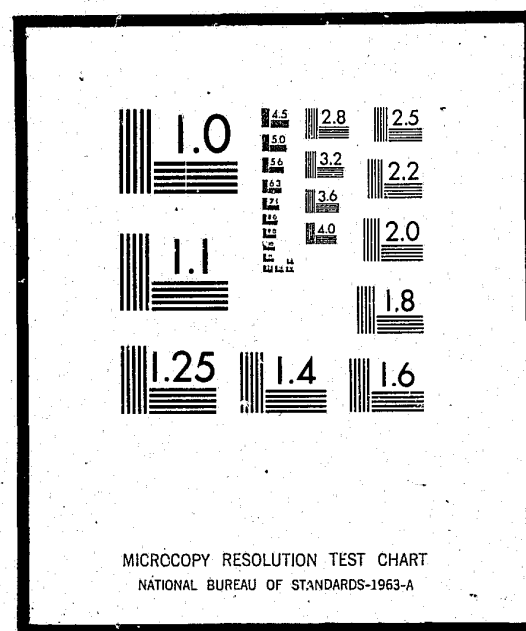# NCJRS

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Arizona State Department of Corrections

Neighborhood Factors

Affecting

Delinquency Rates

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NEIGHBORHOOD FACTORS AFFECTING DELINQUENCY RATES

To consider all factors which have a suggested relationship with juvenile delinquency is obviously beyond the scope of a paper of this length. The research reported here is, therefore, limited to an examination of relationships that exist between the demographic characteristics of selected neighborhoods and the juveniles living there who come in contact with the police.

The idea that the particular ecology of a neighborhood may foster a high delinquency rate is not a new one. Clifford Shaw, et al, presented a theory of Delinquency Areas[1] in a 1929 study in Chicago and a large number of other studies since that time have cited environmental factors as important correlates of delinquency. However, while Shaw's Chicago work was based on statistics at the police precinct level, which allowed for some general neighborhood comparisons, the study was handicapped in that the precincts were large, encompassing a variety of neighborhoods and provided an index of delinquency based on where juveniles were apprehended rather than where they lived.

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[1] Shaw, Clifford R. and Henry D. McKay, Juvenile Delinquency and Urban Areas. University of Chicago; Chicago, Ill.; 1942.

In general, police data on delinquency still allow only for comparisons between one jurisdiction and another. Policy differences in the way juveniles are handled and variations in the way such incidents are reported, open even those comparisons to a certain amount of suspicion. Further, such comparisons almost exclusively are made without the ability to examine the residential neighborhoods of the juveniles involved. Most of the studies of any scale since Shaw's time have, therefore, suffered from the same methodological weaknesses and the relationship between delinquency and socioeconomic conditions has only been suggested, not demonstrated.

It is only with more recent advances in computer technology and a growing interest in getting to some of the root causes that it has become possible to make detailed comparisons of delinquency within specific neighborhoods.

METHODOLOGY: The Phoenix (Arizona) Police Department uses an x/y coordinate system to divide the city into grids one-quarter square mile in area. Whenever a police officer has any official contact with a juvenile, he fills out a report which includes (among other items) all the data elements required for preparing the Uniform Crime Reports, the grid where the contact or alleged offense occurred and the grid where the child resides. These data (on 17,400 contacts in 1970) are coded onto computer punch cards which the Phoenix Police Department makes available for the research programs of the Arizona State Department of Corrections. These data are then used by the Department to develop a system of computer maps to pinpoint target areas for special delinquency prevention programs. In a 1971 study published by the Maricopa County Community Council[2] Richard Galbraith compared data from these

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[2] Galbraith, Richard, Study on Needs and Services for Boys in Selected Areas of Phoenix, Community Council Serving Maricopa County, Phoenix, AZ, 1971.

computer maps with demographic information for neighborhoods surrounding Phoenix Boys Club facilities. This exploratory study demonstrated the utility of relating delinquency rates and Census Bureau data within specific neighborhoods. The present research expands on the innovative Boys Club project by extending the scope of the neighborhood variables and by applying a more comprehensive methodology.

