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POPULATION UPDATE

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South Dakota's Population: Age and Sex Structure, 1975*

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There is more to population study than merely knowing how many people live in a geographical location.

Two of the most important "other" aspects of demography are the age and sex composition of a population. Should planners be thinking about adding space to a grammar school or to a retirement center? By studying age and sex compositions, they will make more accurate decisions.

The distribution of a population by age and sex is often shown in a pyramid. The bars in the pyramid (see inside) represent age groups spaced at 5-year intervals. The pyramid is also divided in the middle, with the males at the left and the females at the right.

State pyramids for 1960, 1970, and 1975 point up interesting trends. One of the most significant is a lowered birth rate. Thus, the base of the pyramid reflecting the children is shrinking.

Statewide services required for the very young may not need expansion. On the other hand, those born around 1960, when the birth rate was higher, are now young adults and form an exaggerated proportion of the state's population. Jobs and higher education are their major concerns. Should we build more colleges and technical schools to accommodate these young people?

Look at the age structure at the bottom of the pyramid. In 10 years who is going to fill those schools? Perhaps educators should think in terms of temporary measures to alleviate present difficulties—extension courses, night classes, and the like.

Population ratios and indexes like those under the "detailed state totals" can also be useful. Although pyramids are not portrayed, indexes and ratios as described below are provided for each county.

Population Ratios and Indexes

1. **Total Dependency Ratio.** The basis for the dependency ratio is the idea that certain age groups in the population are in general productive and other age groups are generally dependent upon the efforts of the productive group. Of course, the term "dependent" will always be somewhat arbitrary, and there will be exceptions. Nevertheless, it has become customary to refer to the population over 15 through 64 years as the **productive population.**

$$\text{Total Dependency Ratio (TDR)} = \frac{\text{Persons under 15 yrs + Persons 65 yrs \& over}}{\text{Persons 15 through 64 years}} \times 100$$

2. **Child Dependency Ratio.** This ratio is a more refined measure; it breaks the child population out of the total dependent population and treats the child population separately in relation to the productive population.

$$\text{Child Dependency Ratio (CDR)} = \frac{\text{Persons under 15 Years}}{\text{Persons 15 through 64 Years}} \times 100$$

3. **Aged Dependency Ratio.** This is another refined measure of dependency showing the relation of the aged dependent population to the productive population.

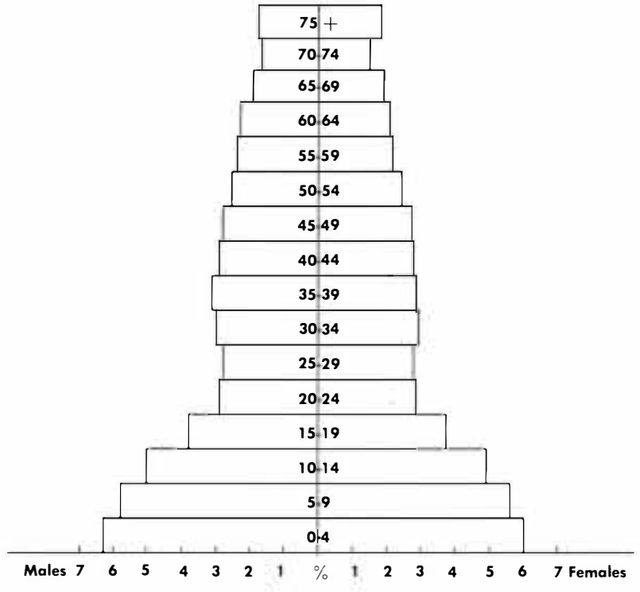
$$\text{Aged Dependency Ratio (ADR)} = \frac{\text{Persons 65 Years and Over}}{\text{Persons 15 through 64 Years}} \times 100$$

4. **Index of Aging.** This index relates the two segments of the dependent population (the children and the aged) to each other. When the index figure is compared with other years, it provides a single measure of the extent to which a population is aging.

$$\text{Indexing of Aging (I of A)} = \frac{\text{Persons 65 Years and Over}}{\text{Persons under 15 Years}} \times 100$$

5. **Sex Ratio.** The simplest measure of population structure is the "sex ratio" which is defined as the number of males per 100 females.

