* Specifying a multiple regression model in which CRIME (DV) is regressed on SIZE and POV.

**Overall test of model:**

**PA = 3**

**PC = 1**

**PA – PC = 2**

***n* – PA = 171**

A screenshot of a computer

Description automatically generated with medium confidence

Number of inhabitants (Size) and percent of inhabitants living under the poverty line (POV), together, explain a significant proportion of the variance in the number of serious crimes during the year, *F*(2, 171) = 42.43, *p* < .001, PRE=.33. Although meaningless, when the number of inhabitants is 0 and the percent of inhabitants living below poverty line is zero, then the average number of serious crimes will be -5705.75.

Controlling for the number of inhabitants living under the poverty line, for every increase in ten thousand people in the city’s population the number of serious crimes during the year will increase by 1320.04, *t*(171) = 6.31, *p* < .001, PRE = .19, 95% CI [907.04, 1733.05]. Controlling for the number of inhabitants, as the percent of inhabitants living below poverty line increases by one unit, the number of serious crimes during the year increases by 3310.38, *t*(171) = 5.18, *p* < .001, PRE = 0.14, 95% CI [2049.75, 4751.00].

Taken together, larger, and poorer cities have higher crime rates.

* Investigating whether the effect of poverty on crime is magnified in big cities. To test this hypothesis, it is necessary to compute a new variable that is the product of POV and SIZE.

**Test of interaction:**

**PA = 4**

**PC = 3**

**PA – PC = 1**

***n* – PA = 170**

A screenshot of a computer

Description automatically generated with medium confidence

There was a significant interaction between size and percent of inhabitants living below official poverty line when predicting number of serious crimes during the year, *t*(170) = 2.10, *p* = .04, PRE = .03, 95% CI [5.90, 185.75].