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## **THE EFFECT OF WEATHER CONDITIONS ON CRIME TRENDS**

### **Abstract**

Weather patterns affect all of our lives. The development of crime, or the fear of it, can accompany us throughout our lives, but if we think about it, we can find a more serious correlation in rainy, gloomy days and in the heat, and the geographical distribution of crimes committed under the influence of weather forces, but of course, the socio-economic context of the country in question can not be neglected. My essay aims to show the interrelationship of these motives.

**Keywords:** crime geography, weather, police, law enforcement, crime

### **1. Introduction - Criminal geographical aspects**

According to Antal Tóth, "...criminal geography is the study of crime as a social phenomenon of mass, examining its spatial and temporal aspects of crime, and an inter-sub-discipline between criminology and applied social geography. The spatial structure and extent of crime, trends and dynamics, spatial intensity, socio-economic background, the socio-economic processes taking place, and its expected spatial displacement, and contributes to the development of area-specific crime prevention strategies" (Tóth 2007, 10-11).

According to most researchers, crime geography is the interface between criminology and social geography. János Sallai sees the field as a discipline and believes that „Crime, as spatial structure, spatial intensity, tendency and dynamics, territorial intensity, the socio-economic background; that can be expected in the light of the social processes and their shifts in the context of the current social situation, is one of the relatively new but increasingly important geography of crime (criminal geography, crime geography, geography of crime), which is an interdisciplinary science between criminology and social geography." (Kobolka-Sallai 2008, 86.)

According to Szabolcs Mátyás, the cultivation of the area requires the high level of criminological and geographical knowledge. The relation of the geography of crime to law enforcement studies is becoming increasingly close, and its research methods include numerous

research methodologies from a wide range of disciplines, making it necessary to interdisciplinary approach (Mátyás 2020).

## 2. Impact of the summer heatwave on crimes

Violent crimes and the propensity to commit crime show an upward trend in the warmer months. According to research conducted by Finnish on ambient temperature changes and crime rates over twenty years the prominent factor contributing to crime is the weather. The researchers concluded that the rise in crime is a direct proportional to the rise in temperature, i.e. a 1.7% increase in the number of crimes committed for every one degree increase in temperature.

The study concluded that the increase in crime caused by high temperatures serotonin levels are likely to have contributed significantly to the increase in offenders' increased impulsivity, risk-taking, and the number of crimes committed the higher risk of offending. The research suggests that the nation's crime rate of 10% of the nation's fluctuations may be due to rising temperatures (Mátyás 2020). The relationship between crime and temperature change the research, which was repeated in ten US cities. The study found that where gun crimes occurred, the increase in temperature in ten cities, the number of shooting victims increased in nine cities, including San Francisco. However, studies in the city of Philadelphia found that the number of crimes taking place outdoor increased, while the number of indoor crimes did not show an increase as temperatures rose.

## 3. Types of crime and the weather

By examining the data from Chicago, this research provides further insights into the weather and temperature changes on crime. The crime reports aggregated by the city's police department, crime data shows that crimes committed during the summer season are also weather dependent in certain crimes. From the seven major crime categories theft, shooting and fighting showed increasing numbers as temperatures rose. For every additional ten degrees rise in temperature, nine more cases of crime increased (<https://data.cityofchicago.org>).

The additional crime categories do not show such a strong correlation with temperature rise. For every additional ten degree increase, the number of recorded for each increase in temperature, the number of offences increased by five for each increase in temperature, three additional incidents with each increase in temperature. The trend in burglary, drug-related crimes and the number of homicides were significantly influenced by the weather conditions, with a correlation between the temperature increase and an increase in violent crime.

#### **4. The effects of different weather conditions**

The relationship between the increasing trend in violent crimes and rising temperatures has been confirmed by several studies, but this seems to be the only weather condition that influences crime trends. Data collected in the South African city of Tshwane found significantly higher rates of violent, sexual and property crimes committed in the area and sexual offences on the hottest days, but particularly violent and violent crimes increased by 50% compared to the city's coldest days. The rainy days were much less prominent in crime rates. Violent and sexual crimes decreased, and crimes against property increased by only 2% on these days, according to the research (<https://online.vwu.edu>).

In comparison, cold weather conditions were from normal winter to severe snowstorm conditions, crime rates generally decreases.

