

Measuring the impact of visitors, not just residents, on a city's crime rate

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Credit: University of Montreal

When a city district is said to have a "high crime rate," it's often assumed the criminals are "insiders," people who live in the area. But what if the criminals are actually outsiders, people who live somewhere else?

That's what University of Montreal criminology professor Rémi Boivin is trying to figure out. In a new study, published in the *Journal of Quantitative Criminology*, Boivin takes a novel approach to analyzing violent and property crimes using police and population data.

With co-author Marcus Felson of Texas State University, Boivin looked at Montreal police crime data on [people](#) charged with or awaiting charge for property or violent crimes in the federal census year 2011. The researchers wanted to see how many were residents of the area where the crime was committed and how many were just visiting.

Then, using data from a telephone survey on the transportation habits of 156,000 people in and around the city in 2013, the researchers estimated how many had come for a specific type of activity: recreational (e.g. going to nightclubs and bars), shopping, work or education (going to school).

Their conclusion: An increase in visitors not only increases the number of crimes, it also results in more residents in these high-traffic areas getting involved in crimes. In other words, a city's "crime rate" reflects the criminality both of the people who live there and of those who don't.

"The novelty of this paper is we focus on visitors," Boivin said.

"Criminologists have been studying so-called 'ambient' populations for about a decade, but we try to push that a little further. When it comes to crime, it's always good to know how many people are doing it, but we also need to know who they are."

'Visitors matter'

Following up on a previous study Boivin published in 2013 in the *Canadian Journal of Criminology and Criminal Justice*, he and Felson had an advantage over researchers in the U.S., where precise residency

data is almost impossible to come by, and even over researchers in most Canadian cities, where transportation survey data is not collected.

"When we look at crime rates, we forget that people move, that people are visitors of other areas all the time," said Boivin, himself an "outsider" to Montreal (he lives on the city's South Shore and commutes to work at the university) and also an "insider" with the city's police force (he worked there as an analyst until 2012 while doing his PhD).

"Our new study is unique in two ways," Boivin said. "The first is that we had very detailed data from the police; having the location of crime incidences is not rare, but having the home address of offenders is. The second is we use transportation data, which is something that's not widely available; only four other Canadian cities collect it."

What did they learn?

"Our main finding, if I had to just sum up in one sentence, is that visitors matter. We need to know more about visitors to better understand crime, and the good news is that we are learning more, from social media and other sources. Visitor data is increasingly available, and our paper is just one of the first on the subject."

'A boom in criminology'

One other surprising finding: Not only do parts of the city with high numbers of visitors also have higher [crime rates](#) by both visitors and residents, there's also more violent crime in areas that have what Boivin calls "an unstable population," places where there's a high number of recent arrivals, over the last five years or less.

Violent crimes include homicide, sexual and non-sexual assault, robbery

and kidnapping; property crimes include breaking and entering, various forms of theft, and fraud. Most violent crimes have a high "clearance rate," meaning a suspect is charged or identified; in Montreal, the rate in 2011 was 63 per cent. Property crimes, by contrast are rarely cleared: in Montreal in 2011, the rate was only 12 per cent. Boivin anticipates "there will be a boom in criminology as new data become available," and hopes that more research will buttress his finding that mobility is just as important for property and [violent crime](#) as the usual factors related to "social disadvantage" in cities: how many single-parent families live in an area, how many visible minorities, how many recent arrivals, how many low-income households.

Twitter data coming next

Two further studies are coming this year from Boivin and colleagues at UdeM:

- The first, co-authored with Patricia Obartel, looks at the relationship between visitor inflows to Montreal and the police's use of force between 2008 and 2011. The paper has been accepted for publication in the CJCCJ.
- The second involves Twitter. Boivin and criminologist Francis Fortin are looking at where tweets are sent from and how they might relate to crime trends; the scholars plan to submit their findings for publication this summer.

The Twitter data, all publicly available, could prove to particularly rich in information.

"Transportation survey data is not that specific; we don't really know precisely where people are, just where they say they've been," said Boivin. "Twitter data is something else entirely. They have x/y coordinates, so we can know exactly where people are, as close to five

metres away. We can look at the content and see if and how it relates to patterns in [crime](#)."

More information: Rémi Boivin et al. Crimes by Visitors Versus Crimes by Residents: The Influence of Visitor Inflows, *Journal of Quantitative Criminology* (2017). [DOI: 10.1007/s10940-017-9341-1](https://doi.org/10.1007/s10940-017-9341-1)

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