

Social Media Discussion of Long-Term Business Impact of COVID-19 (weekly change over time, February 2020)

Ipsos Biosurveillance Atlas:

*A Multi-Method Approach to
Monitoring COVID-19 Pandemic*

An Ipsos U.S. Public Affairs Point of View

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Introduction

An outbreak of a respiratory disease caused by a new coronavirus that was first detected in Wuhan City, Hubei Province, China is now detected in over 75 locations internationally. The virus has been named SARS-CoV-2 and the disease it causes has been named “coronavirus disease 2019” (COVID-19).¹

As the spread of COVID-19 evolves, it will become critical for decisionmakers at the highest levels of government to have access to both real time and validated information about the public perception and reaction to the disease.

Making educated and real-time decisions in an evolving crisis requires using multiple disparate information sources and applying advanced research methods to better understand the public’s reaction to the crisis. Applying these advanced capabilities can help improve decisionmakers ability to understand public perceptions and trust in effectiveness of government’s policies, countermeasures and facilities, and allow localized management of the evolving crisis, including improved messaging and communication.

Ipsos, offers a capability to our clients that combines **real-time data social media, newspapers, and other digital public opinion streams** with traditional gold-standard survey data, applying **proprietary algorithms** and **deep knowledge of geospatial analysis** to make these data streams and outputs actionable. Our approach uses integrated insights from social media analytics, Internet of Things² data, financial transaction,³ and Human Movement data⁴ to assess both national and hyper-local social disruption associated with COVID-19. These disruptions include local adaptation to the health crisis, government countermeasures, and identification of health-related digital disinformation campaigns (“fake news”). These real-time data streams can be **fully integrated with existing survey platforms** to create an **omnichannel feedback** tool.

COVID-19 is an emerging and rapidly evolving situation. Federal decisionmakers need an integrated public opinion assessment platform that clearly communicates public perceptions, preparedness and reaction to this emerging pandemic threat.

¹ <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>

² Internet of Things: Applying advanced analytics to the huge volumes of information companies are already collecting from consumer technology. This data may include traffic and environmental sensors as well as retail foot traffic sensors.

³ Financial data may include anonymized credit card transactions associated with purchases of COVID-19 protective equipment.

⁴ Human Movement/Mobility Patterns: Applying advanced analytics to the collection of large-scale, longitudinal data about human mobility that is tracked via anonymized cell phones and app data.

Background: Current State of Public Perception of COVID-19

Context:

As there are increasing reports about the global spread of the novel coronavirus outbreak, Ipsos conducted new public opinion research (February 28, 2020) to gauge the impact on the American public's behavior to date. Some key findings are highlighted below, but sustained research will be necessary to understand the evolving public opinion dynamics of the crisis over time:

- 74% of Americans are concerned about the impact of the coronavirus on the United States, with 61% concerned about the impact on the markets. Fifty-seven percent are concerned about the impact on them personally. Older respondents are more concerned about the impact on the country in the markets, while younger people are more concerned about the impacts on themselves.
- Concern over the outbreak is increasing. Two in five Americans report their concern over the outbreak has grown in the past week (42%), and about half of Americans (50%) believe it is likely that the coronavirus will become a full-blown crisis in the United States.
- There is significant public support for strong containment measures, like the federal government placing a quarantine on cities or towns—including large cities like New York, Chicago, or San Francisco—if the coronavirus is found there (80%).
- About a quarter of Americans (24%) report that they started regularly checking for news online more frequently than a few weeks ago, suggesting greater desire for current updates.
- A third of Americans (34%) have also reported making a point to purchase preventative health products such as masks or gloves in the past few days.

