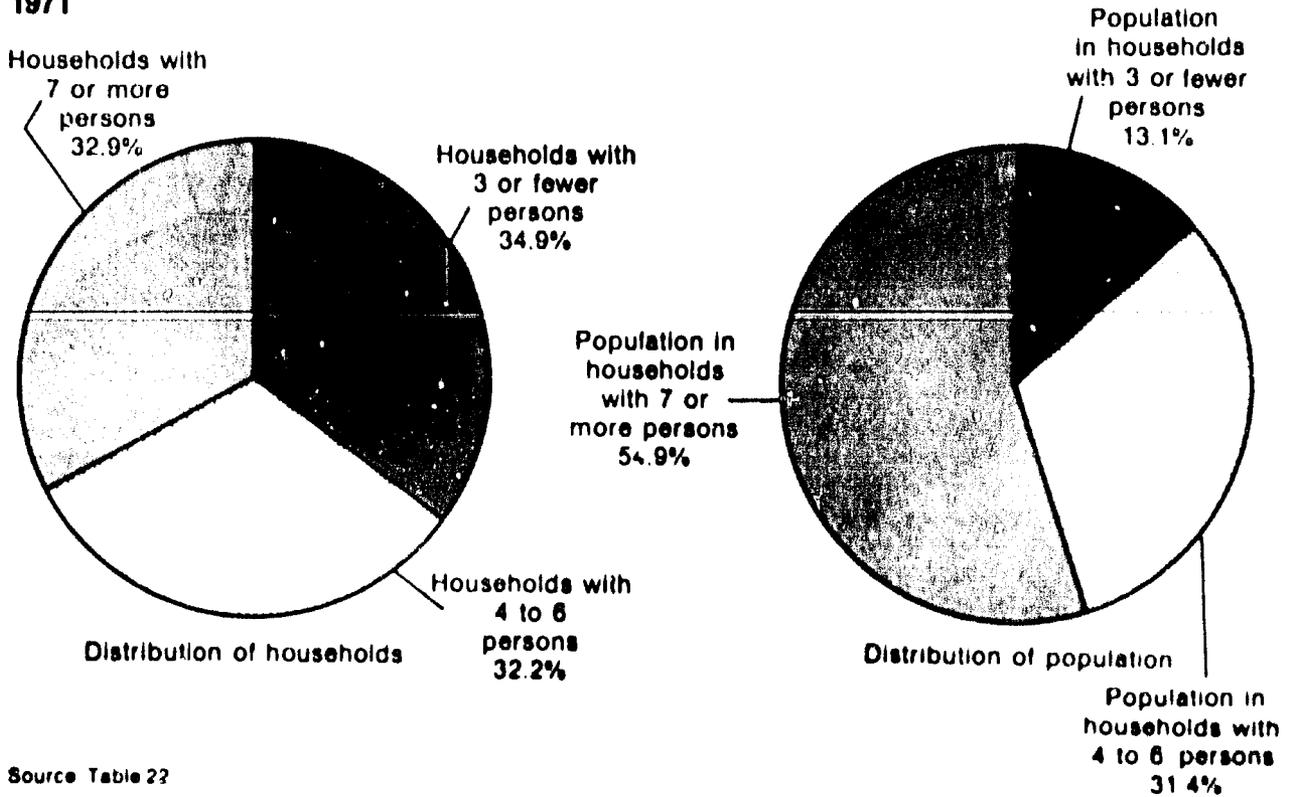


Figure 14.

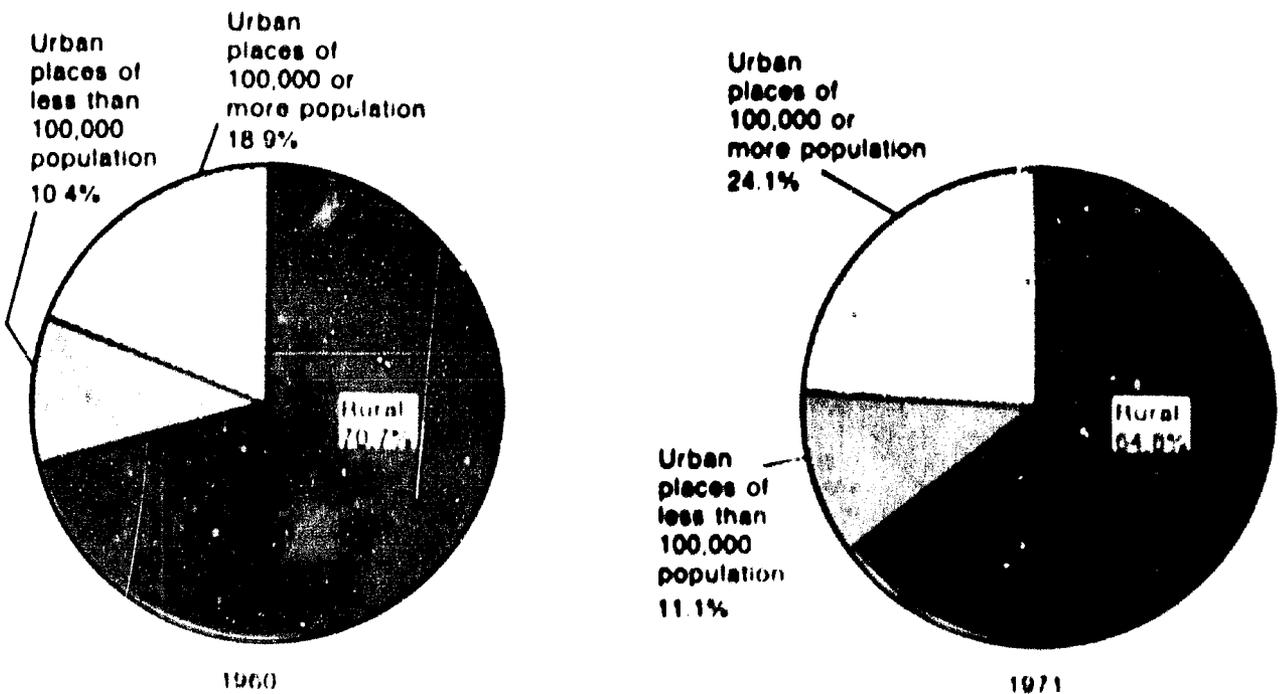
Percent Distribution of Households and of Population, by Size of Household: 1971



Source Table 22

Figure 15.

Percent Distribution of Population, by Urban and Rural Residence and Size of Urban Locality: 1960 and 1971



Source Table 21

Glossary

(Following are definitions of terms as used in the tables and the notes of the reports in the profile series)

Age pattern of fertility. The percent distribution of a set of age-specific fertility rates. It expresses the relative contribution of each age group to total fertility.

Age-sex-specific death rate. The average annual number of deaths to a given sex in a given age group during a specified period of time per 1,000 persons in the same sex and age group (based on midperiod population).

Age-specific fertility rate. The average annual number of births to women in a given age group during a specified period of time per 1,000 women in the same age group (based on midperiod population).

Age-specific marital fertility rate. The average annual number of births to married women in a given age group during a specified period of time per 1,000 married women in the same age group (based on midperiod population).

Arriaga fertility technique. A method of estimating age-specific fertility rates based on the observed change in the number of children ever born by age of mother, for two or more points in time.

Birth rate. The average annual number of births during a specified period of time per 1,000 persons (based on midperiod population). Also called crude birth rate.

Brass fertility technique. A method of adjusting age-specific fertility rates based on an assumed relationship between these rates and the average number of children ever born per women in 5-year age groups.

Brass mortality technique. A method of estimating the level of infant and child mortality based on information on children ever born and children surviving provided by women in 5-year age groups, and on an assumed relationship between certain life table values and the proportion of children ever born who are still surviving.

Chandrasekaran-Deming technique. A statistical procedure used to estimate the number of vital events missed by the two independent data gathering operations of a dual record system.

Child(hood) mortality. Mortality during the early childhood years, sometimes up to age 10 or 15.

Child survivorship techniques. Various techniques used to estimate the level of infant and child mortality based on data on children ever born and children surviving (e.g., see mortality techniques developed by Brass, Feeney, Sullivan, and Trussell).

Children ever born. The number of live births to a woman, regardless of whether the children are currently living or dead, or living with or away from the mother. At times, data may be collected or reported only for women of a specific group, e.g., ever-married women.

Children surviving. The number of children ever born to a woman who are still alive at the time of the inquiry, regardless of whether the children are currently living with or away from the mother. At times, data may be collected or reported only for women of a specific group, e.g., ever-married women.

Coale-Demeny regional model life tables. See model life table.

Coale-Trussell model fertility schedules. A set of model age-specific fertility schedules that can be used to estimate patterns of fertility.

Cohort. A group of individuals who experience the same event in the same time period, such as birth or marriage in the same year.

Component method. A method of estimating or projecting a population in which separate components of population change (fertility, mortality, and migration) are used. This method may be used to derive the total population or population by specific characteristics (e.g., age and sex).

Crude birth rate. See birth rate.

Crude death rate. See death rate.

Death rate. The average annual number of deaths during a specified period of time per 1,000 persons (based on midperiod population). Also called crude death rate.

De facto population. A concept under which individuals are attributed to the geographic area where they were actually located at the time of the enumeration.

De jure population. A concept under which individuals are attributed to a geographic area by virtue of their usual place of residence, whether or not they were actually located in that area at the time of the enumeration.

Dual record system. A method of obtaining estimates of vital statistics which employs the simultaneous collection of reports of vital events by two independent data gathering operations.

Empirical life table. A life table derived from the observed frequency of death in an actual population.

Ever-married women. All women who are now, or who have been, married. The category includes the currently married, widowed, divorced, or separated.

Feeney mortality technique. A method of estimating the trend in infant mortality based on information on children ever born and children surviving provided by women in 5-year age groups, and on assumed relationships between certain life table values and the proportion of children ever born who are still surviving.

Gross reproduction rate. The average number of daughters born per woman in a group of women passing through the childbearing years and experiencing a given set of age-specific fertility rates. This rate implicitly assumes that all the women live to the end of the childbearing years. (See also net reproduction rate.)

Growth rate. The average annual percent change in the population calculated assuming exponential growth. This change results from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving the country.

Hyphen versus "to" in dates. In this report, a period of years joined by a hyphen, e.g., 1960-64, is used to indicate that the data shown for this period refer to an average for the entire period, and generally is used when data for individual years are not available or data for individual years have been averaged to smooth annual fluctuations. A period of years joined by the word "to", e.g., 1960 to 1964, indicates that data are available for each individual year included within the period.

Incomplete registration. A term used to indicate that the coverage of registered data is less than 90 percent of all vital events.

Infant mortality rate. A measure of the frequency of death between birth and age 1, during a specified period of time. Usually calculated as the number of deaths to infants under 1 year of age per 1,000 live births occurring in the same calendar year.

Life expectancy at birth. The average number of years lived by a birth cohort, exposed to a given set of age-specific death rates.

Life table. A statistical table representing the life history of a hypothetical cohort exposed to a given set of age-specific death rates.

Life table central death rates. Age-specific death rates based on a life table population.

Logit mortality technique. A method of adjusting a specific function in an empirical life table based on an assumed relationship with the same function in a standard (model) life table.

Longitudinal survey. A survey which follows the same group of individuals (or households) over time by means of repeated visits.

Matched and unmatched events. The total number of vital events recorded in a dual record system derived as the sum of events recorded by both systems (matched events), plus events recorded only by the first system and those recorded only by the second system (unmatched events).

Model life table. A life table not derived from the observed mortality of an actual population. Well-known sets of model life tables include United Nations model life tables and Coale-Demeny regional model life tables.

Net census error. The combination of net underenumeration (or net overenumeration—see net coverage error) and net age misreporting.

Net coverage error. The balance between the number of persons not counted in a census or survey and those improperly counted, expressed as a percentage of the adjusted population. An excess of persons not counted is referred to as net underenumeration, an excess of persons improperly counted as net overenumeration.

Net emigration rate. See net migration rate.

Net immigration rate. See net migration rate.

Net migration rate. The balance between the number of persons entering and leaving a country during a specified period of time per 1,000 persons (based on midperiod population). An excess of persons entering the country is referred to as net immigration, an excess of persons leaving the country as net emigration.

Net reproduction rate. A refinement of the gross reproduction rate that allows for mortality of women from birth to the end of their reproductive years.

New acceptors. Persons accepting methods of contraception from family planning systems, including clients accepting contraceptive services for the first time; clients changing to another service organization; clients changing to a different contraceptive method; and clients resuming acceptance of contraceptive services after a lapse of 1 year or more.

Orphanhood technique. A method of estimating the level of adult mortality based on the proportion of persons at each age whose mother or father is no longer living at the time of the census or survey.

Overenumeration. An enumeration of the population which erroneously counts more persons than actually belong to it.

Projections. A term used to describe population data and vital rates for years since the latest reliable population census figures, complete vital registration data, or sample survey data.

