Assignment Activity Unit 2

Department of Computer Science, UoPeople

MATH 1280-01 - AY2025-T3

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# ****Analysis of Police and Homicide Rates in Detroit (1961–1973)****

## ****Step 1: Data Representation****

We are given data on the number of full-time police officers and the number of homicides per 100,000 citizens in Detroit, Michigan, from 1961 to 1973. Below is the tabulated data:

| Year | Police (per 100,000) | Homicides (per 100,000) |
| --- | --- | --- |
| 1961 | 260.35 | 8.6 |
| 1962 | 269.8 | 8.9 |
| 1963 | 272.04 | 8.52 |
| 1964 | 272.96 | 8.89 |
| 1965 | 272.51 | 13.07 |
| 1966 | 261.34 | 14.57 |
| 1967 | 268.89 | 21.36 |
| 1968 | 295.99 | 28.03 |
| 1969 | 319.87 | 31.49 |
| 1970 | 341.43 | 37.39 |
| 1971 | 356.59 | 46.26 |
| 1972 | 376.69 | 47.24 |
| 1973 | 390.19 | 52.33 |

### ****Graph Interpretation****

To visualize the trend, we plot the number of police and the number of homicides on the same graph, with the x-axis representing the years from 1961 to 1973.

* The **blue line** represents the number of police officers per 100,000 citizens.
* The **red line** represents the number of homicides per 100,000 citizens.

From the graph, we can observe a rising trend in both variables over the years. However, the rate of increase differs significantly.

## ****Step 2: Percentage Increase Calculation****

To determine which variable experienced a higher percentage increase relative to its initial value, we use the formula:

 Increase Value Value ValuePercentage Increase=(Initial ValueFinal Value−Initial Value​)×100

### ****For Police Officers:****

* **Initial Value (1961):** 260.35
* **Final Value (1973):** 390.19

 IncreasePercentage Increase=(260.35390.19−260.35​)×100 =(260.35129.84​)×100 ≈49.9%

### ****For Homicides:****

* **Initial Value (1961):** 8.6
* **Final Value (1973):** 52.33

 IncreasePercentage Increase=(8.652.33−8.6​)×100 =(8.643.73​)×100 ≈508.5%

### ****Conclusion on Percentage Increase:****

* The number of police officers increased by approximately **49.9%**.
* The number of homicides increased by **508.5%**, which is **significantly higher** than the increase in police presence.

This suggests that, despite the increase in police numbers, homicide rates still surged at a much faster rate.

## ****Step 3: Analyzing the Impact of Police on Homicide Rates****

### ****Observations****

1. **Both police numbers and homicides increased over time.**
2. **The homicide rate grew at a much faster pace than the police force.**

### ****Possible Explanations****

* **Insufficient Increase in Police Force:** The increase in police officers may not have been enough to counteract other factors contributing to the rise in homicides.
* **Other Influencing Factors:** Socioeconomic issues, demographic changes, urban crime patterns, drug-related activity, and economic instability could have influenced the homicide rate.
* **Effectiveness of Policing Strategies:** The presence of more officers does not necessarily translate to better crime prevention if policing strategies were not effectively implemented.

### ****Final Conclusion****

The data suggests that the increase in police officers did **not** have a significant impact on reducing homicide rates in Detroit during this period. The sharp rise in homicides indicates that other factors likely played a more crucial role in the escalation of violent crime between 1961 and 1973.