Assignment 5

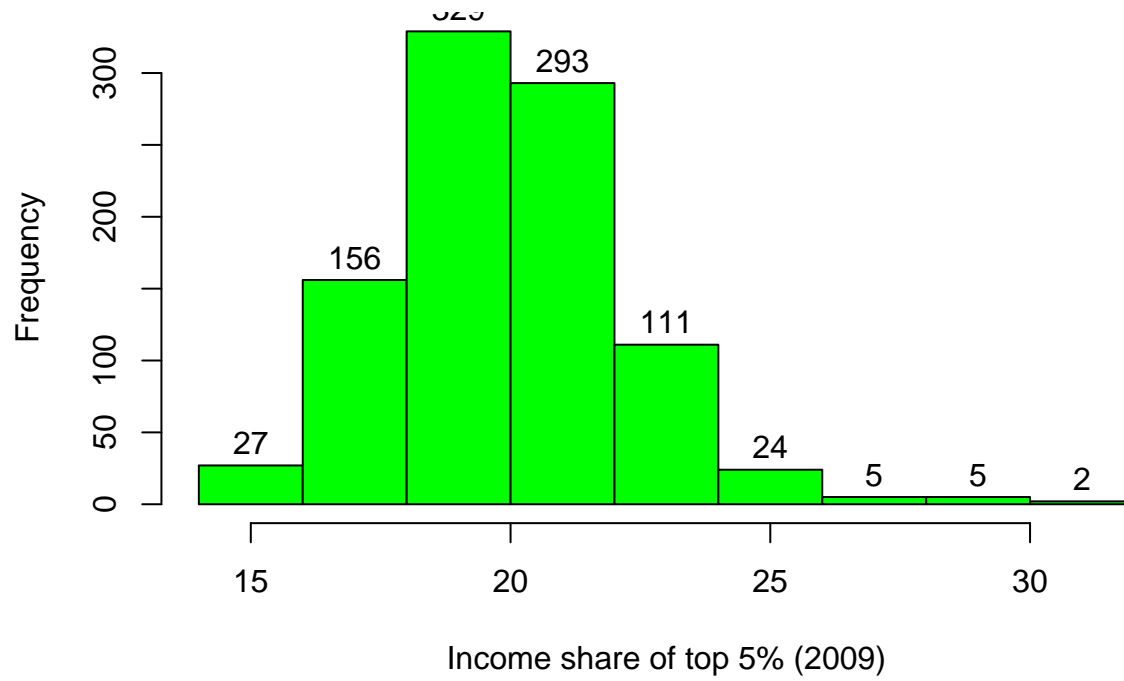## Michael Entwistle, Momiana Fazal, Yosef Aryeh Kahan

July 24, 2023

1. To calculate the effect of the variables relative to each other, we can use two pieces of information, the correlation coefficient and the standard deviation. By seeing how a change of one standard deviation affect the dependent variable for each, we can compare strength of effect. In the case of x_1, the change for one standard deviation is β_1 times σ_1 which is 12 times 0.5, or six. For x_2, the change is β_2 times σ_2 which 1.5 times 5, or 7.5. zx_3 is a standardized regressor. This means it tells us what the change in the dependent variable is for a change of σ_3 in x_3 as opposed to for a change of one unit in x_3. This means we don't need to adjust the coefficient and can simply say a change of σ_3 produces a change of 4 in the dependent variable. Using this information we can say that x_2 has the greatest effect and x_3 has the weakest effect.

2.

