

Crime Statistics Comparison

Area Shopping Centers and Kansas City, Missouri Police Patrol Divisions

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**Crime Statistics Comparison
Area Shopping Centers
And
Kansas City Missouri Police Patrol Divisions**

Part I Overall Conclusions and Discussion

Introduction

The purpose of this study is to compare selected crime statistics from the Independence Mall, Olathe Mall of the Great Plains, Oak Park Mall, and the Bannister Mall/ 3 Trails Community Improvement District (the "CID") area shopping centers. A similar study was conducted in 1999 for the Economic Development Corporation of Kansas City, Missouri incorporated in this study as Exhibit A. This study includes the Lenexa municipality in addition to the other shopping centers. In addition, this study includes a comparison of selected crime statistics of the Kansas City Missouri Police patrol divisions. The data were collected from the respective police departments. The data were analyzed utilizing the Statistical Packages for the Social Sciences.

Overall conclusions.

The data suggest that the ***south patrol area in general has a lower rate of crime than the rest of the Kansas City area patrol divisions. The CID and Bannister Mall/CID area are in the south patrol division.***

The shopping centers have crime rates associated with their locations. The crime rates in the various locations are reflected in the tables presented. ***The lowest crime experience is associated with the Bannister Mall/CID location.*** The south patrol division is also associated with a low crime statistic compared with other divisions. The south patrol and the north patrol have similar data. The data appear to be constant in terms of time. The data were analyzed across location and by multiple years.

The comparison of data utilized mean statistics as a method to compare equally across areas. The comparison of these statistical areas does suggest that ***the least crime is associated with the Bannister Mall/CID location.*** Additionally these data suggest that the ***Bannister Mall/CID location is least associated with violent crime.***

Statistically the data suggest that the crime category variables show differences among the location. The variables, which have a significance level of less than .10, showing difference among the locations was theft and theft of valuables from autos. The ANOVA procedure observes this statistical difference. The meaning of this statistic is that the theft variables vary in terms of numbers of crimes among the locations and differentiate the locations. These variables would appear to be an accurate of crime in shopping centers. ©(See Graph 1)

Discussion

The data here confirm a previous study that the Bannister Mall/CID area has the lowest crime and violent crime rate when compared to study areas in Missouri and Kansas. The finding is corroborated by the fact the South Patrol has the lowest crime activity level of all the Missouri Patrols included in this study.

© Crime activity is associated with neighborhood patterns. The Bannister Mall/CID area is characterized as a suburb, with moderate housing values and with single-family residences. The property values are rising based on Focus data from Kansas City. The area appears to have a stable economic environment especially the Bannister Mall/CID area where substantial increases in retail sales have occurred in the last two years. Additionally there is a significant immigrant population, which is well educated and has strong religious, family and community attitudes. The area has several large employers, and the presence of institutional facilities, which also bring stability to the area.

Part II

Technical Discussion and Analysis

Part II Technical Discussion and Analysis

Data Description:

The data elements in this study consist of data from police departments on crime activity by year. The data are the crime incidents, and the year is the calendar year. The crime categories are explanatory. The item labeled auto theft is defined as theft occurring by taking items from an automobile. This activity occurs in parking lots within the shopping center areas.

Data collection:

The variables included the location, patrol division, and crimes by category (homicide, rape sexual assault, robbery, assault, auto theft.). The data were collected from the respective police departments. The data were collected for the years 1997 through 2004.

Methods:

The data collected were processed within a statistical data analysis program. The procedures used included descriptive data analysis such as frequencies and chi square data analysis. These procedures are intended to compare the mall crime data for differences. The statistical significance of a chi-square suggests the crime incidence suggest a difference between the shopping malls.

Procedures:

The data were analyzed using descriptive statistics. The purpose of this analysis was to assess the crime statistic pattern among the locations.

Data Analysis:

The data was analyzed using statistical procedures and the Statistical Package for the Social Sciences computer program. The procedures included descriptive analysis to assure data quality and Quantitative Procedures to assess if there are differences among the mean data elements. The descriptive procedures provided measures of central tendency or the mean, median and the model of the distributions of the various crime categories.