Sample Neighborhoods.   A study of delinquency in neighborhoods poses some definitional problems with reference to both "delinquency" and "neighborhood." In this study, neighborhood was operationally defined so as to be consistent with the boundaries of the available data units, police grids and census tracts. The layout of both the census tracts and the police grid system along the major arterial streets however, demonstrate this definition to be more than a methodological convenience as the Phoenix Planning Commission's concept of a residential neighborhood also shows.[3]

> Characteristically, in Phoenix a neighborhood is an area of approximately one square mile. The size of a neighborhood usually is from 4-7,000 people. Within the neighborhood, an elementary school, park, and churches serve as the focal point for the area. Access to the neighborhood is provided by major streets, while an internal street system discourages through traffic and allows safe pedestrian movement.

Specifically, the conditions that were pre-set for selection of sample neighborhoods for this study, were: 1) be one square mile in area, 2) be bounded by major arterial streets which coincide with the boundaries of the police grids, 3) be a single (1970) census tract within the city limits of Phoenix, 4) not be bisected by a freeway, 5) not be within a mile of the nearest boundary of any other selected neighborhood, and 6) have a population of at least 2,000.

[2]Phoenix Comprehensive Plan, 1990, Phoenix Planning Commission, 1972.

CITY OF PHOENIX, ARIZONA
1970

Sample Neighborhoods
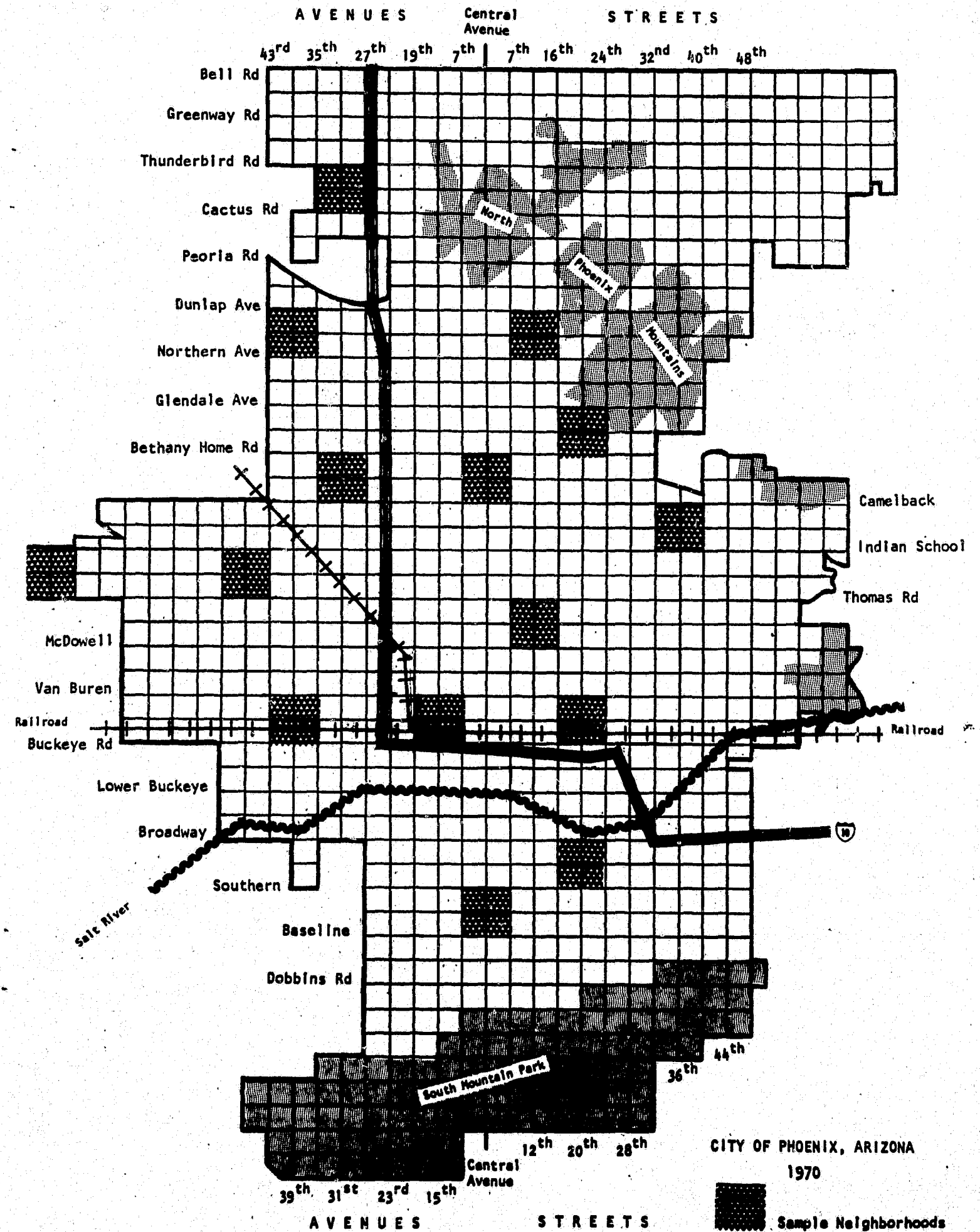
These criteria rather than a pure random selection were used to insure a
set of sample neighborhoods which were distinct geographic units with suf-
ficient population to minimize the effect of random fluctuations on the
various rates and percentages that were computed for this study. Using
these criteria, fifteen neighborhoods were selected to give the widest possi-
ble cross-section of Phoenix with respect to: geographic location, the
number of police reports on juveniles in 1970, and median family income.
Figure 1 displays these neighborhoods with respect to the city limits and
other natural boundaries such as freeways, rivers, etc. and Table 1 sets out
the general demographic description of the sample areas.

