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Population Change and Crime Change

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POPULATION CHANGE AND CRIME CHANGE

by

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I. Introduction.

The relationship existing between population change and crime rates in the central city merits study. There is limited research in this area, and the vast majority of the literature focuses on the correlation between population density and crime in the Standard Metropolitan Statistical Areas (SMSA). These few studies explore various types of crime in relation to population density, rather than the investigation of the relationship between population change and crime rates in the central city.

Population Density and Crime

A relationship is generally thought to exist between population density and violent crime. Contrary to this belief, Spector (1975) found no significant relationship between population density and the incidence of violent crime. Pressman and Carol (1971) estimated partial correlations between crime rates and a few demographic and socioeconomic variables, on the basis of data for 95 SMSA's. Their results show the correlations between population density and the rates of murder, forcible rape and assault are all negative, while the correlation between population density and robbery is positive. (Pressman and Carol, 1971, pp. 230-231).

Kvalseth (1977) presented a review of the reported studies analyzing the effect that population density has on urban crime. He concludes his presentation by stating that none of the empirical studies assessed support the belief that there is a positive relationship between crime and population density. (Kvalseth, 1977, p. 109).

These studies have some obvious limitations. First, the SMSA was used as the unit of analysis, and one cannot effectively analyze urban crime without studying the central city. It is possible that an SMSA could have a high crime rate and the central city could be densely populated, but because of sparsely populated suburban surroundings, it could show up with a low overall population density. (Pressman and Carol, 1971, p. 231). This is not always the case, but the finding that crime and population density are not correlated may be challenged if the central city is used as the unit of analysis.

Population Change and Crime

Secondly, population density has been studied, rather than population change. Why study population change rather than population density? Implicitly, population change is an important component in at least three interrelated theoretical perspectives; social disorganization, cultural transmission, and cultural conflict.

Social Disorganization

Social disorganization is the state which occurs "when influences are not uniform and harmonious." (Sutherland, 1934, p. 64). Sutherland assesses the starting point of social disorganization to be the colonization of America. Many changes occurred within the family and the neighborhood over a period of time as a result. The large family and homogeneous neighborhood were replaced by the small family and a neighborhood in which the mores were not homogeneous. (Sutherland, 1934, p. 65). The areas by which control was exerted were weakened.

The problem of control was intensified by the extension of the boundaries of frequent and effective interaction from a local community to the nation or even the whole earth in the form of radio, newspapers, etc. (Sutherland, 1934, p. 65). Interaction confined to the local community was easily controlled, but the extension which made behavior unobservable led to the problem of lack of control.

The concentration of crime may be explained by social disorganization, as crime and delinquency are concentrated in the city, where business and industrial centers play a crucial role to the city, as well as to the breeding of crime. Social disorganization in the neighborhood is an explanation for the criminality that occurs in larger cities. Sutherland explains that lawlessness has become a tradition in the city. This results from the "physical deterioration, congested population, decreasing population, economic dependency, rented homes, foreign and negro population, adult criminality, and the few institutions supported by the local community" that characterize the neighborhood. (Sutherland, 1934, p. 127).

Cultural Transmission

The cultural transmission perspective focuses on the development of criminal traditions in specific settings. (Carey, 1978, p. 61). Shaw and McKay (1969) present evidence of the passing on of criminal traditions in Chicago neighborhoods. Low rent areas, adjacent to the central business district, were found to have a continuous fluctuation in ethnic and racial composition, but no change occurred in male delinquency rates.

Shaw and McKay present further evidence to support the cultural transmission perspective. They report life history accounts of former delinquents who lived in high delinquency areas who explain how criminal traditions were passed on from the older delinquents to the younger residents.

The findings in the Chicago neighborhoods are supportive of the cultural transmission perspective. One author, Kapsis, explains that cultural transmission occurs as a result of "the general breakdown of effective conventional social organizations in racially or ethnically shifting neighborhoods as a consequence of the rapid cultural changes and population turnover attendant upon rapid ethnic or racial succession." causing the emergence of criminal values and traditions. (Kapsis, 1978, p. 461).