Quasi-stable population analysis. A method of demographic analysis based on a model population which has not been subjected to migration, where fertility has remained constant over a long period of time, and where mortality has been declining (cf. stable population analysis).

Rate of natural increase. The average annual percent change in the population during a specified period of time resulting from a surplus (or deficit) of births over deaths. The natural increase of the population does not include an allowance for net migration (see growth rate).

Registration. A method of continuously recording information on vital events as they occur, through either a civil or a special recording system.

Retrospective question. A question asked in a census or survey which attempts to obtain information about past actions or events rather than about the present status of the respondent or his/her family.

Sex ratio at birth. The number of male births for each female birth during a specified period of time.

Stable population analysis. A method of demographic analysis based on a model population which has not been subject to migration, and where fertility and mortality have remained constant over a long period of time.

Sullivan mortality technique. A modification of the Brass mortality technique for estimating the level of infant and child mortality. Results from a regression analysis of empirically based fertility and mortality schedules are incorporated into the procedure of converting the proportion of children ever born who are still surviving per woman in given 5 year age groups into precise life table measures.

Survival ratios. The proportion of persons in a given age group who will be alive a specified number of years later.

Symbols. A dash (—) represents zero. The symbol "NA" means data not available, and "X" means not applicable. The symbol "Z" indicates that the value is less than 500 or less than 0.05 percent.

Total fertility rate. The average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given set of age specific fertility rates.

Trussell mortality technique. A refinement of the Brass and Sullivan mortality techniques for estimating the level of infant and child mortality. Additional independent variables are included in the regression analysis and Coale-Trussell model fertility schedules are substituted in place of empirical fertility schedules.

Underenumeration. An enumeration of the population which erroneously counts fewer persons than actually belong to it.

Underregistration. The failure to record all vital events which occur during a specified time period in a given population.

Table 1. Estimates and Projections of Midyear Population and Period Growth Rates: 1950 to 1979

(Numbers in thousands. Growth rates, in percent, are from midyear to midyear)

Year or period	Number or percent	Year or period	Number or percent	Year or period	Number or percent
POPULATION		POPULATION--Con.		POPULATION--Con.	
Estimates		Estimates--Con.		Projections--Con.	
1950.....	9,343	1963.....	13,385	1975.....	18,177
1951.....	9,634	1964.....	13,722	1976.....	18,692
1952.....	9,939	1965.....	14,066	1977.....	19,229
1953.....	10,206	1966.....	14,415	1978.....	19,787
1954.....	10,486	1967.....	14,770	1979.....	20,368
1955.....	10,782	1968.....	15,137	AVERAGE ANNUAL	
1956.....	11,089	1969.....	15,517	GROWTH RATE ¹	
1957.....	11,406	1970.....	15,909	1950-55.....	2.9
1958.....	11,735	1971.....	16,313	1955-60.....	2.8
1959.....	12,074	1972.....	16,752	1960-65.....	2.5
		Projections		1965-70.....	2.5
1960.....	12,423	1973.....	17,207	1970-75.....	2.7
1961.....	12,736	1974.....	17,682	1975-79.....	2.8
1962.....	13,057				

¹The average annual rate of growth, r, is computed by the exponential formula,

$$r = \frac{1}{n} \ln \frac{p^{t+n}}{p^t}$$

where ln indicates the natural logarithm, p^{t+n} = the population at the end of the period, p^t = the population at the beginning of the period, and n = time (number of years in the period).

Source: The 1950 to 1971 estimates for Moroccan Moslems are based on the 1960 and 1971 population censuses adjusted for net underenumeration of 6.3 and 5.9 percent, respectively, and estimated fertility, mortality, and migration trends from 1950 to 1971 (see the Technical Notes in the appendix for details on the adjustment of the census). The Moroccan Jewish and foreign populations were assumed to change exponentially between official census estimates for 1955, 1960, and 1971. The Moroccan Jewish and foreign populations constituted 7.6 percent of the total adjusted population in 1952, 4.5 percent in 1960, and 3.9 percent in 1971.

The 1972 population was estimated by the component method based on the adjusted 1971 census population, by age and sex, moved to midyear, and estimates of fertility and mortality for 1972.

The 1973 to 1979 population figures were projected by the component method based on the estimated 1972 population, by age and sex, fertility, mortality, and migration assumptions for 1972 to 1979 were as follows (see appendix for detailed discussion).

Fertility: The total fertility rate (TFR) for 1979 (6.2) was estimated by assuming a continuation of the linear trend in TFR's from 1960 (8.1) to 1972 (6.9). For further details see appendix table A-3 and the Technical Notes in the appendix.

Mortality: Life expectancy at birth was assumed to increase from 51 to 54 years for males and from 52 to 55 years for females from 1972 to 1979, respectively (see table 4 and appendix table A-4).

Migration: Net emigration of Moroccan Moslems was assumed to decline linearly from 37,000 in 1973-74 to 21,400 in 1978-79 (see appendix tables A-5 and A-6).

Table 2. Estimated and Projected Population, by Age and Sex: July 1971 and Midyear 1979

(Numbers in thousands. Figures may not add to totals due to rounding)

Age	Adjusted census, July 1971 ¹			Projected population, midyear 1979		
	Both sexes	Male	Female	Both sexes	Male	Female
POPULATION						
All ages.....	16,335	8,245	8,089	20,368	10,250	10,118
0 to 4 years.....	2,808	1,424	1,384	4,484	1,763	1,716
5 to 9 years.....	2,475	1,256	1,219	2,855	1,448	1,407
10 to 14 years.....	2,241	1,138	1,103	2,534	1,286	1,248
15 to 19 years.....	1,857	941	915	2,322	1,178	1,144
20 to 24 years.....	1,434	720	714	2,013	1,016	997
25 to 29 years.....	877	426	451	1,606	801	805
30 to 34 years.....	909	449	460	1,111	542	569
35 to 39 years.....	844	423	421	789	378	410
40 to 44 years.....	720	366	353	845	419	425
45 to 49 years.....	594	306	288	741	373	368
50 to 54 years.....	478	247	232	610	311	300
55 to 59 years.....	375	192	183	486	247	238
60 to 64 years.....	283	142	140	371	187	184
65 to 69 years.....	200	99	101	268	134	135
70 to 74 years.....	131	64	67	177	87	90
75 years and over.....	110	53	58	157	75	82
PERCENT						
All ages.....	100.0	100.0	100.0	100.0	100.0	100.0
0 to 4 years.....	17.2	17.3	17.1	17.1	17.2	17.0
5 to 9 years.....	15.2	15.2	15.1	14.0	14.1	13.9
10 to 14 years.....	13.7	13.8	13.6	12.4	12.5	12.3
15 to 19 years.....	11.4	11.4	11.3	11.4	11.5	11.3
20 to 24 years.....	8.8	8.7	8.8	9.9	9.9	9.9
25 to 29 years.....	5.4	5.2	5.6	7.9	7.8	8.0
30 to 34 years.....	5.6	5.4	5.7	5.5	5.3	5.6
35 to 39 years.....	5.2	5.1	5.2	3.9	3.7	4.1
40 to 44 years.....	4.4	4.4	4.4	4.1	4.1	4.2
45 to 49 years.....	3.6	3.7	3.6	3.6	3.6	3.6
50 to 54 years.....	2.9	3.0	2.9	3.0	3.0	3.0
55 to 59 years.....	2.3	2.3	2.3	2.4	2.4	2.4
60 to 64 years.....	1.7	1.7	1.7	1.8	1.8	1.8
65 to 69 years.....	1.2	1.2	1.3	1.3	1.3	1.3
70 to 74 years.....	0.8	0.8	0.8	0.9	0.9	0.9
75 years and over.....	0.7	0.6	0.7	0.8	0.7	0.8

¹For unadjusted census figures see appendix table A-1. Population in de jure.

Source: See note to table 1 and the Technical Notes in the appendix.

Table 3. Estimated and Projected Vital Rates: Selected Years, 1960 to 1979

Year	Births per 1,000 population	Deaths per 1,000 population	Rate of natural increase (percent)	Growth rate (percent)
ESTIMATED				
1960 ¹	55	22	3.3	3.2
1971 ¹	44	16	2.9	2.6
1972.....	44	15	2.9	2.7
PROJECTED				
1979.....	42-44	13	2.9-3.1	2.8-3.0

¹Refers to the Moroccan Moslem population only (95.5 percent of the adjusted population in 1960 and 99.1 percent of the adjusted population in 1971). The growth rates shown here differ from those implied in table 1 due to the high level of emigration of the foreign and Moroccan Jewish populations.

Source: Crude birth rates for 1960 and 1971 were estimated at the U.S. Bureau of the Census using age-specific fertility rates and midyear populations, by age and sex, based on the adjusted 1960 and 1971 census populations. For 1960, age-specific fertility rates were estimated using adjusted 1972 rural marital age-specific fertility rates from the 1972-73 Dual Record Experimental Study (see appendix table A-3) and the percent married from the 1960 census assuming that Moroccan Moslem marital age-specific fertility rates in 1960 were equal to those in rural areas in 1972. For 1971, age-specific rates were linearly interpolated from the 1960 and 1972 estimated age-specific fertility rates (see table A-3). The crude birth rate for 1972 was derived using the 1972 estimated age-specific fertility rates based on the results of the 1972-73 Dual Record Experimental Study and the estimated midyear population, by age and sex, based on the 1971 adjusted census population.

Crude death rates for 1960 and 1971 were based on life tables for 1960 and 1971 derived by linear interpolation between the estimated 1952 and 1972 life tables (see appendix table A-4 for life expectancies at births), and the adjusted census populations for 1960 and 1971, by age and sex, moved to midyear. The 1972 crude death rate was based on the 1972 estimated life table (see table 5) derived using data from the 1972-73 Dual Record Experimental Study and the estimated midyear population, by age and sex, based on the 1971 adjusted census population.

The range of vital rates for 1979 is implied by alternate component population projections from 1972 to 1979 based on the 1971 midyear population, by age and sex, three projections of the trend of fertility, and one projection of the trend of mortality and migration (see appendix tables A-3, A-4, and A-5 for fertility rates, life expectancies at birth, and net migrants, respectively).

A crude birth rate of 43, a crude death rate of 13, a net emigration rate of 1 per 1,000 population, and a growth rate of 2.9 percent for 1979 are consistent with the projection series shown in table 1 (middle projection series).

For all years, rates of natural increase were calculated from unrounded crude birth and death rates. They may not equal the difference between the crude birth and death rates shown due to rounding. Growth rates are based on unrounded crude birth and death rates, and estimates of net international migration (see appendix tables A-5 and A-6 and the Technical Notes in the appendix).

Table 4. Estimated Infant Mortality Rate and Life Expectancy at Birth, by Sex: 1972

Year	Infant deaths per 1,000 live births			Life expectancy at birth (years)		
	Both sexes	Male	Female	Both sexes	Male	Female
1972.....	162	171	152	51	51	52

Note: Estimated life expectancies prior to 1972 and projected life expectancies at birth for 1979 are given in appendix table A-4.

Source: Infant mortality rates were based on an application of the Trussell mortality technique to data from the first and second round surveys of the 1972-73 Dual Record Experimental Study (Morocco CE.R.E.D., 1975c). For further information, see the Technical Notes in the appendix. The rate for both sexes was obtained by weighting the male and female rates using an assumed sex ratio at birth of 1.05.

Life expectancies at birth for 1972 were derived from life tables generated at the U.S. Bureau of the Census. The life tables were based on registered deaths, by age and sex, for 1972 and 1973 from the 1972-73 Dual Record Experimental Study (Morocco CE.R.E.D., 1974c), adjusted for underregistration. Life expectancy for both sexes assumes a sex ratio at birth of 1.05. For further details, see the Technical Notes in the appendix.

