This is how RTL Nieuws conducted its research of risks of accidents in residential areas

Traffic safety in residential areas is an important theme for many. Research by the Dutch Central Bureau of Statistics, or CBS, shows, for instance, that 30 percent of the Dutch experience a lot of traffic problems, caused by speeding, aggressive driving and parking problems.

With this investigation RTL Nieuws wants to identify the differences in various residential areas by looking at the risk of accidents. For this various data sources have been used. We will explain below what these are and how they contribute to the investigation.

**Accidents resulting in injury**

For the investigation, over 40,000 registered traffic accidents in 10,000 Dutch residential areas over the past 3 years were used. This concerns accidents in which at least one person was injured.

These data were provided by the Ministry of Infrastructure and Water Management, which in turn collects data from police registrations. Not every accident that happens in the Netherlands is reflected in the police statistics. Especially accidents that only involve minor damage to vehicles are not always registered.

Thus only the registered accidents that involve injury have been used for our investigation, as the registration of these accidents is more comprehensive and the impact of these accidents on both the residential area as well as the victims is greater. We should however add that this registration is not exhaustive either.

The data of the accidents used for this investigation were obtained from the Ministry of Infrastructure and Water Management. These data contain descriptions of accidents such as location and outcome. For the analysis data for 2017, 2018, and 2019 have been used. Only accidents of which the exact location is known were used.

We have opted for accidents of which the exact location is known, as these are traceable in a specific residential area, whereas with accidents of which only a name of a municipality or street is known, this is not automatically the case.

**CBS residential areas**

For the division of residential areas we have used the method employed by the CBS which divides the Netherlands in close to 14,000 residential areas.

Accidents have been located and counted per residential area with the aid of GIS software. Thus a set of data arose with registered accidents over the years 2017 to 2019.

**Traffic intensity**

The number of accidents in a particular residential area does not necessarily reveal if a residential area is safe or not. In a residential area where many serious accidents occur, the risk of accidents is not automatically higher. In a residential area with less accidents, but also less traffic, the risk can be much greater.
The Dutch Institute for Road Safety Research thus states it is wise to also take the amount of traffic into account. This is supported by professor in Transport Policy Bert van Wee of TU Delft. He followed the investigation by RTL Nieuws and verified the methodology. “At the end of the day what’s important with regards to safety is the risk you run when participating in traffic.”

Since the amount of traffic is not measured 24/7 on every street in the Netherlands, there are no exact data known with regards to traffic volume. That’s why RTL Nieuws has made use of data provided by TomTom.

TomTom navigation systems monitors traffic volume at certain places with apps and GPS systems. These measurements are not comprehensive, as they only originate from applications that use TomTom, but the measured amount of traffic, however, is a good indicator to monitor the differences in various residential areas. For the investigation the volume between 1 January 2019 and 1 January 2020 was measured.

Just like the data about accidents, the data about traffic volume that was gathered on the most detailed level, were paired with the aid of GIS software to CBS residential areas. Besides intensity, street lengths were also taken into account.

Since this investigation is specifically aimed at traffic safety in residential areas, the intensity data of national highways were not considered in the calculations. A highway may actually cross a residential area, but has a limited impact on traffic in a residential area as a result of its closed character. Besides, not every residential area with a national highway is connected to that highway. It would severely distort the intensity data if these were taken into account.

Accidents risks

On the basis of the collected data we calculated the risk of accidents for each residential area. This is the number of accidents per million driven kilometres registered in a residential area.

This risk was subsequently compared with the average score in the Netherlands and converted to a star rating according to the following principle:

• 1 star: risk is >5 times higher than average
• 2 stars: risk is 2 to 5 times higher than average
• 3 stars: average risk (between 2 times higher and 2 times lower)
• 4 stars: risk is >2 times lower than average
• 5 stars: 0 accidents with injured parties in three years time

There were not enough data available for every residential area in the Netherlands for a decent analysis, i.e., because there are hardly any roads present or very little traffic is registered. As a result these residential areas did not receive a star rating.

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