Measures of Central Tendency Summaries:

The statistical procedures used to summarize the information, depend on the purpose of the study, and the nature of the data summarized. The measure of central tendency gives information the numbers. The measures described and presented in this study data are the mean, the median, and the mode.

Mean: The mean has two distinct advantages over the median. The mean is more stable. The arithmetic mean (or the average, simple mean) is computed by summing all numbers in an array of numbers (x_i) and then dividing by the number of observations (n) in the array.

$$\text{Mean} = \bar{x} = \sum X_i / n, \text{ the sum is over all } i\text{'s.}$$

The mean uses all of the observations, and each observation affects the mean. The mean is sensitive to extreme values; i.e., extremely large or small data can cause the mean to be pulled toward the extreme data; it is still the most widely used measure of location. The mean has valuable mathematical properties for use with inferential statistical analysis.

Median: The median is the middle value in an **ordered** array of observations. If there is an even number of observations in the array, the median is the **average** of the two middle numbers. If there is an odd number of data in the array, the median is the **middle** number. The median is often used to summarize the distribution of an outcome. If the distribution is skewed the median, the mode can indicate where the observed data are concentrated.

Mode: The mode is used to assess if a group of numbers is centered. The numbers are ordered in an array for observation of the numbers. The mode is the most frequently occurring number in a distribution of numbers in a group.

Analysis of Variance (ANOVA):

The definition of the ANOVA is analysis of variance is a statistical procedure, which compares means by splitting the overall observed variance into different parts.

The fundamental technique is a partitioning of the total sum of squares into components related to the effects. For example, the model for a simplified ANOVA with one type of treatment at different levels is shown.

$$SS_{\text{Total}} = SS_{\text{Error}} + SS_{\text{Treatments}}$$

The number of degrees of freedom (df) can be partitioned specifies the distribution, which describes the associated sums of squares.

$$df_{\text{Total}} = df_{\text{Error}} + df_{\text{Treatments}}$$

Degrees of freedom:

Degrees of freedom indicate the effective number of observations, which contribute to the sum of squares in an ANOVA, the total number of observations minus the number of linear constraints in the data.

Tests of significance:

Analyses of variance provide the tests of statistical significance of the distribution. The ANOVA result allows us to know the difference between 2 or more means. The result is obtained by examining the ratio of variability between two conditions and variability within each condition.

Measures of Association:

The *eta* measure suggests the proportional variation in the variable being analyzed. The eta term is used to suggest the meaning of the analysis. If the eta is large, the inference[©] is that the variation can be explained by the variable under study.

Part III

Tables and Graphs

ANOVA:

The following table shows the crime category variables by the location variable.

Table 1
Analysis of Variance Crime category variables by location

ANOVA Table

		Sum of Squares	df	Mean Square	F	Sig.
homicide * location	Between Groups (Combined)	19.167	4	4.792	1.623	.200
	Within Groups	73.800	25	2.952		
	Total	92.967	29			
rape * location	Between Groups (Combined)	2056.333	4	514.083	2.801	.048
	Within Groups	4588.633	25	183.545		
	Total	6644.967	29			
robbery * location	Between Groups (Combined)	15059.233	4	3764.808	2.082	.113
	Within Groups	45207.467	25	1808.299		
	Total	60266.700	29			
assault * location	Between Groups (Combined)	242485.4	4	60621.354	2.046	.118
	Within Groups	740583.8	25	29623.351		
	Total	983069.2	29			
burglary * location	Between Groups (Combined)	1707900	4	426975.012	1.980	.128
	Within Groups	5391245	25	215649.797		
	Total	7099145	29			
theft * location	Between Groups (Combined)	39334147	4	9833536.854	2.477	.070
	Within Groups	99258069	25	3970322.770		
	Total	1.39E+08	29			
auto theft * location	Between Groups (Combined)	253613.4	4	63403.354	10.141	.000
	Within Groups	125038.3	20	6251.917		
	Total	378651.8	24			

The result in this table indicates the variables of theft from auto and thefts are significant to the location of the shopping centers.