Kapsis studied 721 black adolescent males from low-income neighborhoods, which had undergone varying rates of black population change, to assess the cultural transmission perspective. He found the incidence of delinquency to be positively correlated with the rate of racial change of neighborhoods.

Cultural Conflict

Culture conflict, like social disorganization, has been used to refer "to social conditions characterized by a lack of consistency and harmony in the influences which direct the individual." (Sutherland and Cressey, 1955, p. 90). Sellin (1938) states that culture conflict is "regarded as the by-product of cultural change, and sometimes is the result of migration of conduct norms from one area to another."

The disharmonious norms can develop within a culture or through the introduction of norms of another culture. This is commonly viewed as a problem inherent in early immigration. When immigration occurs, those bringing norms of another culture are disadvantaged. The new immigrants have many cultural limitations and may resort to crime to attain their goals. (Carey, 1978, p. 130).

II. Methodology.

In order to assess the relationship between population change and crime change, census information and Uniform Crime Report data were utilized. Census information and crime data were obtained for 98 central cities in the largest 100 SMSA's. This information was for the years 1970 and 1980, allowing for a comprehensive evaluation of impact of population change on crime change.

The assessment of population change and crime change was achieved by creating a new variable for population change and crime change. Population change was created by dividing the 1980 population into the 1970 population. This eliminated the problem of negative numbers. An example of the computation of population change is New York City. Population change for New York City was computed by dividing the 1980 population (7,071,031) into the 1970 population (7,896,000). Population change for New York City was .896. The range for the variable population change was .579 (Honolulu) to 1.519 (Dallas). Those cities with a population change of .579 to .999 experienced a decrease in population. Those cities showing a 1.0 for population change experienced no change in their population. Those cities

with a population change larger than 1.0 experienced an increase in population.

A new variable was created to assess crime change. Crime change was created by dividing the 1980 crime rate into the 1970 crime rate. For example, crime change for New York City was computed by dividing the 1980 crime rate (710,151) into the 1970 crime rate (517,716). Crime change for New York City was 1.372. The range for crime change was .998 (Detroit) to 9.560 (Knoxville). Detroit was the only city that experienced a decrease in crime from 1970 to 1980. The remaining 97 cities all experienced an increase in crime from 1970 to 1980.

Table 1 presents data for the 98 cities studied. The percentage of change in population and crime are shown, as well as the actual 1970 and 1980 population and crime rate.

III. Findings.

Initially, it was hypothesized that crime rates would be related to population change regardless of whether or not that change was a net increase or decrease. That is, an increase in population or decrease in population will result in an increase in crime rates. There are a number of different theoretical foundations for this hypothesis, one of which is derived from the social disorganization perspective. Social disorganization is a state that results "when influences are not uniform and harmonious." (Sutherland, 1934, p. 64.) Population change is one factor that can contribute to social disorganization.

The traditional social disorganization perspective tended to recognize only the effect of population growth on social disorganization and therefore crime. The development of this perspective was bound by the historical period in which

urban growth was at its peak. Population decrease in the cities was not a reality, and therefore the theorist responsible for the development of the social disorganization perspective never anticipated the decline of American cities and subsequent decrease in population. Thus, they did not consider population decrease as a contributing factor to social disorganization.

The major hypothesis of the present study is a departure from this tradition in that both an increase or decrease in population are viewed as contributing to social disorganization. Like population increase, population decrease can result in a state where "influences are not uniform and harmonious."

Table 2 presents the percentage of population and crime change for the 98 cities studied. The information is presented by population rank. That is, the cities are ranked from the highest population increase to lowest population decrease. Population change ranged from an increase of 51.9 percent (Dallas) to a decrease of -42.1 percent (Honolulu). Each city is listed in appropriate rank order with its percentage of crime change from 1970 to 1980.

