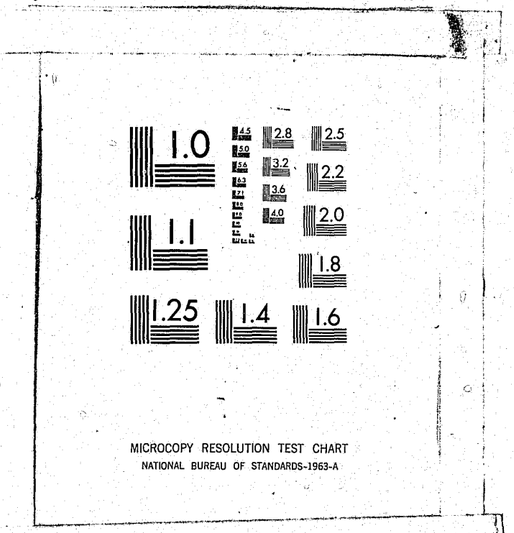

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

National Institute of Justice
United States Department of Justice
Washington, D.C. 20531

PRELIMINARY ANALYSIS
OF THE PERFORMANCE
OF
VIRGINIA CRIMINAL JUSTICE SYSTEMS

MAY 1977

COMMONWEALTH OF VIRGINIA
DIVISION OF JUSTICE AND CRIME PREVENTION

RAYMOND HOGUE
WILLIAM LUCAS
WILLIAM WILMOT

(Rev. 6/3/77)

TABLE OF CONTENTS

A. Summary

A preliminary analysis of twenty-nine urban, suburban, and rural jurisdictions and their criminal justice systems utilized some thirty-eight variables to measure: size, income, expenditures for law enforcement, crime, processing of arrested persons, numbers of sworn officers, numbers of equivalent full-time Commonwealth Attorneys and assistants, numbers of judges, and adequacy of jail capacity. Variables are combined to constitute measures of input, output, performance, and work load. The jurisdictions analyzed comprise the Virginia Standard Metropolitan Statistical Areas (with the exception of the City of Bristol, Virginia) in addition to a number of rural jurisdictions. The variables for the most part are converted to rates, ratios, and percentages or expressed on a per capita or per officer (Commonwealth Attorney), (judge) basis. Determination of the correlation of the variables with each other, multiple regression analysis and analysis of variance were among the statistical procedures employed using the Statistical Package for the Social Sciences, an integrated system or computer programs designed for the analysis of social sciences data. Principal results are now summarized.

Law Enforcement

- Jurisdictions with higher crime rates spend more to cope.
- The expenditure slice per sworn officer correlates highly with median income level of a jurisdiction.
- Total arrests per sworn officer and clearance rates go down as median income level of jurisdictions goes up.
- Level of expenditure correlates more highly with property crime rates than violent crime rates and is highly correlated with population density. Property crime rates correlate with income levels.

Commonwealth Attorneys

- The higher the number of equivalent full-time Commonwealth Attorneys the fewer persons arrested for felony offenses are tried for misdemeanors.
- The higher the number of equivalent full-time Commonwealth Attorneys the greater number of persons receiving sentences of confinement having been tried for and convicted of a misdemeanor.
- The percent of felony arrests going to trial is adversely affected by the total number of arrests (felony and misdemeanor) per Commonwealth Attorney.
- Time to bring felony cases to trial is strongly correlated with the total number of arrests (felony and misdemeanor) per Commonwealth Attorney.

Courts

- The percentage of persons arrested for felonies who are never brought to trial is adversely affected by long times to bring cases to trial. The same is true for persons arrested for misdemeanors.
- The percent of persons who are convicted when tried on felony charges is also adversely affected by long times to bring cases to trial.

Sentencing Patterns

- In jurisdictions with a higher number of persons arrested for either felonies or misdemeanors the higher the percentage of those persons arrested for and convicted of a misdemeanor who receive confinement sentences.
- In jurisdictions with a higher incidence of felony crimes per 1000 population a higher percentage of persons arrested for and convicted of misdemeanors receive confinement sentences.
- When time to bring persons to trial arrested for felonies but tried for misdemeanors increases the percentage of those convicted who receive confinement sentences increases while those receiving probation sentences decreases.

