

## Gallup Study Finds That Declines in Wellbeing Could Triple by 2030 Due to Climate Change

*Globally, people faced 3x more “high-temperature days” in 2020 than in 2008, and rising temperatures have decreased global wellbeing by 6.5%.*

*High-temperature days could decrease global wellbeing by an estimated 17% by 2030.*

*The impact of rising temperatures on quality of life is more pronounced among older generations and people in poorer countries and developing economies with large populations, including China and Brazil.*

WASHINGTON, D.C. – August 31, 2022 – [A new study](#) on the impact rising temperatures have on people's life evaluations shows that since 2008, global wellbeing has declined by at least 6.5% and could drop an estimated 17% or more by 2030. Gallup, in collaboration with Citi, combined survey geospatial results from 1.75 million people in 160 countries with daily, high-resolution temperature data from NASA to understand the impact high heat has on people's life evaluations.

This study comes at a time when extreme temperatures have battered areas around the world, including the United States, China and Europe. While much is known about the broader environmental and economic effects of climate change, there has been less systematic analysis of how rising temperatures affect individual quality of life around the world.

“The findings provide new insight into the significant negative impact rising temperatures have on global quality of life,” said Dr. Nicole Willcoxon, Research Director at Gallup. “They also quantify the overall human toll, beyond financial impacts, climate change has had on people's lives.”

Gallup's life evaluation question is one of its most stable measures and does not fluctuate significantly; for example, during the 2009 global financial crisis, worldwide life evaluations fell by just 3.7%. Despite this, the study found that each time a person experiences a high-temperature day, their life evaluation drops by an average of 0.56%. When viewed in the context of the stability of life evaluations — even in the face of negative events such as financial and governmental crises — these data provide an important tool for policymakers and leaders to use to galvanize action more broadly, as wellbeing is projected to continue to decline.

The impact of rising temperatures on quality of life is more pronounced among older generations and people in poorer countries and developing economies with large populations, including China and Brazil.

Globally, the largest difference in effect of heat on life evaluation is seen between old and young adults.

Among people 65 and older, each high-temperature day in the past 30 days is associated with a 1.11% drop in life evaluation, compared to a 0.48% drop among people younger than 65.

People in low- and middle-income countries are more vulnerable to weather extremes than those in high-income countries; additionally, rising temperatures tend to disproportionately affect disadvantaged groups, resulting in greater social inequality. High temperature days are significantly more likely to impact quality of life among many of the world's most populous countries: China, Mexico, Turkiye, Nigeria and Brazil. The relationship between high temperatures and low life evaluations is especially strong in the 37 countries listed in the report. Combined, these countries make up more than a third of the world's population.

Using current climate projections, declines in wellbeing could triple due to high-temperature days by 2030. The results suggest people will experience on average 3.1 such days in 2030, compared to 1.7 days in 2021. The cumulative effect of such days implies that, holding all else constant, rising temperatures will be associated with a drop in life evaluations three times greater in 2030 than current levels.

"A summer of intense weather and wildfires across the globe and recent climate science reports have underscored the urgency of the global climate crisis," said Val Smith, Chief Sustainability Officer at Citi. "In this report, Gallup has helped to identify the tangible impact of climate change on individuals' wellbeing. The findings of this report further fuel our commitment to help our clients transition to net zero."

## Note to Media

If you wish to receive any additional information about [the survey](#), including further demographic group responses, please contact [kristjan\\_archer@gallup.com](mailto:kristjan_archer@gallup.com).

## Methodology

The results in this report are based on Gallup World Poll respondent-level data from 2006 to 2020 in 160 countries. This data represents about 1.75 million respondents interviewed over the course of those 15 years. Information about the respondents' location (either country administrative divisions or GPS coordinates) is matched with daily, high-resolution land surface temperatures from NASA's MERRA-2 database. Specifically, the analysis tests for relationships between respondents' life ratings and the number of days in the 30 days prior to the survey with unusually high daytime temperatures where they live.

In this study, Gallup merged NASA MERRA-2 daily temperature data from 1980 to 2020 with the World Poll data. "High-temperature days" are defined as days on which the temperature in a given location is 1.5 or two standard deviations above the location's mean temperature during a historical reference period, which is derived using aggregated NASA MERRA-2 data from 1980-2004. This approach follows previous analyses that examine relationships with heat anomalies relative to baseline levels in investigating the effects of rising heat on wellbeing.

This study is a novel attempt to explore the relationship between rising temperatures and life evaluations. Yet, the relationships and associations mentioned in this report do not imply causality. Further research is needed to explore the mechanisms through which climate change impacts individuals' livelihoods.

## About Gallup

Gallup delivers analytics and advice to help leaders and organizations solve their most pressing problems. Combining more than 80 years of experience with its global reach, Gallup knows more about the attitudes and behaviors of employees, customers, students and citizens than any other organization in the world.

## About Citi

Citi is a preeminent banking partner for institutions with cross-border needs, a global leader in wealth management and a valued personal bank in its home market of the United States. Citi does business in more than 160 countries and jurisdictions, providing corporations, governments, investors, institutions and individuals with a broad range of financial products and services.

Additional information may be found at [www.citigroup.com](http://www.citigroup.com) | Twitter: [@Citi](https://twitter.com/Citi) | YouTube: [www.youtube.com/citi](https://www.youtube.com/citi) | Blog: <http://blog.citigroup.com> | Facebook: [www.facebook.com/citi](https://www.facebook.com/citi) | LinkedIn: [www.linkedin.com/company/citi](https://www.linkedin.com/company/citi)