Forty cities experienced an increase in population, and 58 cities experienced a decrease in population. When a rank order correlation was computed for population change and crime change, a .44 correlation was found. A correlation does exist for crime change and population change. When the cases were broken into an increase or decrease in population, the finding differs. A correlation is found between

an increase in population and crime change (.37). Although the relationship does not exist between population decrease and crime change (.09).

While the overall rank order correlation (.44) is significant the relationship between population change and changes in the crime rate is far from perfect. Some examples using the data in Table 1 illustrate this point. For example, Chattanooga and Davenport experienced a very small increase in population, .9 percent and .5 percent respectively, and each city experienced a fairly large increase in crime rate, 212.1 percent and 216.6 percent respectively. On the other hand Detroit experienced a population decrease of -20.5 percent and also experienced a -.2 percent decrease in crime rate.

Conclusion

What can be concluded about the relationship between population change and change in the crime rate? First, the findings do not support the original hypothesis of this study, that an increase or decrease in population will result in an increase in crime rates. Instead, the relationship that was found tends to be in the direction that is consistent with social disorganization and related perspectives. That is, an increase in population tends to be associated with an increase in crime. Second, although the rank order correlation of .44 between population change and crime change can be considered moderate in strength, much of the covariation remains unexplained. Thus while the relationship between population change and crime deserves further consideration, additional variables need to be included in the analysis.

What additional variables should be included in an analysis of population change and crime change to more validly assess the social disorganization, cultural transmission, and cultural conflict perspectives? One variable to consider is the changing ethnic composition of the city. Changes in ethnic composition may serve as an indicator of changing norms and values. This in turn may serve as the basis of culture conflict and have a bearing on crime rates. Population change and changes in ethnic composition should be considered in light of other variables. For example, unemployment or economic conditions generally may be related to changes in populations and this can impact on crime rates. Clearly, ethnic composition and economic conditions are only two of the additional variables to consider. Still other factors will need to be considered when unraveling the complex relationship between population change and crime rates.

