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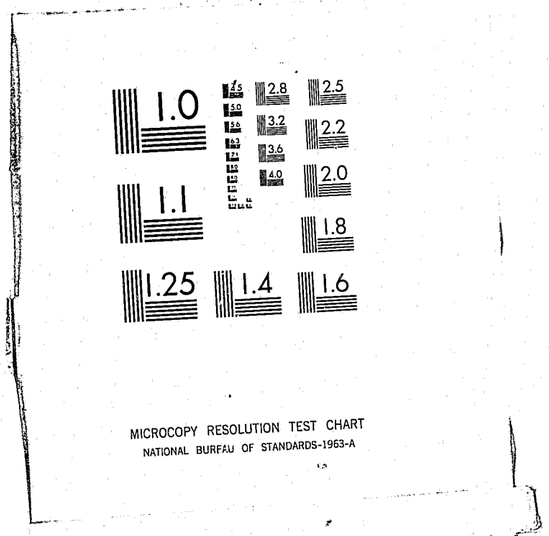

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Minnesota
Crime
Prevention
Center

121 E. Franklin Ave.
Minneapolis
Minnesota
55404
612/872-2300

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An Analysis of the Relationship Between Adult Entertainment Establishments, Crime, and Housing Values

Submitted to the Consumer Services Committee
Minneapolis City Council

by

Marlys McPherson
Executive Director

and

Glenn Silloway
Research Associate

The Minnesota Crime Prevention Center, Inc.
121 East Franklin Avenue
Minneapolis, Minnesota 55404

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An Analysis of the Relationship Between Adult Entertainment Establishments, Crime, and Housing Values

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An Analysis of the Relationship Between Adult Entertainment Establishments, Crime, and Housing Values

Preface

This study examines two separate but related issues: 1) the relationship of bars to crime, and 2) the impact of adult entertainment establishments on neighborhood deterioration.

The first issue is specific in its focus and is limited to studying the impact of alcohol-serving establishments on crime in the immediate geographical area (a six-block radius) around the bar. This relationship between bars and crime is analyzed in three sections in the first chapter of this report. These analyses investigate:

1. The general relationship between bars and crime, taking type of neighborhood into account;
2. The effect of eliminating the liquor patrol limits in 1974; and
3. The characteristics of "nuisance" bars as compared with "non-nuisance" bars.

The second issue is broader, and more complex to answer. The study looks at all adult entertainment establishments . . . saunas, rap parlors, adult theaters, etc., in addition to bars. It examines their relationship to neighborhood deterioration as measured by crime and housing value. For this part of the study, "neighborhoods" are defined as census tracts. Other factors affecting neighborhood deterioration are controlled for in order to measure the independent effects of adult entertainment establishments. The research questions involve establishing whether or not there is an association between adult entertainment and neighborhood deterioration at the census tract

level, and then determining whether the evidence supports the hypothesis that adult entertainment precedes neighborhood deterioration.

The second chapter of the report presents the analysis of these issues in four sections:

1. A summary of the policy issues that motivate the study;
2. The research questions and study design derived to investigate these policy issues;
3. The analysis and results of the study, and
4. The summary conclusions.

This study was commissioned by the Minneapolis City Council in winter, 1980 to provide some empirical basis for policy decisions regarding the licensing and zoning of adult entertainment establishments. The research questions were derived through discussions with the members of the Council's Consumer Services Committee, and with members of the committee appointed to assist the research, including John Bergquist, manager of the Department of Licenses and Consumer Services, Roger Montgomery of the Police Inspection Unit, and Mary Wahlstrand of the City Attorney's office. Numerous other city employees were generous with their time and helpful in their suggestions.

CHAPTER I

BARS AND CRIME

Section A

General Relationship Between Bars and Crime

1. Introduction: The Research Question

The hypothesis investigated in this section is that bars are significantly associated with crime. This portion of the study examines the general association of bars to crime as well as the association of certain types of bars to crime, while controlling for neighborhood setting. The general hypothesis in this context can be reinterpreted as specific research questions:

a. Are selected crimes distributed non-randomly in areas surrounding bars as a group? Do they cluster around bars?

b. Do these distributions provide evidence of an association between types of bars and crime, i.e., do the crimes tend to cluster around the various types of bars?

c. Do these observed distributions change when controls (factors other than bars or crimes) are taken into account?

2. Methodology

a. Variables and Data Sources

The major independent variable is all licensed alcohol-serving (on-sale) establishments in Minneapolis. This variable is measured by identifying the location (address) of each bar. The license categories established by the city -- beer, wine, or liquor bars, and Class A, B, or C entertainment -- are subdivisions of the independent variable and are considered separately in some analyses below. Bars are also classified into two categories according to the volume of food service business they do.

The data source for identifying bar locations was the records of the License Department of the City of Minneapolis. According to these

records, there were 203 liquor licenses, 21 wine licenses, and 143 beer licenses issued in 1979. Each of these businesses is also licensed for a certain entertainment level. The data source for classifying bars according to volume of food business were the observations of members of the License Department and the Minneapolis Police Department. 215 of the 367 licensed establishments could be classified in this way. The remaining 152 bars are dropped from any analysis based on food categories.

The dependent variable is the density of crime in areas surrounding the bars. The crimes that are measured for the analysis are street robbery and assault. These crimes are reasonable in that we might expect to find a relation between alcohol consumption and these personal crimes. No theory connecting crime and drinking in public places exists, but we have sufficient experience with the effects of alcohol on aggressive behavior to make the connection. In addition, bars serve as gathering places where outbursts of aggression have handy targets. Finally, neither observed relationships (as in the adult entertainment portion of this study, which shows a low overall relationship between bars and residential burglary, for example) nor logic argue for the inclusion of other crimes. One important candidate may be vandalism, but reported vandalism rates are so unreliable by present measurement techniques that it could not be included.

Crime counts were made at the address level using the offense report data automated through the Minneapolis Police Department's Integrated Criminal Apprehension Program (ICAP). These counts were aggregated into frequencies for each crime and for each area

surrounding a bar for a one-year period from May 1, 1979 to April 30, 1980. Assaults and street robberies were considered both separately and together in various analyses.

Finally, the analysis takes into account the type of neighborhood as a control variable. "Neighborhood" is here defined as a census tract, and it is measured by the percent of owner-occupied homes by tract. It was necessary to use the census tract as the unit of measurement for this variable because the address level data necessary to construct the exact distance decay areas was not available at an affordable price. Percent owner-occupied, taken from the 1970 census, is known to be highly related to other indicators of socio-economic status such as income, and in addition it is believed to indicate in some degree the important properties of stability and salience of neighborhood identity on the part of residents. The actual measure used is a Z-score, dividing the variable into three categories (low = -.5 standard deviations or less, medium = -.5 to .5, high = .5 or greater).

b. Unit of Analysis

The units of analysis are the areas around each bar, and the subdivisions of that area. These units of analysis are not existing civil divisions, like census tracts, but rather are created by specialized processing software which uses the address-level crime data provided by ICAP to first aggregate the data into uniform areas around each bar and then perform standard analyses on the densities of crimes found in these areas for each bar or group of bars. This technique is known as distance decay analysis.

Distance decay analysis determines the degree to which crime is uniformly distributed geographically about a particular site. Where crime is not uniformly distributed around a site but displays a pattern of being densely distributed near the site and gradually becoming less dense as distance from the site increases, then it may be the case that the site is associated with crime. There are three tests to determine whether a site is statistically associated with crime:

1. Is a distance decay curve present, that is, does the density of crime decrease as we move away from the site?

2. Is there a significant chi-square statistic demonstrating that the areas around sites vary from normal density?

3. Is there a significantly negative slope to the curve as measured by a signs test?

Only if all three tests are positive do we consider a site associated with crime. Thus, this study uses a conservative test in order to be confident that the relationship between crime and bars actually exists.

The sub-areas constructed around each bar by the distance decay software are six approximately concentric rings of 1/10 mile in width each, for a total area with a 6/10 mile radius.[1] The technique compares the proportion of the total crimes in each ring to the proportion of land area within each ring to get a measure of the density in crime in each concentric ring. These measures (six for each distance decay) are then tested by the three tests outlined above to see if the density of crime is non-random and if it is concentrated at the middle of the area (the "node") where the bar is.[2]

[1]The technique is most easily described with concentric rings as the units of analysis. The actual unit of analysis used in this study was city-blocks.

[2]See Appendix A.1 for a further description of distance decay analysis.

3. Analysis and Findings

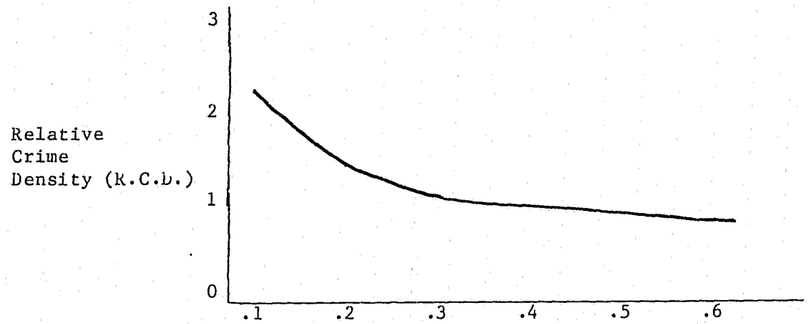
a. Are selected crimes distributed non-randomly in areas surrounding bars as a group? Do they cluster around bars?

This analysis looks at the general association between bars and selected types of crime. Separate distance decay analyses were performed on the 367 bars and a summary analysis was prepared for all bars. This was done for each of the crimes separately and for the two crimes combined.

The summary analysis of bars and assaults in Figure I.1 demonstrates a classic distance decay curve. As can be seen in Figure I.1, as distance from the bar increases the density of assaults decreases. Both the chi-square and the signs test are significant. As a group, bars in Minneapolis are significantly associated with assaults. This, of course, does not mean that every bar is associated with assault.

Figure I.1

Distribution of Assaults Around Bars

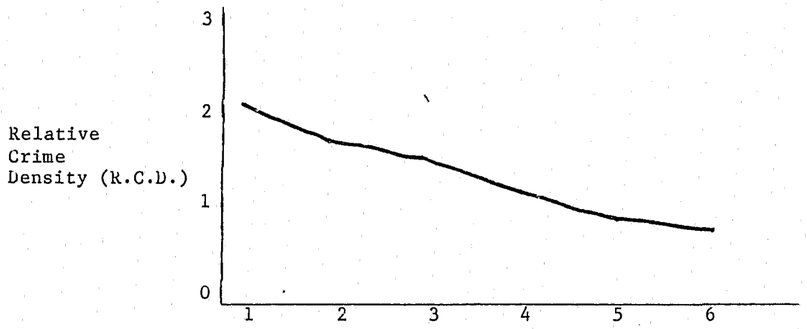


x^2 = 2325.8 Sig. .05 Slope negative .03

The association of Minneapolis bars and street robbery is demonstrated in Figure I.2. Once again, there is a fairly strong distance decay curve which indicates a concentration of street robbery around bars that decreases as distance from the bar increases. Both the chi-square and the signs are significant. In general, bars in Minneapolis are significantly associated with street robbery.

Figure I.2

Distribution of Street Robbery Around Bars



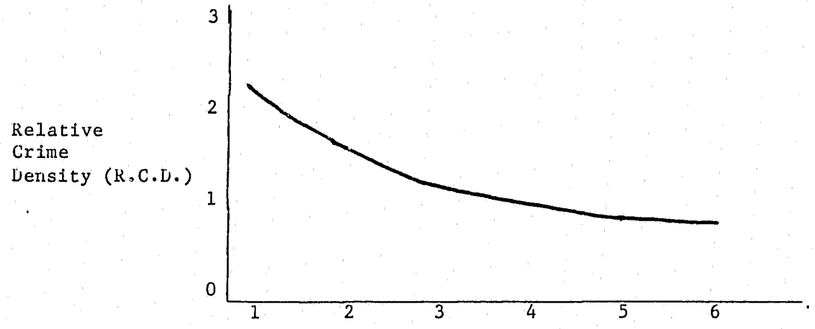
(Distance in tenths of miles from bar)

X^2 = 1968.4 sig. 05 Slope negative .03

Because bars are associated with both assaults and street robberies separately, we may expect that they will be associated with the two crimes combined. This is the case as presented in Figure I.3. Again, the chi-square and signs test are both significant. It is the case that bars are associated with the crimes of assault and street robbery both separately and combined.

Figure I.3

Distribution of Assaults and Street Robbery Around Bars



(Distance in tenths of miles from bar)

x^2 = 4122.0 Sig .05 Slope negative .03

b. Do these distributions provide evidence of an association between types of bars and crime, i.e., do the crimes tend to cluster around the various types of bars? Do these observed distributions change when controls (factors other than bars) are taken into account?

Despite the relationship between bars and crime in general, it is quite possible that this relationship does not exist for some categories of bars but does hold for others.

Bars are licensed according to the type of alcohol allowed to be served. The city has three categories: liquor, beer (3.2), and wine. The level of entertainment allowed in a licensed establishment also is licensed by the city and is used to categorize bars. There are three classes of entertainment defined by license categories: "C" (juke boxes, machines, T.V.); "B" (single performer plus those permitted under "C"), and "A" (live bands, shows, dancing, plus those permitted under "B" and "C").

In addition, the city staff expressed interest in the effect of volume of food business on crime. The assumption to be tested is that bars with lower food volume have lower associations with crime than bars with greater food volume. The two categories of food volume are: high = greater than 50 percent food; low = less than 50 percent food volume. This section looks at bars and their association with crime in each of these three categorizations: alcohol, entertainment, and food.

Because many other studies on crime have found that the type of neighborhood has a great influence on crime, it was decided to add neighborhood type as a control variable. Therefore, the study analyzes the relationship of all bars with the selected crimes while controlling for the environment in which a bar exists.

(1) Bars by sub-type and crime

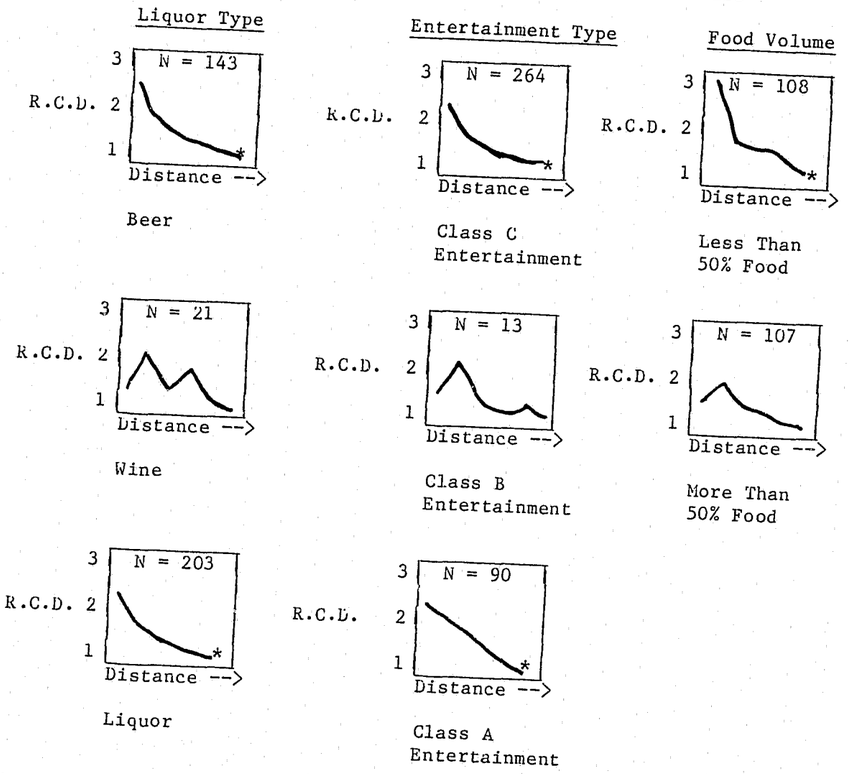
Summary distance decays were run for each of the six license categories of bars, plus two categories of food volume in the businesses, measuring the density of the combined crimes of assault and street robbery.[1] The results of these eight summary distance decays are reported in Figure I.4.

Wine and Class B entertainment bars, and bars which have more than 50 percent of their total volume in food service do not show significant associations with the distribution of the selected crimes in the surrounding areas. All other categories do exhibit significant

[1]Separate analyses for each crime were performed, but the results were similar and therefore the combined measure was used.

Figure I.4

Distribution of Crime Around Bars by Categories of Bars



*These distance decay curves are significant according to the three tests outlined in the text.

tendencies toward clustering around the bars as types.[1] In the cases of wine and Class B bars, these results may be due to the spatial

[1]The results for wine and Class B bars may be questioned by some because of the small number of bars in those categories. However, the technique aggregates the number of crimes in surrounding areas to get a density measure, and it would be sensitive to low N if the number of crimes in a ring were small. In these cases, all rings in the aggregated measures count over several hundred crimes (some crimes are counted more than once), so the number is adequate.

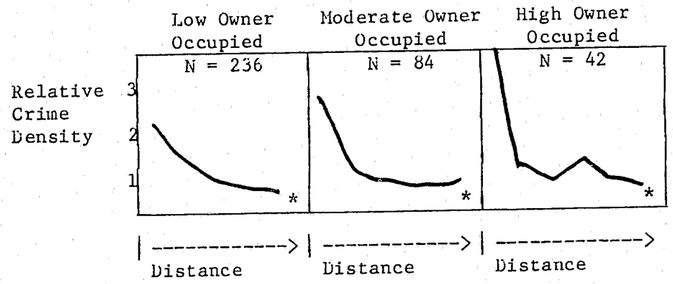
distribution of the bars in the city and the way the distance decay technique aggregates events within these distributions. Wine bars are also bars with high food volume which may in fact account for a lower crime association. Class B bar effects cannot be accounted for in any simple way by the kind of entertainment permitted since bars with both fewer (Class C) and more (Class A) entertainment options are significantly associated with crime.

(2) Crime around bars controlling for neighborhood type

Figure I.5 reports three summary distance decays for all bars within the three types of neighborhoods as identified by percent owner occupied housing.

Figure I.5

Distribution of Crime Around all Bars Within Types of Neighborhoods



*Indicates significant distance decay.

As Figure I.5 shows, the measured densities of the crimes of assault and street robbery are signficantly associated with the location of bars in all three types of neighborhoods.

This finding is especially interesting in the cases of the moderate and high owner-occupied neighborhoods where the possibly confounding impact of the downtown bars has been eliminated. The low owner-occupied cell contains all of the bars from the downtown area where few people own the homes they live in. This concentration of bars may exaggerate the impact of bars on crime because we know that: 1) assaults and street robberies are concentrated in highly commercialized areas, such as the Central Business District, which suggests that the observed relationship between bars and these crimes may be due to some characteristic of the commercial area other than bars; and 2) the aggregating technique used in the distance decay analysis overweights crimes around extreme clusters of bars, such as is found downtown.