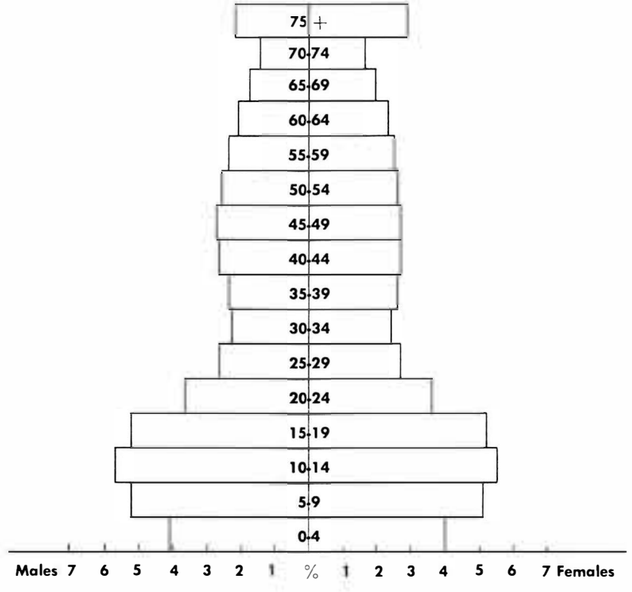
$$\text{Sex Ratio (SR)} = \frac{\text{Number of Males}}{\text{Number of Females}} \times 100$$



DETAILED STATE TOTALS - 1960

AGE	MALES Number	MALES Percent	FEMALES Number	FEMALES Percent	TOTAL Number	TOTAL Percent
TOTAL	344,271	50.6	336,243	49.4	680,514	100
0-4	42,328	6.2	40,799	6.0	83,127	12.2
5-9	39,721	5.8	38,190	5.6	77,911	11.4
10-14	34,284	5.0	33,160	4.9	67,444	9.9
15-19	26,098	3.8	25,967	3.8	52,065	7.7
20-24	19,564	2.9	19,601	2.9	39,165	5.8
25-29	18,778	2.8	19,045	2.8	37,823	5.6
30-34	20,497	3.0	20,081	3.0	40,578	6.0
35-39	20,917	3.1	19,925	2.9	40,842	6.0
40-44	20,045	2.9	19,369	2.8	39,414	5.8
45-49	18,720	2.8	18,163	2.7	36,883	5.4
50-54	17,027	2.5	16,674	2.5	33,701	5.0
55-59	15,918	2.3	15,302	2.2	31,220	4.6
60-64	14,772	2.2	14,056	2.1	28,828	4.2
65-69	13,155	1.9	12,936	1.9	26,091	3.8
70-74	10,597	1.6	10,423	1.5	21,020	3.1
75+	11,850	1.7	12,552	1.8	24,402	3.6

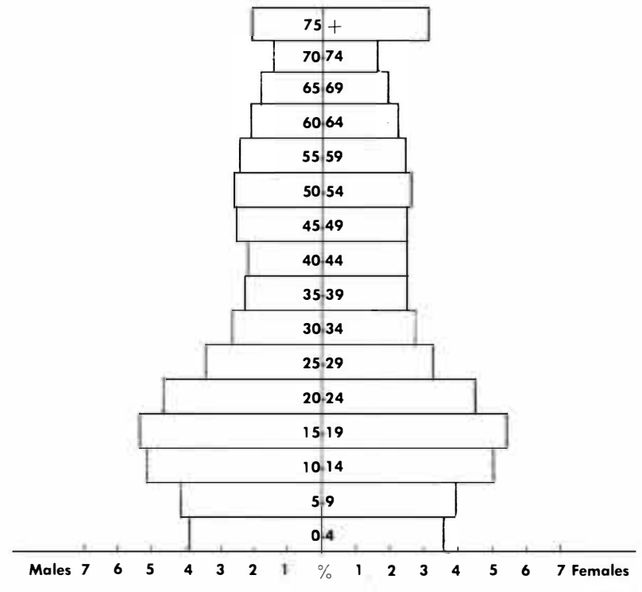
Total Dependency Ratio	78.8	Sex Ratio	102.4
Child Dependency Ratio	60.0	Fertility Ratio	670.4
Aged Dependency Ratio	18.8	Young Adult Ratio	33.2
Index of Aging	31.3	Median Age	27.7