Table 1
Profile of Sample Neighborhoods

Tract	Delinquency Rate	Population	Median Income	% Ethnic Minorities	% Multiple Unit Housing
A	30.22	5,815	4,305	70	50
B	24.94	2,260	7,087	40	46
C	22.08	6,201	4,724	91	27
D	17.70	4,892	7,675	98	6
E	17.22	4,237	9,527	39	14
F	12.07	6,831	8,221	14	21
G	11.98	5,734	10,570	10	17
H	11.22	7,545	9,9931	10	1
J	11.11	8,414	10,992	14	-
K	10.26	3,538	11,724	10	34
L	8.78	7,494	13,345	1	35
M	8.50	5,238	9,029	3	14
N	7.36	3,281	16,000	2	28
P	6.94	5,726	11,246	13	1
Q	6.91	5,060	10,102	11	1
Phoenix	12.9	581,562	9,956	19	27

Definition of Delinquency. There is nothing which even approaches a univer-
sally accepted definition of juvenile delinquency. Hirschi does provide a
definition which is conceptually appropriate to a study of the behavior of
neighborhood children. "Delinquency is defined by acts, the detection of
which is thought to result in punishment of the person committing them by
agents of the larger society."[4] The difficulty in this definition is that
there is usually no way of counting the total number of such acts; the best
we can do is to count the number of such acts that resulted in contact with
the police.

The use of an operational definition of delinquency which is based on police
reports necessarily introduces certain ambiguities; police reports record
the behavior of the officer as well as of the juvenile, therefore, differences
between the delinquency rates of different areas could well be caused by
differences in police practices as well as by differences in the behavior
patterns of the residents. This fact presents many problems when comparing
delinquency from one city to another. This problem may be minimized some-
what, though not eliminated, by comparing neighborhoods that are patrolled by
the same police department with generally uniform policies. Also, police
apprehensions are allegations of acts, they include no record of any subse-
quent court findings. Therefore, a child may become the subject of a police
report for an act that he did not commit. And, the number of reports does
not directly correspond to the number of different children involved. One
child may be counted several times, if he is apprehended for more than one
act in the course of a reporting period.

[4]Hirschi, Travis, Causes of Delinquency, Univ. of Cal. Press, Berkley,
California, 1969.

And finally, police contacts occur in response to a variety of juvenile behavior and situations, not all of which should be labeled delinquency. Our operational definition of delinquency therefore, excludes police reports for traffic violations, dependency (where the child is a victim of neglect) and interrogation (where no offense is specified). It does include reports of violations of laws that affect only juveniles (runaway, curfew, truancy and incorrigibility) as well as acts which could be crimes if committed by an adult and is subject to such ambiguities as the factors discussed above may introduce.

This definition of delinquency consequently encompasses a wide variety of symptoms, so it is reasonable to question its usefulness as a unitary phenomenon. Specifically, when we talk about the delinquency rate of a neighborhood, are we talking about a separate entity, or is it an artificial unit composed of a number of unrelated classes of behavior.