However, these considerations are not present in higher owner-occupied neighborhoods, which tend to be lower crime areas and removed from concentrations of bars like that found in downtown. The fact that a greater density of crime around bars remains in these areas gives us somewhat more confidence that the finding of a relationship between bars and crime really exists. Concentrations of bars or the fact that bars are in commercial zones still could be confounding these results, but this is substantially less likely when the downtown bars are eliminated from the analysis.

4. Summary: General Relationship Between Bars and Crime[1]

What is the general relationship between bars and crime? Does the relationship hold when other variables associated with crime are controlled?

a) An aggregate analysis of all 367 bars in Minneapolis shows that bars as a group are associated with the crimes of assault and street robbery.

b) This relationship between bars and the selected crime types remains when type of neighborhood (as measured by percent owner-occupied housing) is controlled.

c) Bars whose food volume accounts for over 50 percent of total volume, bars with wine licenses, and bars with Class B entertainment licenses are not associated with the crimes of assault and street robbery.

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[1]Additional distance decay results showing groups of bars cross-classified by type of license or food volume and type of neighborhood are provided in Appendix A. Those results support the ones reported here.

Section B

The Effect of Changing the Liquor Patrol Limits: New Bars and Crime

1. Introduction: The Research Question

Liquor patrol limits have had a long and controversial history in Minneapolis. Initially established in 1887, the patrol limits restricted liquor licenses to be located within certain boundaries. The original liquor patrol boundaries were drawn closely around the central city so that Minneapolis Police Department foot patrolmen could reach the ends of the limits. (An indication that the presumed relationship between bars and crime is indeed an old idea.) There were several unsuccessful attempts during the 1950's to extend the patrol limit boundaries, with the issue ultimately bound up with the larger issue of the economic and physical redevelopment of the down-town area.[1] City voters finally approved a charter amendment to extend the patrol limit boundaries in 1959.[2]

The liquor patrol limits continued to be a political issue throughout the 1960's. In 1974, voters approved a charter amendment abolishing the liquor patrol limits altogether. The restriction that on-sale liquor establishments can be located only in seven-acre

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[1]Many groups argued that the narrow confines of the patrol limits would guarantee that another skid row would develop, similiar to the one along Washington Avenue that was cleared in the 1950's and that resulted in many liquor licenses being forced to relocate. Therefore, one of the principal arguments was to extend the limits to permit a wider dispersal of the bars.

[2]The boundaries in effect after 1959 extended the patrol limits to Franklin on the south, Lyndale on the west, Broadway on the north and the Mississippi River on the east, along with a section in Northeast Minneapolis along University Avenue.

commercial zones remained in effect, however. As a result of Minneapolis' liquor licensing restrictions, major portions of the city remained without liquor bars until 1974 (with the exception of several "distressed" licenses issued outside of the limits).

One of the purposes of this study is to examine the effect on crime of the 1974 rescission of the liquor patrol limits. If bars are associated with higher incidences of certain kinds of crimes, as has been hypothesized, then one would expect to find significant increases of crime around those liquor bars established outside the old patrol limits.

2. Methodology

a. The Research Design

In order to answer the question about the effect on crime of the elimination of the liquor patrol limits, "before" and "after" analyses of the amount and distribution of the crime of assault were conducted. The logic of the design is illustrated below (Figure I.6).

Figure I.6

Before and After Research Design for Assessing Impact of Abolishment of Liquor Patrol Limits

Before (One year period, July 1, 1974 - June 30, 1975)		After (One year period, May 1, 1979 - April 30, 1980
Amount (number) of assaults within six blocks of the site	Introduction of a bar to the site	Amount (number) of assaults within six blocks of the bar
Distribution of crime as indicated by distance decay analysis of sites	Introduction of a bar to the site	Distribution of crime as indicated by distance decay analysis of sites

As indicated, the design looks at crime in areas outside the patrol limits before new liquor licenses were established and then compares it with crime after those liquor licenses have been in existence for a period of time. An area with a radius of six blocks around each new bar site was selected for the unit of analysis. This is the same unit as was used to examine the general relationship between bars and crime. If those liquor licenses granted after 1974 have an effect uppon crime, it would be expected that the amount or distribution of crime (or both) around those sites would change between the two time periods.

b. The Data

Bars located outside the old liquor patrol limits were identified by mapping the 1980 liquor licenses and identifying bars located outside the boundaries in effect in 1974. The City License staff then provided the dates on which licenses were granted for these locations. A total of twenty-three bars were identified that met the following criteria: 1) had been granted licenses at locations outside the patrol limits after the 1974 change, and 2) existed before the 1979 data collection period. A list of these bars can be found in Appendix A.

The crime variable used in this analysis was number of assaults reported to the Police Department.[1] As suggested previously, the

[1]The general relationship between bars and crime was explored using data on assaults and street robberies. The same definition of the dependent variable, crime, would have been used for this analysis except that address-level data on street robbery was unavailable for the 1974-75 period. But, as the previous analysis indicates, both assaults and street robberies show similar patterns.

hypothesized relationship between bars and the crime of assault is supported on logical grounds. The data on assaults comes from two sources. For the "before" period, crime data for July 1, 1974 through June 30, 1975 was taken from the Crime in Minneapolis study in which address-level crime data was coded from police offense reports.[1] The Minneapolis Police Department's ICAP (Integrated Criminal Apprehension Program) system provided data for the "after" time period of May 1, 1979 through April 30, 1980.

c. The Analysis

In order to test the hypothesis that on-sale liquor licenses granted outside the old patrol limits are associated with a disproportionate increase in crime, both the number of assaults and the distribution of assaults within the six-block radius area of each of the 23 new liquor license sites were analyzed for the two time periods. Distance decay analyses were performed to analyze the distribution of crimes in the areas around each of the sites. For a complete discussion of the distance decay technique, see Appendix A. If the distribution of crime around the sites changed significantly during the five-year period, one would expect to find a random distribution of assaults in 1974-75 (as indicated by the distance decay curve) and a non-random distribution (i.e., a significant chi-square and negative slope in the distance decay curve) for the 1979-80 data.

3. Analysis and Findings

a. Amount of Crime

The results of the comparative analysis (1974-75 to 1979-80) of the number of assaults in the immediate vicinity of the 23 liquor

[1]D. Frisbie, et al., Crime in Minneapolis, Minneapolis: Minnesota Crime Prevention Center, Inc., 1977.

licenses granted outside the old patrol limits does not show an unexpected increase. That is, on the average, assaults in the areas surrounding these sites did not increase at a greater rate than for the city as a whole. These results are presented in Table I.1. In general it cannot be said that the introduction of bars into new areas of the city resulted in an increase in the amount of crime (assaults) in those neighborhoods, although this was true for some particular bars.

Table I.1

Comparison of the Number of Assaults, 1974-75 to 1979-80

	1974-75	1979-80	Percent Change
Areas surrounding the 23 new liquor license sites	2,124*	2,384*	+12%
Minneapolis city-wide totals	4,156	5,614	+35%

*Note that the crime counts in the cells for the 1974-75 and 1979-80 new liquor licenses are not actual crime counts for those areas, but reflect the aggregating procedure used by the distance decay technique. The percent change for the new licenses can be compared to the percent change for the city as a whole. The temporal change within a row is also a valid comparison, as the areas are the same at both times.

b. Distribution of Crime

Comparative analysis of the distribution of assaults within the six-block radius area surrounding the 23 new liquor license sites suggests an apparent tendency toward a greater concentration of assaults in the immediate one-block area where the bars are located. As Table I.2 illustrates, in 1974-75 none of the sites had significant distance decay curves (defined in terms of a significant chi-square

and a significant negative slope). In other words, the assaults did not cluster around the sites, but were more randomly distributed throughout the area. In 1979-80, however, six of these sites had significant distance decay curves, and an additional seven sites showed an increased concentration of assaults within the block of the bar although the increases were not sufficient to achieve significance.

Table I.2

Comparison of Distance Decay Analyses of New Liquor License Sites, 1974-75 to 1979-80

	1974-75	1979-80
Number of Significant* Distance Decay Curve Analyses for the 23 sites	0	6

*Significant chi-square at .05 level and significant negative slope.

Table I.3 provides additional confirmation of a greater concentration of assaults within the immediate block where new liquor licenses are located. As this Table suggests, while the increase in assaults for the six-block areas where the 23 new licenses are located (12 percent) was less than the city-wide average (35 percent), the percent increase in assaults within one block of the bar sites was considerably higher (69 percent).

Table I.3

Change in the Distribution of Assaults Around New Liquor License Sites, 1974-75 to 1979-80

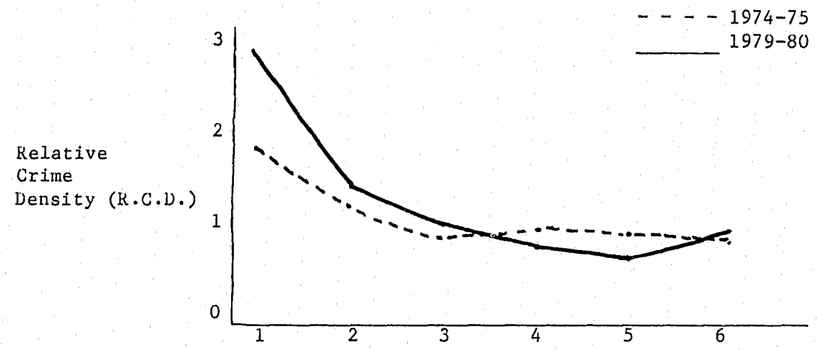
	1974-75	1979-80	Percent Change
Number of assaults within one block area of the 23 new liquor license sites*	110	186	+69%
Number of assaults within six-block radius area of the 23 new liquor license sites*	2,124	2,384	+12%
Minneapolis city-wide totals	4,156	5,614	+35%

*Note that the crime counts in the cells for the 1974-75 and 1979-80 new liquor licenses are not actual crime counts for those areas, but reflect the aggregating procedure used by the distance decay technique. The percent change for the new licenses can be compared to the percent change for the city as a whole. The temporal changes within rows are valid as the areas are the same at both times.

Finally, a comparison of the summary distance decay curve for the 23 sites in 1974-75 to the summary curve for those same sites with liquor licenses in 1979-80 shows that the concentration of assaults within the first .1 mile band has increased significantly. The relative crime density for the first .1 mile band has increased from 1.86 in 1974-75 to 2.81 in 1979-80. This comparison is illustrated in Table I.4.

Table 1.4

Comparison of Summary Distance Decay Curves
1974-75 to 1979-80



The x^2 for both curves is significant at .001 level; both curves have significant negative slopes

From these results we may conclude that although there was some change in the amount and distribution of crime around some of the bar sites, in general the introduction of bars in areas outside the liquor patrol limits has not had the effect of increasing the amount of crime in the neighborhoods around these sites. However, there was a fairly uniform effect of increasing the concentration of assaults within one block of the bar sites. This indicates that bars may have an affect on crime, but the area is geographically limited to the immediate surrounding area. It may be that groupings of bars (concentrations) have a wider range effect on distribution of crime, but we were unable to test this hypothesis given the limited number of such concentrations among the new licenses issued.

4. Summary Findings

What is the effect on crime of the 1974 rescission of the liquor patrol limits?

a. Twenty-three liquor licenses were granted outside the old liquor patrol limits between 1974 and 1979. An analysis of the numbers of assaults in the areas surrounding these sites shows that, on the average, assaults did not increase at a greater rate than for the city as a whole.

b. In general, there was an increased concentration of assaults within one block of the bar sites where liquor licenses were granted outside the patrol limits.

Section C

Characteristics of "Nuisance" Bars

1. Introduction: The Research Question

There are a number of bars in Minneapolis that generate "nuisances" and crime-related problems for the citizens of the city. These nuisances are in the form of relatively minor crimes such as vandalism, noise, litter, and discomfort of local residents. Yet, nuisance situations often are more obvious to citizens and cause them more concern and worry than serious crimes, such as assault and robbery. Although this was not part of the contract, several city officials expressed interest in knowing whether bars which generate nuisance situations differ systematically from bars which do not generate nuisances. If there are systematic differences between nuisance bars and non-nuisance bars, are these differences controllable through licensing restrictions? A third purpose of this portion of the study was added: to conduct some preliminary and exploratory analyses of the characteristics of nuisance-generating bars.

2. Methodology

a. The Research Design

Members of the City staff and the City Council suggested a number of factors that could be important in explaining why some bars generate nuisance situations and others do not. The factors suggested included: 1) the volume of food business, 2) proximity to a primarily residential area, 3) the type and availability of parking,[1] 4) the

[1]City staff and Council members expressed concern that bars that do not have off-street parking can create nuisances. It is assumed that customers parking in front of houses and in front of other businesses create conflict situations which result in disturbances and nuisances.

type of entertainment,[1] 5) the type of liquor license, 6) the type of clientele, and 7) bar management practices. The data on the first six of these characteristics was collected through on-site observational visits to a sample of 40 Minneapolis bars.[2]

The research design is based on comparing two samples of bars, 20 bars identified as generating nuisances and 20 non-nuisance bars, on the six characteristics identified above. Although nuisances often result in calls-for-service to the police, at present the Minneapolis Police Department does not have an automated record keeping system for these calls that provides easy access to this data. Because the city has tens of thousands of calls each year, a study of all bars and their relationship to nuisances was outside the scope of this study. Instead a sample of bars believed to generate nuisances and a sample of bars that do not were selected for the comparative analysis.

A chi-square statistic was used to determine if there was a statistically significant difference between the two samples of bars on the characteristics.

Members of the Minneapolis City Council were asked to identify bars in their wards which generate complaints to their offices as well as to identify "exemplary" bars. Members of the Police License Inspection Unit were asked to identify bars in these two categories as well. From these nominations, 20 bars from each type of bar (nuisance and non-nuisance) were selected from their nominations. A list of

[1]Entertainment at a bar has been cited as a potential source of nuisances because of the number and type of people it attracts.

[2]Given the observational method selected and the relatively short time spent at each bar, we were unable to collect data on the variable of management practices.

the 40 bars included in the two samples can be found in Appendix A. On-site observations using a structured data collection instrument were made at the 40 bars by MCPC, Inc. staff. A copy of the data collection instrument used is also included in Appendix A.

b. Definition of the Variables and Data Sources

(1) Volume of food. The 40 bars were categorized according to whether their food business constituted over 50 percent of their gross business sales. Most of this data came from the Police Inspection Unit with supportive data from on-site observation.

(2) Proximity to residential neighborhood. The bars were categorized according to their proximity to residential areas using the following classifications: 1) within a block, 2) between one and two blocks, and 3) greater than two blocks distance. The data was collected by on-site observation.

(3) Type and availability of parking. The sampled bars were categorized according to the type of parking available for their customers: 1) street parking only, 2) metered street parking, 3) other parking lots available in the vicinity, and 4) the bar provides its own adequate-sized parking lot. The data was collected through on-site observation and inspection.

(4) Type of entertainment. The 40 bars were categorized two different ways according to type of entertainment. The first category consists of the types of entertainment license issued to bars by the City's Licensing Department: Class C, Class B, Class A (see p. 10 above for a discussion of these classifications). The second category is the type of entertainment actually present (as opposed to that for which they were licensed), based upon the on-site observations. The

categories used were the following: 1) none, 2) single performer, and 3) band (and/or major disco-type sound system).

(5) Type of liquor license. The City issues liquor licenses based upon the type of alcohol which can be served. There are three classifications: 1) beer (3.2 alcoholic content), 2) wine, and 3) liquor. There are very few wine licenses in Minneapolis and neither of our samples included any bars with wine licenses, so for this portion of the study the two remaining types of alcohol were used: 1) beer, and 2) liquor.

(6) Type of clientele. The city has little direct control over the type of clientele a bar attracts; thus, this aspect of bars is not directly affected by city policies. Although the analysis of clientele may be interesting, the value to policy makers may be quite limited.

The factors describing clientele included age, class, residence and social pattern. Information about these variables was collected by on-site observation and was analyzed. As might be imagined, the measurements on this set of variables were subject to considerable error. Since only one visit was made to each bar, and the measurements were taken according to the judgments of one observer, the results obtained were considered to be too unreliable. Therefore, they are not included in this report.

(7) Game rooms. Although information on game rooms was not a part of the original data collection instrument, this information was collected. The criteria used to classify bars on whether or not they had a game room was: 1) the games constituted a clearly defined

area of the establishment, and 2) the games were an important attraction for the bar. Bars with one or two machines were not classified as having a game room.

3. Analysis and Findings

a. Volume of Food

The data on the relationship between volume of food and type of bar (nuisance or non-nuisance) is presented in Table I.5.

Table I.5

Relationship of Volume of Food Business to Type of Bar

	Less Than 50% Food		More Than 50% Food	
Nuisance Bars	69%	(20)	0%	(0)
Non-Nuisance Bars	31%	(9)	100%	(11)
Total	100%	(29)	100%	(11)

x^2 = 15.172 1df
sig. .001

As this Table indicates, none of the bars with over 50 percent food business were nuisance bars, while the majority of the bars with low food volume tended to be nuisance bars. This difference is statistically significant. It suggests that if a bar does a large volume of food business it is less likely to generate nuisances than if it does a small volume of food business.

b. Proximity to Residential Neighborhood

Table I.6 shows the results of the analysis for the relationship between proximity to residential neighborhood and type of bar.

Table I.6

Relationship of "Proximity-to-Neighborhood" and Type of Bar

	Within 1 block	1-2 blocks	2 or more
Nuisance Bars	63% (10)	22% (2)	53% (8)
Non-Nuisance Bars	37% (6)	78% (7)	47% (7)
Total	100% (16)	100% (9)	100% (15)

x^2 = 3.844 2df
sig. .15

The results are more ambiguous than was the case for volume of food. Although there is a tendency for bars closer to residential areas to be nuisance bars, this result is not statistically significant at a level which justifies reaching general conclusions.

c. Type and Availability of Parking

The results of the analysis of the relationship between the type of parking available and type of bar are shown in Table I.7.

Table I.7

Relationship Between Type of Parking Available and Type of Bar

	Street	Meter	Other Lot	Own lot
Nuisance Bars	69% (9)	33% (1)	71% (5)	29% (5)
Non-Nuisance Bars	31% (4)	67% (2)	29% (2)	71% (12)
Total	100% (13)	100% (3)	100% (7)	100% (17)

x^2 = 6.424 3df
sig. .10

These results are ambiguous, but the tendency exists for nuisance bars to rely on street parking, while non-nuisance bars tend to have their own lots. These results are significant at the .10 level.

To carry the analysis further, a comparison was made between bars that have their <u>own lot</u> available and those that do not (i.e., they rely on all other types of parking). This involved combining the first three categories. The results of this comparison are clearer and statistically significant. Table I.8 indicates that bars without their own lots are much more likely to be nuisance bars, while bars with their own parking lots are less likely to be associated with nuisances.

Table I.8

Relationship Between Ownership of Parking Lot and Type of Bar

	Other Parking Facilities		Bar Owns Lot	
Nuisance Bars	65%	(15)	29%	(5)
Non-Nuisance Bars	35%	(8)	71%	(12)
Total	100%	(23)	100%	(17)

$x^2 = 5.013$ 1df
sig. .05

d. <u>Type of Entertainment</u>

Using the first definition of this variable, type of entertainment license issued by the City, the results in Table I.9 are obtained.