Table 5. Estimated Life Table Values, by Sex: 1972

Sex and age interval (x to x+n)	$1,000 n q_x$	l_x	$d_n x$	$L_n x$	$1,000 m_n x$	e_x
MALE						
0 to 1 year.....	170.9	100,000	17,090	88,550	193.0	50.6
1 to 5 years.....	57.6	82,910	4,775	318,994	15.0	60.0
5 to 10 years.....	13.3	78,135	1,036	388,082	2.7	59.6
10 to 15 years.....	9.8	77,098	756	383,602	2.0	55.4
15 to 20 years.....	16.1	76,343	1,227	378,646	3.2	50.9
20 to 25 years.....	17.4	75,116	1,307	372,312	3.5	46.7
25 to 30 years.....	18.8	73,809	1,386	365,581	3.8	42.5
30 to 35 years.....	20.1	72,423	1,455	358,478	4.1	38.2
35 to 40 years.....	24.0	70,968	1,704	350,580	4.9	34.0
40 to 45 years.....	33.2	69,264	2,299	340,573	6.8	29.7
45 to 50 years.....	48.6	66,965	3,257	326,683	10.0	25.7
50 to 55 years.....	72.9	63,708	4,647	306,924	15.1	21.9
55 to 60 years.....	98.8	59,061	5,833	280,723	20.8	18.4
60 to 65 years.....	139.4	53,228	7,420	247,589	30.0	15.1
65 to 70 years.....	182.2	45,808	8,348	208,169	40.1	12.2
70 to 75 years.....	273.3	37,460	10,236	161,710	63.3	9.3
75 to 80 years.....	396.5	27,224	10,795	109,131	98.9	6.9
80 years and over.....	1,000.0	16,429	16,429	78,065	210.5	4.8
FEMALE						
0 to 1 year.....	152.2	100,000	15,219	90,108	168.9	51.5
1 to 5 years.....	59.5	84,781	5,040	325,821	15.5	59.7
5 to 10 years.....	14.0	79,740	1,116	395,910	2.8	59.4
10 to 15 years.....	10.4	78,624	817	391,076	2.1	55.2
15 to 20 years.....	17.2	77,806	1,338	385,686	3.5	50.8
20 to 25 years.....	19.4	76,468	1,484	378,630	3.9	46.6
25 to 30 years.....	22.6	74,984	1,694	370,684	4.6	42.5
30 to 35 years.....	28.9	73,290	2,116	361,158	5.9	38.4
35 to 40 years.....	36.0	71,173	2,562	349,463	7.3	34.5
40 to 45 years.....	43.3	68,612	2,970	335,633	8.9	30.7
45 to 50 years.....	49.2	65,641	3,230	320,132	10.1	27.0
50 to 55 years.....	58.0	62,411	3,621	303,004	12.0	23.2
55 to 60 years.....	76.8	58,790	4,517	282,659	16.0	19.5
60 to 65 years.....	111.2	54,273	6,033	256,285	23.5	15.9
65 to 70 years.....	168.2	48,241	8,112	220,922	36.7	12.6
70 to 75 years.....	256.6	40,128	10,296	174,900	58.9	9.6
75 to 80 years.....	379.0	29,832	11,306	120,894	93.5	7.1
80 years and over.....	1,000.0	18,526	18,526	90,459	204.8	4.9

Note: x = Exact age at beginning of age interval, in years.
 n = Length of age interval, in years.

$1,000 n q_x$ = Number of deaths occurring between age x and age $x+n$ per 1,000 persons alive at exact age x $\left(\frac{d_n x}{l_x} \times 1,000 \right)$.

l_x = Number of persons living at exact age x .

$d_n x$ = Number of deaths occurring between age x and age $x+n$.

$L_n x$ = Number of persons living between age x and age $x+n$.

$1,000 m_n x$ = Number of deaths occurring between age x and age $x+n$ per 1,000 persons living between age x and age $x+n$ $\left(\frac{d_n x}{L_n x} \times 1,000 \right)$.

e_x = Average number of years of life remaining for those alive at exact age x .

Source: Calculated at the U.S. Bureau of the Census. See table 4 and the Technical Notes in the appendix.

Table 6. Estimated and Projected Number of Women of Childbearing Age: 1971, 1972, and 1975 to 1985

(Midyear population in thousands. Figures may not add to totals due to rounding)

Year	All women, 15 to 49 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	40 to 44 years	45 to 49 years
ESTIMATED								
1971.....	3,597	914	713	451	459	421	353	287
1972.....	3,726	949	756	482	450	429	363	297
PROJECTED								
1975.....	4,138	1,052	857	642	422	445	394	326
1976.....	4,281	1,081	891	692	436	442	403	336
1977.....	4,425	1,105	926	735	467	434	411	347
1978.....	4,571	1,126	962	772	514	421	419	357
1979.....	4,718	1,144	997	805	569	410	425	368
1980.....	4,867	1,162	1,030	837	625	409	428	377
1981.....	5,018	1,179	1,059	871	675	422	426	386
1982.....	5,169	1,197	1,084	906	717	453	418	394
1983.....	5,322	1,214	1,105	942	754	499	406	402
1984.....	5,478	1,232	1,124	978	787	553	396	408
1985.....	5,637	1,251	1,142	1,010	819	608	395	411

Source:

1971 - Based on the adjusted 1971 census, by age and sex, moved to midyear.

1972 - Estimated by the component method based on the adjusted 1971 census population, by age and sex, moved to midyear, and estimates of mortality and migration for 1972.

1975 to 1985 - Projected based on the estimated 1972 population, by age and sex, and the following assumptions:

Fertility: Assumptions regarding fertility have no effect on the number of women in these ages.**Mortality:** Life expectancy at birth for women increased from 52 years in 1972 to 58 years in 1985.**Migration:** Net emigration fell from 10,800 in 1971-72 to 3,400 in 1984-85.

Table 7. Estimated Age-Specific Fertility Rates and Selected Derived Measures: 1972

Age	Births per 1,000 women	Derived measures	
15 to 19 years.....	66	Total fertility rate	
20 to 24 years.....	296	per woman.....	6.88
25 to 29 years.....	365	Gross reproduction	
30 to 34 years.....	304	rate per woman.....	3.36
35 to 39 years.....	220	Net reproduction rate	
40 to 44 years.....	93	per woman.....	2.44
45 to 49 years.....	33	Sex ratio at birth.....	1.05

Source: Total and age-specific fertility rates are based on age-specific fertility rates from the 1972-73 Dual Record Experimental Study, adjusted to the level of matched and unmatched births. Separate estimates for urban and rural areas were weighted to national levels using the unadjusted 1971 census.

The gross reproduction rate is based on the estimated total fertility rate and sex ratio at birth.

The net reproduction rate is based on the estimated age-specific fertility rates, the sex ratio at birth, and L_x values from the female life table for 1972 (see table 5).

The sex ratio at birth^x was assumed to be 1.05 based on the work of other investigators (Morocco C.E.R.E.D., 1975a; Paulet, 1976).

Table 8. Ever-Married Women Ages 15 to 49 Years, by Number of Children Ever Born: 1962

(Numbers in thousands and may not add to totals due to rounding. For meaning of symbols, see text)

Age	Total	Number of children ever born							Average number of children ever born per ever-married woman	
		0	1	2	3	4	5	6		7 or more
Ever-married women, 15 to 49 years.....	2,146	342	259	249	236	226	210	175	450	3.9
15 to 19 years.....	173	88	47	24	10	2	1	(Z)	(Z)	0.8
20 to 24 years.....	428	85	85	92	73	51	26	11	6	2.2
25 to 29 years.....	433	53	46	55	66	67	64	41	41	3.5
30 to 34 years.....	374	42	30	28	37	43	50	46	98	4.5
35 to 39 years.....	300	31	22	19	22	25	31	35	115	5.3
40 to 44 years.....	263	27	17	18	18	24	22	26	113	5.6
45 to 49 years.....	175	17	13	12	10	14	16	16	76	5.6

Note: Data exclude an estimated 12,580 ever-married women, 15 to 49 years of age, for whom there were no data on children ever born. Evaluation of the data indicates that there was a problem with age reporting by women and underreporting of children ever born.

Source: Based on the results of the 1961-63 Multiple Objectives Survey which were inflated to the national level (Morocco SCS, 1964a, table VI, p. 72).

Table 9. Average Number of Children Ever Born and Children Surviving Per Woman, by Age of Woman: 1962 and 1972-73

(For meaning of symbols, see text)

Year and age	Average number of children ever born per woman	Average number of children surviving per woman
1962¹		
All women, 15 to 49 years.....	3.5	(NA)
15 to 19 years.....	0.4	(NA)
20 to 24 years.....	2.0	(NA)
25 to 29 years.....	3.4	(NA)
30 to 34 years.....	4.5	(NA)
35 to 39 years.....	5.2	(NA)
40 to 44 years.....	5.5	(NA)
45 to 49 years.....	5.5	(NA)
1972-73²		
All women, 15 to 49 years.....	3.4	2.6
15 to 19 years.....	0.1	0.1
20 to 24 years.....	1.4	1.1
25 to 29 years.....	3.3	2.6
30 to 34 years.....	4.9	3.9
35 to 39 years.....	6.0	4.5
40 to 44 years.....	6.4	4.7
45 to 49 years.....	6.4	4.4

¹Data exclude an estimated 12,580 ever-married women, 15 to 49 years of age, for whom there were no data on children ever born.

²Urban and rural data from the 1972-73 Dual Record Experimental Study have been weighted to the national level using the urban-rural distribution from the 1971 census. See appendix table A-7 for unadjusted data from the 1972-73 survey.

Note: Averages for total women were calculated assuming that single women had zero children ever born. Only ever-married women were asked the question on number of children ever born. Evaluation of the data indicates that there was a problem with age reporting by women and underreporting of children ever born.

Source: 1962 - Based on the results of the 1961-63 Multiple Objectives Survey which were inflated to the national level (Morocco SCS, 1964a, tables II, p. 45 and VI, p. 72).

1972-73 - Based on the results of the second round survey of the 1972-73 Dual Record Experimental Study (Morocco CE.R.E.D., 1975a, tables 13-Bis. 2 and 13-Bis. 3; 1974d, tables 5 and 6; and Morocco DS, 1976, table OIDE).

**Table 10. Distribution of Births, by Order of Birth:
1972-73**

Birth order	Percent distribution
All orders.....	100.0
1st birth.....	16.4
2nd birth.....	13.0
3rd birth.....	12.1
4th birth.....	11.0
5th birth.....	8.9
6th birth.....	9.8
7th birth.....	8.1
8th birth.....	8.1
9th birth.....	4.7
10th birth and over.....	7.9
Median birth order.....	4.3

Note: Based on the unweighted data from the second round survey of the 1972-73 Dual Record Experimental Study. Data are not necessarily representative of the whole country.

Source: Morocco C.E.R.E.D., 1974c, table 10D.

Table 11. Population Ages 10 Years and Over by Marital Status, Age, and Sex: 1960 and 1971

(Population in thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Year, sex, and age	Population					Percent				
	Total	Single	Married	Widowed	Divorced or separated	Total	Single	Married	Widowed	Divorced or separated
1960¹										
Male										
Total, 10 years and over.....	3,535	1,288	2,137	57	53	100.0	36.4	60.5	1.6	1.5
10 to 14 years ²	585	582	2	(2)	(2)	100.0	99.6	0.4	(2)	(2)
15 to 19 years.....	343	325	15	1	1	100.0	95.0	4.4	0.2	0.3
20 to 24 years.....	382	223	148	3	7	100.0	58.4	38.8	0.9	2.0
25 to 29 years.....	412	90	306	5	11	100.0	21.9	74.4	1.1	2.6
30 to 34 years.....	368	30	325	4	8	100.0	8.3	88.4	1.1	2.2
35 to 39 years.....	312	14	289	4	6	100.0	4.4	92.6	1.2	1.8
40 to 44 years.....	273	8	256	4	5	100.0	3.0	94.0	1.3	1.7
45 to 49 years.....	175	4	166	3	2	100.0	2.1	94.9	1.6	1.4
50 to 54 years.....	189	4	178	5	3	100.0	1.9	94.0	2.5	1.6
55 to 59 years.....	96	1	91	2	1	100.0	1.4	94.7	2.5	1.4
60 years and over.....	400	6	359	26	9	100.0	1.4	89.6	6.6	2.2
Female										
Total, 10 years and over.....	3,503	638	2,230	503	133	100.0	18.2	63.7	14.3	3.8
10 to 14 years ²	437	433	4	(2)	1	100.0	99.0	0.8	0.1	0.1
15 to 19 years.....	323	135	170	4	13	100.0	41.9	52.8	1.3	4.0
20 to 24 years.....	475	29	421	8	18	100.0	6.1	88.5	1.7	3.8
25 to 29 years.....	496	11	458	11	15	100.0	2.3	92.4	2.2	3.1
30 to 34 years.....	426	7	386	19	14	100.0	1.6	90.6	4.4	3.3
35 to 39 years.....	286	4	249	23	10	100.0	1.3	87.0	8.1	3.6
40 to 44 years.....	290	4	225	49	13	100.0	1.4	77.3	16.8	4.4
45 to 49 years.....	141	2	95	36	7	100.0	1.6	67.5	25.6	5.3
50 to 54 years.....	201	3	105	79	12	100.0	1.6	52.6	39.6	6.2
55 to 59 years.....	63	1	27	30	4	100.0	2.2	43.7	47.5	6.6
60 years and over.....	365	8	90	243	25	100.0	2.1	24.5	66.6	6.8
1971³										
Male										
Total, 10 years and over.....	5,167	*2,452	2,581	68	67	100.0	47.4	49.9	1.3	1.3
10 to 14 years.....	1,101	1,100	1	(2)	(2)	100.0	99.9	0.1	(2)	(2)
15 to 19 years.....	755	732	21	(2)	2	100.0	96.9	2.8	0.1	0.2
20 to 24 years.....	505	360	136	1	8	100.0	71.3	28.9	0.2	1.6
25 to 29 years.....	412	126	274	2	10	100.0	30.6	66.4	0.3	2.5
30 to 34 years.....	397	51	335	2	9	100.0	12.7	84.5	0.6	2.2
35 to 39 years.....	394	25	359	3	7	100.0	6.4	91.0	0.7	1.8
40 to 44 years.....	361	16	335	4	6	100.0	4.3	92.6	1.0	1.8
45 to 49 years.....	271	9	253	3	6	100.0	3.5	93.4	1.3	1.7
50 to 54 years.....	266	9	248	5	5	100.0	3.3	93.3	1.8	1.7
55 to 59 years.....	154	4	144	3	2	100.0	2.8	93.7	2.0	1.6
60 years and over.....	552	20	475	44	13	100.0	3.6	84.1	8.0	2.3
Female										
Total, 10 years and over.....	5,210	*1,699	2,744	591	171	100.0	32.4	52.7	11.4	3.3
10 to 14 years.....	988	984	3	(2)	1	100.0	99.6	0.3	(2)	0.1
15 to 19 years.....	711	499	191	2	19	100.0	70.3	26.8	0.3	2.7
20 to 24 years.....	556	113	409	4	28	100.0	20.4	73.8	0.8	3.2
25 to 29 years.....	508	30	450	7	20	100.0	6.0	88.4	1.4	4.0
30 to 34 years.....	504	15	456	15	17	100.0	3.0	90.5	3.0	3.4
35 to 39 years.....	429	10	380	25	15	100.0	2.4	88.5	5.7	3.4
40 to 44 years.....	397	10	326	46	14	100.0	2.4	83.9	11.6	4.0
45 to 49 years.....	232	6	175	41	11	100.0	2.7	75.1	17.5	4.3
50 to 54 years.....	246	7	158	68	12	100.0	3.0	64.2	27.8	5.1
55 to 59 years.....	102	4	58	55	5	100.0	3.5	57.1	34.0	3.4
60 years and over.....	538	21	140	348	29	100.0	3.9	24.0	64.7	5.3