Measures of Association

The following table provides the eta measures for each variable in the selected crime study.

Table 2 Measures of Association

Measures of Association		
	Eta	Eta Squared
homicide * location	.454	.206
rape * location	.556	.309
robbery * location	.500	.250
assault * location	.497	.247
burglary * location	.490	.241
theft * location	.533	.284
auto theft * location	.818	.670

The results show the eta measures and the squared eta. The value of the theft from auto variable suggests the measure is a meaningful measure of crime by location.

Mean Statistics:

The following table shows the means for each of the variables of the crime categories.

Table 3
Mean statistic for the crime category variables
Crime Categories Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Arson	20	1.00	196.00	60.5000	49.19403
Assault	23	6.00	3406.00	1078.0435	1068.84102
Burglary	23	.00	2031.00	878.4783	655.59708
Drug	13	.00	494.00	115.9231	173.99304
Murder	23	.00	31.00	8.3913	11.18741
Rape	23	.00	101.00	34.8696	31.51090
Robbery	23	1.00	762.00	194.1304	225.42874
Stolen auto	23	9.00	1776.00	662.8261	575.50852
Theft	23	.00	6538.00	3323.3913	2405.21645
Theft from auto	8	6.00	396.00	180.3750	157.03042
Valid N (list wise)	5				

The means statistics indicate the data for the crime statistics. The mean is the unit, which is used to calculate the other statistical procedures.

Mean Statistics:

The following table shows the means for each of the variables of the police patrol units.

Table 4
Mean statistics of crime by category for the Police Divisions

		Report					
location		homocide	rape	robbery	assault	burglary	theft
metro	Mean	20.00	56.00	348.00	2422.50	1667.50	3709.00
	N	2	2	2	2	2	2
	Std. Deviation	.000	.000	21.213	54.447	26.163	359.210
south	Mean	3.50	19.50	182.50	1006.50	936.50	2891.00
	N	2	2	2	2	2	2
	Std. Deviation	4.950	2.121	40.305	.707	77.075	56.569
east	Mean	31.00	84.00	477.00	2885.50	1792.50	4432.00
	N	2	2	2	2	2	2
	Std. Deviation	.000	14.142	1.414	736.098	337.290	16.971
central	Mean	27.00	98.50	742.50	2741.00	1551.50	6531.50
	N	2	2	2	2	2	2
	Std. Deviation	2.828	3.536	27.577	43.841	144.957	9.192
north	Mean	3.50	35.50	127.50	1453.00	909.00	4106.50
	N	2	2	2	2	2	2
	Std. Deviation	.707	2.121	9.192	188.090	11.314	423.557
Total	Mean	17.00	58.70	375.50	2101.70	1371.40	4334.00
	N	10	10	10	10	10	10
	Std. Deviation	12.347	31.330	233.791	821.555	413.965	1292.650

The data show that the lowest crime activity is in the south patrol. The other patrol divisions have higher rates of crime in the categories selected for this study.

Shopping Centers:

©The data for the Shopping Centers contain data for the centers in Bannister Mall CID, Independence, Oak Park, Olathe, and Lenexa municipality. These data suggest that the Bannister Mall/CID location is overall lower than the other centers.