Table 1: Table of Descrpitive Statistics of Data on Income Inequality in Urban Areas(2009)

Statistic	Mean	Median	Min	Max	Pctl(25)	Pctl(75)	St. Dev.
Year	2,009.000	2,009	2,009	2,009	2,009	2,009	0.000
MSACode	29,745.890	29,740	10,020	49,780	19,940	39,540	11,401.450
Income share of the top 5%	19.948	19.900	14.400	31.400	18.500	21.300	2.256
Gini Index	44.017	44	35	56	42	46	3.195
Labor Force Participation Rate	62.007	62.500	31.000	83.400	58.300	66.400	6.549
Unemployment Rate	43.467	43.200	20.500	72.600	38.600	47.500	7.054
Number of households	111,470.600	28,297	3,911	6,750,902	15,128	65,746	362,874.400
Households with Income in the past 12 months below poverty level	15.812	14.330	4.170	60.270	11.500	18.170	6.952
Household with public assistance income	2.441	2.210	0.130	10.770	1.630	2.920	1.210
Total Population	300,289.300	73,459	11,100	18,912,644	39,467	170,049	1,020,203.00
Per capita income in the past 12 months (in 2009 inflation-adjusted dollars)	22,332.350	21,900.5	6,022	48,394	19,581.8	24,790.5	4,745.286
Population 16 Years and Older	78.781	78.910	65.750	87.730	77.220	80.560	2.904
Population between 25 and 64 years old	50.913	51.540	33.010	64.630	49.500	53.150	3.602
Population with a High school diploma	16.961	16.670	5.280	29.090	14.410	19.590	3.854
Population with some college degree or associate's degree	15.663	15.620	7.160	24.910	13.750	17.550	2.830
Population with a Bachelor's degree or higher	11.219	10.240	3.680	36.500	8.280	13.580	4.280
Male	49.466	49.190	45.070	65.260	48.580	49.960	1.650
Female	50.534	50.810	34.740	54.930	50.040	51.420	1.650
White alone (population)	82.328	86.650	15.500	98.710	75.360	93.310	14.207
Black or African American alone (population)	9.403	3.600	0.000	82.350	1.100	12.020	13.019
American Indian and Alaska Native alone (population)	1.278	0.360	0.000	72.690	0.210	0.780	4.239
Asian alone (population)	1.555	0.840	0.000	43.400	0.500	1.670	2.879
Hispanic or Latino (population)	10.955	4.170	0.170	99.870	1.840	10.560	17.918
Married (population)	41.555	41.650	24.610	54.670	38.940	44.630	4.387
Not Married (population)	37.226	37.030	23.000	55.280	33.930	39.820	4.759

