

***Most of the world's roads are unsafe. Indeed, the prevalence of death and injury from traffic accidents has been called an epidemic by the World Health Organization. And lower-income countries suffer most, despite having fewer cars. In South Africa, a recent campaign to encourage safe driving took an innovative behavioral approach: all drivers were eligible for a cash-prize lottery – as long as they maintained clean records.***

### Summary

Each year, traffic accidents cause 1.25 million deaths and tens of millions of injuries worldwide. Although low- and middle-income countries have only half the world's cars, they suffer 90% of traffic fatalities. According to the World Health Organization, the African Region has the highest rate of road fatalities at 26.6 per 100,000 population, compared to 9.3 in the European Region.

In South Africa, where the rate of vehicle deaths is only slightly lower than the African average, there has been growing public concern over roads that are far deadlier than those in most countries. In addition to causing human suffering, the country's high rate of traffic accidents has detrimental economic effects. In one recent year, the government estimated that nearly 8% of national GDP was lost to traffic accidents.

South Africa has been working to reduce the risks people face when they navigate the country's roads and highways. In 2012, representatives from the Western Cape province asked ideas42 to help develop a behavioral approach to improving road safety. Specifically, the province hoped to launch a targeted intervention during a time of year when accidents tend to spike: the festive season of December and January. This is an especially busy travel period in South Africa, as it coincides with summer vacation in the Southern Hemisphere.

After working with officials to understand the problem and examine the province's earlier efforts to address it, our team proposed a pilot project that would leverage behavioral insights into the power of incentives: all Western Cape residents who maintained clean driving records during the holiday period would be eligible to participate in a lottery offering significant cash prizes.

### Enforcement plus an incentive

In 2009, the provincial government had set the objective of cutting road fatalities in half within five years. One measure introduced to reach that goal was an intensification of traffic enforcement activity, including the use of random roadblocks, during the December-January holiday period. Stepped-up enforcement and related publicity efforts succeeded in reducing road fatalities for the first two years. But as increased police presence on Western Cape roads became a normal part of life around the holidays, the province's transportation authorities were concerned that traffic enforcement might simply blend into everyday expectations and become less effective at keeping road safety and responsible driving behaviors at the top of drivers' minds.

#### Highlights

- ▶ African Region has highest rate of road fatalities world-wide at 26.6 deaths per 100,000 people
- ▶ In South Africa, the rate of traffic accidents results in a notable amount of lost national GDP
- ▶ Road safety can be improved by behavioral insights as well as local law enforcement. One method is through a lottery incentive that promotes safe driving.

As our collaboration got underway in 2012, the government's goal was to complement enforcement with a campaign that fostered a culture of safety on the roads – not just by punishing misbehavior, but by reinforcing good habits. It was agreed that most Western Cape drivers obeyed the rules of the road and took safety seriously. We needed to develop an intervention that would draw people's attention to their status as responsible drivers and increase their commitment to upholding it.

## “The ticket you don't want to lose”

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In our lottery strategy, anyone who had a clean driving record at the start of the festive season – and whose registration details were up to date in the National Traffic Information System – would automatically be entered in a draw with two cash prizes of R25,000 each. Drivers who subsequently committed new traffic violations during the lottery period would become ineligible to win.

Our rationale for this approach rests on two key insights from behavioral economics. One is the psychological power of lotteries. For most people, the slim chance of winning a large amount of money is more compelling than the certainty of receiving a smaller sum. Western Cape drivers, like many consumers who spend money on lottery tickets, may have understood rationally that the likelihood of winning was small. But the significant cash prize – equivalent to about three months' income for the average South African household at that time – remained a meaningful incentive.

The second concept underpinning the safe-driving lottery is *loss-aversion*: people's tendency to be especially troubled by the risk of losing things that already belong to them. We deliberately designed and promoted the lottery to emphasize that drivers were eligible by default, and that incurring a traffic violation would cause them to lose something they already possessed: their chance of winning the cash prize. The publicity campaign for the lottery tapped into this loss-aversion motive by promoting eligibility with the slogan, “The ticket you don't want to lose.”

## The rules of the road become the rules of the game

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The lottery not only offered a new incentive to drive safely; it also created an opportunity for community leaders and residents to talk about responsible driving habits in a new way. After the Minister of Transportation and Public Works announced the campaign in a radio broadcast in mid-December 2012, the Ministry began promoting it via social media. These efforts and subsequent media coverage created constant opportunities to remind people of safe driving practices, but with a new twist: the same rules of the road that the government had been stressing for years now doubled as eligibility criteria for the draw. In order to hold onto their lottery tickets, drivers had to obey speed limits, avoid using mobile phones behind the wheel, ensure everyone in their vehicles were buckled up, be mindful of pedestrians – and, of course, not drive while intoxicated (a behavior associated with 58% of road fatalities, according to government data).

By reframing compliance with existing laws as the key to winning an attractive prize, the campaign refreshed the laws' relevance and boosted their salience. It also tapped into Western Cape residents' competitive spirit; when drivers tossed their mobile phones into the glove box or encouraged passengers to fasten their seat belts, they were not just obeying the law – they were keeping themselves in the game.

## Promising preliminary results: reduced fatalities

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The campaign concluded in late January 2013, when the second of the two prizewinners was announced. Although this was a pilot project whose results must be interpreted with caution, there were promising indications that the lottery had contributed to improving road safety.

When we compared road fatalities during the 2012–13 festive season to the same period in 2011-12, we found that in early December, before the lottery was announced, the Western Cape had seen more fatalities than the year before: 89 (5.6 per day), compared to 69 (4.3 per day). But after the lottery was announced, the picture shifted noticeably. Between mid-December, when the eligibility period began, to the closing prize draw in the third week of January, there were 118 traffic deaths, or 3.3 per day. In total, there were 40 fewer deaths than during the same period a year earlier. And overall, we saw a 42% decrease in the number of fatalities compared to previous trends.

Our conclusion, therefore, is that the lottery provided an effective complement to heightened policing, possibly by drawing more drivers' attention to enforcement activity and thus enhancing its influence over their behavior. (Additional research would be needed to fully disentangle the relative contributions of enforcement and lottery awareness to the decline in fatalities.)

## The road ahead

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Although the results of the pilot are preliminary, they're sufficiently promising to warrant further exploration. Moreover, the reduction in fatalities coincided with the rollout of the lottery strategy on a fairly modest scale. A more ambitious media campaign, combined with endorsements by prominent public figures, could spread awareness among a larger segment of the Western Cape population. This in turn could influence the behavior of many more drivers, making the province's roads even safer.

At the same time, given the apparent widespread appeal of the lottery incentive, we envision comparable road safety programs achieving the same kind of success in other jurisdictions around the world.