**Table 5
Mean Statistics for Shopping Center areas.**

Report

location		homicide	rape	robbery	assault	burglary	theft	auto theft
bannister	Mean	.00	.33	4.67	13.33	5.33	.00	27.67
	N	3	3	3	3	3	3	3
	Std. Deviation	.000	.577	3.215	7.506	5.033	.000	19.296
independence	Mean	1.83	14.42	56.33	221.83	483.33	2644.25	42.29
	N	12	12	12	12	12	12	7
	Std. Deviation	2.517	18.153	63.477	247.851	598.238	2900.151	67.146
oak park	Mean	.00	3.75	3.00	18.25	494.25	33.50	22.75
	N	4	4	4	4	4	4	4
	Std. Deviation	.000	1.500	1.155	3.775	58.869	67.000	6.238
olathe	Mean	1.33	26.50	23.67	113.50	770.17	2500.00	193.50
	N	6	6	6	6	6	6	6
	Std. Deviation	.816	13.368	11.553	59.618	533.851	1123.588	86.250
lenexa	Mean	.20	8.20	11.80	248.40	139.00	697.00	272.00
	N	5	5	5	5	5	5	5
	Std. Deviation	.447	3.962	6.943	108.313	68.996	321.217	122.403
Total	Mean	1.03	12.97	30.10	156.60	436.97	1678.33	119.64
	N	30	30	30	30	30	30	25
	Std. Deviation	1.790	15.137	45.587	184.117	494.771	2186.102	125.607

The data show the mean statistics for each of the categories of crime. The statistical differences show that the areas differ in the categories of theft, theft from auto, and rape. The mean statistics suggest that the largest crimes in these areas are in Lenexa municipality, Independence, Olathe and Oak Park.

BannisterMall/CID is at the lower end of these crime categories.

The following table shows the data displayed by year. This data suggest that the crime statistics have been constant over time. The analysis shows that except for assault the categories remain constant in other crime.