Table I.9

Relationship Between Type of Entertainment License and Type of Bar

	C	B	A
Nuisance Bars	53% (10)	33% (1)	50% (9)
Non-Nuisance Bars	47% (9)	67% (2)	50% (9)
Total	100% (19)	100% (3)	100% (18)

$x^2 = .386$ 2df
no sig.

As this table indicates, there is not a significant relationship between the type of entertainment license a bar has and whether or not it is a nuisance bar.

When the alternative entertainment classification scheme (<u>observed</u> type of entertainment) is used, the results are slightly different. These results appear in Table I.10.

Table I.10.

Relationship Between Observed Type of Entertainment and Type of Bar

	None	Single	Band
Nuisance Bars	44% (12)	25% (1)	78% (7)
Non-Nuisance Bars	56% (15)	75% (3)	22% (2)
Total	100% (27)	100% (4)	100% (9)

$x^2 = 4.111$ 2df
sig. .112

This data shows some tendency for the bars with higher levels of entertainment to be associated with nuisance bars, but this is not a statistically significant finding.

e. Type of Liquor License

Table I.11 contains the data on this variable and its association with whether or not a bar is nuisance-generating.

Table I.11

Relationship Between Type of Alcohol and License and Type of Bar

	Beer		Liquor	
Nuisance Bars	33%	(2)	53%	(18)
Non-Nuisance Bars	67%	(4)	47%	(16)
Total	100%	(6)	100%	(34)

$x^2 = .784$ 1df
no sig.

According to these results from the sample of bars, the type of liquor license a bar has is not related to whether or not it generates nuisances. bars with one type of alcohol license are not more likely to be nuisance bars than bars with another type of license.[1]

f. Game Rooms

Table I.12 shows that the relationship between game rooms and type of bar is significant. Bars with game rooms are more likely to generate nuisances than bars that do not have game rooms.

[1]The sampling procedure makes this result dubious since the city-wide distribution of beer licenses versus liquor licenses is 143 versus 203, quite different proportions than 6 versus 34.

Table I.12

Relationship Between Game Rooms and Type of Bar

	No Game Room		Game Room	
Nuisance Bars	32%	(8)	80%	(12)
Non-Nuisance Bars	68%	(17)	20%	(3)
Total	100%	(25)	100%	(15)

$x^2 = 8.640$ 1df
sig. .01

4. Summary of Findings

Are there any systematic, significant differences in the characteristics of bars which generate crime-related nuisances when compared to bars that do not generate nuisance complaints?

a. Bars which do less than 50 percent volume of business in food tend to be nuisance bars.

b. There is no statistically significant relationship between a bar's proximity to a residential neighborhood and whether or not it is a nuisance bar.

c. Bars which do not have their own parking lots tend to be nuisance bars.

d. Bars with a higher level of entertainment (e.g., bands) tend to be nuisance bars, but the finding is not statistically significant.

e. There is no relationship between the type of liquor license a bar has and whether or not it is a nuisance bar.

f. Nuisance bars are more likely to have game rooms than are non-nuisance bars.

CHAPTER II

ADULT ENTERTAINMENT ESTABLISHMENTS AND NEIGHBORHOOD DETERIORATION

Introduction

The general purpose of this section is to examine the impact of adult entertainment establishments on neighborhood quality. The study is empirical, and uses statistical techniques to examine the relationships between concentrations of adult entertainment establishments and measures of neighborhood quality. On the basis of this analysis of data, inferences about whether adult entertainment establishments are associated with neighborhood decline and whether the establishments follow or precede neighborhood decline can be made.

The concerns represented here are neither unique to Minneapolis[1] nor new to the city.[2] There is widespread recognition of the importance of the use of city policy to encourage healthy, viable neighborhoods, and there is a suspicion that adult entertainment businesses -- bars, saunas, adult bookstores, and the like -- may be undesirable in such neighborhoods.

Two fairly common measures of neighborhood quality are used in this report: the crime rate, and a measure of housing value. While neither of these measures is perfect, each of them embodies real concerns of residents of the city. These measures consistently reflect our intuitive ideas of a "good" neighborhood; that is, relatively high quality housing (as reflected in housing value) and low crime rates are better than low quality housing and high crime.

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[1] See, for example, City of Los Angeles, "Study of the Effects of the Concentration of Adult Entertainment Establishments in the City of Los Angeles" (Los Angeles: Department of City Planning, 1977).

[2] For a number of years the city has attempted various approaches to controlling the effects of adult entertainment. The liquor patrol limits, zoning regulations, licensing of saunas, and so forth, are all part of this effort.

In this study "Adult entertainment establishments" include all types of alcohol serving establishments, plus businesses which commercialize sex -- saunas, "adult" theaters and bookstores, rap parlors, and arcades. The various combinations of these establishments will be considered for their impact on the measures of neighborhood quality. They are considered the independent variables.

The entire analysis in this report is conducted at the level of the census tract. All of the measures used here were available at that level or could be easily aggregated to that level. The census tract is not necessarily the best level of analysis for all the purposes of this study, but the others are either impractical due to cost or availability. For example, block-level analysis is possible given available data, but the cost of acquiring that data and running analyses on about six thousand cases was prohibitive in this study. Though there are problems with the census tract level of analysis, it is a common and useful way to measure phenomena that are of interest at a geographical area larger than the site.

The remainder of this chapter is divided into four sections. Section A summarizes the policy issues that motivate the study. Section B then gives the empirical research questions to be examined here that follow from these policy issues. This second section briefly reports the research design followed in answering the research questions. Section C provides the results of the study in written and tabular form. Section D is a summary of the study results in light of the policy issues identified in Section A. Appendix B describes and justifies the methods used in this portion of the study.

Section A

Policy Issues

The central issue is whether the city can and should use its zoning and licensing powers to regulate the concentration and combinations of adult entertainment establishments. It has been well established in law that zoning is a valid use of the state's police power to protect the "health, safety, morals and general welfare" of a community.[1] Likewise, the licensing function is an established way to regulate the existence and condition of a business. The more narrow question is whether these powers can be exercised to regulate adult entertainment without infringing on other guaranteed rights of proprietors and customers, such as the First Amendment right to free speech.

In Young vs. American Mini Theaters, Inc.,[2] the Supreme Court held that a Detroit ordinance that caused the dispersal of adult theaters from certain other "regulated" land uses, including adult bookstores and theaters, and on-sale liquor establishments, was constitutional. It was held that, in principle, the ordinance did not deprive proprietors and customers of the right to distribute or consume certain ideas, specifically those with explicit sexual content. Further, the particular limits placed on adult businesses by the law were seen as justified by a "compelling state interest" to preserve the city's neighborhoods. The ordinance represented a rational

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[1] Village of Euclid V. Ambler Realty Co., 272 U.S. 365, cited in Fredric A. Strom, Zoning Control of Sex Businesses (New York: Clark Boardman Co., Ltd., 1977), p. 21

[2] 427 U.S. 50

response to the problem of neighborhood decline based on the testimony and evidence of expert witnesses.[1]

The conditions laid down in Young vs. American Mini Theaters are narrow, and the legal issues are complex. It is not the intention of this report to enter the legal thicket in search of optimum solutions. The relevant point raised by the Detroit decision is that one of the conditions that must be satisfied to sustain the use of zoning powers to regulate adult entertainment businesses is that there must be a demonstrable public interest to be served by such regulation. Among the considerations raised by the Young case are the concerns that a concentration of adult entertainment businesses in a neighborhood may have an adverse effect on property values, result in an increase in crime, or undermine the stability of businesses and residents in the area. These are among the concerns that are empirically examined in this study, as indicated by the primary measures of relative neighborhood deterioration, housing values and crime rates.

This study looks at the effects of both sexually-oriented and alcohol serving adult entertainment establishments on neighborhoods in Minneapolis. Alcohol-serving establishments and movie theaters are subject to both licensing and zoning restrictions, while many sexually-oriented businesses are subject only to zoning restrictions (as of July 1, 1980).[2]

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[1] Ibid.

[2] Licensing of certain sexually oriented businesses, e.g., saunas and rap parlors, has proved difficult since the licensing can be avoided simply by changing the ostensible purpose of the business. Also, several past attempts to use license violations to revoke licenses have been challenged successfully in court.

Discussions with Council members and City staff produced several specific policy questions that can be pursued in this research:

1. Do different types of alcohol-serving establishments have different impacts on neighborhoods?

This is a complex question since City Council and License Staff members have raised numerous ways to classify bars. The legal definitions embodied in licensing requirements are included in the classification scheme, used here, e.g., liquor, wine, or beer, class A, B, or C entertainment. A further consideration raised is the extent to which a business is based on serving food and how this may alter the effects of the establishment on the neighborhood.

2. Do particular combinations or concentrations of adult entertainment establishments have particular impacts on neighborhoods?

This question asks whether the location of adult entertainment establishments in clusters will have different or greater impacts on neighborhoods than will similar establishments separated by a significant amount of distance. As of July 1981, the zoning code will regulate sexually-oriented businesses to 500 foot intervals between them and with 500 foot intervals between the businesses and other priority uses like residences or churches. One assumption in the regulation is that concentration of these establishments will exacerbate their negative impacts on neighborhoods. This assumption requires empirical support.

3. Does the location of a bar or sexually-oriented business in an area precede the decline of a neighborhood or does it follow it?

There is some evidence that adult entertainment businesses locate in areas that are already in decline, or perhaps are undergoing rapid change in character with relatively few stable residents or

businesses. The problem then is to determine if adult businesses further or contribute to the cycle of decline that is already in existence.

Given the severe limitations in the quality and availability of data on neighborhoods for most years, some of these policy questions are very difficult to answer. However, they can be translated into research questions that can be investigated empirically. There can be no absolute certainty in answering questions of this sort, but information can be produced that will place policy decisions on firmer grounds.

Section B

The Research Design

The policy concerns expressed in the previous section must be translated into research questions amenable to appropriate statistical techniques. This section discusses the research questions identified above and provides an outline of the techniques used in answering them.[1]

1. Introduction: The Research Question

a. Are the location and number of adult entertainment establishments and the various sub-types within this general category associated with measures of neighborhood decline?

This portion of the research utilizes simple correlation analysis to establish whether or not adult entertainment establishments of various types are empirically associated with measures of neighborhood deterioration at the census tract level.

b. Do these relationships between adult businesses and deterioration change after controlling for the impacts of other variables known to be associated with deterioration?

If the the simple relationships described in a. are established, it is reasonable to ask if they remain after the effects of other variables that may be associated with neighborhood decline are controlled. Two related statistical techniques are used in this portion of the analysis. First, the simple correlations are re-analyzed while "holding constant" some other variables thought to be related to the measures of neighborhood quality. Second, multiple regression analysis is performed to determine if any or all combinations of the adult entertainment establishments are associated with measures of

[1]Methodological issues and discussion of the choices of techniques are contained in Appendix B.1.

neighborhood quality when considered together with other control variables. The regression equations permit some estimate of the impacts of adult entertainment establishments on neighborhoods in comparison with other variables, using the regression coefficients.

c. Does a concentration of these establishments have a disproportionate impact on neighborhood decline? That is, are the observed relationships non-linear?

The relationship established in a. and b. may reveal that changes in neighborhood deterioration increase at a greater or lesser rate than increases in the concentration of adult entertainment establishments. If this is the case, the relationships are non-linear, and it may be possible to identify the point at which further increases in the concentration of adult uses will have disproportionately great impacts on surrounding areas. The simple relationships are tested using one-way (bivariate) analysis of variance techniques to identify significant departure from linearity. The multi-variate regression analyses are tested through examination of residuals.

d. Do the relationships observed in the data, either over time or cross-sectionally, permit the inference that adult entertainment establishments precede or accelerate neighborhood decline?

For policy concerns, it is important to determine whether adult entertainment establishments precede or follow neighborhood deterioration. This will be impossible to prove empirically. However, circumstantial evidence can be developed which is consistent with our suspicions about neighborhood decline. In the present case, the statistical technique of path analysis is used to determine whether adult businesses precede or follow signs of deterioration. We hypothesize that deterioration does follow the location of such

businesses, (in the sense that adult businesses contribute to the existing cycle of decline in the neighborhood), even though it may be the case that adult businesses are attracted to areas already in the process of decline (the businesses follow decline).

It is also possible to examine hypotheses about causal relationships using longitudinal data. Observations of actual changes in variables over time were made, comparing 1979 to 1970 measurements, but these observations were unsatisfactory due to measurement error and lack of sufficient data points. Therefore, these cross-time measurements and the analyses of them are not reported in this document.

2. Variables and Data Sources

Numerous data sources were used to obtain measures of the many variables used in this study.[1] Measurements were taken at two points in time for as many variables as possible. Generally, the years for which measurements are available are 1970 and 1979, although some variables were measured for different years if data was not available for one of these years. These can best be discussed as independent, dependent, and control variables.

a. Independent Variables

The independent variables are all on-sale liquor serving establishments of all types and classes, plus sexually-oriented businesses.

(1) On-sale liquor establishments - Establishments may be licensed to sell beer only, wine and beer, or liquor, wine, and

[1]Appendix B.2 contains a complete list of variable names and their descriptions and/or measurement.

beer. We will refer to these simply as beer, wine, or liquor. Wine licenses are issued to businesses whose total volume is expected to be at least 60 percent food service. These businesses also obtain different types of licenses depending on the kind of entertainment provided on the site. As discussed in Chapter I, a Class C license permits only juke boxes, machines, T.V. and the like. The Class B license permits a single performer to play an instrument, plus the entertainments permitted under the C license. The Class A license permits any of the entertainment allowed under the first two licenses, plus live bands, shows, dancing, and so forth. Table II.I shows the numbers of bars in each category for 1970 and 1979, excluding the downtown tracts.[1]

Table II.1: Number of Bars by Category, 1970 and 1979[2]

	1970			1979		
	Class A	Class B	Class C	Class A	Class B	Class C
Beer	10	3	175	5	2	128
Wine*	0	0	0	1	0	17
Liquor	28	3	58	47	3	62
Total	38	6	233	53	5	207

*"Wine" was not a license category in 1970.

[1]Downtown tracts 45, 46.01, 46.02, 44, 47, 53, and 54 were eliminated from most analysis because they are not, properly speaking, residential areas. There are numerous households in the area, but the predominance of commercial and other non-residential uses, combined with the high concentration of adult businesses, distorts the analysis performed here. See Tables II.7 and II.8 for some results including downtown.

[2]Counts here differ from those in the previous section because downtown tracts are excluded. The 1979 citywide total, including downtown is 367. In this study, the total is 265.

(2) Adult sexually-oriented businesses - These businesses include adult (x-rated) movie theaters, adult book stores, saunas and rap parlors, plus bars which provide live sexually-oriented entertainment. The 1980 data is complete, but information on sexually-oriented businesses that were not licensed in the period around 1970 (e.g., sexually-oriented entertainment in bars) cannot be reliably measured at this point and were omitted from the analysis. Table II.2 provides counts of these businesses for 1970 and 1979, again omitting downtown.

Table II.2: Number of Sexually-Oriented Businesses by Category, 1970 and 1979

	1970	1979
Saunas, etc.*	11	14
Adult bookstores	UNK	7
Adult theaters	1	6
Bars with sexually-oriented entertainment	UNK	5

*License records are available beginning with 1973.

The source for saunas and theaters are License Department records for the different years. Complete up-to-date counts of these businesses plus adult bookstores, rap parlors, and so forth, were also obtained from the Office of the Zoning Administrator. Bars with live sexually-oriented entertainment in 1979-1980 were identified by members of the Minneapolis Police Department and License Department staff.

b. Dependent Variables

The main dependent variables used in this study are mean housing value and an index of crime rate per 1,000 population, at the census

tract level. These variables are generally recognized to be good indicators of neighborhood deterioration.

(1) Housing value - For 1970, mean housing value is the owner estimated single-family housing value in the 1970 census, averaged for each tract.

For 1979, the mean housing value is the average assessed value of the single family housing in each census tract. The Property Management System of the City of Minneapolis is the source of this information.

Though neither of these measures perfectly reflects the arm's length market value of housing, each should provide an unbiased estimate of housing value in each tract for that year, thus producing valid measures of variation from tract to tract.

(2) Crime rate - Adequate census tract level data on crime rates is not available for 1970. The substitute measure used here is an index of crime using data from a one year period extending from the middle of 1974 to the middle of 1975. This data was collected by staff of the Minnesota Crime Prevention Center as part of a study of crime in Minneapolis.[1]

Crime data for 1979 and 1980 was collected from the files of the Minneapolis Police Department's Integrated Criminal Apprehension Program, for which the Minnesota Crime Prevention Center provides technical assistance. A crime index was constructed from this data using commercial robbery and burglary, residential burglary, personal robbery, rape and assault. The index is an aggregated tract-level measure of the number of crimes per 1,000 population.

[1]Douglas W. Frisbie, et al, Crime in Minneapolis, Minneapolis: Minnesota Crime Prevention Center, Inc., 1977.

Finally, other measures of neighborhood quality were considered for inclusion in the list of dependent variables, including measures of commercial vacancy rates and area condition estimates. Some analysis was performed using these variables, and will be reported where appropriate.

c. Control Variables

Certain third variables believed to have an impact on neighborhood quality were also measured for 1970 and 1979. These variables are used in the analysis to determine the extent to which the associations of adult entertainment establishments with neighborhood quality are actually due to the control variables rather than the independent variables themselves. It is possible that both the location of adult businesses and the level of housing value or crime rate are caused by some third variable. Control variables can be held constant with statistical techniques to see how the variables of major concern are related when the controls can no longer make a difference. Statistically speaking, these variables are used to identify spurious relationships or to help confirm the effects of an independent variable. Because a large number of these third variables are used, the data sources and variable definitions will be presented only in summarized fashion.

(1) 1970 Data - The major sources used for measuring 1970 control variables were the 1970 census and the Polk Company's Minneapolis City Directory. Tract level measures of neighborhood characteristics like residential stability and percent of owner occupied dwellings were taken from the census. The Polk directory provided information on commercial structures in 1972.

(2) 1979 Data - The 1979 data was obtained from several sources. Data on residential units, including age, type, condition, number, gross building area, lot size, and tax status (i.e., homestead or not) were collected from the Property Management System.[1]

The bulk of the commercial property descriptions were taken from the Polk city directory for 1978. In addition, estimates of 1978 household income and tract population were taken from Polk data.

Measures of household occupancy and turnover rates were taken from the Minneapolis quarterly report on vacancy and turnover for January 1, 1980 to March 31, 1980 produced by the Minneapolis Planning Department. The original source of this data was the NSP billing tapes.

3. Level of Analysis

All variables have been measured at the census tract levels. This means that observations for a given variable have been aggregated within a tract for the appropriate time period, and a summary measure produced. For example, the measure of all alcohol serving businesses for 1979 is a count of all types and classes of on-sale licenses issued by the city for that year, by census tract.

[1]Programming and tape creation for PMS data were performed by the City's Management Information Service.

Section C

Analysis and Findings

1. Simple Relationships

- Are the location and number of adult entertainment establishments and the various sub-types within this general category associated with measures of neighborhood decline?

