

FLETCHER D-PRIZE COMPETITION

2022-2023 Academic Year

Public Services Challenges

Improve Road Safety to Save Lives

We challenge you to launch a new organization that reduces reckless driving and road accidents. Traffic accidents are a significant and avoidable cause of death in low income countries. Fortunately there is a simple public safety campaign proven to reduce accidents. Fletcher D-Prize will award up to \$20,000 to teams with a plan to launch a pilot of this campaign, and who have a vision to expand country-wide within five years.

The Poverty Problem

Road traffic accidents kill more than 1.35 million people per year and are the leading cause of death for children and young adults aged 5-29.¹ More people die each year in road accidents than of HIV/AIDS, tuberculosis, or diarrhoeal diseases.²

These fatalities disproportionately occur in sub-Saharan Africa, which has 32 of the 40 countries with the highest death rate per capita.³ Low- and middle-income countries account for 90% of the world's road deaths, despite owning just 54% of the world's vehicles.⁴ In addition to suffering from injury and loss of life, these accidents incur a heavy economic burden on victims' families through loss of productivity and medical costs.⁵

Shared taxis, including minibuses, account for the bulk of public transit in African cities.⁶ This form of public transit plays an outsized role in violent road accidents. In Kenya, for example, these shared taxis account for only 11% of registered vehicles but are responsible for 43.6% of road accidents resulting in hospital admission and a staggering 70.2% of casualties.⁷

¹ Global status report on road safety 2018. Geneva: World Health Organization; 2018.

² Ibid.

³ https://www.who.int/violence_injury_prevention/road_safety_status/2015/GSRRS2015_data/en/

⁴ <https://www.weforum.org/agenda/2015/10/countries-with-the-most-and-least-road-traffic-deaths/>

⁵ https://www.who.int/health-topics/road-safety#tab=tab_1

⁶ <https://www.tandfonline.com/doi/full/10.1080/01441647.2019.1598513>

⁷ <https://academic.oup.com/inthealth/article/6/3/242/2964838>

Unfortunately, most systems are structured so that drivers have an incentive to drive recklessly. Drivers are typically paid a margin of each rider fee, and so have motivation to complete routes as fast as possible. Drivers also rarely own the vehicle or hold the insurance policy, so which limits their financial incentive to avoid accidents.⁸⁻⁹ Passengers are also unable to select a driver based on reputation, are not allowed to ask for refunds, and overall have limited choice.

The Proven Intervention

Fortunately, there is a proven solution. A road safety program in Kenya called Zusha! (Swahili for “Protest”) encourages passengers to speak out against dangerous driving when they encounter it, reducing accidents and deaths.

The Zusha! campaign places stickers inside shared taxis with messages encouraging riders to protest reckless driving. Stickers feature evocative images of wrecked vehicles and passengers protesting. Over 24 months, stickers placed in 8,000 shared taxis were found to have averted 140 accidents and 55 deaths.¹⁰

The intervention is highly cost-effective. Based on a conservative estimate of the age of the passengers, the cost-per-DALYs saved (a metric to evaluate cost effectiveness) was \$13-60!¹¹ In addition, vehicles in the treatment group saw a 25% reduction in insurance claims relative to the comparison group, and a reduction of speed by 1 km/hr.¹²

Your Distribution Challenge

Fletcher D-Prize will award up to \$20,000 to teams that can create a new organization that reduces road accidents and death by adapting and scaling this road safety sticker campaign in a new transportation market.

You must have a vision to scale your campaign to all major public transportation markets in a country within 5 years. Our award is meant to enable the first step toward this vision by supporting a small test pilot in a mid-sized transportation market or a portion of routes in a large city. For a baseline, in its first two years Zusha! reached 8,000 of the estimated 20,000 matatus in Nairobi.¹³

Designing Your Social Enterprise

There are several elements we believe define a successful Road Safety organization. We recommend you design your pilot after considering these questions.