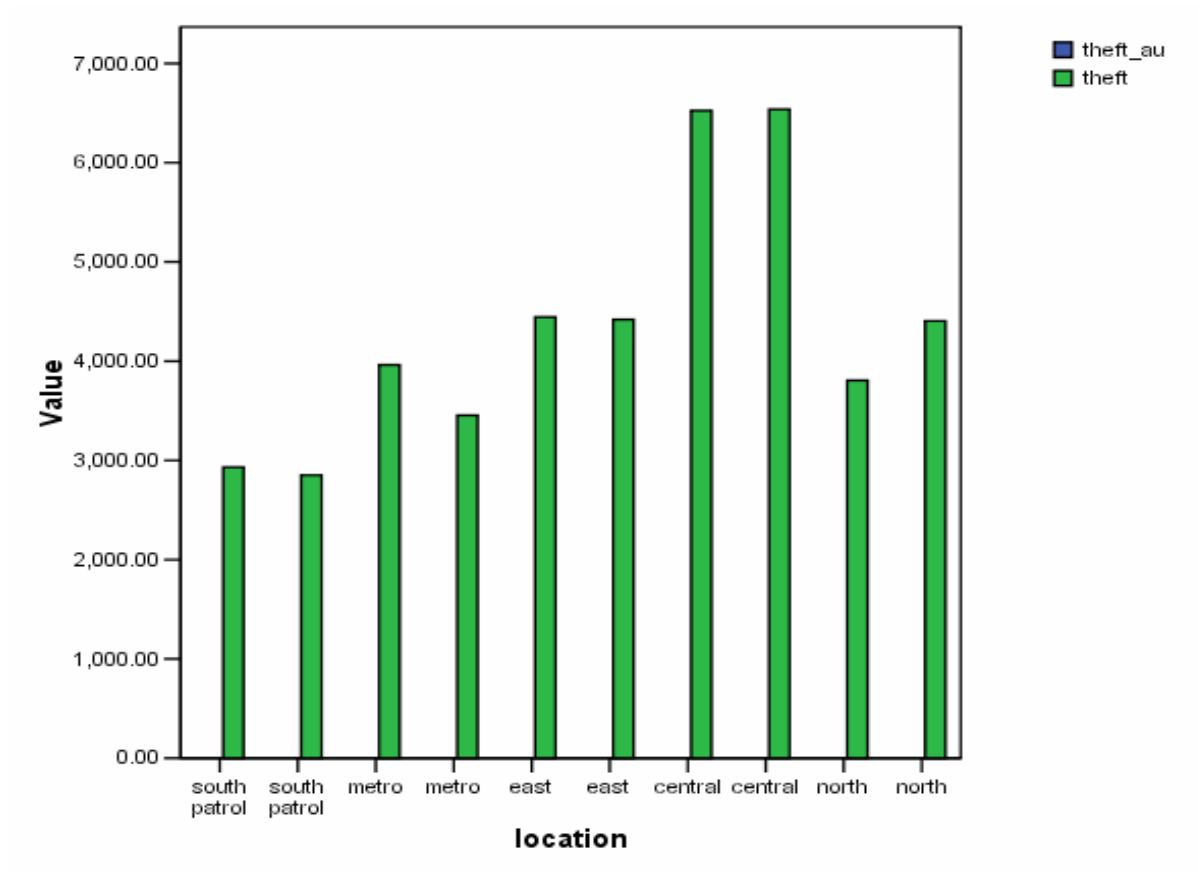
**Table 6
Mean Statistics by Year**

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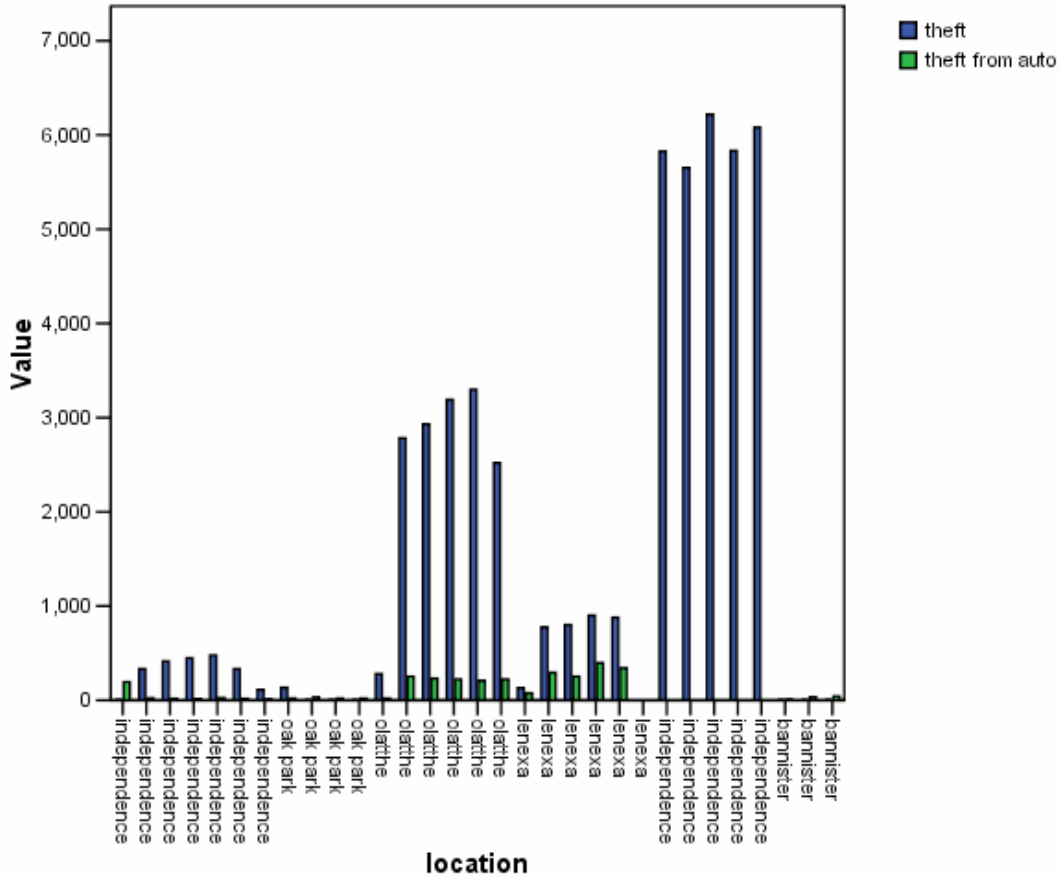
		Report						
year		homocide	rape	robbery	assault	burglary	theft	auto theft
1995	Mean	2.00	30.00	29.00	189.00	476.00	2520.00	224.00
	N	1	1	1	1	1	1	1
	Std. Deviation
1996	Mean	1.00	21.50	18.00	72.50	657.00	1856.50	112.50
	N	2	2	2	2	2	2	2
	Std. Deviation	1.414	30.406	24.042	78.489	919.239	2038.589	135.057
1997	Mean	.50	7.75	11.00	43.00	406.75	993.00	73.00
	N	4	4	4	4	4	4	4
	Std. Deviation	1.000	12.393	12.702	45.804	575.585	1477.623	100.936
1998	Mean	.25	6.50	10.50	51.00	429.00	852.25	118.00
	N	4	4	4	4	4	4	4
	Std. Deviation	.500	9.950	8.583	46.152	557.756	1404.033	110.800
1999	Mean	1.75	18.25	41.75	158.75	493.75	2235.00	96.33
	N	4	4	4	4	4	4	3
	Std. Deviation	2.872	19.939	62.104	205.057	429.678	2696.740	135.681
2000	Mean	.50	10.25	34.25	121.25	398.75	1544.50	15.33