Based on previous related research and discussions with interested persons, we expected to find that a high concentration of such businesses is associated with an increased crime rate and decreased housing values.[1] The simple correlation coefficients confirm these expectations.

Table II.3: Pearson Correlation Coefficients: Adult Entertainment Establishments and Measures of Neighborhood Quality, 1979

	Mean Housing Value 1979	Crime Rate Index, 1979-80
All adult businesses	-.1320	.1926*
Sexually-oriented businesses	-.1533*	.2440*
Alcohol-serving businesses	-.1208	.1380
Beer	-.2531*	.1683*
Wine	.1079	-.0441
Liquor	.0267	.0760
Class A	.0584	.0405
Class B	-.0691	.2415*
Class C	-.1409	.1421

*Correlations are significant at the .05 level or better.

As Table II.3 shows, several categories of adult businesses have a statistically significant relationship with the measures of neighborhood deterioration. Concentrations of sexually-oriented businesses and beer bars show relatively strong relationships with both housing value and the crime rate in the expected directions.[2] The

[1]See Minnesota Crime Prevention Center, "Neighborhood Deterioration and the Location of Adult Entertainment Establishments in St. Paul," Minneapolis: MCPC, Inc., 1978.

[2]See Appendix B.1 for a breakdown of the crime rate into four of its component crimes and their associations with adult establishments.

relationship between the location of adult entertainment businesses and crime is generally stronger than that between these businesses and housing value. Most of the observed correlations are very weak.

The relationships in Table II.3 vary among the sub-types of adult establishments: some of the types are more closely related to the neighborhood variables than others. It is possible that these differences are due entirely to differences between the types of establishments, but that seems to be only a part of the issue. It is likely that other variables are affecting the relationship.

Included among these other variables, the effects of city policy, business decisions, and the general environment of the adult business are likely to make a difference in the way the business is related to housing value and crime. The classification of the businesses that is used here already reflects the licensing procedures of the city, but other policies, especially zoning regulations, may have an impact. Zoning regulations affect the size and type of commercial area within which different types of adult businesses may locate, with possible consequences for their impacts on neighborhoods. One business decision that Council members suggested might affect an establishment's relationship with crime and housing value is the proportion of the business that is devoted to food service. Businesses that are actually restaurants that happen to have alcohol licenses may be different than those that are primarily bars. The residential environment of the adult business may be characterized by many variables that could have an impact.

In this study, these concerns are measured and taken into account through the use of statistical controls. The zoning policy issue is

summarized in a measure of the proportion of commercial units found in each tract. The restaurant vs. bar distinction is based on a measure of the proportion of a business that is food-related, with those that are greater than 50 percent food considered primarily restaurants.[1] The residential environment is characterized by a measure of average household income in a census tract. Income is very highly related to other measures of residential area type.

The simple relations between these control variables and the types of adult entertainment establishments suggest that they might make a difference in the relationships between types of adult businesses and crime or housing value.[2] The next section presents some analyses that explicitly use these control variables to examine the relationship between adult business and neighborhood deterioration more closely.

Summary Findings: Simple Relationships

(1) Concentrations of beer licensed bars and sexually-oriented businesses are significantly related to lower housing values. Most types of adult businesses are negatively related to housing values, even if they are not significant.

(2) A summary measure of all adult businesses, sexually-oriented businesses, beer and Class B entertainment licensed alcohol-serving businesses are significantly related to high crime rates. All but one type of adult business are positively related to the crime rate.

(3) Overall, the relationship between adult business concentrations and neighborhood deterioration measures are weak.

2. Complex Relationships

- Do the observed relationships change after controlling for the impacts of other variables known to be associated with neighborhood quality?

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[1] Members of the Police Department and the Licensing staff supplied the list of licensed establishments that are primarily in food service.

[2] See Appendix B.1 for a presentation and discussion of these results.

This section is in two parts. The first part presents first order partial correlations between concentrations of adult businesses and measures of neighborhood quality, controlling for the policy relevant variables of food percentage of business and commercial characteristics of bar locations, in addition to controlling for the effects of type of residential area on the relationships. In the second half of this section, even more stringent statistical tests are reported which permit an estimation of the amount of impact of various combinations and concentrations of adult businesses on neighborhood quality, while simultaneously controlling for the effects of other variables.

a. Partial Correlation

Table II.4 shows how the simple relationships between adult entertainment establishments and neighborhood quality measures change when the effects of other variables that measure important policy and environmental factors are controlled.

The partial correlations in the third and fourth columns of Table II.4 show the effects of controlling for food business on the relationships between adult entertainment business types and the neighborhood deterioration measures.[1] Bars that are devoted primarily to serving alcohol are more strongly related to lower housing value and higher crime rates. With the effects of restaurant-type businesses removed, more of the relationships are significant, and nearly all of them are in the direction expected, i.e., concentrations of bars

[1] Sexually-oriented establishments and all adult business partial correlations are not reported in this case because there is no indication that sexually oriented businesses serve food.

are associated with lower property values and higher overall crime rates. Liquor bars and Class C entertainment licensed bars, in particular, are significantly related to crime and/or housing value when food business is controlled.

Table II.4: Partial Correlation Coefficients: Adult Entertainment Establishments and Neighborhood Quality, 1979

	Simple Correlations		Partial Control for food		Partial Control for Percent Commercial		Partial Control for Mean Income	
	House Value	Crime Index	House Value	Crime Index	House Value	Crime Index	House Value	Crime Index
All adult	-.1320	.1926*	-	-	-.0707	-.0147	.0738	-.0861
Sexually-oriented	-.1533*	.2440*	-	-	-.1415	.2314*	-.1089	.2153*
Alcohol-serving	-.1208	.1380	-.2865*	.1751*	-.0405	-.0700	.1023	-.1398
Beer	-.2531*	.1683*	-.2254*	.1618*	-.2423*	.1418	-.2036*	.0879
Wine	.1079	-.0441	-.2800*	-.0029	.1627*	-.2154*	.2219*	-.2034*
Liquor	.0267	.0760	-.1592*	.1039	.1022	-.1482	.2254*	-.1859*
Class A	.0584	.0405	-.1137	.0645	.1191	-.1514	.2334*	-.1975*
Class B	-.0691	.2415*	-.1310	.2494*	-.0441	.1898*	.0360	.1420
Class C	-.1409	.1421	-.3217*	.1667*	-.0856	-.0560	.0303	-.1066

*Significant at the .05 level or better.

The controls for commercial area (the fifth and sixth columns in Table II.4) and mean income (seventh and eighth columns) also change the simple relationship dramatically, and the two variables are fairly similar in their effects on the relationships of particular types of adult businesses to neighborhood deterioration.

When the percentage of all units in a census tract that are commercial is used as a control, the overall relationship between adult businesses and deterioration is reduced almost to zero. However, when the various sub-categories of adult businesses are investigated, some fairly strong relationships remain.

Sexually-oriented businesses continue to be related to higher crime rates, and beer bars continue to be related to lower property values, even when commercial business concentrations are controlled. Beer bars are likely to be nearer to residential areas than wine or liquor bars are, in part because of zoning requirements. The fact that sex businesses are significantly related to crime even after the commercial concentration is controlled possibly suggests that these businesses may have an impact on crime rates independent of other commercial businesses.[1]

On the other hand, the control for commercial characteristics raises the relationships between liquor or Class A bars and crime from zero to almost significant levels. In the case of the liquor bars, this probably reflects the zoning restrictions which requires that they locate in "seven-acre" commercial zones. Wine licensed businesses' relationships to neighborhood deterioration change from insignificant to significant, but in the opposite directions expected, i.e., wine bars are associated with higher housing values and lower crime rates when commercial concentration is controlled. This finding is suspect because of the small number of establishments involved.

Controlling for income (columns 7 and 8) produces strong relationships between liquor, wine, and Class A entertainment bars and higher housing values, and between these types of adult businesses and lower crime rates. These relationships are opposite to what would be

[1]See Appendix B.1: information in Tables 7 and 8 in Appendix B.1 also suggests that the relationship of sex businesses to crime is due to the type of area these businesses are in. Specifically, sex businesses are significantly related to commercial vacancies. They are also highly related to commercial crime even though they are not, at the tract level, associated with high commercial concentrations.

expected if all concentrations of bars were associated with neighborhood decline. They suggest that income -- or the social conditions in neighborhoods that income represents -- accounts for a large proportion of the simple relationship between these alcohol-serving businesses and neighborhood quality. One inference is that a bar may be an amenity if the neighborhood is already of higher socio-economic type as indicated by income. Generally, the observed relationships are similar to those observed when commercial land use was the control, only more pronounced. As with the commercial control variables, beer bars and sexually-oriented businesses continue to be related to the deterioration measures in the same direction, although not as strongly, when income is controlled. The effects of these establishments are relatively constant, or independent of changes in mean income in surrounding tracts.

One possibility that these partial correlations do not take into account is that the control variables themselves are related to each other and have effects on the relationships between adult businesses and neighborhood measures in combination. This possibility will be explored using multiple regression in the following section.

b. Multiple Regression: Adult Entertainment Establishments and Crime[1]

The objective of this section is to determine whether adult businesses have an impact on neighborhood quality when other factors -- the control variables described above -- are considered simultaneously,

[1]See Appendix B.1 for a description of the methods used in this portion of the analysis, and for some further results. Unless otherwise noted, the regressions do not include downtown census tracts.

and if these establishments do have an impact, how great is this relative to the other variables.

A set of multiple regressions using the crime index as the dependent variable are reported in Table II.5 The regression coefficients indicate how much change in the dependent crime variables is associated with a change of one unit of the independent variables. For example, in Regression #1, the regression coefficient, b, indicates that the crime rate per 1,000 population drops 28.20 crimes, on the average, for each tract in which all the bars serve 50 percent or more of their volume in food (since the measure of food volume is a proportion). Care must be taken when interpreting the regression coefficients because the units they are associated with are not always comparable. The b for the income variable is very small, but it is more significant than the food service variable. For the purposes of this report, the significance of the coefficients and the beta weights provide the key information. If a coefficient is significant (.05 or less), then the beta weight provides a way to compare the strengths of the relationships between the independent variables (type of adult business) and the measure of crime rate.

Consistent with the partial correlations discussed in the section above, only the sexually-oriented businesses have significant coefficients and are associated with a higher crime rate. Both liquor bars and Class A bars are associated with lower crime rates when other factors are taken into account. No other type of adult businesses are significantly related to the crime index when they are considered simultaneously with the control variables.

Table II.5: Multiple Regression: Adult Entertainment Establishments and Crime, 1979, with Controls

		Regression #1: Control variables and crime.				Regression #2: Controls plus all adult businesses and crime.				Regression #3: Controls plus all adult businesses and crime, including downtown.			
		.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta
Control Variables	% serving food	-28.20	10.81	.010	-.191	-26.42	10.99	.018	-.1787	-76.23	58.09	.192	-.1022
	% of area units commercial	.6556	.2966	.029	.208	.7057	.3020	.021	.2242	5.850	.9756	.000	.6745
	Mean income	-.00638	-.00114	-0-	-.513	-.0066	.0012	.000	-.5315	.0076	.0054	.165	.1251
Independent Variables	All adult					-.8835	.9669	.363	-.0735	.3936	3.201	.903	.0121
	Sexually-oriented												
	Bars												
	Beer												
	Wine												
	Liquor												
	Class A												
	Class B												
	Class C												
Summary Statistics	R	.658				.661				.594			
	R^2	.433				.437				.353			
	Significance	-0-				.000				.000			

Table II.5 Continued: Multiple Regression: Adult Entertainment Establishments and Crime, 1979, with Controls

		Regression #4: Controls plus sexually-oreinted busisnesses and crime.				Regression #5: Controls plus bars and crime.				Regression #6: Controls plus liquor bars and crime.				Regression #7: Control plus Class A bars and crime.			
		.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta
Control Variables	% serving food	-26.51	10.65	.014	-.1794	-24.85	10.98	.026	-.1681	-22.59	11.04	.043	-.1529	-22.71	11.01	.041	-.1536
	% of area units commercial	.6365	.2917	.031	.2023	.7388	.3002	.015	.2347	.7702	.2985	.011	.2447	.739	.2957	.014	.2350
	Mean income	-.0062	.0011	.000	-.4963	-.0067	.0015	.000	-.5417	-.0067	.0011	.000	-.5388	-.0067	.0011	.000	-.5383
Independent Variables	All adult																
	Sexually-oriented	9.151	4.080	.027	.1564												
	Bars					-1.517	1.008	.135	-.1206								
	Beer																
	Wine																
	Liquor									-2.730	1.371	.049	-.1571				
	Class A													-5.15	2.54	.045	-.155
	Class B																
	Class C																
Summary Statistics	R	.676				.666				.672				.673			
	R^2	.457				.444				.452				.452			
	Significance	.000				.000				.000				.000			

The first regression shows the relationships between the three control variables of food, commercial concentration, and mean income. All of them are significantly related to the crime index, although the beta weights suggest that mean income is associated with the greatest changes in neighborhood quality. Both mean income and the percent of bars predominantly in the food business (50 percent food service or greater) have negative signs which indicate that higher incomes and more bars that are primarily food businesses are in lower crime areas. Crime increases as the percent of an area that is commercial increases.[1] These coefficients are about the same size and have the same signs in all the regressions in Table II.5 except for number 3, which includes downtown tracts.[2] This indicates that the estimates for these control variables are fairly reliable, at least with respect to the adult businesses.

The sub-types of the adult businesses that do have significant relationshps with crime -- liquor bars, Class A entertainment bars, and sexually-oriented businesses -- are shown in Table II.5.

The presence of sexually-oriented businesses in a census tract is not as strongly related to the crime rate in the tract as any of the control variables, as indicated by the beta weight. Yet, these

[1]In part, this is an artifact of the data: the crime index is defined to include commercial crimes which happen only in commercial areas, by definition. However, redefining the index to exclude commercial crimes does not change the regressions very much overall. And the greater changes in the commercial variables represent an important loss of information.

[2]The inclusion of the downtown tracts shows the way these tracts change the relationships among the variables.

businesses do have a significant relationship with crime: the regression coefficient, b, suggests that the addition of one sexually-oriented business to a census tract will increase the overall crime rate index by 9.15 crimes per thousand people per year, after the control variables are taken into account.[1]

Liquor bars and Class A entertainment bars are also significantly related to crime, but not in the expected direction. After the effects of the control variables are taken into account, these types of adult businesses are significantly associated with lower crime rates. This confirms the evidence drawn from the partial correlations, above. In the case of liquor bars, each one is associated with a decrease in the crime rate of 2.7 crimes per thousand per year, and the beta indicates that this bar variable is about as strong in its associations with the crime rate as the restaurant control variable. Class A entertainment bars produce an even stronger relationship, on the average, with a decrease of 5.15 crimes for each additional bar of this type in a tract.

In literal terms, when the environment of a bar, as described by the commercial and residential variables, and its internal business procedures, as described by the food control variable, are taken into account, bars of some types may be an amenity to a neighborhood in terms of crime. But, common sense argues that bars are not very likely to produce safety from crime in a neighborhood. The more realistic interpretation of these results is that the associations between liquor bars and Class A entertainment bars and crime are

[1]The citywide average crime rate index by tract is approximately 48.62.

greatly affected by their surroundings. In other words, the environment of the bar produces the conditions that spawn crime, not the bar itself.[1] Nevertheless, the bar may be a focal point for whatever crime disturbances do occur -- these data do not necessarily contradict that point.

c. Multiple Regression: Adult Entertainment Establishments and Housing Value

Table II.6 contains regressions that evaluate the impact of the control variables -- food in bars, commercial concentration, and mean income -- plus the impact of adult business on housing value. The only type of adult entertainment establishment that is significantly related to housing value is the wine bar.[2] Higher concentrations of wine license bars in a tract are associated with lower housing values. This finding is probably spurious: there are relatively few wine licenses in the city, which exaggerates the impact of each one on the measure of housing value. Since several of these licenses are in businesses like the restaurant in the Art Institute, the fact that they are in neighborhoods with low housing values is due to the location of the business prior to acquisition of the license. The wine license per se is almost certainly not "causing" deterioration. This conclusion is further bolstered by the fact that wine licenses were

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[1]This interpretation is also supported by the partial correlations. The food control, as discussed, produced relations in the expected direction. However, the residential and commercial environmental controls changed the relations between these types of bars and crime from weakly positive to significantly negative.

[2]The inclusion of downtown tracts, as usual, changes these values. The adult businesses then become significantly related to housing value. See regression #3 in Table II.6.

Table II.6: Multiple Regression: Adult Entertainment Establishments and Housing Values, 1979

		Regression #1: Control only, with housing value.				Regression #2: Controls plus all adult businesses and housing value.				Regression #3: Controls plus all adult housing values: includes downtown.			
		.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta
Control Variables	% serving food	36123.35	4438.19	0	.5449	36985.71	4507.3	.000	.5579	38683.7	4464.3	.000	.5386
	% of area units commercial	77.63	121.79	.525	.0550	101.99	123.80	.412	.0723	-237.73	74.96	.002	-.2846
	Mean income	3.199	.466	0	.574	3.090	.4769	.000	.5546	2.333	.4186	.000	.3981
Independent Variables	All adult					-425.76	396.43	.285	-.0789	-648.93	246.59	.010	-.2074
	Sexually-oriented												
	Bars												
	Beer												
	Wine												
	Liquor												
	Class A												
	Class B												
	Class C												
Summary Statistics	R	.724				.728				.768			
	R^2	.525				.529				.588			
	Significance	-0-				.000				.000			

Table II.6 Continued: Multiple Regression: Adult Entertainment Establishments and Housing Values, 1979

		Regression #4: Controls, including crime index, plus adult, and housing value.				Regression #5: Controls plus sexually-oriented businesses and housing value.				Regression #6: Controls plus all bars and housing business.				Regression #7: Controls plus wine licenses, and housing value.			
		.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta	.b	error of b	sig.	beta
Control Variables	% serving food	33611.6	4409.59	.000	.5070	35823.3	4451.0	.000	.5404	36943.9	4536.5	.000	.5572	45201.0	5315.59	.000	.6818
	% of area units commercial	192.13	120.96	.115	.1361	80.94	121.88	.508	.0573	98.12	124.04	.431	.0695	108.33	118.50	.363	.0767
	Mean income	2.247	.5155	.000	.4033	3.162	.4682	.000	.5674	3.113	.4768	.000	.5587	3.140	.4524	.000	.5636
	Crime Index	-127.73	36.65	.001	-.2848												
Independent Variables	All adult	-538.62	379.74	.159	-.0998												
	Sexually-oriented					-1627.86	1704.80	.342	-.0620								
	Bars									-371.34	416.45	.374	-.0658				
	Beer													-8155.53	2806.14	.004	-.2332
	Wine																
	Liquor																
	Class A																
	Class B																
	Class C																
Summary Statistics	R	.758				.727				.726				.745			
	R^2	.575				.528				.528				.557			
	Significance	-0-				.000				.000				.000			

not issued in the 1970 sample, so neighborhood deterioration was probably well underway before any business acquired a wine license.