Gaps in Available Information:

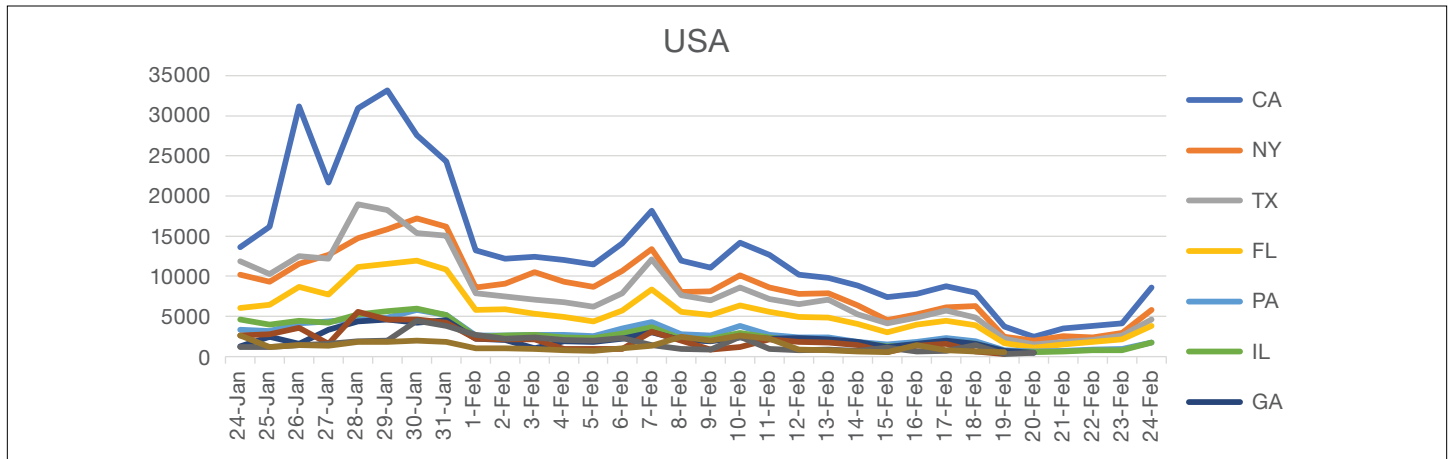
Ongoing opinion surveys will help shed light on potential unknowns and consideration for policy decisions. Current information gaps are noted in the chart below:

Information Gaps for COVID-19

- Public understanding of the disease
- Real time reactions to news and media about the disease
- Public preparedness for potential long-term societal disruptions
- Access to care
- Public perception of effectiveness of public health countermeasures
- Workforce disruptions and ability of the public to telework
- Local and community business disruption
- Local and community transportation disruptions
- Channels and sources of influence for information about the disease
- Disinformation campaigns and impact on opinion

Integrated Biosurveillance Atlas

The platform provides real time insights from disparate data streams in order to provide a unified picture of public reaction to COVID-19 for decisionmakers in real time. The platform allows for aggregation of these insights at national level or alternatively zoom in to a specific locality for hyper-local insights. It also places the power of narrative-building in the hands of the users through its interactive features, allowing people to explore for themselves what the data says.

