PEGASUS INSTITUTE
PUBLIC POLICY RESEARCH

Report: The Relationship between Louisville Metro Police Department Self-Initiated Police

Activities and Homicides for 2018 and 2019

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Pegasus Institute

Corrie Rebecca Block, Ph.D.

Structured Abstract

Research Questions

For Louisville Metro Police Department in Louisville, Kentucky, United States of America:

      Are SIPA and homicides correlated?
      Do SIPA predict the number of homicides?

Methods

A dataset was created of monthly self-initiated police activities and homicides for 2018 and 2019 in Louisville, Kentucky. Descriptive Statistics, a correlation and regression were run.

Results

There was a negative correlation between homicides (M = 7 SD = 3) and SIPA (M = 10, 387 SD = 1625) during 2018 and 2019 in Louisville, Kentucky, r = -.67, $p = \leq .001$.

SIAP for 2018 and 2019 does predict change (decrease) in homicides for 2018 and 2019, R^2 = .44, $p \leq .001$.

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LMPD stands for Louisville Metro Police Department
SIAP stands for self-initiated police activities

Decimal Places & Rounding

The system for rounding decimal point numbers is based on my working understanding of what a homicide is and is not. A homicide is when a human being dies. It is not a homicide if a human being does not die. Logically it seems to follow that we cannot have half of a homicide or any other homicide that is a portion of a whole number. It doesn't make sense to me to provide an analysis about homicides which includes an assertion that there were 137.7 homicides. The statistical findings have been rounded up for numbers with decimal place values at .5 or higher; the statistical findings have been rounded down for numbers with decimal places at .4 or lower. So, this study presents numbers that have been rounded to the nearest whole number.

Results
Descriptive Statistics

Table 1

Descriptive Statistics for Study Variables

Variable	N	Mean	SD	Minimum	Median	Maximum	Mode	N for Mode
SIPA 2018	12	11,111	918	9718	11039	13254	*	0
SIPA 2019	12	9,664	1,881	5956	9985	12742	*	0
SIPA percent change	12	-.12	.22	-.4700	-.070	.2900	-.07	2
Homicides 2018	12	7	2	3	7	10	7	3

Homicides 2019	12	8	3	4	7	15	4	3
Homicide percent change	12	.28	.68	-.60	.00	1.67	0	4
SIPA 2018 & 2019	24	10,387	1625	5956	10,691	13,254	*	0
Homicides 2018 & 2019	24	7	3	3	7	15	4	5

Correlation
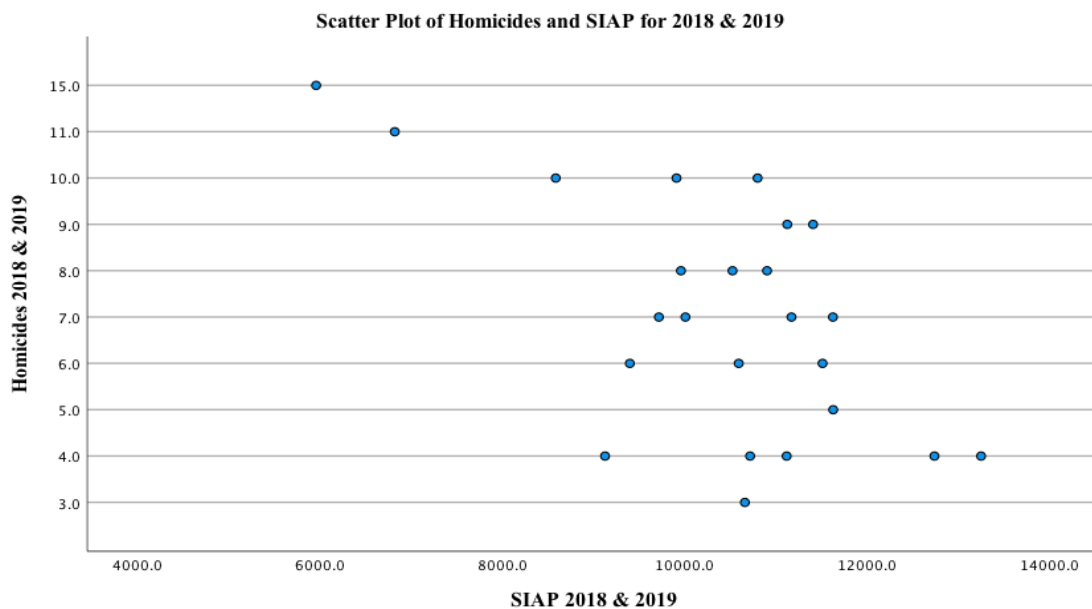
Scatter Plot of Homicides and SIAP for 2018 & 2019

There was a negative correlation between homicides (M = 7 SD = 3) and SIPA (M = 10, 387 SD = 1625) during 2018 and 2019 in Louisville, Kentucky, r = -.67, $p = \leq .001$. SIPA and homicides seem to be correlated and have a strong statistically significant inverse relationship.

Regression

RELATIONSHIP LMPD SIPA HOMICIDES 2018 & 2019
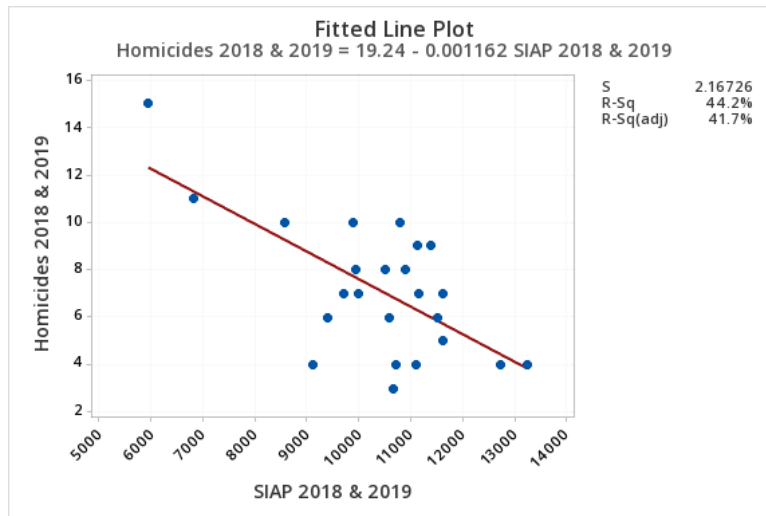
Fitted Line Plot
Homicides 2018 & 2019 = 19.24 - 0.001162 SIAP 2018 & 2019

S	2.16726
R-Sq	44.2%
R-Sq(adj)	41.7%

(Scatterplot with fitted regression line; x-axis: SIAP 2018 & 2019, range 5000–14000; y-axis: Homicides 2018 & 2019, range 2–16)

SIAP for 2018 and 2019 does predict change (decrease) in homicides for 2018 and 2019, $R^2 =$ .44, $p < .001$. In Louisville, Kentucky, homicides appear to decrease when SIPA increases. For 2018 and 2019, we seem to be able to estimate the number of homicides from the number of SIPA. We could see 1.16 fewer homicides a month for every 1,000 SIPA. Significantly, 44% of the decreases in homicides can be explained with SIPAs. Therefore, for 2018 and 2019 combined SIAP do predict change (decrease) in homicides.