In summary, adult entertainment establishments do not appear to have a very strong relationship to changes in housing value when other variables are taken into account. The relationships are weaker than the ones found for crime as the measure of neighborhood quality. Although housing value is negatively associated with adult businesses, these coefficients are statistically insignificant, and therefore no conclusions should be drawn. Similarly, the measure of commercial concentration is insignificantly associated with housing value. Since adult businesses must locate in commercial concentrations, it may be reasonable to interpret the lack of a relation between adult businesses and housing value as a reflection of the lack of association between commercial concentrations and housing values.

Overall, one reasonable interpretation of the patterns in these regressions is that housing value may be high or low whether or not there are concentrations of adult businesses. The direction of the relationship probably depends on particular businesses in particular neighborhoods. In part this depends on the kind of neighborhood surrounding the commercial establishments, as the consistent relationships in the other control variables, such as mean income, demonstrate. In other words, when mean income is low, a relatively high crime rate probably exists given the strong negative relationship between income and crime, regardless of whether bars or other commercial businesses are present.

Summary Findings: Complex Relationships

Controlling for the effects of policy relevant and environmental variables changes the relationships between many of the types of adult establishments and neighborhood deterioration measures.

(1) The effects of beer bars on housing values is negative and significant regardless of which controls are used, as long as they are used one at a time.

(2) The effects of sexually-oriented businesses on crime rate index is positive and significant regardless of which control variable is used.

(3) Controlling for those businesses that are basically restaurants changes the simple relationship between several types of bars and crime or housing value very strongly in the expected direction. It appears that primarily alcohol-serving businesses are much more strongly related to low housing values and high crime rates than are food service businesses.

(4) The impact of zoning policy can be weakly discerned in the relationships when commercial concentration is controlled. Commercial areas themselves have some independent impacts on crime and housing value as indicated by the changes caused by controls. Wine, liquor, and Class A entertainment bars, which are all more likely to be required to locate in highly commercial areas, have stronger -- though not always significant -- relationships, especially with crime.

(5) When mean income by census tract is controlled, liquor, wine, and Class A entertainment bars have a positive association with neighborhood quality, i.e., they are associated with higher housing values and lower crime rates.

(6) Sexually-oriented businesses continue to be associated with higher crime rates, even when the control variables' impacts are considered simultaneously.

(7) Liquor bars and Class A entertainment bars appear to decrease crime when the controls are taken into account. This is taken as evidence that the neighborhood residential and commercial characteristics are really determinative regarding the crime rate. The bars reflect their surroundings.

(8) Only wine bars have significant associations with housing value, appearing to decrease that value. However, the small number of licenses and the types of establishments that have wine licenses suggest that this finding is spurious.

3. Tests for Linearity

There are two reasons to be concerned about whether or not the relationship here are linear. First, non-linear relationships would mean that increases in concentrations of adult businesses would have effects on neighborhoods in geometric proportion, which could mean that concentrations are especially undesirable. Second, discovery of a non-linear relationship would indicate that the methods used in the previous section are improper, as they are based on the assumption of linearity.

The analysis of variance tests performed on the two-variable regressions of adult entertainment and neighborhood measures show no significant departures from linearity. The inspection of residuals from multiple regressions reveal no clear-cut interactions or curvilinear relationships.[1] Therefore, the linear methods and assumptions, and conclusions drawn from them, are appropriate for this study.

4. Causal Analysis

This section addresses the following question:

- Do the relationships observed in the data, either over time or cross-sectionally, permit the inference that adult entertainment establishments precede or accelerate neighborhood decline?

In order to provide answers to this question, we must make use of special techniques and make assumptions about what causes what. If the data are consistent with the assumptions, then there is circumstantial evidence that the causal relations assumed are correct.

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[1]See Appendix B.1 for further discussion.

The major technique used here to assess causality is path analysis.[1] This approach makes use of Pearson and partial correlations to test some assumptions about the causal impacts of adult entertainment establishments on neighborhood quality. To perform this anlaysis, summary variables for neighborhood quality in 1970 and 1979 were created. These variables take into account many factors describing neighborhoods other than adult businesses, mean housing value, or the crime rate.[2] These summary variables are used as controls. In the analysis presented here, only the 1979 factor scores are considered.

The central hypothesis tested is that adult entertainment establishments have a direct causal impact on neighborhood quality measures, but that they also follow from neighborhood quality. That is, these businesses are in a cycle where they are more likely to locate in areas where there is already some deterioration, and then contribute to further decline of the area. This hypothesis is consistent with both our intuitive notions about the matter, and with

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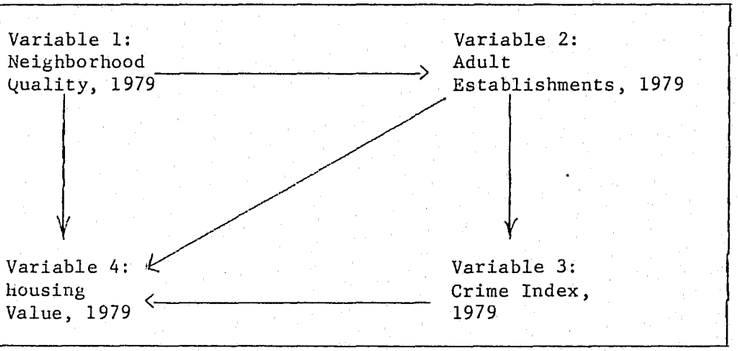
[1]See Appendix B.1. (Section D, p. B-11) for further discussion of the technique.

[2]These summary variables were created from a set of 12 variables describing the residential and commercial characteristics of neighborhoods, including density, stability of residents, percent owner occupied, commercial vacancies, and so forth. The technique used was an R-factor analysis with Quartimax rotation. A single factor accounting for 82 percent of the shared variance of the variable set was used to develop factor scores for each census tract. This new variable was used in the path anlaysis. A 1970 factor was found that accounted for 100 percent of the shared variance of the variables.

some evidence developed in an earlier study in St. Paul.[1] Using arrows to indicate the direction of causality, Figure II.1 represents this hypothesis. Causally speaking, Figure II.1 assumes that 1) the overall measure of neighborhood quality is casusally prior to all the other variables; 2) that characteristics of adult establishments are caused by the general quality of the neighborhood; 3) that crime is caused by both general quality and adult businesses; and 4) that housing value is dependent upon all of the other variables. Table II.7 contains the relevant predictions and actual values of the correlation coefficients obtained from the data.

Figure II.1: Path Diagram of the Hypothesis that Adult Establishments Contribute to On-Going Processes of Deterioration in Census Tracts



[1]Minnesota Crime Prevention Center, "Neighborhood Deterioration and the Location of Adult Entertainment Establishments in St. Paul" (Minneapolis: MCPC, Inc., 1978). Using different methods, the St. Paul study found that the location of bars was related to both prior measures of neighborhood deterioration, and to subsequent ones. It concluded that adult businesses may be part of a cycle of decline in which they contribute to or accelerate an on-going process.

The model in Figure II.1 says that there should be a direct relationship between adult entertainment establishments and housing value, even when the general effects of neighborhood quality are taken into account. According to the logic of the path analysis, this means that a number greater than zero should describe the relationship even after general neighborhood quality is controlled. This relationship is shown in Table II.7 in prediction #3. However, the observed partial correlation in Table II.7 is -.0044 (Actual Value #3), which is too close to zero to accept the prediction as being accurate. The actual value suggests that when the general effects of the neighborhood quality index are taken into account, adult business concentrations have no relationship to housing value. In other words, the general character of the neighborhood is responsible for both housing values and concentrations of adult establishments.

Table II.7: Path Analysis Predictions and Actual Empirical Values[1]

Predictions

(1) Pearson's r, variables 2 and 4: $r_{24} = (r_{12})\ (r_{14})$

(2) Pearson's r, variables 2 and 3: $r_{23} = (r_{12})\ (r_{13})$

(3) Partial correlation, variables 2 and 4, controlling for 1: $r_{24.1} > 0$.

(4) Partial correlation, variables 2 and 3, controlling for 1: $r_{23.1} > 0$.

Actual Values

(1) $r_{24} = -.1320 = (r_{12})\ (r_{14}) = -.130$

(2) $r_{23} = .1926 = (r_{12})\ (r_{13}) = .25$

(3) $r_{24.1} = -.0044$

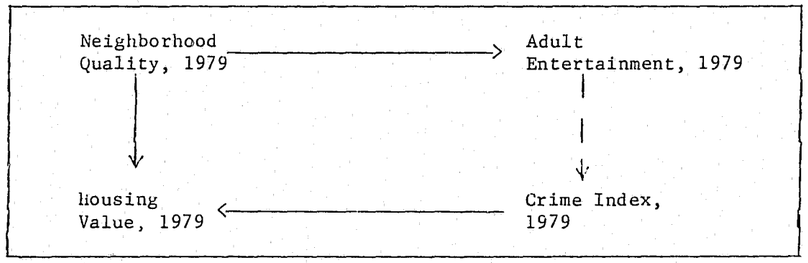
(4) $r_{23.1} = -.0761$

[1]The logic of predictions in path analysis is discussed in Appendix B.1.

The predictions for adult businesses and crime (predictions #2 and #4) are not so clear cut. The predicted correlations in Table II.7 are similar to the actual ones ($r_{23.1} = -.0767 > 0$). Conservatively, we must conclude that some small direct relationship between adult businesses and the crime index remains, even though the magnitudes involved are very small. Alternatively, since the partial correlation between adult businesses and crime, controlling for the neighborhood quality index, drops toward zero, we might also conclude that the neighborhood quality index is responsible for both the crime index and the presence of adult entertainment. This is similar to the case of housing value. However, the evidence suggests that a direct connection between crime and adult businesses is possible, but slight.[1]

Figure II.2 shows the revised model that seems to reflect the data more adequately than Figure II.1. The dotted line between adult entertainment and crime indicates that a weak direct link between

Figure II.2: Revised Causal Path Model of Adult Entertainment and Measures of Neighborhood Decline



[1]It should be noted that for all predictions an analysis of regression coefficients for these variables generally confirms the results reported here. The regression for crime, with both the quality index and adult business as independent, suggests that the adult variable loses significance, and its coefficient drops toward zero.

adult businesses and crime remains. The link between housing value and crime disappears completely. These results are consistent with other findings here which indicate almost no relationship between housing value and adult businesses remains when any of a number of different controls are used. Even though the crime rate index does have a slightly stronger direct relationship with adult business ($r = -.076$), it, too, is very weak and tends to disappear when other variables are considered.

Summary Findings: Causal Analysis

(1) The assumption that concentrations of adult entertainment businesses have a direct impact on property values is not born out in the path analysis. Controlling for general neighborhood quality indicates that, at the census tract level, adult businesses as a group do not lower housing value.

(2) The assumption that crime has a direct link with adult businesses is confirmed in this path analysis, but very weakly.

Section D

Summary and Conclusions

This portion of the study of adult entertainment in Minneapolis has produced several tentative conclusions.

(1) Different types of adult entertainment businesses are different in their relationships to crime and housing value. Some types of these businesses have significant relationships with crime or housing value; others do not. Neighborhood stabilization policies should attempt to take these differences into account.

Sexually-oriented businesses and beer bars are significantly related to both crime and housing value. In addition, a summary measure of all adult businesses and Class B entertainment bars are significantly related to crime, using simple bivariate statistical techniques.

(2) Taking factors which reflect business decisions, urban policy decisions, or neighborhood environment into account changes the simple relationships between adult businesses and neighborhood deterioration a great deal.

The evidence suggests that past policies or residential developments may have greatly affected current observations of the relationships between types of adult businesses and crime or housing value. By law the liquor bars have to be located in seven-acre commercial zones, and therefore they are more likely to be statistically related to commercial crimes (since they are in proximity to more commercial establishments) than residential crimes. Wine licenses are by law only given to establishments that primarily serve food, and the partial correlations reflect this fact. When average income is taken into account, some types of bars -- such as liquor bars and Class A entertainment bars -- even <u>appear</u> to have desirable effects,

i.e., the neighborhood crime rates are lower. This is a result which actually indicates that the type of surrounding neighborhood determines a great deal of the relationship between adult businesses and measures of deterioration.

(3) Evaluation of the data using the technique of path analysis suggests that adult entertainment variables are not causally prior to crime rate and/or housing value.

The path analysis is a technique which can be used to test the compatibility of a hypothesis about the causal relationships among a set of variables with empirical data. The hypothesis tested here was intended to answer the question whether adult entertainment preceded or followed neighborhood deterioration. Specifically, it was assumed in the path model that adult entertainment was likely to locate in areas that were already in decline, and then contribute further to that decline. This assumption is very weakly supported in the case of crime, but it is clearly not supported in the case of housing values. Adult entertainment establishments do concentrate in areas that are relatively deteriorated, but they do not appear to cause that deterioration. At most, they contribute very weakly towards its continuation.

(4) Sexually-oriented businesses have a greater number of significant relationships to high crime rates and low property values than any other type of adult entertainment establishment in this study.

The relationship between sex businesses and higher crime rates is especially strong. The association between these businesses and lower housing values disappears, however, when other factors are taken into account. In addition, these businesses are quite strongly related to percentage of vacant commercial properties, which is often used as a measure of a declining commercial area. These associations

alone are not evidence that a sexually-oriented business locating in an area causes other businesses to leave, or property values to go down. Alternatively, these associations may indicate that sex businesses locate where property values have already fallen and demand for commercial space is weak enough to permit them to compete successfully for space.

(5) The most general finding is that while adult businesses appear to be located in areas of higher crime and lower property values, this is not because they have caused these undesirable conditions. Once in place, they may contribute to the maintenance of such conditions in a neighborhood.

The central thrust of the findings in this study is that adult entertainment establishments do tend to be located in areas of higher crime and lower property values than other parts of the city. The conditions which encourage the businesses to locate in an area may also be the ones that cause lower property values and higher crime rates. This is especially clear for the sexually-oriented businesses. For alcohol-serving businesses, it is less consistent. The license types are apparently not related to neighborhood decline, but there is some evidence that other properties of bars -- such as extensive food service -- may change or modify the impact of a licensed establishment on a neighborhood. These characteristics, such as management procedures, cannot be studied in an approach like the one taken here. The final implication of the study is that these establishments appear to have very localized impacts: even though we know of some bars that are associated with significant amounts of crime or angry neighbors, they do not, on the average, show up in this analysis of census tracts.

CHAPTER III

EMPIRICAL FINDINGS AND POLICY RECOMMENDATIONS

In a sense, this study is an evaluation of the effects of past policy decisions. Directly or indirctly, some of the assumptions underlying those policies have been examined, with an eye toward specifying policies for the future that will help achieve the goals of the city.

One very general finding of the study is that the relationships between adult entertainment establishments and crime or housing values show the effects of past policy decisions. For example, the combination of the old liquor patrol limits and zoning requirements which restrict liquor licensed bars to large commercial areas are reflected in the fact that most of this type of business is located downtown, or in a few commercial areas of the city. Likewise, beer licensed bars are permitted in smaller commercial zones and they have not been restricted by the liquor patrol limits. Thus they are less concentrated than liquor bars, and they are, on the average, closer to residential areas.

The purpose of this chapter is to draw upon the findings that are strongest and most consistent in both portions of the study and relate them to policy concerns. The two portions of the study used different methods, different measurements, and different data sources to investigate a related set of research questions. Wherever these different approaches converged on similar findings, we can have more confidence that they are providing an accurate picture of the relationships as they actually exist, even though some of the statistical results may be weak.

Below are several tentative policy recommendations we make to the City Council, based on the results of the study. The recommendations are stated, and the rationale for them follows.

1. Establishments which intend to serve alcoholic beverages as a complement to food service should be viewed favorably in licensing decisions, other things being equal.

2. Applications for wine licenses also should be viewed favorably, assuming current requirements about volume of food business necessary to qualify for these licenses are maintained.

Certain categories of alcohol-serving establishments are not significantly related to crime, either in immediately surrounding areas as measured by the distance decay analysis, or in the neighborhood as measured at the census tract level. These are wine-licensed bars and establishments that do more than 50 percent of their business in food service. The common characteristic here is the food service aspect. Because of current licensing requirements, wine bars do a high percentage of their business in food service (the wine license requires that the vendor have at least 60 percent of his/her business volume in food service). Restaurant-type businesses are not associated with crime or lower housing values. If the Council issues wine licenses without the food service requirement at some point in the future, the relationship between wine licenses and crime or housing value would have to be re-evaluated.

3. The City should avoid locating sex businesses in residential areas.

4. The current policy of avoiding concentrations of sex businesses can neither be supported nor contradicted.

Sex businesses do have significant and consistent positive correlations with the crime rate index and a negative correlation with the mean single family housing value, measured at the census tract level.

The relationship with crime remains when commercial concentration and average household income are taken into account. The small number of these businesses, plus their distribution, means that no large concentrations of them exist. The large majority of census tracts that have sex businesses have only one. The two-or-three-establishment concentrations that exist, such as along Lake Street, cannot be analyzed apart from their generally commercial surroundings using the techniques in this study. These sex businesses are statistically related to high commercial vacancies and high commercial crime rates, which suggest that they locate in less desirable commercial areas.

5. Adult entertainment business (including bars) should be permitted only in locations that are at least 1/10 mile from residential areas (about 500 feet).

6. Adult entertainment establishments and other kinds of late night businesses should not be placed adjacent to each other.

The effects of adult entertainment establishments, if any, occur in the immediate vicinity of the business. They do not extend far into surrounding neighborhoods. This general finding is supported by both portions of the study: the distance decay analysis suggests in numerous places that crime is concentrated in the areas immediately surrounding bars, and the census tract analysis reveals only weak relationships between adult entertainment and crime or housing value at the neighborhood level.

The intent of recommendation (6) is to avoid mixed commercial uses that may have undesirable effects. For example, the location of a bar next door to a movie theater or late-night laundromat may result in patrons of the non-adult businesses interacting with patrons of adult businesses, possibly increasing their chances of victimization.

7. The circumstantial evidence generated by the study suggests that, although concentrations of adult businesses may not have disproportionate effects, they can raise the total level of crime or reduce housing values more than single establishments. So, all things being equal, concentrations of adult establishments should be encouraged only if a concentration of crime and housing value effects is also desirable.

8. Concentrations of adult business in declining areas should be avoided.

One policy issue is whether the concentration or the dispersal of adult businesses will have better overall effects on the quality of life in the city. The information the study generates on this issue is fragmentary, but several patterns emerge.

- Concentrations are not disproportionately related to crime or housing value, e.g., five bars located right together have no greater <u>total</u> impact on assaults than five similar bars in widely separated, but similar, areas.

- Concentrations are weakly related to lower housing values and higher crime rates at the census tract level, e.g., the impact of five bars located together will be greater than the impact of one, two, three, or four similar bars located in the same area.

- Controlling for other characteristics of the neighborhood, like percent commercial or average income, reduces or reverses the relationship and deterioration. Thus, the impact of concentration of adult businesses at the tract level may depend on the kind of neighborhood in which they are located.

