MAINE STATE LEGISLATURE

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Examples of Quantative Analysis As Applied To

Juvenile Justice System Goals and Objectives

Prepared for:

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Revise Statutes Relating To
Juveniles

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INTRODUCTION

The problem is to find variables that might help explain three phenomena:

A. Differences among counties in the amount of violent and serious acts committed by juveniles

B. Differences among counties in the amount of non-violent or non-serious offenses commited by juveniles

C. Differences in the degree to which counties send juveniles to BTC

The tables presented below show dramatic differences among Maine's sixteen counties. What accounts for these differences?

To begin to answer this question, we looked at:

1. Poverty measured by percent families in each county having children under 18 and living below poverty level.

2. Family disruption as measured by divorces as % of marriages in each county.

3. Family disruption as measured by percent of families in each county having only one parent.

4. Juvenile court activity as measured by number juvenile court appearances per 1,000 population under 18 in each county.

5. Urbanization as measured by % population in each county living in urban areas.

6. <u>Utilization of diversion and alternatives</u>

as measured by number juveniles referred

to mental health centers by police and

courts/corrections per 1,000 population

under 18.

We computed "correlation coefficients" between each

of the three phenomena we are attempting to explain and each

of the six rates described above.

A Note on Correlation

A "correlation coefficient" which may range from

-1.000 to +1.000 is an index of the linear relationship

between two variables. In English this means that a

coefficient of -1.000 shows a perfect negative relationship --

i.e., a <u>higher</u> value for one variable will predict a <u>lower</u>

value for the other. On the other hand, a coefficient of

+1.000 shows a perfect <u>positive</u> relationship -- i.e., a

higher value for one variable will predict a <u>higher</u> value

for the other. Usually, because the world is not "perfect",

the coefficient is somewhere between -1.000 and +1.000. (A

coefficient of "0" shows there is <u>no</u> linear relationship.)

How "large" (close to -1.000 or +1.000) must a correlation

coefficient be in order for us to infer a negative or positive

"relationship"? This depends on (1) the size of the coefficient

and (2) the number of cases (for this exercise, 16 counties)

measured. Accordingly, we have determined the "significance"

of each coefficient which tells us how likely a coefficient

of a given size might have been obtained by sheer chance
alone. Thus, the phrase "significant at the .01 level"
means a coefficient of that size would occur only once in
a hundred chances. Generally, any value exceeding the
.05 significance level is considered not significant, and
one should avoid making any inferences.

We should bear in mind at least two cautions in
reviewing these statistics:

Caution #1: A significant correlation does not
necessarily mean that one thing causes
another. The correlation may be entirely
"spurious" or the apparent relationship
may reflect both variables' relation
to yet another factor.

Caution #2: We have not yet tested the interactive
effects of more than one variable on the
rates we are attempting to explain (multi-
variant analysis). Thus, although some
variables now appear not significant, they
may interact in a complex manner to have
a significant impact.

A. Violent and Serious Offenses

Data available for measuring violent/serious crimes were
found in the Children & Youth Services Planning Project material
presenting the number of juveniles arrested for "Part I offenses"
(murder, rape, robbery, aggravated assault, burglary, and
motor vehicle theft) during FY 1974-75.

The following table shows considerable differences among the 16 counties:

County	Juvenile Arrests per 10,000 arrests under 18 Part I Rate
Androscoggin	147.9
Aroostook	65.4
Cumberland	158.0
Franklin	55.5
Hancock	75.4
Kennebec	115.9
Knox	105.3
Lincoln	63.0
Oxford	74.9
Penobscot	125.9
Piscataquis	57.4
Sagadahoc	84.6
Somerset	64.3
Waldo	72.1
Washington	77.6
York	150.7
STATE TOTAL	114.6

What accounts for these differences?

Non-Violent, Non-Serious Offenses

The Children and Youth Services Planning Project also yielded data concerning juvenile arrests for Part II offenses (all offenses other than those listed under Part I) during FY 1974-75. We have computed rates per 10,000 juvenile population for these arrest figures. Again, there is a wide variation among Maine's 16 counties, with Sagadahoc having over 6 times the arrest rate of Lincoln:

County	Juvenile Part II Arrests per 10,000 Population Under 18
Androscoggin	362.4
Aroostook	82.2
Cumberland	272.0
Franklin	75.7
Hancock	105.8
Kennebec	156.4
Knox	97.7
Lincoln	55.5
Oxford	125.7
Penobscot	148.6
Piscataquis	166.6
Sagadahoc	366.3
Somerset	175.8
Waldo	92.6
Washington	121.6
York	240.3
State Total	192.6

What accounts for these differences?

Utilization of BTC

The Children & Youth Services Project has published county-by-county commitment rates to BTC during FY 1974-75. These rates, reproduced below, show substantially different patterns of utilization:

County	Commitments to BTC per 1,000 population under 18
Androscoggin	.54
Aroostook	.81
Cumberland	.91
Franklin	.50
Hancock	.54
Kennebec	.64
Knox	.98
Lincoln	.90
Oxford	.76
Penobscot	.77
Piscataquis	.56
Sagadahoc	.48
Somerset	.55
Waldo	.72
Washington	1.63
York	.58
STATE TOTAL	.74

What accounts for these differences?