System Interactions

- The higher the total arrests per sworn officer the longer the waiting period to try felony cases. High output from law enforcement is overload in the courts.

B. Profiles of Urbanization and Geographical Groupings

The jurisdictions studied were grouped as urban, suburban, and rural to determine the extent to which the variables describing the jurisdictions and their respective criminal justice systems varied among such groupings.

A one-way analysis of variance was performed to determine if the means of various groups of jurisdictions differed significantly and to test for homogeneity of the variances of the variables within the groups. Jurisdictions were also grouped by geographical regions to determine significant differences using the same procedures. Regional groupings were: Tidewater, Northern Virginia, Capital Area (including Petersburg and Colonial Heights), Central Virginia (jurisdictions in the Roanoke and Lynchburg areas), and Southwest Virginia. Table 1 lists selected variables in order of significance level by which grouping of jurisdictions may be described by the variables for an assignable cause other than pure chance. That F ratio value which controls sequence of listing in Table 1 is underlined. All significance values are at a confidence level of 98% or better.

TABLE 1

	Urbanization Grouping F Ratio	Geographic Grouping F Ratio
Incidence Part I Crimes	22.376	4.656
Expenditure Slice per Officer	16.814	18.546
Median Household Effective Buying Income	18.23	10.037
Total Arrestees per Sworn Officer	6.027	18.055
% Part I Crimes Cleared by Arrest	16.064	11.371
Maximum Months to Conclude Pending Felony Cases	*	13.922
Persons Arrested per 1000 population for Part I	10.818	*
Number Sworn Officers per 1000 population	10.31	3.580
Number Equivalent Full-time Commonwealth Attorneys	9.413	4.217
Law Enforcement Expenditure per 1000 population	7.563	7.129
Persons Arrested per 1000 for Part I and I Offenses	6.159	*
% Part I Arrestees Tried	*	4.217

* Statistically not a useful grouping

A profile of the urban, suburban, and rural grouping of jurisdictions by statistically distinguishing group characteristics follows. If there is little difference statistically between two groups the computer program indicates this by placing them in a homogeneous subset together; or if there is little difference between all three groups a single homogeneous subset is indicated as containing all three groups. When a group is statistically different from the other two it will be a subset by itself.

Profile of Urban Group

1. In the subset of two subsets with the highest incidence of Part I Crimes per 1000 Population (Group Mean = 66.8 Part I Crimes per 1000 Population).

2. Group constitutes the mid subset of three subsets for expenditure slice per sworn officer (Group Mean = $16,127).

3. In the subset of two subsets for lowest median household effective buying income (Group Mean = $11,701).

4. This group is in each of the two subsets for total arrests (Part I and II crimes) per sworn law enforcement officer (Group Mean = 43.2).

5. In the subset of two subsets with the lowest percentage of Part I crimes cleared by arrest (Group Mean = 29.7%).

6. Group constitutes a separate subset of two subsets with the highest number of persons arrested per 1000 population for Part I crimes (Group Mean = 23.0).

7. In the subset of two subsets with the highest number of sworn law enforcement officers per 1000 population (Group Mean = 1.85 officers).

8. In the subset of two subsets with the highest law enforcement expenditure per 1000 population (Group Mean = $29,540).

9. Constitutes the subset with the highest number of persons arrested per 1000 population for Part I and II Crimes (Group Mean = 80.3)

Profile of Suburban Group

1. In the subset of two subsets with highest incidence of Part I crimes per 1000 population (Group Mean = 51.8 Part I crimes per 1000 population).

2. Group constitutes the subset of three subsets with highest expenditure slice per sworn officer (Group Mean = $21,432).

3. Group constitutes the subset of two subsets with highest median household effective buying income (Group Mean = $16,499).