- There is no <u>direct</u> evidence in the study that shows that adult businesses have <u>greater</u> impacts on deterioration in declining areas, but the possibility cannot be eliminated. Further, other studies of

urban development suggest that adult businesses may be seen as a barrier to upgrading neighborhoods.[1]

- Dispersal, as observed in the removal of the liquor patrol limits, has not had any area-wide impacts that raised the crime rate higher than would have been expected anyway.

9. Adult entertainment establishments should be located in large commercial zones in various parts of the city.

The intent of this recommendation is to locate adult businesses in a number of large community-level commercial areas in different parts of the city, not to create a singular concentration of adult businesses like Boston's infamous "combat zone." Rather, the intent is to confirm what is really current city policy, with some extensions. It is already the case that adult businesses, especially liquor licensed bars, are quite concentrated downtown. In addition, zoning restrictions already ensure that many adult business land uses will be in highly commercialized areas. What is recommended here is to continue and accentuate this policy, consistent with the other recommendations made here.

Concentrating bars (and probably other adult uses as well) in large commercial zones will neither raise nor lower crime rates appreciably. There have been numerous indications in this study that it is the commercial areas of town where assaults and street robberies occur. This confirms what has been found in other studies. Because bars are all located in commercial areas, by definition, it is difficult to separate out the crime effects due only to bars from those due to commercial areas. However, we believe that the independent impact of

[1]Phillip L. Clay, Neighborhood Renewal, Lexington, Mass: Lexington Books, 1979, pp. 47, 64-65, 82.

commercial areas is quite great, and could not be appreciably affected by removing bars. This is also confirmed by previous studies.[1]

Such a concentration would improve the efficiency of some city efforts, such as police patrol, and it would also make the achievement of some of the other recommendations made here, like separating adult uses from residential areas, more practicable. It is important to emphasize that this recommendation should be seen as a complement, not a replacement to other recommendations made here.

10. In the long run, policies which foster or supplement attitudes and activities that strengthen the quality of the neighborhood are more likely to have desired impacts on crime and housing value than simple removal or restriction of adult businesses.

There is no evidence in either portion of the study that adult businesses cause neighborhood deterioration, although other measurement or analysis techniques may reveal such a connection. On the basis of this study, the alternative hypothesis that general neighborhood quality determines the kind and quality of businesses to locate in the neighborhood seems more plausible.

11. The study tends to support the position that adequate off-street parking or equivalent spaces on non-residential streets adjacent to the establishment should be required for issuance of licenses to serve alcohol.

12. Type of entertainment, specifically game rooms, may have a relationship to the nuisances generated by an establishment.

13. Individual differences among alcohol-serving establishments should be taken into account in licensing decisions.

14. Parking, entertainment, clientele, and management practices of adult entertainment businesses should be investigated further.

[1]Crime in Minneapolis, op.cit., p. 174. The proportion of assaults where the victim was either intoxicated or leaving a bar was 12.5% in 1975.

The part of the study that analyzes the relationship between certain characteristics of bars and whether or not they are "nuisance" bars has pointed to several factors that may help to explain the differences among individual bars in their effects on crime and other measures of neighborhood quality. The "nuisance bar" portion of the study was developed in response to the concern of several Council members expressed during the course of the research. The nuisance study should be considered preliminary, but it does tend to confirm the expectations of Council members and staff regarding the effect of parking, and possibly other characteristics as well. We believe that these characteristics can be studied in a systematic and straightforward way. Currently, licensing decisions are made on a case-by-case basis, using some of the kinds of information for each case that further study would classify and evaluate more systematically. The efforts of the Council to use this kind of information in licensing decisions appears to be justified.

APPENDIX A

Supplementary Materials for Chapter I:
Bars and Crime

APPENDIX A.1

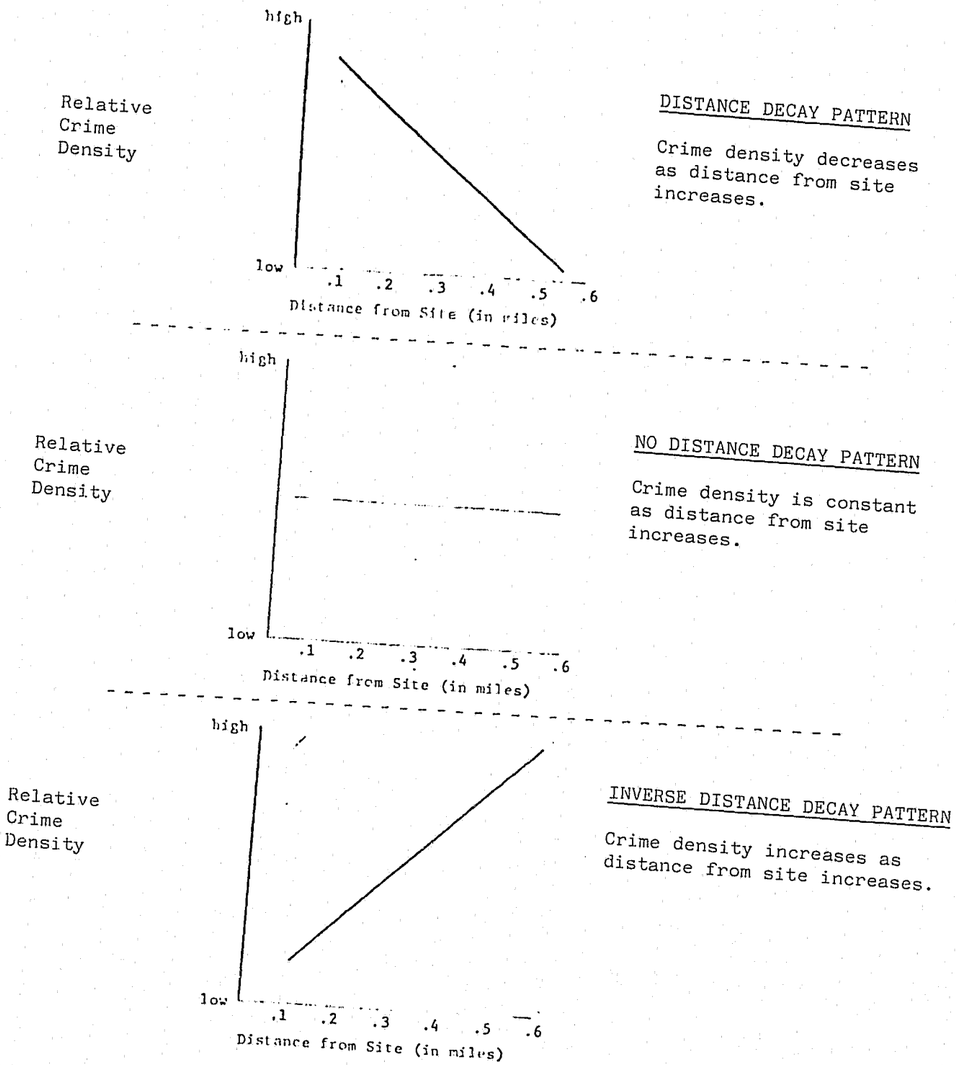
Distance Decay Methodology

Distancy decay is a method for analysis of crime at a limited level and a means for deriving crime impact statements. The method described is based on the distributional characteristics of crime which can be attributed to the geographic location of individual sites. The approach proposed here focuses on the types of crime patterns which can be derived from the analysis of the geography of crime with respect to individual sites. We have taken as a priori the assumption that for some types of crimes, and some types of sites, there is a distinct geographic pattern that can be derived for the distribution of crime around these sites. Further, we assume that given the derivation of such a distribution, the actual impact of the site on crime can be derived and transformed into a crime impact assessment of individual sites, and sites of a similar character. It is important to note that these assumptions are only valid if there is some theoretical interpretation that can assign meaning to the observed associations.

The approach taken for this evaluation is derived from distance decay analysis common to urban geographic studies. Distance decay analysis is a methodology which measures the density of events in relationship to the location of a single site or node. The assumption tested by distance decay analysis is that the closer one gets to the node, the more events, or crimes, occur. Thus, the node is theoretically assumed to be a point from which events or crimes emanate or are drawn toward. In order to develop a distance decay analysis, one generates a distance decay curve as shown in Figure 1.

Figure 1

An Interpretive Guide to Distance Decay Curves[a]



[a]These are pure types. Actual curves may display some amount of random variation and/or curvilinearity.

CONTINUED

1 OF 2

The uses of a Distance Decay Analysis are:

a) to ascertain whether the crime density changes systematically as one approaches a specific geograhic location,

b) to ascertain the direction of this change, i.e., whether the crime rate increases or decreases as the site is approached, and

c) to estimate the magnitude of the change in the crime density as one approaches the site.

As with any statistical technique, the distance decay analysis will produce misleading results if it is used improperly. As noted above, the analysis is meaningful only if some theoretical assumption about the relationship of the nodes to the events in the areas around them can be made, and the measurement conform to these assumptions. Otherwise, associations produced by this technique may be spurious in the same way that other kinds of statistical associations may be spurious. For example, if a bar is next door to a fast food outlet where teenagers hang out and cause trouble, the distance decay analysis using only bars to define the nodes would assign crimes actually related to the fast food outlet to that bar. If the fast food outlet were explicitly taken into account, weighting procedures to overcome this problem could be developed, and an evaluation of the theoretically suggested relationship of bars and crime could be made. Individual distance decays should be carefully assessed to determine that the results are actually due to the measured node and not to some other unmeasured factor(s) within the distance decay area.

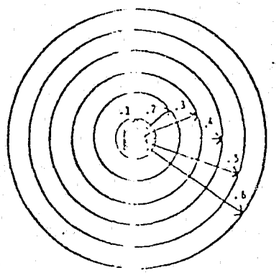
The distribution of crimes around the various nodes can be aggregated to perform a single distance decay analysis for a class of nodes as defined by some theoretical or policy-relevant criterion. Distance decays of this sort should be interpreted similarly to distance decays for individual sites, remembering that the analysis is producing an averaged result which may be valid for a class of nodes, but not necessarily for all individual nodes within the class.

Aggregated distance decays follow a similar procedure to the single node distance decays as described below with one difference. The aggregation procedure used is to identify the total number of events (e.g., crimes) occurring in each ring of each individual distance decay, then adding these to get a total number of events for the aggregate analysis, and then proceeding as usual for calculating the density of events and testing this distribution for significance. The counting procedure thus introduces an implicit weighting function wherever the areas around nodes overlap: any event which lies within two or more areas will be counted two or more times in the aggregating procedure. This is only one of many weighting procedures, and it is one which heavily weights crimes counted numerous times, especially if they are counted as members of the same or adjacent rings in the aggregate analysis.

Figure 2, below, and its associated text, provide a step-by-step guide to the distance decay analysis.

Figure 2: Constructing a Distance Decay Curve

CONSTRUCTING A DISTANCE DECAY CURVE



Distance of .6 mile study area around the site of interest.

Site

1. Count the number of crimes within each band.
2. Transform each count into a crime proportion by dividing by the sum of all crimes within .6 miles of the site of interest.
3. Transform each crime proportion into a relative crime rate by dividing by the proportion of the total area in that band (see table below).
4. Plot the resulting crime rates for each band against the distance for site.

DISTANCE DECAY CRIME WORK SHEET

DISTANCE TO SITE (miles)	COUNT OF CRIMES[1]	CRIME PROPORTION[2]	AREA PROPORTION	RELATIVE CRIME RATE[3]
0 through .1			.0778	
.1+ through .2			.0833	
.2+ through .3			.1389	
.3+ through .4			.1944	
.4+ through .5			.2500	
.5+ through .6			.3056	

SUM OF CRIMES: ___

[1]Count of crime incidents within band.

[2]Count of crime incidents within band divided by sum of incidents for all bands.

[3]Crime proportion divided by area proportion.

The relationship between crime density distance is assumed to be of the form:

$$D = F\ (\text{distance})$$

where D is the density of crime, and F denotes the function relating distance to density. For our purposes, it is unnecessary to derive

the empirical function F, which can easily be derived using simple or polynomial regression techniques. Our primary concern is with deriving the characteristic slope of F, or F'. We can simplistically observe that if $F' < 0$ then a distance decay effect is present. If $F' \geq 0$ then a distance decay effect is not present. Our analysis has focused on determining the degree to which we can assert that $F' < 0$.

Two tests have been employed to derive indications of the nonrandomness of F'. The first is a classic chi-square statistic which reports whether events in the space are uniformly distributed. A significant chi-square is taken to indicate nonuniformity in the space.

The second test is the signs test applied to the difference between distance decay coefficients in a band of lesser radius and a band of greater radius. Since we have six bands, we are making five comparisons and trying to assess the degree to which the coefficients vary in relation to each other. Where the signs of all five comparisons are negative (i.e., each band's coefficient is less than that of the band immediately inscribed to it), then we can assume a probability of $1/2^5$ to the observed slope of the overall distance decay curve.

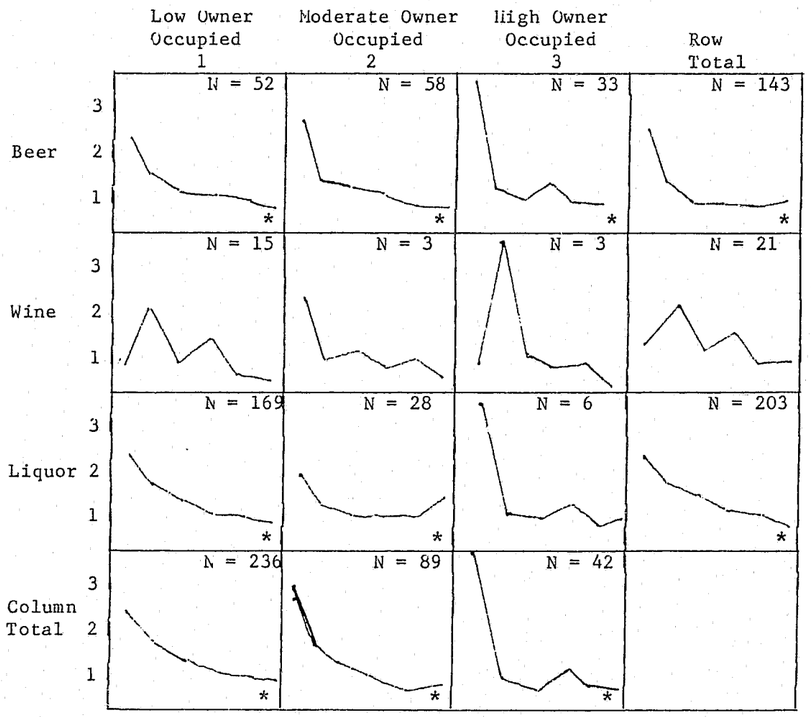
Where all three tests, the distance decay curve, the chi-square, and the signs test indicate significant negative slopes, a distance decay effect is assumed to be observed in the data.

Appendix A.2

Results of Summary Distance Decay Analyses for Detailed Categories

Figure A.2.1

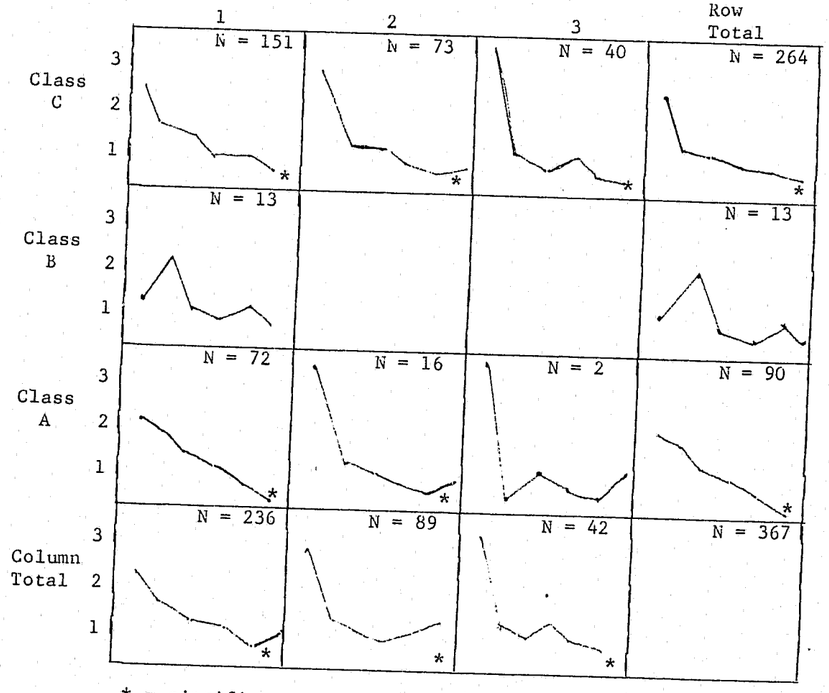
Distribution of Crime Around Bars by Types of Liquor Licenses, Controlling for Neighborhood



* = significant
N = number of bars

Figure A.2.2

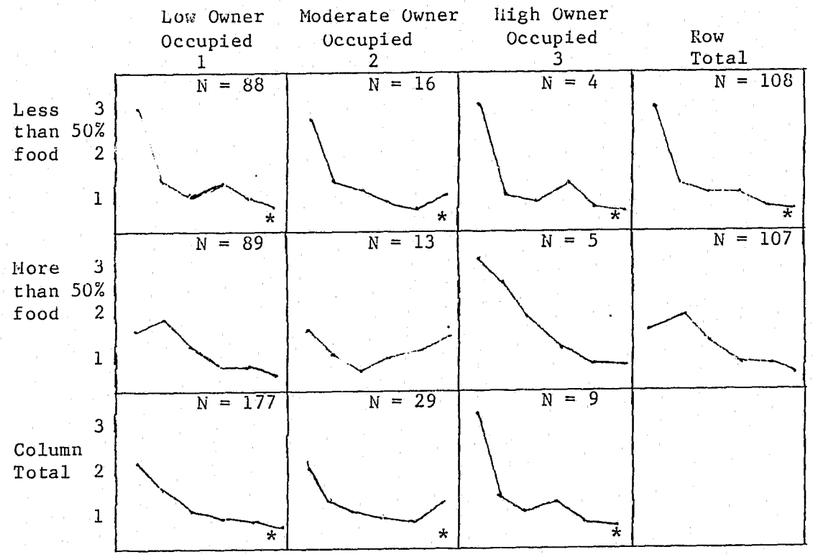
Distribution of Crime and Bars by Type of Entertainment Categories, Controlling for Neighborhood



* = significant
N = number of bars

Figure A.2.3

Distribution of Crime Around Bars by Volume of Food,
Controlling Neighborhood



* = significant
N = number of bars

Appendix A.3

Crime Concentration Values for Category Analysis

Values for Figure A.2.1, Type of Liquor License and Neighborhood

Cell 1	2.38	1.50	1.08	.96	.86	.84
Cell 2	2.67	1.29	1.06	.98	.83	.90
Cell 3	3.49	1.19	.93	1.16	.81	.80
Row Total	2.52	1.42	1.07	.97	.85	.86
Cell 4	1.15	2.08	1.07	1.37	.70	.67
Cell 5	2.32	1.14	1.16	.92	1.0	.82
Cell 6	.90	3.60	1.09	.89	.90	.41
Row Total	1.21	2.04	1.07	1.34	.71	.68
Cell 7	2.19	1.63	1.29	1.01	.84	.71
Cell 8	1.93	1.17	.96	.92	.79	1.11
Cell 9	4.37	1.18	1.03	1.10	.75	.77
Row Total	2.20	1.62	1.28	1.01	.84	.71
Column 1 Total	2.18	1.63	1.25	1.02	.84	.72
Column 2 Total	2.52	1.27	1.04	.96	.83	.93
Column 3 Total	3.59	1.26	.95	1.14	.80	.78