¹Data from the 1960 census are based on a full count of urban areas and a 10 percent sample of rural areas (divided). Figures shown are for Moroccan Muslims only who constituted 93.2 percent of the unadjusted census population in 1960. Excludes 40,718 males and 49,748 females of unknown marital status and 6,372 males and 8,726 females of unknown age.

²The reported married, widowed, and divorced populations ages 0 to 14 in 1960 were assumed to be in the age group 10 to 14 years.

³Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for persons of all nationalities. Moroccan Muslims constituted 99.1 percent of the unadjusted census population in 1971.

*Includes 31,696 males and 41,964 females in the category "Married (engaged)".

Source: Data are from the 1960 and 1971 censuses as reported in Morocco M & B, 1964b, table 8; Morocco DA, 1972a, tables 34 and 37; and 1976, table 02DK, respectively.

Table 12. Legal Age at Marriage and Age at Which Specified Percent of the Population is Ever Married, by Sex: 1960 and 1971

Item	1960 ¹		1971 ²	
	Male	Female	Male	Female
Minimum legal age at marriage.....	18	15	18	15
Age at which 25 percent of the population is ever married.....	21	16	22	17
Age at which 50 percent of the population is ever married.....	23	17	25	19
Age at which 75 percent of the population is ever married.....	27	18	28	21

¹Data from the 1960 census are based on a full count of urban areas and a 10-percent sample of rural areas (*douars*). Figures shown are for Moroccan Moslems only who constituted 95.2 percent of the unadjusted census population in 1960.

²Data from the 1971 census exclude the population in group quarters which was counted separately. Figures shown are for persons of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971.

Source: The age at which the specified percent of the population is ever married was derived at the U.S. Bureau of the Census by fitting a Makeham curve to data from the 1960 and 1971 censuses (Morocco DS, 1972a, tables 36 and 37; and 1976, table O2DE). Minimum legal age at marriage was reported in "Law Lag in Morocco," p.43.

Table 13. Number of Acceptors of Family Planning Services Offered by the National Family Planning Program, by Method: 1966-69, and 1970 to 1979

(In thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Method	1966-69	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979 ¹
All methods.....	43	24	29	28	37	55	72	78	99	128	145
Oral contraceptives..	11	14	18	19	27	46	60	64	80	104	110
IUD's.....	31	10	8	5	5	6	8	6	8	12	16
Other.....	-	-	3	3	4	3	3	8	11	12	18

¹Projected based on data for the first six months.

Source: 1966-69 and 1970 -- Nortman, 1971, table 13.

1971 and 1972 -- Nortman and Hofstatter, 1976, table 16.

1973 to 1976 -- Nortman and Hofstatter, 1979, table 16.

1977 to 1979 -- Reported in U.S. Department of State Telegram 8355, Rabat, November 1979.

Table 14. Estimated Prevalence of Contraceptive Use, by Method and Source of Supplies and Services: 1968 to 1979

(In thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Source and method	Number of users at end-of year												Users of contraception as a percent of married women ages 15 to 49, 1979
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979 ¹	
Total													
All methods.....	26	40	91	114	126	177	229	272	318	365	430	522	15.2
Oral contraceptives...	16	22	68	90	102	140	189	220	265	305	360	445	13.0
IUD's.....	10	17	22	24	23	25	23	31	32	35	39	49	1.4
Other.....	² (2)	1	1	1	2	12	17	21	21	25	31	38	1.1
National family planning program													
All methods.....	11	24	37	30	48	66	84	107	140	167	210	280	6.2
Oral contraceptives...	² (2)	7	15	6	24	35	56	70	103	125	160	225	6.6
IUD's.....	10	17	22	24	23	24	23	31	32	35	39	49	1.4
Other.....	-	-	-	-	1	7	5	6	5	7	11	16	0.5
Private Sector													
All methods.....	15	16	54	84	78	111	145	165	178	198	220	242	7.1
Oral contraceptives...	15	15	53	83	78	105	133	150	162	180	200	220	6.4
IUD's.....	-	-	-	-	-	1	-	-	-	-	-	-	-
Other.....	² (2)	1	1	1	1	5	12	15	16	18	20	22	0.6

¹Projected based on acceptance during the first 6 months of 1979.

²Exact figure is not shown, but users are indicated to number less than 1,000.

Sources: 1968 - Norman, 1969, table 12.

1969 - Norman, 1970, table 15.

1970 - Norman, 1971, table 15.

1971 - Norman, 1972, table 16.

1972 - Norman, 1973, table 16.

1973 - Norman, 1975, table 22.

1974 - Reported in U.S. Department of State telegram 1929,

Rabat, March 1979.

1975-79 - Reported in U.S. Department of State telegram 6335,

Rabat, November 1979.

Married women for 1979 were estimated at the U.S. Bureau of the Census by applying the percent of women ages 15 to 49 years who were currently married in 1971 (see table 11) to the projected number of total women in the same age for end-of-year 1979. The projected end-of-year 1979 population is based on the midyear 1979 and midyear 1980 female population ages 15 to 49 years (see table 6).

Table 18. Population Ages 10 Years and Over, by Literacy, Broad Age Groups, and Sex: 1960 and 1971

(Population in thousands. Figures may not add to totals due to rounding)

Year and age	Both sexes			Male			Female		
	Total population	Literate population		Total population	Literate population		Total population	Literate population	
		Number	Percent of total		Number	Percent of total		Number	Percent of total
1960¹									
Total, 10 years and over.....	7,140	952	13.1	3,581	801	22.4	3,559	150	4.2
10 to 24 years.....	2,571	553	21.5	1,326	427	32.2	1,245	126	10.1
25 to 34 years.....	1,716	172	10.0	788	159	20.2	928	13	1.4
35 to 49 years.....	1,488	119	8.1	765	112	14.7	724	7	1.0
50 years and over.....	1,364	88	6.4	702	84	12.0	662	4	0.5
1971²									
Total, 10 years and over.....	10,377	2,592	25.0	5,187	1,908	36.9	5,210	683	13.1
10 to 24 years.....	4,613	1,782	38.6	2,360	1,224	51.9	2,252	557	24.7
25 to 34 years.....	1,821	346	19.0	809	277	34.2	1,012	70	6.9
35 to 49 years.....	2,084	283	13.6	1,026	250	24.4	1,059	33	3.1
50 years and over.....	1,859	180	9.7	972	157	16.2	887	23	2.6

¹Data from the 1960 census are based on a full count of urban areas and a 10-percent sample of rural areas (SAMPLE). Figures shown are for the Moroccan Muslim population which constituted 93.2 percent of the unadjusted census in 1960.

²Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for persons of all nationalities. Moroccan Muslims constituted 99.1 percent of the unadjusted census population in 1971.

Note: Literacy is defined as the ability to read and write.

Source: Data are from the 1960 and 1971 censuses as reported in Morocco III, 1973b, table 1-6; and 1976, table 6788, respectively.

Table 16. Population Ages 5 to 19 Years, Enrolled in School, by Age and Sex: 1971

(Population in thousands. Figures may not add to totals due to rounding)

Age	Both sexes			Male			Female		
	Total population	Enrolled in school		Total population	Enrolled in school		Total population	Enrolled in school	
		Number	Percent of total		Number	Percent of total		Number	Percent of total
Total, 5 to 19 years.....	6,012	1,808	29.9	3,105	1,092	35.2	2,907	716	24.6
5 to 9 years.....	2,458	541	22.0	1,248	419	33.6	1,210	122	10.0
10 to 14 years.....	2,088	755	36.1	1,101	508	46.1	988	245	24.8
15 to 19 years.....	1,466	512	34.9	755	224	29.7	711	87	12.3

Note: Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for persons of all nationalities. Moroccan Muslims constituted 99.1 percent of the unadjusted census population in 1971.

Source: Data are from the 1971 census as reported in Morocco III, 1976, table 6148.

Table 17. Population Ages 15 Years and Over Who Have Completed School, by Number of Years of Modern School Attended, Age, and Sex: 1971

(Numbers in thousands. Figures may not add to totals due to rounding)

Age and sex	Population					Percent				
	Total	Number of years of modern school				Total	Number of years of modern school			
		0	1 to 5	6 to 7	8 and over		0	1 to 5	6 to 7	8 and over
BOTH SEXES										
Total, 15 years and over.....	7,900	6,949	397	230	324	100.0	88.0	5.0	2.9	4.1
15 to 24 years.....	2,150	1,628	219	148	155	100.0	75.7	10.2	6.9	7.2
25 to 44 years.....	3,389	3,046	141	66	136	100.0	89.9	4.1	2.0	4.0
45 years and over.....	2,361	2,275	37	16	33	100.0	96.4	1.6	0.7	1.4
MALE										
Total, 15 years and over.....	3,783	3,121	269	157	236	100.0	82.5	7.1	4.1	6.2
15 to 24 years.....	986	644	139	95	108	100.0	65.3	14.1	9.7	10.9
25 to 44 years.....	1,554	1,294	103	51	106	100.0	83.3	6.6	3.3	6.8
45 years and over.....	1,243	1,183	27	11	22	100.0	95.2	2.2	0.9	1.8
FEMALE										
Total, 15 years and over.....	4,118	3,829	128	74	88	100.0	93.0	3.1	1.8	2.1
15 to 24 years.....	1,164	984	80	53	47	100.0	84.5	6.9	4.5	4.1
25 to 44 years.....	1,835	1,753	38	16	29	100.0	95.5	2.0	0.9	1.6
45 years and over.....	1,118	1,092	10	5	11	100.0	97.7	0.9	0.5	1.0

Note: These data refer to number of years of school attended and are not comparable to grades completed. Modern school refers to public and private secular schools.

Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for persons of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971.

Source: Data are from the 1971 census as reported in Morocco DS, 1976, table 1122.

Table 18. Economically Active Population, by Age and Sex: 1960 and 1971

(Population in thousands. Figures may not add to totals due to rounding)

Year and age	Male			Female		
	Total population	Economically active		Total population	Economically active	
		Number	Percent of total		Number	Percent of total
1960						
Total, 10 years and over.....	3,476	2,767	79.6	3,547	300	8.5
10 to 14 years.....	585	149	25.5	437	54	12.5
15 to 19 years.....	313	219	70.1	328	29	8.8
20 to 24 years.....	370	344	93.0	479	30	6.2
25 to 29 years.....	404	393	97.1	500	30	6.0
30 to 34 years.....	364	355	97.5	428	31	7.3
35 to 39 years.....	310	301	96.9	288	24	8.5
40 to 44 years.....	272	262	96.3	293	28	9.7
45 to 49 years.....	175	168	96.1	142	15	10.6
50 to 54 years.....	188	179	94.9	205	22	10.6
55 to 59 years.....	96	90	94.0	64	7	10.8
60 to 64 years.....	157	143	91.1	185	17	9.2
65 years and over.....	242	165	68.0	198	12	6.3
1971						
Total, 10 years and over.....	5,167	3,427	66.3	5,210	614	11.8
10 to 14 years.....	1,101	184	16.7	988	82	8.3
15 to 19 years.....	755	443	58.7	711	118	16.6
20 to 24 years.....	505	427	84.6	554	75	13.5
25 to 29 years.....	412	390	94.5	508	57	11.2
30 to 34 years.....	397	382	96.3	504	51	10.2
35 to 39 years.....	394	382	96.8	429	47	11.0
40 to 44 years.....	361	346	95.7	397	52	13.0
45 to 49 years.....	271	256	94.5	232	35	15.0
50 to 54 years.....	266	244	91.6	246	47	18.9
55 to 59 years.....	154	137	88.9	102	23	22.5
60 to 64 years.....	178	113	63.3	198	15	7.7
65 years and over.....	373	125	33.5	341	13	3.8

¹Data from the 1960 census are based on a full count of urban areas and a 10-percent sample of rural areas (*douars*). Figures shown refer to the Moroccan Moslem population which constituted 95.2 percent of the unadjusted census population in 1960. The economically active population under age 10 years is included in the age group 10 to 14 years. Excluded from the table are 98,911 males and 1,051 females with activity not stated and an additional 3,455 males and 567 females of unknown age who were economically active.

²Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for people of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971. The economically active population under age 10 years is included in the age group 10 to 14 years.

Note: In 1960 and 1971, the economically active population comprised all persons, who, at the time of the census, worked for pay or profit; were family helpers; or were seeking work. In 1971, the latter group was restricted to those persons 15 years of age and older. The 1960 female economically active population figures shown exclude an official estimate of 1,231,550 family helpers in agriculture who did not report themselves as part of the labor force. In 1971, an undetermined number of unreported female family helpers were excluded from the economically active population. For this reason, female labor force data for 1960 and 1971 may not be comparable.

Source: Data are from the 1960 and 1971 censuses as reported in Morocco 60, 1965, table 22, and 1964, table 8, and Morocco 65, 1976, table 01A1, respectively.

Table 19. Distribution of Labor Force, by Sex and Industry: 1960 and 1971

(Population in thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Year and industry	Population			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
1960 ¹						
Total classified workers.....	2,680	2,394	287	100.0	100.0	100.0
Agriculture, forestry, hunting, and fishing.....	1,823	1,681	142	68.0	70.2	49.6
Mining and quarrying ²	35	35	(Z)	1.3	1.5	0.1
Manufacturing.....	227	156	71	8.5	6.5	24.6
Electricity and water.....	6	6	(Z)	0.2	0.	(Z)
Construction.....	51	51	(Z)	1.9	2.	0.1
Commerce.....	194	188	6	7.2	7.7	2.1
Transport, storage, and communication Services.....	68	67	1	2.5	2.8	0.3
	277	211	66	10.3	8.8	23.0
1971 ³						
Total classified workers.....	3,641	3,125	516	100.0	100.0	100.0
Agriculture, forestry, hunting, and fishing ⁴	2,067	1,844	223	56.8	59.0	43.3
Mining and quarrying ²	42	41	2	1.2	1.3	0.3
Manufacturing.....	421	307	114	11.6	9.8	22.1
Construction.....	167	163	3	4.6	5.2	0.6
Electricity and water.....	12	11	1	0.3	0.4	0.2
Commerce.....	308	288	20	8.5	9.2	3.8
Transport, storage, and communication Services.....	114	109	5	3.1	3.5	1.0
	510	362	148	14.0	11.6	28.8

¹Data from the 1960 census are based on a full count of urban areas and a 10 percent sample of rural areas (*douars*). Figures shown are for the Moroccan Moslem population which constituted 95.2 percent of the unadjusted census population in 1960. Excludes 281,140 males and 6,109 females who were unemployed, and 95,593 males and 7,910 females whose industry was not determined. Included are 3,000 unemployed males who were classified by industry.

²Includes petroleum and gas bottlers and refinery workers.

³Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for people of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971. Includes 107,038 males and 98,672 females who did not report their industry or provide sufficient information, were unemployed seeking work for the first time, or were working outside of Morocco.

⁴Agricultural workers constituted 98.2 percent of the males in this category and 98.2 percent of the females.

Note: Data for 1960 and 1971 include the economically active population under 15 years of age. Female labor force data for 1960 and 1971 may not be comparable (see note to table 18).

Source: Data are from the 1960 and 1971 censuses as reported in Morocco S(X, 1965, table VIII-3) and Morocco IM, 1976, tables O6AE and I2AE, respectively.

Table 20. Distribution of Labor Force, by Sex and Occupation: 1960 and 1971

(Population in thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Year and occupation	Population			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
1960¹						
Total classified workers.....	2,824	2,533	292	100.0	100.0	100.0
Professional, technical, and related workers.....	72	67	5	2.6	2.7	1.6
Administrative and managerial workers....	6	6	(Z)	0.2	0.2	(Z)
Clerical and related workers.....	28	26	2	1.0	1.0	0.7
Sales workers.....	165	161	4	5.8	6.4	1.3
Service workers.....	241	177	64	8.5	7.0	21.9
Agriculture, animal husbandry and forestry workers, fishers, and hunters.....	1,859	1,717	142	65.8	67.8	48.8
Production and related workers, transport equipment operators, and laborers.....	453	378	75	16.0	14.9	25.7
1971²						
Total classified workers.....	3,663	3,121	542	100.0	100.0	100.0
Professional, technical, and related workers.....	155	132	23	4.2	4.2	4.3
Administrative and managerial workers....	16	15	1	0.4	0.5	0.2
Clerical and related workers.....	104	77	27	2.8	2.5	4.9
Sales workers.....	233	222	11	6.4	7.1	2.0
Service workers.....	320	199	121	8.7	6.4	22.3
Agriculture, animal husbandry and forestry workers, fishers, and hunters.....	2,096	1,858	239	57.2	59.5	44.1
Production and related workers, transport equipment operators, and laborers.....	739	619	121	20.2	19.6	22.3

¹Data from the 1960 census are based on a full count of urban areas and a 10-percent sample of rural areas (douars). Figures shown are for the Moroccan Moslem population which constituted 95.2 percent of the unadjusted census population in 1960. Data exclude 237,646 males and 9,140 females with insufficient information to classify by occupation.

²Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for people of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971. Data exclude 306,157 males and 72,763 females who were not classifiable by occupation.

Note: Data for 1960 and 1971 include the economically active population under 15 years of age. Detailed data on occupation from the 1971 census were classified into broad occupational categories at the U.S. Bureau of the Census according to the 1968 International Standard Occupational Classifications (United Nations, 1968).

Female labor force data for 1960 and 1971 may not be comparable (see note to table 18).

Source: Data are from the 1960 and 1971 censuses as reported in Morocco BCS, 1965, table VII-1; and Morocco DS, 1976, tables 04AE and 11AE, respectively.

**Table 21. Distribution of Agricultural and Nonagricultural Employed Workers, by Status and Sex:
1960 and 1971**

(Population in thousands. Figures may not add to totals due to rounding)

Sex and status	1960 ¹				1971 ²			
	Agricultural		Nonagricultural		Agricultural		Nonagricultural	
	Population	Percent	Population	Percent	Population	Percent	Population	Percent
BOTH SEXES								
Total classified workers.....	1,808	100.0	845	100.0	2,036	100.0	1,462	100.0
Employers and workers on own account.....	987	54.6	288	34.1	923	45.3	423	28.9
Salaried employees and wage earners.....	362	20.0	544	64.4	418	20.5	978	66.9
Unpaid family helpers.....	459	25.4	13	1.6	696	34.2	61	4.2
MALE								
Total classified workers.....	1,666	100.0	704	100.0	1,815	100.0	1,193	100.0
Employers and workers on own account.....	958	57.5	243	34.6	887	48.9	363	30.4
Salaried employees and wage earners.....	344	20.7	451	64.1	390	21.5	798	66.9
Unpaid family helpers.....	364	21.8	9	1.3	538	29.7	32	2.7
FEMALE								
Total classified workers.....	141	100.0	141	100.0	221	100.0	269	100.0
Employers and workers on own account.....	28	20.1	44	31.4	35	15.0	60	22.3
Salaried employees and wage earners.....	17	12.1	93	65.9	28	12.7	180	67.0
Unpaid family helpers.....	96	67.8	4	2.7	158	71.3	29	10.7

¹Data from the 1960 census are based on a full count in urban areas and a 10-percent sample of rural areas (*douars*). Figures shown are for the Moroccan Moslem population which constituted 95.2 percent of the unadjusted census in 1960. Data exclude 118,897 males and 12,696 females with insufficient information to classify by industry or status. Also excluded are 281,140 males and 6,100 females who were unemployed.

²Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. The data exclude 28,730 male and 12,699 female non-Moroccans who were economically active but not classified by status. Also excluded are 390,165 males and 111,718 females of unknown status and/or sector.

Note: Data for 1960 and 1971 include the economically active population under 15 years of age.
Female labor force data for 1960 and 1971 may not be comparable (see note to table 18).

Source: Data are from the 1960 and 1971 censuses as reported in Morocco SCS, 1965, table VIII-3; and Morocco DS, 1976, table 19AE, respectively.

Table 22. Distribution of Households and of Population, by Size of Household: 1971

(Numbers in thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Persons per household	Households		Population in households	
	Number	Percent	Number	Percent
All households.....	2,971	100.0	15,213	100.0
1 person.....	401	13.5	401	2.6
2 persons.....	323	10.9	646	4.2
3 persons.....	314	10.6	941	6.2
4 persons.....	317	10.7	1,267	8.3
5 persons.....	326	11.0	1,632	10.7
6 persons.....	313	10.5	1,878	12.3
7 persons.....	285	9.6	1,997	13.1
8 persons or more.....	692	23.3	6,452	42.4
OTHER HOUSEHOLD MEASURES				
Mean number of persons per household.....	5.1	(X)	(X)	(X)
Median number of persons per household.....	4.9	(X)	(X)	(X)

Note: A household is defined as a group of related or unrelated people living (or sleeping) regularly in the same dwelling and among whom resources or expenses are shared.

Data from the 1971 census exclude the population in group quarters which was counted separately, a total of 51,825 persons. Figures shown are for people of all nationalities. Moroccan Moslems constituted 99.1 percent of the unadjusted census population in 1971.

Source: Data are from the 1971 census as reported in Morocco DS, 1976, table 01M5.

Table 23. Population, by Urban and Rural Residence and Size of Urban Locality: 1960 and 1971

(For meaning of symbols, see text)

Subject	1960			1971		
	Number	Population	Percent of total country	Number	Population	Percent of total country
Total country.....	(X)	11,626,470	100.0	(X)	15,379,259	100.0
Urban areas.....	11/	3,411,037	29.3	184	5,409,725	35.2
Localities with 100,000 or more inhabitants.....	8	2,199,643	18.9	11	3,706,837	24.1
Localities with 20,000 - 99,999 inhabitants.....	22	695,280	6.0	25	940,499	6.1
Localities with 2,000 - 19,999 inhabitants.....	68	491,583	4.2	97	700,883	4.6
Localities with fewer than 2,000 inhabitants.....	19	24,631	0.2	51	61,506	0.4
Rural areas.....	(X)	8,215,433	70.7	(X)	9,969,534	64.8

Note: In 1960 the urban population included all inhabitants of municipalities, autonomous centers, certain delimited centers, and other small centers with some urban characteristics. In 1971 the urban population included all inhabitants of municipalities, autonomous centers, and other centers.

Source: Data are from the 1960 and 1971 censuses as reported in Morocco SCS, 1961, tables A2, D1, D2, D3, and D4; and Morocco DS, 1971, table 2, respectively.

Table 24. Provincial Population and Growth Rates

Region and province or prefecture	1960 population (in thousands)	1971 population (in thousands)	Average annual growth rate, 1960-71 (percent)
Centre			
Beni Mellal.....	474	664	3.0
Casablanca.....	1,100	1,719	4.0
El Jadida.....	490	591	1.7
Khouribga.....	237	328	2.9
Settat.....	546	671	1.9
Centre Nord			
Al Hoceima.....	191	247	2.3
Fès.....	831	1,071	2.3
Taza.....	446	579	2.4
Centre Sud			
Ksar Es Souk.....	381	472	1.9
Meknès.....	577	753	2.4
Nord Ouest			
Kénitra.....	996	1,346	2.7
Rabat Sale.....	388	642	4.5
Tanger.....	164	216	2.4
Tétouan.....	647	796	1.9
Oriental			
Nador.....	348	481	2.9
Oujda.....	523	634	1.7
Sud			
Agadir.....	858	1,168	2.8
Ouarzazate.....	434	522	1.7
Tarfaya.....	18	24	2.5
Tensift			
Marrakech.....	1,237	1,559	2.1
Safi.....	739	898	1.8

Note: Many of the provinces designated above have had boundary and/or name changes since the 1971 census and may not coincide with the provinces as shown in the map on p. V.