	N	4	4	4	4	4	4	3
	Std. Deviation	1.000	15.924	63.190	221.246	489.968	2740.002	7.234
2001	Mean	2.50	20.00	83.50	395.00	678.50	3549.50	342.00
	N	2	2	2	2	2	2	1
	Std. Deviation	3.536	9.899	85.560	135.765	676.701	3776.657	.
2002	Mean	3.00	21.00	66.00	378.50	675.50	3366.50	396.00
	N	2	2	2	2	2	2	1
	Std. Deviation	4.243	16.971	82.024	157.685	755.897	3488.158	.
2003	Mean	1.00	17.67	40.00	318.67	511.00	2293.67	148.00
	N	3	3	3	3	3	3	2
	Std. Deviation	1.732	22.301	58.026	292.165	713.564	3303.429	148.492
2004	Mean	.00	4.00	10.00	150.00	68.00	387.50	164.00
	N	2	2	2	2	2	2	2
	Std. Deviation	.000	5.657	5.657	193.747	87.681	548.008	183.848
2005	Mean	.50	1.00	4.50	32.50	14.50	65.00	40.50
	N	2	2	2	2	2	2	2
	Std. Deviation	.707	1.414	4.950	37.477	20.506	91.924	48.790
Total	Mean	1.03	12.97	30.10	156.60	436.97	1678.33	119.64
	N	30	30	30	30	30	30	25
	Std. Deviation	1.790	15.137	45.587	184.117	494.771	2186.102	125.607