DETAILED STATE TOTALS - 1970

AGE	MALES Number	MALES Percent	FEMALES Number	FEMALES Percent	TOTAL Number	TOTAL Percent
TOTAL	330,033	49.6	335,474	50.4	665,507	100
0-4	27,587	4.1	26,671	4.0	54,258	8.2
5-9	34,952	5.3	33,683	5.1	68,635	10.3
10-14	37,974	5.7	36,531	5.5	74,505	11.2
15-19	35,279	5.3	34,710	5.2	69,989	10.5
20-24	24,390	3.7	24,256	3.6	48,646	7.3
25-29	17,650	2.7	17,717	2.7	35,367	5.3
30-34	15,421	2.3	16,284	2.4	31,705	4.8
35-39	15,947	2.4	17,012	2.6	32,959	5.0
40-44	18,015	2.7	17,847	2.7	35,862	5.4
45-49	18,382	2.8	17,913	2.7	36,295	5.5
50-54	17,594	2.6	17,547	2.6	35,141	5.3
55-59	16,063	2.4	16,342	2.5	32,405	4.9
60-64	14,261	2.1	14,995	2.3	29,256	4.4
65-69	12,012	1.8	13,196	2.0	25,208	3.8
70-74	10,068	1.5	11,561	1.7	21,629	3.2
75+	14,438	2.2	19,209	2.9	33,647	5.1

Total Dependency Ratio	71.7	Sex Ratio	98.4
Child Dependency Ratio	50.9	Fertility Ratio	424.5
Aged Dependency Ratio	20.8	Young Adult Ratio	38.7
Index of Aging	40.8	Median Age	27.4



DETAILED STATE TOTALS - 1975 ESTIMATES FOR SOUTH DAKOTA

AGE	MALES Number	MALES Percent	FEMALES Number	FEMALES Percent	TOTAL Number	TOTAL Percent
TOTAL	338,738	49.6	343,966	50.4	682,704	100
0-4	25,954	3.8	24,940	3.7	50,894	7.5
5-9	28,539	4.2	27,637	4.0	56,176	8.2
10-14	35,497	5.2	34,178	5.0	69,675	10.2
15-19	37,371	5.5	36,557	5.4	73,928	10.8
20-24	32,295	4.7	30,470	4.5	62,765	9.2
25-29	23,654	3.5	22,195	3.3	45,849	6.7
30-34	18,876	2.8	19,035	2.8	37,911	5.6
35-39	16,094	2.4	16,801	2.5	32,895	4.8
40-44	15,982	2.3	16,742	2.5	32,724	4.8
45-49	17,752	2.6	17,387	2.5	35,139	5.1
50-54	18,261	2.7	17,649	2.6	35,910	5.3
55-59	16,765	2.5	16,704	2.4	33,469	4.9
60-64	14,849	2.2	15,652	2.3	30,501	4.5
65-69	12,292	1.8	14,006	2.1	26,298	3.9
70-74	9,770	1.4	11,875	1.7	21,645	3.2
75+	14,787	2.2	22,138	3.2	36,925	5.4

Total Dependency Ratio	62.1	Sex Ratio	98.5
Child Dependency Ratio	42.0	Fertility Ratio	35.9
Aged Dependency Ratio	20.2	Young Adults Ratio	47.7
Index of Aging	48.0	Median Age	27.0

6. **Fertility Ratio.** Often termed the "child-woman" ratio, this measure of the fertility of a population is derived entirely from census data and is based on the number of children under five years per 1,000 women of child-bearing age (15-45 years of age).

$$\text{Fertility Ratio (FR)} = \frac{\text{Children under 5 years of Age}}{\text{Number of Women Aged 15 to 45}} \times 1000$$