Histogram of income share of top 5%

27   156   293   111   24   5   5   2

Frequency

15   20   25   30

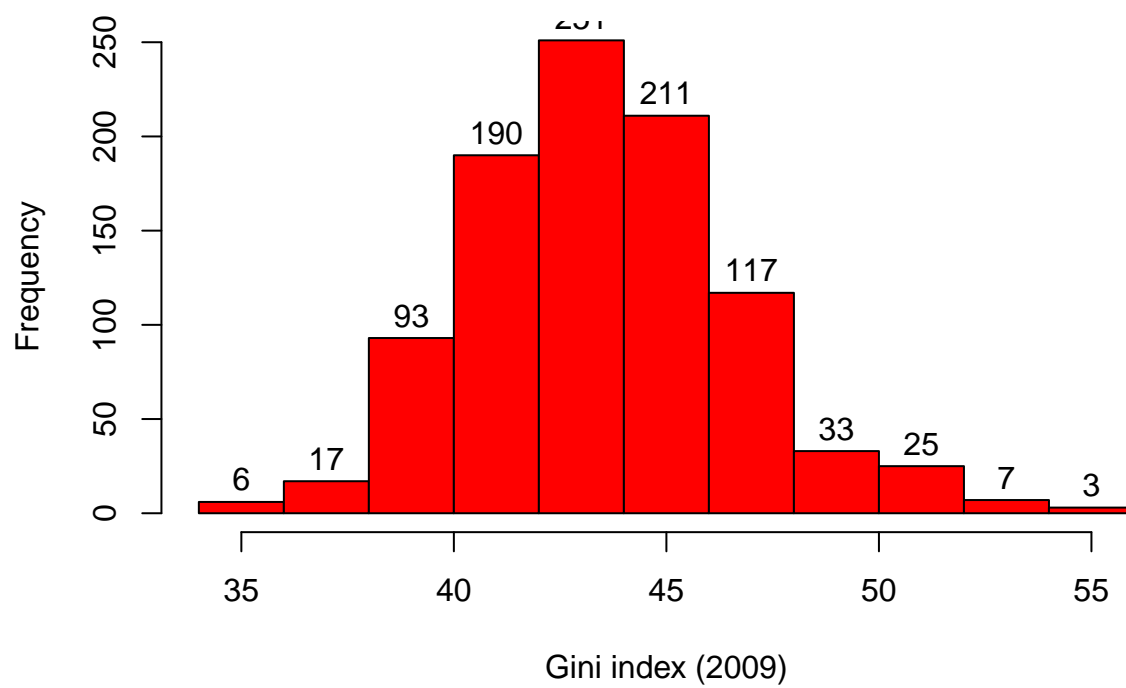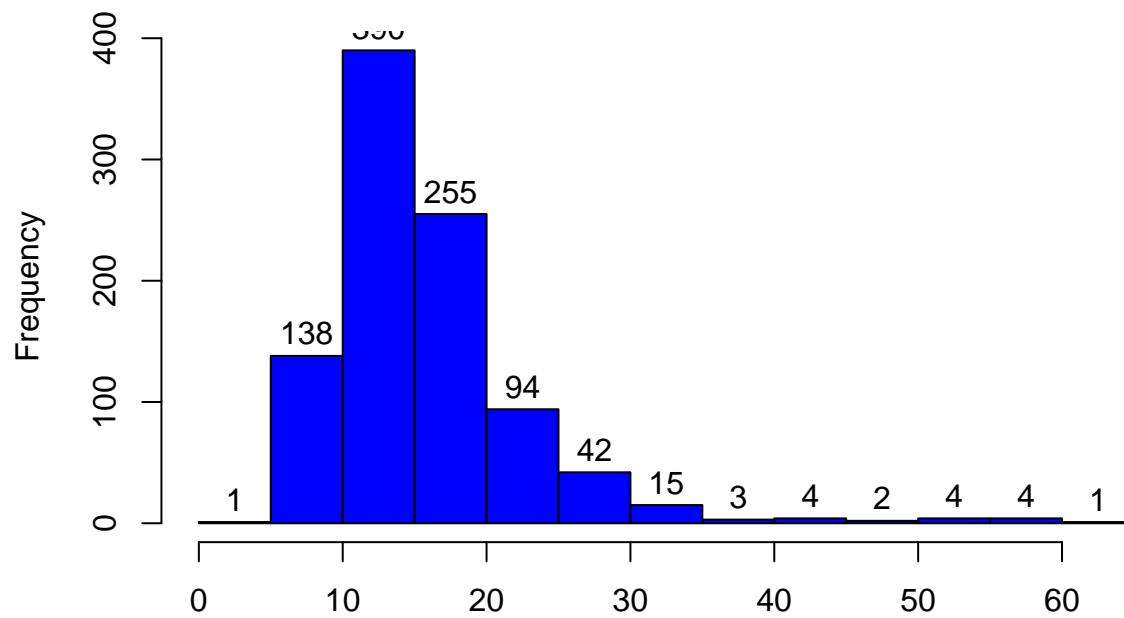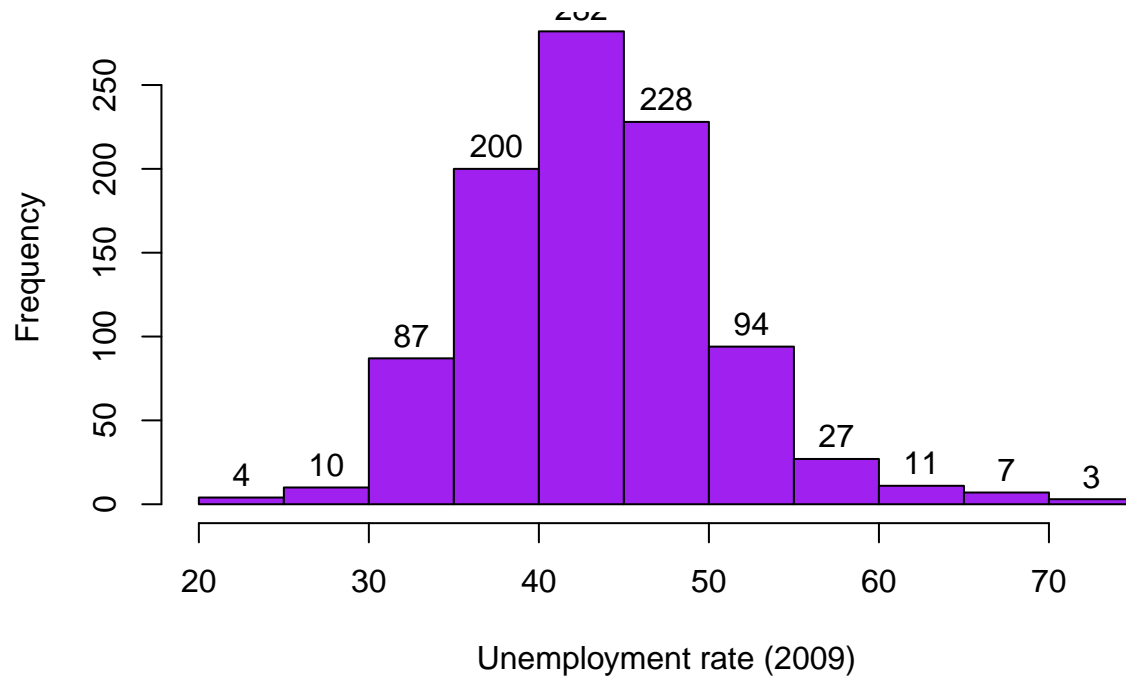Income share of top 5% (2009)

