New tool using Facebook data shows worldwide gender gap

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A new AI tool created to help identify certain kinds of substance abuse based on a homeless youth's Facebook posts could provide homeless shelters with vital information to incorporate into each individual's case management plan. Credit: CC0 Public Domain

An international group of researchers, involving scientists from the

Complexity Science Hub Vienna & Medical University of Vienna and Universidad Carlos III de Madrid, developed a tool to track and analyse gender inequality through Facebook usage data. Their results, published in the latest issue of *Proceedings of the National Academy of Sciences* (*PNAS*), show that gender inequality online is related to gender inequality in society at large.

The tool is based on the aggregate statistics of almost 1,5 billion Facebook users from 217 countries. It produces a measurement that the researchers call the Facebook Gender Divide. By validating their measurements against survey data the scientists show a strong relationship between the Facebook Gender Divide and standard measurements of social and economic gender inequality from the World Economic Forum.

"We found that across countries the number of women actively using Facebook grows faster with the amount of people having a Facebook account than the number of active men," says David Garcia, a computational social scientist at the Complexity Science Hub Vienna and the Medical University of Vienna and first author of the study. In addition the scientists show that countries with a lower Facebook Gender Divide are more rapidly approaching gender equality in economic terms. "We interpret that as an indication that equality in Facebook access might help to close the economic gender gap," says Garcia: "Women seem to benefit more from using Facebook than men."

A powerful monitoring tool

The researchers highlight the significance of the data available on social networks given its enormous potential as a monitoring tool to examine social problems with cultural, demographic and political implications: "Using these data and through cheap, fast and extensive analyses, we can take a simple snapshot of such significant problems as unemployment,

health issues and the gender gap in hundreds of countries," explains co-author Esteban Moro, a professor in UC3M's Mathematics Department and current visiting professor at MIT's Media Lab.

"Our study shows how the socio-demographic information available on social networks can be of great value," adds Rubén Cuevas from UC3M's Telematic Engineering Department. "It can be used to generate metrics at a global level, based on a methodology which is extraordinarily cheap and common to all the countries analysed."

Ranking by country

The Facebook Gender Divide shows that countries with a large gender gap on Facebook are mainly concentrated in certain parts of Africa and Asia (see map). The countries with greatest inequality are Chad, Yemen and Bangladesh, where the imbalance in favour of men using Facebook is very strong.

On the contrary, ex-Soviet countries such as Moldova and Belarus have the lowest worldwide values of a Facebook Gender Divide. In some countries like Spain and the US women have a slightly greater tendency to use Facebook than men.

The analysis reveals Austria as an outlier: "Given its development and offline gender inequality, it should have a low Facebook Gender Divide," says David Garcia, "close to countries like France and Norway. But in reality it is much more unbalanced towards men, with a Facebook Gender Divide similar to Thailand and Fiji."

The study is titled "Analysing gender inequality through large-scale Facebook advertising data."

  More information: David Garcia et al. Analyzing gender inequality

through large-scale Facebook advertising data, *Proceedings of the National Academy of Sciences* (2018). DOI: 10.1073/pnas.1717781115

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