TABLE 1

CHANGE IN POPULATION AND CRIME RATE

City	1970 Population[a/]	1980 Population[b/]	% Change 1970-1980	1970 UCR[c/]	1980 UCR[d/]	% Change 1970-1980
New York, NY	7,896,000	7,071,030	- 10.4	517,716	710,151	37.2
Los Angeles, CA	3,173,000	3,328,097	4.9	175,719	293,837	67.2
Chicago, IL	3,369,000	3,005,072	- 10.8	128,017	196,605	53.6
Philadelphia, PA	1,950,000	1,688,210	- 13.4	45,734	101,144	121.2
Detroit, MI	1,514,000	1,203,339	- 20.5	127,630	126,420	- .2
San Francisco, CA	1,077,000	1,018,262	- 5.5	57,136	70,424	23.3
Washington, D.C.	757,000	637,651	- 15.8	59,311	63,668	7.3
Dallas, TX	849,000	1,289,219	51.9	50,391	106,010	110.4
Houston, TX	1,282,000	1,594,086	24.3	59,883	143,926	140.3
Boston, MA	641,000	562,994	- 12.2	38,294	75,755	97.8
St. Louis, MO	622,000	453,085	- 27.2	45,915	64,631	40.8
Pittsburgh, PA	520,000	423,938	- 18.5	28,396	30,399	7.1
Baltimore, MD	906,000	786,775	- 13.2	62,150	76,704	23.4
Minneapolis, MN	744,000	641,181	- 13.8	23,420	35,820	52.9
Atlanta, GA	495,000	425,022	- 14.1	27,378	59,394	116.9
Newark, NJ	382,000	329,248	- 13.8	31,781	42,593	34.0
Anaheim, CA	443,000	548,911	23.9	7,225	17,131	137.1
Cleveland, OH	751,000	573,822	- 23.6	44,564	57,602	29.3
San Diego, CA	697,000	875,504	25.6	23,232	70,505	203.5
Miami, FL	335,000	346,931	3.6	23,903	52,540	119.8
Denver, CO	582,000	568,081	- 2.4	37,835	58,782	55.4
Seattle, WA	584,000	548,259	- 6.2	31,176	53,294	70.9
Tampa, FL	494,000	508,416	2.9	13,986	38,903	178.2
Riverside, CA	313,000	377,753	20.7	8,103	15,626	92.8
Phoenix, AZ	589,000	764,911	29.9	29,483	88,523	200.3
Cincinnati, OH	454,000	385,457	- 15.1	17,395	32,985	89.6
Milwaukee, WI	717,000	636,212	- 11.3	20,188	41,446	105.3
Kansas City, MO	507,000	448,159	- 11.6	28,995	49,274	69.9
San Jose, CA	461,000	636,550	38.1	14,492	51,831	257.7
Buffalo, NY	463,000	357,870	- 22.7	18,284	29,085	59.1
Portland, OR	382,000	366,383	- 4.1	23,275	40,833	75.4
New Orleans, LA	593,000	557,482	- 6.0	35,371	53,575	51.5
Indianapolis, IN	794,000	700,807	- 11.7	25,277	37,220	47.2
Columbus, OH	540,000	564,871	4.6	25,784	55,362	114.7
San Antonio, TX	709,000	785,410	10.8	27,221	57,873	112.6
Ft. Lauderdale, FL	246,000	270,444	9.9	8,533	20,955	145.6
Sacramento, CA	257,000	275,741	7.3	11,708	34,699	196.4
Rochester, NY	295,000	241,741	- 18.1	12,442	28,989	133.0
Salt Lake City, UT	260,000	227,440	- 12.5	10,361	19,086	84.2
Providence, RI	357,000	315,131	- 11.7	11,091	14,317	29.1
Memphis, TN	657,000	646,356	- 1.6	21,614	50,921	135.6
Louisville, KY	362,000	298,451	- 17.6	19,420	20,072	3.4
Nashville, TN	448,000	455,651	1.7	17,703	34,886	97.1
Birmingham, AL	311,000	284,413	- 8.5	13,362	35,406	165.0
Oklahoma City, OK	368,000	403,213	9.6	11,386	36,191	217.9
Dayton, OH	245,000	203,598	- 16.9	16,097	26,593	65.2
Greensboro, NC	345,000	351,634	1.9	5,623	12,462	121.6
Norfolk, VA	591,000	633,755	7.2	13,402	20,183	50.6
Albany, NY	257,000	226,337	- 11.9	3,358	4,656	38.7
Toledo, OH	383,000	354,635	- 7.4	13,407	34,047	153.9
Honolulu, HI	631,000	365,048	- 42.1	16,056	57,718	259.5
Jacksonville, FL	529,000	540,898	2.2	25,223	42,890	70.0
Hartford, CT	158,000	136,392	- 13.7	9,305	23,648	154.1
Orlando, FL	100,000	128,394	28.4	5,466	17,532	220.7

TABLE 1 (Continued)