Histogram of Gini index (2009)

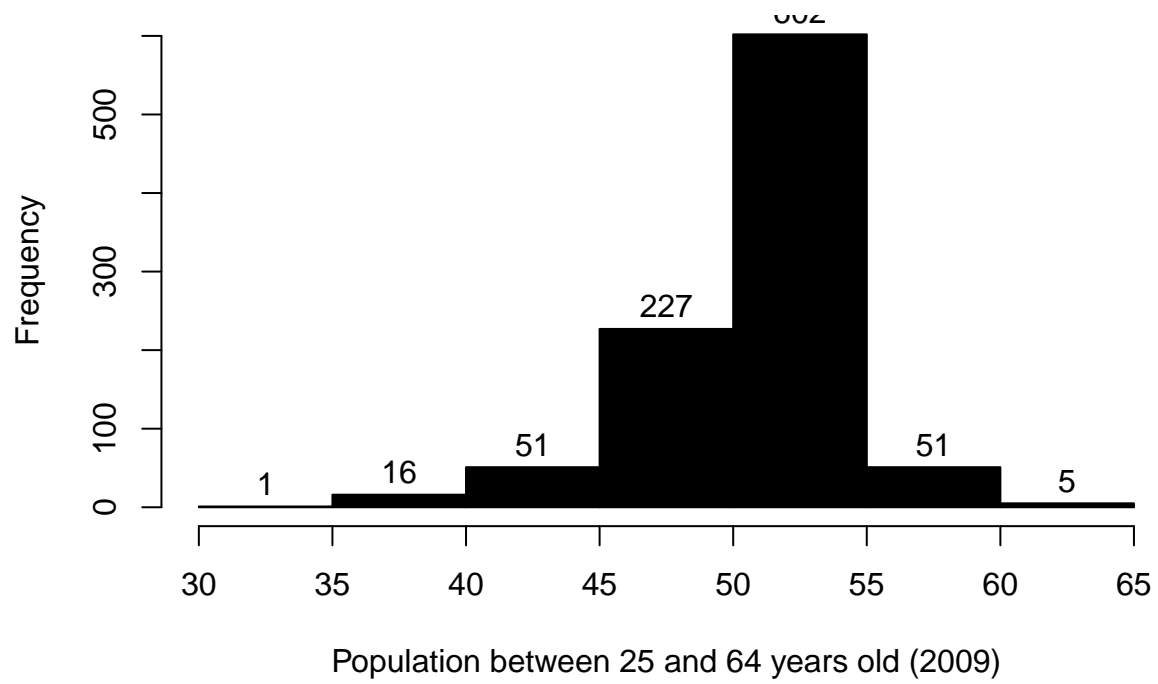**ɹram of households with Income in the past 12 months below poverty l**