Graph 1

Crime by Police Patrol Division



Graph 2
Crime by Locations



NB

The higher values for Independence in this chart represent the municipality of Independence. The lower bars indicate the Independence Mall. The chart shows the lower values of the Bannister Mall/CID compared to the other locations.

Exhibit A
EDC Shopping Center Study July 1999

Economic Development Corporation

Shopping Center Study

Introduction

The study reported here compared the shopping malls at Bannister Mall, Oak Park Mall, Independence Mall, and the Mall of the Great Plains. The purpose of this study was to determine if comparison of the crime data by shopping mall would show differences in crime incidences. The perception is that there are differences between the mall crime data.

Data collection

The variables included the location, the zip code, and the population by zip, crimes by category (homicide, rape sexual assault, robbery, assault, auto theft.) and demographics. The data were collected from the respective police departments. The data were collected for the years 1997 through 2000.

Data were requested for the period 1995 and 1996. These data were not available in all the police departments. Therefore, the common years were used.

Methods

The data collected were processed within a statistical data analysis program. The procedures used included descriptive data analysis such as frequencies and chi square data analysis. These procedures are intended to compare the mall crime data for differences. The statistical significance of a chi-square suggests the crime incidence suggest a difference between the shopping malls.

Procedures

The data were analyzed using descriptive statistics. The purpose of this analysis was to assess the crime statistic pattern for the stated zip codes controlling for the population of the zip code. The chi square statistic is used to assess the probabilities of the data pattern. The significance level was .05. The analysis considered this level .05 would identify a difference in pattern, which was not expected. The expected level would indicate that the patterns were similar.

Results.

The demographics of the malls suggest that the demographics in terms of income and population reflect similarity among the malls. The Mall of the Great Plains has a larger population within the respective zip code. The ratio of white to non-white population varies from 72% to 94%. The Independence mall has the most homogenous population. The Bannister, Olathe, and Oak Park show some population diversity. The incomes of all zip codes are similar between 46,700 to 49,086.

MALL	ZIP	POPULATION	INCOME	%WHITE	%NONWHITE	Average age
OLATHE	66061	38507	47768	91	09	35
BANNISTER	64137	9760	46700	72	18	36
OAK PARK	66214	12806	49086	88	12	35
INDEPENDENCE	64057	10430	47244	94	06	33

*Data provided by MARC metro data line 1999 statistics for selected zip codes

MALL	1997	1998	1999	2000	
OLATHE					
BANNISTER					
OAK PARK					
INDEPENDENCE					
Significance of crime by location By year	.137	.261	.261	. Na	

* These data suggest that the pattern of crime in each of the malls were similar to each other. The data reflect numbers, which would be expected. These malls are therefore no different from each other in terms of the crime statistics analyzed.

Results

The results show that the amount of crime within the mall centers when compared to similar malls show no difference in the rate of crimes as measured by key indicators of homicide, rape and sexual assault, robbery, burglary, and auto theft.

In the chart below the value of 1=2000, 2=1999, 3=1998
Total N= number of years available data.

Case a

			homoci	RAP	ROBBER	ASSAUL	BUR LAR	auto	TOTAL
locatio	Bannist	1	0	0	9	22	4	48	83.0
		2	0	0	14	33	7	15	206.0
		3	0	0	21	45	10	19	270.0
		Total	N	3	3	3	3	3	3
	independen	1	0	0	6	35	0	22	63.0
		2	0	0	1	17	7	17	42.0
		3	0	0	4	14	0	14	32.0
		4	0	0	3	19	1	25	48.0
		5	0	0	3	29	2	17	51.0
		6	0	0	1	7	0	7	15.0
		Total	N	6	6	6	6	6	6
	oak	1	0	3	2	19	52	19	564.0
		2	0	5	4	13	40	32	460.0
		3	0	5	4	22	52	21	576.0
		4	0	2	2	19	526	19	563.0
		Total	N	4	4	4	4	4	4
	olatth	1	0	4	5	6	33	20	68.0
		2	1	35	29	130	403	253	851.0
		3	1	21	14	118	118	232	1567.0
		4	2	26	30	110	122	224	1613.0
		5	2	43	35	128	130	208	1723.0
		6	2	30	29	189	476	224	950.0
		Total	N	6	6	6	6	6	6
	Tota	N	19	19	19	19	19	19	19

a. Limited to first 100

SHOPPING CENTER ANALYSIS OF CRIME STATISTICS

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JULY 7, 1999

Exhibit B
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Education and Experience

Degree	Ph.D. Education Research and Education Administration
1978	
1978-1984	Director Family Studies Center University of Missouri
1999-2000	Associate Director Center for Educational Policy Analysis University of Missouri System
1978-2002	Faculty Urban Leadership and Policy Studies University of Missouri Kansas City
2003- Present	Emeritus Professor Urban Leadership and Policy Studies University of Missouri Kansas City
2003- Present	Ottawa University International Program Adjunct Faculty
1998-Present	Consultant Center for Islamic Education in North America
1990-1995	Federal Panel Grant Review Chairman HHS-ACYF Washington, DC.

