

# Innovative statistical methods shed light on extent of modern slavery in US, world

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Policymakers, law enforcement and advocates can now better identify and target modern slavery thanks to the work of human rights experts and researchers whose application of unique statistical methods yields more precise figures on its existence and extent. The groundbreaking work appears in the October issue of *Chance*, which features a series of articles written by authority figures on the subject of modern slavery.

The new methods helped inform the 2016 Joint Global Estimates of Modern Slavery—published by the United Nations (UN) International Labour Organization (ILO) and the Walk Free Foundation—which estimated 24.9 million people in forced labor and 15.4 million in forced marriage. "For decades, though, the prevalence of modern slavery was difficult to quantify with accuracy. Political sensitivities, unwillingness to share data and questionable data collection and analysis techniques led to inaccurate calculations and subsequently poor, if any, tracking and prevention efforts," notes Davina P. Durgana, senior researcher at the Walk Free Foundation and report co-author of the Global Slavery Index.

One statistical method gaining worldwide interest is multiple systems estimation (MSE). The method basically involves analyzing three to four concurrent lists of identifiable victims for apparent overlap to estimate a victim population size.

"The ongoing lack of transparency, and the lack of data sharing in the study of slavery, is not just a threat to good science; it prevents comparable analyses that might reduce suffering and the extreme human

cost," notes Kevin Bales, professor of contemporary slavery at the University of Nottingham, co-founder of Free the Slaves—a nonprofit anti-slavery advocacy organization in Washington, DC—and lead author of the Global Slavery Index. "The exploration of the MSE technique to measuring the prevalence of slavery appears to offer a solution to the problem of estimating the extent of slavery in well-developed countries."

This method and subsequent findings have been widely accepted by the UN's ILO and International Organization for Migration, as well as advocates and organizations spanning the globe. "MSE and the Global Slavery Index are 'game changers' in the way [slavery](#) is measured, benefitting developed and underdeveloped countries with potential for application to other human rights issues," says Durgana.

Deployed in the United Kingdom and The Netherlands in 2014 and 2016, respectively, MSE has attracted the attention of the United States government, which is evaluating its feasibility in the context of human trafficking. "Success in the US context would encourage many other developed countries to take similar action and contribute substantially to the information that exists about human trafficking in the US, both domestically and abroad," notes Paul Zador, senior statistician at Westat, Inc. Zador recently helped design a survey and analyzed data of bonded laborers in India, as well as a decades-long period of terror in Guatemala.

Provided by American Statistical Association

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