CHANGE IN POPULATION AND CRIME RATE

City	1970 Population[a/]	1980 Population[b/]	% Change 1970-1980	1970 UCR[c/]	1980 UCR[d/]	% Change 1970-1980
Tulsa, OK	330,000	360,919	9.4	12,667	32,017	152.8
Akron, OH	275,000	237,177	-13.8	13,252	18,448	39.2
Gary, IN	343,000	285,453	-16.8	11,472	12,446	8.5
Syracuse, NY	197,000	170,105	-13.7	6,480	13,828	113.4
Charlotte, NC	322,000	361,780	12.4	12,982	26,208	101.9
Allentown, PA	212,000	200,204	-5.6	2,667	5,923	122.1
Richmond, VA	249,000	219,214	-12.0	15,007	21,493	43.2
Grand Rapids, MI	198,000	181,843	-8.2	7,422	16,185	118.1
New Brunswick, NJ	113,000	110,362	-2.3	3,088	4,542	47.1
West Palm Beach, FL	87,000	112,035	28.8	2,679	11,849	342.3
Omaha, NE	358,000	311,681	-12.9	11,962	24,430	104.2
Greenville, SC	106,000	102,210	-3.6	3,937	6,517	65.5
Jersey City, NJ	260,000	223,532	-14.0	7,690	19,245	150.3
Austin, TX	259,000	345,496	33.4	6,794	30,066	342.5
Youngstown, OH	204,000	172,065	-15.7	5,900	9,679	64.1
Tucson, AZ	267,000	330,537	23.8	8,529	35,947	321.5
Raleigh, NC	218,000	250,602	15.0	4,390	10,681	143.3
Springfield, MA	281,000	252,109	-10.3	7,834	14,410	83.9
Oxnard, CA	189,000	260,169	37.7	3,352	8,771	161.7
Wilmington, DE	80,000	70,195	-12.3	5,990	8,458	41.2
Flint, MI	193,000	159,611	-17.3	10,513	21,201	101.7
Fresno, CA	167,000	218,202	30.7	8,854	24,806	180.2
Long Branch, NJ	48,000	46,834	-2.4	1,516	2,684	77.0
Baton Rouge, LA	271,000	219,486	-19.0	8,377	26,224	213.0
Tacoma, WA	154,000	158,501	2.9	6,096	16,516	170.9
El Paso, TX	322,000	425,259	32.1	9,333	27,065	190.0
Knoxville, TN	175,000	183,139	4.7	5,659	12,423	119.5
Lansing, MI	179,000	178,723	-.2	7,968	9,515	19.4
Las Vegas, NV	126,000	164,674	30.7	4,331	41,405	856.0
Albuquerque, NM	244,000	331,767	36.0	13,363	29,326	119.5
Paterson, NJ	282,000	264,821	-6.1	6,907	14,260	106.5
Harrisburg, PA	68,000	53,264	-21.7	2,778	6,820	145.5
Mobile, AL	190,000	200,452	5.5	9,187	21,088	129.5
Johnson City, TN	97,000	95,766	-1.3	750	2,563	241.7
Charleston, SC	120,000	135,140	12.6	3,422	7,306	113.5
Chattanooga, TN	168,000	169,565	.9	5,132	16,019	212.1
New Haven, CT	191,000	179,293	-6.1	8,473	17,834	110.5
Wichita, KS	277,000	279,272	.8	11,097	24,562	121.3
Columbia, SC	114,000	99,296	-12.9	5,209	14,036	169.5
Canton, OH	110,000	94,730	-13.9	3,418	6,631	94.0
Bakersfield, CA	70,000	105,611	50.9	3,547	14,386	305.6
Bridgeport, CT	157,000	142,546	-9.2	9,992	15,627	56.4
Little Rock, AR	193,000	222,880	15.5	7,507	17,851	137.8
Davenport, IA	195,000	196,009	.5	2,725	8,626	216.6

[a/] Source: *State and Metropolitan Area Databook* 1979.

[b/] Source: *American Demographics*, December, 1981.

[c/] Source: *Crime in the United States*, 1970.

[d/] Source: *Crime in the United States*, 1980.

