

Eco220 Exercise Set 1.

1) The following table reports two random samples of 15 chinese city population sizes one for 1961 and the other for 1999, calculate the mean, median, range, interquartile range, variance and coefficient of variation for each year. What do your calculations indicate about the progress of Chinese city sizes during the last half of the 20th century.

Chinese city sizes by population (10,000's)	
1961	1999
129.03000	72.500000
12.980000	46.800000
456.09000	164.55000
44.980000	59.500000
11.000000	21.500000
14.160000	150.82000
89.120000	57.000000
90.010000	60.000000
59.780000	66.000000
21.260000	62.580000
13.240000	36.780000
21.000000	64.100000
18.690000	105.27000
240.80000	59.500000
28.350000	179.08000

2) The following table reports two random samples of life expectancies of 15 African nations, calculate the mean, median, range, interquartile range, variance and coefficient of variation for each year. What do your calculations indicate about life expectancy in Africa during the last decade of the 20th century.

African Life Expectancy 1990 and 2000	
1990	2000
48.217072	50.380489
57.917561	55.958538
57.917561	55.958538
52.617073	51.156097
42.617073	46.506340
46.287804	55.143902
44.080486	47.636585
57.917561	55.958538
50.577560	45.960976
44.880489	45.870731
67.183418	62.008537
54.263416	52.463413
38.487804	49.626831
50.577560	45.960976
39.489429	44.882927

3) The following table reports two random samples of 12 wage rates of unionized and non-unionized female and male workers culled from The Survey of Labour and Income Dynamics for 1994. Calculate the mean, median, range, interquartile range, variance and coefficient of variation for each category of each gender. What do your calculations indicate about the differences in male and female wage rates.

Females		Males	
non-union	union	non-union	union
22.020000	12.250000	23.290000	11.980000
26.980000	20.740000	5.960000	10.000000
9.860000	28.570000	18.870000	10.670000
12.450000	15.650000	20.400000	22.000000
15.500000	13.940000	42.670000	17.000000
24.580000	17.990000	21.600000	34.790000
32.030000	15.740000	38.380000	21.600000
9.850000	10.560000	24.000000	21.800000
10.560000	25.000000	33.600000	23.780000
12.000000	10.000000	23.550000	17.280000
25.950000	17.810000	14.400000	16.710000
10.990000	19.200000	15.200000	21.000000

4. The correlation between spouses educational levels has attracted the interest of Sociologists, Demographers and Economists alike. A complementarity view of spousal roles argues for differences in educational attainment levels. Maximizing earning power suggests a preference for mates with the highest possible educational attainment level and, since higher earning power attracts higher earning power, similarities in educational attainment levels. Random samples of married or cohabiting couples are taken from the 1960 and 1990 USA Censuses of Population. Individual schooling attainment is ranked into five educational categories, 1 - No High School, 2 - No college 3 - No More than 1 year of College, 4 - No More than 4 years of College and 5 - More than 4 years of college and the male educational attainment level is subtracted from his spouses to give an educational difference index. Calculate the mean, median, range, interquartile range, variance and coefficient of variation for each year. What do your results suggest about changes in spousal educational attainment difference over 30 years.

1960

0, 1, 0, 1, 0, -1, -3, 1, -1, -1, -1, 1, 0, 1, 0.

1990

-2, -1, 0, -2, -2, 0, 2, 0, 2, 0, 1, -2, 0, 0, 0, -1, 0, -1, -1, 0, 1, 0, 0.