⁸ <https://www.povertyactionlab.org/fr/node/4965080>

⁹ <https://books.google.com/books?id=SLX9n4fG5V8C&lpg=PA375&dq=matatu&pg=PA371#v=onepage&q&f=false>

¹⁰ Habyarimana J, Jack W. Results of a large-scale randomized behavior change intervention on road safety in Kenya. Proc Natl Acad Sci U S A. 2015 Aug 25;112(34):E4661-70. doi: 10.1073/pnas.1422009112. Epub 2015 Aug 10. PMID: 26261326; PMCID: PMC4553826. <https://www.pnas.org/content/pnas/112/34/E4661.full.pdf>

¹¹ Ibid.

¹² <https://www.povertyactionlab.org/fr/node/4965080>

¹³ <https://www.bbc.com/news/business-24426676>

1. *Why is this intervention appropriate to your market?* This road safety campaign is designed for a market with a high per capita rate of road accidents and death. Before applying you should be clear on the current road safety statistics in your market. The campaign targets shared taxis in a poorly regulated transportation market, where drivers lack incentive to drive safely. This intervention may not be applicable to a market with robust public transportation or other configurations.
2. *What is the most effective combination of message and image to increase road safety?* Zusha! tried a variety of stickers. The two most effective included text encouraging riders to protest bad driving with a call to collective action, and one of two images: either a “supportive” image of a rider shouting at a driver or an “event aversion” image of a wrecked vehicle.¹⁴ Text-only stickers were not effective.

A successful proposal will explain the sticker(s) you plan to use in your pilot, and how you will adapt learnings from Zusha! to your market. We recommend designing stickers as close to the proven images from Zusha! as possible.

3. *How will you distribute these stickers and ensure they are in use?* A successful applicant will outline a compelling distribution plan to ensure stickers reach a large number of shared taxis and are used appropriately.

As a baseline, Zusha! reached 8,000 taxis by partnering with an insurance agency to distribute stickers alongside the insurance certificates required to be displayed in every public vehicle. To ensure compliance, drivers, owners, and the intermediaries who purchase insurance were enrolled in a lottery. If a random inspection found the stickers in use, all three stakeholders received the equivalent of a driver’s one-week salary. Radio advertisements encouraged adoption and included interviews with lottery winners.¹⁵

4. *How will you know if you are driving change?* A successful proposal will have a plan to measure the impact of your road safety campaign and make adjustments based on the results to maximize impact.

Researchers who studied Zusha! used administrative data from insurance companies to compare historical rates of insurance claims to those in the treatment group. To determine impact on speed, the team measured the average speed of thousands of trips through GPS tracking, and rider behavior and driver response were measured through nearly 10,000 rider interviews.¹⁶

¹⁴ Ibid.

¹⁵ Habyarimana J, Jack W. Results of a large-scale randomized behavior change intervention on road safety in Kenya. Proc Natl Acad Sci U S A. 2015 Aug 25;112(34):E4661-70. doi: 10.1073/pnas.1422009112. Epub 2015 Aug 10. PMID: 26261326; PMCID: PMC4553826. <https://www.pnas.org/content/pnas/112/34/E4661.full.pdf>

¹⁶ <https://www.povertyactionlab.org/fr/node/4965080>

For a pilot to be successful, we suggest targeting a similar impact of the Zusha! campaign.

5. *How does your venture scale?* For the first several years, the easiest path may be to add new municipal and regional markets in your country of operation and adapt messaging to suit regional contexts. You should have a vision for how your team will grow to manage much larger markets. You should also consider what external support is required to grow, such as the need for support or official partnership from local governments, national governments, or insurance companies.

You will also need to consider how you manage your original market long term. The initial Zusha! campaign ran for two years, and included mechanisms to ensure drivers kept stickers in place and in good condition, including a lottery with a cash prize for compliance, during that time.¹⁷ You should similarly consider how your organization will ensure long term impact years after your first stickers are placed.

A good proposal should also consider how to fund a long term operation. We are interested in hearing all ideas. Based on the benefits of the original Zusha! program, it's possible that government transportation offices or insurance companies would be interested in funding this work.

Helpful Resources

- Past D-Prize winners include [Please Disturb the Driver!](#) (Mexico) and [Smart City Initiatives Uganda](#).

Ready To Apply?

Download a First Round Application Packet and start creating your proposal at www.fletcher.tufts.edu/D-Prize.

Questions? Email Dorothy Orszulak at dorothy.orszulak@tufts.edu.

¹⁷ <https://www.thelifeyoucansave.org/best-charities/zusha/>