To test this possibility, we calculate an overall delinquency rate for each sample neighborhood (computed simply by dividing the number of police reports for delinquent behavior by the number of residents in the 8-17 age group) and similar rates for specific offense categories. Table 2 shows that, with the notable exception of narcotic violations, the overall delinquency rate correlates with the rates for each of the specific categories at better than the .01 level of significance. Therefore, the overall delinquency rate for a neighborhood seems to be a valid index for describing (separately and collectively) a problem which encompasses a wide variety of forms of anti-social activity. The negative correlation between the overall delinquency rate and the rate of report of juvenile narcotic (mostly marijuana) violations indicates

Table 2
Correlation of Delinquency Rate with Particular Juvenile Offenses

	Correlation	significance
Crimes against Persons	.928	.001
Crimes against Property	.925	.001
Burglary	.945	.001
Petty Theft	.780	.001
Destruction of Property	.579	.01
Drug Abuse	.485	.05
Alcohol	.806	.001
Narcotics	- .555	.025
Public Nuisance	.867	.001
Other	.740	.001
Total CRIMES by juveniles	.970	.001
Total JUVENILE VIOLATIONS	.880	.001
Curfew	.887	.001
Runaway	.704	.005
Incorrigible	.605	.01
Other	.840	.001
CORRELATION OF DELINQUENCY WITH OTHER TYPES OF POLICE JUVENILE REPORTS		
Traffic	- .138	n.s.
Dependency	.794	.001
Interrogation	.875	.001

that juvenile marijuana use may well be a distinct problem, with different causes than other behaviors classified as delinquent. This latter point is discussed in some detail later.

Delinquency as defined and measured for this study is therefore not a pure measure of the behavior of juveniles. Our working definition of delinquency is an act in violation of the codified norms of juvenile behavior to which police respond in an official way.

ANALYSIS OF SAMPLE NEIGHBORHOODS: To compare the delinquency rate to other characteristics of the sample neighborhoods, correlation coefficients were computed relating delinquency rates to some 60 demographic variables from the 1970 census for Phoenix. Thirteen of these variables were found to correlate with the delinquency rate at the .001 level of significance. The variables have been grouped into four categories for purposes of discussion: Neighborhood Composition, Housing & Income, Employment & Education, and Ethnic Background. Finally, as mentioned above, a discussion of juvenile narcotic use is included.

Neighborhood Composition. In examining the neighborhoods, several variables generally assumed to be important for community planning were not found significantly related to the delinquency rate. (see Table 3) Population density (persons per square mile), for example, appears to be unrelated to juvenile delinquency. However, Phoenix has no area of extreme population density, so the possible effect of very high density in contributing to delinquency in other cities cannot be ruled out. However, other data on overcrowding discussed later indicates that when density increases to the

point of infringing on the private space of individuals, delinquency could be expected to increase. No measure of age distribution of the neighborhoods showed any significant relationship to the delinquency rate, except that juvenile narcotic violations appear to be more common among children residing in areas with a smaller than average portion of juveniles in the population (r = .479; p = .05). This may suggest that marijuana use is more likely to occur among children who are isolated from the normal peer group associations.

Table 3

Neighborhood Composition and Juvenile Delinquency

	Correlation with Delinquency Rate	significance p <
Density (persons per square mile)	- .260	n.s.
Juvenile Density	- .152	n.s.
% of Households which include Children	- .058	n.s.
% of Population under 18	.230	n.s.
% of Population over 62	.151	n.s.
% of Households Headed by Females	.787	.001
Homogeneity of Income Levels	.087	n.s.
Distance from Center of City	- .747	.001

The degree to which a neighborhood is "family oriented" (as indicated by the percent of households that include children) or populated by older persons, likewise, does not appear to affect the level of police enforcement of juvenile behavior problems.

It is difficult to obtain a quantifiable index of the homogeneity of the socio-economic composition of a neighborhood. A rough index of the homogeniety of income levels was made by comparing the mean and median household incomes (which would indicate the extent to which the income distribution is skewed by a portion of the residents having an income far above or below the average). This index also does not correlate significantly with the delinquency rate and might suggest that the careful mixing of income levels in housing development would not have a major effect on the overall delinquency rate of the community.

On the other hand, two factors do show up as having very strong relationships to the delinquency rate. One is the distance from the historic center of the city (Central and Washington - starting point for street numbers). This is just one more bit of evidence of the deteriorating condition of our inner cities.

The second significant factor, concentration of households headed by females, has been cited in a number of studies as contributing to delinquency. A closer examination of this factor (see Table 4) shows that although the correlation of delinquency with the percent of children living in fatherless households is extremely high (.818), the correlation with the percent of all children living in broken homes (other than with both natural parents) is even

higher (.865). This might indicate that the insecurity which results from the dissolution of a family home may be a more basic factor in the high delinquency risk for broken homes than the presumed inadequacies of the mother as a role model.