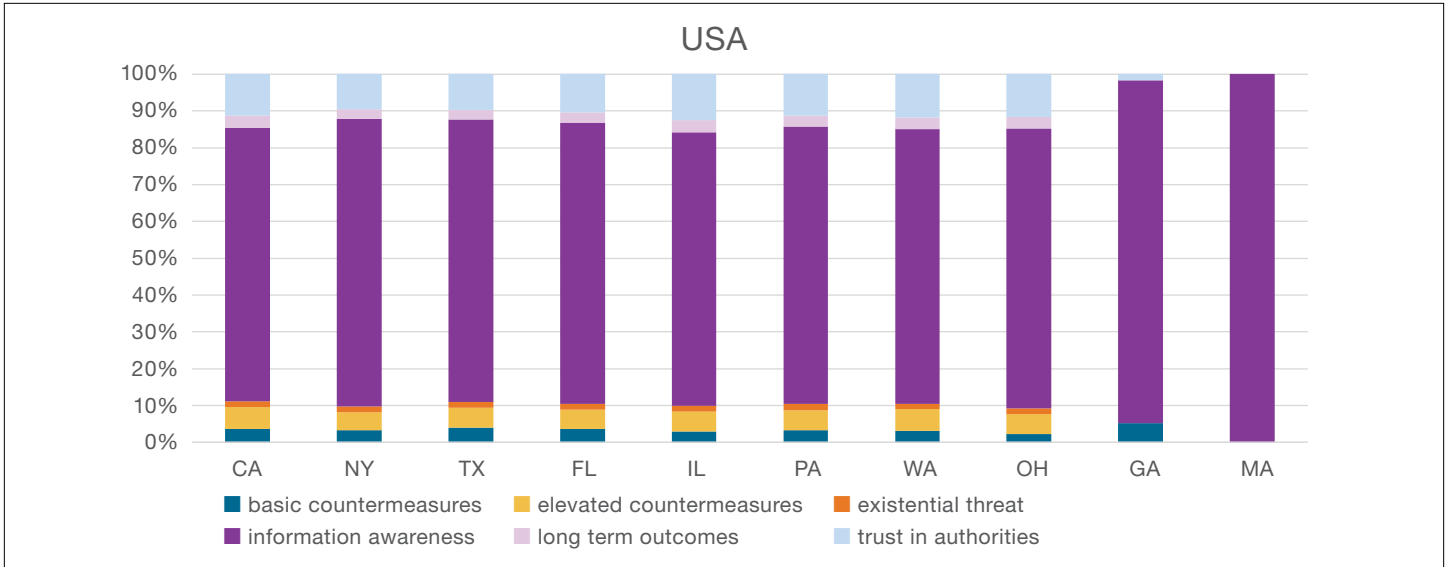


Top 10 States—Volume of Discussion of COVID-19 (Jan-Feb 2020)

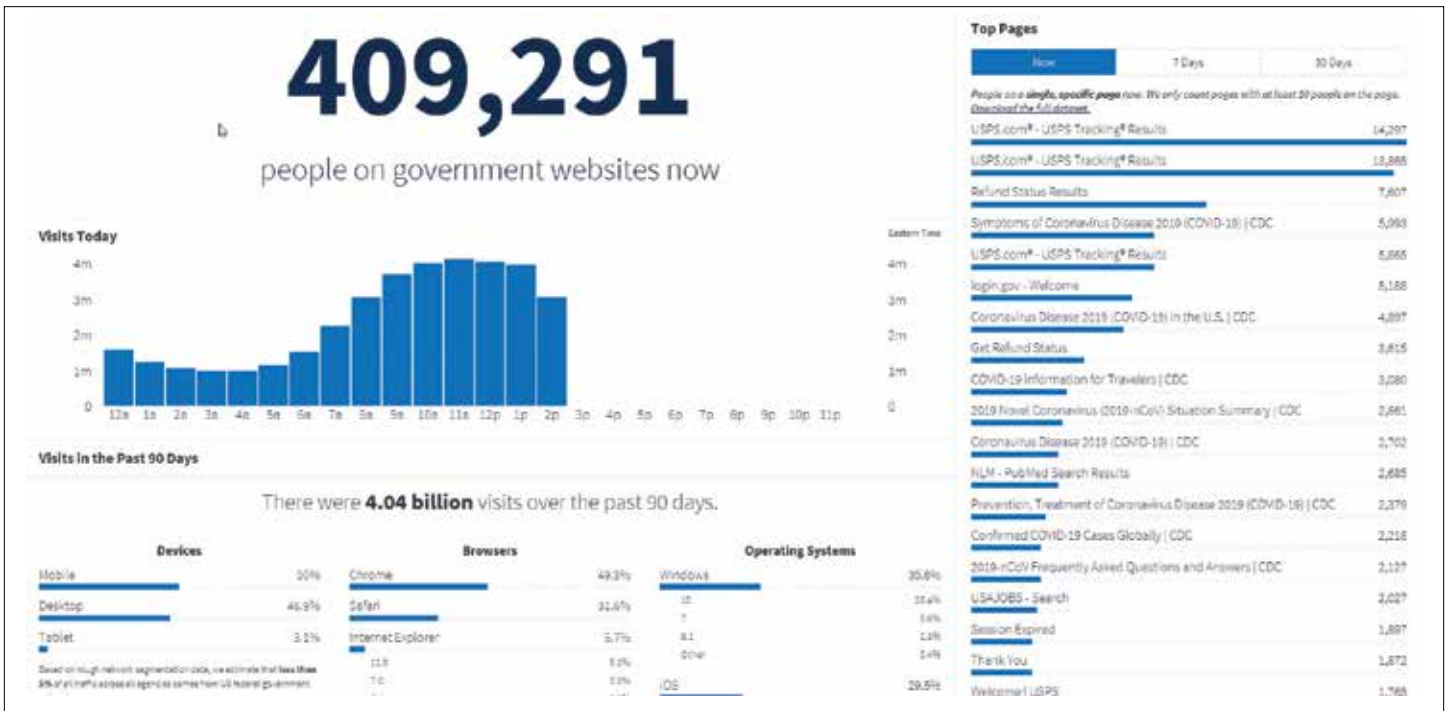
Each monitoring metric plays an important role. Survey data serves to take a freeze-frame of where the public stands in a moment, stitched together over time by surveys on the same question, and then augmented by averaging many different surveys together.