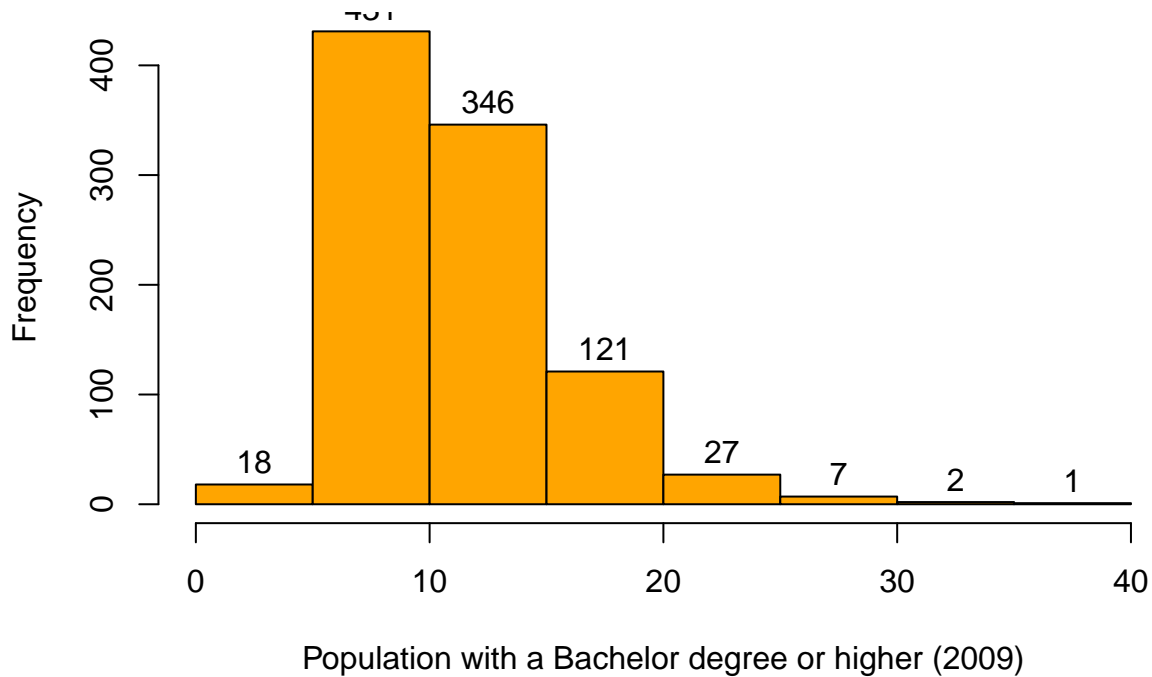Households with Income in the past 12 months below poverty level (2009)
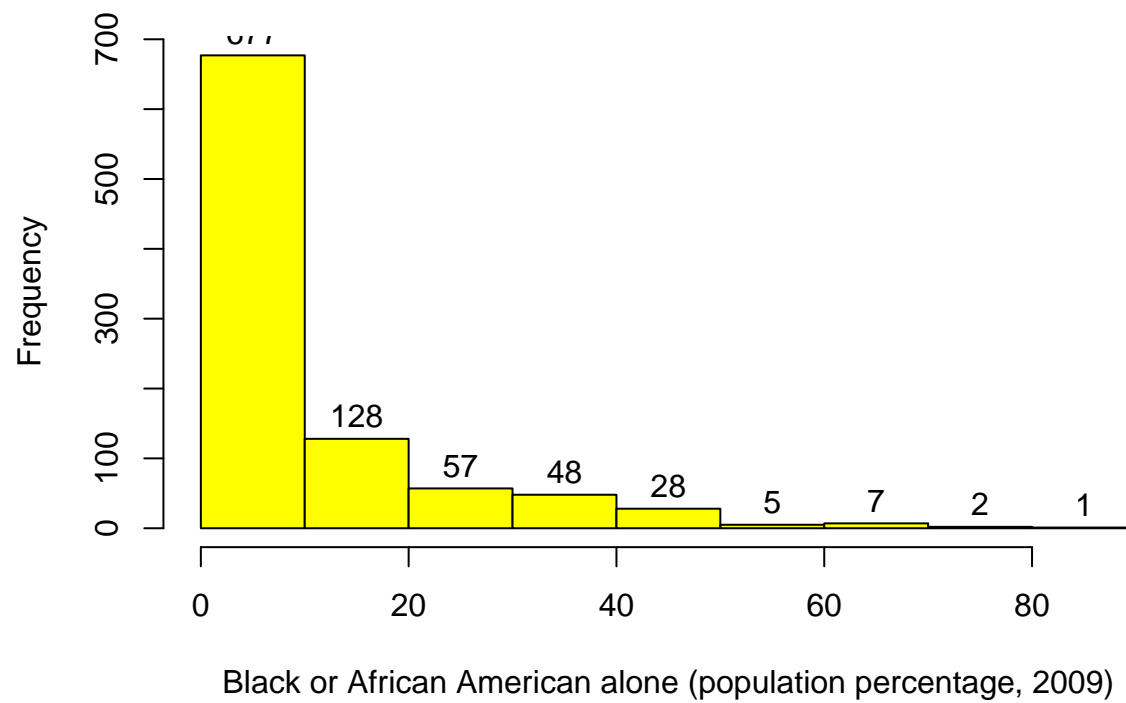
Histogram of unemployment rate (2009)