Table 4

Household Composition and Juvenile Delinquency

	Correlation with Delinquency Rate	significance $p <$
Persons per Household	- .136	n.s.
% of children under 18 living with		
Both Natural Parents	- .865	.001
Female Head of Household	.818	.001
availability of automobiles		
No automobile	.696	.005
One automobile	.023	n.s.
Two or more automobiles	- .815	.001
Three or more automobiles	- .675	.005

The number of cars per family has an interesting relationship to the delinquency rate. The percent of households that have no automobile available on a regular basis is positively correlated to the delinquency rate, while the percent with two or more available autos has a significantly negative correlation with delinquency. This is probably just a further reflection of the connection between poverty and delinquency - fewer cars indicates more poverty hence greater delinquency. However, the fact that this relationship between number of autos and delinquency grows weaker in

three car families might show that the provision of a teenager with his own car (two cars are ample to meet the needs of two parents) increases his chances of being picked up by the police on a delinquency complaint. This could be the result of decreased parental supervision that accompanies the increased independence that car ownership provides.

Family mobility (see Table 5) appears to correlate significantly with delinquency rates only when it is extreme. In comparing neighborhood stability (number of families who have lived in the same house for a given period of time) the shorter the unit of time used as a cut-off point, the higher the correlation with delinquency. This may indicate that long term stability is not an important factor in the delinquency risk rate of a neighborhood, but that a high level of transience increases the delinquency rate.

Table 5
Family Mobility and Juvenile Delinquency

	Correlation with Delinquency Rate	significance $p <$
% of families living in same housing unit:		
Less than 2 years	.464	.05
Less than 5 years	.267	n.s.
Less than 10 years	- .117	n.s.
Living in Maricopa County Less than 5 years	- .081	n.s.

Housing and Income. A survey of the housing units lends additional support to the hypothesis that transience is a contributor to delinquency rates. There are very strong correlations between the delinquency rate and both the vacancy rate and the percent of housing units occupied by renters instead of owners. This relationship does not seem to be merely a by-product of the type of housing occupied by renters, as neither the percent of housing that is single unit homes, or the percent that are large (10 or more units per structure) apartment complexes is significantly related to the neighborhood delinquency rate.

Table 6
Housing and Juvenile Delinquency

	Correlation with Delinquency Rate	significance $p <$
% housing units occupied by:		
Owner	- .759	.001
Renter	.746	.001
Vacant	.858	.001
Single Unit Housing	- .026	n.s.
10 or more Units per Structure	- .107	n.s.
Median Home Value	- .662	.005
Median Monthly Rent	- .777	.001
age of housing, % of units:		
Less than 3 years old	- .393	n.s.
Less than 6 years old	- .314	n.s.
More than 20 years old	.652	.005
More than 30 years old	.588	.01
Missing some Plumbing	.723	.005
Overcrowding of housing units:		
1.01 or more Persons per Room	.751	.001
1.51 or more Persons per Room	.805	.001

The age and condition of the housing in the neighborhoods appear to be significantly related to the delinquency rate. (see Table 6) The definition of "old housing will vary with the locality. A housing unit might be considered old in Phoenix (which has doubled and doubled again in size in the past twenty years) and yet be a relatively new unit in an older community. Therefore, the findings concerning age of housing should not be generalized to other cities without local research. While there is a general pattern of lower delinquency rates associated with newer housing, the correlation between delinquency and age of housing did not reach a statistically significant level for any cut-off age below twenty years. The percent of housing more than thirty years old also had a significant (though weaker) correlation with delinquency. For Phoenix, the index of neighborhood age that most closely related to the delinquency rate is the percent of housing that is more than twenty years old.

The condition of housing is probably more important than its age as a correlate of delinquency. Unfortunately, housing condition is difficult to measure in an objective way as the only census item which indicates the substandard condition of houses is the number of units that do not have complete plumbing facilities. This index correlates with the delinquency rate at the .005 level of significance, a slightly stronger correlation than any of the housing age factors.