Digital metrics work to understand public's emerging attitudes toward COVID-19. Combined, they provide unique insights into how people are feeling and how those sentiments are changing. In particular, digital metrics are sub-divided into the following key categories:

- **Social Intelligence**—Real time stream from multiple social media channels powered by AI algorithms. They are designed to provide insight into 1) local adaptation to disease 2) public perceptions of government effectiveness in handling crisis 3) digital disinformation campaigns 4) effectiveness of individual medical facilities 5) patient/staff experience at designated COVID-19 facilities 5) local reaction to proposed changes in COVID-19 related regulations.
- **Search Trend Data**—Real time stream based on localized search patterns designed to provide insight into 1) COVID-19 information awareness 2) population reaction to government countermeasures 3) attempted self-countermeasures (e.g. searching for a remedy, specific drug and/or facility).
- **Digital Newspapers**—Real time stream from U.S.-based newspapers designed to provide insight into 1) perceptions of local authorities' response to COVID-19 crisis 2) local adaptation to evolving public health event.
- **Website Traffic**—Real time stream from local/national public health/medical agencies designed to provide insight into 1) which agencies do people turn to for information about COVID-19 2) what policies/public health/medical advice are people looking for.
- **Human Movement**—Real time stream from anonymized cell phone data designed to provide insight into 1) local adaptation to disease, including decrease in attendance of business facilities 2) change in net migration due to COVID-19 3) change in staff attendance at local health facilities 4) access to underserved populations.
- **Anonymized Financial Transactions**—Real time stream from anonymized geo-aggregated credit card transactions designed to provide insight into 1) purchasing patterns associated with COVID-19 response 2) purchasing pattern associated with disease fleeing behavior 3) potential shortages of COVID-19 supplies.