Values for Figure A.2.2, Type of Entertainment Categories and Neighborhood

Cell 1	2.31	1.40	1.18	1.01	.86	.79
Cell 2	2.40	1.25	1.09	.97	.84	.95
Cell 3	3.54	1.28	.95	1.15	.81	.77
Row 1 Total	2.35	1.38	1.16	1.01	.86	.81
Cell 4	1.56	2.15	1.07	.87	.90	.77
Cell 5	None					
Cell 6	None					
Row 2 Total	Same as Cell 4					
Cell 7	2.11	1.86	1.39	1.07	.79	.61
Cell 8	3.33	1.40	1.18	.92	.74	.86
Cell 9	5.14	.68	1.25	.73	.57	1.13
Row 3 Total	2.15	1.84	1.38	1.07	.79	.62
Column Values	Same as I					

Values for Figure A.2.3, Volume of Food and Neighborhood

Cell 1	2.89	1.57	1.29	1.10	.75	.68
Cell 2	2.47	1.39	1.23	.96	.71	.91
Cell 3	4.25	1.25	.99	1.16	.78	.72
Row 1 Total	2.88	1.56	1.29	1.10	.75	.69
Cell 4	1.57	1.69	1.24	.99	.92	.73
Cell 5	1.36	.88	.68	.87	.94	1.27
Cell 6	2.88	2.24	1.16	.82	.75	.74
Row 2 Total	1.57	1.68	1.23	.99	.92	.74
Column 1 Total	2.13	1.64	1.26	1.04	.85	.71
Column 2 Total	2.01	1.18	1.01	.93	.81	1.06
Column 3 Total	3.90	1.50	1.03	1.07	.77	.72

Appendix A.4

Liquor Licenses Granted Outside the Liquor Patrol Limits
Between 1974 and 1979

Name	Address	Date Liquor License Granted
1. Ames Lodge #106	1614 Plymouth Avenue	5/28/76
2. Artist's Quarter	14 East 26th Street	12/20/74
3. Black Forest	1 East 26th Street	10/8/76
4. CC Club	2600 Lyndale Avenue South	7/25/75
5. Calhoun Beach Club	2730 West Lake Street	2/25/77
6. Campus Club	300 Washington S.E.	8/25/77
7. Howie's	2119 West Broadway	10/10/75
8. Improper Fraction	710 Washington S.E.	4/25/76
9. Jimmy's	3675 Minnehaha Avenue	2/28/75
10. Martini's and Bagels	3025 West Lake Street	3/17/78
11. Minnikahda Club	3241 Zenith	12/12/75
12. Occie's	2951 Lyndale Avenue South	2/28/75
13. Poodle	3001 East Lake Street	2/4/75
14. Popeye's	3601 East Lake Street	3/27/75
15. Rainbow Cafe	2916 Hennepin Avenue	3/27/75
16. Society of Fine Arts	2400 3rd Avenue South	7/25/75
17. Stardust Lanes	2520 26th Avenue South	8/8/75
18. Stub n' Herbs	227 Oak Street S.E.	2/14/75
19. Sunny's	2944 Chicago Avenue	2/28/75
20. Uptown Bar and Cafe	3016 Hennepin Avenue	2/13/76
21. Waldo's	4601 Lyndale Avenue North	11/27/74
22. Walker Art Center	Vineland Place	4/30/76
23. Williams Pub	2911 Hennepin Avenue	3/28/75

Appendix A.5

List of Bars in the Nuisance Study

Bars Identified as Nuisance Bars	Bars Identified as Non-Nuisance Bars
Addison's	Arthur's
Beanie's	Black Forest
Carousel	Cedar Inn
Dollie's	Charlie's
Duffy's	Duff's
Jimmy's	Dusty's
Longhorn	Elsie's
Moby Dick's	Famous Bar
Moore on University	Hub Cap
Mousey's	Jax
Mr. Arthur's	LaFamilia
Mr. Z's	Lake Inn
New Wonder Bar	Monte Carlo
Occie's	Nye's
Poodle	Parkway
Rainbow Bowl	Sebastian's
Spring Inn	Sunny's
Uncle Sam's	The First Story
Union	Williams Pub
Waldo's	Zurbey's

Appendix A:6

Collection Instrument for Nuisance Bars

NAME: Arthurs ADDRESS:

1. Is the volume of food business more or less than 50 percent of the bar's total volume?

_____ < 50 percent = 0

_____ ≥ 50 percent = 1

2. What is the proximity of the bar to a predominantly residential area?

_____ Within 1 block = 0

_____ 1-2 blocks = 1

_____ Greater than 2 blocks = 2

3. What is predominant parking situation?

_____ Street parking = 0

_____ Metered parking = 1

_____ Other lots available = 2

_____ Own lot = 3

4. What predominant type of clientele frequent the bar?

Age

_____ 19 - 29 = 0

_____ 30 - 45 = 1

_____ 46+ = 2

Race

_____ White = 0

_____ Mixed = 1

_____ Minority = 2

Social Pattern

_____ Single = 0

_____ Couples = 1

_____ Groups = 2

Residence

_____ Neighborhood = 0

_____ Non-local = 1

Class

_____ Upper Class = 0

_____ Upper-Middle Class = 1

_____ Lower-Middle Class = 2

_____ Lower Class = 3

5. What is the level of entertainment?

_____ None = 0

_____ Sound System = 1

_____ Single performer = 2

_____ Band = 3

6. Is there sexually-oriented entertainment?

_____ Yes = 0

_____ No = 1

7. What type of license does the bar have?

Alcohol	Entertainment
_____ Beer = 1	_____ C = 1
_____ Wine = 2	_____ B = 2
_____ Liquor = 3	_____ A = 3

8. Management practices:

Bouncer	Other employees to maintain order	Policy to deal with drunks
_____ No = 0	_____ No = 0	_____ No = 0
_____ Yes = 1	_____ Yes = 1	_____ Yes = 1

9. Open ended comments:

APPENDIX B

Supplementary Materials for Chapter II:
Adult Entertainment and Neighborhood Deterioration

Appendix B.1

Methods used in the Research on Adult Entertainment

A. Simple Relations

The Pearson correlation, as reported, only establishes that a relationship exists, to what degree, and whether it is positive or negative. What degree of confidence we can have that the observed association is not due to chance (significance) can be easily calculated. These coefficients are appropriate for exploring a set of data when theoretical expectations are absent or minimal. They cannot be interpreted as indications of causal order, especially in the absence of a theory. They are used in this report to establish benchmarks for more complex analyses building up toward testing of causal assumptions.

Some simple, bivariate correlations are presented here to substantiate and extend the discussion in the main text.

To begin, the overall crime rate index reported in the main text hides some important differences due to type of crime. Table 7 shows four of the crimes that make up the crime index and their simple correlations with the different types of adult businesses. Table 7 shows a fairly great range of correlation between type of adult establishment and type of crime. In particular, note the significant positive correlation between beer bars and residential burglary as compared with the significant negative relation of liquor and Class A bars with residential burglary. These figures illustrate the impact of zoning policy. The relatively high correlations between sex businesses and commercial crimes may indicate that these businesses

are located in relatively undesirable commercial areas, an interpretation substantiated by the fact that sex businesses are significantly related to percent of commercial vacancies as shown in Table 8.

Table 7: Pearson Correlation Coefficients: Adult Entertainment Establishments and Selected Crime Rates, 1979

		Assault Rate	Residential Burglary Rate	Commercial Burglary Rate	Commercial Robbery Rate
All adult businesses		.1889*	-.1010	.0937	.0317
Sexually-oriented businesses		.1876*	.0848	.3096*	.3003*
Alcohol-serving businesses		.1258	-.1239	.0315	-.0315
Beer		.1173	.2008*	.1210	.1054
Wine		-.0356	-.0225	-.0907	-.0629
Class A		.0951	-.2365*	-.0197	-.0869
Class B		.2487*	.1402	.1084	.1266
Class C		.1232	-.0518	.0565	-.0191
Beer	Class A	.0357	.0555		
	Class B	.2330*	.2701*		
	Class C	.0879	.1412		
Wine	Class A	.0195	.0333		
	Class B	N.A.	N.A.		
	Class C	-.0401	-.1066		
Liquor	Class A	.0456	-.1090		
	Class B	.1273	.0722		
	Class C	.1175	-.0873		

*Significant at the .05 level or better.

Next, Table 8 gives the simple Pearson correlations between types of adult businesses and various measures of business and city policy effects. Specifically, the food service measurement and three different measures of commercial activity in a tract are related to adult businesses. Again, clear confirmation of the fact that different types of adult entertainment cluster in different areas in response to zoning policy is given. For example, liquor bars cluster in areas where the overall proportion of the tract that is commercial is high, but they are negatively related to number of non-manufacturing businesses. Both of these results may reflect the seven-acre zoning requirement for liquor bars, since many seven-acre zones include some manufacturing or wholesaling establishments.

Table 8: Pearson Correlation Coefficients: Adult Entertainment Establishments and Measures of Policy Infuence

	Proportion of business predominantly food	Proportion of Tract Commercial	Number of non-manufacturing businesses	Proportion of Commercial Property Vacant
All adult businesses	.2565	.4219*	.4030*	.2081*
Sexually-oriented businesses	-.0486	.0873	.0453	.2457*
Alcohol-serving businesses	.3212*	.3960*	.4290*	.1736*
Beer	-.1183	.0925	.2375*	.0422
Wine	.6183*	.2825*	.3994*	-.0042
Liquor	.3259*	.4023*	-.3318*	.1609*
Class A	.3076*	.3410*	.3063*	.1887*
Class b	.0927	.1603*	.1487	.1774*
Class C	.2678*	.3869*	.4569*	.0815

*Significant at the .05 level or better.

Finally, Table 9 shows the relations between the measures of neighborhood deterioration -- crime and housing value -- and the control variables.

Table 9: Pearson Correlation Coefficients: Measures of Neighborhood Deterioration and Control Variables

	Mean Housing Value	Crime Rate Index
Mean Income	.4686*	-.6216*
Food Business	.4856*	-.0676
Commercial Concentration	-.1631	.4840*

*Significant at the .05 level or better.

One general conclusion to these figures is that the various adult businesses relate to their environments differently. Sexually-oriented businesses appear to be related relatively strongly to several different measures of neighborhood quality, including commercial vacancies. These establishments apparently are not generally located in tracts that are heavily commercial as defined by the Polk index. Beer bars are similar in this respect, since they appear to be located in less commercial areas. Beer licenses also have a relatively strong association with residential burglary. Liquor bars, on the other hand, are located in heavily commercial areas, and exhibit lower correlations with housing value or residential burglary than beer bars. Finally, sexually-oriented businesses appear more likely to be located in tracts with high commercial crime rates, even though these tracts are not the ones with the highest concentrations of commercial uses.

B. Statistical Controls

(1) Partial correlations: in this portion of the report, partial correlation is used to elaborate the patterns found among the simple correlations, and to demonstrate how the mutual effects of several variables operating simultaneously can alter a simple relationship. Statistically, partial correlations are correlations between the residual variances of two variables after the variance in each of them accounted for by one or more third variables has been removed. Thus, over-interpretation of partials may result if true causal connections are violated: the statistical operation removes the effects of control variables before it assesses the residual relationship between the two variables of interest. This is analogous to a causal assumption that the control variable precedes the other variables in causal ordering. In the section on causal inference we make use of this property to evaluate some assumptions about the causal ordering among the variables. In the present section, however, the partials are only used to examine the relationship between adult business and neighborhood quality when presumably relevant variables are controlled.

(2) Multiple regression: multiple regression permits us to move a step beyond the Pearson and partial correlations because it not only helps establish that an association exists between two (or several) variables, it also provides an estimate of how much change in one variable is associated with a change in a second variable. Thus it gives an estimate of the relative importance of the several independent variables in accounting for the variance of the dependent variable.

The independent variables used in the multiple regressions reported here and in the main text were selected in part by initial step-wise regressions which help identify those variables that account for the largest proportions of the variance in the dependent variables. This exploratory technique helped to identify the variables which were then used in the further simple multiple regressions reported.

Because this approach doesn't necessarily yield the most meaningful equations, mostly because of the implicit causal assumptions in the step-wise technique, additional criteria were used to select the independent variables. These included evidence from the partial correlation analysis, substantive considerations, and statistical requirements. The variables utilized in the partial correlation analysis are good candidates because we have reason to believe they are relevant to policy decision made about adult entertainment, and they obviously change the relationship between adult entertainment and neighborhood quality. In addition to these substantive considerations, the variables selected have been used in other studies for similar purposes. For example, income is frequently associated with housing choice, both for sociological (e.g., class preferences) and institutional (e.g., mortgage requirements) reasons.[1]

Finally, variables were selected to meet certain statistical requirements. The primary interest here was to avoid multicollinearity. Technically, this is a problem that occurs in multiple regression when a set of independent variables contain some relationships with high

[1]J. Anthony, "The Effect of Income and Socio-Economic Groups on Housing Choice," cited in Michael Ball, "Recent Empirical Work on the Determinants of Relative Housing Prices," Urban Studies 10, 1973, p. 232. Also see p. 231 in Ball's article.

correlations between them. The effect of this is to make the coefficients derived to estimate the association of an independent variable and the dependent variable unreliable, i.e., containing a high degree of error that results in different estimates from one sample to the next. If the objective of the research is to estimate the total relationship (k or k^2), multicollinearity is usually thought to pose no problem. However, we are interested here in comparing the effects of different variables on the dependent variables, so we want to avoid multicollinearity. The regressions reported in the main text use two variables that are correlated fairly high: mean houshold income and percentage of units in an area that are commercial. The simple Pearson correlation is -.6388, which may be high enough to cause trouble. In our judgment, the value of continuity in the presentation and analysis, and the intuitive value of both variables, out-weigh the danger of the multicollinearity.[1]

Some further multiple regressions using variables with little or no correlation among the independent variables were also run. The contribution of the adult entertainment variables is not improved. Other regressions were run which permitted the computer to select the variables according to the total amount of variance explained. In several of these, the adult variables achieved significance with respect to <u>crime</u>, but always with <u>lower</u> crime. These were rejected since they permit high multicollinearity among the variables, and thus the particular coefficients are uninterpretable.

[1]Refer to the variables list and correlation matrix in Appendix B.2. By convention, correlations greater than .6 are considered possibly important sources of multicollinearity, to be avoided if possible.

Multiple regression produces several different coefficients and test values that must be understood in order to interpret the regression. The brief definitions to follow can serve as an introduction to these terms and as a justification for their use in this report. Only those terms useful in understanding the report are defined:

(1) b - the ordinary partial regression coefficient: The coefficient b is the estimate of the amount of change that occurs in the dependent variable for each unit change in the independent variable it modifies.

(2) Error of b - This is the standard error of b, the regression coefficient. It is the standard deviation of the dependent values predicted from that b and its independent variable, taking the number of cases into account. The standard error tells us how much uncertainty there is in predictions based on the regression coefficient. lt is the basis for the significance test.

(3) Beta weights: This is the standardized regression coefficient. It is obtained by multiplying the ordinary regression coefficient by the ratio of the standard deviation of the independent variable to the standard deviation of the dependent variable. The point of doing this is to transform the dependent and independent variables into units of measurement that are directly comparable -- in this operation the unit of measurement for all variables becomes the standard deviation. Therefore any change of so many standard deviation units in one independent variable is associated with just so much change in similar units of the independent variable. The independent variables can thus be directly compared for the magnitude of

their impact, which is a major point of interest in this report. When the beta weight approaches zero, there is little or no relationship between two variables.

(4) Significance: This is a test of the confidence we may have that a regression coefficient (standardized beta weights or ordinary b's) is actually different from zero. The closer to zero the significance test, the more confidence can be had that the regression coefficient is a good estimate of the relationship. The conventional minimum level of significance for accepting a relationship is .05, which is used in this report.

(5) R is the multiple correlation coefficient that measures the overall strength between the dependent variable and the combined independent (including control) variables. It is analogous to the simple Pearson correlation coefficient, and can be interpreted similarly.

(6) R^2 is the squared multiple correlation coefficient, and it measures the proportion of the variance of the dependent variable accounted for by the independent variables.

(7) Significance of R: describes the confidence we can have that the multiple correlation coefficient is sufficiently different from zero.

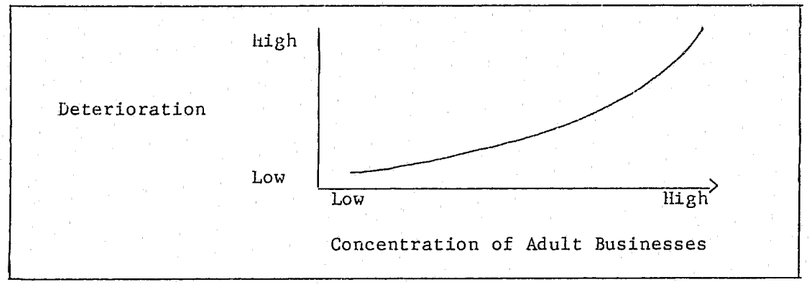
C. Tests for Linearity

Two tests for linearity were made on the results of the analyses described above: standard analysis of variance tests on the bivariate relationships between measures of neighborhood quality and adult entertainment establishments, and an examination of residuals for selected multiple regressions.

Some researchers suggested that concentrations of adult businesses may have disproportionate effects on measures of neighborhood quality.

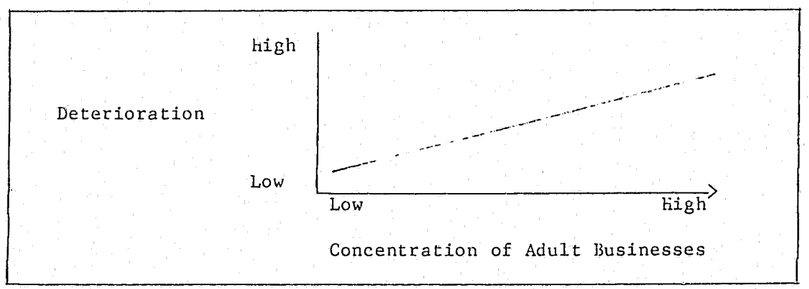
Figure A presents this "non linear" hypothesis. If the data do match this hypothesis, there are two consequences. First, it means that concentrations of adult business are increasingly bad for neighborhoods as concentration increases, and second, that the common statistical techniques, such as linear regression, must be modified.

Figure A: Graphic Representation of the Non-linear Hypothesis of the Relationship Between Adult Businesses and Neighborhood Deterioration



Fortunately, the analysis of variance tests for linearity made on the bivariate relationships, and inspection of regression residuals, confirm that the relationships are linear. Presumably, Figure B is closer to the form of the true relationship. Figure B indicates that adult businesses' effects on neighborhoods, if any, would increase in direct proportion to the number of establishments.