As referred to earlier overcrowded housing (and concurrent lack of privacy) was found to be a more important correlate of delinquency than overall density. Overcrowded housing is defined by the census bureau as a living unit inhabited by more than one person per room. A housing unit is considered

highly overcrowded if occupied by more than 1.5 persons per room. The percent of overcrowded housing in the selected neighborhoods correlated with the delinquency rate at the .001 level of significance ($r = .751$). The index of more severely overcrowded conditions (1.5 persons per room) correlates even more strongly ($r = .805$) with delinquency. The relationship between family income level and juvenile delinquency has become almost axiomatic. A number of indices in this support the general suggestion that the lower the economic level of a neighborhood the higher its delinquency rate. Median monthly rent, median home value, median and mean family income, all significantly correlate with the delinquency rate. However, the neighborhood economic index showing the strongest relationship with the delinquency rate was the percent of families with incomes below the federal poverty level ($r = .885$). As shown in Table 7 however, there is no stronger correlation with delinquency for those families at less than half the poverty level and interestingly, the correlation drops only slightly (to .881) for those families with incomes less than double the poverty level. This latter group, marginally poor families, seems to have as much experience with juvenile delinquency as families in true poverty. On the other hand above the marginally poor level it appears that increased family income does not reduce the risk of delinquency. Specifically, if the four sample neighborhoods with a high concentration (over ten percent) of families below the poverty level are eliminated the correlation between median family income and delinquency rates for the remaining eleven neighborhoods is insignificant. In other-words, delinquency does not increase proportionately as family income declines or decrease proportionately as income rises. This could suggest simply that a destructive tension exists within a family when there are not

enough resources to meet general needs that is not present in families

where these needs can be adequately met.

Table 7

Family Income and Juvenile Delinquency

	Correlation with Delinquency Rate	significance p <
Median Family Income	- .719	.005
Mean Family Income	- .747	.001
% of Families with Income Below:		
one-half Poverty Level	.885	.001
Poverty Level	.885	.001
Double Poverty Level	.881	.001
Triple Poverty Level	.783	.001
% of Families Receiving Public Assistance	.862	.001

note: *Among the eleven neighborhoods with fewer than ten percent of their families below poverty level income, there is no significant correlation between Median Family Income and Delinquency Rate (r = .304).*

Employment & Education. Three employment factors show very strong cor-
relations with the delinquency rate. They are, in order, the percent of
workers who are unskilled, the unemployment rate, and the percent of workers
who are not in the professions. A neighborhood with a large number of pro-
fessionals will probably have a low delinquency rate (the percent of mana-
gerial personnel and businessmen does not seem to have the same predictive
value), while a neighborhood of predominately unskilled laborers can be
expected to show a high delinquency rate.

Interestingly, the percent of married women who are in the labor force did

not significantly correlate with the delinquency rate (see Table 8).

Caution should be used in interpreting this finding because it measures the

employment of all married women, not specifically the mothers of school-age

children.

Table 8

Employment and Juvenile Delinquency

	Correlation with Delinquency Rate	significance p <
of males 16 years or older		
% in Labor Force	- .588	.01
Unemployment	.812	.001
% Married Women in Labor Force	- .235	n.s.
Self-employed	- .336	n.s.
Working at Home	.019	n.s.
occupation (% of all workers)		
Professional	- .776	.001
Managerial & Professional	- .733	.005
Domestic, private	.714	.005
Unskilled Laborers	.937	.001

The census data on education is mainly applicable to adults (persons 25

years or older). Nevertheless, there exists a strong correlation between

the education level of the adults in a neighborhood and its delinquency

rate (r = -.917). In comparing the percent of adults who had reached

specific levels of academic training, it was found that the best indicator

of the delinquency rate to be the percent who had completed eighth grade or

less. The level of significance declined when the measure of education was

college attendance instead of simply high school graduation. This finding

parallels the comparison of income levels in that it suggests that a family's

failure to meet society's general norms for achievement (high school graduation and a moderate income) substantially increases the delinquency risk of its children, but that achievement levels surpassing these norms do not appreciably lower the delinquency risk rate.

It will surprise no one that the number of high school dropouts (persons 16 to 21 who are not now in school and who have not graduated from high school) is very closely correlated to the incidence of delinquency (see Table 9).

Table 9

Education Level and Juvenile Delinquency

	Correlation with Delinquency Rate	significance p <
of persons 25 years or older:		
Median Education	- .917	.001
No School	.734	.005
Completed Less than 5 years	.816	.001
Completed Less than 8 years	.890	.001
8th Grade Graduation or Less	.910	.001
Not Completed High School	.878	.001
High School Graduates	- .878	.001
Some College	- .641	.005
College Graduate	- .530	.025
of persons 16 - 21 years old:		
Not in School nor Graduated from High School (Drop-outs)	.906	.001
16 & 17 year olds Not in School	.658	.005

Ethnic Background. Numerous studies over the past fifty years have shown that members of ethnic minorities, particularly Negroes and Mexican-Americans, account for a disproportionately large percentage of official juvenile delinquency. The disparity in these rates, almost always in this same direction of minority over-representation, have been used by some to support claims that crime rates in a neighborhood would inevitably increase if minorities moved in, and by others to justify allegations of police discrimination against minorities. Social scientists have suggested for a long time that such differences are most likely not cause-effect related to ethnic background or police discrimination but are merely a function of other socio-economic conditions. To test this hypothesis, it is necessary to compare the delinquency rates of different ethnic groups living under essentially equal socio-economic conditions.