4. In the subset of two subsets with the lowest total arrests (Part I and II crimes per sworn law enforcement officer (Group Mean = 27.1)

Profile of Suburban Group (Cont.)

5. In the subset of two subsets with the lowest percentage of Part I Crimes Cleared by arrest (Group Mean = 21.2%)

6. In the subset of two subsets with the lowest number of persons arrested per 1000 population for Part I crimes (Group Mean = 11.5).

7. In the subset of two subsets with the highest number of sworn law enforcement officers per 1000 population (Group Mean = 1.64 officers).

Profile of Rural Group

1. Group constitutes the separate subset of two subsets with the lowest incidence of Part I crimes per 1000 population (Group Mean = 15.4 Part I crimes per 1000 population).

2. Group constitutes lowest of three subsets for expenditure slice per sworn officer (Group Mean = $10,742).

3. In the subset of two subsets for lowest median household effective buying income (Group Mean = $10,232).

4. In the subset of two subsets with the highest total arrests (Part I and II crimes) per sworn law enforcement officer (Group Mean = 65.4).

5. Group constitutes a separate subset (of two subsets) with the highest percentage of Part I crimes cleared by arrest (Group Mean = 47.5%).

6. In the subset of two subsets with the lowest number of persons arrested per 1000 population for Part I crimes (Group Mean = 7.8).

Profile of Tidewater Grouping

1. In the subset with lowest maximum months to conclude pending felony cases (Group Mean = 3.5 months).

2. One of three groups in subset with lowest percentage of Part I Crimes cleared by arrest (Group Mean 25.8%).

Profile of Capital Area Grouping

1. Middle group for maximum months to conclude pending felony cases (Group Mean 4.1 months). (Additional judgeship created in Fourteenth Judical Circuit by 1977 General Assembly).

2. In the subset with lowest percentage of Part I Crimes cleared by arrest (Group Mean 27.9%)

Profile of Central Virginia Grouping

1. In subset with lowest number for maximum months to conclude pending felony cases (Group Mean = 2.8 months). (Additional judgeship created in Twenty-Third Judicial Circuit by 1977 General Assembly).

2. In subset with lowest expenditure slice per sworn officer (Group Mean = $13,083).

Profile of Northern Virginia Grouping

1. Next to highest maximum months to conclude pending felony cases (Additional Circuit created by 1977 General Assembly).

2. In highest of three subsets with regard to expenditure slice per officer, (Group Mean = $25,532).

3. Group constitutes separate subset with highest median household effective buying power (Group Mean = $17,870).

4. One of three groups in the subset with lowest percentage of Part I crimes cleared by arrest (Group Mean = 18.5%).

5. In the subset with the lowest percentage of Part I arrestees tried (Group Mean = 65%).

Profile of Southwest Virginia Grouping

1. Highest maximum months to conclude pending felony cases (Group Mean = 13.2 months).

2. Exceptionally low incidence of Part I crimes compared with other four geographical groups (Group Mean = 7.2 Part I crimes per 1000 population).

3. In lowest of three homogeneous subset with regard to expenditure slice (Group Mean = $10,249).

4. Group constitutes separate subset with highest total arrests per sworn officer (Group Mean = 100.5 arrest per officer).

5. Group constitute a separate subset with highest percentage of Part I crimes cleared by arrest (Group Mean = 59.8%).

6. In the subset with lowest percentages of Part I arrestees tried (Group Mean = 51.3%).

C. Relationships of Key Variables

1. Population is not highly correlated with many of the variables used to describe the twenty-nine criminal justice systems analyzed.

Correlate	Coefficient
Median Household Effective Buying Income	0.43
Part I Crime Clearance Rate	-0.49
Number Equivalent Full-time Commonwealth Attorneys	0.70

2. Area correlates negatively as follows:

Correlate	Coefficient
Number Sworn Law Enforcement per 1000 Population	-0.86
Law Enforcement Expenditure per 1000 Population	-0.66
Incidence of Part I Crimes per 1000 Population	-0.77

3. Population Per Square Mile:

Correlate	Coefficient
Number Sworn Law Enforcement per 1000 Population	0.79
Local Law Enforcement Expenditure per 1000 Population	0.79
Incidence of Part I Crimes per 1000 Population	0.73
Number Equivalent Full-time Commonwealth Attorneys	0.61
Population per Circuit Court Judge	-0.20

COMMENT: These relationships indicate that crime increases with population density and that, consequently, so does the number of law enforcement per 1000 population.