TABLE 2

POPULATION RANK AND CRIME CHANGE

City	% Population Change 1970-1980	% Crime Change 1970-1980
Dallas, TX	51.9	110.4
Bakersfield, CA	50.9	305.6
San Jose, CA	38.1	257.7
Oxnard, CA	37.7	161.7
Alburquerque, NM	36.0	119.5
Austin, TX	33.4	342.5
El Paso, TX	32.1	190.0
Fresno, CA	30.7	180.2
Las Vegas, NV	30.7	856.0
Phoenix, AZ	29.9	200.3
West Palm Beach, FL	28.8	342.3
Orlando, FL	28.4	220.7
San Diego, CA	25.6	203.5
Houston, TX	24.3	140.3
Anaheim, CA	23.9	137.1
Tucson, AZ	23.8	321.5
Riverside, CA	20.7	92.8
Little Rock, AR	15.5	137.8
Raleigh, NC	15.0	143.3
Charleston, SC	12.6	113.5
Charlotte, NC	12.4	101.9
San Antonio, TX	10.8	112.6
Ft. Lauderdale, FL	9.9	145.6
Oklahoma City, OK	9.6	217.9
Tulsa, OK	9.4	152.8
Sacramento, CA	7.3	196.4
Norfolk, VA	7.2	50.6
Mobile, AL	5.5	129.5
Los Angeles, CA	4.9	67.2
Knoxville, TN	4.7	119.5
Columbus, OH	4.6	114.7
Miami, FL	3.6	119.8
Tampa, FL	2.9	178.2
Tacoma, WA	2.9	170.9
Jacksonville, FL	2.2	70.0
Greensboro, NC	1.9	121.6
Nashville, TN	1.7	97.1
Chattanooga, TN	.9	212.1
Wichita, KS	.8	121.3
Davenport, IA	.5	216.6
Lansing, MI	-.2	19.4
Johnson City, TN	-1.3	241.7
Memphis, TN	-1.6	135.6
New Brunswick, NJ	-2.3	47.1
Denver, CO	-2.4	55.1
Long Branch, NJ	-2.4	77.0
Greenville, SC	-3.6	65.5
Portland, OR	-4.1	75.4
San Francisco, CA	-5.5	23.3
Allentown, PA	-5.6	122.1
New Orleans, LA	-6.0	51.5
Paterson, NJ	-6.1	106.5
New Haven, CT	-6.1	110.5

TABLE 2 (Continued)

POPULATION RANK AND CRIME CHANGE

City	% Population Change 1970-1980	% Crime Change 1970-1980
Seattle, WA	- 6.2	70.9
Toledo, OH	- 7.4	153.9
Grand Rapids, MI	- 8.2	118.1
Birmingham, AL	- 8.5	165.0
Bridgeport, CT	- 9.2	56.4
Springfield, MA	- 10.3	83.9
New York, NY	- 10.4	37.2
Chicago, IL	- 10.8	53.6
Milwaukee, WI	- 11.3	105.3
Kansas City, MO	- 11.6	69.9
Indianapolis, IN	- 11.7	47.2
Providence, RI	- 11.7	29.1
Albany, NY	- 11.9	38.7
Richmond, VA	- 12.0	43.2
Boston, MA	- 12.2	97.8
Wilmington, DE	- 12.3	41.2
Salt Lake City, UT	- 12.5	84.2
Omaha, NE	- 12.9	104.2
Columbia, SC	- 12.9	169.5
Baltimore, MD	- 13.2	23.4
Philadelphia, PA	- 13.4	121.2
Syracuse, NY	- 13.7	113.4
Hartford, CT	- 13.7	154.1
Minneapolis, MN	- 13.8	52.9
Newark, NJ	- 13.8	34.0
Akron, OH	- 13.8	39.2
Canton, OH	- 13.9	94.0
Jersey City, NJ	- 14.0	150.3
Atlanta, GA	- 14.1	116.9
Cincinnati, OH	- 15.1	89.6
Youngstown, OH	- 15.7	64.1
Washington, D.C.	- 15.8	7.3
Gary, IN	- 16.8	8.5
Dayton, OH	- 16.9	65.2
Flint, MI	- 17.3	101.7
Louisville, KY	- 17.6	3.4
Rochester, NY	- 18.1	133.0
Pittsburgh, PA	- 18.5	7.1
Baton Rouge, LA	- 19.0	213.0
Detroit, MI	- 20.5	- .2
Harrisburg, PA	- 21.7	145.5
Buffalo, NY	- 22.7	59.1
Cleveland, OH	- 23.6	29.3
St. Louis, MO	- 27.2	40.8
Honolulu, HI	- 42.1	259.5

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