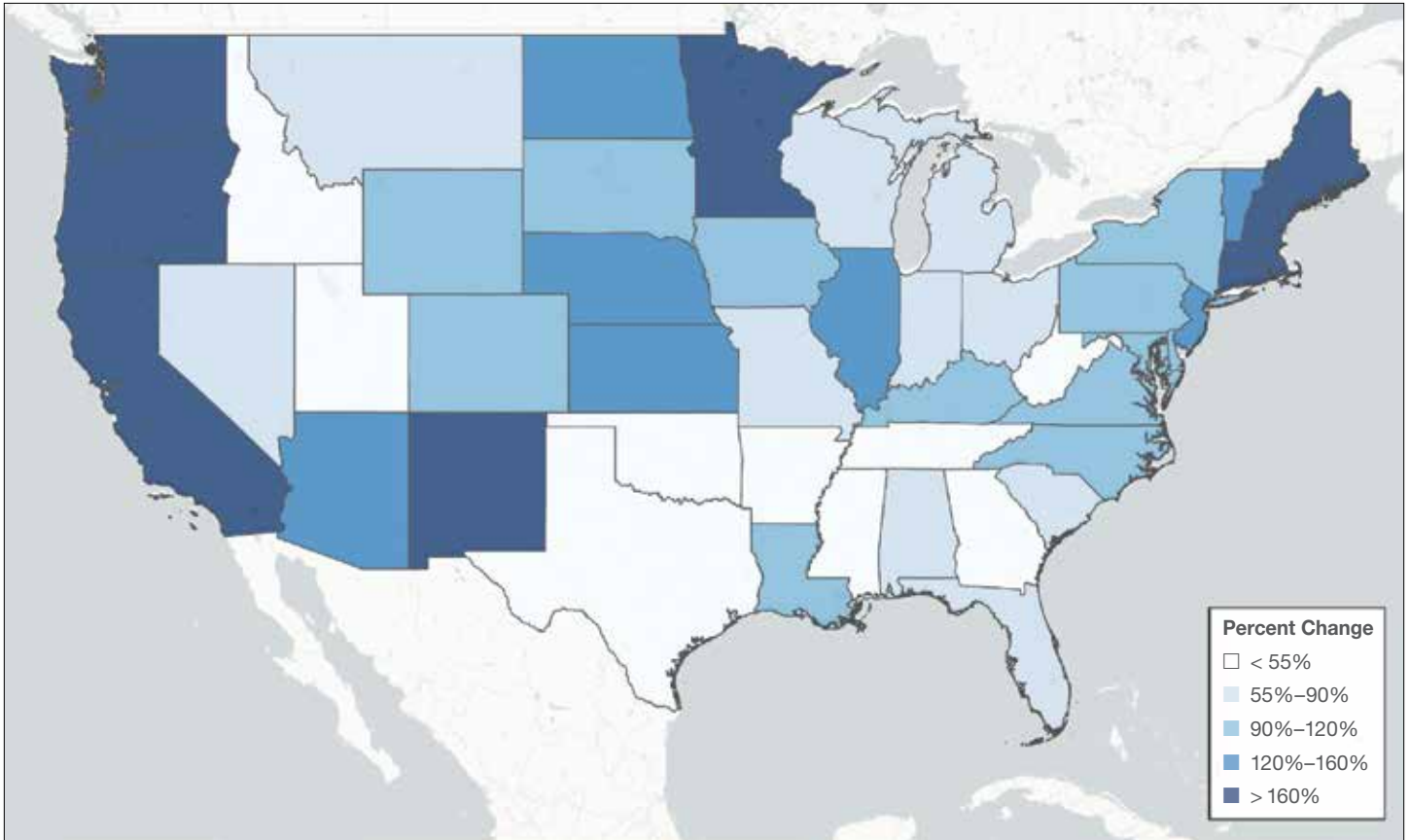
COVID-19 related discussions of citizen countermeasures and perception of government's effectiveness in United States, February 2020



Website Traffic to US Government Agencies, Top Pages, February 28, 2020

Situational Awareness Dashboard

Ipsos plans to provide a common operating picture, including mapping of nationwide, state level and localized understanding and opinion in real time on critical metrics. A sample of opinion at the state-level is displayed in the map on the next page. This example shows the increase of discussion around COVID-19 each week during the month of February 2020.



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Google Search Share

The Google Search Share function gathers all the google searches on COVID-19 and related countermeasures, and then breaks out thematic summaries of the search results. If ‘Coronavirus Prevention’ has 30% of the Google Search Share, for instance, then for every ten times someone searches about COVID-19, three of those searches pertain to prevention. This information is available at DMA, city, and state levels.

Social Listening and Natural Language Processing

Our digital listening analysis uses our ability to examine social media from major social network channels, including Facebook, Instagram, Reddit, YouTube, and Twitter as well as over 192,000 newspapers worldwide. Ipsos maintains an archive of 5B social media mentions over recent years allowing us to maintain accurate understanding of baseline of local response to disease outbreaks, discussions of effectiveness of local healthcare, as well as perceptions of government public health communication campaigns. Our proprietary deep learning (sub-set of AI) algorithms will allow us to rapidly provide insights into public attitudes towards COVID-19 and correlate them with socio-economic and demographic characteristics, as well as the geography of social media users.

Incorporating Social Media and Survey Data

Ipsos incorporates social media and traditional survey data for a solution that provides deeper insights about the public's response toward COVID-19. Self-reported survey measures are combined with social media data streams to provide point in time measurements support by real-time data flows to increase speed and availability of sentiment data. This approach creates a unified record that incorporates survey results and social media mentions. This analysis can be aggregated at multiple geography and market levels.