ANALYSIS OF GROUPINGS: This variable, when the jurisdictions are grouped according to urbanization, forms two homogenous subsets:

SUBSET 1

Group	Rural
Mean for variable	351.9 persons per sq. mile

SUBSET 2

Group	Urban	Suburban
Mean for variable	2462.6	2568.8
	(persons per sq. mile)	

For the variable, population per square mile, it is apparent that in Virginia there is little distinction between urban and suburban. In fact, the so-called "suburbs" of Washington, D.C., and the suburbs of the cities of Richmond, Roanoke, Lynchburg, and Petersburg are more dense as a group than the group of Virginia urban areas. This is caused by the higher density of four northern Virginia suburbs of Washington, D.C. (with itself a 1974 population per square mile of 11,848).

When the jurisdictions are grouped geographically this variable forms two homogeneous subsets:

SUBSET 1

Group	Southwest Virginia	Central Virginia	Capital Area	Tidewater
Mean for variable	67.3	973.1	1790.8	2434.7
		(persons per square mile)		

SUBSET 2

Group	Capital Area	Tidewater	Northern Virginia
Mean for variable	1790.8	2434.7	3862.7
		(persons per square mile)	

4. Median Household Effective Buying Income

Correlate	Coefficient
Incidence of Part I Crimes per 1000 Population	0.22
Number Sworn Law Enforcement per 1000 Population	0.30
Violent Crime Rate	0.06
Property Crime Rate	0.44
Law Enforcement Expenditure per 1000 Population	0.48
Expenditure Slice per Sworn Officer	0.72
Clearance rate	-0.79
Persons arrested per 1000 Population for Part I Offenses	0.27
% Part I Arrestees Tried and Convicted of Misdemeanors, Sentenced to Probation	0.51
Number of Part-time Commonwealth Attorneys	0.68
Population per Circuit Court Judge	0.56

COMMENT: Jurisdictions with higher median household effective buying incomes generally expend a larger expenditure slice per sworn officer. Even so, clearance rates go down in jurisdictions with higher income. The number of persons arrested for Part I offenses is negatively correlated with median income. Whether jurisdictions are grouped by urbanization or geographically, all groups are part of a single homogeneous set with regard to Part I arrestees tried for misdemeanors, verdicts, and dispositions with one exception. The mean percentage of Part I adult arrestees, tried and convicted for misdemeanors which are sentenced to probation is sufficiently higher in suburban jurisdictions, that an homogeneous subset is formed for the suburban grouping with regard to this variable.

ANAYSIS OF GROUPINGS: Grouping by urbanization provides two homogeneous subsets:

SUBSET 1

Group	Rural	Urban
Mean for variable	$10,232	$11,701

SUBSET 2

Group	Suburban
Mean for variable	$16,499

A geographical grouping of jurisdictions results in three homogeneous subsets:

SUBSET 1

Group	Southwest Virginia	Central Virginia	Tidewater
Mean for variable	$7,846	$11,924	$12,174

SUBSET 2

Group	Central Virginia	Tidewater	Capital Area
Mean for variable	$11,924	$12,174	$13,708

SUBSET 3

Group	Northern Virginia
Mean for variable	$17,870

5. Number Sworn Law Enforcement per 1000 Population

Correlate	Coefficient
Area	-0.86
Population per square mile	0.79
Law Enforcement Expenditure	0.86
Expenditure Slice per Sworn Officer	0.60
Incidence of Part I Crimes	0.86
Clearance Rate	-0.50
Part I Arrestees per 1000 population	0.62
Number Equivalent Full-time Commonwealth Attorneys	0.58
Violent Crime Rate	0.70
Property Crime Rate	0.85

Two homogeneous subsets are formed for this variable when the set of jurisdictions studied is grouped according to urbanization:

SUBSET 1

Group	Rural
Mean for variable	0.79 officers per 1000 population

SUBSET 2

Group	Suburban	Rural
Mean for variable	1.64 (officers per 1000 population)	1.85

If the set of jurisdictions is grouped geographically two homogeneous subsets are formed which are statistically useful.