7. **Young Adult Ratio.** This measure focuses attention on the younger adult segment of the population, relating the age group containing the "potential" parents and those persons in the early stages of the family building process to the remainder of the population.

$$\text{Young Adult Ratio (YAR)} = \frac{\text{Persons 15 through 34 Years}}{\text{Persons Under 15 Yrs + Persons 35 Yrs \& Over}} \times 100$$

8. **Median Age (MA).** The most useful single figure summarizing a population's age structure is its median age; a form of "average" which divides the population into two equal parts, half older and half younger. The median age of South Dakota's population in 1975 was 27 years. This figure tells us that one-half of the population was older and one-half of the population was younger than the age of 27 years.

Many things can be deduced by comparing county indexes and ratios with state indexes and ratios.

Brookings County, for example, has a low total dependency ratio, low child dependency ratio, low aged dependency ratio, and high index of aging. The sex ratio indicates a large number of males, a low fertility ratio, an unusually high young adult ratio, and a low median age. More than one-fourth of the inhabitants in Brookings County are students at South Dakota State University. The result is an atypical age and sex distribution. In 1975, two age groups (15-24) comprised 34% of Brookings County population. This created a wide variation between state average ratios and indexes and the average ratios and indexes for Brookings County. Such things as military installations (Pennington County), a veteran's home (Fall River County), a college (Brookings and Clay counties), or unusual population phenomena such as high or low birth rates will tend to skew county population indexes and ratios.

The information in this circular is based on "population estimates," not actual census counts. It must be considered a beginning point for population analysis and not a summation on which hard judgments should be made.

