Connections

Transport Global Practice

Better Crash Data Can Improve Road Safety

Holly Krambeck, Soames Job, Sara Sultan

Low- and middle- income countries typically lack adequate systems for collecting road crash data. This limits their capacity to monitor, effectively advocate for, manage and efficiently improve road safety.

While many cities, states, and countries have adopted or developed proprietary systems for recording crash data, they are often developed in isolation, limiting the ability to share data among users. These systems may also be expensive—and unable to support road safety delivery and advocacy. They usually lack a seamless, global, real-time, and georeferenced crash repository: a basis for monitoring the scale of the challenge.

80% of road crash deaths are missing from official low-income country statistics

Data for Road Incident Visualization Evaluation and Reporting—DRIVER—a data collection system developed and now operating in the Philippines, answers this challenge, and offers an effective road safety support solution with these features:

- Is easy to procure and deploy at limited cost, with its Open Source license;
- Adapts to almost all countries, states, and cities, through its use of Open Street Map;
- Provides key tools for recording and managing road safety data, including analytical tools for blackspot prediction, estimating the economic costs of crashes for a selected area, and tracking the efficacy of road safety interventions;
- Employs a public-facing website with tools for downloading anonymized data for third-party analysis;
- Accommodates local crash data records with customizable data entry;
- Includes the option of geocoding of crash locations; and
- Is available in Arabic, Bengali, Chinese, English, Lao, Portuguese, Spanish, and Vietnamese, and can be easily translated into other languages.

DRIVER offers important opportunities for improved road safety data in many national and subnational jurisdictions, and its code is available free on the World Bank GitHub open source code repository. DRIVER is likely to become more widespread as the World Bank and the Global Road Safety Facility (GRSF) support its use in other countries and cities.

The Value of Road Safety Data

Crash data limitations in many countries have extensive omissions of fatal and injury crashes, with 80 percent of fatalities not included in official low-income country records;[1] a reliance on health-based death data systems, which lack essential information on crashes to assist interventions; poor crash location recording, stifling crash location treatment opportunities; and inadequate crash occurrence details, limiting the selection of effective interventions.

This lack of comprehensive crash data limits advocacy for road safety, which is ideally based on sound data, an appreciation by governments and communities of the extent of the problem, and ownership of the problem by governments. It also limits the evidence-based selection of effective interventions, and the evaluation of 'early wins' and other successes that can improve the political and economic sustainability of road safety actions.

DRIVER, the Game Changer

DRIVER[2] was developed and deployed in the Philippines by the World Bank, working with the Philippines government.[3] The system assists the government to respond to the substantial road safety losses that occur each year, through the collection and reporting of sound crash data.

DRIVER links multiple agencies involved in recording road crash data—local government units, the police, and the health system; it standardizes terms and definitions for reporting; and provides analytical tools to support evidence-based investments and policies and to monitor the impact of interventions.

Better than Commercial Systems

There are a number of proprietary software packages for crash reporting, yet these packages have four main drawbacks relative to DRIVER:

• Because DRIVER has been developed as an open-source system, it can be translated and used across global contexts.
• Proprietary packages can cost hundreds of thousands of dollars, and require annual support and maintenance fees from international consultants, whereas the license for the DRIVER software has no cost, and a custom demonstration instance can be set up in a day, seamlessly putting the software in the hands of counterparts to test at liberty and discuss before any commitments are made.
• Proprietary systems can only be maintained by a single vendor, whereas open-source systems can be maintained by local developers, through competitive procurement, and to an extent by transport agencies themselves.
• Proprietary programs generally rely on GIS shapefiles for the road base-map in lieu of the Open Street Map, which is easier and cheaper to update with unlimited frequency.

With its easy to deploy, low-cost Open Source platform, and its adaptability to almost all country contexts through its use of Open Street Map, DRIVER could be the game changer countries need to transform the discussion and the delivery of road safety.