SUBSET 1

Group	Southwest Virginia	Central Virginia
Mean for variable	0.54 (officers per 1000 population)	1.28

SUBSET 2

Group	Central Virginia	Capital Area	Tidewater	Northern Virginia
Mean for variable	1.28	1.68 (officers per 1000 population)	1.68	1.96

6. Law Enforcement Expenditure per 1000 Population

Correlate	Coefficient
Population per square mile	0.79
Median Household Buying Income	0.49
Expenditure Slice per Officer	0.72
Number Sworn Law Enforcement per 1000 population	0.86
Incidence of Crime per 1000 population	0.72
Clearance Rate	-0.48
Property Crime Rate	0.75
Violent Crime Rate	0.69
Equivalent Full-time Commonwealth Attorneys	0.56
Persons Arrested for Part I Offenses per 1000 population	0.40

COMMENT: The above relationships say that jurisdictions with higher crime also generally spend more to cope with it. However, law enforcement performance in general declines with these increasing expenditures.

ANALYSIS OF GROUPINGS: Grouping jurisdictions by urbanization results in two homogeneous subsets:

SUBSET 1

Group	Rural
Mean for variable	$8,735 (per 1000 population)

SUBSET 2

Group	Urban	Suburban
Mean for variable	$29,540	$37,583

(per 1000 population)

Grouping jurisdictions geographically yields two homogeneous subsets:

SUBSET 1

Group	Southwest Virginia	Central Virginia	Tidewater	Capital Area
Mean for variable	$5,448	$17,794	$26,147	$26,893

(Expenditure per 1000 population)

SUBSET 2

Group	Northern Virginia
Mean for variable	$51,810

7. Expenditure Slice per Sworn Officer

Correlate	Coefficient
Median Household Effective Buying Income	0.72

ANALYSIS OF GROUPING: Grouping jurisdictions by degree of urbanization yields three homogeneous subsets:

SUBSET 1

Group	Rural
Mean for variable	$10,742 (expenditure slice per officer)

SUBSET 2

Group	Urban
Mean for variable	$16,127 (expenditure slice per officer)

SUBSET 3

Group	Suburban
Mean for variable	$21,432 (expenditure slice per officer)

Grouping jurisdictions geographically results in three homogeneous subsets:

SUBSET 1

Group	Southwest Virginia	Central Virginia
Mean for variable	$10,249	$13,083

(expenditure slice per officer)

SUBSET 2

Group	Central Virginia	Tidewater	Capital Area
Mean for variable	$13,083	$15,946	$17,119

(expenditure slice per officer)

SUBSET 3

Group	Northern Virginia
Mean for variable	$25,532

(expenditure slice per officer)

8. Incidence of Part I Crimes per 1000 Population

Correlate	Coefficient
Area	-0.77
Population per Square Mile	0.73
Number Sworn Officers	0.86
Law Enforcement Expenditures per 1000 Population	0.72
Expenditure Slice per Officer	0.54
Clearance Rate	-0.52
Arrests for Part I Offenses per 1000 population	0.77
Arrests for Part II Offenses per 1000 population	0.52
Number Equivalent Full-time Commonwealth Attorneys	0.69
Arrests for Part I and II Offenses	0.64
% Part II Arrestees Tried and Convicted Who Receive Confinement	0.55

ANALYSIS OF GROUPING: Grouping jurisdictions by urbanization yield two homogeneous subsets.