Source: Data are from the 1960 and 1971 censuses as reported in Morocco DS, 1971, table 1.

Table 25. Foreign Population, by Nationality: 1960 and 1971

Year and nationality	Population	Percent of total population
1960 ¹		
All foreign nationalities..	395,833	3.4
French.....	175,090	1.5
Algerian.....	93,026	0.8
Spanish.....	92,901	0.8
Other.....	34,866	0.3
1971		
All foreign nationalities..	111,909	0.7

¹Data from the 1960 census are based on a full count of urban areas and a 10-percent sample of rural areas (douars).

Source: Data are from the 1960 and 1971 censuses as reported in Morocco SCS, 1964b, table II-4; and Morocco DS, 1971, p. XII, respectively.

Appendix

Technical Notes

SUMMARY

The demographic data presented in this profile cover primarily the period 1950 to 1979. Fertility and mortality estimates are based on information from the 1972-73 Dual Record Experimental Study, the 1961-63 Multiple Objectives Survey, the 1950 census of the Spanish zone, the 1951/1952 census of the French zone, and the 1960 and 1971 censuses. After an analysis of the available census and survey information, fertility and mortality estimates were derived and the 1960 and 1971 censuses were evaluated.

FERTILITY

Estimates

There is a general lack of fertility data for Morocco. The data that exist come from the 1961-63 Multiple Objectives Survey (crude birth rates and children-ever-born data for urban and rural areas, and births by age of mother in rural areas) and the 1972-73 Dual Record Experimental Study (registered births by age of mother for 1972 and the first 6 months of 1973, and children-ever-born data and births in the last 12 months by age of mother from the two survey rounds).

The unadjusted crude birth rate (CBR) for the country based on either the survey or registration system of the 1972-73 Dual Record Experimental Study (DRES) is about 42 per 1,000 population. The Chandrasekaran-Deming correction raises the CBR to 55 (Notzon and Fichet, 1975, p. 38). A separate verification of the matching status of a sample of events indicated that due to out-of-scope events and uncertainties in matching, the Chandrasekaran-Deming estimate of births was too high: by about 14 percent in urban areas and 9 percent in rural areas (Notzon and Fichet, 1975, p. 43) implying a CBR of about 49.

Even though the 1972-73 DRES sample covered only two of the country's seven economic planning regions, it did cover a variety of geographical areas with differing demographic characteristics, and it was therefore assumed that the sample results were close to representative of the whole country. Since the sample area was more urban than the whole country, separate fertility estimates were derived for

urban and rural areas and then weighted based on the proportions of urban and rural population in the total country from the 1971 census.

Correction of the 1972-73 DRES survey or registration age-specific fertility rates was not possible using the Brass (1975) fertility technique because of changes in fertility level and pattern, as well as problems of age reporting (see appendix table A-7 for unadjusted age-specific fertility rates and table A-10 for children ever-born data from the DRES).

Estimates of urban and rural age-specific fertility rates for 1972 were computed from the DRES survey data using urban and rural patterns of fertility, derived by averaging the age-specific fertility rates based on the second round survey and the 1972 and 1973 registration data (see appendix table A-7). The level of fertility for each area was estimated by correcting the survey total fertility rates (TFR) for underreporting of births. The correction factor was obtained by taking the ratio of matched plus unmatched births from the 1972-73 DRES to all births reported in the survey (Notzon and Fichet, 1975, p. 39). The resulting urban and rural age-specific fertility rates were combined using the proportionate age distribution of urban and rural women from the survey (1972-73 DRES) and the total number of females in urban and rural areas from the 1971 census.

An attempt to correct the rural age specific fertility rates from the 1961-63 Multiple Objectives Survey (MOS) using the Brass (1975) fertility technique was unsuccessful, probably due to age misreporting. Problems of age reporting also made it impossible to estimate fertility using the Arriaga fertility technique (Arriaga and Anderson, 1970) on children-ever-born data from the 1961-63 MOS and the 1972-73 DRES. The results of the 1961-63 MOS were therefore not used in deriving fertility estimates (see appendix table A 7).

The 1952 and 1960 age specific fertility rates used in this profile (see appendix table A 3) were computed by multiplying the 1972 marital age specific fertility rates (see below) for rural areas by estimates of the percent of females currently married, by age, for 1952 based on the 1950 and 1952 censuses and for 1960 based on the 1960 census. This assumes that marital fertility of all women was constant in the past at the level of the rural areas of Morocco in 1972.

The 1972 marital age-specific fertility rates for rural areas were obtained by dividing the rural age-specific fertility rates, derived above, by the percent currently married for females in each age group. The resulting rural marital age-specific fertility rates in 1972 are:

Ages	Births per 1,000 currently married women
15 to 19 years.	244
20 to 24 years.	419
25 to 29 years.	442
30 to 34 years.	376
35 to 39 years.	285
40 to 44 years.	125
45 to 49 years.	50

The resulting crude birth rates for the Moroccan Moslem population show a large decline between 1960 and 1971 from 55 to 44 per 1,000 population. This 11-point decline can be decomposed into three components using the method of Kitagawa (1955). The largest component, which accounts for 55 percent of the decline, is due to the changes in proportions married. The second component is due to changes in marital fertility and accounts for 24 percent. The remaining 21 percent of the decline is due to the differences in the age composition of the population.

Projections

Three trends in fertility were assumed for the period 1972 to 1979. Since most of the change in the total fertility rate from 1960 to 1972 was due to changing proportions of women who were married, and since these proportions probably would not continue to change as fast as in the past, the following assumptions were made. The total fertility rate (TFR) of 6.16 for the medium projection series in 1979 was obtained by a linear extrapolation of the 1960 and 1972 total fertility rates (8.14 and 6.88, respectively). This TFR of 6.16 is almost identical to the 6.17 which is obtained by assuming that the annual percentage change assumed to occur between 1971-76 and 1976-81 in Hypothesis II of the C.E.R.E.D. population projections (Morocco C.E.R.E.D., 1975a, p. 4) applied to the 1972 to 1979 period. For the low series, the annual percentage change assumed to occur between 1971-76 and 1976-81 in Hypothesis III of the C.E.R.E.D. population projections (Morocco C.E.R.E.D., 1975a, p. 4) was assumed to apply to the 1972 to 1979 period, giving a TFR of 5.04 in 1979. The high variant total fertility rate of 6.36 is the same distance above the medium projection TFR value as the low projection TFR is below it.

The age-specific fertility rates corresponding to the projected TFR values for 1979 were determined by interpolating between the 1972 urban and rural age-specific fertility rates (see appendix tables A.3 and A.7). The weights

used for interpolating the 1979 age-specific fertility rates for each series were calculated considering the 1972 rural TFR of 7.93, the 1972 urban TFR of 5.07, and the 1979 projected TFR's for the respective series.

MORTALITY

Estimates

The 1972 life tables were constructed based on registered deaths, by age and sex, from the 1972-73 Dual Record Experimental Study (Morocco C.E.R.E.D., 1974, tables 5, 6, 16, and 17). Each age-sex-specific death rate (${}_n m_x$ value) was multiplied by the same adjustment factor in order to correct for underregistration and make the rates more consistent with the estimates of infant mortality derived independently (see below). The adjustment factor was obtained by taking the ratio of deaths estimated by the Chandrasekaran-Deming method to registered deaths (Notzon and Fichet, 1979, p. 39). These adjusted ${}_n m_x$ values for urban and rural areas were weighted using the unadjusted 1971 census age distribution for urban and rural areas. Because of irregularities in the age patterns, the resulting ${}_n m_x$ values for each sex were smoothed by taking a moving average of the logarithms of the adjusted ${}_n m_x$ values to get the final age-sex-specific death rates for ages 15 to 69. The values for ages 70 and over were computed by interpolating between Coale and Demeny (1966) west region female model life tables. The levels of the model life tables used in the interpolation were selected based on the value of ${}_5 m_{65}$ (death rate for the age group 65 to 69) as estimated from the smoothed ${}_n m_x$ values described above.

Infant mortality was estimated using Trussell's method for converting children ever born and children surviving into life table probabilities of dying from birth to age x (${}_x q_0$; Trussell, 1975). Using the Coale-Demeny (1966) west region model life tables and the model for early patterns of fertility, this method was applied to the data for women ages 20 to 24 years, 25 to 29 years, and 30 to 34 years from the first and second rounds of the survey. Infant mortality rates were derived based on the estimated ${}_x q_0$ values and the Coale-Demeny west region model life tables. The resulting six values of the infant mortality rate were then averaged. This analysis of infant mortality was performed separately for males and females in rural and urban areas. The urban and rural infant mortality rates were weighted using the proportion urban and rural from the 1971 population census and the ratio of adjusted rural to urban birth rates. This ratio was estimated based on matched plus unmatched births from the 1972-73 Dual Record Experimental Study (Notzon and Fichet, 1975, p. 39). The resulting infant mortality rate was linked to the previously estimated death rate for ages 15 to 19 using the logit method with the Brass general standard life table (Brass, 1971).

Deaths by age were also collected in rural areas during the 1961-63 Multiple Objectives Survey. Laila Nawar (1975) analyzed these data, using the Brass growth-balance method to inflate deaths over age 5 years, and obtained male and

female life expectancies at birth (45.0 years and 45.3 years, respectively) in rural areas. These life expectancies at birth (\hat{e}_0), however, are based on unadjusted deaths under age 5 (see appendix table A-8).

Nawar (1975) also used the Brass growth balance method to adjust registration data from 13 towns for 1960-62. The resulting urban life expectancies at birth were 51.2 for males and 54.0 for females. These values were also based on unadjusted deaths under age 5 and thus are upper estimates of life expectancy at birth.

The 1961-63 Multiple Objectives Survey report used the unadjusted ratio of infant deaths to births estimated as occurring between the first and third rounds of the survey to select the United Nations model life tables and obtained an \hat{e}_0 estimate of 47 years for both sexes for 1962 (Morocco, 1964a). This figure must also be taken as an upper bound since it is based on the unadjusted level of infant mortality, which is lower than the estimate for 1972.

The 1961-63 mortality data were not used in this profile due to the extensive irregularities in the age-specific death rates and the absence of an estimate of underreporting of infant deaths.

Life tables used in this study for years prior to 1972 were computed based on the 1972 life table and the linear regression slopes used by Coale and Demeny (1966, p. 21) to produce the west region model life tables. It was assumed that the excess mortality of females in the childbearing ages observed in the 1972 life tables was higher in the past because of the higher level of fertility and lower status of women. Life tables for 1947 (female $\hat{e}_0 = 35$ years, male $\hat{e}_0 = 35$ years) and 1952 (female $\hat{e}_0 = 40$ years, male $\hat{e}_0 = 39$ years) were computed to reflect a rapid improvement in mortality after World War II, followed by a slower but steady increase in expectation of life at birth. See the census evaluation section of the Technical Notes for further information on mortality estimates prior to 1952.

Projections

After 1972, the trend of mortality was derived by projecting the life expectancy at birth for females based on assumed trends of mortality (see appendix table A-4). The male expectation of life for 1979 was based on the projected female expectation of life at birth, and the change in sex differentials of the expectation of life at birth in the Coale Demeny (1966) west region model life tables with the same levels of mortality for females as estimated in 1972 and projected for 1979. Life tables, by sex, for 1979 were calculated based on an estimated set of ${}_nq_x$ values from the 1972 empirical life tables (see table 5) and the relative change observed between ${}_nq_x$ values from two model life tables (Coale and Demeny, west region) with life expectancies at birth similar to those estimated and projected for Morocco in 1972 and 1979, respectively.

INTERNATIONAL MIGRATION

Although there are many sources of data on emigration of Moroccan Moslems from Morocco, they are not all consistent. There are estimates of both stocks (Moroccans

enumerated in other countries, primarily in France) and flows (counts of departures from Morocco or arrivals in other countries). Estimates of net emigration accepted for the profile were based on data from France, the Federal Republic of Germany, Belgium and the Netherlands (see appendix tables A-5 and A-6). These data show an increase in the level of net international emigration, reaching a peak around 1971.

More recent data indicate possible declines in the level of emigration. Therefore, for the 1971 to 1979 projections, net international emigration was assumed to decline linearly from an estimated level of 37,000 in 1971-72 to an assumed level of 23,400 in 1978-79.