Ratios and Indexes By County
1975
Population Estimates

State	TDR (1)	CDR (2)	ADR (3)	I of A (4)	SR (5)	FR (6)	YAR (7)	MA (8)
Aurora	68.3	42.5	25.8	60.8	114	43.7	39.1	34.3
Beadle	59.4	37.6	21.9	58.3	91.6	32.5	45.9	34.6
Bennett	68.6	52.4	16.2	30.8	98.2	42.4	51.4	20.6
Bon Homme	65.0	35.6	29.4	82.6	105.6	37.7	44.3	32.3
Brookings	45.0	29.3	15.7	53.6	108.0	25.9	82.1	21.2
Brown	58.6	40.7	18.0	44.2	93.1	32.7	55.1	28.4
Brule	66.5	44.1	22.4	50.7	104.1	43.9	40.5	34.5
Buffalo	80.1	69.7	10.4	14.9	97.8	61.9	47.4	15.0
Butte	60.0	39.4	20.6	52.4	96.0	32.0	43.8	34.6
Campbell	57.9	37.2	20.6	55.5	106.0	39.4	39.2	31.5
Charles Mix	69.2	46.3	22.9	49.3	98.3	35.6	43.8	26.7
Clark	67.1	39.8	27.3	68.6	94.9	31.7	35.7	30.1
Clay	38.7	26.7	12.0	45.1	109.1	25.0	105.6	21.9
Codington	104.1	41.2	22.9	55.6	95.0	37.8	47.2	26.2
Corson	69.6	55.9	13.6	24.4	107.7	46.6	39.6	20.9
Custer	57.4	38.4	19.0	49.6	100.8	30.7	45.6	34.3
Davison	63.3	39.2	24.0	61.3	90.9	32.8	47.9	26.3
Day	76.4	45.5	31.0	68.1	100.8	40.7	33.5	30.9
Deuel	70.1	42.5	27.6	65.0	103.8	34.6	33.5	30.1
Dewey-Arms.	78.0	65.5	12.5	19.0	104.4	50.4	44.9	23.3
Douglas	75.0	47.8	27.3	57.1	91.8	36.0	34.9	33.2
Edmunds	79.3	52.5	26.8	51.1	100.2	41.1	34.3	34.3
Fall River	59.5	29.0	30.5	105.3	130.5	38.5	30.7	41.1
Faulk	70.3	45.5	24.8	54.4	97.1	29.6	38.0	33.7
Grant	67.5	44.0	23.5	53.4	97.0	37.1	43.4	25.6
Gregory	72.5	41.7	30.8	73.9	101.7	37.8	37.0	31.0
Haakon	68.8	50.1	18.7	37.3	111.4	52.7	44.4	29.4
Hamlin	77.0	44.3	32.8	74.0	103.8	43.3	32.5	39.4
Hand	70.4	46.0	24.4	53.0	104.2	33.2	34.4	32.5
Hanson	80.0	53.1	26.9	50.6	108.2	48.5	37.7	26.9
Harding	50.1	35.0	15.1	43.1	133.2	31.2	49.5	25.9
Hughes	56.6	42.9	13.7	31.9	91.2	35.5	48.9	27.5
Hutchinson	75.8	41.7	34.1	81.9	94.5	40.6	30.3	36.4
Hyde	64.8	40.1	24.7	61.6	98.2	36.5	35.0	30.2
Jackson	55.9	36.2	19.7	54.2	86.3	33.8	42.9	32.5
Jerauld	74.8	42.2	32.6	77.4	103.9	47.4	33.0	38.8
Jones	60.1	41.0	19.0	46.3	98.3	39.0	41.0	34.3
Kingsbury	72.9	39.1	33.8	86.2	100.1	35.1	32.2	36.9
Lake	63.8	37.1	26.7	72.0	94.3	29.6	44.1	33.8
Lawrence	57.5	38.2	19.3	50.6	103.2	33.4	52.4	28.1
Lincoln	67.4	41.3	26.1	63.3	96.2	35.9	40.4	33.1
Lyman	68.0	49.1	18.9	38.4	113.2	45.0	42.1	27.2
McCook	74.8	45.8	29.0	63.3	103.8	41.8	35.0	32.2
McPherson	66.5	38.7	27.8	71.7	96.6	28.7	33.5	38.0
Marshall	71.0	41.6	29.4	70.8	100.4	31.2	35.4	30.5
Meade	56.4	44.2	12.2	27.6	123.1	34.3	61.3	21.0
Mellette	68.2	50.9	17.3	34.0	111.8	50.6	46.6	29.1
Miner	73.4	39.9	33.4	83.7	93.3	34.2	30.9	44.9
Minnehaha	57.4	40.9	16.4	40.2	92.3	31.6	53.3	27.8
Moody	65.8	41.8	24.0	57.4	95.8	34.9	50.0	28.2
Pennington	54.4	42.5	11.9	28.0	96.5	37.9	61.0	20.0
Perkins	58.5	39.0	19.5	50.1	103.8	35.0	38.6	32.4
Potter	66.8	43.8	23.0	52.6	94.8	34.4	39.9	34.2
Roberts	80.8	52.3	28.5	54.5	101.9	44.7	35.4	25.5
Sanborn	67.4	41.3	26.1	63.2	100.6	29.2	40.1	32.8
Shannon	89.7	79.9	9.8	12.2	94.6	66.5	43.1	16.8
Spink	61.6	37.3	24.3	65.2	102.7	35.8	37.2	30.2
Stanley	60.2	45.3	14.9	32.9	102.6	34.4	45.1	27.9
Sully	61.2	42.9	18.3	42.6	116.6	36.2	51.6	26.7
Todd	91.7	80.0	11.7	14.7	101.1	72.1	43.9	16.0
Tripp	59.1	40.7	18.4	45.2	95.3	37.2	39.8	33.7
Turner	70.2	36.7	33.5	91.2	96.9	30.5	33.5	35.8
Union	64.5	40.7	23.9	59.7	100.8	37.3	40.6	33.3
Walworth	71.3	47.3	23.9	50.6	91.7	43.5	35.3	33.7
Washabaugh	77.2	67.2	10.1	15.0	105.7	61.0	50.9	24.1
Yankton	60.3	37.6	22.7	60.5	93.8	33.7	44.3	33.7
Ziebach	72.5	58.9	13.6	23.1	108.7	53.3	46.9	22.7

*These 1975 county population estimates have been prepared by the U.S. Census Bureau for the National Cancer Institute.

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