

Exercise 10. Population Pyramids

Purpose: Population pyramids are a useful way of visualizing the age and sex structure of large populations. Within most populations the number of males exceeds that of females in the early years and then this reverses in the later years as males tend to die off more quickly. The pyramids also contrast developing nations with high birth rates and death rates with developed nations with lower birth rates and longer lived populations. Furthermore, abrupt changes in numbers between adjacent categories or cohorts indicate the effects of wars, migration, and general attitudes toward having more or fewer children.

Creating a Population Pyramid

It is possible to create a population pyramid in Excel with a little adjusting of the data values.

1. Open the file *CalifCitiesAgeSex* in *Excel*. This file has been modified so that all age categories are 5 year intervals. Furthermore all male values have been changed to negative numbers. This must be done so that the bars for males increase toward the left.

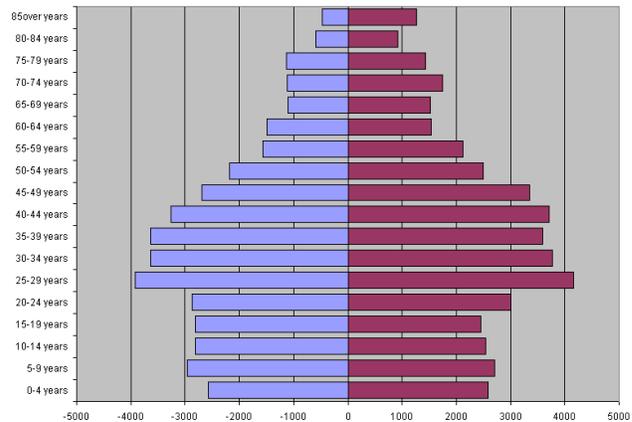
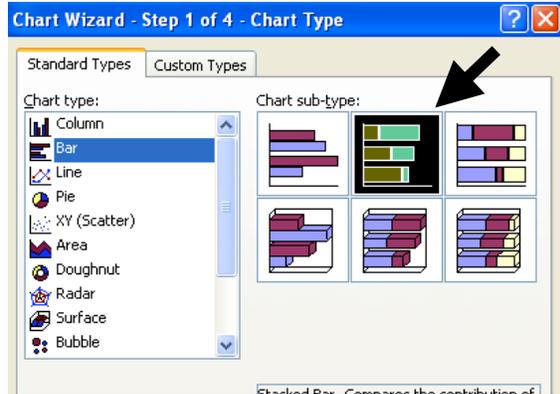
2. Copy a row of ages for a California city of your choice along with the column labels to a new file.

3. Copy all the female age groups in the new spreadsheet and paste them below the corresponding categories for males. See below.

	A	B	C	D	E	F
1	GEO_ID2	GEO_NAME	m0-4 yrs	m5-9 yrs	m10-14 yrs	m15-19 yrs
2	0600884	Alhambra city, California	-2573	-2954	-2809	-2818
3			2594	2715	2556	2470
4						

4. Highlight all cells from *C1* to *T3* and select *Insert > Chart*.

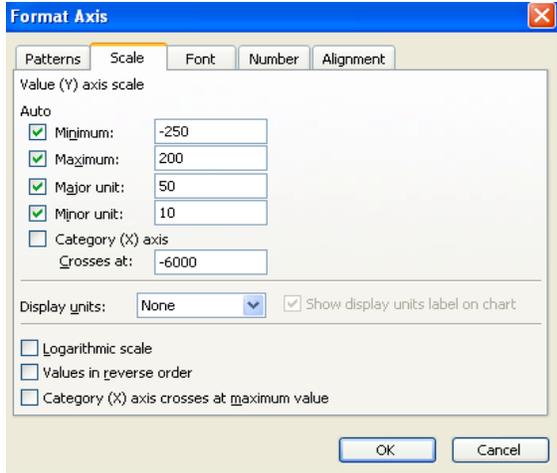
5. In the first window of the *Chart* wizard select the second type of *Bar* chart.



6. Proceed through the remaining windows to make the population pyramid.

Alhambra, shown above, has a sudden increase in the number of persons at age 25. Perhaps this is due to immigrant settlement or perhaps to people with children choosing to live somewhere else.

You can move the labels to the left margin by double-clicking on the bottom axis. When the *Format Axis* window appears, set the *Category X axis* value to cross at the lowest negative number shown. (-5000)



7. Repeat this for another city and compare the results for the two cities.

Exercises

1. Prepare a population pyramid for the entire state and compare it to your city.

2. Prepare a population pyramid for the entire U.S. and compare it to your state.

3. Download some age data for a developing country from the United Nations or the Population Reference Bureau and compare a population pyramid to that of the United States.

<http://www.prb.org/DataFind/datafinder7.htm>

<http://unstats.un.org/unsd/databases.htm>