Figure B: Graphic Representation of the Non-linear Hypothesis of the Relationship Between Adult Businesses and Neighborhood Deterioration



The analysis of variance test is an F-test that is based on a comparison of the correlation ratio, Eta^2, with the squared correlation coefficient, r^2. The formula for the test is:

$$F_{k-2,\ N-k} + \frac{(E^2 - r^2)\ (N-K)}{(1-E^2)\ (K-2)},$$

where N is the number of cases and k is the number of categories (greater than 2) into which the independent variable has been divided. If the relationship is not linear, the F-test should yield a significant result.[1]

Inspection of residuals in this study simply involved visual inspection of scatterplots of residuals for each case (tract) against the estimated value of the dependent variable for that case. More sophisticated tests were not deemed necessary given the lack of non-linearity in the bivariate tests and no apparent deviations in the residuals scatterplots.

D. Analysis of Causality

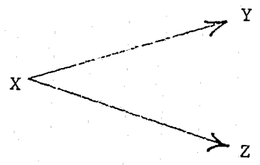
The path analysis technique used here is a way of comparing either regression coefficients or correlation and partial correlation coefficients to determine if the pattern of relationships in a data set are consistent with theoretical assumptions. The theoretical assumptions or hypotheses are a critical element in this technique: it is only by making these assumptions that causal inferences can be made. The results of the tests provide either falsification of the model being tested or circumstantial evidence to support it. Using this technique it is possible to compare several different models

[1]For example, see any edition of H. M. Blalock's Social Statistics.

(assumptions about causal relations in the data) to see which one is most consistent with the data.[1] The approach has the advantage that it is possible to make causal inferences with cross-sectional (one time only) measurements. Since the data available cannot provide enough observations over time to do reliable time-series analyses, this advantage is decisive in this report.

It is important to have some passing acquaintance with the path analysis technique used here. Figure C presents a simple model of the relationships between three (unknown) variables. The arrows represent causal connections we expect on the basis of some theory: logically, there are many different possible sets of relationships among these variables, but we have eliminated all but the one shown in Figure C. Next, the model has to be tested against empirical measurements to see if the hypotheses it represents are consistent with data.

Figure C: Simple 3-Variable Path Diagram, With Predictions



Predictions

$r_{yz} = r_{xy}\, r_{xz}$

$r_{yz.x} = 0$

[1]The standard introductory reference for the technique is H. M. Blalock, Causal Inferences in Nonexperimental Research (Chapel Hill: University of North Carolina Press, 1964).

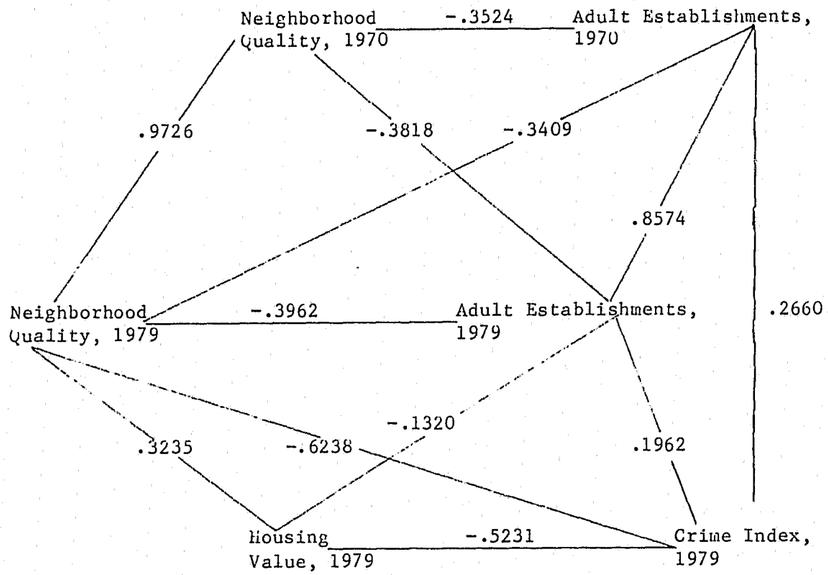
Specifically, the model in Figure C asserts that variable X is the cause of both Y and Z, but that there is no direct connection between Y and Z. Mathematicians have shown that these hypotheses translate into predictions about the behavior of simple and partial correlation coefficients, and regression coefficients. These predictions are shown beneath Figure C. The first prediction is that the simple correlation coefficient between Y and Z (r_{yz}) should equal the product of the correlations between X and Y and X and Z.[1] The second prediction is that the partial correlation between Y and Z controlling for X ($r_{yz.x}$) should be zero. In other words, the model says that any observed correlation between Y and Z is spurious; that is, it is due to the fact that X is related to both of them. The predictions reflect this hypothesis.

If the predictions do not match the evidence, then the hypothetical model can be rejected, or modifications can be made to fit the data better. When the model does fit the data, we can say that it is provisionally correct, until further evidence comes along that disconfirms it.

Figure D shows the pattern of simple Pearson correlations among the variables used in the path analysis in the text. Figure D includes the variables for overall neighborhood quality and adult establishments for 1970. These correlations form the basis for the path analysis.

[1]Assuming (1) the model is correct, and (2) the effects of measurement error are random and negligable.

Figure D: Pearson Correlation Coefficients
Among Path Analysis Variables

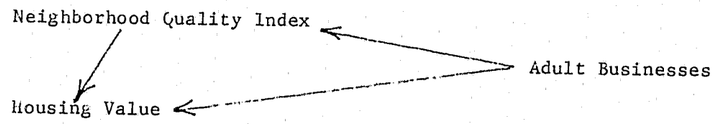


The decision was made to use only the data for 1979 as (1) the measurements for 1970 were not identical to those for 1979, (2) there were too few observations to do a genuine time series analysis, and (3) the 1970 neighborhood quality meausre and the 1970 adult business measure were very highly correlated with their 1979 counter parts. This last point means that, in this context, we cannot assume that the measures' error terms are uncorrelated across time, making inference based on the relationships between them impermissable.

The correlations in Figure D are compatible with many sets of assumptions besides the ones used in the text. However, the assumptions used were chosen because they are reasonable and they do reflect the substantive issues at stake.

Among the alternative assumptions that could be made here, see Figure E. For instance, if adult businesses cause general neighborhood quality, which in turn causes housing value, as in the Figure shown here, then the correlation between the quality index and housing value should drop to zero. However, this test on the data only changes the observed relationship between the quality measure and housing value from .3235 to .2980. The hypothesis is clearly disconfirmed. This matches the expectations of common sense in this case.

Figure E: Some Alternative Causal Assumptions



Appendix B.2

List of Variables for Neighborhood Deterioration Study

Variables 45 through 70 refer to 1979 data. Variables that begin with "PM" are taken from the Property Management System. Variables that begin with "P8" are from the 1978 Polk City Directory.

REL POS	VARIABLE NAME	VARIABLE LABEL
1	SEQNUM	
2	SUBFILE	
3	CASWGT	
4	TRACT	
5	V12	TOTAL NUMBER OF HOUSING UNITS
6	V17	TOTAL OWNER OCCUPIED
7	V20	TOTAL RENTER OCCUPIED
8	V111	PCT RESIDENTS STABLE 1965-1970
9	V112	PCT HOUSING UNITS OCCUPIED
10	V113	PCT OWNER OCCUPIED
11	DEMO1	TOTAL POPULATION
12	POLK2	TOTAL COML STRUCTURES PER CENT OF ALL
13	POLK6	TOTAL COML. UNITS CURRENT COUNT
14	POLK8	NET CHANGE COML. UNITS DURING PERIOD
15	POLK9	NO. COML. UNITS WITH CHG. OF OCCUPANTS
16	POLK11	VACANT COML UNITS CURRENT COUNT
17	POLK12	PER CENT OF TOTAL COML UNITS VACANT
18	POLK16	TOTAL NON-MFG. FIRMS CURRENT COUNT
19	XTRACT	X-COORDINATE OF TRACT CENTER
20	YTRACT	Y-COORDINATE OF TRACT CENTER

REL POS	VARIABLE NAME	VARIABLE LABEL
21	DISTCBD	DISTANCE OF TRACT CENTER TO IDS TOWER
22	RATEF1	FREQUENCY OF CRIME - SEX RELATED CRIMES
23	RATEF2	FREQUENCY OF CRIME - STREET ASSAULT
24	RATEF3	FREQUENCY OF CRIME - STREET ROBBERY
25	RATEF4	FREQUENCY OF CRIME - RES BURGLARY
26	RATEF5	FREQUENCY OF CRIME - COMM BURGLARY
27	RATEF6	FREQUENCY OF CRIME - COMM ROBBERY
28	RATEF7	FREQUENCY OF CRIME - VANDALISM
29	RATEF8	FREQUENCY OF CRIME - AUTO THEFT
30	AREA	AREA IN SQUARE MILES OF TRACT
31	OWNVM	MEAN VALUE OWNER OCC RES UNIT
32	MEANI	MEAN FAM AND UNREL INCOME
33	HAGEPCT1	PCT RES STR BUILT 1969-70
34	HAGEPCT2	PCT RES STR BUILT 1965-68
35	HAGEPCT3	PCT RES STR BUILT 1960-64
36	HAGEPCT4	PCT RES STR BUILT 1950-59
37	HAGEPCT5	PCT RES STR BUILT 1940-49
38	HAGEPCT6	PCT RES STR BUILT BEFOR 1940
39	FACTO1	CRIME RATES BY OFF - 1 2 3 7 8,
40	FACTO2	CRIME RATE BY OFF - 4 5 6
41	ZV17	Z SCORE % OWNER OCCUPPIED
42	ZDEMO3	ZSCORE % POPULATION WHITE
43	ZMEANI	ZSCORE MEAN INCOME
44	NEIGH	3 TYPES OF NEIGHBORHOODS DERIVED FROM Z
45	PM8SF	TOTAL SINGLE FAMILY UNITS
46	PM8DT	TOTAL DUPLEX-TRIPLEX UNITS
47	PM8MF	TOTAL MULTI-FAMILY UNITS
48	PM8HSF	TOTAL HOMESTEAD SINGLE FAMILY UNITS
49	PM8HDT	TOTAL DU-TRIPLEX HOMESTEAD UNITS
50	PM8HMF	TOTAL HOMESTEAD MULTIFAMILY UNITS
51	PM8A1	% TOTAL SF BUILT BEFORE 1940
52	PM8A2	% TOTAL SF BUILT 1940-1959
53	PM8A3	% TOTAL SF BUILT AFTER 1960
54	PM8C1	%TOTAL SF WITH CONDITION 4,5,
55	PM8X1	SUM AREA CODES BY TOTAL SF UNITS
56	PM8X2	SUM SF BLD AREA BY TOTAL SF UNITS
57	PM8X3	GBA OF COMMERCIAL BY TOTAL COMMERCIAL

REL POS	VARIABLE NAME	VARIABLE LABEL
58	PM8X4	SUM LOT AREA OF SF DUP TRIPLEX
59	PM8X5	SUM LOT AREA FOR UNITS WITH ALPHA NOT =C
60	PM8X6	SUM LOT AREA FOR UNITS WITH ALPHA = C
61	PM8X7	SUM LOT AREA FOR ALL UNITS
62	PM8X8	SUM MARKET VALUE SF BY TOTAL SF UNITS
63	PM8X9	SUM EMV COMMERCIAL BY TOTAL COMMERCIAL U
64	PM8X10	SUM BLD CODES BY TOTAL SF
65	V8111	NSP PCT STABLE
66	V8112	NSP PCT UNITS OCCUPPIED
67	P8LK2	% COMMERCIAL UNITS
68	P8LK6	SUM COMMERCIAL UNITS
69	P8LK8	CHANGE COMMERCIAL UNITS
70	P8LK9	% COMMERCIAL UNITS CHANG OF OCCUPANTS
71	P8LK11	VACANT COMMERCIAL UNITS
72	P8LK12	% VACANT COMMERCIAL UNITS
73	P8LK16	TOTAL NON-MANUFACTURING FIRMS
74	P8LKH	TOTAL HOUSEHOLDS
75	P8LKAH	AVE SIZE HOUSEHOLDS
76	P8LKIN	AVE HOUSEHOLD INCOME
77	BAR7A	BEER BAR 1970 CLASS C
78	BAR7B	BEER BAR 1970 CLASS B
79	BAR7C	BEER BAR 1970 CLASS A
80	BAR7D	WINE BAR 1970 CLASS C
81	BAR7E	WINE BAR 1970 CLASS B
82	BAR7F	WINE BAR 1970 CLASS A
83	BAR7G	LIQUOR BAR 1970 CLASS C
84	BAR7H	LIQUOR BAR 1970 CLASS B
85	BAR7I	LIQUOR BAR 1970 CLASS A
86	GMOV7	GENERAL MOVIE 1970
87	SUANA7	SUANA 1970
88	AMOV7	ADULT MOVIE 1970
89	DBK7	ADULT BOOKSTORE 1970
90	POOL7	POOLHALL 1970
91	BAR8A	BEER BAR 1980 CLASS C
92	BAR8B	BEER BAR 1980 CLASS B
93	BAR8C	BEER BAR 1980 CLASS A
94	BAR8D	WINE BAR 1980 CLASS C

REL POS	VARIABLE NAME	VARIABLE LABEL
95	BAR8E	WINE BAR 1980 CLASS B
96	BAR8F	WINE BAR 1980 CLASS A
97	BAR8G	LIQUOR BAR 1980 CLASS C
98	BAR8H	LIQUOR BAR 1980 CLASS B
99	BAR8I	LIQUOR BAR 1980 CLASS A
100	GMOV8	GENERAL MOVIE 1980
101	SUANA8	SUANA 1980
102	AMOV8	ADULT MOVIE 1980
103	DBK8	ADULT BOOKSTORE 1980
104	POOL8	
105	PRBAR8	PROBLEM BAR 1980
106	FOOD8	OVER 50% FOOD8 1980
107	SEX8	SEUAL ENTERTAINMENT BAR 1980
108	OASLT8	OTHER ASSAULTS 1980 CRIMES
109	NASLT8	NONSTRANGER 1980 ASSAULTS
110	SASLT8	STRANGER TO STRANGER 1980 ASSAULTS
111	TASLT8	TOTAL ASSAULTS 1980
112	RAPE8	RAPES 1980
113	OCSC8	OTHER CRIMMINAL SEXUAL CONDUCT 1980
114	TCSC8	TOTAL CSC 1980
115	SROB8	STREET ROBBERRY 1980
116	PROB8	PERSONAL ROBBERY 1980
117	TPROB8	TOTAL PERSONAL ROBBERY
118	BROB8	BUSINESS ROBBERY 1980
119	RBURG8	BURGLARY OF RESIDENCE 1980
120	BBURG8	BUSINESS BURGLARY
121	PM8OO	# OWNER OCCUPPIED
122	PM8TRU	TOTAL RESIDENTIAL UNITS
123	PM8POO	% OWNER OCCUPPIED
124	EPOP8	EST 1980 POP FROM POLK
125	ASLT8R	1980 ASSAULTS PER 1000 POP.
126	RAPE8R	1980 RAPES PER 1000 POP.
127	PROB8R	TOTAL PERSONAL ROBBERIES PER 1000 POP.
128	BROB8R	BUSINESS ROBBERIES PER 1000 POP.
129	RBURG8R	RESIDENT BURGLARIES PER 1000 POP.
130	BBURG8R	BUSINESS BURGLARIES PER 1000 POP.
131	CRIEX8	1980 TOTAL CRIMES ASLT THRU BBURG

REL POS	VARIABLE NAME	VARIABLE LABEL
132	RESPCT8	% AREA RESIDENTIAL 1980
133	COMPCT8	% AREA COMMERCIAL 1980
134	RAPE7	FREQ 1974 RAPES
135	ASLT7	FREQ ALL ASSAULTS 1974
136	RAPE7R	RAPES PER 1000 POP.
137	ASLT7R	ASSAULTS PER 1000 POP.
138	EPOP	1974 ESTIMATED POP FROM POLK
139	CRIEX8R	SUM OF RESIDENTIAL CRIMES 1979 DATA
140	FACTS7	
141	BEER	SUM OF 1980 BARS WITH BEER LIC.
142	WINE	SUM OF 1980 BARS WITH WINE LIC.
143	LIQUOR	SUM OF 1980 BARS WITH LIQUOR LIC.
144	BEER7	SUM OF 1970 BARS WITH BEER LIC.
145	WINE7	1970 WINE LIC.
146	LIQUOR7	SUM OF 1970 LIQUOR7 LIC.
147	SEXBIZ	SUM OF 1980 SUANAS,ADULT MOVIES, ADULT B
148	BARS	SUM OF ALL 1980 BARS
149	BARS7	SUM OF ALL 1970 BARS
150	HUPCTMF	PM8MF BY PM8SF+PM8DT+PM8MF
151	AREAMMF	PM8X5-PM8X4
152	CBAR	CONDENSED BARS VARIABLE 0&1 =1, GT 2 BAR
153	DENSE8	EPOP8 DIVIDED BY AREA
154	ADULT	BARS+SEXBIZ
155	TYPEA	1980 BARS WITH CLASS A LIQUOR LIC.
156	TYPEB	1980 BARS WITH CLASS B LIQ. LIC.
157	TYPEC	1980 BARS WITH CLASS C LIQ. LIC.
158	TYPEA7	1970 BARS WITH CLASS A LIQ. LIC.
159	TYPEB7	1970 BARS WITH CLASS B LIQ. LIC.
160	TYPEC7	1970 BARS WITH CLASS C LIQ. LIC.
161	RBURG7R	RATEF4*1000 BY DEMO1
162	BBURG7R	RATEF5*1000 BY DEMO1
163	BROB7R	RATEF6*1000 BY DEMO1
164	DV8111	V8111-V111
165	DV8112	V8112-V112
166	DPM8P00	PM8P00-V113
167	DEPOP8	EPOP8-DEMO1
168	DP8LK2	P8LK2-POLK2

REL POS	VARIABLE NAME	VARIABLE LABEL
169	DP8LK12	P8LK12-POLK12
170	DP8LKIN	P8LKIN-MEANI
171	DPM8X8	PM8X8-OWNVM
172	DRBURG	RBURG8R-RBURG7R
173	DBBURG	
174	DBROB	BROB8R-BROB7R
175	DRAPE	RAPE8R-RAPE7R
176	DASLT	ASLT8R-ASLT7R
177	DBARS	BARS-BARS7
178	DBEER	BEER-BEER7
179	DWINE	WINE-WINE7
180	DLIQUOR	LIQUOR-LIQUOR7
181	DTYPEA	TYPEA-TYPEA7
182	DTYPEB	TYPEB-TYPE7B
183	DTYPEC	TYPEC-TYPE7C
184	FOODPCT	FOOD8 BY BARS
185	FACTOR7	FACTOR SCORES FROM NEIGHBORHOOD VARIABLE
186	FACTOR8	1980 FACTOR SCORES FROM NEIGH. VAR.S

END