

# Ethnicity and Urbanization

**Project Objective:** The goal of this project is to understand the ethnic diversity of Greenville County and relate it to the geographical space with respect to the urban centers within the county. One observation-driven hypothesis is that the white population represented in U.S. Census block groups increases as distance from the City of Greenville increases.

**Methods:** First, I had to define my parameters for distance. I decided to measure the ethnic make-up of the population of block groups within Greenville City, those 0-2km, 2-4km, 4-8km, 8-12km, 12-16km, and 16km or greater from Greenville City. Since the block groups did not match the city limits in shape, I defined the block groups to make up Greenville City as those that are either contained within the city limits or have a portion of the group boundary touching the Greenville city limits. Then, using 2000 U.S. Census data, I recorded the totals for each of the eight ethnic definitions used by the census (White, Black, Hispanic, Asian, Hawaiian Islander/Pacific Islander, American Eskimo, Multi-Race, and Other). I also recorded the proportion of each ethnicity for each block group.

I placed these values in a spreadsheet and performed a Chi-Squared Test of Independence. My null hypothesis is that there is no relationship between race and distance from Greenville City. With 42 degrees of freedom, I was able to reject my null hypothesis at the 0.01 level of confidence ( $\chi^2 = 21520.241$ , which is greater than the critical value of 63.691). This implies that there is a relationship between ethnicity and distance from Greenville City.

**Conclusion:** This study concludes that there is a significant relationship between the distance of the U.S. Census block group from Greenville City and the proportion of that block group that is white. The proportion of white citizens in the block groups increases with distance from the city. Conversely, the minority population of these same block groups must decrease as distance from the city increases.

	White	Black	Amer. Es.	Asian	HI/PI	Hispanic	Mult. Race	Other	Sum
<b>Greenville City</b>	63074	28985	163	1322	62	3666	1052	1449	99773
	63.2%	29.1%	0.2%	1.3%	0.1%	3.7%	1.1%	1.5%	100.0%
<b>1-2km</b>	48084	13585	166	1215	40	3911	933	1442	69376
	69.3%	19.6%	0.2%	1.8%	0.1%	5.6%	1.3%	2.1%	100.0%
<b>2-4km</b>	39300	9686	120	974	28	2633	666	1170	54577
	72.0%	17.7%	0.2%	1.8%	0.1%	4.8%	1.2%	2.1%	100.0%
<b>4-8km</b>	65636	8622	107	1282	25	1915	763	581	78931
	83.2%	10.9%	0.1%	1.6%	0.0%	2.4%	1.0%	0.7%	100.0%
<b>8-12km</b>	46285	5628	110	373	11	1494	606	549	55056
	84.1%	10.2%	0.2%	0.7%	0.0%	2.7%	1.1%	1.0%	100.0%
<b>12-16km</b>	16641	2336	26	59	1	366	153	117	19699
	84.5%	11.9%	0.1%	0.3%	0.0%	1.9%	0.8%	0.6%	100.0%
<b>16+ km</b>	15304	613	34	17	4	298	138	79	16487
	92.8%	3.7%	0.2%	0.1%	0.0%	1.8%	0.8%	0.5%	100.0%
<b>Overall (entire county)</b>	29432	69455	726	5242	171	14283	4311	5387	393899
	74.7%	17.6%	0.2%	1.3%	0.0%	3.6%	1.1%	1.4%	100.0%

## Ben Whitehouse