Histogram of unemployment rate (2009) with Frequency on the y-axis and Unemployment rate (2009) on the x-axis. Bar frequencies: 4, 10, 87, 200, 282, 228, 94, 27, 11, 7, 3.

Histogram of population between 25 and 64 years old (2009)

Population between 25 and 64 years old (2009)
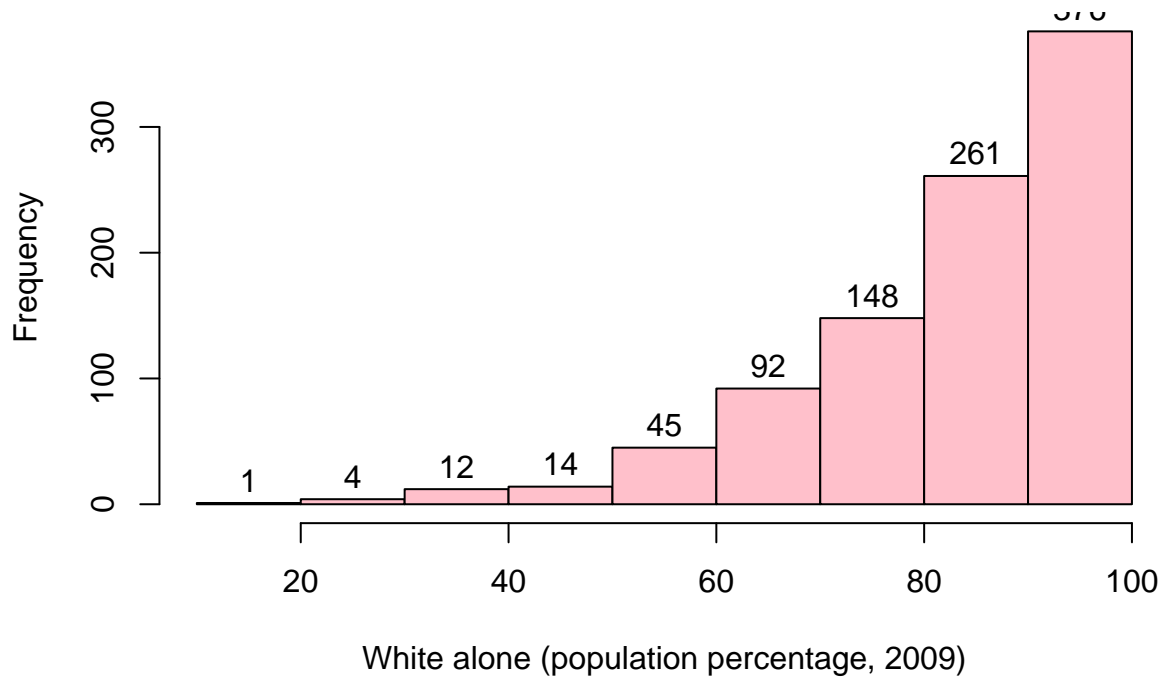
Histogram of population with a Bachelor degree or higher (2009)