Past studies have generally been based on the delinquency rates for entire cities - so the higher delinquency rates for minorities may be attributable to their greater concentration in lower income, higher delinquency neighborhoods, we are able to test for differences in delinquency rates of members of different ethnic groups living in similar socio-economic situations. Delinquency rates were computed for four ethnic groups (Mexican-Americans, Anglos, Negroes, and Others) in each of the fifteen sample neighborhoods (see Table 10). To equalize for the differences in over-all delinquency rates of the neighborhoods, the rate for Anglos was used as the baseline (1.00) for each census tract and the rates for the other ethnic groups were computed as ratios of the Anglo rate. In cases where the minority group accounted for less than one percent of the population of a neighborhood, no rate was calculated, and that neighborhood was omitted from the computation of average rates.

Table 10

COMPARISON OF DELINQUENCY RATES BY ETHNIC BACKGROUND

	Anglo	Mexican-American	Negro	Other
City-wide rate	1.00	1.80	2.52	2.07
Within Census Tracts mean	1.00	1.11	1.00	.95
median	1.00	.92	1.18	.99
Tract A	1.00	1.86	1.87	.99
B	1.00	1.43	*	.41
C	1.00	.73	1.18	1.03
D	1.00	.13	.18	.02
E	1.00	1.32	1.64	.66
F	1.00	.63	1.27	1.95
G	1.00	1.09	*	.52
H	1.00	1.18	.00	*
J	1.00	.61	.89	*
K	1.00	.15	*	1.66
L	1.00	4.98	*	*
M	1.00	.48	*	1.29
N	1.00	*	*	*
P	1.00	.17	*	*
Q	1.00	.16	*	*

* rate not computed because group comprised less than 1% of population.

Comparing rates on a city-wide basis shows the traditional differences.
Minority groups have rates between eighty percent and one-hundred-fifty
percent above the delinquency rate for Anglos. However, when the rates
are compared within census tracts, the average differences shrink to less
than twenty percent, with each ethnic group being above average in some
neighborhoods and below average in others. The differences in delinquency

rates of members of different ethnic groups living under similar socio-
economic conditions were found to be insignificant. The rates of minority
members living in middle-class areas are as low as those of middle class
Anglos, and the rates for all groups living in the inner city were equally
high.

Narcotic Violations. While there were significant, positive correlations
between most individual offense types and the overall delinquency rate, the
number of narcotics apprehensions was found to be negatively related to the
delinquency rate (see Table 11). This means that neighborhoods with high
delinquency rates experienced few juvenile apprehensions for narcotic viola-
tions. This appeared to be largely due to economic conditions (narcotic
apprehensions correlated highly with median family income), especially as
the police category of narcotic violations does not include sniffing paint
or glue (which is concentrated in the lower economic neighborhoods).

However, even when the lower income neighborhoods were excluded from the
sample, the incidence of narcotic apprehensions was negatively correlated
to overcrowded housing and the incidence of high school drop-outs - two
factors closely related to the general delinquency rate. It appears that
even when the economic level is controlled, the conditions which foster
juvenile drug abuse are different from the conditions which give rise to
other forms of delinquency.

It should be noted that less than one percent of the juvenile narcotic
apprehensions in Phoenix in 1970 were for heroin or other opiate derivatives.
The vast majority of these cases involved marijuana (75%) or pills

(amphetamines and barbituates), so the conclusions of this study should not
be applied to the hard drug addict. Given these restrictions, it appears
that juvenile drug abuse may be connected with greater mobility (higher
concentrations in rented housing and areas where teenagers have their own
cars), individual isolation (greater likelihood of having one's own bedroom
and a smaller proportion of juveniles in the neighborhood's population), and
community pressure for academic success (areas with fewer drop-outs from high
school and more adults with college educations).