Within the United States, Ipsos' premier survey offering is our national online panel known as KnowledgePanel®. Bringing statistical projectability to online research, KnowledgePanel is the largest online panel that is representative of the U.S. population. Because every sample unit has a known selection probability, KnowledgePanel is not susceptible to the "professional respondent" problem and other hazards of "opt-in" online panels based on convenience sampling.

KnowledgePanel is unique in that the panel is recruited via postal mailing utilizing the United States Postal Service Computerized Delivery Sequence File. All U.S. residential non-institutional addresses are eligible for selection. Because of this recruitment approach, and random probabilistic sampling methods, resulting survey data are useful for estimates of prevalence of health conditions and health attitudes. Households on KnowledgePanel are extensively profiled on health conditions and demographics, and our approach enables non-internet households to take surveys online to minimize coverage bias.

Human Movement Analytics

Ipsos also applies advanced analytics to the collection of large-scale, longitudinal data about human mobility that is tracked via examining opt-in geo-location from anonymized app and/or cell phone usage. Daily, Ipsos data includes human movement from as many as 250m cell phones in United States. Using de-identified anonymized cell phone data, Ipsos applies proprietary algorithms to make inferences on pattern-of-movement, behaviors, group/population identities, access to services and functionality. Specifically, for COVID-19, we can provide real time understanding of 1) readiness of healthcare facilities 2) patient flow to the facilities 3) out-migration from affected areas 4) change in business practices/foot traffic within affected areas.

Some previous analytics include:

- Estimations on patient, visitors, and staff load (provided for any time interval, daily, weekly, monthly, etc.) at point locations for facilities, such as hospitals, public buildings, universities, etc.
- Population estimations at any geographic admin level, including inferences about net migration.
- Local community mobility insights—Visualization of short- and long-distance movement patterns, allowing us to better understand economic, business, and other types of activity (e.g. trips to markets/stores, time spent at places of business, time spent at places of worship, etc.).
- "Guilty-by-association" analytics—in combination with some ground survey work, this allows us to go beyond the original sample of interest that we plan to interview. We are able to identify (using anonymous cell phone data) who else has similar patterns as compared to the selected group and allow us to identify new patterns of behavior, new areas (e.g. contagion—where the disease spread may be occurring that may not be apparent or known to on the ground).
- Cross-border and in-country movement—useful for understanding issues related to migration and movement—anonimized cell phone activity records and offered a unique view at utilization of border crossing as well as key points of origination and destinations.

Benefits:

By applying advanced analytics to these new streams of data, Ipsos can gain new insights that can help make more informed decisions about which actions to take to react to the ongoing situation.

Other benefits of using multiple data streams include those in the chart below.

Benefits of Utilizing Multiple Data Streams

- Does not add to survey fatigue.
- Allows for unbiased data collection and does not rely on self-report. It goes beyond measuring trust to understanding what is really happening.
- Improves efficiency of traditional sampling designs.
- Improves response times and lessens burden.
- Connects populations with needed resources more quickly.
- Monitor populations remotely and track mobile health.

Conclusion

As the spread of COVID-19 continues, innovative tools such as the Ipsos Biosurveillance Atlas will give decisionmakers critical real-time data to help their organizations react and adapt to COVID-19. Our data will enable leaders to make those decisions in an informed and educated fashion, surfacing issues as they arise and minimizing costly mistakes due to misinformation. Without access to real time situations data, decisionmakers will be at a severe disadvantage in a rapidly evolving situation, potentially making costly errors that could be prevented to access to the appropriate streams of information.

About Ipsos

Ipsos is the third largest global market research and professional services company in the world, with over \$1.8 billion in revenue annually and offices in 89 countries, employing over 16,600 research professionals across the globe. Ipsos' RAD **Risk Analytics Division (RAD)** combines real-time data streams with traditional survey data, applying **proprietary algorithms** and **deep knowledge of environments** to make these data streams and outputs useful. The team uses social media analytics, Internet of Things data, Human Movement data, and satellite imagery to provide political risk forecasting, rapid humanitarian crisis assessments, and real-time monitoring of population attitudes and issues.