Projects

School Partnership Project Hickman Mills and Universal Academy 2005.
DelaSalle Data Quality project 2005
School Accreditation Board Member Catholic Schools Missouri Catholic Conference 2004-2006
Campus Plan St Monica School Kansas City Missouri 2003-2004
Quality Management Plan Kansas City Free Health Clinic. 2003
Islamic Society of North America Presentation on Technology Planning for Schools
Chicago Illinois 2003
Quality Management Plan Mattie Rhodes Center January 2003
Hispanic Policy Center Mattie Rhodes. Design Policy Center for Hispanic Population
Issues 2003
Kansas City Free Health Clinic Quality Management Study.2003
Heart of America United Way Quality Management Project Implementation Study. 2002
2003
Center for Islamic Education Survey of Islamic Education in North America 2002
Center for Islamic Education Study on School Accreditation and School Certification
2001
Proposal to Department of Education Dynamic Interactive Model for K-12 education for
85 pilot schools Submitted in July 2002
United Way Kansas City Missouri Change Model for Resource Based Investment Model
2002-2003
Kauffman Foundation Successful Schools Studies
Planning grant for under served inner city areas using micro planning models
Center for Islamic Education in North America Islamic school profile study
Planning model for accreditation of schools and teacher certification
Planning grant for inner city Social Services.
Establish Quality Process for National Council on Accreditations for Blue Cross Blue
Shield Subsidiary

Publications

Validity and Reliability of Portfolio Assessment of Competency in a Baccalaureate Dental Hygiene Program Journal of Dental Education September 2003
New Directions Design of Quality Assurance Statistical Process 1997-2000
Quality Culture as Quality Metric. Elizabeth Noble, Ph.D. Total Quality Management Congress Carefax Publishers, London UK 1998
Two Worlds Collide Community College Journal of Research and Practice Fall 1999
Analysis of Eleven Typologies in Alcoholism Journal of Alcohol Studies March 1999
Peer Report on Education in State of Missouri February 2000
Conditions of Education Report for State of Missouri April 2000
Education Policy Forum UMKC April 2000
Design of Computer Based and Web Based (K-9) infrastructure for United Arab Emirates Education Ministry. AWT Proposal 2001
Design and Project Development of GIS Project for Abu Dhabi Water and Electrical Company Proposal Proposal for United Arab Emirates 2001
Islamic School Profile Study of 110 Schools in North America Islamic Education Forum Imam University Riyadh KSA Conference Proceedings 2002
Achieving Sex Equity through Education. Chapter 2, Economic Considerations for Achieving Sex Equity through Education. Johns Hopkins University Press, 1984.
Factor Structure of the State and Trait Versions of the Depression Adjective Check Lists. Ron Van Whitlock Bernard Lubin Elizabeth Noble Journal of Clinical Psychology September 1995

Professional Activities.

Professional Presentation

Forum on Cultural Competency Kaufman Foundation October 2003
Education Issues for Islamic Education Islamic Society of North America Chicago 2003
United Way Kansas City Missouri Outcomes Study and Resource Investment Model 2002-2003
Islamic Education Profile Islamic Society of North America. Chicago 2001
Teacher Education Issues for Islamic Education Islamic Society of North America Chicago 2000
Quality Culture as a Quality Metric Total Quality Management Congress Hallam University Sheffield UK 1998 1999 2000 2002
Presentation to the Evaluation Roundtable Midwest Research Institute. March 1994
Presentation: Assessment based on TQM strategies presented to Staff College Administrators Fort Leavenworth Kansas February 1994
Path Analysis and Data Analysis of Complex data sets. Presented at Midwest Research Conference February, 1994
Presentation: Coalition Process: A qualitative analysis of coalitions. Presented at the National Council of Jewish Women Research Conference for Headstart Washington DC November, 1993
Presentation: Demand Characteristics of Learners. Presented at the Technology research conference Augusta, Maine. August 1993

Presentation: Qualitative and Quantitative Analysis Research and Evaluation
Professionals; Kauffman Foundation 1995
Panel Participation in National Regional or International Professional Meeting 1995
Presentation: Study of substance abuse prevention at a small private college.
Presentation at state conference of Missouri Psychological Association. September
1992