SUBSET 1

Group	Rural
Mean for variable	15.4 (Part I crimes per 1000 population)

SUBSET 2

Group	Suburban	Urban
Mean for variable	51.8	66.8

(Part I crimes per 1000 population)

9. % of Part I Crimes Cleared by Arrest

Correlate		Coefficient
Median Household Effective Buying Income		-0.79
Number Sworn Law Enforcement per 1000 Population		-0.50
Law Enforcement Expenditure per 1000 population		-0.48
Expenditure Slice per Sworn Officer		-0.58
Incidence of Part I Crimes		-0.52
Persons arrested for Part I Crimes per 1000 Population		-0.02
RATIO	Part II arrests per 1000 Population / Part I arrests per 1000 Population	0.60
RATIO	Total Arrests per 1000 Population / Number Equivalent Full-time Commonwealth Attorneys	0.50
RATIO	Total Arrests per 1000 Population / Number Sworn Law Enforcement per 1000 Population	0.82

COMMENT: These relationships seem to say: (1) jurisdictions with a higher incidence of crime (and consequently a corresponding higher number of sworn officers and rate of expenditure) the clearance rate for Part I crimes falls off or, conversely the less crime the higher the clearance rate; (2) clearance rates vary inversely with the median income of the population of jurisdictions; (3) law enforcement agencies that have better Part II arrest rates will also have higher clearance rates for Part I Crimes (and reverse); (4) and, as might be expected, the work load of Commonwealth Attorneys is higher where clearance rates are highest. Somewhat suprisingly, there is no correlation between clearance rate and arrest rate for Part I offenses.

ANAYSIS OF GROUPINGS: Grouping by urbanization yield two homogeneous subsets:

SUBSET 1

Group	Suburban	Urban
Mean for variable	21.2%	29.7%

(% of Part I crime cleared by arrest)

SUBSET 2

Group	Rural
Mean for variable	47.5% (% of Part I crime cleared by arrest)

Grouping geographically yields three homogeneous subsets:

SUBSET 1

Group	Northern Virginia	Tidewater	Capital Area
Mean for variable	18.5%	25.8%	27.9%

(% of Part I crime cleared by arrest)

SUBSET 2

Group	Tidewater	Capital Area	Central Virginia
Mean for variable	25.8%	27.9%	36.2%

(% of Part I Crime cleared by arrest)

SUBSET 3

Group	Southwest Virginia
Mean for variable	59.8%

(% of Part I crime cleared by arrest)

10. Persons Arrested per 1000 Population for Part I Offenses

Correlate	Coefficient
Number Sworn Law Enforcement per 1000 population	0.62
Incidence of Part I Crime per 1000 population	0.77
Percent Part I Crime Cleared by Arrest	-0.02
Persons Arrested per 1000 Population for Part II Offenses	0.67
Law Enforcement Expenditure per 1000 population	0.40
Expenditure Slice per Sworn Officer	0.17
Percent Part II Arrestees Tried and Convicted who Receive Confinement	0.45
Violent Crime Rate per 1000 Population	0.52
Property Crime Rate per 1000 population	0.63

ANALYSIS OF GROUPINGS: Grouping jurisdiction by urbanization produces two homogeneous subsets:

SUBSET 1

Group	Rural	Suburban
Mean for variable	7.8	11.5

(persons arrested per 1000 population for Part I crimes)

SUBSET 2

Group	Urban
Mean for variable	23.0

When jurisdictions are grouped geographically a single homogeneous subset is formed which statistically is not a good grouping.

11. Persons Arrested for Part I and II Crimes per 1000 Population

Correlate	Coefficient
Number Sworn Officers per 1000 Population	0.53
Law Enforcement Expenditures per 1000 Popualtion	0.56
Incidence of Part I Crimes per 1000 population	0.64
% Part I Crimes Cleared by Arrest	0.18
Number Equivalent Full-time Commonwealth Attorneys	0.36
Violent Crime Rate per 1000 Population	0.49
Property Crime Rate per 1000 population	0.53
Percentage Part II Arrestees Tried and Convicted who Receive Confinement	0.50

ANALYSIS OF GROUPINGS: Grouping jurisdictions by urbanization produces two homogeneous subsets:

SUBSET 1

Group	Rural	Suburban
Mean for variable	42.8	44.2

(Persons arrested for Part I and II Crimes per 1000 population)

SUBSET 2

Group	Urban
Mean for variable	80.3

When jurisdictions are grouped geographically a single homogeneous set results which is not statistically useful.