CENSUS EVALUATION

The 1960 and 1971 census counts of Moroccan Moslems were evaluated by comparing them to population estimates of the Moroccan Moslem population derived by the component method, for 1960 and 1971. The population estimates were developed according to the following steps:

1. It was assumed that the Moroccan Moslem population distribution was stable in 1935. The stable population in 1935 was constructed using estimated 1952 age-specific fertility rates (i.e., assuming fertility had remained constant before 1952, see appendix table A-3) and estimated 1935 life tables (see below). The total population used was the official estimate for 1935 (Morocco DS, 1971, p. XII).
2. An approximate level of the crude death rate (30 per 1,000) for 1935 was estimated based on limited registration data for some areas in Morocco (Noin, 1970b, pp. 113-114), estimated crude death rates for Algeria from 1930 to 1969, and the observed differentials in estimates of Algerian and Moroccan crude death rates after 1950 (Négadi, et al., 1974, p. 19, and Noin, 1970b, pp. 59-61). Life tables for males and females consistent with this crude death rate were then constructed based on the mortality pattern from estimated 1972 life tables (see table 5 and the discussion of the method used to construct the 1952 life table in the mortality section of the Technical Notes).
3. An attempt was made to simulate the impact of the typhus epidemic in 1938, plague and typhus epidemics in 1942, and the famine and epidemics of typhus and relapsing fever in 1945-46 (Buy, 1966, pp. 116-119 and Noin, 1970, pp. 104-110) on the age distribution (i.e., by increasing mortality in those years and decreasing fertility in the famine years of 1945 and 1946) based on limited registration data for the years 1935 to 1950.

The level of mortality assumed for 1947 was the same as that for 1935. A rapid decline in mortality was assumed from 1947 to 1952 due to adequate harvests, the introduction of antibiotics, an increase in the number of physicians, and the use of pesticides to reduce mortality from malaria (Noin, 1970b, pp. 110-111).

4. Except for the reduction in fertility during the famine and epidemic of 1945-46 noted above, fertility was assumed to remain constant from 1935 to 1952 based on the 1952 age-specific fertility rates (see appendix table A-3). Age-specific fertility rates for the years after 1952 were estimated by linear interpolation of the estimated rates for 1952, 1960, and 1972 (see appendix table A-3).

5. Migration of the Moroccan Moslem population was assumed to be nil prior to 1955 after which it was assumed to increase linearly to levels estimated for 1965-66 and 1971-72 (see the migration section of the Technical Notes and appendix tables A 5 and A 6).

Once the 1960 and 1971 population estimates were derived, comparisons were made between the censuses and estimated population for each sex as follows: (a) for each 5 year age group, (b) for the population ages 5 years and over, (c) for the population ages 10 years and over, and (d) for the population ages 15 years and over.

The census age sex distributions used in these comparisons (Morocco SCS, 1964, table 6; and Morocco DS, 1976, table 03DE) were inflated to the official population total for Moroccan Moslems (totals which include the population counted separately and persons for whom age information was not collected; see Morocco DS, 1971, p. XII). The 1960 enumerated population was also adjusted to include the Moroccan Moslem population of Ifni.

The comparison of the census and estimated populations for each sex in each 5 year age group in 1960 and 1971 indicated a high degree of age misreporting in both censuses. Females under age 15 years have a tendency to be reported as younger than they actually are, while women in the childbearing ages seem to be concentrated in the age groups 25 to 29 years and 30 to 34 years, a pattern typical of most Near Eastern and North African countries (United Nations, 1967, p. 19). The males below age 15 years seem to show an understatement of age similar to that for the females, although less extreme. After age 15 years, there appears to be a tendency to overstate age and there are indications that men between ages 15 to 29 years are more likely to be missed by the census than other age groups. As a result of these tendencies, comparison of the populations ages 5 years and over, 10 years and over, and 15 years and over showed high implied net underenumeration in the censuses. The only exception was the 1960 female population ages 15 years and over, which showed overenumeration, probably due to the pattern of age misreporting. Comparison of the census and the estimated population ages 5 to 9 years for each sex in 1960 and 1971 indicated that the implied percent net underenumeration was consistently low for this age group as can be seen in the following figures:

Sex	1960	1971
Male	1.7	0.2
Female	2.8	0.4

Age reporting of the younger population in 1971 is generally considered to be more accurate than that of the older population, due in part to the fact that the civil registration booklet was used more often in determining the age of the younger than the older population. Also, the data for younger males appear to be less subject to systematic age misreporting than for any other age group (Beaujot and Elamrani Jamal, 1972, pp. 23-25).

It might be argued that the 5 to 9 age group is over-enumerated due to a net transfer from above age 9 or from below age 5. However, the fact that the 5 to 9 age group starts and ends with odd ages, and that there is a heaping on even digits in the younger ages in the 1960 and 1971 censuses probably minimizes transfer into this age group.

Considering all these facts, it was decided to accept the estimated Moroccan Moslem populations, by age and sex, as the adjusted census populations for 1960 and 1971.

The estimates of net (percent) underenumeration for both the total Moroccan Moslem population (the Moroccan Jewish and foreign populations were not evaluated for coverage error) and the population under age 10, by sex, in 1960 and 1971 are shown below.

Sex and age	1960	1971
Both sexes		
All ages	6.3	5.9
Under 10 years	6.5	6.1
Male		
All ages	7.8	6.7
Under 10 years	6.1	6.3
Female		
All ages	4.6	5.1
Under 10 years	4.9	5.9

Since the adjusted populations derived above referred only to the Moroccan Moslem population, it was necessary to add in the foreign and Moroccan Jewish populations to obtain the adjusted census figures for the total population. Because of the high rate of emigration, it was not possible to evaluate the coverage of the Moroccan Jewish and foreign populations, and the official census totals for these groups were therefore accepted without adjustment. These two groups constituted 4.5 percent of the adjusted population in 1960, and 0.9 percent in 1971.

The age sex distribution of the foreign population for 1971 was estimated as the difference between the total and the Moroccan age sex distributions since no age sex distribution was available for this group. The Moroccan age sex distribution was assumed to apply to both the Moroccan Moslem and the Moroccan Jewish populations because separate age sex distributions for these groups were not available (Morocco DS, 1976, tables 01DE, 02DE, 03DE).

The 1960 and 1971 age-sex distributions for the foreign and Moroccan Jewish populations were then inflated to their respective official population totals (Morocco DS, 1971, p. XII) and added to the adjusted Moroccan Moslem

age-sex distributions to obtain the adjusted total population age-sex distributions (see table 2 and appendix table A-2).

The final total adjusted and unadjusted population figures for each group are as follows:

Population group	1960		1971	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Total country	11,626,000	12,412,000	15,379,000	16,335,000
Moroccan Moslems	11,071,000	11,857,000	15,236,000	16,192,000
Moroccan Jewish population	160,000	160,000	31,000	31,000
Foreign population	396,000	396,000	112,000	112,000

**Table A-1. Enumerated Census Population, by Age and Sex:
July 1971**

(In thousands. Figures may not add to totals due to rounding)

Age	Both sexes	Male	Female
All ages.....	15,321	7,670	7,651
0 to 4 years.....	2,486	1,255	1,231
5 to 9 years.....	2,478	1,248	1,210
10 to 14 years.....	2,088	1,101	988
15 to 19 years.....	1,466	755	711
20 to 24 years.....	1,059	505	554
25 to 29 years.....	920	412	508
30 to 34 years.....	900	397	504
35 to 39 years.....	823	394	429
40 to 44 years.....	759	361	397
45 to 49 years.....	503	271	232
50 to 54 years.....	513	266	246
55 to 59 years.....	256	154	102
60 to 64 years.....	376	178	198
65 years and over.....	714	373	341

Note: Data exclude the population counted separately (persons in group quarters such as army barracks and hospitals, a total of 51,823 persons). Population is de jure.

Source: Data are from the 1971 census as reported in Morocco DS, 1976, table 02DE.

Table A-2. Enumerated and Adjusted Census Population, by Age and Sex: June 1960

(In thousands. Figures may not add to totals due to rounding. For meaning of symbols, see text)

Age	Enumerated ¹			Adjusted		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages.....	11,601	5,796	5,805	12,412	6,302	6,110
0 to 4 years.....	2,195	1,073	1,122	2,443	1,238	1,206
5 to 9 years.....	1,873	955	918	1,925	976	948
10 to 14 years.....	1,081	618	463	1,417	718	700
15 to 19 years.....	722	371	351	1,037	522	515
20 to 24 years.....	908	407	501	1,015	513	502
25 to 29 years.....	957	435	522	967	481	486
30 to 34 years.....	840	390	450	805	411	394
35 to 39 years.....	641	313	328	672	346	326
40 to 44 years.....	599	290	309	551	285	265
45 to 49 years.....	347	191	157	449	233	216
50 to 54 years.....	423	204	219	360	186	175
55 to 59 years.....	181	107	74	277	141	136
60 to 64 years.....	364	169	195	209	104	105
65 to 69 years.....	119	70	50	143	70	73
70 to 74 years.....	178	86	92	91	44	47
75 years and over.....	171	100	72	72	34	38
Unknown.....	25	13	12	-	-	-

¹Population in de jure. Data exclude Ifni which had an unadjusted census population of 27,664 males and 22,220 females on December 31, 1960 (United Nations, 1965, table 1).

Source: Enumerated census population is given in Morocco DS, 1964b, table 11. For a description of the adjustment of the census, see the Technical Notes in the appendix.

Table A-3. Estimated and Projected Total and Age-Specific Fertility Rates: Selected Years, 1952 to 1979

Age	Estimated				Projected, 1979		
	1952	1960	1971	1972	Upper series	Middle series	Lower series
Age-specific fertility rates (per 1,000 women)							
15 to 19 years.....	124	129	71	66	62	60	58
20 to 24 years.....	350	371	302	296	278	270	262
25 to 29 years.....	400	408	369	365	339	330	321
30 to 34 years.....	334	341	307	304	277	268	258
35 to 39 years.....	236	248	222	220	202	193	185
40 to 44 years.....	92	97	93	93	86	83	80
45 to 49 years.....	29	34	33	33	28	27	25
Total fertility rate (per woman).....	7.82	8.14	6.99	6.88	6.36	6.16	5.94

Source: 1952 and 1960 - Based on the estimated rural marital fertility rates for 1972 and estimated marital status distributions for 1952 and 1960, respectively. For further detail, see the Technical Notes in the appendix.

1971 - Estimated by linear interpolation between rates for 1960 and 1972.

1972 - See table 7.

1979 - See the Technical Notes in the appendix.

Table A-4. Estimated and Projected Life Expectancies at Birth: Selected Years, 1952 to 1979

Year	Life expectancy at birth (years)		
	Both sexes	Male	Female
ESTIMATED			
1952 ¹	40	39	40
1960 ¹	44	44	44
1971 ¹	50	50	51
1972.....	51	51	52
PROJECTED			
1979.....	55	54	55

¹ Refers to the Moroccan Moslem population only (95.5 percent of the adjusted population in 1960 and 99.1 percent of the adjusted population in 1971).

Source: The 1972 estimates of life expectancy were calculated at the U.S. Bureau of the Census based on adjusted registered deaths for 1972-71 from the 1972-71 vital record experimental study. Life expectancies for 1952 were based on assumed trends in mortality prior to 1972. The life expectancies for 1960 and 1971 were estimated by linear interpolation between the 1952 and 1972 life tables. Projected life expectancies were derived at the U. S. Bureau of the Census assuming a slight decline in the average annual increase in life expectancy at birth estimated for 1952 to 1972. For further details, see the mortality section of the Technical Notes in the appendix.

**Table A-5. Estimated and Projected Net Emigration of Moroccan Moslems:
1955-56 to 1978-79**

(In thousands. Figures may not add to totals due to rounding)

Period (midyear to midyear)	Both sexes	Male	Female
ESTIMATED			
1955-56 to 1959-60.....	36.8	27.4	9.4
1960-61 to 1970-71.....	285.2	208.9	76.2
1955-56.....	2.5	1.8	0.6
1956-57.....	4.9	3.7	1.3
1957-58.....	7.4	5.5	1.9
1958-59.....	9.8	7.3	2.5
1959-60.....	12.3	9.1	3.1
1960-61.....	14.7	11.0	3.8
1961-62.....	17.2	12.8	4.4
1962-63.....	19.6	14.6	5.0
1963-64.....	22.1	16.4	5.6
1964-65.....	24.5	18.3	6.3
1965-66.....	27.0	20.1	6.9
1966-67.....	28.7	21.1	7.6
1967-68.....	30.3	22.1	8.2
1968-69.....	32.0	23.2	8.8
1969-70.....	33.7	24.2	9.5
1970-71.....	35.3	25.2	10.2
1971-72.....	37.0	26.2	10.8
PROJECTED			
1972-1973.....	35.1	24.8	10.2
1973-1974.....	33.1	23.4	9.7
1974-1975.....	31.2	22.1	9.1
1975-1976.....	29.2	20.7	8.5
1976-1977.....	27.3	19.3	8.0
1977-1978.....	25.3	17.9	7.4
1978-1979.....	23.4	16.5	6.8

Source: Estimated at the U.S. Bureau of the Census based on linear interpolation and extrapolation of estimated migrants by age in 1965-66 and 1971-72 and the assumption that there were no migrants before 1955 (see table A-6 for detailed discussion). Projected estimates assume a linear decline from an estimated level of 37,000 in 1971-72 to an assumed level of 23,400 in 1978-79.

