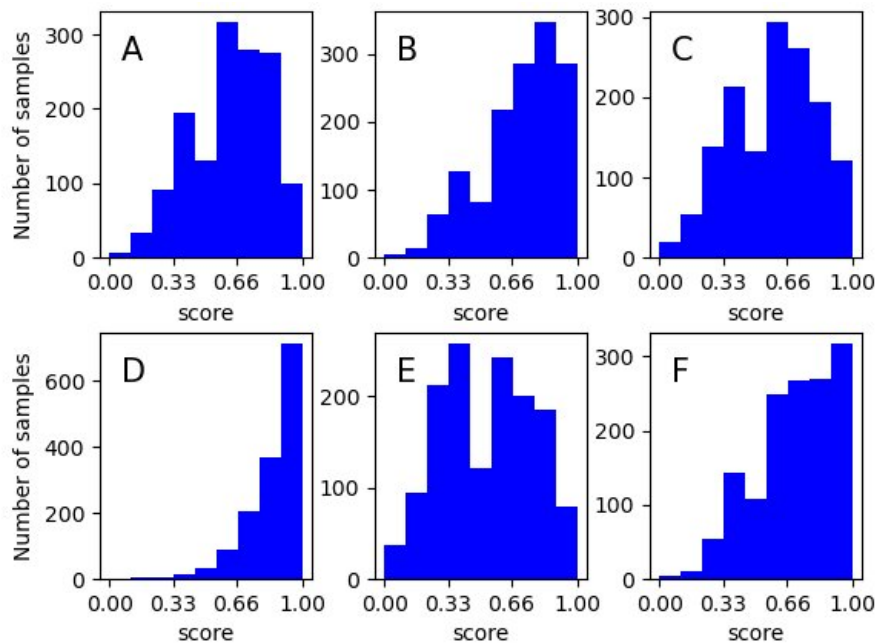# Scientists show validity of using social media to predict users' psychological well-being

March 8 2023, by Zhang Nannan

Normalized scores: (A) environment mastery, (B) positive relations, (C) autonomy item, (D) personal growth, (E) self-acceptance, (F) purpose in life. Credit: *Journal of Medical Internet Research* (2023). DOI: 10.2196/41823

Curious about your mental well-being without seeing a psychiatrist? Or are you curious about how you can get a sense of your psychological well-being through social media? In reality, psychological well-being is difficult to assess in real time on a large scale. However, the popularity and proliferation of social media make it possible to sense and monitor

the psychological well-being of online users in a nonintrusive way.

Led by Prof. Zhu Tingshao from the Institute of Psychology of the Chinese Academy of Sciences (CAS), a research team demonstrated how a machine learning model senses people's psychological well-being and investigated the predictive power of social media corresponding to ground truth well-being data in a psychological way. The study titled "Sensing Psychological Well-being Using Social Media Language: Prediction Model Development Study" has been published on Jan. 31 in *Journal of Medical Internet Research*.

The researchers recruited 1,427 participants on the Sina Weibo platform based on their self-developed online platform. The participants' well-being was assessed using a 6-dimensional questionnaire, including environmental mastery, positive relationships with others, autonomy, personal growth, self-acceptance and purpose in life.

The participants' social media posts were then collected, and six different psychological lexicons were used to extract linguistic features from the collected posts. A multi-objective prediction model was then built using the extracted linguistic features as input and psychological well-being as the output.

Finally, they evaluated the machine learning model using a psychological questionnaire scoring method.

The result showed that the machine learning model performed very well based on the use of psychological lexicons. In addition, the model also exhibited great performance in terms of reliability and validity.

By confirming the reliability and validity of the machine learning prediction model, the study verified the predictability of social media corresponding to the ground truth well-being data from the perspective

of [psychological well-being](#). The study has positive implications for the use of social media to predict [mental health](#) in nonprofessional settings such as self-testing or a large-scale user study.

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