

# Analysis of spatial distribution of crime of violence in Vilnius City municipality in 2015–2020

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## Abstract:

Crime is one of the most serious social problems in every country, every city or town. The situation in Lithuania and Vilnius City Municipality is not an exception. It is obvious that it is impossible to completely prevent the phenomenon of crime, it occurs everywhere and all the time. However, it is important to look for the causes, monitor the situation, analyze the available data and look for possible solutions to the problem. A safe living environment is an aspiration that is relevant for decision-makers (police representatives, municipal representatives) seeking to create a better, more beautiful, safer environment for people to live in, and for the residents themselves, for whom it is instinctively important to ensure a sense of security.

The research “Analysis of spatial distribution of crimes of violence in Vilnius city municipality registered by police in 2015–2020” performed in 2022 at Vilnius University uses a database based on The Register of Events Recorded by the Police (RERP). The database encompasses registered events that have the characteristics of a crime and are one of the best crime indicators. This study investigates one type of event recorded by the police – crime of violence (COV). These events have elements of direct threat to a person. Analysis of the spatial distribution of COV incidents reported by the police can help to keep violent incidents to a minimum – it must be understood that they are not completely uncontrollable. Crime events are regularly concentrated in certain places (areas), therefore their investigation by cartographic methods helps to better present the current situation, to analyze it and to solve problems. Events recorded by the police have sufficiently accurate time and space components and are visualized and analyzed by modern Geographic Information Systems (GIS). Vilnius City Municipality was chosen because Vilnius is the capital of Lithuania. Safety of the environment in this city is not only important for its inhabitants or administration, but also for the entire Lithuania.

The analysis has been performed on the most actual of the available data – COV incidents recorded by the police in 2015–2020. This six-year period is examined in the light of current events. 2020 – is a Covid-19 pandemic year, so it has been decided to divide the whole period into two parts: the pre-pandemic period (2015–2019) and the pandemic period (2020). The statistics of incidents in the last year of the research (2020) show that there have been significant changes in the number of social deviations and the number of offenses (criminal offenses and administrative offenses) investigated by the police. In 2020, Vilnius City Municipality stands out with the largest number of COV events in the entire of 2015–2020 period. At the moment, it is difficult to tell whether it is due to the impact of the Covid-19 pandemic or is it the continuing trend, but in any case, it is appropriate to divide the entire period into two parts.

The maps created as the result of the research represent the spatial distribution of the violent crime in Vilnius City Municipality in detail. They help to explain the phenomenon and contribute to the better management of crime.

During the research, it was noticed that in residential areas, COV events in 2015–2019 are recorded more on weekends and after working hours – from 17 to 24 hours. Domestic violence and crimes against a person are fairly evenly distributed in these areas, at 50% each. In 2020 there is a noticeable change with a slightly higher proportion of domestic violence recorded in the previous hours, from 1–2 am until midnight. The number of COV events is higher in the central part of the Vilnius municipality, but when assessing the relative numbers or local coefficient indicators, it can be noticed that the problem is higher in the areas around the central part of Vilnius city municipality and in the peripheral areas of the

municipality. The situation is similar with the changes – the increase in the number of events is observed around the central part of Vilnius City Municipality.