

October 24, 2013, 1:14 PM ET

How Much Risk of Death Will You Accept to Save Time, Money?

By Brenda Cronin

A new paper on tradeoffs between time and money is likely to influence public policy on infrastructure — and spark a new appreciation of a smooth trip to the airport.

[Research](#) by **Gianmarco León** and **Edward Miguel** on calculating VSLs, or the value of statistical life, began with the “harrowing journey” travelers must make to and from the international airport in Sierra Leone. Compared with that odyssey, the ride to JFK, Dulles and O’Hare looks like a cakewalk.



Agence France-Presse/Getty Images

The remains of a helicopter crashed at Sierra Leone’s Lungi international airport in June 2007.

Messrs. León and Miguel visited Sierra Leone several times in the past decade while collecting data for projects on postwar reconstruction. The two economists experienced the stressful journey first-hand — and saw an opportunity. For years, the often-protracted and risky trek to Sierra Leone’s international airport have fed many a headline and conversation.

The transportation options “are really orders of magnitude riskier” than in the U.S., Mr. Miguel said. “And people are making this trade-off. They’re trading off both the costs of the trip and their time.”

To reach the airport, in the hamlet of Lungi, from the capital, Freetown, travelers have to cross the roughly 10-mile-wide Sierra Leone River. Driving is out of the question: circumnavigating the river would mean a journey of at least six hours on unpaved roads. That leaves four options, none with an impeccable safety record: ferry, water taxi, hovercraft or helicopter. The ferry, at \$2, is the cheapest and slowest, taking 70

minutes. In addition, the ferry depot in Lungi is a ways from the airport, and travelers have to take a half-hour bus ride to the terminal. The ferry also has the second-worst safety record, and vessels often are packed with too many passengers.

A safer and more expensive option is a water taxi. Aboard these smaller craft, which carry 12-18 passengers, the trip costs \$40 and takes about 45 minutes. A slightly faster option is the hovercraft, which also costs \$40, for a journey about 40 minutes long. The fastest and most expensive option, the helicopter, costs \$80, takes 10 minutes, and has the worst safety record.

(The strife apparently doesn't end upon reaching the terminal. Even visitsierraleone.org, a site promoting tourism, warns, "Prepare yourself for chaos when you arrive at the airport.")

On crossing the Sierra Leone River, the site observes, "In recent times, this journey across has been an adventure in itself and on very few occasions, with fatal consequences. It is your decision which mode of transfer you choose but the main things to evaluate are speed, safety and reliability – all of which are available to various degrees.")

The researchers conducted interviews with more than 550 travelers, both Africans and non-Africans, and found that "while differences between Africans and non-Africans are not statistically significant... African travelers appear somewhat less willing to pay for reduced mortality risk, with an average VSL of \$577,000 compared to \$924,000 for the non-African travelers."

The primary reason behind this difference appears to be income. "If you're a wealthy business person, those extra few hours on the ferry are actually worth a lot of money," Mr. Miguel said. "That's a real opportunity cost... If you have a high opportunity cost at the time, you take a higher risk."

The research's implications extend far beyond documenting travel headaches. The VSL is a concept "urban planners, transportation and public-health officials are grappling with all the time," Mr. Miguel said. VSLs are commonplace in many countries—the study cites the \$2.7 million VSL that the **California Department of Transportation** uses in weighing investments in safety. However, VSLs are less seen in the developing world and would be particularly helpful in countries, such as Sierra Leone, that are in the midst of infrastructure booms.

"We're providing new evidence," for Sierra Leone, said Mr. Miguel. The research has "a really practically applied dimension." Authorities in Sierra Leone are debating how to improve the situation, perhaps by building a bridge to Lungi, making the existing modes of transportation safer, or moving the airport to a more accessible location.

"The VSL estimates we generate," the authors wrote, "may be directly applicable in evaluating potential infrastructure projects in Sierra Leone itself."