Population with a Bachelor degree or higher (2009)
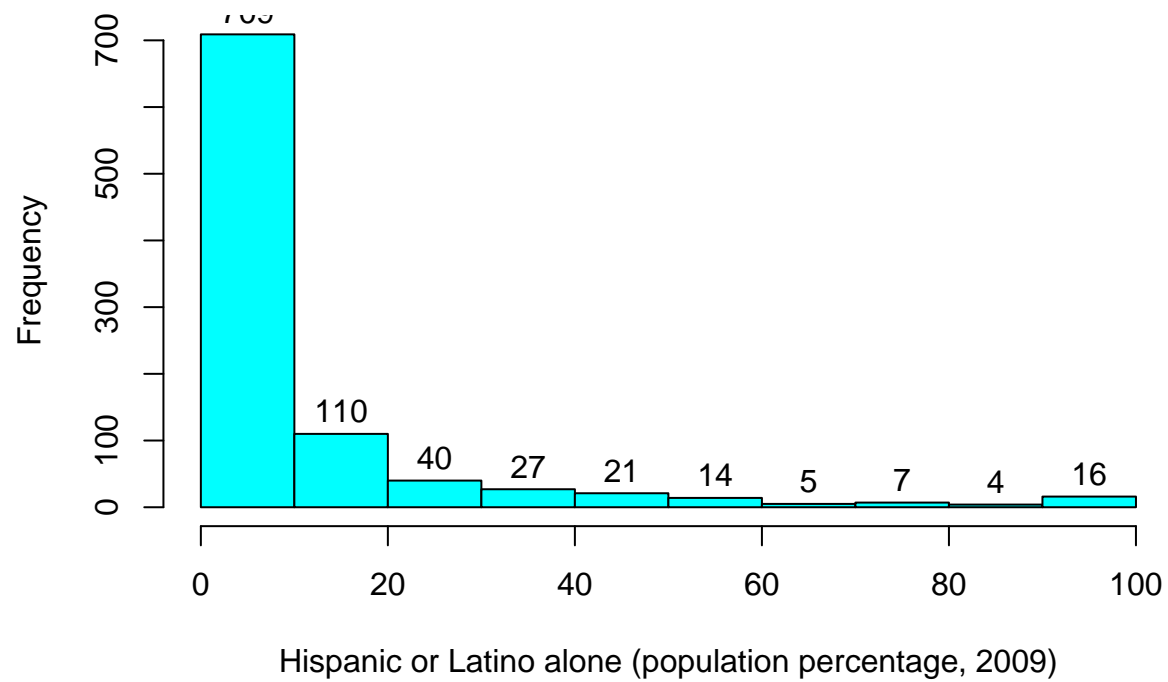
Histogram of Black or African American alone (population percentage, 2

Black or African American alone (population percentage, 2009)

Histogram of White alone (population percentage, 2009)

White alone (population percentage, 2009)

Histogram of Hispanic or Latino alone (population percentage, 2009

Hispanic or Latino alone (population percentage, 2009)

Histogram of Married (population percentage, 2009)

Married (population percentage, 2009)