Table 11

Neighborhood Conditions Correlated with

Juvenile Narcotics Apprehensions

	Correlation Coefficient	significance p
Median Family Income	.623	.005
Educational level (of adults)	.601	.01
High School Drop-outs	- .701	.005
Overcrowded Housing	- .729	.005
*Within middle class areas**		
High School Drop-outs	- .836	.01
Overcrowded Housing	- .743	.01
Rented Housing	.544	.05
% of Population under 18	- .479	.05
College Graduates (among adults)	.472	.05
Households with 3 or more Automobiles	.469	.05
Unemployment	.361	n.s.
Broken Homes	.295	n.s.

* *rank order correlation coefficients for the ten neighborhoods with median
family income above $ 9,000.*

CONCLUSION: The authors feel that the major worth of the research reported
in this study is not in the conclusions reached but rather the
implications of the methodology employed. For the most part, the relation-
ships between socio-economic conditions of sample neighborhoods and juvenile
delinquency rates which reached statistical significance should startle no
one familiar with the literature of delinquency. Social scientists have
been suggesting many such relationships for years.

True, there are some findings of particular importance. First, the study
was able to isolate for comparison individual socio-economic variables and
found that these do not always correlate in the same degree or direction.
In most reported research some unitary measure of socio-economic status is
used for comparison and the differences between separate variables may
thereby be obscured. Then, the lack of correlation between delinquency and
neighborhood population density contrasted with a rather strong correlation
of delinquency rates and percent of persons living in dwelling units with
more than one person per room may have some value for city planners and
those people currently exploring the implications of private space and urban
population concentration. Also, the lack of a simple inverse correlation
between median family income and delinquency may say something more precise
about the general consideration of poverty and crime than we have considered
before. The fact that the significant break with respect to income and
delinquency was at the economic level generally associated with marginal
poverty possibly suggests a general subsistance level required for families
to avoid the tension and disorganization so often connected with anti-social
behavior. If duplicated in other studies, this could have far reaching
implications for public assistance, unemployment compensation, welfare or

even a national guaranteed income. Juvenile marijuana use was found to be
a different kind of problem than other defined forms of delinquency. While
this may not surprise many, the characteristic response to it by the Criminal
Justice Community indicates we have not fully comprehended the fact.

Finally, that the superficial differences in delinquency rates by various
ethnic groups disappear when neighborhood socio-economic variables are con-
trolled is a fairly significant finding. Again, not because it will cause
great surprise but that the relationship could be tested and the conclusion
supported with some objective data.

As stated above it is felt that the methodology utilized here has great
implications for Criminal Justice research, planning and evaluation. The
statistical validity of examining a large body of data by comparing neigh-
borhood rates with demographic information from the census has been demon-
strated. In metropolitan areas with large populations and Criminal Justice
System records running into the thousands the cohort-case study, on the
other hand, by the very size, difficulty and methodological complexity is
virtually impossible. The potential for relating neighborhood demographic
data with Criminal Justice records for planning and evaluation is enormous.
The Delinquency Prevention Bureau of the Department of Corrections has
further used these data to pinpoint areas of Phoenix and Tucson where
neighborhood programs should be established and to subsequently evaluate the
impact of such program. A new inner city project of the Community Services
Division of the Department to bring preventive, family counseling, and
intensive parole services to areas of greatest risk in the state's two
major cities has drawn on these data for planning and will continue to use

it for evaluating impact. The data have also been made available to various
community groups for planning and evaluation.

The Phoenix Police Department is to be commended for recording data in such
a manner that individuals involved in contacts with the police can be re-
lated to specific neighborhoods which correspond to census subdivisions.
Tucson, the state's other major city is considering changing its neighbor-
hood area coding system to an x/y coordinate grid system like Phoenix. The
same computer programs will then work on data from either city. Not every
city is so conveniently laid out as is Phoenix but some examination could
well be made in many cities of census tract boundaries, "natural" neighbor-
hoods, police precincts and recording practices to explore the possibilities
for developing data to analyze these and other kinds of relationships.

The computer in Criminal Justice until recently has been utilized mostly by
law enforcement for communications and identification. The development of
an Offender Based Transaction Statistics system is a major step in the
direction of statistical analysis across the entire Criminal Justice System.
It will be years however, before OBTS output will meet the requirements of
planning and evaluation. In the meantime (and probably always in a supple-
mental capacity) research efforts such as this can play an important part
in establishing computer technology as a legitimate tool for planning and
evaluation in Criminal Justice.

END