12. Total Arrestees (Part I and II) per Sworn Officer

Correlate	Coeficient
Median Household Effective Income	-0.60
Number Sworn Officers per 1000 Population	-0.45
Law Enforcement Expenditure per 1000 Population	-0.42
Expenditure Slice Per Sworn Officer	-0.46
% Part I Crime Cleared by Arrest	0.82
Maximum Months to Conclude Pending Felony Cases	0.59
Property Crime Rate	-0.41
Incidence of Part I Crime per 1000 Population	-0.33

COMMENT: The high correlation of total arrests (Part I and II) per sworn officer with the maximum months to conclude pending felony cases is a particularly dramatic illustration of the interaction and inter dependencies of criminal justice systems. High output from law enforcement is overload on the courts.

ANALYSES OF GROUPINGS: Grouping jurisdictions by urbanization two homogeneous subsets are formed:

SUBSET 1

Group	Suburban	Urban
Mean for variable	27.1	43.2

SUBSET 2

Group	Urban	Rural
Mean for variable	43.2	65.4

When jurisdictions are grouped geographically two homogeneous subsets are formed:

SUBSET 1

Group	Northern Virginia	Tidewater	Central Virginia	Capital Area
Mean for variable	25.5	35.8	37.4	43.6

SUBSET 2

Group	Southwest Virginia
Mean for variable	110.5

13. Number Equivalent Full-time Commonwealth Attorneys

Correlate	Coefficient
Population	0.61
Population per square mile	0.58
Number Sworn Law Enforcement Officers per 1000 Population	0.56
Law Enforcement Expenditure per 1000 Population	0.69
Incidence of Part I Crime Per 1000 population	-0.44
% Part I Crime Cleared by Arrest	-0.36
RATIO Part I Arrestees Tried for Misdemeanors / Part I Arrestees Tried	0.18
Maximum Months to Conclude Pending Felony Cases	0.69
% Part II Arrestees Tried and Convicted who Receive Confinement	0.44
Persons Arrested for Part I and II Offenses per Commonwealth Attorney	0.51
Violent Crime Rate per 1000 Population	0.44
Property Crime Rate per 1000 Population	

COMMENT: The negative correlation of the ratio, Part I arrestees Tried for Misdemeanor / Part I arrestees Tried indicates that this ratio becomes smaller as the number of equivalent full-time Commonwealth Attorneys is larger, or that more Part I arrestees are tried for felonies.

ANALYSES OF GROUPINGS: Grouping jurisdictions by urbanization results in two homogenous subsets:

SUBSET 1

Group	Rural	Suburban
Mean for variable	0.63	3.9

SUBSET 2

Group	Urban
Mean for variable	7.6

When jurisdictions are grouped geographically two homogeneous subsets result:

SUBSET 1

Group	Southwest Virginia	Central Virginia	Capital Area	Northern Virginia
Mean for variable	0.5	1.6	5.3	6.0

SUBSET 2

Group	Capital Area	Northern Virginia	Tidewater
Mean for variable	5.3	6.0	8.3

14. % Part I Arrestees Tried

Correlate	Coefficient
% Part I Arrestees Tried and Convicted	0.76
% Part II Arrestees Tried	0.63
RATIO Total Arrestees (Part I and II) per 1000 population / # Number Equivalent Full-time Commonwealth Attorneys	-0.49
Maximum Months to Conclude Pending Felony Trials	-0.42