**Table A-6. Estimated Net Moroccan Moslem Emigrants, by Age and Sex:
1965-66 and 1971-72**

(For meaning of symbols, see text. Figures are for midyear to midyear)

Age	1965-66		1971-72	
	Male	Female	Male	Female
All ages.....	20,100	6,900	26,200	10,800
0 to 4 years.....	1,025	1,435	1,939	1,999
5 to 9 years.....	824	994	1,467	1,501
10 to 14 years.....	904	759	1,467	1,285
15 to 19 years.....	2,231	807	3,458	1,609
20 to 24 years.....	4,322	869	5,974	1,674
25 to 29 years.....	4,582	704	5,004	1,004
30 to 34 years.....	3,015	504	2,908	594
35 to 39 years.....	1,608	324	1,939	464
40 to 44 years.....	824	179	1,100	281
45 to 49 years.....	342	104	524	162
50 to 54 years.....	161	90	210	108
55 to 59 years.....	141	76	131	76
60 to 64 years.....	121	55	79	43
65 years and over.....	-	-	-	-

Source: Estimated at the U.S. Bureau of the Census based on the age distributions of Moroccans in France in the 1962, 1968, and 1975 population censuses of France (unpublished census tabulations); Moroccan workers and family members entering France (INSEE, 1965, 1967, 1973; United Nations, 1978); Moroccans counted in the Netherlands in 1963, 1967, 1968, and 1973 (Netherlands Central Bureau of Statistics, 1973, p. 22); Moroccan workers in the Federal Republic of Germany (Germany Statistisches Bundesamt, 1975); and census counts of Moroccans in Belgium in 1961 and 1970 (Belgium Institut National de Statistique, 1976, p. 42).

Table A-7. Alternate Estimates of Total and Age-Specific Fertility Rates, by Residence of Mother: 1962, 1972, and 1973

(For meaning of symbols, see text)

Residence of mother and age	1961-63 Multiple Objectives Survey	1972-73 Dual Record Experimental Study						
		Registered rates		1972-73				
		1962 ¹	1972	1973	Survey rates	Adjusted rates		Matched and unmatched births
						Brass method	Brass/quasi-stable population methods	
Urban								
Age-specific fertility rates (per 1,000 women)								
15 to 19 years.....	(NA)	51	44	36	56	55	50	
20 to 24 years.....	(NA)	202	211	198	304	302	229	
25 to 29 years.....	(NA)	250	269	238	366	363	283	
30 to 34 years.....	(NA)	193	187	191	293	290	216	
35 to 39 years.....	(NA)	136	118	138	211	209	151	
40 to 44 years.....	(NA)	58	64	58	88	88	67	
45 to 49 years.....	(NA)	22	14	10	15	15	18	
Total fertility rate (per woman).....	(NA)	4.57	4.54	4.34	6.66	6.60	5.07	
Rural								
Age-specific fertility rates (per 1,000 women)								
15 to 19 years.....	93	67	61	70	85	84	77	
20 to 24 years.....	300	310	280	282	344	340	337	
25 to 29 years.....	317	356	417	320	391	387	408	
30 to 34 years.....	289	317	331	280	342	339	352	
35 to 39 years.....	184	241	252	204	249	246	263	
40 to 44 years.....	106	84	87	108	132	131	109	
45 to 49 years.....	92	35	44	32	38	38	41	
Total fertility rate (per woman).....	6.90	7.05	7.36	6.48	7.90	7.83	7.93	

¹Refers to Moroccan Moslems only.

Source: 1962 - Fertility rates based on the births observed between the first and third rounds (February 1962 to February 1963) of the 1961-63 Multiple Objectives Survey (MOS) and female population, by age, from the second round of the MOS, were inflated to equal an official estimate of the crude birth rate for the 1961-63 period. Rates are reported in Morocco Service Central des Statistiques, 1964a, p.71.

1972 and 1973 registered rates - Based on registered urban and rural births occurring between January 1972 and June 1973 and female population, by age, from the first and second rounds of the survey from the 1972-73 Dual Record Experimental Study (DRES) (Morocco C.E.R.E.D., 1974, selected tables).

1972-73 survey rates - Based on births occurring during the 12 months preceding the second round of the survey (February 1973 to June 1973) from the 1972-73 DRES and female population, by age, enumerated during this second round (Morocco C.E.R.E.D., 1974c, tables IV B1B-3 and 9c).

1972-73 adjusted rates using Brass method - The Brass fertility method was applied to 1972-73 reported age-specific fertility rates and children-ever-born data, by age of mother, from the second round of the survey from the 1972-73 DRES (Morocco C.E.R.E.D., 1974b, table 3).

1972-73 adjusted rates using Brass and quasi-stable population methods - These rates were derived by Morocco C.E.R.E.D. (1974b, table 8). The urban and rural total fertility rates (TFR's) were derived by averaging TFR's obtained by application of the Brass method and TFR's obtained by applying the Coale-Demeny quasi-stable population method to the second-round survey results for each area. Urban and rural age-specific fertility rates were derived using the fertility pattern of the reported survey age-specific fertility rates and the estimated total fertility rate for each area.

Fertility rates for the total country were obtained by weighting the urban and rural fertility rates. These resulted in a TFR of 7.40.

1972-73 adjusted rates based on matched and unmatched births - Computed at the U.S. Bureau of the Census. The TFR was determined by inflating the survey TFR by the ratio of matched plus unmatched births to all births reported in the survey (see the fertility section of the Technical Notes in the appendix). The pattern of fertility was based on an average of age specific rates based on survey and registered births.

Table A-8. Alternate Estimates of Life Expectancy at Birth, by Sex, for Moroccan Moslems: Selected Periods, 1960 to 1972

(For meaning of symbols, see text)

Source, method, and residence	Year or period	Both sexes	Male	Female
1961-63 MULTIPLE OBJECTIVES SURVEY				
All areas.....	1962	47	(NA)	(NA)
Urban ¹	1962	57	(NA)	(NA)
Rural.....	1962	43	(NA)	(NA)
NAWAR				
Registration and Survey Deaths				
All areas.....	1960-63	47.3	(NA)	(NA)
Urban.....	1960-62	52.6	51.2	54.0
Rural.....	1961-63	45.2	45.0	45.3
Chain Survivorship				
All areas.....	1961-71	47.3	46.5	48.1
Survey Orphanhood Method				
All areas.....	1961-71	48.5	47.6	49.4
PAULET				
All areas.....	1960-70	(NA)	(NA)	51.4
ABOU-GAMRAH				
Urban.....	1962-72	(NA)	49.8	50.5
Rural.....	1962-72	(NA)	46.1	48.4
KROTKI AND BEAUJOT				
All areas.....	1960-71	(NA)	47.5	49.6

¹Includes the urban Moroccan Jewish population.

Source: 1961-63 Multiple Objectives Survey - Based on urban and rural infant mortality rates for 1962, estimated using infant deaths and births from the 1961-63 Multiple Objectives Survey, and United Nations (1955) model life tables with infant mortality rates similar to those estimated for Morocco (Morocco ACS, 1964a, p. 77).

Nawar-Registration and survey deaths - The urban and rural values were based on registered deaths, by age and sex, from 13 towns; deaths for rural areas, by age and sex, from the 1961-63 Multiple Objectives Survey; and Coale and Demeny south region model life tables (Nawar, 1975, tables 9, 10, and 13). The total values for 1960-63 were based on the urban and rural values weighted by the proportion of the population urban and rural from the 1961-63 survey.

Chain survivorship - Based on the 1960 and 1971 census populations, by age and sex, and the logit method using as a standard the Coale and Demeny level 14 south region model life table (Nawar, 1975, table 6).

Survey orphanhood method - Based on orphanhood data reported in the first round of the survey in the 1972-73 Dual Record Experimental Study (DRES) and children-ever-born and children-surviving data reported in the second round of the survey in the 1972-73 DRES. The Brass and Hill orphanhood method was used for estimating adult mortality and the Brass mortality method was used for estimating childhood mortality (Nawar, 1975, tables 12 and 13).

Paulet - Based on the 1960 and 1971 female census populations and Coale and Demeny south region model life tables (Paulet, 1975, p. 10).

Abou-Gamrah - Based on orphanhood data from the 1972-73 DRES and children-ever-born and children-surviving data reported in the second round of the survey in the 1972-73 DRES. The Brass mortality method was used for estimating childhood mortality and the Brass and Hill orphanhood method for estimating adult mortality (Abou-Gamrah, 1975, tables 8, 9, 10, and 11).

Krotki and Beaujot - Based on 1960 and 1971 census populations, by age and sex, adjusted by Krotki and Beaujot, estimated intercensal growth rates, and Coale and Demeny west region model life tables (Krotki and Beaujot, 1975, p. 362).

Table A-9. Alternate Estimates of Crude Vital Rates for Moroccan Moslems: Selected Periods, 1960 to 1971

(For meaning of symbols, see text)

Source, method, and residence	Year or period	Births per 1,000 population	Deaths per 1,000 population	Rate of natural increase (percent)
1961-63 MULTIPLE OBJECTIVES SURVEY				
All areas ¹	1962	46.1	18.6	2.74
Urban ¹	1962	47.2	14.8	3.24
Rural.....	1962	45.6	20.3	2.53
NANAR				
Registration and Survey Deaths				
All areas.....	1960-63	(NA)	20.0	(NA)
Urban.....	1960-62	(NA)	13.6	(NA)
Rural.....	1961-63	(NA)	22.7	(NA)
Chain Survivorship				
All areas.....	1966	(NA)	19.2	(NA)
Survey Orphanhood Data				
All areas.....	1967-68	(NA)	18.5	(NA)
PAULET				
Cumulative Census Survivorship Method				
All areas.....	1960-70	46.1	16.8	2.93
Quasi-Stable Population Method				
All areas.....	1960-70	45.1	15.8	2.93
KROTKI AND BEAUJOT				
All areas.....	1960-71	44.0-49.5	16.0-20.5	2.8-2.9

¹Includes the urban Moroccan Jewish population.

Source: 1961-63 Multiple Objectives Survey (MOS) - Based on reported births and deaths and estimated total, urban, and rural populations for 1962 based on results from the 1961-63 MOS. The rates of natural increase were calculated from unrounded crude birth and death rates (see Morocco SCS, 1964a, pp. 70, 75, and 81).

Nawar - Registration and survey deaths - Based on urban and rural age-sex-specific central death rates obtained by using registered deaths, by age and sex, from 13 towns; deaths for rural areas, by age and sex, from the 1961-63 Multiple Objectives Survey; and Coale and Demeny south region model life tables (Nawar, 1975, table 13).

Chain survivorship - Based on age-sex specific death rates obtained by applying the logit method to survival ratios, estimated using the 1960 and 1971 census populations, by age and sex, and the Coale and Demeny level 14 south region model life tables (Nawar, 1975, table 13).

Survey orphanhood data - Based on age-sex-specific death rates obtained by applying the Brass and Hill orphanhood method to orphanhood data reported in the first round of the survey in the 1972-73 Dual Record Experimental Study (DRES) and the Brass mortality method to children-ever-born and children-surviving data reported in the second round of the survey in the 1972-73 DRES (Nawar, 1975, table 13).

Paulet - Cumulative census survivorship and quasi-stable population methods - Estimated using the 1960 and 1971 census populations and the Coale and Demeny south region model life tables (Paulet, 1975, p. 11).

Krotki and Beaujot - Based on 1960 and 1971 population censuses, by age and sex, based on various stable population methods which take into consideration migration, underenumeration, and age misreporting (Krotki and Beaujot, 1975, p. 367).

Table A-10. Average Number of Children Ever Born and Children Surviving Per Woman, by Residence and Age of Woman: 1972-73

Area and age	Average number of children ever born per woman	Average number of children surviving per woman
URBAN		
All women, 15 to 49 years.....	2.9	2.3
15 to 19 years.....	0.1	0.1
20 to 24 years.....	1.1	1.0
25 to 29 years.....	3.0	2.5
30 to 34 years.....	4.5	3.8
35 to 39 years.....	5.4	4.3
40 to 44 years.....	5.5	4.1
45 to 49 years.....	5.4	3.8
RURAL		
All women, 15 to 49 years.....	3.7	2.8
15 to 19 years.....	0.2	0.1
20 to 24 years.....	1.5	1.2
25 to 29 years.....	3.5	2.7
30 to 34 years.....	5.2	4.0
35 to 39 years.....	6.3	4.7
40 to 44 years.....	6.9	5.0
45 to 49 years.....	6.9	4.7

Note: Averages were calculated assuming that single women had zero children ever born. Only ever-married women were asked the question of number of children ever born. Evaluation of the data indicates that there was a problem with age reporting by women and underreporting of children ever born.

See table 9 for estimates for both areas combined.

Source: Based on the results of the second round survey of the 1972-73 Dual Record Experimental Study (Morocco C.E.R.E.D., 1973a, tables 13-Bis. 2 and 13-Bis. 3; and 1974d, tables 5 and 6).

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