#### **5. The relationship between temperature and crime**

Two main theories have been put forward by researchers as to how warmer temperatures can encourage more crime: an increase in the opportunity for crime is one, and the other is the changes in temperament due to warmer weather and behavioural differences in the human body. In particular, cold or stormy weather compared to warm summer days can lead to more time away from home and more outdoor activities, thus facilitating criminal activity. With the growing potential for crime against property, there is an increasing in number of contacts and encounters between people. From a statistical point of view, more interaction means a greater chance of violent acts or crime occurring. The Philadelphia study mentioned above clearly demonstrates the link between changes in weather and increased opportunities (<https://online.vwu.edu>).

#### **6. Rising temperatures and changing temperament**

The other element often referred to the influence of warming weather on crime is the change in temperament that comes with a change in temperature. In Finland a study linked warm temperatures to changes in brain chemistry that increased the likelihood of impulsivity and aggressive actions but it is not the only study to investigate this link. Craig Anderson, an expert on human aggression, said that rising temperatures exacerbates situations by making people more aggressive in certain actions than they actually are in the situations. In other words, the effect of a hot day under the influence of heat stress is more mentally demanding and more likely to the same event that would occur on a cooler day is more likely to contribute to the

more violent behaviour, more aggressive human reactions in the summer heat (<https://regi.tankonyvtar.hu>).

### **7. Weather conditions and law enforcement effectiveness**

As the propensity to commit crime is influenced by the weather, most notably by rising temperatures, the effectiveness of law enforcement is also affected by weather conditions.

The increase in the frequency of extreme events, especially prolonged extreme summer heat periods of extreme hot weather have a negative impact on police performance, while crime rates are increasing, partly due to rising temperatures. Those sensitive to fronts may also experience migraine-like pains. The natural factors have an impact on people, including human performance. But just as the willingness of criminals to commit crimes is negatively affected, also the police performance can be negatively affected by natural factors.

### **8. Weather and crime**

The finding that hotter temperatures are in fact linked to a higher number of crime is important for several reasons. We can better understand those mental factors that contribute to the commission of crime and the overall impact on individuals. Of course, changes in temperature are not just a matter of important factors in criminal justice and environmental protection, but a really important way to examine the relationship between the two, and to understand the impact of aggression and crime trends can be explained through (<https://online.vwu.edu>).

According to a 2014 publication (Ranson 2014), in which researchers compared crime rates and weather data over a thirty-year period, they found that approximately 22.000 more homicides from 2010 to 2099 are due to climate change, and 18.000 more rapes, 1.2 million more aggravated assaults, 2.3 million more assaults, 260.000 more robberies, 2.2 million more thefts and 580.000 more vehicle thefts will occur in the United States of America compared to recent years, and this situation is becoming worse according to currently available data (Jagannathan 2019). Research is contradicted by a study over a shorter period of time, however, which it found that despite warmer weather, homicide rates have not continued to rise in the U.S. over the higher temperatures, but it does acknowledge that weather has a significant impact on propensity to commit crime and explains the increased number of crimes against property (Ranson 2012).

## 9. Summary

According to Géza Finszter, "the crime in the classical approach is an infringement based on free will, which, because of its hidden nature, can only be known to a certain extent... Punishment is the retribution that restores the rule of law, which can be humanised, but its revenge-driven essence remains unchanged. The crime is an individual phenomenon, based on individual responsibility, a local behaviour, whose harmful effects beyond the circle directly harmed is no longer a matter of the criminal procedure but to discover the full causal background is itself a hopeless undertaking. The insights outlined above are drawn from two criminal sciences, criminalistics and criminology, which have become part of the human knowledge. Criminalistics has made the crime detectable, while bringing us closer to the realisation of the values of law enforcement. In addition to environmental factors, the relationship between the different authorities is just as important as the quality of the interaction between different authorities and the reconciliation of the different effectiveness missions of these bodies (Vári 2015, 195.).

In an ideal future, there would be less crime, especially violent crime and the perpetrators are caught much sooner so that they can receive their punishment that they deserve. I believe that supporting law enforcement and crime prevention is very important, but it should be supported by individual states in such a way that people's privacy, identity and their rights are still respected. From the law enforcement's point of view, it is important to realise that in warmer weather conditions crime rates may increase, and it is even more important to understand how temperature affects the increase in violent human behaviour.

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