COMMENT: The first two relationships above should not be unexpected. However, the negative correlation coefficient of the Commonwealth Attorney work load variable indicates a shortage of Commonwealth Attorneys in enough jurisdictions studied to produce work loads sufficiently high to affect adversely the percentage of Part I arrestees tried. The negative correlation of percentage of Part I arrestees tried with maximum months to conclude pending felony trials says, quite plainly, that Virginia has serious problems with its courts. (See next variable below, % Part I arrestees tried who are convicted.) The Judicial Council of Virginia made recommendations to the 1977 General Assembly which were enacted. These should reduce

caseloads per judge in judical circuits affecting seven of the twenty six jurisdictions analyzed in addition to other jurisdictions not analyzed: Norfolk, City of Roanoke, Henrico County, Roanoke County, the City of Salem, Fairfax County, and Prince William County.

ANALYSIS OF GROUPINGS: Grouping jurisdictions by urbanization yields but one homogeneous subset; which is not statistically a good grouping.

Grouping geographically yields two homogeneous subsets:

SUBSET 1

Group	Southwest Virginia	Northern Virginia
Mean for variable	51.3%	65.0%

SUBSET 2

Group	Northern Virginia	Capital Area	Tidewater	Central Virginia
Mean for variable	65.0%	75.8%	79.0%	82.2%

15. Maximum Months to Conclude Pending Felony Cases

Correlate	Coefficient
Number Sworn Law Enforcement Officers per 1000 Population	-0.44
Incidence of Part I Crimes Per 1000 Population	-0.39
Persons Arrested per 1000 Population for Part I Crimes	-0.41
% Part I Arrestees Tried (Felony or Misdemeanor)	-0.42
% Part I Arrestees Convicted	-0.28
% Part I Arrestees Tried for Misdemeanors	-0.36
% Part I Arrestees Tried and Convicted for Misdemeanors	
-who receive Confinement	0.04
-who receive Probation	-0.55
% Part II Arrestees Tried	-0.24
RATIO $\frac{\text{Part II Arrests}}{\text{Part I Arrests}}$	+0.22
RATIO $\frac{\text{Arrestees}}{\text{Number Equivalent full-time Commonwealth Attorneys}}$	-0.26
Total Arrests per Sworn Officer	0.59

COMMENT: The first three correlates indicate that as law enforcement loads the system the maximum months to conclude pending felony cases increases. The second three correlates show the impact of long times to come to trial on numbers tried, numbers convicted, or numbers of felony arrests tried for misdemeanors.

ANALYSIS OF GROUPINGS: Grouping jurisdictions by urbanization results in one homogeneous subset:

SUBSET 1

Group	Urban	Suburban	Rural
Mean for variable	3.0 months	5.3 months	6.9 months

Grouping geographcially yield four homogeneous subsets:

SUBSET 1

Group	Central Virginia	Tidewater
Mean for variable	2.8 months	3.5 months

SUBSET 2

Group	Tidewater	Capital Area
Mean for variable	3.5 months	4.1 months

SUBSET 3

Group	Northern Virginia
Mean for variable	6.9 months

SUBSET 4

Group	Southwest Virginia
Mean for variable	13.2 months

16. % of Present Jail Capacity Needed to Relieve Jail Overcrowding 95% of the Time

Correlate	Coefficient
% Part I Adult Arrestees Tried and Convicted in Circuit Court who are sentenced to Probation	-.31
Population per Circuit Court Judge	.40
Percent of Present Jail Capacity filled with State Prisoners	.68

COMMENT: A multiple regression analysis indicates that 46% of the variability of this jail overcrowding variable can be accounted for by the variable, percent of present jail capacity filled with State prisoners. Data for that variable were collected on 23 and 24 May 1977. Four other variables accounting for 10%, 7%, 7%, and 5% of the variability respectively, for a total of 75% of the variability of our overcrowding rodex:

Persons arrested for Part I and II crimes per 1000 Population
% Part I Adult arrestees tried and convicted who are Sentenced to confinement
% Part I adult arrestees tried and convicted in Circuit Court sentenced to probation (r = -.31)
Population per Circuit Court Judge

END